

Executive Summary

Introduction

The NZ Transport Agency (NZTA) has lodged resource consent applications and a notice of requirement for a designation (NoR) in relation to a future section of State Highway 1 (SH1), formed to an expressway standard, from Peka Peka to North Ōtaki (the Expressway).

To accommodate the Expressway, approximately 1.2km of the North Island Main Trunk Railway (NIMT) through Ōtaki will be realigned, and New Zealand Railways Corporation / KiwiRail Holdings Limited (trading as KiwiRail) has lodged an NoR for that purpose.

The NoRs and resource consent applications seek approvals required under the Resource Management Act 1991 (RMA) to construct, operate, and maintain the Project, which comprises the Expressway, associated local road connections, and the realigned NIMT.

The NZTA will be responsible for the roading aspects of the Project, and KiwiRail will be responsible for the rail aspects, but the Project has been designed and will be constructed (and construction effects managed) in an integrated, cohesive manner.

The Project passes through part of the Kāpiti district, from Te Kowhai Road (near Peka Peka) in the south to just north of Taylors Road (to the north of Ōtaki).

Once constructed, the Expressway will form part of SH1, and the current section of SH1 from Peka Peka to Ōtaki will become a local road. The Expressway will tie in with the new section of SH1 created by the MacKays to Peka Peka (M2PP) Expressway Project to the south, at Te Kowhai Road, and re-join the current SH1 north of Ōtaki.

The Project is shown in Figures 1 and 2 overleaf.



Figure 1: Location of the Peka Peka to North Ōtaki Expressway



Figure 2: Schematic View of the Peka Peka to North Ōtaki Expressway Project

Background to the Project

The Project represents the culmination of many years of consideration of how best to provide a safe, efficient, long-term route through the Kāpiti district, one of the fastest-growing parts of the Wellington Region.

As the only south-north route through the Kāpiti district, SH1 currently carries all through-traffic, as well as numerous vehicles making local trips. Given population growth trends, and the general increase nation-wide in vehicle and trip numbers, existing issues of traffic congestion, delays, and accidents are expected to worsen. Various strategic studies and investigations have been undertaken to analyse these issues and identify potential solutions.

In March 2009, this section of SH1 was classified by the government as part of the Wellington Northern Corridor Road of National Significance (RoNS), one of seven major State highways prioritised for enhancements in order to reduce congestion, increase transport efficiency, improve safety, and support economic growth.

In late 2011, a review by the NZTA of long-term route options for this section of SH1 concluded that the general corridor within which the Expressway is located best meets national, regional, and district needs for a State highway.

As an integral part of the Wellington Northern Corridor RoNS, and as a stand-alone proposal, the Project provides significant benefits in terms of safety, travel time savings, and route security through the Wellington Region, as explained below. Accordingly, the Project is a key component of a number of national, regional, and local transport strategies, policies, and plans to improve transport in the region and nationally.

The benefits of the Project include those set out below.

- The Project will achieve significant safety improvements for users of transport networks, through:
 - the separation of local traffic from State highway traffic travelling through the Kāpiti district;
 - improved road standards, due to the geometric design of the Expressway (including continuous median separation of north and south-bound traffic); and
 - an enhanced traffic environment on the local road network (which will include the current SH1), with benefits for motorists, cyclists, and rail users due to:
 - fewer vehicles using the current SH1;
 - the provision of grade-separated local road connections (i.e. bridges) across the Expressway and NIMT; and
 - the removal of five of the eight level crossings of the NIMT in the Project area.
- The Project will promote economic development, including through:
 - improvements in efficiency for freight movements and reduced travel times;

- the reduction of traffic through the Ōtaki Railway Retail area, improving the amenity values¹ of that area as a social, employment, retail, and transport centre; and
 - increased economic activity and employment opportunities during the Project's four-year construction period.
- The Project will enhance connections between communities in the Kāpiti district, through:
 - the provision of the Expressway as an alternative route; and
 - the continued availability of the existing SH1 as part of the local road network, with a safer, improved transport environment (as discussed above).
 - The Project will result in reduced and more reliable travel times along key routes, and reduced traffic congestion.
 - As part of the Wellington Northern Corridor RoNS, the Project will improve access to Wellington's key facilities such as the port, international airport, hospital, and central business district (CBD).
 - The Project is "lead infrastructure", in that it will meet the future needs of a growing population, as well as foster economic growth in the ways summarised above.
 - The Project will improve route security and resilience of the road network in the event of a significant earthquake, road accidents, or other disruption, by providing a high-quality alternative route between Peka Peka and Ōtaki (including two bridges providing alternative crossings of the Ōtaki River).
 - The Project has a high degree of alignment with key strategic planning instruments for the Kāpiti district, including the Greater Ōtaki Vision (GOV).

