

**BEFORE THE BOARD OF INQUIRY CONCERNING A REQUEST FOR  
NOTICE OF REQUIREMENT AND APPLICATIONS FOR RESOURCE  
CONSENTS TO ALLOW THE MACKAYS TO PEKA PEKA  
EXPRESSWAY PROJECT**

**IN THE MATTER**

of the Resource Management Act 1991 and the deliberations of a Board of Inquiry appointed under Section 149J of the Act to consider a request for notice of requirement and applications for resource consents by New Zealand Transport Agency, in respect of the MacKays to Peka Peka Expressway Project

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**DRAFT DECISION AND REPORT OF BOARD OF INQUIRY UNDER  
SECTION 149Q OF THE ACT**

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- Board:** The Honourable Sir John Hansen (Chairperson)  
Environment Commissioner David Bunting (Member)  
Glenice Paine (Member)  
Mark Apeldoorn (Member)
- Legal representations:** Mr John Hassan appearing for the New Zealand Transport Agency (NZTA)  
Ms Susanne Janissen appearing for NZTA  
Ms Jill Gregory appearing for NZTA  
Ms Katherine Viskovic appearing for NZTA  
Mr Matthew Conway appearing for the Kāpiti Coast District Council (KCDC)  
Ms Kerry Anderson appearing for the Greater Wellington Regional Council (GWRC)  
Ms Aleise White appearing for GWRC  
Mr Chris Mitchell appearing for Waikanae on One (WOO)  
Mr Tim Bennion appearing for Raumatī South Residents Association  
Mr Richard Fowler appearing for Save Kāpiti Inc and Dr and Mrs Dearden  
Ms Aleyna Hall appearing for the New Zealand Historic Places Trust (NZHPT)  
Ms Sarah Backhouse appearing for NZHPT  
Mr Leo Watson appearing for Takamore Trustees  
Ms Sue Simons appearing for Kāpiti Coast Airport Holdings Ltd (KCAH)  
Ms Joanna Van Den Bergen appearing for St Heliers Capital Ltd
- Appearances:** See Appendices 3 and 4 for appearances
- Hearing at:** Paraparaumu commencing on 12 November 2012 and ending on 22 January 2013



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# 1. INTRODUCTION

- [1] This report addresses applications by the New Zealand Transport Agency (NZTA, the applicant) for a Notice of Requirement (NoR) and resource consents to allow what is known as the MacKays to Peka Peka Project (the Project). The report has been prepared by the Board of Inquiry (the Board) in accordance with s149Q(1) Resource Management Act 1991 (RMA).
- [2] In accordance with s149Q(2)(a)-(d) RMA this report states the draft decision and reasons for the decision, including a statement of the principal issues that were in contention and the main findings on these issues.
- [3] The proposal is to construct, operate and maintain an expressway within Kāpiti District, Wellington Region, from MacKays Crossing (in the south) to Peka Peka (in the north). The details of the proposal and why the Applicant wishes to undertake it are fully outlined in the following sections of this report.

## 2. OUTLINE OF THE PROPOSAL

### 2.1 INTRODUCTION TO THE PROPOSAL

- [4] The application documents describe the roading aspects of the Project to be undertaken by NZTA and the alliance in the following terms.
- [5] The Project forms part of what is known as the Wellington Northern Corridor, identified as one of seven projects described as Roads of National Significance (RoNS) in a Government Policy Statement prepared under the Land Transport Management Act 2003.
- [6] The Project comprises the design, construction, operation, and maintenance of an expressway for the section of SH1 between MacKays Crossing and Peka Peka, extending for a length of approximately 16 kilometres from just south of Poplar Ave, Raumati, to just north of Peka Peka Road, north of Waikanae.
- [7] The designation for the Project is proposed to generally follow the existing WLR Designation as identified in the Operative Kāpiti Coast District Plan (KCDP).
- [8] The expressway will provide two lanes of traffic in each direction, connections with local roads at four interchanges, construction of new local roads and access roads to maintain local connectivity, along with an additional crossing of the Waikanae River.
- [9] For the purposes of description and administration, the location of features along the Project are given as a chainage distance from MacKays Crossing, with MacKays Crossing being chainage 0 metres and the northern extreme of the Project being chainage 18,050 metres.
- [10] The southern end of the Project begins at chainage 1,900 metres, as upgrades to the existing section of SH1 between MacKays Crossing and chainage 1,900 metres will be undertaken separately to the Project within the existing designation.
- [11] The route of the Project has been divided into four sectors:

Sector	Sector Name	Chainage (m)	Length (km)
Sector 1	Raumati South	1,900 – 4,500	2.6
Sector 2	Raumati/Paraparaumu	4,500 – 8,300	3.8
Sector 3	Otaihanga/Waikanae	8,300 – 12,400	4.1
Sector 4	Waikanae North	12,400 – 18,050	5.65

[12] The Project includes the following key design features:

- i) A four lane median divided Expressway (two traffic lanes in each direction), incorporating a sealed 26m-wide carriageway within a designated corridor;*
- ii) Partial interchange at Poplar Avenue;*
- iii) Full interchange at Kāpiti Road;*
- iv) A four lane bridge over the Waikanae River;*
- v) Full interchange at Te Moana Road;*
- vi) Partial interchange at Peka Peka Road;*
- vii) Grade separated overbridges and underbridges to cross some local roads and watercourses and parts of the proposed Expressway;*
- viii) Culverts and related drainage infrastructure;*
- ix) Stormwater treatment and attenuation facilities;*
- x) Provision of a shared cycleway/walkway alongside but separate to the proposed Expressway; and*
- xi) Provision of a bridleway over sections of the corridor.*

[13] The Project also includes the following additional features:

- i) Provision of buffer areas on both sides of the formed carriageway to enable landscape treatment, ecological enhancements, noise attenuation measures (including noise walls and earth bunds) and other facilities;*
- ii) Lighting and associated structures along the planned Expressway except at interchanges;*
- iii) Landscape treatment for finished slopes of all cuts and fills;*
- iv) Erosion protection works on bridge piers and culvert structures;*
- v) Creation of wetlands and stream related habitat along with mass planting along stream edges and in other areas;*
- vi) Construction of swales, filtration-type devices and constructed treatment wetlands for stormwater runoff;*
- vii) Enabling works including the formation of construction lay-down areas and site compounds. The main construction compound is to be located at the former Otaihanga Landfill next to the planned Expressway route; and*
- viii) Construction works including earth embankments, areas of cut and fill, reinforced soil embankments, piling and mechanically stabilised earth walls with concrete facing panels.*

[14] Approximately 2.3 million cubic metres of excavated (cut) material is proposed as fill within the designation. In addition, approximately 350,000 cubic metres of imported fill will be required, approximately 240,000 cubic

metres of sand will need to be exported off-site (to quarries), and approximately 200,000 cubic metres of peat will need to be exported off-site (to various locations). There is a possibility that the proposed volume of exported material will reduce through refinements during the construction phase.

- [15] Comprehensive erosion and sediment control measures are proposed for all earthworks and for works in and around water bodies.
- [16] Construction will comprise multiple construction sites operating simultaneously at different locations along the alignment.
- [17] Once completed, NZTA intends to request the Chief Executive of the Ministry of Transport to declare the Project part of SH1.
- [18] Upon completion, the existing section of SH1 between MacKays Crossing and Peka Peka would likely become a local arterial road (subject to the Chief Executive at Ministry of Transport revoking its current state highway status).

## **2.2 REASONS FOR THE PROJECT**

- [19] The following reasons for the Project have been taken from NZTA's application documentation and the evidence of Mr Rod James.
- [20] The existing SH1 route through the Kāpiti District faces a number of issues, including safety issues, congestion, and inefficient journeys for both local and arterial traffic.
- [21] With respect to road safety, the current SH1 geometry is considered sub-standard with tight curvature and an inconsistent speed environment. Combined with the numerous intersections and accesses onto the existing route, this contributes to its poor crash history and a high incidence of injury accidents.
- [22] The existing SH1 route accommodates both arterial and local traffic as there is no alternative route north – south through the District. As a result, SH1 frequently operates beyond its design capacity, is prone to congestion at peak times, and combined with its vulnerability to road “incident” disruptions contributes to unreliable journey times impacting freight, commuter and other movements.
- [23] In terms of route security, resilience and risk, the route has significant vulnerability and resilience issues including the only crossing of the Waikanae River in the District.
- [24] Current operational pressures and safety risks are anticipated to worsen, exacerbated by growing demands including the relatively high rate of population growth in Kāpiti District and forecasted increase in road-based freight movements.
- [25] The lack of an alternative local road network between MacKays Crossing and Peka Peka means that worsening safety, congestion, journey reliability and route security issues are impacting locally, regionally and nationally.

## Project Objectives

[26] Part A of Volume 2 of the AEE sets out the Project Objectives at s2.6.26. These reflect the reasons outlined above that have led to the Project being developed, namely:

- *“Enhancing local, regional and national economic growth and productivity;*
- *Enhancing efficiency and journey time reliability from, to and through the Kāpiti District, Wellington’s CBD, key industrial and employment centres, CentrePort, Wellington Airport and Wellington Hospital;*
- *Enhance safety of travel on SH1;*
- *Appropriately balance the competing functional performance requirements of interregional and local traffic movements, recognising that modal and route choice opportunities need to be provided that enable local facilities and amenities in the Kāpiti Coast District to be efficiently accessed; by developing and constructing a cost optimised new State Highway alignment to expressway standards between MacKays Crossing and Peka Peka;*
- *Managing the immediate and long-term social, cultural, land use and other environmental impacts of the Project on the Kāpiti Coast District and its communities by so far as practicable avoiding, remedying or mitigating any such effects through route and alignment selection, expressway design and conditions; and*
- *Integrating the expressway into the urban form of Kāpiti Coast District by taking into account current and future planned settlement patterns in route and alignment selection and expressway design and conditions.”*

## Consideration of Alternatives

[27] The AEE summarises the consideration which NZTA, as requiring authority, has given to alternative sites, routes, and methods of undertaking the work proposed.

## 2.3 STATUTORY APPLICATIONS AND APPROVALS NEEDED

[28] A NoR is required under s145(3) of the RMA, as well as 29 resource consents. The specific applications are identified below.<sup>1</sup>

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<sup>1</sup>From Public Notice, Dominion Post, 14 July 2012.

### **Kāpiti Coast District Council**

- i) Notice of requirement for a new designation for the construction, operation, and maintenance of a state highway from 2 kilometres north of MacKays Crossing to Te Kowhai Road, Peka Peka; and
- ii) One land use consent for disturbance of contaminated soil.

### **Wellington Regional Council**

- i) Eleven land use consents for the disturbance of soil in erosion prone areas, vegetation clearance, placement of structures, removal of culverts, reclamation of river beds and wetlands, disturbance of river beds, and the construction of bore holes;
- ii) Three discharge permits for discharge of contaminants to land and water; and
- iii) Fourteen water permits for extraction and use of groundwater, and temporary or permanent diversion of water.

## **2.4 PROJECT APPLICATION DOCUMENTATION**

- [29] The Project application documentation comprised a suite of five volumes as set out in Appendix 2.

## **2.5 ROADING HISTORY**

- [30] The AEE sets out at Part A, Chapter 2, Volume 2 a more full and detailed account of the historical context for transport planning along the route. There is a significant history in relation to transport planning in and around the WLR corridor and through the Kāpiti region. Since about 2009, the work that has been undertaken has principally led to the selection of the preferred route alignment and subsequent application. A brief summary of this history is set out as follows.
- [31] In 1956 a '*proposed motorway*' between Paekākāriki and Ōtaki (as part of the Wellington to Foxton Motorway) was proposed and locally known as the 'Sandhills Route' or 'Sandhills Motorway'. In 1965, and again in 1976, requirements were issued to the Hutt County Council and Kāpiti Borough Council respectively to include provision for a motorway along the Sandhills Route in the relevant district scheme.
- [32] In 1993, GWRC commissioned a study to investigate future alignment options for SH1 through Kāpiti. The study examined three principal alternative routes and found that the western bypass route ('the Sandhills Route') provided the optimum highway alignment. In 1994, Transit issued KCDC with a NoR to designate the Sandhills Route for a proposed limited access road, being a future western bypass of Paraparaumu and Waikanae to replace the existing SH1. The NoR was modified by Transit in 1995 including altering the description of the designation to 'State Highway purposes'. The 'Sandhills route' designation was confirmed by KCDC in 1995 but was later uplifted by Transit in 1999.

- [33] In November 1994, KCDC commissioned a study of the Kāpiti Roding Network. The study was designed to examine options and to determine a long term strategy for developing the roading network in the district consistent with Transit's policies regarding the desired location of SH1 as the principal road north from Wellington. The findings of this report indicated that significant changes to the local roading network would be required to service the state highway if it was relocated to the Sandhills route, and that the alignment should instead be used for a local arterial road (termed the 'Sandhills Arterial') with SH1 remaining in its current location.
- [34] Transit resolved to agree to KCDC's long term strategy of retaining SH1 on its existing alignment in October 1995. In December 1997 KCDC issued a NoR for a proposed "Local Road" along the Sandhills route between Poplar Avenue and SH1, just south of the Peka Peka Road intersection and for a widened Poplar Avenue through to SH1 (which was referred to as the Western Link Road or WLR). This designation sought to provide for a four lane local road between Raumati Road and Te Moana Road, with a two lane section south of Raumati Road and north of Te Moana Road. The NoR for the WLR designation was confirmed by independent hearing commissioners in 1998. However, final confirmation of the designation did not occur until July 2006 following Environment Court and High Court determinations on appeals lodged by the Waikanae Christian Holiday Camp and the Takamore Trustees.
- [35] The WLR project was proposed to be consented and constructed in three core stages (stages 1\_3) and seven sections (sections 1-7), within the boundary of the designation. A number of regional consents were obtained for the construction of Stage 1 of the WLR project, between Raumati Road and Te Moana Road (which have not yet lapsed). These approvals covered activities such as discharges to waterways, earthworks and construction related effects. A number of authorities from the NZHPT were also sought and obtained to undertake investigative archaeological work within the designated area.
- [36] In parallel with the development of the WLR, Transit investigated the future of SH1 in the Wellington region. In 2004 Transit, together with the GWRC, commissioned the Western Corridor Study (AECOM), the purpose of which was to investigate the principal options for all transport modes in the Region's western transport corridor (Ngauranga to Ōtaki). The study confirmed the need to develop a four lane alignment for SH1 from MacKays Crossing to north of Ōtaki as part of a series of multi modal transportation improvements along this corridor. This study concluded that SH1 should be upgraded to expressway standard.
- [37] Two further studies were undertaken in 2008 and 2009 by Transit. The first was the "*Kāpiti SH1 Strategy Study – Scoping Report*" by Opus, July 2008. The second was the "*Kāpiti SH1 Strategy Study – Technical Report*" by Opus, August 2009. The studies are described as being commissioned to develop a strategy for creating an SH1 expressway between Pukehou Bridge (north of Otaki) and MacKays Crossing (south of Paraparaumu). They were commissioned and further developed the work undertaken in the Western Corridor Study (2004-2005).

## 2.6 PROJECT HISTORY

- [38] In May 2009, the Government Policy Statement on Land Transport Funding prepared under the Land Transport Management Act 2003 (GPS) came into force (amended November 2010). The GPS listed seven RoNS, including the Wellington Northern Corridor from Wellington Airport to Levin.
- [39] In August 2009, the NZTA consulted the public on two alternative route options for an expressway between MacKays Crossing and Peka Peka. These are described as upgrading the state highway essentially along the current SH1 alignment; and realigning the state highway around Waikanae (to avoid Waikanae township) via the WLR alignment between Otaihangā and Waikanae Beach.<sup>2</sup>
- [40] In October 2009, NZTA extended the consultation period in response to community feedback. The three routes consulted on in October 2009 were a Western Option SH1 Expressway avoiding Waikanae town centre, with local supporting roads; an Eastern Option SH1 Expressway following the existing rail corridor with local supporting roads; and, a Western Link Road (Sandhills) option, with SH1 Expressway generally following the WLR Corridor.
- [41] The NZTA Board determined in December 2009 that:<sup>3</sup>
- “The Sandhills route is the preferred Corridor for the SH1 Expressway through Kāpiti, subject to further alignment development within the corridor including more detailed assessment of effects and further community consultation.”*
- [42] NZTA selected the MacKays to Peka Peka Expressway Alliance in June 2010.<sup>4</sup> KCDC then joined as an Alliance partner through an alliance agreement in September 2010. KCDC’s aspirations are set out:<sup>5</sup>
- “As part of the terms and conditions of KCDC becoming a member of the Alliance, the Alliance Board agreed on 17 September 2010 to a set of Guiding Objectives relating to the design and construction of the Expressway. These objectives were conceived following community consultation and stakeholder engagement, and were also informed by various Council strategies and policies. The agreed objectives that underpin KCDC’s involvement in the Alliance are set out in the September 2010 KCDC paper SP-10-1024, Guiding Objectives and Membership of the Alliance: MacKays Crossing to Peka Peka, a copy of which is included as Appendix A of this report.”*

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<sup>2</sup> AEE, Volume 2, Chapter 2, section 2.2.6.

<sup>3</sup> NZTA opening submissions, paragraph 3.4.

<sup>4</sup> AEE Volume 1, Chapter 1, section 1.3, page 19.

<sup>5</sup> MacKays Crossing to Peka Peka Alternative Options Report, Volume 1, s1.4 Guiding Objectives for the Alliance.

- [43] The Alliance carried out two investigations which are reported as the:<sup>6</sup>
- “MacKays to Peka Peka Scoping Report (October 2010); and the MacKays to Peka Peka Expressway – Alternative Route Options Report (November 2011).”*

The Alliance has undertaken investigations that identified a long and then short list of alternatives. Through this process it assessed a range of corridor options, progressively refining the scheme down through a series of alignment and connectivity arrangements to establish the preferred Project.

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<sup>6</sup> AEE, Volume 2, Chapter 2, section 2.2.7.

### 3. BACKGROUND, REFERRAL TO BOARD OF INQUIRY, AND MINISTER'S REASONS

#### Background and Lodgement

- [44] On 20 April 2012, the NoR and resource consent applications were lodged with the Environmental Protection Agency (EPA) in accordance with s145 RMA (referred to hereafter collectively as the applications). The applications comprised a NoR for a designation in the KCDP and applications for resource consents under the KCDP and the Wellington Regional Plans.
- [45] Following lodgement, the EPA coordinated several concurrent processes:
- i) Technical reports TR5-TR36 were reviewed for completeness and adequacy by independent technical experts contracted by the EPA. A number of the relevant Management Plans were also reviewed. The experts provided advice to the EPA regarding any information gaps in the technical reports.
  - ii) The local authorities, GWRC and KCDC, reviewed the AEE for completeness against the requirements of their respective plans. Again, any information gaps were provided to the EPA.
  - iii) The EPA prepared documentation regarding the recommendation to the Minister for the Environment, potential board of inquiry members, public notification, and submission forms.

#### EPA Recommendation

- [46] When such applications are lodged with the EPA, s146 RMA requires the EPA to recommend a course of action to the Minister for the Environment (the Minister). On 27 April 2012, the EPA recommended to the Minister that the matters be referred to a board of inquiry for consideration and decision.

#### Minister's Direction

- [47] After receiving a recommendation from the EPA, the Minister must make a direction under s147 RMA.
- [48] On 2 July 2012, the Minister confirmed that the applications seek to allow works which form part of a proposal of national significance and directed that these matters be referred to a board of inquiry for determination under s171 RMA. In accordance with s149C, on 14 July 2012, the applications were publicly notified, calling for submissions. Submissions closed on 10 August 2012.

[49] s142(3) RMA sets out a number of matters the Minister may have regard to in determining whether or not a matter is, or is part of, a proposal of national significance. The Minister's reasons for directing the matters to the Board, in accordance with s142(3) were:<sup>7</sup>

**a) *“Involves or is likely to involve significant use of natural and physical resources***

- *The proposed 16 km Expressway will have a designation area of approximately 316 hectares that will result in the exclusive use of most of this designated land for a State highway. This is a significant change in the use of land from its current state that supports numerous different activities and land uses.*
- *The Expressway proposal is significant in size and scale, estimated to cost approximately \$630 million and take a period of four to five years to construct. Up to 500 construction workers are likely to be engaged at peak construction periods.*
- *Extensive earthworks may involve approximately 2,300,000m<sup>3</sup> of cut converted to fill, and 350,000m<sup>3</sup> of imported fill from local quarry suppliers. Approximately 440,000m<sup>3</sup> of sand and peat fill will need to be transported away.*
- *Significant engineering work is required to construct 18 principal bridge structures and a new 180m long bridge crossing the Waikanae River.*
- *Approximately 11 construction yards will need to be set up along the route to accommodate and service the construction works.*
- *A significant number of vehicle movements will be required to transport fill, aggregates, concrete and other construction materials.*
- *In total, 84 landowners (excluding the Crown and the Kāpiti Coast District Council) have land that needs to be acquired in whole or part by NZTA to construct the Expressway.*

**b) *Results or is likely to result in or contribute to significant or irreversible changes to the environment (including the global environment)***

- *The installation of culverts, bridge structures and stream diversions may contribute to the loss of stream habitat, including resident populations of freshwater flora and fauna. Native freshwater species include the Longfin eel,*

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<sup>7</sup> Minister's Direction to refer the MacKays to Peka Peka Expressway proposal to an independent Board of Inquiry, July 2012.

*Giant kokopu and Redfin bully (classified as 'declining' by the New Zealand Freshwater Fish Database).*

- *Sediment levels from both construction activities and storm water runoff could have a number of effects on rivers and streams, with a possible release of up to 16.64 tonnes of sediment across five freshwater catchments during the construction period of four to five years.*
  - *The Expressway proposal may involve the permanent loss of approximately 5.6 hectares of vegetation (dominated by indigenous species).*
  - *The Expressway proposal may disturb a nationally threatened bird species (North Island fernbird).*
  - *Construction work may damage 20 recorded archaeological sites located within the designation.*
  - *The permanence of the four lane Expressway will alter community connectivity.*
  - *The local character of the Kāpiti Coast is of a narrow and flat coastal plain, and the proposed Expressway will be highly visible from many locations.*
- c) *Has aroused widespread public concern or interest regarding its actual or likely effect on the environment (including the global environment)***
- *The Expressway proposal has a legacy of media and public attention. Widespread community interest has been reflected by the high attendance at public meetings and a high number of submissions received by NZTA during its two consultation phases from 2009 to 2011.*
  - *Community feedback expressed a wide range of opinions relating to the actual or potential effects of the proposal on the environment.*
- d) *Is or is likely to be significant in terms of section 8***
- *A number of significant cultural sites are in the vicinity of the Expressway route. The Expressway route will go through a portion of the Takamore Cultural Heritage Precinct and a registered waahi tapu area (sacred sites).*
  - *Construction activities will create notable modifications to the natural contours of the landscape and may physically separate waahi tapu sites, disturb koiwi tangata (human remains) or destroy waahi taonga (treasured places).*
- e) *Will assist the Crown in fulfilling its public health, welfare, security, or safety obligations or functions***
- *The Expressway proposal is part of the Wellington Northern Corridor which aims to provide an alternative route into and out of Wellington. High design standards*

*are proposed to be applied to provide greater resilience against traffic accidents and natural hazards.*

- *The Expressway proposal aims to improve State highway safety by incorporating the latest safety roading practices, including a central median barrier and separation of cycle/walking paths from the Expressway.*
- *Freight movements are expected to benefit with improved travel times to and from Wellington's Central Business District, Wellington International Airport and the Wellington Port.*

**f) *Affects or is likely to affect more than 1 region or district and relates to a network utility operation that extends or is proposed to extend to more than 1 district or region***

- *The Expressway proposal is physically contained within the boundaries of the Kāpiti Coast District, but also falls under the jurisdiction of both the Kāpiti Coast District Council and Wellington Regional Council.*
- *The Expressway is part of the Wellington Northern Corridor, running from Levin to Wellington International Airport. This will affect six districts and two regions in its entirety."*

[50] In the various sections of this report we have considered the Minister's reasons for directing this matter to us.

## 4. STATUTORY FRAMEWORK FOR DELIBERATIONS

[51] The RMA provides the framework for our deliberations. Of particular relevance are provisions detailing our jurisdiction and the process regarding NoRs and resource consent applications. The statutory framework is explained in the balance of this section. An analysis of the Project against this framework is provided later in this report.

### 4.1 JURISDICTION OF THE BOARD OF INQUIRY

[52] s140 RMA outlines the purpose of Part 6AA which addresses proposals of national significance. s149P identifies the matters that must be considered by us in determining such applications. We must have regard to the Minister's reasons for making a direction in relation to the matter, and consider any information provided by the EPA.