Description of the Environment

The Project traverses a range of different land uses along its 13km route, including farming and agricultural land, lifestyle blocks, residential areas, and urban townships and communities:

- At the southern end, the four-lane Expressway is located over the existing SH1, and a replacement section of arterial road is to be built, predominantly through low-lying areas and undulating mounds associated with sand dunes;
- North of Te Hapua Road, the Expressway and new arterial road pass through sand dunes and curve east to avoid a culturally and ecologically significant area at Mary Crest, where the Expressway crosses from the west to the east of the NIMT and the arterial road joins with the existing SH1;
- North of Mary Crest, the Expressway runs adjacent to the existing transport corridor (i.e. the NIMT and the current SH1) until the Ōtaki River, across generally flat topography and properties primarily associated with agriculture or horticulture;
- The Expressway crosses the Ōtaki River and runs across the floodplain, then passes through an urban area to the east of the Ōtaki Railway Retail area; it is in this area that the section of NIMT will be realigned to run parallel to the Expressway;

¹ "Amenity values" are those natural and physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes.

- The Expressway and realigned NIMT pass under the existing SH1 as it exits the Ōtaki Railway Retail area in a northward direction, where the NIMT rejoins the current rail alignment; and
- The Expressway passes through a sand dune system immediately north of Ōtaki (as is the NIMT), before it reduces to two lanes, crosses the Waitohu Stream, and traverses flat rural land at the northern end of the Project area.

The Project area generally consists of rural pasture land, market gardens, discrete areas of urbanised land, sand dunes, pockets of native and exotic vegetation, and wetlands.

Much of the Kāpiti district has been modified by human activity over hundreds of years, resulting in a variable range of terrestrial (land-based) and aquatic ecological habitats along the route. Design criteria for choosing the Project route included seeking to avoid or minimise the Project's effect on high-value ecological habitats; most notably, the Project successfully avoids existing significant indigenous vegetation at Mary Crest (which is also an area of significance to the tangata whenua).

The Project traverses four main hydrological catchments and numerous smaller catchments, flowing east to west to the Kāpiti coast. The Ōtaki River is the largest water course. The Project area traverses a series of floodplains, where land drainage works predominate – initially these were to enable pastoral farming, while more recently the focus has been on flood control.

Network utilities near the Project area include high voltage overhead transmission lines, which are located to the west of the Project and will not be affected, and local electricity distribution lines, gas and water supply pipelines, and telecommunications cables. The Arcus Road irrigation scheme draws groundwater from near the Ōtaki River.

Description of the Project

Roading aspects of the Project

The Expressway has been designed to an NZTA expressway standard, which features four lanes (two in each direction) with continuous median separation.

Local access to and from the Expressway is provided by half-interchanges² to the north and south of Ōtaki, which will be clearly signposted and will provide legible access to Ōtaki and Te Horo. Direct access is deliberately prevented elsewhere along the alignment.

Key design features of the roading aspects of the Project include the following:

- The Project incorporates construction, operation, and maintenance of an Expressway of approximately 13km in length, a new section of local arterial road near Mary Crest, and new or reconfigured local roads (including connections from properties to local roads) throughout the Project area;
- The Expressway will have a sealed carriageway up to 26m wide, including 2.5-3m sealed shoulders on each outer edge; the new local arterial road will have a sealed

² A half-interchange comprises two ramps allowing, in this case, access between the Expressway and the local road network. For instance, the half-interchange to the north of Ōtaki allows southbound traffic to exit the Expressway and enter the Ōtaki Railway Retail area, and northbound traffic to leave the Ōtaki Railway Retail area and join the Expressway.

carriageway approximately 10.6m in width, including a 1.8m-wide shoulder on each side;

- Buffer areas are provided on either side of the formed carriageway to enable landscape treatment, ecological enhancements, and other facilities including stormwater controls;
- Project earthworks will all take place within the proposed designations; comprehensive landscape treatment is provided for earthworks areas, including for the finished slopes of cuts and fills;
- The Project includes ten bridge structures, comprising two parallel two-lane Expressway bridges across the Ōtaki River,³ one two-lane Expressway bridge across the Waitohu Stream to the north of Ōtaki, six grade-separated overbridges to maintain local road connections, and one overbridge where the Expressway crosses the NIMT near Mary Crest;
- A low-noise road surface (such as Open-Graded Porous Asphalt (OGPA)) will be used near the Ōtaki urban area, from the Ōtaki Railway Station to Waitohu Valley Road;
- There will be no lighting along the Expressway, except at the interchanges;
- The Project will bring about a net increase in the physical extent of indigenous vegetation, wetlands, and stream-related habitat, and "no-net-loss" of ecological values associated with those areas;
- Mass planting will be carried out along stream edges and in other areas affected by the Expressway;
- Stormwater run-off from the new roading infrastructure is to be collected and treated using swales, filtration-type devices and constructed treatment wetlands;
- A main site compound will be formed to the north of the Ōtaki River which, among other functions, will serve as an administrative centre, delivery point for materials to the site, and plant/equipment storage area;
- Construction works will include earth embankments, areas of cut and fill,⁴ reinforced soil embankments, and piling and mechanically-stabilised earth walls with concrete facing panels, predominantly around bridges;
- Approximately 800,000 cubic metres of excavated (cut) material will be used as fill within the designations;
- In addition, there will be approximately 45,000 cubic metres of imported fill used to construct the Project;
- Comprehensive erosion and sediment control measures are to be provided for all earthworks, and particular safeguards will be adopted for works in and around water bodies; and
- Construction will be undertaken by a number of work crews working on different parts of the Project, both at the same time and in different stages. Construction is expected to take approximately four years.