[53] This Board was appointed in accordance with ss149J and 149K RMA. s149L states where relevant:

(1) *"A board of inquiry appointed to determine a matter under section 149J may, in conducting its inquiry, exercise any of the powers, rights and discretions of a consent authority under sections 92 to 92B and 99 to 100 as if –*

*(a) the matter were an application for a resource consent; and*

*(b) every reference in those sections to an application or an application for a resource consent were a reference to the matter."*

[54] We must determine the applications in accordance with s149P RMA which specifies the matters that we are required to consider in making our decision. s149P states:

(1) *"A board of inquiry considering a matter must—*

*(a) have regard to the Minister's reasons for making a direction in relation to the matter; and*

*(b) consider any information provided to it by the EPA under section 149G; and*

*(c) act in accordance with subsection (2), (3), (4), (5), (6), (7), (8), or (9) as the case may be.*

*(2) A board of inquiry considering a matter that is an application for a resource consent must apply sections 104 to 112 and 138A as if it were a consent authority.*

...

- (4) *A board of inquiry considering a matter that is a notice of requirement for a designation or to alter a designation—*
- (a) *must have regard to the matters set out in section 171(1) and comply with section 171(1A) as if it were a territorial authority; and*
- (b) *may—*
- (i) *cancel the requirement; or*
- (ii) *confirm the requirement; or*
- (iii) *confirm the requirement, but modify it or impose conditions on it as the board thinks fit; and*
- (c) *may waive the requirement for an outline plan to be submitted under section 176A.”*

## 4.2 NOTICES OF REQUIREMENT FOR DESIGNATION

[55] A NoR for a designation may only be issued by a requiring authority. s166 RMA defines a requiring authority as:

- (a) *“A Minister of the Crown; or*
- (b) *A local authority; or*
- (c) *A network utility operator approved as a requiring authority under section 167.”*

[56] NZTA was approved under s167(3) RMA as a requiring authority by *Resource Management (Approval of Transit New Zealand as Requiring Authority) Notice 1994*, which was notified in the Gazette on 3 March 1994.

[57] In determining a matter that is a NoR for a designation, in accordance with s149P(4)(a) RMA, we must have regard to the matters set out in s171(1) and comply with s171(1A) as if we were the territorial authority. We will address those matters in due course.

## 4.3 APPLICATIONS FOR RESOURCE CONSENTS

[58] In the case of a resource consent application, under s149P(2) RMA, we must apply ss104-112 and s138A as if we were a consent authority.

[59] The considerations for particular classes of activities are:

- i) Discretionary under s104B;
- ii) Restricted discretionary, under s104C;
- iii) Discharge permits under ss105 and 107.

[60] All of the relevant statutory considerations are subject to Part 2 RMA.

## 5. MINUTES, DIRECTIONS ISSUED AND FURTHER INFORMATION REQUESTS

[61] In the course of the inquiry process we issued minutes, directions and memoranda in relation to the following topics:

- i) Consideration of late submissions;
- ii) Pre-hearing conference;
- iii) Non-expert and expert conferencing;
- iv) Provision of NZTA supplementary evidence;
- v) Extension to evidence timeframes;
- vi) Pre-hearing requests from parties;
- vii) Consideration of amended/late evidence and extended timeframes for some evidence exchange;
- viii) Responses to Memoranda of Counsel;
- ix) Hearing venue and the hearing day on the Whakarongotai Marae; and
- x) Proposed designation and resource consent conditions.

[62] The content of each minute will not be described here but reference to the relevant minutes, directions, and memoranda are made as necessary throughout this report.

[63] Following application completeness checks, we made a s92 further information request for the following:

- i) A large scale map showing the WLR designation, the proposed designation and alignment, the four expressway alternative routes considered and the existing SH1 alignment;<sup>8</sup>
- ii) The lack of a technical report addressing economic aspects was noted and confirmation was sought that economic evidence would be provided;
- iii) Confirmation was also sought that evidence addressing social impacts would be provided;
- iv) Confirmation that the potential for an additional land use consent and water permit from GWRC for damming in two locations, along with the proposed damming of Culvert 38 in a perennial stream has been addressed; and
- v) Clarification and confirmation on a range of technical matters with respect to noise standards, air quality, contaminated land, groundwater and ground settlement.

[64] A response to the s92 request was received from NZTA on 28 August 2012 addressing the various matters raised.

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<sup>8</sup> See plan at Appendix 5.

## 6. PROCEDURES

### 6.1 SUBMISSIONS

- [65] A total of 728 submissions were received on the applications.
- [66] 676 complete submissions were received before the close of the submission period. It was resolved to formally accept 49 submissions that were received as incomplete, non-complying or that were received after the close of the statutory submission period.
- [67] In addition, three additional late submissions were accepted on 21 September 2012, 2 October 2012, and 4 October 2012.<sup>9</sup>
- [68] Two incomplete submissions were not accepted.<sup>10</sup> Despite strenuous attempts the EPA was not able to contact these submitters to obtain further information.

### 6.2 SUMMARY OF SUBMISSIONS

- [69] The EPA produced a Summary of Submissions, which outlined whether submitters supported or opposed the Project, the location of submitters, and a list of the high-level issues raised in submissions. Appendix 4 of the Summary of Submissions contains a summary of each individual submission.
- [70] Of the 728 submissions received:
- i) 410 submitters (56.3%) opposed the Project either in full or in part;
  - ii) 302 submitters (41.5%) supported the Project either in full or in part; and
  - iii) 15 submitters (2.1%) were either neutral in full, in part, or have a mixed position. One submitter chose not to state a position.
- [71] 27.3% of submitters were from Waikanae, 18.5% were from Paraparaumu, and the rest were from elsewhere.
- [72] Submitters that supported the Project either in full or in part supported the Project for the following broad reasons (approximate figures are provided, and many submitters gave multiple reasons):
- i) 39% – traffic congestion, travel time, and ability to deal with current and future traffic volumes;
  - ii) 39% – economic viability and regional growth and development;
  - iii) 34% – general support;
  - iv) 31% – road safety;

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<sup>9</sup> Submission #741 – Axe, J; #742 – Short, J; and #743 – Wright, A.

<sup>10</sup> Milada Pivac, received 24 July 2012, and Jutta Kress, received 29 May 2012.

- v) 31% – connectivity, emergency service access, and reliability and resilience following natural disasters and accidents;
- vi) 7% – best option out of the available alternatives, presenting the greatest benefits with the least cost and disruption;
- vii) 5% – environmental effects can be appropriately avoided, remedied, or mitigated; and
- viii) 3% – social and health benefits and improved quality of life.

[73] Submitters that opposed the Project in full or in part, were neutral in full or in part, or had mixed views gave the following reasons (approximate figures are provided, and many submitters gave multiple reasons):

- i) 64% – better alternatives such as the WLR, upgrades to the existing SH1, and/or upgrades to the rail and public transport networks;
- ii) 57% – cost-benefit is too low, not economically viable, the effects of greenhouse gases negate any benefits, funding would be better directed to public transport or the Christchurch rebuild;
- iii) 55% – noise and vibration effects during construction and operation;
- iv) 51% – physical, social, and psychological severance and disruption of access to properties and amenities;
- v) 50% – health and social effects, loss of recreation and amenity values, and decrease in quality of life;
- vi) 43% – effects on flora and water and destruction of habitat;
- vii) 39% – air quality effects from dust and fumes during construction and operation;
- viii) 32% – effects on water including runoff, destruction of wetlands, and groundwater drawdown affecting water supply;
- ix) 29% – property value decrease and inability to sell properties;
- x) 28% – visual and landscape effects;
- xi) 25% – light pollution during construction and operation;
- xii) 21% – natural hazards including an increase in flooding potential, tsunami and sea level rise (climate change) effects, and earthquake and liquefaction effects;
- xiii) 20% – cultural and heritage effects;
- xiv) 18% – general construction effects and disruption;
- xv) 16% – effects on submitter’s personal property;
- xvi) 11% – inadequate or misleading consultation; and
- xvii) 9% – no or minimal benefits such as no decrease in travel time or safety.

[74] Many of these issues were discussed in further detail by submitters and experts on their behalf at the hearing. We confirm that we have considered the content of each submission received, including late submissions

received after the conclusion of the hearing, and the issues raised by submitters have formed part of our considerations in section 10.

### 6.3 PRE-HEARING CONFERENCES

[75] A pre-hearing conference was held on Tuesday 16 October 2012 at Southwards Car Museum, Paraparaumu. The purpose of the conference was to outline procedures for the hearing, and to allow the Applicant and submitters to raise any issues that they had with the draft hearing procedures and any other procedural matters.

### 6.4 EVIDENCE

[76] The applicant's evidence in chief (EIC) was received by the EPA by 7 September 2012 (see Appendix 3 for a list of parties who filed evidence).

[77] A time extension was agreed for receiving the Applicant's EIC in relation to health and planning and this was received by the EPA on 10 September 2012.

[78] The applicant was also allowed to file a supplementary EIC in regard to the provision of a Community Exposure Assessment report.<sup>11</sup> This was received by the EPA on 14 September 2012.

[79] Evidence on behalf of the submitters was received by the EPA on 5 October 2012.

[80] APSOC were also allowed to file further evidence and make a correction to existing evidence.<sup>12</sup>

[81] The applicant filed rebuttal evidence with the EPA on 26 October 2012.

[82] We agreed to a time extension for receiving the applicant's rebuttal evidence in relation to urban design and this was received by the EPA on 31 October 2012. We also agreed to a time extension in relation to planning and this was received by the EPA on 29 October 2012.

[83] Supplementary evidence was filed by Mr Nanckeville on 19 November 2012 with respect to design and costs associated with the proposed design. This followed questions from WOO and as directed by the Board Chair during proceedings.<sup>13</sup>

[84] We agreed in light of health issues and with the agreement of all parties requesting cross-examination, that Mr Fuller be excused from appearing in relation to his ecology evidence. Cross-examination was undertaken via written questions and answers, also with the consent of counsel.

[85] Supplementary evidence was filed by Mr Schofield of NZTA on 10 December 2012 which included a revised set of proposed designation and

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<sup>11</sup> Board Minute, 18 September 2012.

<sup>12</sup> Board Minute, 8 November 2012.

<sup>13</sup> Hearing transcript, page 224 and following.

resource consent conditions. We subsequently directed that further conferencing on the proposed conditions be undertaken, with the relevant planning witnesses appearing on 18 January 2013. All parties were able to seek leave to cross examine the relevant planning witnesses.

- [86] Mr Schofield filed further supplementary planning evidence for NZTA on 15 January 2013, including revised conditions as annexures to his evidence.
- [87] Supplementary evidence was also filed by Mr Nicholson of NZTA on 14 December 2012, and parties were able to seek leave for cross examination on the further matters raised in the evidence.
- [88] All parties were able to seek leave to file supplementary evidence addressing the proposed KCDP which was notified on 29 November 2012 during the course of the hearing. Ms Donaldson subsequently filed additional evidence addressing the proposed KCDP on 14 January 2013.

## 6.5 CONFERENCING

- [89] We established an active programme of expert witness conferencing that was facilitated by Environment Court commissioners. The purpose of the programme was to identify the substantive and determinative matters in dispute between the witnesses.
- [90] A non-expert conferencing session was held on 29 October 2012 at Southwards Car Museum, Paraparaumu. This session was open to all parties who wished to be heard at the hearing and resulted in a non-expert conferencing report that summarised collective views relating to key issues. The report was then made available for expert conferencing.
- [91] Expert conferencing was principally held between 30 October and 9 November 2012 and covered 17 topic areas, with further conferencing on groundwater, planning, traffic and transport, ecology and landscape and visual effects taking place in November and December. Planning conferencing with respect to the proposed conditions continued into January. Conferencing statements were received on the following topics (where more than one statement was received this is noted):
- i) Planning (three statements were received including six annexures setting out proposed conditions);
  - ii) Cultural;
  - iii) Economics;
  - iv) Urban design;
  - v) Groundwater (two statements were received);
  - vi) Social impact assessment;
  - vii) Archaeology;
  - viii) Air quality;
  - ix) Traffic and transportation (one statement and an addendum were received);

- x) Surface water;
- xi) Noise and vibration;
- xii) Erosion and sediment control;
- xiii) Freshwater (three statements were received);
- xiv) Terrestrial ecology (three statements were received);
- xv) Ground settlement;
- xvi) Landscape and visual (two statements were received along with a separate statement dealing with conditions); and
- xvii) Public health (two statements were received).

[92] The various groups of experts participated constructively in conferencing, and provided helpful reports as to the facts and issues agreed, facts and issues unresolved, and (generally) reasons for the latter. We have considered these statements, along with other submitters' concerns, in our deliberations later in this report.

## 6.6 HEARING

- [93] The hearing was held at Southward Car Museum, Otaihangā Road, Paraparaumu, from 12 November 2012 until 22 January 2013, with a recess over the Christmas and New Year Period from 15 December 2012 until 6 January 2013.
- [94] All evidence, documents and exhibits produced and referred to at the hearing have been made available on the EPA website, along with a daily transcript of proceedings.
- [95] Following a request from Takamore Trustees, the hearing venue was moved from Southward Car Museum to the Whakarongotai Marae, Waikanae, on 24 November 2012 for the hearing of the cultural, heritage and archaeological evidence.
- [96] Following a request from the media, permission was granted for a photographer to take photos at the hearing at the Whakarongotai Marae.
- [97] We heard two weeks of representations from submitters who exercised their right to be heard. The issues raised by submitters opposed to the Project in their representations were generally the same issues raised in submissions. The representations expressed genuine concern as to the adverse effects of the Project which have been fully considered in section 10 of this report.
- [98] Appendices 3 and 4 list all parties who appeared at the hearing.

## 6.7 SITE VISITS

- [99] We undertook three site visits; one prior to the hearing and two during. A preliminary site visit was undertaken on 11 July 2012 taking in the locations of the four proposed interchanges.
- [100] A comprehensive site visit was undertaken on 15 November 2012 following commencement of the hearing. Numerous sites were visited within and adjacent to the Project alignment, including the properties of submitters who had requested a site visit.
- [101] We conducted a further site visit on 4 December 2012 taking in Jonathon Smith's property at Waikanae.

## 7. REPORTS TO THE BOARD

### 7.1 S149G RMA

[102] s149G requires the EPA to commission a report from the relevant local authorities on the key issues in relation to the matter. The EPA commissioned reports from the GWRC and KCDC which were provided to us for our consideration.

[103] Each of these reports responded to a Statement of Work from the EPA which defined the scope of the reports to identify the key issues arising from the Project. The Statement of Work specified that the reports should address the following:

- a) *any relevant provisions of a national policy statement, a New Zealand coastal policy statement, a regional policy statement or proposed regional policy statement, and a plan or proposed plan; and*
- b) *a statement on whether all required resource consents in relation to the proposal to which the matter relates have been applied for; and*
- c) *if applicable, the activity status of all proposed activities in relation to the matter;*

*In addition to the requirements of a-c above:*

- d) *confirmation of the status and weighting, if proposed, of any relevant regional policy statement, and or relevant plan; and*
- e) *Details of the permitted baseline and existing environment for the resource consents applied for within the jurisdiction. This will include:*
- f) *The permitted baseline and details of any relevant consents held in the areas that form the existing environment within your authorities' jurisdiction; and*
- g) *Comment on whether the proposed consents applied for within your authorities' jurisdiction will affect any relevant existing consent holder's ability to implement their existing consents should the proposed consents be granted.*
- h) *Any other matter which is relevant to the key issues associated with the applications.*

[104] s149G reports were received from both KCDC and GWRC in June 2012. Although generally supportive of the Project, they raised a number of concerns that were considered in the course of the hearing. By the end of the hearing those concerns had been addressed through the proposed conditions.

## 7.2 S42A RMA

- [105] s42A RMA allows a local authority (or the Board) to require a local authority officer, a consultant, or any other person to prepare a report.
- [106] We commissioned Mitchell Partnerships Limited to prepare a s42A report with Mr John Kyle as the primary author. This report comprised an independent planning report.
- [107] The first edition of this report was received by the EPA in October 2012 and addressed the application documents, submissions, s149G reports, and applicant and submitter evidence. It included an assessment against statutory documents, an assessment of actual and potential environmental effects, and provided an initial review of the conditions proposed by the applicant.
- [108] The s42A report made a number of observations and recommendations particularly with regard to the specificity of conditions and the certainty of mitigation measures.
- [109] An addendum to the first edition of the independent planning report was received by the EPA in November 2012. The addendum provided supplementary comment and evaluation of the applicant's rebuttal evidence and expert witness conferencing statements.
- [110] A supplementary report and addendum were received by the EPA in December 2012. The supplementary report addresses the notification of KCDC's proposed KCDP.

## 8. LEGAL ISSUES

[111] It became clear early in the process that whether or not the applications and the NoRs would be granted was mainly dependent on our assessment of their effects in terms of the RMA. However, a number of legal issues arose which we are required to address. Unsurprisingly, these are similar to those that arose in the context of the Board of Inquiry hearing and decision in the Transmission Gully Proposal (TGP). Overall we address the following:

- i) General issues;
- ii) Relevant permitted baseline and existing environment;
- iii) Greenhouse gas emissions;
- iv) The existing designation;
- v) Additional consents; and
- vi) Adaptive management.

[112] We have considered s11 of the Final Decision and Report of the Board of Inquiry in the TGP case. We concur in their findings on the issues addressed, and accordingly do not necessarily rehearse some of these issues at the same length as in that decision. We acknowledge and adapt the findings of that Board where relevant.

### 8.1 GENERAL ISSUES

#### 8.1.1 Our independence

[113] Many submitters appeared not to fully understand the independent nature of this Board of Inquiry. We were frequently referred to as part of the EPA. We are not, although that organisation provides us with administrative support. Others considered our role was to simply rubber-stamp the NZTA request, as the decision had in fact already been made. Indeed, shortly after the hearings closed, we received a letter from submitter number 293, Ms Abigail, pointing out that advertisements had appeared in local newspapers indicating that NZTA was going to carry out further geotechnical research. This was said to indicate that NZTA treated the decision as already having been made.

[114] Nothing could be further from the truth. We are appointed by the Minister for the Environment, pursuant to the RMA, as an independent Board. We conducted the hearing in a judicial manner throughout. At the time of the letter Ms Abigail was concerned about, we had not even concluded our deliberations.

### 8.1.2 Conflict of interest

[115] We posted notice of any potential conflicts of interest on the EPA website in August 2012.<sup>14</sup> No submitters raised issues in relation to this. In the course of the hearing, on three occasions, submitters were known to members of the Board as previous colleagues. Those matters were recorded in the transcript, which was again available on the EPA website daily, and no issue was taken.

### 8.1.3 What we cannot do

[116] Despite the clarity of our limited jurisdiction, as set out in section 4, many submitters seemed to think that our powers were very wide-ranging. Requests made ranged from seeking compensation; to requiring extra trains for public transport; to the addition of new railway stations. These matters are clearly beyond our jurisdiction.

### 8.1.4 Evidence

[117] The powers and duties of the Board in relation to hearings are governed by s39, which applies, amongst others, to hearings under s149J. Somewhat interestingly, s39(2) states:

*“In determining an appropriate procedure for the purposes of subsection (1), the authority shall—*

*...*

*(c) not permit any person other than the chairperson or other member of the hearing body to question any party or witness; and*

*(d) not permit cross-examination.”*

[118] Yet s149L, dealing with the conduct of an inquiry, states at (4)(c) that the Board may permit cross-examination. There is a clear contradiction between these two provisions, and we intend to apply s149L(4)(c) and allow cross-examination, as we understand has occurred in all other Boards of Inquiry. This is simply to apply the specific over the general in accordance with standard statutory interpretation. We understand this discrepancy is subject to an appropriate amendment.

[119] In relation to the hearing itself, s4B of the Commissions of Inquiry Act 1908 applies regarding evidence. This section reads:

*(1) “The Commission may receive as evidence any statement, document, information, or matter that in its opinion may assist it to deal effectively with the subject of the inquiry, whether or not it would be admissible in a Court of law.*

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<sup>14</sup> MacKays to Peka Peka Expressway Proposal Board of Inquiry Interest Register.

- (2) *The Commission may take evidence on oath, and for that purpose a member or officer of the Commission may administer an oath.*
- (3) *The Commission may permit a person appearing as a witness before it to give evidence by tendering a written statement and, if the Commission thinks fit, verifying it by oath.”*

[120] In this case we have heard evidence, as well as the written submissions, and have heard from submitters who exercised their right to speak to those submissions. It is for us to determine what weight to apply to the evidence, and indeed the submissions. Generally, sworn evidence could expect to be given greater weight than unsworn representations and submissions. The latter are not on oath and are not tested by cross examination. Questions in such cases could only be put through the Chair.

[121] We cite with approval and adopt from the *Transpower Grid Upgrade Board of Inquiry Final Report and Decision*:<sup>15</sup>

*“[390] In the event, some submitters who had not lodged evidence statements with the Board prior to the hearing, took the opportunity of speaking to their submissions to present statements on matters of fact and opinion that were in the nature of evidence, and which could have been the subject of evidence statements lodged with the Board prior to the hearing.*

*[391] Dr J B Forret, counsel for several submitters, asserted that some submitters had understood that although expert evidence needed to be pre-circulated, where they wanted to speak in support of their written submission, that did not need to have been pre-circulated. Counsel argued that it was hard to imagine, in the absence of legal submissions, what more submitters would be saying in support of their submissions which would not really fall into that evidence category. Her clients had anticipated that where they strayed into the realm of evidence, Transpower counsel would have opportunity to question them on that.*

*[392] Transpower responded that leave should have been sought by any submitter seeking to adduce evidence after 14 March 2008, showing good reason for not having lodged evidence prior to Transpower having to lodge its rebuttal evidence.*

*[393] The Board accepts Transpower’s submission. In the event, there were submitters (even some who were represented by counsel at the hearing) who presented information or opinions in the nature of evidence in the course of speaking to their submissions, but statements of that information or opinion had not been lodged with the Board prior to the hearing.*

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<sup>15</sup> *Report and Decision of the Board of Inquiry into the Upper North Island Grid Upgrade Project*, September 2009, paragraphs 390-397.

*[394] The number of submitters who were heard, and the range of the subject matter of their submissions, made it impracticable to expect Transpower to cross-examine on what was in the nature of evidence that was presented for the first time at the hearing. Any cross-examination would have been impromptu, and without having the opportunity to investigate the evidence presented and for considered decisions to be made on what of it was to be tested. Further, the relevant Transpower witness would by then have given evidence, had not been cross-examined by the submitters in question, and been excused.*

*[395] The result was that, at least where the material in question lacked particulars, or was in conflict with evidence of Transpower witnesses, the potential for the Board to confidently rely on it as a basis for making findings was considerably weakened.*

*[396] Submitters had the opportunity to present evidence in a way that could assist the Board to resolve conflicts among witnesses and make reliable findings, by lodging evidence statements in accordance with the Board's timetable. Those who did not take that opportunity could not reasonably expect that the Board would be able to place the same reliance on their evidence.*

*[397] Consequently, the Board places less reliance on evidence given without notice as submissions, and especially where particulars were lacking or where evidence was in conflict with evidence given in an orderly way."*

[122] However, one issue arose in this case dealing with submitter number 427, Ms Lewis. She had transport expertise, but chose to speak to her submission. We queried why she had chosen this course, rather than to give expert evidence. Amongst other matters she referred to, she advised us that EPA staff had told her that her submission and representation would carry as much weight as evidence. On enquiry this proved to be correct. It is clear that the EPA staff in this regard exceeded their jurisdiction, although when enquiries were made, it was confirmed that Ms Lewis was told this. We are informed that she was the only witness told this. In those circumstances, we are prepared to take her submission as evidence, notwithstanding it was not sworn and cross-examined on. However, for reasons that appear in section 10.3 of this report, we have preferred the evidence of the applicant over the evidence of Mr Pekol, Ms Genter and what we have treated as evidence from Ms Lewis.

#### **8.1.5 Failure to cross-examine**

[123] It is clear that s4B of the Commission of Inquiry Act, cited above, gives the Board a very wide brief as to the admissibility of evidence. We are not constrained by the Evidence Act 2006 as to admissibility. However, in other areas, particularly the one that follows, we consider we should give effect to that Act. s92 thereof provides:

“92 Cross-examination duties

- (1) *In any proceeding, a party must cross-examine a witness on significant matters that are relevant and in issue and that contradict the evidence of the witness, if the witness could reasonably be expected to be in a position to give admissible evidence on those matters.*
- (2) *If a party fails to comply with this section, the Judge may—*
- (a) *grant permission for the witness to be recalled and questioned about the contradictory evidence; or*
- (b) *admit the contradictory evidence on the basis that the weight to be given to it may be affected by the fact that the witness, who may have been able to explain the contradiction, was not questioned about the evidence; or*
- (c) *exclude the contradictory evidence; or*
- (d) *make any other order that the Judge considers just.”*

[124] The section essentially encapsulates the rule referred to as “*the rule in Brown v Dunne*”.<sup>16</sup> We raised this issue in relation to the evidence of Ms A Williams. It was put to Mr Fowler, counsel for Dr and Mrs Dearden, that he had not cross examined Ms A Williams on parts of her rebuttal evidence. He responded at the hearing and in a later memorandum dealing with *Brown v Dunne* but did not mention the section.<sup>17</sup> Essentially, it was Mr Fowler’s argument that he did not need to put such matters to the NZTA witness because she had misunderstood or misinterpreted the evidence of his own witness in the rebuttal. This seems to us to be the very case when such misunderstandings or misinterpretation should be put to a witness to clarify an apparent or real contradiction. It seems to us to fall squarely within the section. Nothing turns on it, because we prefer the evidence of Ms A Williams in any event. However, we should not be seen as accepting Mr Fowler’s interpretation.

[125] As noted earlier, s4B of the Commission of Inquiry Act 1908 gives us very broad powers as to the admissibility of evidence. s5(1) of the Evidence Act provides:

*“if there is an inconsistency between the provisions of this Act and any other enactment, the provisions of that other enactment prevail, unless this Act provides otherwise”*

There is no reference in the RMA, or the Evidence Act, specifically stating whether or not a board of inquiry is bound or entitled to apply the provisions of the Evidence Act. Clearly, if there is inconsistency between the provisions

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<sup>16</sup> *Brown v Dunne* (1893) 6 R. 67, H.L.

<sup>17</sup> Memorandum of Counsel, 5 December 2012. Dearden Evidential Matter.

of the Evidence Act and the cited section from the Commission of Inquiries Act, the Commission of Inquiries Act takes precedence.

[126] But the matter goes further, because this question has been considered on a number of occasions by the Environment Court. s276(1)(a) RMA is in very broad terms, and entitles the Environment Court to receive anything in evidence that it considers appropriate to receive. Such a section may well be broader than the section from the Commission of Inquiries Act cited above. The Environment Court itself noted this point in *Te Maru o Ngati Rangiwewehi v Bay of Plenty Regional Council*.<sup>18</sup> The same decision noted that such breadth of powers reflects the specialist nature of the Environment Court and its work, which enables a Court to determine the probative value of evidence and apply it without the need to apply the strict rules of evidence.

[127] However, in that decision Judge Whiting went on to note that:<sup>19</sup>

*“The Evidence Act should guide the Court to the starting point of a consideration to a challenge relating to the admissibility of evidence. The Environment Court should only depart from the prescriptions of the Evidence Act in a principled manner.”*

[128] To similar effect is the decision of Judge Dwyer in *Universal College of Learning v Wanganui District Council*.<sup>20</sup>

*“The provisions of s276(2) RMA which provide that this Court is not bound by rules of law about evidence that otherwise apply to judicial proceedings were referred to by both Counsel. It will however, be well known to practitioners in this jurisdiction that the normal rules of evidence are not simply ignored. They are in fact commonly and routinely applied. Their application is the rule rather than the exception.”*

[129] And to like effect, again, the observations of Judge Jackson in *Ngati Hokopu Ki Hokowhitu v Whakatane District Council*.<sup>21</sup>

*“One of the reasons we wished to remind ourselves of the rules of evidence is because they are normally applied for good reasons. If they are not going to be complied with in any proceedings, then the reasons for which they exist need to be borne in mind. The common law rules are robust, but when the Court hears evidence which does not comply with them it is in danger of travelling in an unfamiliar landscape without a good compass.”*

[130] It is evident that the Environment Court, while not being bound to do so, has been guided by, and applied, the relevant rules of evidence from the common law and the Evidence Act provisions on a number of occasions.

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<sup>18</sup> *Te Maru o Ngati Rangiwewehi v Bay of Plenty Council* [2008] NZRMA 395 at [24] (EnvC).

<sup>19</sup> *Te Maru o Ngati Rangiwewehi v Bay of Plenty Council* [2008] NZRMA 395 at [40] (EnvC).

<sup>20</sup> *Universal College of Learning v Wanganui District Council* W65/2009, 17 August 2009 (EnvC 197), paragraph 26.

<sup>21</sup> *Ngati Hokopu Ki Hokowhitu v Whakatane District Council* (2002) 9 ELRNZ 111 (EnvC), paragraph 55.

- [131] Given the jurisdiction of a Board of Inquiry in a matter such as this, by analogy, we consider it appropriate for us to take guidance from and apply the rules of evidence and the Evidence Act provisions such as s92 in the same manner as the Environment Court, despite the broad discretion under s41 RMA. This would be particularly so where we considered there was good reason for adopting the normal rules of evidence in any particular circumstance. An example would be where the Board considers that applying normal evidence procedure is necessary in order for it to truly determine the probative nature of, or weight that should be given to, certain evidence.
- [132] We would add that while it is appropriate to extend considerable latitude to submitters in person (as we did throughout the hearing) we expect counsel to understand the obligation to put their client's case in cross examination and apply the terms of s92.
- [133] The matter went considerably further. We have already referred to approval above to the passage in the *Report and Decision of the Board of Inquiry into the Upper North Island Grid Upgrade Project* in relation to submissions containing matters of fact. In this case, the pre-hearing material provided submitters with definitions of representation, evidence and expert evidence.<sup>22</sup>
- [134] However, the real significance in the context of this case is the criticism made by Mr Fowler in his closing of the evidence of Messrs Brewer and Baily, urban planners for NZTA, and Mr Munro on behalf of KCDC. This he compared to the evidence of Messrs Lunday and McIndoe on behalf of Save Kāpiti Inc.
- [135] Mr Fowler's submission to us in closing was that this was the fundamental contest in the hearing, and he talked about it as an "overall stand-off". However, as was pointed out by Mr Hassan in closing, there was no cross-examination of these witnesses by Mr Fowler on behalf of Save Kāpiti Inc. What this means, of course, is that the evidence of Messrs Brewer, Baily and Munro as to the greater suitability of the chosen route was not challenged by Save Kāpiti Inc. RSRA did cross examine as to the southernmost portion of the route. We are therefore entitled to apply s92 and give lesser weight to the Lunday and McIndoe evidence. We do not do so in this instance because we prefer the applicant's evidence over that of Messrs Lunday and McIndoe.

### 8.1.6 Consultation

- [136] Consultation is contained in chapter 10 of the Assessment of Environmental Effects Report. This in turn refers back to TR3, in Volume 3 of the technical reports and supporting documents. Both are substantial documents.

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<sup>22</sup> MacKays to Peka Peka Expressway Proposal Hearing Procedures.

- [137] s36A of the RMA determines that there is no duty to consult about resource consent applications and notices of requirement.<sup>23</sup> Schedule 4 of the RMA also sets out what an AEE must contain, including s1(h) any consultation undertaken. We are able to consider the consultation undertaken by the NZTA in making its decision in accordance with s104 of the RMA.<sup>24</sup> The consultative process has been heavily criticised by submitters opposing this project as being inadequate, biased, misleading, and on occasions dishonest.
- [138] An analysis of the evidence satisfies us that this is not the case.
- [139] The evidence given on behalf of the applicant was from Ms Black, an urban planning consultant with over 25 years' experience. Applications to cross-examine Ms Black were made by St Heliers Capital Ltd and Takamore Trustees, but at the end of her evidence no questions were proffered by them. She was not cross-examined by anyone else and her EIC was unchallenged. Her evidence reflects a very extensive consultation process that was carried out in accordance with the NZTA Public Engagement Manual 2008.
- [140] In her evidence Ms Black explains that she was the manager of stakeholder engagement, and in that capacity drafted all the consultation material, oversaw its production and led contact with directly affected property owners, responded to queries from the public and interest groups, organised expos, briefed project team staff and attended all expos. She also stated that her evidence was relevant to the evidence given on behalf of NZTA by Dr Bentley, as to engagement with key stakeholders; Mr Quinn, as to consultation with utility operators; Ms Rose, as to social impacts; and Mr Kamo, as to iwi engagement and cultural effects.
- [141] It is clear from her evidence that there were two phases of consultation for the proposed expressway. The first was consultation on alignment options and interchanges, and the second consultation on design development. Before that there was earlier consultation we will address in due course.
- [142] At paragraph 17 of her evidence she sets out the consultation on three corridor options for a four-lane expressway between MacKays Crossing and Peka Peka. Those objectives are set out as follows.<sup>25</sup>
- i) *“Inform affected communities, key stakeholders, iwi and other members of the general public about the Expressway options;*
  - ii) *Provide an opportunity for these parties to provide feedback to the NZTA on the Expressway options;*
  - iii) *Provide the NZTA Board with an understanding of the views of the affected community, key stakeholders, iwi and general public regarding the three Expressway options; and*

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<sup>23</sup> s36A: inserted, on 10 August 2005, by section 18 of the Resource Management Amendment Act 2005 (2005 No 87).

<sup>24</sup> See also s104(1).

<sup>25</sup> AEE, Chapter 10, page 259.

iv) *Provide a method of community, stakeholder and general public engagement on the preferred route for a four-lane Expressway between MacKays Crossing and Peka Peka, which meets the requirements of the Land Transport Management Act 2003.*"

- [143] This consultation was carried out over 10 weeks, between August and October 2009. Brochures were sent to all households, seeking feedback on the options. Potentially affected land owners were informed. A series of eight open days, three public meetings and a number of individual meetings as per requests were carried out. Following that consultation, a preferred route largely following the existing designated corridor was chosen, and that closely aligns to the option before us.
- [144] This early consultation was before the two phases mentioned above. It is this early stage that particularly led to criticism from objecting submitters. It included a criticism of a Colmar Brunton telephone survey and the consultation that led to the option largely following the existing designation being included is basically the route we are concerned with.
- [145] The criticism can be summarised as a criticism of NZTA for misleading people by referring to this new option as the WLR. Submitters said that those receiving the consultation documents from NZTA would consider this a reference to the WLR as a local arterial road that had earlier been the favoured position of NZTA and KCDC as outlined in the Historical sections (sections 2.5 and 2.6) of this decision. Inevitably, the alternative routes presented would lead to resident opposition. This was stated to us by a number of submitters, and we do not intend to mention them all. However, the views of submitter number 673, Ellen Dale Hinkley are representative of this concern. In speaking to her submission, she appended a document produced by NZTA dated October 2009 and headed '*Kāpiti Consultation Extended*', after a State Highway 1 sign.<sup>26</sup> Ms Hinkley took the view that the first two pages did not provide clarity, and statements in the question and answer section were either biased, loaded, misleading or ultimately untrue.
- [146] It is true that in the first section the document states the consultation period had been extended as a result of the community's desire for more information and a new option to be considered using the WLR. But above that, under the heading Options for MacKays Crossing to Peka Peka, the subheading reads:

*"The NZ Transport Agency has extended the consultation period on the proposed Kāpiti State Highway 1 **Expressway** routes in response to community feedback for another option from MacKays Crossing to Peka Peka to be added to the two concepts provided in August 2009 (our emphasis)."*

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<sup>26</sup> NZTA Newsletter "*Kapiti consultation extended – Options for MacKays Crossing to Peka Peka*" October 2009.

[147] There then follows a section relating to roads of national significance being a priority, and on page two, on the top left-hand side, is a box with the heading, in bold, Objective:

*“To provide a four-lane **expressway** through the Kāpiti Coast District (our emphasis).”*

[148] It then lists the criteria, as follows:

*“The NZ Transport Agency Board will decide on on [sic] a preferred route for the proposed **expressway** (our emphasis).”*

*When evaluating each option, the Board will give careful consideration to the views of the community and the extent to which each option:*

- *Assists economic development*
- *Assists safety and personal security*
- *Improves access and mobility*
- *Protects and promotes public health*
- *Ensures environmental sustainability.*

*The Board’s decision must also take into account all relevant Government and regional strategies, including NZ Transport Agency’s Investment and Revenue Strategy, the Government Policy Statement, the National Energy Efficiency and Conservation Strategy and the Wellington Land Transport Strategy.”*

[149] Immediately below that, in a bold heading, it is stated:

*“What makes an expressway different to other highways?”*

[150] The document then goes on to define an expressway.

[151] While we do not suggest the document presented to us by Ms Hinkley was the only one issued by NZTA, it makes plain to any reader that the route following the existing designation was to be an expressway. In our view, the material makes it clear that whatever route was ultimately chosen, it was for an expressway. We do not consider a reader of that document would have been misled into thinking that the route following the existing designation was to be simply a local road in the form previously consented and agreed to as suggested. They would understand an expressway was intended.

[152] Continuing with Ms Black’s evidence, it is clear that there was consultation in relation to alignment and interchange options and design development. We refer in particular to paragraphs 18 to 25 of her evidence-in-chief. She sets out the consultation methods used:<sup>27</sup>

*“26.1 Brochures and postcards, sent to all addresses in the district;*

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<sup>27</sup> Ms Black EIC, paragraph 26.

26.2 *Expos (ie open days where there was an opportunity for members of the public to view panels, maps and information, and discuss issues with members of the Project team) held at four different locations on the Kāpiti Coast (Southward Car Museum, Kāpiti Community Centre, Waikanae Memorial Hall, and Raumati South Memorial Hall);*

26.3 *Individual meetings, with people directly affected by the Project and as requested by members of the public and local businesses;*

26.4 *Media releases;*

26.5 *Newspaper and radio advertising;*

26.6 *A staffed Information Centre at Coastlands Mall in Paraparaumu;*

26.7 *A project website;*

26.8 *A toll free phone line; and*

26.9 *Feedback forms.”*

[153] It is equally clear that the feedback received was considered. In particular, there was a large amount of feedback about the options at the southern end, around the Waikanae River and the Takamore cultural precinct. There were also concerns over whether the expressway went over or under local roads, the quality of design for the Waikanae Bridge, the provision of local access and a number of issues concerning accessibility, connectivity and the effects of the construction. At paragraphs 66 to 70, Ms Black describes the consultation in the phase 2 design development stage, and states:<sup>28</sup>

*“RESPONSE TO FEEDBACK ON THE CONSULTATION PROCESS*

*A number of people considered that the consultation process was good. Others considered that there had been enough consultation and that NZTA just needed to get on with it. Some people felt that they were not being listened to. Criticism of the process was in some cases linked with opposition to the Expressway. I believe that people were given many opportunities to engage with the Project and to provide feedback. In addition to the series of Expos, the information centre was staffed so that people could find out more, and the phone line and website were both available for people to make comment and seek information. I believe that we considered feedback carefully and ensured that designers took account of the issues raised (our emphasis).”*

[154] It is clear that feedback was referred to others within the overall project team, but not all of it was acted upon. This again is an area of much

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<sup>28</sup> Ms Black EIC, paragraph 71.

criticism, with many submitters saying the concerns they raised in response to the consultation process were ignored. Many submitters seemed to be of the view that if they raised concerns in the consultation process, those concerns had to be given effect to. If not the consultation was ineffective. Of course many of the concerns, for all sorts of obvious reasons such as design constraints and other difficulties, could simply not be incorporated.

- [155] Ms Black also included a section on a response to the many submissions received about the misleading and inadequate consultation at the various stages and the failure for direct contact to be made. She states:<sup>29</sup>

*“In my view, every attempt was made to provide information on the proposed Expressway that enabled people to understand the design. Feedback received as a result of the consultation was taken into account and provided to the designers to consider as part of ongoing design development. Feedback received was not necessarily adopted as a good design idea, as there were other factors to take into account such as technical matters.”*

- [156] In relation to those who claimed there was no direct contact, Ms Black stated:<sup>30</sup>

*“The team was very responsive to these requests and best endeavours were made to provide as much information as requested.”*

- [157] We accept that evidence, unchallenged by cross-examination, of Ms Black. Despite the criticisms we have heard in evidence and from many submitters, both in their submissions and when speaking to their submissions, it is clear that extensive consultation was undertaken in relation to this project. The extent of the material we have referred to and the steps taken to consult satisfy us that this is clearly the case. The real complaint of the submitters objecting to the project is that their complaints were not given effect to and the project abandoned.

## 8.2 RELEVANT PERMITTED BASELINE AND EXISTING ENVIRONMENT

- [158] In a number of the specialist areas we addressed, opponents of the Project maintained that the relevant baseline was that of the WLR local road, either on its own or in some sort of combination with SH1. As an example, Ms Buchan, who gave social impact evidence for Save Kāpiti Inc, stated:<sup>31</sup>

*“... the existing Western Link Road designation should be taken into account in setting the baseline in accordance with the Court of Appeal decision (Hawthorne [sic] 2006). Had the Western Link*

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<sup>29</sup> Ms Black EIC, paragraph 78.

<sup>30</sup> Ms Black EIC, paragraph 79.

<sup>31</sup> Expert Conferencing Joint Witness Statement to the Board of Inquiry – Social Impact Assessment, 30 October 2012, page 3.

*Road been included in the baseline, the benefits attributed to the expressway would no longer apply because they would already be in place.”*

- [159] It is necessary to briefly refer to the history again. There have been plans and various designations of a road of some description along the proposed MacKays route since the 1950s. It was known as the Sandhills or Motorway route. It began with the midline proclamation for a proposed motorway between Wellington and Foxton in 1956. Most recently, the route has been designated by KCDC for a local arterial road known as the WLR planned to be constructed in three stages.
- [160] This designation was finally confirmed by the Environment Court (following various appeals) in July 2006. A number of regional resource consents were obtained for Stage 1, and they have not yet lapsed. In 2008, KCDC decided to limit this local arterial road to two lanes (rather than the central section being four lanes as originally proposed). KCDC has never sought funding, nor has it been approved by NZTA, for this road in any form.
- [161] The progression of the WLR has been essentially superseded by the development of the Project since the Wellington Northern Corridor was identified as a road of national significance in 2009. This project has a similar alignment to the WLR in the main, and would occupy much of the land included in the current designation. The new designation is being sought because the NZTA project team considered it sufficiently different in terms of design standards and alignments from the WLR to rely upon that designation for construction. Chapter 35 of the AEE makes it plain that, assuming the present requirement and applications are approved and given effect to, it is anticipated the WLR designation will be withdrawn.
- [162] We are required by ss104 and 171 to have regard to any actual and potential effects on the environment of allowing the “requirement” and “activity” in determining NZTA’s NoR and consent applications.<sup>32</sup> The necessary starting point for consideration of effects is to understand both the relevant “environment” on which the Projects’s effects will occur, and the scope of potential effects that can validly be taken into account for the purposes of that assessment. This involves a consideration of the future state of the environment in which the activity will take place and application of our discretion to apply a “permitted baseline” analysis. In this instance, the question is whether the WLR should be considered to form part of the environment and/or permitted baseline for the Project.
- [163] The future state of the environment and the application of permitted baseline are distinct exercises undertaken for different reasons. The permitted baseline assessment is discretionary, while determining what constitutes the environment is a matter of definition and application.
- [164] The future environment assessment is to determine the nature of the receiving environment on which an activity’s effects will occur, as it might be in future (that is, the existing environment) with the overlay of potential use

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<sup>32</sup> We must apply ss104 and 171 in accordance with s149P.

and development that is likely to occur. As was noted in *Queenstown Lakes District Council v Hawthorn Estate Ltd*, this is conceptually different from the purpose of permitted baseline which:<sup>33</sup>

*“...is to isolate, and make irrelevant, effects of activities on the environment that are permitted by a district plan, or have already been consented to. Such effects cannot then be taken into account when assessing the effects of a particular resource consent application...”*

*Where it applies, therefore, the “permitted baseline” analysis removes certain effects from consideration under s104(1)(a) of the Act.”*

### 8.2.1 Existing environment

[165] The Court of Appeal decision in *Hawthorn* is the leading authority on what must be considered an existing environment:<sup>34</sup>

*“In our view, the word “environment” embraces the future state of the environment as it might be modified by the utilisation of rights to carry out permitted activity [sic] under a district plan. It also includes the environment as it might be modified by the implementation of resource consents which have been granted at the time a particular application is considered, where it appears likely that those resource consents will be implemented. We think Fogarty J erred when he suggested that the effects of resource consent that might in future be made should be brought into account in considering the likely future state of the environment. We think the legitimate considerations should be limited to those that we have just expressed.”*

[166] In *Villages of NZ (Mt Wellington) Ltd v Auckland City Council*, the Environment Court held:<sup>35</sup>

*“...The fact [an] appeal concerns an NOR does not place it outside the findings in Hawthorn, which concerned the effect of the subject matter of resource consents on the future environment. Nor do we find it a point of difference that Hawthorn was concerned with an offsite future receiving environment whereas the focus here is onsite.”*

[167] It is apparent that the consideration of the existing environment is relevant to both NZTA’s resource consent applications and the NoR. It is also relevant to consider whether the WLR forms part of the existing environment, where it both overlaps with and lies outside the boundary of the designation applied for.

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<sup>33</sup> *Queenstown Lakes District Council v Hawthorn Estate Ltd* [2006] NZRMA 424 at [65] and [66] (CA).

<sup>34</sup> *Queenstown Lakes District Council v Hawthorn Estate Ltd* [2006] NZRMA 424 at [84] (CA).

<sup>35</sup> *Villages of NZ (Mt Wellington) Ltd v Auckland City Council* A23/2009, 20 March 2009 (EnvC) at [32].

- [168] We accept at face value the WLR designation might be considered to form part of the existing environment, as being a provision in the district plan for a permitted activity. Therefore, the construction and operation of a highway along that route would be an activity permitted by the district plan, the adverse effects from which we should then take into account. This is particularly so given s175(2)(a) provides that, once confirmed, a territorial authority must include its designation in its district plan and any proposed district plan as if it were a rule.
- [169] Even accepting that, we have before us evidence, that we accept, that the WLR is not a viable alternative to the application before us. It will, in fact, be superseded by the present requirement and applications, if approved. Further, KCDC has not even made a construction funding request for the WLR, and it does not have all the regional consents it requires in order for it to be constructed. Critically, the extent of overlapping alignments mean there is no prospect of the WLR proceeding if the present requirement and applications are approved by us, and ultimately given effect to.
- [170] In the light of that evidence, we are satisfied it is not credible to conclude the future environment “might” be modified by utilisation of the WLR designation, if the expressway proceeds. We accept that the WLR designation, therefore, cannot be considered to form part of the existing environment on this basis.
- [171] There is a subordinate point. In *Watercare Services Ltd v Minhinnick*,<sup>36</sup> the Court of Appeal confirmed that while a territorial authority is required to include a designation in its district plan “as if it were a rule”, this deeming provision does not turn a designation into a rule (i.e. for the purposes of provisions that refer to plan rules, but not designations, as was the case with s319(2) at the relevant time). It could, therefore, be argued that the WLR designation cannot validly be accepted as a permitted activity rule under the district plan. If accepted, then at best the present designation can only become relevant if considered analogous to an existing but unimplemented resource consent.
- [172] If such were the circumstance, the key issue for both the WLR designation and the remaining resource consents is whether they are “likely” to be implemented if the Project proceeds. On the evidence, as we have stated above, and which we accept, and for the reasons above, we do not consider this question can be answered in the affirmative.
- [173] Neither the WLR designation nor the resource consents should, therefore, be considered in forming part of the existing environment for the purposes of the expressway. This conclusion we consider to be consistent with the Environment Court decision in *Villages*.<sup>37</sup> In that case, Judge Newhook held that the existing resource consents for a retirement village were unlikely to be implemented, and therefore did not form part of the existing environment in respect of the NoR for a proposed sports park. This was primarily

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<sup>36</sup> *Watercare Services Ltd v Minhinnick* [1998] 1 NZLR 294 (CA). See also *Donkin v Board of Trustees of the Sunnybrae Normal School* [1997] NZRMA 342 (EnvC).

<sup>37</sup> *Villages of NZ (Mt Wellington) Ltd v Auckland City Council A23/2009*, 20 March 2009 (EnvC).

because the two developments could not co-exist on the common site where they were both intended to be located. This is the case with which we are faced with the WLR and the expressway.

### 8.2.2 Permitted baseline

[174] The Court of Appeal in *Hawthorn* also provided a useful summary of the process involved in considering the permitted baseline. There they stated:<sup>38</sup>

*“We have earlier expressed our view that the ‘permitted baseline’ has in previous decisions of this Court been limited to a comparison of the effects of the activity which is the subject of the application for resource consent with the effects of other activities that might be permitted on the subject land, whether by way of right as a permitted activity under the District Plan or whether pursuant to the grant of a resource. In the latter case, it is only the effects of activities which have been the subject of resource consents already granted that may be considered, and the Consent Authority must decide whether or not to do so: Arrigato Investments Limited v Auckland Regional Council at [30] and [34]-[35].”*

[175] As the permitted baseline assessment is only relevant to the land subject to the present requirement and applications (ie where both WLR and the expressway overlap), its usefulness in the present circumstances is somewhat questionable. Further, as noted in *Beadle v Minister of Corrections*:<sup>39</sup>

*“... neither the Act nor the case-law [on permitted baseline] states whether the obligation to make permitted baseline comparisons extends to designation requirements or to applications for regional resource consents...”*

[176] In that case, Judge Sheppard, in the absence of submissions to the contrary, accepted it should apply to both.

[177] For completeness, assuming this to be correct, we adopt the same approach.