³ The two bridges are numbered together on the layout plans as if they were one structure, Bridge No. 5.

⁴ A cut is where earthworks operations 'cut' through soil or rock; a fill is where soil or other material is used to fill a depression or form a mound or embankment.

Rail aspects of the Project

The NIMT realignment is designed to ensure that the NIMT continues to operate to its current standard and runs to the west of the Expressway through Ōtaki.

The NIMT realignment is to be built along with the Expressway as an integrated construction project, so the earthworks management and mitigation measures referred to above will be largely common to both the roading and rail aspects of the Project.

The design of the NIMT realignment incorporates the following specific features:

- The length of the realignment is approximately 1.2km through the Ōtaki area, and features of the current designation are proposed to be replicated (including an existing passing loop past Ōtaki Railway Station, to allow trains travelling in opposite directions to pass each other, and a future-proofed double-track formation);
- The design standards for the NIMT realignment provide for an 820m minimum radius for the horizontal track curvature and a minimum 5.5m vertical clearance (for example where a road bridge passes over the rail corridor), to future-proof the line for electrification; and
- The Ōtaki Railway Station building will be reoriented on its current site so that the building and platform remain parallel to the realigned railway line.

Consideration of Alternatives

Roading designation

The NZTA and its predecessors carried out (or commissioned) numerous historical assessments of alternative State highway routes through the Kāpiti district, including between Peka Peka and Ōtaki.

In developing the Project, that historical work was examined and brought up to date. The updated assessment involved detailed multi-criteria analysis of four alternative routes, a western route, a central route closely following the existing SH1 (which was ultimately preferred for the Expressway), and two routes to the east – the 'eastern plains' and 'eastern foothills' routes.

The NZTA's conclusion (in late 2011) was that the central route, which had previously been presented to and discussed with the local communities as the NZTA's preferred option, achieved the best fit with the NZTA's statutory obligations and the Project objectives. In large part this is because the route chosen for the Expressway allows ready access between the Expressway and Ōtaki (including the Ōtaki Railway Retail area), and best integrates the Project with the Kāpiti district's existing infrastructure and land use planning framework.

Parallel processes for defining the Expressway route were conducted during 2010 and 2011. These processes focused on the location of interchanges and cross-corridor local connections, and specific Expressway route choices. The processes were informed by specialist inputs from a multi-disciplinary expert team. Public consultation and meetings with key stakeholders provided valuable feedback that was factored into the NZTA's decisions on options.

As a result of these processes, the Project design incorporates:

- Half-interchanges to the north and south of Ōtaki, providing full access from the Expressway to the Ōtaki Railway Retail area and vice versa;⁵
- The following cross-corridor local connections:
 - At Te Horo, a local road bridge over the Expressway, NIMT, and the existing SH1, connecting residences and businesses to the east and west of the transport corridor (a more northerly location was chosen because of preferences expressed by Te Horo residents during consultation);
 - Just south of Ōtaki River, new local roads and bridges across the Expressway and NIMT, connecting Ōtaki Gorge Road and Old Hautere Road with the existing SH1 to provide access to and from Ōtaki, and linking to the Expressway (heading south); and
 - At Rahui Road in Ōtaki, a local road bridge across the Expressway and realigned NIMT, linking the Ōtaki Railway Retail area with residential areas to the east;
- Specific provision for cyclists and pedestrians on all cross-corridor local connections;
- An alignment at Mary Crest that avoids significant indigenous vegetation remnants and sites/areas of cultural significance; and
- An alignment at Te Horo that facilitates the benefits of the Mary Crest alignment, and enhances safety and urban design outcomes.

Rail designation

KiwiRail has also considered alternatives in relation to the realignment of the short section of the NIMT through Ōtaki, necessitated by the route of the Expressway.

The realigned NIMT largely runs parallel and immediately to the west of the Expressway, which minimises the inaccessible land between the two. The chosen alignment also enables the continued use of the historic Ōtaki Railway Station in its current setting, with the Station building and platform adjusted to remain parallel to the realigned railway track.