[178] As summarised in *Beadle*:<sup>40</sup>

*“There are three different aspects of permitted baseline comparisons. The first is to compare the environmental effects of the activity the subject of consideration with the environmental effects of activity actually being carried out lawfully on the land. The second is to compare them with the environmental effects of hypothetical activity that (not being fanciful) could occur on the land as a permitted activity under the relevant plan. The third is to compare the environmental effects of the subject activity with those*

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<sup>38</sup> *Queenstown Lakes District Council v Hawthorn Estate Ltd* [2006] NZRMA 424 at [63] (CA).

<sup>39</sup> *Beadle v Minister of Corrections* A74/2002, 8 April 2002 (EnvC) at [991].

<sup>40</sup> *Beadle v Minister of Corrections* A74/2002, 8 April 2002 (EnvC) at [991].

*of an activity authorised by an earlier resource consent that has not been implemented.”*

[179] It could be prima facie argued that the WLR designation provides a relevant “permitted baseline” on the basis it enables construction and operation of a highway on the designated route as a permitted activity under the relevant plan. However, in the circumstances, we are satisfied the construction of the WLR is sufficiently fanciful (i.e., while a realistic and reasonable development of itself, it cannot co-exist with the expressway) to require it be excluded from providing a relevant and appropriate permitted baseline comparison.

[180] The alternative, as noted above, is to consider the WLR designation as analogous to existing unimplemented resource consent. As noted in Hawthorn,<sup>41</sup> consideration of both the WLR designation and existing resource consent as part of a permitted baseline would then be within our discretion. However, given there is no prospect of the WLR proceeding if the present requirement and applications are approved and implemented, we are satisfied we should rule out including the WLR as part of the permitted baseline. As stated in Hawthorn at [79]:<sup>42</sup>

*“[To do so] would have the consequence that all of the adverse effects of the later proposal should be taken into account, with no “discount” given for consents previously granted”.*

[181] We are satisfied that neither the WLR designation nor resource consents should be considered to form part of a permitted baseline for the purposes of the application before us. Even if a contrary view was advocated, which it has been, we would exercise our discretion against taking those designation and resource consents into account, for the reasons appearing above. For the sake of completeness, this is essentially the approach adopted by the TGP Board with respect to the earlier designation applying to that part of the Wellington Northern Corridor.

[182] We have applied the law, as we understand it, relating to the future state of the environment and the permitted baseline, where relevant, throughout this report.

### **8.3 GREENHOUSE GAS EMISSIONS**

[183] A number of submitters who made representations raised the issue of greenhouse gas emissions and how they might be affected by the Project.<sup>43</sup>

[184] The issue of greenhouse gases is addressed in the Regional Air Quality Plan.<sup>44</sup>

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<sup>41</sup> *Queenstown Lakes District Council v Hawthorn Estate Ltd* [2006] NZRMA 424 at [63] (CA).

<sup>42</sup> The very point we make in the Social Impacts section (section 10.7).

<sup>43</sup> Dr Marie O’Sullivan (APSOC), Ms Julianne Genter (APSOC), Mr Nick Fisher, Ms Nicki Young, Mr Jake Roos, Mr Brent Cherry, Mr John Baldwin and Mr Paul Bruce.

<sup>44</sup> Issue 2.4.1.

- [185] The commentary to that policy notes it is the responsibility of central Government to co-ordinate the reduction of such emissions, but does acknowledge that emissions from motor vehicles are significant sources of greenhouse gas.
- [186] Counsel for the applicant contends that greenhouse gas emissions are not a relevant consideration. He further submitted that carbon emissions are regulated at the national level by the Government's Emissions Trading Scheme (ETS), introduced through the Climate Change Response Act 2010. We note that in the TGP decision,<sup>45</sup> counsel submitted that it would be double regulation to attempt to regulate this on a project by project basis, and it would not assist in promoting the purpose of the RMA.
- [187] In TGP it was stated:<sup>46</sup>
- “[121] Notwithstanding those very specific objectives and policies, Provision 5.1.1 of the Plan provides that the regional rules as to discharges to air ...do not apply to discharges from mobile transport sources...and no resource consents are required for such discharges.*
- [122] We consider that there was some merit in the submissions for NZTA and PCC. Those submissions appear to be founded on and are consistent with the findings of the Court of Appeal in Genesis Power Ltd v Greenpeace New Zealand Inc.”*
- [188] We concur.
- [189] Further, on the evidence before us it would be impossible to make a definitive finding as to the net effect of greenhouse gas emissions with the operation of the expressway. Whether it would be possible to definitively calculate that is also unclear. However, we do note that there was evidence before us from Ms Borger to the effect that vehicles operating in a free flowing stream on an expressway will produce an improved air quality outcome. This can be contrasted with the existing stop-go nature of both local and through traffic as has been amply demonstrated in section 10.3. We therefore accept that there is a possibility that there could be a small net overall benefit to air quality from the Project for the Kāpiti District. In any event, we accept Ms Borger's evidence that any adverse effects on air quality from the expressway will not be significant. However, as with TGP, we will not otherwise assess the benefits or disbenefits in terms of greenhouse gases, except to say we are satisfied that any potentially adverse effects are insignificant and would not affect our final conclusion.

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<sup>45</sup> *Final Report and Decision of the Board of Inquiry into the Transmission Gully Proposal EPA 0175*, June 2012.

<sup>46</sup> *Final Report and Decision of the Board of Inquiry into the Transmission Gully Proposal EPA 0175*, June 2012.

## 8.4 THE EXISTING DESIGNATION

[190] We have noted earlier the history of the existing designation that has been in place since 1956. Indeed, it was first approved by the Governor-General as a motorway in 1949. NZTA concedes that effect could not be given to the existing designation to construct the project. They did not contend the effects authorised by the currently proposed designations were part of the permitted baseline.

[191] However, drawing on the rebuttal evidence of Mr Brewer, on behalf of NZTA we consider the applicant's position on the relevance of the existing designation is:<sup>47</sup>

- i) The designation is evidence that a four-laned state highway for much of the designation sought has previously been found acceptable.
- ii) Since 1956, the designation has influenced land use and the expectations of residents have developed to accommodate the proposed motorway and its likely effects.
- iii) Residents and others affected by the existing State Highway 1 have considered the designation as signalling the first step in a development.
- iv) The existing designation has operated as a barrier, creating a degree of severance along its line.

[192] We accept these matters are correct and will be considered relevantly in the sections that follow. Overall, however, the particular fact of the designation is of no great weight in our considerations, which as required still turn on the question of effects and the necessary balancing act required under the RMA.

## 8.5 ADDITIONAL CONSENTS

[193] During the course of the hearing no additional consents have been identified as being required. If during the implementation of mitigation measures and the application of adaptive management additional consents are required as being identified that will be a matter for the relevant local authority.

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<sup>47</sup> From Brewer EIC, pages 11 & 14.

## 8.6 ADAPTIVE MANAGEMENT

[194] In this regard we adopt and concur with the entirety of ss11.8 and 11.9 (the latter dealing with approval and certification) of the TGP decision.

[195] The Board in TGP aptly defined adaptive management as:<sup>48</sup>

*“Put briefly, adaptive management is a system for managing the effects of (generally) large projects where the nature and extent of those effects is uncertain and the outcome of methods proposed to avoid, remedy or mitigate them is similarly uncertain. Adaptive management regimes are commonly established through conditions of consent incorporating management plans which seek to manage the effects of any given activity in a flexible and responsive manner.”*

[196] Further they cited from the s42A report prepared by Mr McLean for the TGP Board, as follows:<sup>49</sup>

*“Adaptive management plans are to enable an adaptive management approach whereby environmental management of a particular activity, or effect can evolve and adapt in response to measured data or best management practices.*

*Adaptive management enables a ‘plan-do-check-act’ approach to be undertaken whereby the on-going monitoring and reporting that is proposed creates a continuous feedback loop from the effects being created, allowing for the most appropriate solution to be utilised or change of method made for any particular environmental effect, however adaptive management must not be used as a substitute for industry best solutions to mitigate a potential adverse effect.”*

[197] The TGP decision then goes on to describe that an essential part of adaptive management regimes is the use of management plans, and they then deal with the two overarching management plans which between them define the overall management plan process. The first is the outline plan (that we have been asked to waive) required pursuant to s176A of the RMA, and the second is the CEMP.

[198] Following that discussion, the TGP Board identified two issues for determination in relation to adaptive management. The first was whether or not the use of adaptive management regimes is an appropriate means of managing environmental effects. The second, what were the essential features of such regimes.

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<sup>48</sup> *Final Report and Decision of the Board of Inquiry into the Transmission Gully Proposal* EPA 0175, June 2012 paragraph 170.

<sup>49</sup> *Final Report and Decision of the Board of Inquiry into the Transmission Gully Proposal* EPA 0175, June 2012, paragraph 172.

[199] In relation to the first, the TGP Board stated:<sup>50</sup>

*“Insofar as the first issue is concerned, the answer is clearly yes. The essential test of any method of managing effects under RMA is whether or not it achieves the purpose of the Act set out in s5(2). There is no reason why an adaptive management regime cannot achieve that purpose. The Environment Court has previously accepted the use of adaptive management regimes in decisions such as Clifford Bay Marine Farms Limited v Marlborough District Council, Lower Waitaki River Management Society Incorporated v Canterbury Regional Council and Crest Energy Kaipara Limited v Northland Regional Council.<sup>51</sup> Whether or not any particular proposal for use of an adaptive management regime achieves the purpose of RMA is a matter to be determined by the relevant consent authority in any given instance.”*

[200] In this instance, the following planning witnesses who appeared before us agreed that adaptive management was an appropriate response in the circumstances of this case:

NZTA: Mr Robert Schofield

KCDC: Ms Emily Thomson

GWRC: Mr Richard Percy

NZHPT: Ms Sacha Walters

[201] Our own planning adviser, Mr Kyle, agreed an adaptive management regime was the most appropriate way to deal with complex effects in this case, as was the case with TGP.

[202] Paragraphs [184] to [187] of the TGP decision are as apposite in this case as in TGP, and we concur in them. It is appropriate to set them out here in their entirety:<sup>52</sup>

*“[184] It appeared to us that there was very little difference in principle in the views of all those who commented on this issue to us although there were differences of emphasis. In their opening submissions, Counsel for NZTA and PCC described the key elements of the adaptive management regime proposed by the Applicants in these terms (footnotes excluded):*

*121.1 The setting of objectives in the consent conditions to provide focused management plan development. The consent conditions also contain performance criteria which*

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<sup>50</sup> *Final Report and Decision of the Board of Inquiry into the Transmission Gully Proposal* EPA 0175, June 2012, paragraph 180.

<sup>51</sup> *Clifford Bay Marine Farms Limited v Marlborough District Council* C131/2003, 22 September 2003 (EnvC); *Lower Waitaki River Management Society Incorporated v Canterbury Regional Council* C80/2009, 21 September 2009 (EnvC); and *Crest Energy Kaipara Limited v Northland Regional Council* A132/2009, 22 December 2009 (EnvC).

<sup>52</sup> *Final Report and Decision of the Board of Inquiry into the Transmission Gully Proposal* EPA 0175, June 2012, paragraphs 184 – 187.

*operate as directly enforceable 'bottom lines' as this was the preference of the Regional Council;*

*121.2 A requirement to design and plan for management of the Project. The proposed resource consent conditions require each management plan to be finalised prior to construction commencing. In addition Condition G.15E requires the Applicant to consult with DoC, Ngati Toa and the Regional Council in relation to the updating and finalisation of the Ecological Management and Monitoring Plan (EMMP);*

*121.3 Management of construction in accordance with the management plans and conditions;*

*121.4 Monitoring and evaluation as required by the management plans and conditions (including pre-construction monitoring). Monitoring is required by the draft EMMP and by many proposed conditions. A new condition requiring the provision of an annual report on all monitoring, is suggested in Ms Rickards' rebuttal evidence;*

*121.5 Review of monitoring results, by the Applicants and their expert advisors, by the Regional Council, and in some instances by stakeholders and a peer review panel. This monitoring will occur regularly to help ensure that, where relevant, steps can be taken before any significant adverse effects occur;*

*121.6 Refinement of management plans and programmes in response to such review.*

*[185] We agree that the matters identified above constitute key elements of an effective adaptive management regime although we may have placed greater emphasis on some elements of that regime.*

*[186] Although the Applicants' submission referred to the need for pre-construction monitoring as part of monitoring and evaluation, we would have separately identified pre-construction monitoring to emphasise that it is a fundamental component of the monitoring regime. Detailed pre-construction monitoring is vital to establish the existing state of the environment at the time of commencement of any project. That must be established to provide a base line against which environmental effects of works might be identified and measured. We note, in this instance, that there has been extensive monitoring already undertaken by the Applicants in respect of many of the components of the environment likely to be effected by TGP.*

*[187] We also emphasise the importance of conditions of consent if adaptive management regimes are to operate properly. In his advice to the Board, Mr Milne identified the need for*

*conditions to be clear, certain and enforceable. Conditions need to contain quantifiable standards and performance criteria against which proposed management plans can be assessed and subsequent operation of the management plans measured. The Board considered that the conditions proposed by the Applicants at the conclusion of the hearing generally achieved those objectives.”*

[203] We concur in the passage cited above and appropriately apply it to conditions we impose.

### **8.6.1 Approval/certification**

[204] This was again a matter that concerned the Board in TGP. Understandably so, because there are two obvious concerns that arise regarding the fact that the initial conditions and draft management plans provided to the Board in TGP, and to us in this hearing, required either approval or certification of such plans by various council officers.

[205] The first concern was the extent to which the TGP Board might be delegating its decision making (or judicial) functions through the process of certification and/or approval by council officers. The second was the issue of just what it was council officers were being directed to certify and approve.

[206] In relation to the first, it is clear that powers to approve resource consents, impose conditions and to cancel and confirm notices of requirement or impose conditions on them lie with us. They may not be delegated to a third party, either in principle or in practice. However, we concur with the manner in which this was dealt in TGP as follows:<sup>53</sup>

*“The Board was initially concerned that the extensive use of management plans which were to be approved or certified by Council Officers rather than the Board, might mean that we were in effect delegating our decision making obligations. Ultimately, we determined that was not the case, provided the conditions of consent imposed contained clear objectives to provide focus to management plan provisions and performance criteria which operate as bottom lines which the management plans must achieve. In other words, the conditions imposed by the Board would identify the performance standards which had to be met and the management plans would identify how those standards were to be met.”*

[207] A number of the conditions initially submitted caused us some concerns in this regard, but as a consequence of further conferencing, refinement and our ultimate decision we are satisfied that the conditions contained in Volume 2 accord with the requirements set out in the second sentence of paragraph 190 of TGP above.

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<sup>53</sup> *Final Report and Decision of the Board of Inquiry into the Transmission Gully Proposal* EPA 0175, June 2012, paragraph 190.

[208] The second issue that raised concern in TGP relating to the nature of the certification/approval of management plans was dealt with by that Board as follows:<sup>54</sup>

*“Insofar as certification or approval is concerned, we understood there to be a distinction between the two terms. Use of the word certify or certification suggests that the role of any certifying person is simply to check and ensure that requirements contained in conditions have been met. On the other hand we understand the term approval to require the exercise of discretionary powers and judgment to determine whether or not a proposed management plan is satisfactory. However, it became apparent to us that the words are in fact used interchangeably. We shall use the word certify.”*

[209] The same applies here with this Project, and we also will use the term ‘certify’.

[210] The TGP Board continued, at paragraph 193, to cite the advice of their legal adviser, Mr Milne. The TGP Board concurred with that advice.<sup>55</sup> Like that Board, we concur with that advice and we agree with the comment at paragraph 194 of the TGP decision:<sup>56</sup>

*“In particular we emphasise the need for conditions to contain clear objectives against which the certifier must check management plans. Conditions imposed by the Board will identify the standards that activities must meet. The certifier will ensure that the proposed management plans achieve those standards.”*

[211] Further, the TGP Board stated:<sup>57</sup>

*We consider that the process for certification of management plans in this case requires the following determinations:*

- *Does the management plan generally accord with draft management plans submitted with the application or provided in evidence to the Board. In that respect, we note that not all proposed management plans, particularly site specific environmental management plans, will have been previously submitted. However such plans must be consistent with the provisions of the higher order management plans which form part of the application documents;*

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<sup>54</sup> *Final Report and Decision of the Board of Inquiry into the Transmission Gully Proposal EPA 0175, June 2012, paragraph 192.*

<sup>55</sup> *Final Report and Decision of the Board of Inquiry into the Transmission Gully Proposal EPA 0175, June 2012, paragraph 193 and following.*

<sup>56</sup> *Final Report and Decision of the Board of Inquiry into the Transmission Gully Proposal EPA 0175, June 2012, paragraph 194.*

<sup>57</sup> *Report and Decision of the Board of Inquiry into the Transmission Gully Proposal EPA 0175, June 2012, paragraph 197.*

- *Has the management plan in question been prepared in accordance with the relevant conditions of consent;*
- *Has consultation been carried out in accordance with the relevant conditions of consent;*
- *Does the management plan meet the objectives or standards prescribed by the relevant conditions of consent. In making that determination the certifying authority will (indeed must) exercise judgement and apply expertise. Where it is determined that a management plan does not meet the objectives prescribed by conditions, the authority may direct changes to the management plan which satisfy it that the objectives are met. [emphasis added]*

*We will return to the matter of conditions later in this decision but we observe that the final conditions proposed by the Applicants at the conclusion of our hearing have been drafted generally in accordance with the requirements we have identified.*

- [212] Again, we concur, and indeed a great deal of effort was made by the majority of experts who gave evidence before us to ensure that all conditions accorded with such requirements. We consider the conditions we have imposed so comply.
- [213] Again, as with TGP, we require that where management plans which require certification and impinge on both regional and territorial functions, they are to be certified by the regional and territorial authorities, each as to their respective jurisdictions. The conditions of consent and notices of requirement adopted by us reflect that requirement.
- [214] As noted, we have concurred in ss11.8 and 11.9 of the TGP decision, and acknowledge the assistance we have derived from that decision. We would add that we had two additional concerns relating to KCDC. The first was the possible perception of lack of independence because of its involvement in the alliance. The second was, given the size of the Project, whether KCDC was adequately resourced to fulfil the necessary complex certification process.
- [215] Evidence we received and submissions made on behalf of KCDC have allayed both our concerns.
- [216] We accept and agree with that evidence and submission. A similar submission was made on behalf of GWRC which we also accept. We see sufficient separation between the council's statutory requirement in relation to certification and its involvement in the alliance. That involvement was for limited purposes, as outlined in NZTA's AEE.<sup>58</sup>
- [217] Our decision in this regard recognises the statutory obligations of KCDC and GWRC. As a consequence we are satisfied that there is no need for the suggested Condition DC.16 imposing the appointment of a conditions auditor.

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<sup>58</sup> AEE, Chapter 1, page 19.

[218] In relation to our second concern, we are reassured by the KCDC commitment to provide sufficient resources to properly fulfil its certification and enforcement obligations. It was made clear to us that if the internal resources of KCDC fell short, the council would ensure that suitable independent expertise would be contracted to fulfil that role under the direction of KCDC officers.

## 9. ASSESSMENT OF ALTERNATIVES

[219] Part E, Section 9 of the AEE sets out NZTA's consideration of alternatives, which it describes as leading to its Board's decision preferring the expressway corridor now proposed. It contains a comprehensive description of the option evaluation and design development phases undertaken, and the methodology adopted in refining the options to NZTA's preferred route. Part E is detailed in its assessment, particularly where regard is had for the supporting investigative and option assessment documents referenced. In its *Overview*, the consideration of alternatives process is broadly summarised. It states:<sup>59</sup>

*“Under the RMA a requiring authority needs to consider alternative sites, routes and methods of undertaking a work when lodging a notice of requirement (NoR) if it does not have an interest in the land sufficient for undertaking the work or the work is likely to have a significant adverse effect on the environment. The Act also requires an applicant to consider alternative methods and locations for resource consents relating to any activity that may have significant adverse effects on the environment or, when an activity involves the discharge of a contaminant, alternative methods of discharge.*

*This Chapter outlines the alternatives that were identified and assessed as part of the process to determine the selected alignment and design of the proposed MacKays to Peka Peka Expressway. This included a detailed analysis of 4 principal route options (i.e. an Expressway alignment within one of the four principal corridor options between MacKays Crossing and Peka Peka: the Western Link Road Corridor, the Western Corridor, the Eastern Corridor and the Existing State Highway Corridor), 12 connectivity options (i.e. number, location and orientation of ramps and interchanges) and 24 alignment sub-options (i.e. local road tie-ins and location).*

*The assessment of alternatives demonstrates that the NZTA, in developing the proposed route, alignment, design, and methodology for the proposed Expressway has considered:*

- *alternative routes (as appropriate);*
- *alternative alignments and interchanges/connections to the transport network;*
- *alternative designs, including construction methods and alternative measures to avoid, remedy and mitigate identified adverse effects on the environment; and*
- *alternative methods of discharging contaminants.*

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<sup>59</sup> AEE, Volume 2, Chapter 9, Part E, Overview.

*The assessment process applied was highly iterative, and involved ongoing refinement of the Project on the basis of information derived from desk top studies, field work, community and stakeholder engagement and detailed technical investigations. The process was also informed by the requirements of Part 2 of the RMA, the objectives of the Project and relevant national policy directives...”*

- [220] We consider this to be an accurate, albeit summarised, description of the process undertaken by NZTA and its Alliance. We do not consider it necessary to describe the alternatives considered in any further detail here.
- [221] It was evident to us that the process involved a period of public consultation led by NZTA, which, as many submitters referred, was extended to a second round of consultation including a further option. The results of the consultation phase are inconclusive in our view and we are unwilling to attach any material weight to the outcome of that process in our considerations.
- [222] Following this, the Alliance made its assessment of alternatives, and in doing so carried out two investigations which are reported as the:
- i) MacKays to Peka Peka Scoping Report (October 2010); and the
  - ii) MacKays to Peka Peka Expressway – Alternative Route Options Report (November 2011).
- [223] These reports set out a comprehensive scoping, option development, sensitivity testing and evaluative process that significantly broaden the range of alternatives considered from that described in the NZTA consultation phase. We can perhaps best summarise the findings of these reports, in particular the *Alternative Route Options Report*, in that there are strong and repetitive indicators, being environmental, property, transport efficiency, benefit and cost indicators, that the route proposed is to be preferred. We note specifically, however, and with some care, that the sensitivity testing that was based on cultural considerations was the only criteria based assessment that ran counter to the predominant outcomes described. We consider the “Cultural” matters more particularly and separately under the same heading.
- [224] There was a range of further and alternate options and methodologies presented to us by expert witnesses and submitters. In summary, these included alternate alignments, in total and in part, alternate connections and interchange arrangements covering most sections of the route. Some of these were accompanied by expert evidence addressing some areas of technical discipline. Many were substantially outside the designation. Overall, these further alternatives will be considered in more detail in section 10.3.
- [225] None of the alternatives were supported by evidence of sufficient detail or reliability to enable us to assess whether they were achievable, viable, or of sufficient merit (on balance) when compared with the alternatives that had been considered, or whether they aligned satisfactorily with the stated *Project Objectives*. The evidence and rebuttal of NZTA was counter to the

further alternatives presented, and in some cases, submissions ran counter to the further alternatives that had been put. Ultimately, the evidence of NZTA explaining how the range of alternatives identified was appropriate with respect to the *Project Objectives*, and why the Project route was preferred, was not seriously controverted.

[226] The evidence we have heard has lead us to conclude that the consideration of alternatives has been sufficiently broad and varied to meet the test for adequate consideration. Indeed, we are satisfied the range of alternatives, sub-options and the methodology (including sensitivity analyses) adopted in the evaluation goes some way beyond the s171(1)(b) threshold for consideration of alternative sites, routes or methods.<sup>60</sup>

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<sup>60</sup> See also section 13.2.1

## 10. EFFECTS OF THE PROJECT

### 10.1 INTRODUCTION

[227] The AEE and Technical Reports lodged by the applicant provided a comprehensive assessment of a wide range of identified effects. In this section of the report we address what we consider to be the determinative regional and project wide effects of the Project. These effects constitute the principal issues which we are obliged to identify pursuant to s149Q(2)(c) RMA. We summarise those effects as follows.

### 10.2 CONSTRUCTION PROGRAMME AND METHODOLOGY

[228] In this section of our decision we provide a brief overview of the proposed programme and methodology for the construction of the expressway. In doing so we rely primarily on the evidence of Mr Goldie, the Alliance Construction Manager.

[229] In his evidence Mr Goldie has identified that there will be two main construction operations. Firstly, the preloading of peat areas to effect ground settlement, and secondly, general road construction which includes other ground improvement works, bridges, pavements, drainage landscaping and ancillary works.<sup>61</sup>

[230] Mr Goldie refers to TR4 "*Construction Methodology*" which was part of the NoR application documents. In particular, he notes that within this report there are sets of drawings which identify the sequence of construction, erosion and sedimentation control measures, construction traffic management and access, construction office and yard areas and the Waikanae River Bridge and associated stream works.<sup>62</sup>

[231] This report is available on the NZTA website and we do not need to repeat its content here.

[232] Many submitters who live near to the proposed expressway told us that they were concerned at having to endure the disruption to their lives from four years of continuous expressway construction. In response, we have examined Mr Goldie's evidence to try and obtain an indication as to what the time period of disruption might be for different neighbourhoods along the expressway.

[233] Mr Goldie advises that the preloading will involve the building of embankments over the deep deposits of peat which exist at the southern and northern ends of the proposed expressway. These embankments, which are to be left in place for 6 to 12 months, are required to consolidate the peat which if left untreated would result in uneven and undulating road surfaces.

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<sup>61</sup> Goldie EIC, paragraph 11.

<sup>62</sup> Goldie EIC, paragraph 15.

- [234] It is not clear from Mr Goldie's forecast construction timetable as to how long it will take to build these preload embankments and how long it will take for their removal ahead of road construction in the deep peat areas.<sup>63</sup>
- [235] The forecast timetable indicates construction being undertaken at different times over different lengths of the expressway. Our interpretation of these lengths, the need for preloading in each length and the times for road construction in the same length areas are set out as follows:
- i) MacKays Crossing to Raumati Road (preloading required and 1 year for road construction);
  - ii) Raumati Road to Kāpiti Road (preloading required and 1 year for road construction);
  - iii) Kāpiti Road to Otaihanga Road (no preloading and 2 years for road construction);
  - iv) Otaihanga Road to Te Moana Road (no preloading and 2 years for road construction );<sup>64</sup>
  - v) Te Moana Road to Smithfield Road (no preloading and 2 ½ years for road construction);
  - vi) Smithfield Road to Peka Peka Road (preloading required and 1 year for road construction);
  - vii) Peka Peka Road interchange (about 1 year for road construction).
- [236] From this, our assessment is that residents living along the expressway, depending on the location, can expect some form of active construction to be taking place in their neighbourhood for between 2 to 3 years.
- [237] In section 10.5.2 which deals with construction noise, we have provided a brief overview of the durations when construction noise is expected to exceed the limits of the New Zealand Standard. In day time, these durations extend from about 6 to 9 months for the area from Poplar Avenue to Mazengarb Road and for bridge construction, about 10 months at Raumati Road, 12 months at Kāpiti Road, 4 months at Mazengarb Road, 2 months at Otaihanga Road and 8 months at Te Moana Road.
- [238] It is our understanding that construction noise would be intermittent both within these overall periods and within each day.
- [239] In addition, night time noise limits are expected to be exceeded for between 4 and 12 nights at bridge sites during the placement of bridge deck beams.
- [240] In his evidence at Table 2, Mr Goldie has summarised his understanding of what the actual and potential adverse construction effects might be including their likely causes.<sup>65</sup> He also lists the individual experts who have prepared

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<sup>63</sup> Goldie EIC, paragraph 20.

<sup>64</sup> We note an inconsistency in the pre loading status for this location contained in Mr Goldie's table with the information contained in Table 7 of TR35, Assessment of Ground Settlement Effects, although this inconsistency does not affect our evaluation.

<sup>65</sup> Goldie EIC, paragraph 71, Table 2: *Summary of Construction Effects on the Environment*.

evidence on each of these effects, the measures these experts have proposed for mitigation and the related designation and consent conditions.

- [241] These effects are those arising from sediment and contaminant discharges to waterways; the dewatering of excavations; disruption to groundwater; dust; oil and chemical spills; noise and vibration; light spill, disruption to terrestrial and freshwater ecological systems; water abstraction for construction; settlement; construction traffic, waste management and disposal and works on contaminated land. Each has been examined in some detail in other sections of this report.

### **Earthworks**

- [242] When preload embankment materials are removed, these will be used as fill elsewhere along the expressway to minimise the need for imported fill material. Outside of the planned preloaded areas, it is planned to remove any peat encountered and to replace this with imported sand fill. This will be mainly in the central section between Kāpiti Road and Smithfield Road. The excavated peat will be stockpiled, dried and then used where feasible to construct the proposed noise barriers along the expressway.
- [243] It will be necessary to dispose of unsuitable and surplus peat outside of the designation and conversely to import some specialist materials. For example, the bottom layer of all embankments will be constructed using imported granular fill to facilitate the passage of drainage through the embankment. This is particularly important given the concerns raised by some submitters (including WOO) that the embankments would act as a dam and constrict natural flow paths.
- [244] More detail on the management of the effects from the construction of the earthwork embankments is set out in the relevant individual sections of this report.

### **Bridges**

- [245] Ground improvement works and the installation of foundations will be noisiest activities during the construction of the expressway bridges. In addition night-time works will be required for the placement of bridge deck beams. Concrete will be obtained from local suppliers and delivered to the Otahainga construction yard (for the prefabricated components) or directly to the bridge sites via SH1 and local roads.

### **Pavements and Haul Routes**

- [246] Once the earthworks, drainage and bridges have been completed in a section of the expressway, the pavements will be laid and sealed on one of the carriageways to enable the immediate protection of the underlying materials. The second carriageway will be completed to sub-base level to protect the sub-grade and then used as the haul route for plant and materials for the construction of the next section of the expressway.

### **Construction Working Hours**

- [247] In his evidence Mr Goldie indicated that the proposed hours of work would be from 0700 to 1800 Monday to Saturday.<sup>66</sup> In answer to our question as to whether consideration had been given to providing some relief or certainty for residences particularly for public holidays, Mr Goldie advised while there had been some consideration, the best course of action was to complete the construction as quickly as possible and that this would be compromised if there were reduced working hours.<sup>67</sup>
- [248] He went on to say that in some of the more densely populated areas along the expressway, some relief could be considered to the working hours including public holidays. It was his view that this could be addressed during the preparation of the relevant management plans, (and we suggest should include consultation with the community through the Community Liaison person provided for in DC.11).
- [249] In the absence of defined working hours, construction activity will de facto be controlled through condition DC.31 which sets out the limits on construction noise. As we have noted in the section on construction noise, for weekdays and Saturdays a noise limit of 70 dB LAeq(T) is proposed to apply from 0730 to 0800 with a lower 65 dB LAeq(T) to apply from 1800 to 2000 on weekdays only.
- [250] The noise limits proposed to apply outside of these weekday and Saturday hours and on Sundays and public holidays effectively preclude noisy construction operations during these periods.

### **Finding on Construction Programme and Methodology**

- [252] The proposed construction programme and methodology will result in many residents having to endure extended periods of construction activity and noisy operations.
- [253] This reinforces the need for the designation and consent conditions for the control and minimisation of adverse effects from construction activities to be both comprehensive in their formulation and rigorous in their application. In turn, this leads on to the suggestions we made during the hearing on the need for independent reviews of management plans and the potential need for an independent project auditor.
- [254] Ultimately, we have decided that a condition requiring the independent review of all management plans should suffice without the need for an independent project auditor. The case made in NZTA's closing legal

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<sup>66</sup> Goldie EIC, paragraph 75.2.

<sup>67</sup> Hearing transcript, page 247.

submission for the deletion of condition DC.16 (for a project auditor) is therefore accepted.

### 10.3 TRAFFIC AND TRANSPORT

[256] Evidence on the subject of Traffic and Transport was received from a number of expert witnesses:

NZTA:	Mr Andrew Murray
	Mr Stephen Hewett
	Mr Noel Nancekivell
	Mr Mike Copeland (Economics)
KCAH:	Mr Tim Kelly
	Mr Fraser Colgrave (Economics)
KCDC:	Mr Don Wignall
GWRC:	Mr Tim Kelly
	Dr Wayne Hastie
APSOC:	Ms Julie-Anne Genter
Save Kāpiti Inc:	Mr Adam Pekol
	Dr Michael Pickford (Economics)
Personal submitter:	Mrs Michelle Lewis

[257] In addition to the expert evidence, there were wide ranging submissions in relation to this subject.

#### Issues Identified

[258] The overall transport issues are centred on the following, broad subject areas:

- i) Type and Design of Road;
- ii) Integrated Transport System;
- iii) Route Security and Resilience;
- iv) Transportation Modeling and Network Capacity;
- v) Peka Peka Road and Poplar Avenue Interchanges;
- vi) Road Safety;
- vii) Access Restrictions;
- viii) Walking and Cycling;
- ix) Construction Traffic Effects; and

x) Walking, Cycling and Equestrian facilities.

[259] Collectively these traffic and transport issues are considered as follows.

#### **Type and Design of Road**

[260] Mr James (NZTA) sets out the context of RoNs in his evidence in chief.<sup>68</sup> By way of a summary he describes, the LTMA requires the Minister of Transport to issue a GPS every three financial years. Mr James' evidence is that the GPS 2009/10 – 2018/22 is confirmed in the GPS 2012/13 – 2021/22 and makes specific reference to seven RoNS projects including the Wellington Northern Corridor (Wellington Airport to Levin). He states that the National Land Transport Programme (NLTP) gives effect to the GPS by establishing investment and revenue priorities for works. He also states:<sup>69</sup>

*“The NZTA considers that to achieve the stated objectives of the Wellington Northern Corridor upgrade, and where traffic volumes dictate, the standard of the upgrade will generally result in a median divided, dual carriageway with grade separation at interchanges”.*

[261] NZTA defines its Project objectives and describes the work it seeks a designation for.<sup>70</sup> It states amongst its objectives, to:<sup>71</sup>

*“appropriately balance the competing functional performance requirements of interregional and local traffic movements, recognising that modal and route choice opportunities need to be provided that enable local facilities and amenities in the Kapiti Coast District to be efficiently accessed; by developing and constructing a cost optimised new State Highway alignment to expressway standards between MacKays Crossing and Peka Peka.”*

[262] The NZTA Memorandum of Counsel describes an expressway as:<sup>72</sup>

*“...a road mainly for through traffic, usually dual carriageway with full or partial control of access. Intersections are generally grade separated.”*

Mr Murray considers the form of road necessary to achieve the objectives, in his EIC. At paragraph 209 and 210 he summarises his findings and the need for a four lane expressway as necessary to achieve the:<sup>73</sup>

*“...efficiency, and journey time reliability and to enhance safety for travel on SH1.”*

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<sup>68</sup> James EIC, paragraphs 20 to 33.

<sup>69</sup> James EIC, paragraph 40.

<sup>70</sup> AEE, Volume 2, Part A.

<sup>71</sup> James EIC, paragraph 67.

<sup>72</sup> NZTA Memorandum of Counsel, 15 January 2013, paragraph 4.

<sup>73</sup> Murray EIC, paragraph 209.

Mr Nancekivell describes, that the physical design parameters for a 100 km/hr expressway affect both the horizontal and vertical alignment designs, and differ from those of a lower speed local road.<sup>74</sup> The fundamental design criteria necessary to achieve an expressway standard road were not challenged by any party to these proceedings.

[263] KCDC opening submissions set out the position as:<sup>75</sup>

*“The Council supports the proposal, subject to appropriate conditions being imposed. In particular, the Council supports a second route through the district to facilitate the separation of local and through traffic and the provision of a second Waikanae River crossing.”*

[264] KCDC raised a number of matters of interest to it that were substantially addressed through its consultation with NZTA during the course of the hearing. The key outstanding transport matters of concern for KCDC are described in the closing submissions and include access controls around interchanges and the potential for future east-west connections across the expressway. We address these separately in this decision.

[265] The evidence of Mr Pekol for Save Kāpiti Inc makes reference to the *Kāpiti SH1 Strategy Study – Technical Report*.<sup>76</sup> In it he identifies that the study:<sup>77</sup>

*“...concludes that building the expressway so as to allow for both a western arterial (the proposed Western Link Road) and an eastern arterial (the Old SH1) was desirable.”*

[266] Mr Pekol confirmed a need for an expressway to be part of an overall future roading solution for Kāpiti, in his own view, where Mr Hassan put to him:<sup>78</sup>

*“So you have in mind a concept of an expressway along the route of Option 3, plus a local road arterial with a third bridge at that point across the Waikanae River as well.”*

[267] The Automobile Association sought the expressway be designated as a motorway. They stated:<sup>79</sup>

*“...that for safety reasons this expressway be designated as a motorway so that the risk of high speed traffic colliding with vulnerable slower road users is eliminated.”*

They also indicated that an alternative method of control could be established through a local bylaw. They described slow moving traffic as anything incapable of moving at less than 70 km/hr. Kāpiti Cycling

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<sup>74</sup> Nancekivell EIC, paragraphs 51 and 52.

<sup>75</sup> KCDC opening submissions, paragraph 1.2.

<sup>76</sup> Pekol EIC, paragraph 43.

<sup>77</sup> Pekol EIC, paragraph 55.

<sup>78</sup> Hearing transcript, page 405.

<sup>79</sup> #266 NZ Automobile Association Representation, 21 May 2012, Section 2, last paragraph.

Incorporated opposed this view and sought amongst other things, retention of cycle access on the expressway.

[268] NZTA describes their position on the safety issues, and in particular that for cyclists in the evidence of Mr Murray<sup>80</sup> and Mr Quinn<sup>81</sup>. That is, that:<sup>82</sup>

*“... the current proposal is for cyclists to be able to use the Expressway itself (utilising the road shoulders). The substantial reduction in traffic on the existing SH1 route will also make that a more attractive route for cyclists.”*

[269] Many submissions represented the view that a local road solution such as was proposed in the WLR would suffice. Submissions on these bases were generally supportive of upgrading the existing SH1 corridor for through traffic movement, some suggesting that this should be to motorway standard.<sup>83</sup>

[270] NZTA produced a Memorandum of Counsel dated 3 December 2012 which describes the difference in legal terms between a Motorway and a Road. It describes the following summarised principal matters related to “motorway”:<sup>84</sup>

- i) A motorway is defined at Section 2 of the Government Roding Powers Act (GRPA) 1989;
- ii) Motorways are declared under the Public Works Act 1981;
- iii) There are no legal frontage rights;
- iv) There are restrictions on lawful places where a motorway can be accessed or egressed;
- v) There are statutory restrictions to vehicle types, persons and animals;
- vi) A motorway is not a road at common law; and
- vii) There are no statutory requirements as to design for a motorway.

[271] NZTA also produced a Memorandum of Counsel in which it describes the differences between the terms “motorway” and “expressway”. It describes that “...the term “expressway” is a design term, not a statutory one”.<sup>85</sup> It also defines “expressway” as:<sup>86</sup>

*“...a road mainly for through traffic, usually dual carriageway with full or partial control of access. Intersections are generally grade separated.”*

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<sup>80</sup> Murray EIC, paragraphs 113 to 116.

<sup>81</sup> Quinn EIC paragraphs 72 to 74.

<sup>82</sup> Murray EIC paragraph 116.

<sup>83</sup> Hearing transcript, pages 2279 to 2281.

<sup>84</sup> From NZTA Memorandum of Counsel, 3 December 2012, paragraphs 8 and 9.

<sup>85</sup> Memorandum of Counsel, 15 January 2013, paragraph 4.

<sup>86</sup> Memorandum of Counsel, 15 January 2013, paragraph 4.

- [272] We do not have the powers to direct a specific road type. The Project Objectives established by the Requiring Authority are specific in seeking to construct a “...new State Highway alignment to expressway standards...”<sup>87</sup>
- [273] We accept the evidence of NZTA as to the design parameters that define an expressway, and we note that this was uncontested. We find that the design described, and which is proposed, is consistent with that which has been defined as “expressway”. Accordingly, we conclude that the type of road that has been described accords with the Project Objectives for construction of an “expressway”, and more particularly, we find they are necessary to produce the efficiency, productivity and safety outcomes that have been described.
- [274] Based on the evidence we have before us, we also conclude that an expressway design is necessary to achieve the “balancing” of “competing functional” performance that the Project Objectives set out. The restrictions that apply to “motorway” are, in our view, inconsistent with the Project Objectives, and also with the access requirements that have been described as being needed in future, such as at Ihakara Street.
- [275] Finally on this point, we are satisfied that should any particular restriction on access or movement prove necessary there are various, appropriate and suitable mechanisms available to the requiring authority and local authority individually to address it. These may include Limited Access Road (LAR) provisions, bylaws or other design and/or land use controls, or even a combination of these or other mechanisms. While these mechanisms do not extend to networks operated by other jurisdictions, we consider that these minor technical complexities and details are best able to be addressed through the NIP, other current agreements and through simple collaboration between the respective authorities as these documents require.

### **Integrated Transport System**

- [276] NZTA sets out in the Project Objectives the importance it attaches to integrating the transport systems of the state highway and local road network, and also with the current and future urban form of Kāpiti District. The directly relevant Objectives are:<sup>88</sup>

*“Appropriately balance the competing functional performance requirements of inter-regional and local traffic movements, recognising that modal and route choice opportunities need to be provided that enable local facilities and amenities in the Kapiti District to be efficiently accessed.”*

*and*

*“To integrate the proposed Expressway into the urban form of Kapiti District by taking into account current and future planned settlement patterns in route alignment selection and expressway design conditions.”*

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<sup>87</sup> AEE Part A, Section 2.6, page 36.

<sup>88</sup> AEE Part A, Section 2.6, page 36.

- [277] Mr Wignall set out a number of technical traffic and transportation matters he considered that KCDC required further certainty about.<sup>89</sup> Underlying the evidence presented by KCDC are the “*Guiding Objectives for Project Alliance Board*”.<sup>90</sup> Three Objectives in particular describe the characteristics that reflect the Project Objectives. These are “*Connectivity*”, “*Local Planning*” and “*Urban Form*”.
- [278] The Expert Conferencing Joint Witness Statement – Traffic and Transportation establishes a number of common grounds between the expert witnesses under the head of “*Operational Issues*”. Dr Hastie’s matter of concern in relation to bus stops was resolved.<sup>91</sup> Other common findings were reached on matters including “*Te Moana Rd Intersection*”, “*Ihakara Street Ramps*”, and “*Footpath Lighting*”<sup>92</sup> in particular, and make reference to work that is necessary to be undertaken through the “...*detailed design*...” stage.<sup>93</sup>
- [279] Mr Murray addresses these matters, with others in his evidence in chief and rebuttal statements. He recommends development of a “*Network Integration Plan*”,<sup>94</sup> and proposes a condition to this effect. The effect of the NIP is to provide a mechanism for collaboration between NZTA and KCDC on development of some of the detailed design features of the expressway at the interface with the local road. The condition proposed includes the following road design features:
- i) Interface of the expressway with Kāpiti Road, Te Roto Drive and Milne Drive;
  - ii) The shared pedestrian and cycle network interfaces with the local roads;
  - iii) Protocols for operating traffic signals;
  - iv) Alternate property access on Kāpiti Road;
  - v) Replacement bus stops at Kāpiti Road and Peka Peka;
  - vi) Design of pedestrian and traffic calming facilities; and
  - vii) The form of intersection controls at Te Moana Road interchange.
- [280] Related to this area of consideration are matters such as urban design, alternative transport mode investment, connectivity and severance that many submissions were made on. We address these matters specifically and separately in their own right. On the matter of the ability to physically link and connect the transport systems, we accept the common views represented by the experts in this area.

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<sup>89</sup> Wignall EIC, paragraph 2.1.

<sup>90</sup> AEE, Appendix A.

<sup>91</sup> Expert Conference Joint Witness Statement: Traffic and Transportation, paragraph 25.

<sup>92</sup> Hearing transcript, page 367.

<sup>93</sup> Expert Conference Joint Witness Statement: Traffic and Transportation, paragraphs 19, 20 and 27.

<sup>94</sup> Murray EIC, paragraphs 274 and 283.

[281] By the time of closing there were still issues between KCDC and NZTA around certain conditions. In relation to those described in the KCDC and NZTA agreement, we are satisfied that the agreement suffices. On the evidence in relation to that, we find that the alternative viewpoints put by the respective planning witnesses do not impact on the ability of the design to achieve the Project Objectives, or for it to be achieved within the designation sought. Rather, we consider they are matters of preference on form and function. From the evidence we heard, for example in relation to the form of intersection controls at Te Moana Rd, either traffic signals or roundabouts could achieve the safety, efficiency and integration outcomes required by the Project Objectives. There were, however, different degrees to which each could achieve the levels of safety or efficiency necessary. We do not consider these decisions of such significance as to warrant a direction one way or the other. The matters are not, in our view, material to determining the NoR. We are satisfied the designs and standards proposed can deliver the safety and efficiency outcomes that have been described, and that the NIP process proposed is a suitable and appropriate mechanism for the determination of these matters of minor design detail.

### **Route Security and Resilience**

[282] Guiding Objective 5 of the Alliance describes the “Resilience” object for the Project as:<sup>95</sup>

*“The Project will improve network resilience in the event of emergencies.”*

The AEE describes:<sup>96</sup>

*“The Project provides the following benefits: ...Improved route security and resilience of the Wellington region’s state highway and the Kapiti district’s networks in the event of significant earthquake, road accidents or other disruption.”*

In defining the *Need for the Project*, the AEE describes that the Project addresses a particular constraint in the network at present, as being a single road bridge across the Waikanae River.<sup>97</sup>

[283] The AEE makes the observation that, through the consultation process, a number of submitters raised the potential issue of natural hazards, in particular concerns about fault lines in the area, and also for liquefaction effects. The stated response describes:<sup>98</sup>

*“Potential for earthquake events has been addressed within the proposed Expressway design, and a high standard of seismic design is required under NZTA policies to ensure a high level of network resilience.”*

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<sup>95</sup> AEE, Appendix A: Guiding Objectives for the Project Alliance Board, Objective 5.

<sup>96</sup> AEE, Executive Summary, page 4, bullet point 2.

<sup>97</sup> AEE, Section 2.4.3, paragraph 4.

<sup>98</sup> AEE, Section 10.15.6.2, page 309.

[284] Seismicity is discussed further in section 10.11 of this report.

[285] In relation to “*Economic Effects*”, the AEE describes:<sup>99</sup>

*“Lifeline benefits – Economic benefits accrue from the additional road crossing of the Waikanae River provided by the proposed Expressway, and in addition leads to better network resilience in the event of road accidents or natural disasters closing the existing SH1 alignment.”*

[286] The AEE goes on to summarise the regional social effects as resulting in:<sup>100</sup>

*“... significant positive social benefits for transport, accessibility and connectivity to the Wellington region in terms of more reliable travel, improved accessibility through reduced travel time and accessibility resilience in the event of an accident of natural disaster) ...”*

These statements and observations on resilience and travel security are supported in the evidence in chief of Mr James and Mr Murray.

[287] Submissions were received contending that the route security would be compromised by the proposed location.<sup>101</sup>

*“The road will also be at risk from the effects of sea level rise and flooding due to storm surges. Moving the SH1 away from its current alignment towards the coast threatened route security, and makes the state highway vulnerable to long term closure after a major natural event such as an earthquake or tsunami.”*

We found little technical evidence to support this proposition. We have responded to these concerns in section 10.11 (seismicity) and section 10.21 (climate change). We address the matters of flooding and inundation separately, although we note the EIC of Ms A Williams (Groundwater), describing an assessment of tsunami hazard. For tsunami risk, Ms A Williams concludes that:<sup>102</sup>

*“Tsunami risk to the Kapiti Coast has been evaluated and evacuation zones developed by GWRC and KCDC together with Civil Defence. The Expressway crosses the inland extent of the “Yellow” zone (1:2500 year return period or “maximum credible” tsunami) at two locations, Waikanae River and Te Moana interchange over Te Moana Road and Waimeha Stream. In both cases the Expressway will be long span bridges that will allow an inland surge of water up these waterways... The Expressway will pass over Te Moana Road, and will not impede evacuation on this road toward the designated assembly area at Waikanae Park. It is therefore concluded that the Expressway will not alter the tsunami*

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<sup>99</sup> AEE, Section 29.5, page 591, sub-section f.

<sup>100</sup> AEE, Section 30.3.1, page 599.

<sup>101</sup> #663 Beechey N, paragraph 21.

<sup>102</sup> A Williams EIC, Annexure C, Conclusion pages 2 and 3.

*risk to residents on the Kapiti Coast in the vicinity of the Expressway.”*

[288] It was clear to us that significant sections of the expressway were elevated, and, in particular at river crossings, had taken account of flood (including the effects of forecast global warming) and tsunami risks. Other natural hazards such as earthquake risk have been appropriately factored into the seismicity assessments. We also found significant evidence as to the improved reliability of travel (both in road safety terms and also in travel time consistency terms). On this matter, and in the absence of material evidence to the contrary, we accepted the evidence and analysis of the expert witnesses as to the merits of route security and resilience.

### **Transportation Modelling and Network Capacity**

[289] The applicant’s transport modelling and network capacity assessments are principally set out in the following documents:

- i) AEE, Section 12 Traffic and Transport;
- ii) TR32: Assessment of Transport Effects;
- iii) TR34: Traffic Modelling Report; and in
- iv) Mr Murray, EIC.