Consultation and Engagement

Consultation on the Project has been guided by recognised good practice principles and has featured significant levels of interaction with stakeholders over a number of years.

The community's views have been sought on the Project as a whole, and on specific matters such as cross-corridor local connections and the measures proposed to mitigate the Project's environmental effects.

The Project has benefited greatly from feedback provided by stakeholders through various consultation channels, including one-on-one and group meetings, a series of public open days in 2009, 2011, and 2012, written submission processes, a project email address, and

⁵ The option of an interchange at Te Horo was discounted several years earlier because (among other reasons) such an interchange would promote residential development in that area, contrary to Kāpiti Coast District Council's strategies for growth in the district.

a free-phone service. Information has also been disseminated through the Project website, media releases, and brochures and newsletters sent to households and businesses.

The NZTA has kept in close touch with the tangata whenua, Ngāti Raukawa and Nga Hapū o Ōtaki, as the Project has developed. This collaborative engagement has included numerous briefings, workshops, and hui, an open day at Raukawa Marae in Ōtaki, site walkovers, and various meetings with specialists.

Likewise, on-going consultation with Kāpiti Coast District Council (KCDC), Greater Wellington Regional Council (GWRC), and other relevant regulatory agencies has been undertaken in developing the Project to date.

Open channels of communication and stakeholder engagement will remain important features of the Project as it is constructed and becomes operational.

Assessment of Effects on the Environment

An Assessment of the Environmental Effects (AEE) of the Project has been carried out in accordance with the relevant provisions of the RMA, and an AEE report prepared. The AEE report describes in detail the wide range of actual or potential effects, both positive and adverse, that the Project will have on the environment.

Many of the Project's adverse effects will be limited to the period during which the Project is constructed. The Project's effects also vary in significance, scale (local, regional, and national), and intensity.

A comprehensive suite of measures is proposed to address the Project's adverse effects on the environment. The various effects and the range of mitigation measures are summarised below.

Traffic and Transport

The Project will have significant positive transport effects at a local, regional, and national scale, including:

- Improved safety and reduced road accident risk, due to:
 - the separation of local traffic from State highway traffic travelling through the Kāpiti district, which will address the very poor current performance of the intersections of local roads with SH1;
 - improved road standards, due to the geometric design of the Expressway (including continuous median separation of north- and south-bound traffic); and
 - an enhanced traffic environment on the local road network (which will include the current SH1), with benefits for motorists, cyclists, and rail users due to:
 - fewer vehicles using the current SH1;
 - the provision of grade-separated local road connections across the Expressway and NIMT; and
 - the removal of five of the eight level crossings of the NIMT in the Project area;
- Enhanced connections between communities in the Kāpiti district, through:
 - the provision of the Expressway as an alternative route; and

- the continued availability of the existing SH1 as part of the local road network, with a safer, improved transport environment (as discussed above);
- Reduced and more reliable travel times along key routes and reduced traffic congestion, which in turn will improve efficiencies in freight movement;
- Improved access to Wellington's key facilities such as the port, international airport, hospital, and CBD; and
- Improved route security and resilience of the road network in the event of a significant earthquake, road accidents, or other disruption.

During construction, there will be localised, short-term, adverse traffic effects, including delays or inconvenience arising from increased heavy construction traffic and the need to do work on some local roads adjacent to the Expressway. These effects will be managed through a comprehensive Construction Traffic Management Plan (CTMP), a draft of which is provided with the AEE report.

Geotechnical Engineering and Resilience

A detailed geotechnical assessment has been undertaken to inform the design of the Project's earthworks, bridges, and other structures, to assess earthquake hazards, and to identify and address potential environmental effects such as ground settlement⁶ and effects on groundwater levels.

As noted above, a key benefit of the Project is that it is designed to be resilient to natural hazards and be readily reopened in the event of a significant earthquake. This will improve route security and resilience of the road network in such an event (or indeed if road accidents or other disruptions occur), by providing a high-quality alternative route between Peka Peka and Ōtaki, including two additional bridges across the Ōtaki River.

Project works have been assessed to have a negligible effect on the groundwater regime. Some ground settlement is anticipated in discrete areas (where there are no buildings), due to groundwater drawdown, fill embankments, or the construction of bridge foundations. This will be monitored and managed through common construction techniques.

Urban Form and Function

The Project will be a significant addition to the urban form of the Kāpiti district, and urban design principles have therefore been key considerations in developing the Project.

Particular regard has been had to urban form and land use patterns, and addressing potential issues relating to amenity, community severance, and connectivity (both to and across the Expressway).

An Urban and Landscape Design Framework (ULDF) has been developed as a key document to capture the urban design decisions made, and set out further methods for achieving optimal urban design outcomes in future (as the details of the Project's design are finalised).

The Project's overall urban design outcome is rated as "low (positive)", meaning that the Project's benefits in terms of urban design moderately outweigh its adverse effects.