[290] By way of an overall summary we understand the transportation modelling has established principal traffic demands from the GWRC multi-modal model, it has assessed district level transport network effects within a “*Project Assignment Model*” and has then investigated particular corridors and intersections using tailored transportation models for those purposes. There was no evidence counter to the appropriateness of the models for the assessment purposes described.

[291] Modelling was used to assess the Do Minimum case, principally for the year 2016, and the Project case for the future year 2026. There was also sensitivity testing of the modelling. This examined what is described as the “*Full growth land use assumptions (as agreed with KCDC) for each of the four significant growth areas*”.<sup>103</sup> TR34 also describes sensitivity model testing of a northbound off-ramp at Ihakara Street Extension.

[292] The Expert Conferencing Joint Witness Statement: Traffic and Transportation describes areas of disagreement between the experts as to the modelling. These appear to centre principally on the assumptions adopted in the models and on the model calibration. Outside of the conferencing statement, where further information was to be provided by Mr Murray to Mr Pekol,<sup>104</sup> and separately in relation to information to be provided to Mr Kelly for KCAH<sup>105</sup>, we found these matters were satisfactorily addressed between the respective parties. Mr Murray included further

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<sup>103</sup> TR34, section 8.4.1 2026, page 93, paragraph 1.

<sup>104</sup> Expert Conference Joint Witness Statement: Traffic and Transport, paragraph 15.

<sup>105</sup> Kelly EIC, paragraphs 97 to 102.

modelling of the Ihakara St ramp in his Annexure I to his rebuttal evidence. He concludes from this:<sup>106</sup>

*“The model indicates some increases and some decreases in traffic through the interchange [Kapiti Road] area, but no net reduction in traffic... The transport assessment for the Airport Plan Change previously identified that such connections could create adverse effects on those local streets, so such a connection may not be suitable for that reason.”*

[293] Mr Wignall outlined the principal matter of concern in relation to capacity was on Kāpiti Road. He states:<sup>107</sup>

*“The AEE and other background information forecast difficult operating conditions for traffic and other modes in the absence of improvements to adjacent junction and links on Kapiti Road... My particular operational concerns include the potential for long delays for local turning movements to and from Kapiti Rd, associated safety concerns and associated inefficiencies between closely spaced and uncoordinated junctions.”*

[294] Mr Murray cited the further modelling that followed Mr Wignall’s request and proposed further discussion of it in expert witness conferencing.<sup>108</sup> Mr Murray’s conclusion on these matters was:

*“...that the design of the project and the associated effects assessment is appropriate.”<sup>109</sup>*

[295] In relation to the traffic effects to be expected on Kāpiti Road, Mr Murray describes:

*“...KCDC has approved consent for development of the Bunnings site on Milne Drive, which includes a precondition to install traffic signals at the Kapiti Road / Milne Drive intersection. Subsequent modelling showed that with these signals installed the performance of this section of Kapiti Road with the interchange in place actually improved.”<sup>110</sup>*

[296] The conferencing statement describes:<sup>111</sup>

*“It is agreed that the assumptions (the do-minimum network) used for 2026 in the Assessment of Environmental Effects are not unreasonable subject to appropriate sensitivity testing.”*

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<sup>106</sup> Murray Rebuttal, paragraph 165.

<sup>107</sup> Wignall EIC, paragraphs 3.4 and 3.5.

<sup>108</sup> Murray Rebuttal, paragraph 166.

<sup>109</sup> Murray Rebuttal, paragraph 167.

<sup>110</sup> Murray EIC, paragraph 250.

<sup>111</sup> Expert Conference Joint Witness Statement – Traffic and Transport, paragraph 16.

[297] Submissions were also received in relation to the extent that future growth to the north of Peka Peka and Ōtaki had not been included in the modelling. Mr Bills, submitter number #433, (and similarly Mr Stephenson) states:

*“We do not believe that the full effects of the Peka Peka to Ōtaki expressway on the movement of traffic along local roads that connect to the roundabout at Peka Peka has been included in the modelling in this MacKays to Peka Peka application.”<sup>112</sup>*

He describes this is in relation to traffic that might be generated following construction of the Peka Peka to Ōtaki section of the expressway. On this matter, we observe that it is only for the Board to consider the application before us. The effects of any future roading proposal will need to be assessed, developed and mitigated as part of that proposal.

[298] A submitter, Mr Harding (and others) made submissions expressing concern as to inconsistencies in the traffic growth assumptions that were modelled, when compared with the observed and flat profile of traffic growth on SH1 since 2007.<sup>113</sup> We understood from TR34 that future traffic demand forecasts were determined from the Wellington Transport Strategy Model, which determines trips, not based on historical trends, but rather on forecast land use and employment data.<sup>114</sup> We understood the model to be multi-modal, and therefore capable of distributing trips between general traffic and public transport services. The forecast land use scenarios assessed are described as extending out to 2031.<sup>115</sup>

[299] Mrs Lewis (submitter number #427) made a representation based on her expert knowledge in the area of transportation planning and also drawing from her experience having lived and worked in the United Kingdom. She did not take part in expert conferencing on this subject. She describes concerns in relation to the transport modelling, analysis and resulting economic assessment.

[300] Overall, we conclude that the performance assessments and modelling that has been undertaken demonstrate that the design proposed is capable of achieving performance targets that have been established in the *“Guiding Objectives for the Project Alliance Board”* for the expressway. It is clear to us that the traffic modelling has adopted a suitably robust approach, has had appropriate regard for forecast regional and district growth and settlement planning and has appropriately examined growth sensitivities and network connectedness. We consider the various model results provide a fair and reliable prediction, as well as can be expected from such tools, as to the forms of connection and linkage necessary within the network to achieve the performance targets, both on the expressway and the local road, that were described.

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<sup>112</sup> Hearing transcript, page 2051.

<sup>113</sup> #595 Harding, page 3.

<sup>114</sup> TR34: Traffic Modelling Report, Page v.

<sup>115</sup> TR34: Traffic Modeling Report, Section 5.2, page 22.

- [301] We are satisfied that the Project will not result in more than a minor effects on the capacity of adjacent intersections that are outside of the designation. Also, with the inclusion of other external factors, such as the Kāpiti Road / Milne Drive signals related to the Bunnings consent, (which we accept may or may not occur), we understood there is the potential that the traffic capacity may improve. That said, we recognise that there are finer points of design and evaluation to be completed for the purposes of construction. We are satisfied that these matters of detail are appropriately provided for and will be addressed through the NIP process that has been proposed.

### **Peka Peka Road and Poplar Avenue Interchanges**

- [302] The application describes partial interchanges with south facing ramps only at Poplar Ave and north facing ramps only at Peka Peka.
- [303] Harrisons Country Garden World submitted that travel distances would not be reduced for persons travelling to the area from the north, although it did acknowledge that:<sup>116</sup>

*“It is not a significant increase in distance when travelling from Peka Peka to join the existing SH1 and travel south but distances are still greater than the current configuration.”*

This submission, as did others, referenced travel time delays it considered would result for emergency services.

- [304] No submissions were received from the emergency services authorities. We acknowledge that emergency services, in this case, may not be expedited in their servicing of the Peka Peka area as a result of the expressway. We did not see sufficient evidence, however, to indicate they would be slowed or adversely affected in more than a minor way by the Project.
- [305] Mr Schofield describes that a full interchange option was considered at Peka Peka but was rejected because:<sup>117</sup>

*“The costs of building a full interchange in this location outweighed the benefits relative to the amount of traffic that would use this interchange; and*

*The presence of a full interchange would be contrary to District Plan policies of managing urban growth further north than the Waikanae North urban growth area in that it would create a development pressure node with the attendant requirements for public infrastructure”*

- [306] Mr Murray describes in relation to the Poplar Avenue interchange:<sup>118</sup>

*“Those properties on the northern (east-west) section of Leinster Avenue would cease to be able to directly access the existing SH1, and therefore would have to use Poplar Avenue. This new route*

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<sup>116</sup> Harrisons Country Garden World Arthur Bills Resettlement Trust, Submission, page 5.

<sup>117</sup> Schofield EIC, paragraphs 337.1 and 337.2.

<sup>118</sup> Murray EIC, paragraph 125.2.

*would be up to 700 metres longer than the current route. The extra travel time of just under 1 minute for this movement would be off-set by the significantly reduced delays (and improved safety) using the new Poplar Avenue interchange.”*

- [307] For northbound travel for these properties, a total additional travel distance of up to 1.7 kilometres and 2 minutes is described by Mr Murray. He concludes in relation to all effects to property access:<sup>119</sup>

*“... these are generally off-set by improved travel times and safety for other movements from these properties, especially those wishing to turn right onto the existing SH1.”*

- [308] When assessed in respect of the Project Objectives that are established, we were satisfied that the proposal is consistent with them. In particular, it is evident that the decision taken in relation to a partial interchange at Peka Peka, for example, has been influenced by “...current and future planned settlement patterns...”<sup>120</sup>

- [309] It is also evident to us that through the multi-criteria evaluative process, and also the assessment of alternatives processes, a range of alternate connections and interchange arrangements have been adequately considered. Some properties, in particular those located on Leinster Avenue, will incur additional travel time effects, albeit, to some degree, these will be off-set by travel time and safety benefits elsewhere on the expressway. We accepted there are sound integrated land use planning and cost reasons to support the configuration of interchanges as are proposed. We heard that while this means only half interchanges are to be established at Poplar Road and Peka Peka Road at present, it would not necessarily preclude full interchanges being established in future where land use and traffic demands supported such connection. Overall, however, we are of the view that the net adverse traffic movement effects, while changed, will be minor. To this extent, we accept the evidence of the applicant on this point.

### **Road Safety**

- [310] Mr Murray sets out the current traffic crash history and the operational crash forecast in his evidence in chief. The existing SH1 crash history is summarised in his evidence as:<sup>121</sup>

*“That analysis showed that, for the section of SH1 from MacKays Crossing to Peka Peka, about 16.6 injury crashes per year could be expected, whereas on average 20.4 injury crashes were recorded each year. This indicates that the actual crash rate on this section of highway is higher than that for similar sections of State highway elsewhere in New Zealand.”*

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<sup>119</sup> Murray EIC, paragraph 134.2.

<sup>120</sup> AEE, Section 2.6, page 36.

<sup>121</sup> Murray EIC, paragraph 71.

- [311] The future year analysis of road safety, described by Mr Murray investigates the expected change in road crashes on the existing SH1 and adds the expected new crashes on the proposed expressway (based on similar roadway sections elsewhere in New Zealand). The principal finding there is:<sup>122</sup>

*“This analysis shows that the total crash costs in this corridor are expected to reduce by over \$3 million (38%) every year.”*

The analysis described includes predictions made on the basis of the future year forecast traffic flows at 2026.

- [312] Mr James describes amongst the “Needs giving rise to the Project”:<sup>123</sup>

*“Road Safety—the current SH 1 geometry is sub-standard with out-of-context curves and an inconsistent speed environment. Combined with the multiplicity of intersections and accesses, this contributes to its poor crash history and a high incidence of injury accidents.”*

- [313] The Project Objectives specify as a principal Objective to “*Enhance safety of travel on SH1*”.<sup>124</sup> TR1 – Design Philosophy Statement describes the “*Guiding Objectives for the Project Alliance Board*” as requiring the expressway to be designed “...to meet the KiwiRAP 4 star standards”<sup>125</sup>

- [314] The Automobile Association submitted on the matter of safety, particularly as it related to slow road users. On this basis they sought the expressway be designated as Motorway. We have addressed this consideration under the heading “Type and Design of Road” above.

- [315] Other submissions and representations were made addressing safety concerns, and in particular factors such as “*high speed traffic and freight is mixed with short distance, locally focused journeys.*”<sup>126</sup>

- [316] Mr Wignall and some submitters described safety concerns in relation to the form of intersection control to be established at Te Moana Rd.<sup>127</sup> Mr Wignall also expresses safety concerns arising from his projections for queuing at Kāpiti Road. We accepted the representations made by submitters that pedestrian safety could be enhanced with signalised intersections at Te Moana Road. Mr Munro describes that his:

*“motivation for a signal based intersection is on pedestrian, cyclist and someone walking a horse, safety.”*<sup>128</sup>

- [317] He went on to acknowledge that there may also be other road safety and broader consequent considerations that would need to inform the overall

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<sup>122</sup> Murray EIC, paragraph 150.

<sup>123</sup> James EIC, paragraph 64.

<sup>124</sup> AEE, Section 2.6, page 36.

<sup>125</sup> TR1: Design Philosophy Statement, 9: Safety, page 5.

<sup>126</sup> Gradwell Representation, page 4, paragraph 1.

<sup>127</sup> Wignall EIC, paragraphs 6.8 to 6.10.

<sup>128</sup> Hearing transcript, page 1453.

consideration of safety through selection of intersection control, and he cites not just potential crash rates but that “*a more relevant statistic is injury crashes.*”<sup>129</sup> We accept that statement.

- [318] We received anecdotal submissions as to the potential for adverse road safety effects to result from the Project. In response to this, there was evidential analysis presented by the applicant, based on established crash analysis and comparative methodologies. It was very clear to us that the existing state highway is significantly less safe to travel on when compared with other similar roadway sections around New Zealand and there was substantial evidence not only about the number of crashes, but also the high degree of severity, and the consequent significant congestion that also results from incidents on the road. In relation to the substantial question of safety, we were satisfied the expert evidence demonstrated that a safe expressway design would be achieved and this in turn would achieve the Project Objectives.
- [319] There were a number of relatively detailed road safety considerations, such as at Te Moana Road. It was clear to us that there were changes in and competing emphasis between road safety for different road users, traffic delay, and other social costs. However, in our view there was no evidence to indicate a material change in the overall safety outcome that was counter to the works achieving the stated Project Objectives. The NZTA recommended that these matters be addressed through the NIP condition. The merits of the NIP condition were not raised in KCDC closing submissions as “outstanding issues”. We are satisfied there are suitably robust mechanisms proposed to achieve design outcomes without affecting the overall integrity of the designation.

### Access Restrictions

- [320] KCDC sought a specific condition to prevent all vehicle access from the expressway to adjacent properties within 1 kilometre of any interchange.<sup>130</sup> The purpose of this request was described to us as to protect against unwanted land use development. We understood this would otherwise be controlled by rules within the KCDP.
- [321] Mr Munro describes a concern arising, in his view, from the relative attractiveness for development to locate close to its interchanges. He states:<sup>131</sup>

*“While the partial access interchanges proposed at Poplar Avenue and Peka Peka will go a long way to avoiding the de facto creation of new centres at these locations, there will still in my view be considerable interest from larger-scale and other commercial activities (those that do not rely on agglomeration benefits and co-location to meet their needs) in seeking development at the interchanges. While I support full access at Te Moana Road, this*

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<sup>129</sup> Hearing transcript, pages 1453-454.

<sup>130</sup> KCDC opening submissions, paragraph 6.3.

<sup>131</sup> Munro EIC, paragraph 6.2.

*access may also give rise to commercial activity close to but still very detrimental to Waikanae.”*

His concern is that District Plan land use based controls take too long to implement and that even then they are inadequate to prevent these outcomes.

- [322] Ms Thomson further sets out proposed changes to the NIP condition, seeking controls on access within one kilometre of on/off ramps on the expressway, and also location and timing triggers for future road links at Leinster Avenue, Ferndale Road and Ngarara Road.<sup>132</sup> She relies on the evidence of Mr Munro on these matters. We heard evidence of a Project Agreement between KCDC, NZTA and GWRC as to the potential for these future connections. This was introduced through the evidence of Mr Baily<sup>133</sup> and also addressed to Mr Munro in cross examination.<sup>134</sup> Mr Munro confirmed his understanding of the “Agreement” when it was put to him that:<sup>135</sup>

*“...there is a common acknowledgement between the Council and the NZTA that there is no immediate necessity, in principle, in terms of providing for those, it’s not an immediate necessity, it’s a matter of future planning, isn’t it?”*

- [323] In addressing “Urban Design and Land Use” Mr Baily describes that the selection of interchange locations and forms has been influenced by and supports KCDC’s urban growth plans. In relation to how land use development should be controlled and managed he states:<sup>136</sup>

*“There are clearly some benefits that can derive from allowing better forms of urban development at the town centres and where urbanisation exists. In sections of the existing State Highway where KCDC considers urban development to be undesirable (such as in the Otaihangā stretch or at the north and south intersections at Poplar Avenue and Peka Peka Road) then the District Plan and limited access road/frontage requirement tools can be applied to inhibit development potential.”*

- [324] Mr Munro discussed a number of mechanisms available to contribute to the management of access to land, particularly around interchanges. Mr Munro sought a condition ensuring no vehicle access within one kilometre, principally of interchange points.<sup>137</sup> He agreed with then proposition put to him by Mr Hassan, that “...the issue is really primarily a question of land use control.”<sup>138</sup>

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<sup>132</sup> Thomson EIC, paragraph 9.36.

<sup>133</sup> Baily EIC, paragraph 76.

<sup>134</sup> Hearing transcript, pages 1447-1450.

<sup>135</sup> Hearing transcript, page 1447.

<sup>136</sup> Baily EIC paragraph 107.

<sup>137</sup> Munro EIC, paragraph 6.1.

<sup>138</sup> Hearing transcript, page 1441.

[325] Mr Hassan, through cross examination of Mr Munro, explored the “gateway” tests under s104D of the RMA.<sup>139</sup> It was described and discussed that, for a non-complying land use, there are separate policy and effects based pathways to be assessed against. Mr Munro accepted this and described the relevance of affected party approval processes in any determination under the effects pathway test.

[326] One of the tools for access control that was described to us, involved establishing a LAR status under the Government Rounding Powers Act 1989. In addition to the evidence and transcript of cross examination of Mr Munro that we heard on this point, NZTA lodged two Memorandum of Counsel (dated 3 December 2012 and 15 January 2013) which contained reference to statutory processes and application of LAR’s and as to our ability to direct such a mechanism. The 3 December 2012 Memorandum describes that local authorities separately have powers under the Local Government Act 1974, s346A, to impose LAR controls on roads within their jurisdiction. The 15 January 2013 Memorandum of Counsel discusses how access controls are affected by designation of the road as expressway, motorway, LAR, and also where the designation remains in place or is uplifted. It submits that:

*“...it would be also open to the Board to express a preference for or against motorway status (as opposed to LAR) for the Expressway in its findings. However it is submitted that it would be beyond jurisdiction for the Board to seek to go further and impose a condition to require such an outcome.”<sup>140</sup>*

[327] The *expert conferencing joint witness statement: urban design* presents a common urban design viewpoint on related land use planning and access. It states in relation to future use of residual land that:

*“The planning for the future land use of such areas should be undertaken through a comprehensive structure plan process...”<sup>141</sup>*

In relation to future land use at interchanges it states:

*“The expressway is likely to result in significant pressure to relocate commercial and retail development close to the expressway interchanges. We do not support this and the conditions of the designation should limit such development as far as possible.”<sup>142</sup>*

[328] The principal issue put to us is one of the desire to control land use, in achieving the growth and development objectives of KCDC, and to contribute to this outcome by controlling access to land. We accept that, in its broadest context, the management and control of land use and development is an important and significant issue. The “Project Objectives” set out specifically:

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<sup>139</sup> Hearing transcript, pages 1442-1444.

<sup>140</sup> Memorandum of Counsel for NZTA, 15 January 2013, page 3, paragraph 11.

<sup>141</sup> Expert Conferencing Joint Witness Statement: Urban Design, paragraph 22.

<sup>142</sup> Expert Conferencing Joint Witness Statement: Urban Design, paragraph 24.

*“To manage the social, cultural, land use and other current and future environmental impacts of the Project on the Kapiti District and its communities by, as far as practicable, avoiding, remedying or mitigating any such effects through route alignment selection, expressway design and conditions.”<sup>143</sup>*

It is clear to us there is a Project intention to “*manage land use*” through “*alignment selection, expressway design and conditions*”.

- [329] The stated objective is clear in our view. It does not specify as an outcome the management of land use through “access control”. We heard evidence about the selection of alignment and alignment options and on design mechanisms such as physical constructions, and we were presented with recommendations about network integration.
- [330] We accepted the evidence of KCDC as to the potential adverse land use outcomes that could result, and the evidence of where such effects had occurred in other similar examples. We heard evidence from Ms Thomson, Mr Munro and Mr Schofield in particular on the role of a District Plan as the primary land use management tool. We noted in particular that Mr Munro had advised KCDC and had input to the establishment of objectives, policies and rules of the proposed KCDP, released during the course of this hearing. His view remained, however, that the land use controls available within District Plans were generally insufficient, even in non-complying land use situations, to achieve the outcomes sought and described by KCDC here.
- [331] It was of some concern to us to hear evidence to the effect that a local authority could not establish controls within its own District Plan sufficient to achieve the land use outcomes it sought. In short, we do not accept the proposition that the District Planning tools are inadequate. Notwithstanding this we heard that councils have other mechanisms also available to them. We heard evidence of the availability of a wide range of tools available equally to the local authority, as to the applicant, should it consider it necessary to supplement land use planning rules with other access control mechanisms.
- [332] We have had regard for the “Agreement” that was referenced as existing between NZTA and KCDC. This is, as we are to understand, the NZTA Sandhills Expressway - Project Objectives, adopted by KCDC 22 April 2010. There are clear objectives in that Agreement as to the outcomes that KCDC seeks here. They are not as succinctly reflected in the Project Objectives for the designation, the subject of these proceedings and which we are to particularly consider. It is for KCDC to determine the particular level of assurance it receives from the “Agreement”. We received submissions from NZTA as to the process related to uplifting designations, and the availability for a local authority to object through that process as it considered warranted.
- [333] The question for us is, therefore, the weight that we should afford a side agreement, unable to be enforced within this jurisdiction. We have

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<sup>143</sup> AEE, Section 2.6, page 36.

determined to recognise the document and the issues it describes. We have considered the merits of those issues in so far as the Project described is able to meet the stated Project Objectives.

- [334] Weighing all of the evidence put before us, and having recognition for the proposed NIP condition as well as other statutory processes, we have concluded that the imposition of a restriction is not necessary for the requiring authority to achieve its stated objectives.

### **Construction Traffic Effects**

- [335] TR33 describes the temporary traffic management plan proposed during construction. The overall approach is summarised as:<sup>144</sup>

*“In general it is expected that traffic impacts will primarily be monitored and managed in accordance with the Construction Traffic Management Plan (CTMP) (CEMP Appendix O, Volume 4) which forms part of the Construction Environmental Management Plan...”*

- [336] The CTMP outlines the procedures, requirements and standards that are considered necessary for managing the construction effects. It describes:<sup>145</sup>

*“To reflect this dynamic environment and uncertainty in the potential construction and traffic management methodologies, this document prescribes a process whereby Site Specific Traffic Management Plans (SSTMP) will be developed by the NZTA’s Project team and approved by the Road Controlling Authority (RCA). It defines how and when the NZTA’s Project team will be required to consult with stakeholders and what kinds of mitigation measures will be necessary for the anticipated range of impacts.”*

- [337] It also defines a performance monitoring system including measuring key indicators such as travel times on the network and stakeholder survey in consultation with KCDC as the approving authority.

- [338] Many submissions sought construction work mitigation in the form of limiting the number of days per week for work, avoiding work over public holidays and conditions on construction noise.<sup>146</sup>

- [339] Some of the key reasons cited for these reliefs include avoiding noisy working periods when children are home from school on holidays, recognising the needs of elderly or those who are at home during the day and exposed to construction noise on an on-going basis. The applicant has described an indicative working day comprising 0600 to 1900.<sup>147</sup> Mr Hewett also stated that night time work may be necessary in some areas, particularly in relation to bridge construction, although he had investigated alternatives in some cases to enable that work to occur during the day in

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<sup>144</sup> TR33: Assessment of Temporary Traffic Effects, Section 1, page 1, paragraph 5.

<sup>145</sup> CEMP Appendix O: Construction Traffic Management Plan, page 1, paragraph 5.

<sup>146</sup> #683 Donaldson Submission, page 4, Construction Mitigations.

<sup>147</sup> TR33, Appendix A, Section 1.1, paragraph 1. Refer also Goldie Rebuttal, paragraph 14.

order to minimise night time noise effects for neighbours. We understand the principal constraint on the type of work that can be undertaken as being controlled by the construction noise conditions. The proposed SCMP sets out the intentions to consult on construction working hours including weekend and public holiday works if these are intended. It also proposes to include provision to recognise and where practicable, avoid particular times of day which have been identified as being particularly sensitive for neighbours.

[340] Expert witness conferencing identified some areas of disagreement between the witnesses. The principal areas of outstanding disagreement relate to the management of pedestrians and cyclists through construction areas, management of access to the Otaihanga construction yard and the effects of additional traffic at SH1 / Kāpiti Road intersection. Mr Hewett describes that the analyses that have been undertaken indicate delays and continued safe provision is able to be achieved. He describes that the management plans are to be developed in accordance with a national Code of Practice for Temporary Traffic Management, and that the plans require certification by KCDC prior to the commencement of works on the site. He described a concern in his view that the code of practice was too generous in its permission to delay motorists and recommended a reduced delay threshold. He stated that SSTMPs were proposed to address areas where access or construction movements introduced some complexity. These too were to be submitted to KCDC for certification prior to any implementation. Mr Hewett submitted that the issues of detail around traffic management planning were best addressed through the management plan process.

[341] On the basis of the evidence before us, we consider that construction traffic management planning needs to be carefully considered, monitored and refined in response to live traffic conditions on any given day. It is necessary that the development of plans and management strategies respond to local peak traffic conditions and emergency services access requirements. We consider it appropriate, as has been described to us, that construction is staged to make most effective use of the designation corridor for construction traffic movements and to minimise the number of movements on public roads. We heard evidence from Mr Wignall as to the need to safely provide for pedestrians and cyclists through construction managed areas and we accept the importance of this to these road users. The recommended conditions include a requirement for the review of prepared management plans. Other than the evidence of the applicant itself on the matter of acceptable delay, which it recommended reducing further, there was no evidence to indicate that the codes referred to were not appropriate in these circumstances. On the basis of the evidence before us, we are satisfied that the mechanisms proposed for assessment, monitoring and planning provide a safe and effective way of managing and controlling construction traffic effects. In particular, we are satisfied that the processes established and which require KCDC certification, are suitably robust to protect the interests of road users and communities.

### Walking, cycling and equestrian facilities

- [342] Mr Murray and Mr Nancekivell both describe the dedicated pedestrian, cyclist and bridleway facilities that are proposed as part of the Project.<sup>148</sup> Mr Murray summarises the off-road pathway alignment and its connections, and also sets out that it is the intention that cyclists will be able to use the expressway itself. Two dedicated cross expressway cycle/pedestrian bridges are proposed, one located about 600 metres north of Poplar Road near Leinster Avenue, and the other about 600 metres north of Kāpiti Road, linking the shared pathway with Makarini Street.
- [343] Mr Baily describes that the Project will deliver connectivity gains for walkers and cyclists, and that these are delivered:<sup>149</sup>
- “...as a result of a separate Project Agreement between NZTA, KCDC, and GWRC”.*
- [344] Mr Baily also describes and is the author of the ULDF (TR5). The purpose of this document is described as being to ensure the urban and landscape design concepts of the Project are appropriately designed.<sup>150</sup> He states that the:<sup>151</sup>
- “ULDF also identifies principles (section 5.12) for the Pedestrian and Cycleway and Bridleway Design, so as to ensure the safe and functional facility is provided.”*
- [345] We received evidence, submissions and representations addressing these three areas. These are helpfully and generally summarised, and responded to in the evidence of Mr Baily.<sup>152</sup> Many of the submissions were opposed to each other, e.g. Kāpiti Cycling Incorporated supported cycling on the expressway whereas the Automobile Association opposed that facility. Others addressed design and connectivity issues, such as the adequacy of width on the shared cycleway/bridleway path. On this point, we noted that the equestrian movements were designed to occur on the grassed section adjacent to the formed pedestrian/cycle path.
- [346] A number of designation consent conditions have been proposed by NZTA and are referenced in these same paragraphs of Mr Baily’s evidence. It was apparent to us that the submission points were largely based on fears and concerns, in part based on experiences elsewhere. However there was no quantitative evidence that indicated the design standards would not achieve safe and appropriate outcomes.
- [347] We noted that the final designs had not been developed to a comprehensive stage, but that there were sound design principles and strategies that demonstrated the safety, quality, suitability and connectedness outcomes to be achieved, and that these could be achieved. Based on the evidence

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<sup>148</sup> Murray EIC, paragraphs 111-116; Nancekivell EIC, paragraphs 103, 104 and 126.

<sup>149</sup> Baily EIC, paragraph 76.

<sup>150</sup> Baily EIC, paragraph 43.

<sup>151</sup> Baily EIC, paragraph 149.

<sup>152</sup> Baily EIC, paragraphs 138-151.

presented to us, we were satisfied that an appropriately safe standard and quality of facility would be achieved. In so far as the two cross expressway structures are concerned, proposed condition DC.5 makes a commitment that these will be constructed prior to the expressway being operational. Provisions were also incorporated by NZTA into the conditions (DC.59A) requiring it to engage with relevant advisory groups and neighbourhoods in the development of the designs. We considered these provisions necessary and appropriate.

## 10.4 LIGHTING

[348] *TR8: Assessment of Lighting Effects* describes the lighting standards proposed, the effects of lighting and the mitigation that is proposed. It describes both the operational and temporary construction effects of lighting. In general terms, lighting is proposed at interchange locations, along sections of the walkway/cycleway route and for temporary construction purposes. At section 3 it describes the potential adverse effects of lighting in relation to spill lighting, glare, sky glow, construction activity and headlight sweep effects. The applicant has recommended compliance with the “*Road Lighting Standard AS/NZS 1158*”. The report concludes that:<sup>153</sup>

*“...there are no areas where excessive spill light or glare will be prevalent to residential properties.”*

[349] NZTA’s closing submissions describe that the only expert evidence presented to us was by Mr Gibson, and it also notes that there was no cross-examination of this expert.<sup>154</sup>

[350] Submissions and representations were received on the subject of lighting. Mrs Mackay describes in her representation a concern about the light spill arising from vehicle headlights on her property and generally on residents along the expressway.<sup>155</sup> Mr Gibson describes and addresses a number of submissions in his evidence in chief and also in the rebuttal evidence of 24 October 2012. The Waterhouse’s submission expressed concern about light pollution and in particular loss of night sky vista.<sup>156</sup> The Anderson representation was concerned, as others were about light spill onto their property from the interchange lighting.<sup>157</sup> KCDC also submitted through the evidence of Mr Munro and Ms Thomson on the safe levels of lighting provided on the walkway/cycleways, in particular the matters relating to personal safety as well as visual conspicuity.

[351] Overall, the weight of evidence, supported by the standards and controls that have been recommended as conditions concludes that safe and appropriate measures are in place to achieve compliance with accepted New Zealand Standards. We are satisfied that the design can achieve the standards and adequately protect environments adjacent to the expressway from adverse effects. We are also satisfied that the recommendations require integration of lighting design with the principles of crime prevention through environmental design (CPTED). To this extent, we accept the evidence presented by the applicant’s expert as to design and mitigation of lighting effects.

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<sup>153</sup> TR8: Assessment of Lighting Effects, page 31, paragraph 2.

<sup>154</sup> NZTA closing submissions, paragraph 45.

<sup>155</sup> #404 R Mackay Representation, paragraph 47.

<sup>156</sup> #432 Waterhouse Representation, page 1 and 2.

<sup>157</sup> #678 Anderson Representation, page 3, paragraph 3.

## 10.5 NOISE AND VIBRATION

[352] Evidence on the subject of noise and vibration was received from a number of expert witnesses:

NZTA: Ms Siri Wilkening (construction and operational noise)

Mr James Whitlock

KCDC: Mr Malcolm Hunt

[353] In introducing this section of our decision on noise and vibration, we note that following the November 6, 2012 expert conference, there were no residual matters of disagreement among Ms Wilkening (Noise) and Mr Whitlock (Vibration) for NZTA and Mr Hunt (Noise and Vibration) for KCDC.

[354] The noise expert called by APSOC (Dr Wildmo-Seerup) did not attend this conference and was not a signatory to the agreement reached. As her evidence focussed primarily on the impacts of noise levels on the mental and physical health of those living near to the expressway particularly during construction, we will respond to this in our section on public health.

[355] In his evidence Mr Hunt records that around 362 of the 725 submitters expressed concern about the effects of noise and vibration from the expressway.<sup>158</sup> These concerns were backed up in many of the oral representations made to us during the hearing.

[356] Given the levels of concern, even with the agreement reached among the experts, it is incumbent on us to be satisfied that the measures proposed to mitigate the effects of noise and vibration to acceptable levels during both the operation and construction of the expressway will meet the requirements of the RMA.

### 10.5.1 Operational noise

#### The New Zealand Standard NZS 6806

[357] The noise experts have applied the New Zealand Standard *NZS 6806:2010 Acoustics-Road traffic-noise-New and altered roads* (NZS 6806) for the evaluation and mitigation of road traffic (operational) noise.

[358] As we understand it, the earliest applications of this standard have been for NZTA's projects at Waterview and Transmission Gully. We also understand that the Boards who considered these projects raised concerns over the suitability of some aspects of the standard (it is roading authority centric) when determining acceptable effects in the context of the RMA.

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<sup>158</sup> Hunt EIC, paragraph 3.1.

[359] It is against this background that we consider it necessary to provide some context on the approach adopted in NZS 6806 for the evaluation and mitigation of road traffic noise for the Kāpiti expressway. In doing so we draw heavily on Ms Wilkening’s evidence.<sup>159</sup>

- i) Unlike other New Zealand noise standards which apply numerical noise limits, NZS 6806 sets out a hierarchy of noise criteria;
- ii) The standard distinguishes between new roads and roads that are being altered under three different noise categories:

Category	Altered Roads (dB L <sub>Aeq(24h)</sub> )	New Roads (dB L <sub>Aeq(24h)</sub> ) <sup>160</sup>
A (External)	64	57
B (External)	67	64
C (Internal)	40	40

- iii) The proposed Kāpiti expressway has been classified by the experts as a *new road* for the purposes of evaluating the effects of traffic noise except that where it connects at each end with the existing SH1 it has been classified as an *altered road*;
- iv) A noise level of dB L<sub>Aeq(24h)</sub> is defined as the equivalent continuous (time averaged) A-weighted sound level, or put in more simple terms, the average noise level over a 24 hour period;
- v) The hierarchy of compliance under NZS 6806 is that if it is not practicable to achieve Category A with noise mitigation in place, then Category B applies, then, if it is not practical to achieve either the Category A or Category B *external* noise criteria, and the *internal* noise level of any habitable space in a PPF exceeds 45 dB L<sub>Aeq(24h)</sub> Category C should apply;
- vi) We note that, unlike other New Zealand noise standards which apply a night-time noise penalty, (for example the airport standard applies a penalty of 10 dB), this is not the case with NZS 6806. Against this, in her evidence<sup>161</sup> Ms Wilkening includes a graph showing the variation in traffic noise over a typical 24 hour period where the daily average internal noise level is 45 dB L<sub>Aeq(24h)</sub> or the Category C trigger level. Because of reduced traffic volumes at night-time compared with during the day, this graph shows that night-time internal noise levels can typically be between 5 and 10 dB less than the daily average;
- vii) The 45 dB L<sub>Aeq(24h)</sub> criterion is based on the trigger level for habitable rooms within buildings adjacent to roads as recommended in New Zealand Standard AS/NZS 2107: 2000 “Acoustics-Recommended design sound levels and reverberation times for building interiors”. If the 45 dB L<sub>Aeq(24h)</sub> trigger level is exceeded, NZS 6806 requires that

<sup>159</sup> Wilkening EIC, paragraphs 31-49.

<sup>160</sup> New Roads with a predicted volume of 2,000 to 75,000 AATD (Annual Average Daily Traffic) in the design year). Higher limits apply where there are higher traffic volumes.

<sup>161</sup> Wilkening EIC, paragraph 47.

building modifications (noise insulation) be undertaken to achieve an indoor sound level of no more than 40 dB  $L_{Aeq(24h)}$ . The reason for the 5 dB difference is that if modifications are to be undertaken, these should provide for a meaningful reduction in noise level;

- viii) In order to justify the cost and impact of a proposed mitigation measure, NZS 6806 includes criteria for the mitigation measure to be implemented only if it would achieve an average reduction of 3 dB  $L_{Aeq(24h)}$  and, in addition, for areas of low residential density (generally rural or semi-rural areas), a minimum reduction of 5 dB  $L_{Aeq(24h)}$  at any assessment position;
- ix) A cluster of assessment positions is defined as being at least 3 PPFs on the same side of the road and within 100 metres of each other;<sup>162</sup>
- x) PPFs or Protected Premises and Facilities are defined in Section 1.4 of the Standard as buildings used for residential activities, maraes, and spaces used for overnight patient medical care and teaching areas in buildings used for education. PPFs do not include premises and facilities not yet built other than where a building consent has been obtained which has not yet lapsed;
- xi) In their predictive modelling of noise from road traffic, noise experts develop what could be described as the *base noise mitigation measures* for optimal noise mitigation;
- xii) These measures are then evaluated by an inter-disciplinary team of experts for their effects on noise, landscape, urban design, ecology, engineering, social impact and cost;
- xiii) These inter-disciplinary experts then agree on *Best Practicable Option noise mitigation measures* (the BPO) which in some situations in taking account of non-noise influences can result in reduced levels of noise mitigation from those established in the *base noise mitigation measures*;
- xiv) Property owners who will be affected by traffic noise do not participate in this BPO selection process; and
- xv) Typical mitigation measures include acoustic barriers of different heights, lengths, locations and construction (e.g. timber or earth bunding) and low noise generating road surface paving such as OGPA.

### District Plan Noise Provisions

- [360] Ms Wilkening told us that the traffic noise provisions in the operative KCDP are a reproduction of the NZTA developed *Guidelines for the Management of Road Traffic Noise—State Highway Improvements (1999)*, for new roads carrying more than 5,000 vehicles per day and that these Guidelines have now been superseded by NZS 6806.

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<sup>162</sup> NZS 6806, Section 2.2, page 22.

- [361] For residential zones, KCDP *D.1 Residential Zone Standards, (ii) Transportation Noise, (b) Predicted Future Excessive Noise Routes* states that the only future road in the district predicted to become an excessive noise route is the Sandhills Arterial (or the WLR). For this route, there is a requirement that no dwelling shall be erected within 80 metres of the boundary of the WLR Designation except where an external noise level of no more than 60 dB  $L_{10(18 h)}$  can be achieved at a point 1 metre from the facade of the dwelling, with an internal noise level of no more than 40 dB  $L_{10(18h)}$  in all internal rooms with the windows closed.
- [362] We note that the residential zone noise criteria metric in the KCDP (L 10(18h)) is different from that used in NZS 6806 (LAeq(24h)) and that a direct comparison between the two criteria is not possible. Ms Wilkening does state, however, that the KCDP urban zone criteria are similar to the NZS 6806 criteria of 57 dB  $L_{Aeq(24h)}$  (external) and 40 dB  $L_{Aeq(24h)}$  (internal).<sup>163</sup>
- [363] For rural zones, the operative KCDP at *D.2 Rural Zone, Controlled Activity Standard, New Roads, Traffic Noise from New Roads* requires such roads to be designed and constructed so that traffic noise levels at 10 years following the opening of the route do not exceed the ambient sound levels by more than the limits in the following table:

Ambient Noise Levels (dBA) $L_{eq(24hr)}$	Noise Limit (dBA) $L_{eq(24 hour)}$
Less than 43	55
43-50	Ambient + 12
50-59	62

- [364] The noise metric for the rural zone in the Guidelines is the same as that used in NZS 6806.
- [365] A key distinguishing feature between NZS 6806 and the KCDP traffic noise standard for rural zones is that the former is based on limiting *absolute noise levels* rather than *increases* above ambient levels, whereas the latter is the other way around, i.e. it is based on limiting *increases* rather than *absolute levels*.
- [366] TR15 quite correctly points out that the KCDP provisions do not apply to the proposed expressway as they relate only to the WLR. We have nevertheless found them to be a useful measure in assisting us with our evaluation of the impact of the levels of the *increases* in predicted noise levels above the ambient noise levels along the expressway compared with the absolute levels. In doing so we stress that we have not used these noise levels as having any statutory backing in relation to our findings on traffic noise.

### Western Link Road

- [367] In her evidence, Ms Wilkening refers to a number of submitters who contend that the traffic noise from the WLR (if it had been built) would have lesser

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<sup>163</sup> TR15, page 16.

effects than the expressway.<sup>164</sup> To respond, Ms Wilkening prepared a predictive traffic noise model for the WLR. She based this on traffic and topographical information which she obtained from the hearing evidence for the WLR designation. This included traffic speeds of 50 kilometres per hour between Poplar Avenue and Mazengarb Road and 70 kilometres per hour between Mazengarb Road and Peka Peka.

- [368] Given that the traffic data she used was for 15,000-20,000 vehicles per day with 5% heavy vehicles, it is not entirely clear to us whether her modelling was based on the originally proposed four lane WLR from Raumati Road to Te Moana Road or for the reduced two lane road eventually adopted by KCDC.
- [369] Ms Wilkening also cautions that the alignments of the WLR and the expressway are not directly comparable in some parts. For example the expressway deviates significantly from the WLR alignment at its southern end until just north of Raumati Road and in the areas immediately to the north and south of Te Moana Road.
- [370] Where the two alignments are the same, (and with the qualifications she has made), Ms Wilkening's modelling indicates that the noise levels could be expected to be similar for both the expressway and the WLR. She notes also that the existing ambient noise environment is very quiet in many areas, and that the introduction of a road whether it be the WLR or the expressway would result in noticeable increases in noise levels and a significant change in the character of the existing noise environment.

#### **Traffic Noise Assessment**

- [371] Based on the application of NZS 6806, *TR15: Assessment of Traffic Noise Effects* provides a detailed assessment of the predicted traffic noise and the proposed BPO noise mitigation measures agreed among the interdisciplinary experts in the different environments along the proposed expressway.
- [372] The TR15 assessment sets out the predicted traffic noise levels from the operation of the proposed expressway as well as the increases above existing ambient levels all with the proposed noise mitigation measures in place.
- [373] Indicatively for the Kāpiti expressway, Ms Wilkening points out that the predicted traffic volumes are between 12,000-21,000 vehicles per day, that an increase of 10,000 vehicles per day would result in a noise level increase of about 3.4 dBA, and that such an increase would be classified as a *perceptible change* in perceived noise.<sup>165</sup> She goes on to say that an increase in noise level of 5-8 dBA would be classified as being an "*appreciable change*" and that an increase of around 10 dB "*would be equivalent to a perception of a doubling of loudness*".

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<sup>164</sup> Wilkening EIC, paragraph 137-139.

<sup>165</sup> Wilkening EIC, paragraph 23.

- [374] Drawing on the information provided in TR15, what follows is a summary of the assessment of the predicted traffic noise in different environments in each of the four sectors of the expressway, the predicted increase in noise levels from existing ambient levels and the BPO mitigation measures proposed following conferencing between the noise and other discipline experts. We also highlight any locations where the *BPO noise mitigation measures* agreed following the evaluation by the interdisciplinary experts have resulted in reduced noise mitigation from those proposed in the *base noise mitigation measures*.
- [375] With the qualifications we have already made about their lack of statutory backing, we have also included comparisons of the predicted noise levels with the KCDP rural zone criteria which we have referred to as the KCDP criteria. We have also identified those locations where there is a common alignment between the proposed expressway designation and the existing designation.
- [376] For ease of reading, we have referred to the noise levels as simple decibels or dBs without including the LAeq(24h) metric.
- [377] While the level of information we have provided might seem to be overly detailed, this has been deliberate in response to the concerns raised by so many submitters about the effects of traffic noise along the length of the proposed expressway.

### ***Sector 1 MacKays Crossing to Raumati Road***

- [378] Sector 1 which is on a different alignment from the WLR has been assessed under three receiving environments, west of the expressway in the Leinster Avenue area and both west and east of the expressway in Raumati South.

#### ***Sector 1: Area 1: West of Expressway: Leinster Avenue***

- [379] This area is relatively densely populated with 21 PPFs. TR15 records that the existing ambient noise levels are between 55 and 58 dB depending on the distance and elevation from SH1.
- [380] With the mitigation option proposed (a two metre high bund), 15 PPFs would receive Category A noise levels and six Category B with noise levels ranging from 52 to 61 dB, all within the Category B 64 dB upper limit.
- [381] Ten of the PPFs would receive a change in noise level of less than 1 dB, seven between 1 and 2 dB, two between 3 and 4 dB and two between 5 and 8 dB.
- [382] All of the predicted increases would meet the KCDP criteria.
- [383] As a comment, we note that the ambient levels (55 to 58 dB) stated in TR15 do not appear to be correct as the increases in noise levels from ambient are stated to be up to 8 dB whereas the maximum predicted noise level is only 61 dB.
- [384] In summary, the noise *levels* at all of the PPFs are predicted to be within Category A and the *increases* in noise levels all are within the KCDP criteria.

*Sector 1: Area 2: West of Expressway: Raumati South*

- [385] This area is not densely populated with only 12 PPFs and low existing ambient levels in the mid 40 dB range.
- [386] With the mitigation option proposed (“do minimum” which includes OGPA and a 1.1 metre high edge safety barrier on the bridge), nine PPFs would receive Category A noise levels and three Category B with the overall noise levels ranging from 49-62 dB.
- [387] Two of the PPFs would receive a change in noise level of between 3 and 4 dB, five between 5 and 8 dB, three between 9 and 11 dB and two greater than 11 dB (up to 15 dB).
- [388] Though not stated in TR15, it would seem that the increases in noise levels for the chosen BPO should satisfy the KCDP criteria for most of the PPFs although not for 2 PPFs where the increase is predicted to up to 15 dB, the KCDP criteria for these ambient noise levels being increases within an upper limit of 12 dB.
- [389] While they will all be within Category A or B levels, when compared with the existing environment, most of these PPFs will receive noticeable increases in noise levels with some being at least double. We note that a *base noise mitigation* option for a two metre high barrier on the bridge was discounted as the reduction in noise levels from this did not satisfy the criterion in the standard for mitigation to achieve at least a 3 dB noise reduction for any three or more houses or at least 5 dB for any individual house. In addition the inter-disciplinary team discounted the two metre bridge barrier option on adverse visual grounds.
- [390] In summary, we note that the noise *levels* at three PPFs are predicted to be within Category B and that two PPFs will have *increases* in noise levels over the KCDP criteria. This area would not have been affected by the existing designation.

*Sector 1: Area 3: East of Expressway: Raumati South*

- [391] This eastern area contains the Conifer Court residential area with 11 PPFs all somewhat removed and elevated from the expressway with low existing ambient levels in the 46-47 dB range.
- [392] With the mitigation option proposed (a two metre barrier along the expressway), all 11 PPFs would receive Category A noise levels of up to 57 dB.
- [393] One of the PPFs would receive a change in noise level of 1 - 2 dB, three between 3 and 4 dB, five between 5 and 8 dB, and two between 9 and 11 dB.
- [394] While all will be within Category A, when compared with the current environment, seven of these PPFs will receive noticeable increases in noise levels.
- [395] With the chosen mitigation option, there would be compliance with the KCDP criteria.

[396] A mitigation option of a three metre high wall along the boundary of one property (110 Raumati Road) which would have given an additional 2 dB noise reduction was discounted primarily for visual reasons.

[397] In summary, the noise *levels* at all of the PPFs are predicted to be within Category A and the *increases* in noise levels are all within the KCDP criteria.

***Sector 2: Raumati Road to Mazengarb Road***

[398] Sector 2 is heavily populated particularly between Kāpiti Road and Mazengarb Road and immediately south west of Kāpiti Road. This sector is on the same alignment as the WLR. It sector has been assessed in five different receiving environments, east and west of the expressway at Raumati and Rata Roads, south west of the expressway at Kāpiti Road, east of the expressway between Kāpiti Road and Mazengarb Roads and in this same length, west of the expressway at Cheltenham Drive.

*Sector 2: Area 1: West of Expressway: Raumati Road*

[399] The area north of Raumati Road and west of the expressway contains only four PPFs, all a significant distance away with an existing ambient noise level of around 52 dB.

[400] With the mitigation option proposed (a two metre high barrier extending 240 metres along the expressway and OGPA) all four PPFs would receive Category A noise levels of up to 52 to 53 dB.

[401] The PPFs would receive a negligible change in noise level, one less than 1 dB and three between 1 and 2 dB.

[402] The chosen noise mitigation option would result in compliance with the KCDP criteria.

[403] In summary, the noise *levels* at all of the PPFs are predicted to be within Category A and the *increases* in noise levels are all within the KCDP criteria.

*Sector 2: Area 2: East of Expressway: Rata Road*

[404] This eastern area contains four PPFs. All of these are somewhat removed from and below the level of the elevated bridge section of the expressway with existing ambient levels of around 52 dB.

[405] With the mitigation option proposed (do minimum with OGPA and a 1.1 metre edge barrier on the expressway bridge) two of the four PPFs would receive Category A noise levels and two Category B with these noise levels ranging between 51 and 59 dB.

[406] One of the PPFs would receive a change in noise level of less than 1 dB, and three between 5 and 8 dB, these latter three being noticeable increases in noise levels. A mitigation option of a 350 metre long 2 metre high wall along the eastern side of the expressway which would have placed all of the PPFs within Category A was discounted by NZTA because of the impact of its intrusive height in relation to the adjoining dwellings.

[407] The chosen noise mitigation option would result in compliance with the KCDP criteria.