⁶ The lowering of ground level caused by a volume change or movement within the soil.

The Project does not significantly affect existing urban form and land use patterns, as the Expressway alignment broadly follows the existing transport corridor on what is mainly rural land. A positive outcome is retention of the underlying urban form within Ōtaki, and the reduction of traffic through the Ōtaki Railway Retail area will have a positive effect on local connections and cross-town movement.

The Project will adversely affect existing amenity values enjoyed by nearby residents. Accordingly, the Project's design focuses on integrating its various elements (including interchanges and bridges) into the landscape as much as practicable. Other detailed mitigation measures have been developed, particularly in terms of landscape treatment, and extensive plantings and localised bunding (planted embankments) are proposed. Residents adjacent to the existing SH1 will benefit through amenity improvements arising from reduced traffic flows.

The Project generally achieves or enhances connectivity between communities. There are existing severance issues at Te Horo, which are increased by the Project⁷; mitigation is provided by way of a local road bridge over the Expressway, NIMT, and the existing SH1, connecting residences and businesses to the east and west of the transport corridor.

Landscape and Visual

As a large roading and rail infrastructure development, the Project will inevitably result in changes to the landscape and adverse visual effects. The scale and extent of those effects vary along the Project's length.

Landscape and visual experts have been involved throughout the design of the Project, with the aim of avoiding adverse landscape and visual effects as far as practicable, and mitigating any remaining adverse effects.

Those guiding aims of avoidance/mitigation, and the numerous measures proposed to mitigate adverse landscape and visual effects, are set out in the ULDF. Mitigation has largely been incorporated into the Project design, including extensive planting and the use of trees and bunds to screen or enhance views. Specific mitigation is also proposed in respect of the Pare-o-Matangi reserve, an open space area valued by the tangata whenua and the wider community.

The Project's adverse effects on natural character are limited, given the highly modified nature of the Project area as a whole. This is illustrated by the Project's two bridges across the Ōtaki River; natural character is already compromised by the existing road and rail bridges across the River in that area (which is nonetheless identified as a 'significant amenity landscape' in the Proposed Kāpiti Coast District Plan).

Some native vegetation (approximately half a hectare) is to be removed to construct the Project and, as discussed below, extensive mitigation is proposed.

Hydrology

The Project crosses four significant waterways – the Waitohu and Mangapouri Streams, the Ōtaki River, and the Mangaone Stream – and their floodplains.

⁷ Different parts of the Te Horo community are currently separated or "severed" by the existing State highway and NIMT corridor. The raised Expressway will add a visual severance effect.

As an elevated transport structure, the Project has the potential to interfere with the natural drainage function of these and other catchments. Hydrological modelling has therefore played a key part in the Project's design, with a view to achieving 'hydraulic neutrality', i.e. no worsening of the existing flood situation.

As a result of the design process 'hydraulic neutrality' has largely been achieved, and the Project will even reduce some existing flooding effects in populated areas. The limited areas where effects will be marginally greater are mostly in pasture – one exception is a farm storage building which is already susceptible to inundation in severe flood events; another exception relates to properties in a dedicated flood storage basin near the Mangapouri Stream, where flooding risks will be slightly less than currently in more frequent floods (namely 1-in-100-year events), and slightly greater in extremely rare floods (such as a 1-in-200 or 1-in-500-year event).

The crossings of water bodies (through bridges and culverts) and some limited stream realignments incorporated into the Project design will result in changes to how those water bodies flow. By constructing realigned water bodies in a way that mimics their existing form (in terms of slope, channel size, and shape), effects on water velocity and flow paths –and hence water quality and other ecological values – will be minimised.

Stormwater

Erosion and sediment control measures meeting best practice standards will be used during construction. These measures will achieve high levels of performance, minimising the amount of sediment that enters streams. Consequently, water quality effects during construction are predicted to be minor, with suspended sediment in water clearing quickly out of streams and with minimal levels of deposition in sensitive and other locations.

All storm water run-off from finished road surfaces will be treated using natural filtration and treatment methods – unlike the existing SH1, which has no formal stormwater treatment. Because most traffic is predicted to transfer from the existing SH1 to the Expressway, which will treat all run-off, the Project is predicted to lead to a decrease in the level of contaminants entering the local stream and river systems.

Terrestrial Ecology

The Project passes through a landscape that has been highly modified by agriculture and, to a lesser extent, horticulture, viticulture, and urbanisation.

The Project has relatively minor adverse effects on terrestrial ecology. In part this has been achieved through avoidance of effects; for example, the choice of Expressway alignment avoided the most important ecosystems in the vicinity, namely the significant area of indigenous vegetation and an associated wetland at Mary Crest.

Residual adverse effects will be appropriately remedied or mitigated. The Project will affect relatively small areas of indigenous bush, totalling approximately 0.5 hectare, and this will be offset by either reinstating at least 1.5 hectares of indigenous vegetation or protecting an appropriate area of established native bush, subject to agreement with landowners being finalised.

Culverting or bridging of waterways will adversely affect some riparian vegetation (mainly grazed grass or willow), and bring about a loss of stream bed habitat. Those effects will be addressed by ecological offsetting consistent with GWRC policy, namely through stream restoration and indigenous planting in specified areas.

Mitigation is also provided for effects on 0.5 hectares of wetland habitat (which was originally formed by the current alignment of the NIMT). This effect is being offset by 1.1 hectares of wetland restoration.

The Project's adverse effects on the habitat of terrestrial fauna are assessed as minor. Specific construction methods will be used to address effects on one non-threatened species, peripatus (velvet worm), which was observed in an area of bush where Project works will take place.

Aquatic Ecology

Expert assessments have identified five categories of potential adverse effects of the Project on waterways, and detailed mitigation measures are proposed for each.

First, sediment run-off from earthworks during construction has the potential to have adverse effects on freshwater habitats and species. As discussed above, best practice erosion and sediment control measures are to be adopted in constructing the Project, and on this basis the ecological impact of predicted run-off is considered to be less than minor.

Second, the use of culverts in watercourses has the potential to impair fish migration. Appropriate measures to provide for the passage of fish will be incorporated into the design of all culverts where streams have the potential to carry native fish.

Third, run-off from roads can affect water quality; as noted above, the Project will bring about a net improvement in the level of contaminants entering local stream and river systems, because the Expressway design incorporates formal treatment of run-off.

Lastly, the Project will bring about the loss or alteration of two categories of aquatic habitat. As noted above, stream riparian planting will be established to mitigate stream bed effects, and wetland restoration will be carried out to address effects on wetland habitat.

Air Quality

Project earthworks and other construction activities will be managed to minimise the discharge of dust. A range of mitigation measures is proposed in a draft Construction Air Quality Management Plan (CAQMP), including water spraying to dampen and control dust during dry periods.

The effect of vehicle emissions on air quality once the Expressway is operational has been modelled. The assessment concludes that the Expressway will have an insignificant effect on air quality in the Project area as a whole, with small increases in emissions experienced at some locations adjacent to the Expressway (such as in the South Ōtaki to Te Horo section) and improvements in other areas, including the Ōtaki Railway Retail area and Te Horo.

Noise and Vibration

As the Expressway passes through established urban areas, a detailed assessment of noise and vibration effects has been carried out along the entire route using the process set out in the applicable national standard (NZS 6806:2010).

Noise mitigation measures need to meet the 'best practicable option' requirements of the RMA, in that they have to be effective in noise attenuation while being the best fit for the local environment. To identify such measures, a comprehensive multi-disciplinary

assessment process was undertaken, and the proposed mitigation was reviewed further in light of public feedback given in July 2012.

This process determined that specific noise mitigation measures are required in localised areas, namely the use of a low-noise road surface (such as OGPA) for 1km of the Expressway through Ōtaki, and investigation of one of the assessed 'Protected Premises and Facilities' (PPFs) for acoustic treatment.

Rail noise measurements have been undertaken to quantify existing levels and assess the effects of the NIMT realignment. Two additional PPFs will be investigated for acoustic treatment to mitigate rail noise, and KiwiRail and the NZTA are working with the affected property owners to determine appropriate mitigation.

The removal of five of the eight existing level crossings of the NIMT in the Project area (including near the residential area at Rahui Road in Ōtaki) will have a flow-on benefit in terms of noise, as a train's horn is typically sounded when it is approaching a level crossing, and some level crossings incorporate mechanical crossing signals and bells.

Vibration effects from the operation of vehicles on the Expressway are considered to be negligible, and the newly constructed track on the realigned NIMT will significantly reduce the vibration currently generated by trains.

Construction noise will remain within reasonable limits defined by applicable national standard (NZS 6803:1999). Where construction works are proposed in close proximity to sensitive receivers (such as residential dwellings), methods to manage noise and vibration effects will be employed as set out in the draft Construction Noise and Vibration Management Plan (CNVMP) provided with the AEE report.

Contaminated Land

Given that the Project involves designations over private land, not all of which is currently accessible by the NZTA/KiwiRail, any contaminated-land-specific resource consent(s) required under the relevant National Environmental Standard⁸ (NES) will be sought prior to site works commencing, when access to all sites is readily available.

Nonetheless, assessments have been carried out in the Project area, in terms of the potential risks around the discovery and handling of contaminated soil and materials during construction of the Project. A small number of potential locations for contaminants have been identified to date, and the management of this risk will involve careful investigation, excavation, and management/disposal methods.

A draft Bulk Earthworks Contaminated Land Management Plan (BECLMP) is submitted with the AEE report, which establishes a framework for the comprehensive management (through well-established processes and techniques) of potential issues arising from contaminated land.

⁸ Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.

Archaeology

The Project will affect two pre-1900 structures (which are 'archaeological sites' for the purposes of the Historic Places Act 1993 (HPA)) and the grounds of a third, and is likely to affect archaeology associated with historical Māori and other occupation of the area.

The two pre-1900 structures are the foundations of an earlier building beneath the Ōtaki Railway Station, which is to be moved slightly to align with the new section of NIMT, and an 1870s cottage known as Clifden, at Bridge Lodge, which is to be moved to a suitable location. Various protection and mitigation measures are proposed, to preserve these structures and their archaeological values. The Project will also affect the grounds of a third pre-1900 building, at 230 Main Road, Ōtaki.

Three Māori archaeological sites (a midden, a midden/oven, and a pit) are recorded⁹ as being outside the Project area. These sites could not be re-located and effects on them, while unlikely, are possible given historical mapping inaccuracies.

Given the continual occupation of the Kāpiti district over many years, there is also the potential to encounter unknown, unrecorded archaeological sites during construction. This is particularly so in two dune areas identified as being of high archaeological potential, in the south and north of the Project area.

A process for addressing potential effects on archaeological sites is governed by the HPA, which sets out the requirements for obtaining the appropriate permissions. The NZTA will seek authorities through that separate process in due course.

In addition, detailed further archaeological surveys are an integral part of the pre-construction work programme, and an accidental discovery protocol (ADP) will be agreed with the tangata whenua to manage any unexpected discoveries during construction and ensure that appropriate procedures are followed.

Built Heritage

There are a number of buildings with heritage values located within the footprint of the Project designations or nearby.

As discussed above, the Ōtaki Railway Station building will be moved to align with the new section of NIMT. Those works will be undertaken carefully, in accordance with an updated heritage conservation plan, to ensure that heritage values are preserved. The relocation of Clifden will also be guided by a heritage conservation plan, and undertaken in a manner sensitive to heritage values.

The Project affects part of a site formerly occupied by the potter Mirek Smišek, which includes two 'beehive kilns', a brick flue, and a collection of buildings including the former Te Horo Railway Station building (which was moved to the site in 1971). The site is to be reconfigured to preserve heritage values of the principal structures, and the NZTA is exploring the possibility of providing public access to the site.

The Project will be built near to other listed heritage buildings, namely the former Rahui Milk Treatment Station and the former Rahui Factory Social Hall in Ōtaki. Screen planting

⁹ On the register of the New Zealand Historic Places Trust Pouhere Taonga.

is proposed and adverse effects on heritage values associated with these buildings will be negligible.

Tangata Whenua and Cultural Heritage

There is a rich history of Māori settlement in the Kāpiti district, and the Project traverses a landscape containing various sites of importance to tangata whenua.

The NZTA has built strong relationships with the tangata whenua, namely Ngāti Raukawa and Nga Hapū o Ōtaki (a representative group comprising five Ōtaki-resident hapū of Ngāti Raukawa).

These relationships have been fostered through close on-going engagement with the tangata whenua throughout the Project design process. An important consequence of that engagement was the re-alignment of the Expressway to avoid a culturally-significant area near Mary Crest.

A cultural impact assessment has been prepared by Nga Hapū o Ōtaki representatives, which identifies residual issues such as effects on Māori-owned land and possible effects on unknown archaeological sites of cultural significance in other areas, particularly dunes located in the south and north of the Project area. As noted above, an ADP is to be agreed with the tangata whenua to ensure that appropriate procedures are followed in the event of any sites or cultural materials being found during construction. Nga Hapū o Ōtaki representatives will be invited to assist with the further archaeological surveys carried out prior to construction.

Social and Community

The Kāpiti district is a rapidly-growing and changing area, and the Project will add to this change dynamic. The Project has a range of positive and adverse social effects, some of which will be limited to the Project's construction phase.

As noted above, the Project will have significant safety, transportation, and economic benefits, and these will bring social benefits for the Kāpiti district and Wellington region, particularly in terms of the improvements to the existing level of connectivity between communities.

The Project will also give rise to adverse social effects, however, largely borne in areas immediately adjoining the Project. The Project's design has sought to mitigate a number of those effects, including by maintaining or improving local road accessibility, using planted bunds to screen the Project, and providing comprehensive landscape treatment which will contribute to enhanced amenity.

Many of the Project's adverse social effects will occur during construction. It is therefore important that these effects are mitigated through effective construction management and open communication and community liaison. Construction mitigation measures will be implemented through a Construction and Environmental Management Plan (CEMP) and its subsidiary plans for traffic, noise and vibration, and air quality. A community liaison group and various channels for open communication will be established, and will operate as the Project is constructed.

Economic

The Project is anticipated to bring significant net benefits to the Kāpiti district and Wellington Region.

The Project will promote economic development, including through improvements in efficiency for freight movements and reduced travel times, and through increased economic activity and employment opportunities during the Project's four-year construction period.

Because most traffic passing through the Kāpiti district will use the Expressway rather than the existing SH1, some businesses facing onto the existing SH1 may experience adverse 'business redistribution effects'.¹⁰ This is particularly so at Te Horo, where consumers wishing to access Te Horo would need to exit the Expressway at Waikanae or Ōtaki and proceed along local roads.

On the other hand, the reduction of traffic through Te Horo and the Ōtaki Railway Retail area will enhance the general ambience of those areas, potentially encouraging more visitors. Effects on most businesses in the Ōtaki Railway Retail area are therefore considered to be neutral or positive.

Land Acquisition and Property

The land that is required for the Project includes Crown land, Council-owned land (including road reserves), Māori land, and privately-owned property. The majority of land is privately owned. The NZTA has an active purchase programme which seeks to acquire all required land for the Project that is in private ownership along the route. This includes the land required for the rail aspects of the Project, which is to be transferred to KiwiRail.

Property owners whose land is required for the Project have been advised and made aware of the extent required (either full or partial acquisition). Effects on access to properties have been identified and alternative access provided through the Project's design.

Management of Adverse Environmental Effects

The Project's potential adverse effects on the environment have been avoided, remedied, or mitigated through an integrated route selection and design process and a comprehensive set of proposed designation and resource consent conditions.

In the event that the RMA statutory authorities sought are granted, GWRC will oversee the implementation of mitigation and conditions for the regional consents, and KCDC will oversee implementation of the designation conditions.

Development of the Project design and associated conditions has involved a multi-disciplinary team of technical experts and has been informed by public consultation and on-going stakeholder engagement.

Potential effects of constructing and operating the Project were, in the first instance, sought to be avoided by alignment design choices, such as the avoidance of culturally and ecologically significant areas near Mary Crest.

A multi-disciplinary process was also used to identify the comprehensive use of mitigation measures incorporated into the design of the Project. Examples are the provision of a low-noise road surface (such as OGPA) on a section of the Expressway near the Ōtaki urban area, the use of planted bunds, storm water run-off treatment, landscaping and visual

¹⁰ Businesses in other parts of the District or Region may benefit from this redistribution.

screen planting, native re-vegetation or protection of existing habitat, and wetland reinstatement and management.

Prior to, during, and after construction a monitoring programme will provide information to hone and implement the measures to be used to manage effects.

A comprehensive suite of conditions for the designations and resource consents is proposed. The conditions include a detailed environmental monitoring and management programme for construction effects, featuring a three-tiered system of management plans, comprised of:

- The overarching CEMP;¹¹
- A series of topic-specific management plans, including an Erosion and Sediment Control Plan (ESCP), an Ecological Management Plan (EMP), a BECLMP, a Landscape Plan (LP), a CNVMP, and a CAQMP; and
- Site-specific Environmental Management Plans (SSEMPs), which will address in detail the specific environmental considerations in each section of the Project area.

Implementing this conditions framework will enable the effects of the Project to be appropriately avoided, remedied, or mitigated in accordance with statutory requirements and the commitment by the NZTA and KiwiRail to best practice.

Statutory Matters

A wide range of objectives and policies in national, regional, and local policy and other planning instruments are relevant to the Project. The Project has been assessed against these provisions, and the main conclusions are as set out below.

- The Project is a key part of government policies relating to transportation; as part of the Wellington Northern Corridor RoNS, the Project will result in significant safety improvements, improve efficiency in freight movements and reduce travel times between Wellington Airport and Levin, improve travel time reliability, reduce congestion (especially through Ōtaki), and improve route security.
- Overall the Project is consistent with the objectives and policies of the relevant national and regional statutory planning documents.
- The Project is consistent with the transport-related policies of the Regional Policy Statement (RPS), the Proposed Regional Policy Statement (PRPS), the Regional Land Transport Strategy (RLTS), the operative Kāpiti Coast District Plan (KCDP), and the proposed KCDP.
- The Project will enable communities at a local, regional, and national level to provide for their social, economic, and cultural wellbeing.
- The Project will meet the growing transportation needs of the Wellington Region, in a manner that does not preclude future opportunities for other land transport development, such as public transport.
- The Project will sustain the potential of natural and physical resources for future generations, and safeguard the life-supporting capacity of air, soils, water, and ecosystems.

¹¹ The Construction Environmental Management Plan, noted above.

- The adverse effects of the Project on the environment will be sufficiently avoided, remedied, or mitigated to satisfy the requirements of section 5 of the RMA.
- The Project provides for, and has appropriately responded to, the matters in sections 6, 7, and 8 of the RMA.
- To this end it is considered that the sustainable management purpose of the RMA will be achieved by confirming the designations and granting the resource consents sought.