- [408] In summary, the noise *levels* at two PPFs are predicted to lie within Category B with the *increases* in noise levels all within the KCDP criteria. The designation in this area parallels that of the existing designation.

*Sector 2: Area 3: South west of Kāpiti Road*

- [409] This is a residential area with 35 PPFs (some double storied) in the general location of Milne Drive, Observation Place and Quadrant Heights. These PPFs are elevated above the expressway and have reduced natural shielding from terrain or other barriers. The area has low existing ambient levels in the 43 to 44 dB range due to the current absence of major roads.
- [410] With the extensive mitigation option proposed (a 1-7 metre high dune extending over 275 metres at the southern end by Quadrant Heights, a 2 metre high barrier extending between 200 metres and 500 metres along common property boundaries, a 210 metre long 3 metre high barrier along the expressway and ramp and a 275 metre long 1.1 metre high barrier along the expressway towards the bridge over Kāpiti Road and with OGPA surfacing), all but one PPF (21 Observation Place) would achieve Category A.
- [411] For this option, three of the PPFs would receive a change in noise level of between 3 and 4 dB, 11 between 5 and 8 dB, 12 between 9 and 11 dB and nine more than 11 dB. The upper floor at 21 Observation Place while still within Category B (just) would receive a four-fold increase in noise level of up to 20 dB.
- [412] While all but one of the dwellings will be within Category A, it can be seen that 21 of these 35 dwellings will receive at least a doubling of noise from the existing ambient levels. No viable noise mitigation options provide an outcome which is significantly different from the chosen option. Barriers higher than two metres on the residential boundaries were discounted because of their adverse effects on visual impact and light.
- [413] The noise levels for at least nine of the PPFs would exceed the KCDP criteria for a limit of a 12 dB increase above the ambient noise levels.
- [414] This is a location which would have been affected by similar levels of traffic noise if a road had been built on the existing designation. While there will be noticeable noise from heavy vehicles using the on and off ramps at the Kāpiti Road interchange, it seems likely that there would have been similar noise from vehicles braking and accelerating on a road built on the existing designation even if this was "*at grade*".
- [415] We visited the home of Mr and Mrs Smith who live at 51 Milne Drive close to the Kāpiti Road intersection. They are particularly concerned at the effects of traffic noise including the closeness of the proposed two metre high noise barrier along their boundary which is only two metres from their kitchen and dining rooms. These concerns were reiterated in their representation to us. We note from NZTA's closing submission that further discussions are

planned between NZTA and the Smiths and that proposals may exist for alternative mitigation measures.<sup>166</sup>

- [416] We also note from the closing legal submission that NZTA has agreed for a noise mitigation wall to be constructed along the Anderson's boundary at 17 Datum Way. (We also visited this property). This submission noted that the wall had been inadvertently omitted from the NZTA plans showing the noise mitigation measures and that while this had not been communicated with the Andersons it was now included in updated plans provided to us.
- [417] In summary, the noise *levels* at one PPF is predicted to lie within Category B with nine PPFs predicted to have *increases* in noise levels above the KCDP criteria, one house with a predicted four-fold increase to 20 dB at its upper storey. The designation in this area parallels the existing designation.

*Sector 2: Area 4: East of Kāpiti Road to Mazengarb Road*

- [418] This is the most densely populated area along the expressway and with the existing designation having been in place for considerable time, residential development forms virtually a straight line along the expressway boundary, there being some 147 PPFs including ten double story buildings. The area has low existing ambient levels in the range of 42 to 44 dB due to the current absence of major roads. The exceptions are at either end near to Kāpiti Road and Mazengarb Road where ambient noise levels are around 49 dB.
- [419] The mitigation option proposed comprises 625 metres of 1.1 metre high barrier, 155 metres of 2 metre high barrier, 55 metres of 3 metre high barrier, and 1015 metres of 4 metre high bunding with OGPA surfacing. The number of PPFs which would be Category A or B have not been specifically identified in TR15 although the indications are that about 10 of the 147 PPFs would be Category B.
- [420] For this option, three PPF's would receive a change in noise level of between 1 and 2 dB, four between 3 and 4 dB, 70 between 5 and 8 dB, 52 between 9 and 11 dB and 18 more than 11 dB with some receiving increases of up to 18 dB.
- [421] As can be seen, 63 of the 147 dwellings in this area will receive at least a doubling of noise from the existing ambient levels. TR15 notes that there are no viable noise mitigation options available to provide a significantly different outcome for this area from that proposed. TR15 also notes that traffic noise from the expressway will result in a major adverse effect on the currently quiet noise levels enjoyed by residents along this section of the proposed expressway.<sup>167</sup>
- [422] Noise levels for at least 18 of the PPFs would exceed the KCDP criteria for a limit of a 12 dB increase above the ambient noise levels.
- [423] In summary, the noise *levels* of ten PPFs are predicted to lie within Category B with 18 PPFs predicted to have *increases* in noise levels above the KCDP

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<sup>166</sup> NZTA closing submissions, paragraph 440.

<sup>167</sup> TR15, paragraph 7.4.4 j.

criteria, some predicted to have increases of up to 18 dB. The designation in this area parallels that of the existing designation.

*Sector 2: Area 5: West of Kāpiti Road to Mazengarb Road.Cheltenham Drive*

- [424] The Metlife Retirement Village is located just south of Mazengarb Road with 42 single storey dwellings (PPFs) within 100 metres of the edge of the proposed expressway. The area has low existing ambient levels of about 45 dB due to the current absence of major roads.
- [425] With the mitigation option proposed (225 metres of a 4 metre high bund with 295 metres of a 2.5 metre high barrier and with OGPA), all PPFs would be within Category A.
- [426] For this option, 18 PPF's would receive a change in noise level of between 3 and 4 dB, 15 between 9 and 11 dB and four more than 11 dB with a maximum increase of 12 dB.
- [427] While all being within Category A, 19 of the 47 dwellings in this area will receive at least a doubling of noise from the existing ambient levels.
- [428] Noise levels for at least four of the PPFs would be at about the KCDP criteria upper limit for a 12 dB increase above the ambient noise levels in the rural area.
- [429] In summary, the noise *levels* at all PPFs are predicted to lie within Category A with 4 PPFs predicted to have *increases* in noise levels above the KCDP criteria. The designation in this area parallels that of the existing designation.

**Sector 3: Mazengarb Road to North of Te Moana Road**

- [430] Sector 3 has a rural residential character with low population. Over most of its length, it is on the same alignment as the WLR. It has been assessed in six different receiving environments, east and west of the expressway north of Mazengarb Road, at Otaihanga and Kauri/Puriri Roads, and east, north and south of Te Moana Road.

*Sector 3: Area 1: West of Expressway: Mazengarb Road*

- [431] The western area north of Mazengarb Road contains eight PPFs all sited well below the level of the expressway with low existing ambient noise levels of around 45 dB.
- [432] With the mitigation option proposed (a 2 metre high barrier extending 475 metres along the expressway and OGPA surfacing), all eight PPFs would receive Category A noise levels of between 52-56 dB.
- [433] Two of the PPFs would receive a change in noise level of between 5 and 8 dB and six between 9 and 11 dB. While all within Category A, most of the dwellings in this area will receive at about a doubling of noise from the low existing ambient levels.
- [434] All of the predicted noise levels would meet the KCDP criteria.

[435] In summary, the noise *levels* at all PPFs are predicted to lie within Category A and all PPFs are predicted to have *increases* in noise levels within the KCDP criteria. The designation in this area parallels that of the existing designation.

*Sector 3: Area 2: East of Expressway: Mazengarb Road*

[436] This eastern area contains two PPFs at about the same level as the expressway, not shielded by the intervening terrain and with low existing ambient levels of around 45 dB.

[437] With the mitigation option proposed (a 2 metre high barrier extending from the Mazengarb Road Bridge to past the dwellings and with OGPA surfacing); one dwelling would receive Category A noise and the other Category B with the noise levels ranging from 56 to 59 dB.

[438] The increase in noise level at this latter PPF would be slightly above the KCDP noise criteria.

[439] In their oral presentation, Mr Neville Alexander and Ms Rosemary Neilson expressed concern about the effects of traffic noise on their property at 339 Mazengarb Road.

[440] Following this presentation, Mr Nicholson from NZTA met with Mr Alexander and Ms Neilson to discuss their concerns. In reporting back to us on this meeting Mr Nicholson advised that Mr Alexander and Ms Neilson had a particular concern about the noise mitigation option which had been selected by NZTA for this location.<sup>168</sup> This was that they had specifically said they preferred option 1 and not option 2 which they understood had been chosen by NZTA.

[441] Mr Nicholson was able to advise them that option 1 was in fact the selected option. From TR15 we confirm Mr Nicholson's advice.

[442] In summary, for this area, the noise *levels* at one of the two PPFs is predicted to lie within Category B with one predicted to have an *increase* in noise levels slightly above the KCDP criteria. The designation in this area parallels that of the existing designation.

*Sector 3: Area 3: Otaihanga Road Area*

[443] The area around Otaihanga Road is rural in character with four PPFs, two on the west side of the expressway and two on the east side. There are low existing ambient noise levels of around 47 dB.

[444] As there are considerable distances between each of the four dwellings, in terms of NZS 6806, the low residential density criteria would apply, i.e. mitigation should achieve a minimum reduction of 5 dB at any assessment position, in order to justify the cost and impact of any mitigation.

[445] TR15 records that there was extensive discussion among the experts as to the extent of the noise mitigation which should be provided in this area. In the end, the selected option (which provides only limited noise mitigation)

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<sup>168</sup> Hearing transcript, page 2297.

was a 1.1 metre high 430 metre long barrier on each side of the expressway with OGPA surfacing.

- [446] A second option for a 2 metre high 360 metre long barrier on the eastern side was rejected for urban design and visual reasons and also because this would achieve a noise reduction of only 4 decibels for one dwelling only and hence not satisfy the NZS 6806 5 dB noise reduction criterion. A third option for a 2 metre high 590 metre long barrier on the eastern side of the expressway which would achieve Category A noise levels for all four dwellings was rejected for similar reasons.
- [447] The TR15 report does not state the actual noise levels which would be received by the 4 PPFs under the chosen option except to note that all but one would be below 60 dB with the remaining dwelling receiving 62 dB. It would appear that it would be the two PPFs on the western side which would receive Category A and the two on the eastern side Category B.
- [448] Three of the four PPFs would receive a change in noise level of between 9 and 11 dB and one over 11 dB, i.e. all would receive at least a doubling of noise above the existing ambient levels.
- [449] The noise levels at each of the four PPFs would exceed the KCDP criteria.
- [450] In summary, the noise *levels* at two PPFs are predicted to lie within Category B with four PPFs predicted to have *increases* in noise levels above the KCDP criteria. The designation in this area parallels that of the existing designation.

*Sector 3: Area 4: El Rancho*

- [451] While the El Rancho Christian Holiday Camp with its various buildings is outside the 100 metre assessment area defined in NZS 6806, it has nevertheless been assessed by the NZTA experts because of its specialist nature.
- [452] The camp has low existing ambient noise levels of around 40 dB.
- [453] With the proposed OGPA expressway surfacing and with a 1.1 metre high concrete edge barrier on the western edge of the expressway extending northwards some 450 metres from the southern end of the Waikanae River Bridge, (including the 1.1 metre high barrier along the edge of the bridge), the El Rancho building noise levels are predicted to be within 48 to 56 dB or all within Category A.
- [454] These predicted levels represent an increase of between 8 and 16 dB above existing ambient levels, or for the most part a doubling of perceived noise.
- [455] Compared with the KCDC criteria, the noise limit for El Rancho would be 55 dB or just below the predicted upper limit of 56 dB.
- [456] As noted in his evidence as well as providing noise evidence on behalf of KCDC, Mr Hunt also provided noise evidence on behalf of El Rancho.<sup>169</sup> Mr Hunt concluded that with the mitigation measures proposed, there should be a satisfactory acoustic environment for the holiday camp.

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<sup>169</sup> Hunt EIC, paragraphs 1.19-1.21.

[457] In a submission to EPA dated 29 January 2013 (a week after the hearing had finished) Mr de Geest, Chairman of El Rancho provided follow up information concerning Mr Hunt's evidence on noise mitigation for El Rancho. Whilst strictly this submission is "out of time" and would not normally be considered by us, as a matter of courtesy we will provide a brief response. The essence of the submission is that the mitigation option recommended by Mr Hunt in his advice to El Rancho was for 2 metre high barrier.

[458] We have reviewed this advice<sup>170</sup> and note that in his Summary at 8.4 Mr Hunt writes:

*"In terms of the 24 hour sound levels, buildings housing sleeping and teaching areas (including the chapel) will receive between Leq (24 hr) 49 and 56 dBA with the 1.1 metre high barrier in place. This reduces slightly to Leq (24 hr) 48 and 54 dBA with the 2 metre high barrier in place. These average sound levels are not considered likely to adversely affect the operation of El Rancho."*

[459] In commenting on Mr Hunt's report in her evidence<sup>171</sup>, Ms Wilkening also observes that the difference in noise reduction for El Rancho between a 1.1 metre high wall and a 2 metre high wall would be only 1 or 2 dB and she does not consider that this warrants the higher wall.

[460] We would agree.

[461] Ms Wilkening has given particular attention to the effects of traffic noise on the El Rancho property even though it falls outside the 100 metre limit on NZS 6806. Without repeating all of the detail here, overall she concludes that the noise effects from the expressway would be no greater than would have resulted from the WLR designation.<sup>172</sup>

[462] In summary, with the agreed 1.1 metre barrier, the noise *levels* at all PPFs are predicted to lie within Category A and all have *increases* in noise levels within the KCDP criteria.

*Sector 3: Area 5: East of Expressway.Kauri Road and Puriri Road*

[463] This is a small residential enclave identified as having 6 PPFs in the area south of Te Moana Road adjoining the Takamore Urupa and El Rancho. In this location, the alignment of the expressway starts to deviate to the east of the WLR alignment or closer to the enclave. The existing ambient noise levels vary from 40 dB to around 50 dB depending on the location in relation to Te Moana Road. The dwellings closest to the proposed expressway on the dead end streets have the lowest ambient levels.

[464] The predicted noise levels would be within 50 and 54 dB or all within Category A for the chosen mitigation option (a 3 metre high bund about 280 metres long on the eastern side of the expressway and with OGPA).

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<sup>170</sup> El Rancho Submission #477, Attachment 5.

<sup>171</sup> Wilkening EIC, paragraph 164.

<sup>172</sup> Wilkening EIC, paragraph 167.

- [465] Two of the PPFs would be subjected to an increase of between 2 and 4 dB and the remaining four a doubling of noise of between 9 and 11 dB.
- [466] Compared with the KCDC criteria, the noise limit for this area would be 55 dB which is just above the predicted maximum noise level of 54 dB.
- [467] In their closing submission Dr and Mrs Dearden made a plea for the construction of a 2 metre high fence and double glazing of their home at 39 Puriri Road. Ms Wilkening notes that the predicted maximum external noise level at the Dearden's property is 50 dB<sup>173</sup> which is well within the Category A upper limit of 57 dB. Ms Wilkening also notes that internal noise levels even with the windows open over a 24 hr period are predicted to range from 30 dB to 45 dB which is well below the levels which would warrant building noise modifications.
- [468] We accept Ms Wilkening's evidence and do not support the noise mitigation measures requested by the Deardens at least for traffic noise.
- [469] In summary, the noise *levels* at all PPFs in this area are predicted to lie within Category A and all have *increases* in noise levels at about the KCDC criteria.

*Sector 3: Area 6: West of Expressway.South of Te Moana Road*

- [470] This is a rural-residential area with 7 PPFs. The alignment of the expressway where it crosses Te Moana Road is around 150 metres east of the WLR alignment.
- [471] Traffic on Te Moana Road controls the existing ambient noise environment with noise levels between 51-53 dB or slightly below the Category A maximum of 57 dB.
- [472] For the chosen mitigation option, the predicted noise levels are between 55 and 61 dB with 6 PPFs achieving Category A and one Category B. The proposed mitigation is for OGPA surfacing on the expressway as well as on Te Moana Road.
- [473] Four of the PPFs would be subjected to an increase in noise level of between 1 and 2 dB, two between 3 and 4 dB and one between 5 and 8 dB. These increases are low relative to the increases in many other locations because of the already high ambient noise levels from the existing traffic using Te Moana Road.
- [474] Compared with the KCDC criteria, with the high ambient noise levels, the noise limit for this area would be 62 dB which is just above the predicted maximum noise level of 61 dB.
- [475] In summary, the noise *levels* at all but one of the seven PPFs are predicted to lie within Category A and all have *increases* in noise levels more or less within the KCDC criteria.

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<sup>173</sup> Wilkening Rebuttal evidence, paragraph 104.

*Sector 3: Area 7: West of Expressway-North of Te Moana Road*

- [476] This is a similar rural - residential area to that south of Te Moana Road with 16 PPFs and with traffic on Te Moana Road controlling the existing ambient noise environment with noise levels between 51-53 dB or slightly below the Category A maximum of 57 dB.
- [477] The alignment of the expressway over much of this area is around 150 metres east of the WLR alignment.
- [478] For the chosen mitigation option, the predicted noise levels are between 56 and 60 with nine PPFs achieving Category A and seven achieving Category B. The proposed mitigation is the same as for the area south on Te Moana Road, i.e. OGPA surfacing on the expressway (as noted above, as well as on Te Moana Road).
- [479] Eight of the PPFs would be subjected to an increase in noise level of less than 1 dB, one between 3 and 4 dB and seven between 5 and 8 dB. Again, these increases are low relative to the increases in many other locations because of the already high ambient noise levels from the existing traffic using Te Moana Road.
- [480] As for the area south of Te Moana Road, compared with the KCDC criteria, the noise limit for this area would be 62 dB which is slightly above the predicted maximum noise level of 60 dB.
- [481] In summary, the noise levels at seven PPFs are predicted to lie within Category B and all have *increases* in noise levels within the KCDP criteria.

*Sector 4: North of Te Moana Road Interchange to Peka Peka Road*

- [482] This sector is mostly rural in character with few dwellings within 100 metres of the proposed expressway. It has been evaluated under three receiving environments, the dwellings in End Farm Road, and those to the east and west of the expressway at Peka Peka.

*Sector 4: Area 1: East of Expressway-End Farm Road*

- [483] There are two dwellings in this area, no major roads and ambient noise levels of 46 dB. In terms of NZS 6806, the low residential density criteria would apply, i.e. mitigation should achieve a minimum reduction of 5 dB at any assessment position, in order to justify the cost and impact of the mitigation.
- [484] From here, the route of the expressway designation moving north towards Peka Peka is more or less the same as the existing designation.
- [485] The noise evaluation considered an option of the expressway surface being chip sealed as originally proposed with the two dwellings being retrofitted with sound insulation to achieve an indoor sound level of no more than 40 dB. This option was rejected on the basis that while this would achieve an acceptable level of noise inside the buildings, it would result in outside noise levels of between 65 and 66 dB.
- [486] Instead, the chosen mitigation option is for the expressway to be surfaced with OGPA in place of the noisier chip seal. The OGPA will achieve an

average 5 dB reduction in noise with a predicted outside noise level at both dwellings of 61 dB or Category B.

- [487] Both dwellings will receive increases in noise levels which are more than double those of the ambient noise.
- [488] Compared with the KCDC criteria, the noise limit for this area would be 55 dB which is well below the predicted maximum noise level of 61 dB.
- [489] Mrs Marie Hare, who lives at 66 Smithfield Road, raised a concern as to whether WHO noise guidelines have been met. Later in this section we have directed that the Category C indoor sound levels are not to exceed the WHO 40 dB rather than 45 dB.
- [490] In summary, the noise *levels* at the two PPFs are predicted to lie within Category B with the *increases* in noise levels both well outside the KCDCP criteria. The designation in this area more or less parallels that of the existing designation.

*Sector 4: Area 2: West of Expressway-Peka Peka Road*

- [491] This area where the expressway rejoins SH1 contains a residential enclave of seven PPFs, all generally elevated above the level of the expressway and SH1. In terms of NZS 6806 this area has been assessed as an altered road as opposed to a new road. This means that the Category A criteria is 64 dB (compared with 57 dB for a new road), and the Category B criteria 67 dB (compared with 64 dB for a new road). Because of the proximity to SH1, ambient noise levels have been measured at 58 dB.
- [492] With the originally proposed chip surfacing, a do minimum option would result in predicted noise levels of between 66 and 70 dB with five of the PPFs being within Category A, one in Category B and one in Category C.
- [493] With the eventually agreed mitigation of OGPA surfacing replacing the chip seal, the predicted noise levels would reduce by about 3 dB to between 62 and 67 dB with six of the seven PPFs achieving Category A and 1 Category B. The predicted noise levels are similar to the current levels for 5 of the PPFs, with the sixth receiving an increase of between 5 and 8 dB and the seventh a doubling to between 9 and 11 dB, (these latter two buildings both being closer to the alignment of the expressway than to SH1).
- [494] Compared with the KCDC criteria, the noise limit for this area would be 62 dB or about the same as the predicted noise level for six of the PPFs but significantly below the maximum of 67 dB for the remaining PPF.
- [495] In summary, the noise levels at one of the seven PPFs are predicted to lie within Category B with the increases in noise levels of six of the seven PPFs being at about the KCDCP criteria limit with the remaining PPF being some 5 dB in excess of this limit.

*Sector 4: Area 3: East of Expressway-Hadfield Road*

- [496] This area has also been assessed as an altered road with the ambient noise level measured at 58 dB. There is one dwelling within 100 metres of the expressway.

- [497] The OGPA mitigation option for Peka Peka Road will mean that the Hadfield Road dwelling will have a predicted noise level at about its current ambient level of 58 dB.
- [498] Compared with the KCDC criteria, the noise limit for this area would be 62 dB compared with the maximum predicted noise level of 58 dB.
- [499] In summary, the noise *level* at the one PPF is predicted to lie within Category A with the increase in noise level within the KCDC criteria.

### **Discussion on Traffic Noise**

- [500] Pulling together all of these area assessments, our summary of NZTA's assessment indicates that some 329 PPFs (or dwellings) within 100 metres of the proposed expressway will be affected by traffic noise. Of this total and with the BPO noise mitigation measures proposed, some 296 of these dwellings will receive Category A noise with the balance receiving Category B. No dwellings are predicted to receive the highest Category C noise and on this basis no dwellings would be eligible for sound insulation.
- [501] The NZTA assessment shows that the noise levels received by most of the 33 PPFs in Category B would be at the lower end of the Category B range (which is from 57-64 dB).
- [502] Overall, in terms of criteria set out in NZS 6806, with the proposed BPOs in place, the traffic noise levels at all of the affected PPFs would meet the requirements of the standard and we accept this finding.
- [503] We have assessed that some 40 PPFs would receive increases in noise levels above existing ambient noise levels which would exceed what we have described as the KCDC, although we repeat that these criteria are now to be accorded little weight.
- [504] We note that 37 of these 40 PPFs are in lengths of the expressway designation which is on the same alignment as the existing designation where the ambient noise levels are artificially low because the existing designation covers a wide swathe of land which has yet to be developed.
- [505] Two of the remaining PPFs are in the area to the west of the expressway in Raumati South where the increases in noise levels are predicted to be up to 15 dB, compared with the KCDC criteria of 12 dB.
- [506] This is an area in which we have some sympathy for residents who purchased properties with the clear expectation that any new road through Kāpiti would be well clear to the west. While all of the PPFs in this area will be within Category A or B levels, when compared with the existing environment, most will receive noticeable increases in noise levels with some being more than double.
- [507] As we have already noted, a *base noise mitigation* option for a 2 metre high barrier on the bridge was discounted by NZTA as the reduction in noise levels from this did not satisfy the criterion in the standard for mitigation to achieve at least a 3 dB noise reduction for any three or more houses or at least 5 dB for any individual house. In addition the inter-disciplinary team discounted the 2 metre bridge barrier option on adverse visual grounds.

- [508] After having carefully considered the overall effects which would result from 1.1 metre and 2 metre high barriers on the bridge, we have decided that NZTA's chosen option for a 1.1 metre high barrier should stand.
- [509] The remaining PPF is located in the area west of the expressway at Peka Peka Road where the expressway rejoins the existing SH1 and where the higher NZS 6806 criteria for altered roads apply. The presence of SH1 means that this location is already a noisy environment with existing ambient noise levels in the order of 58 dB. The PPF in question is predicted to receive a noise level of 67 dB which would be some 5 dB above the KCDP criteria of 62 dB. The increase in noise level has resulted from the PPF being located closer to the alignment of the expressway than to the existing SH1.
- [510] TR15 records that an extensive barrier noise mitigation measure option was discounted in this area as this would have provided a further noise level reduction of only 2dB.
- [511] Given that this area is already defined by high levels of traffic noise from the existing SH1 and that there do not appear to be any other practicable effective noise mitigation measures than those proposed, we accept the findings of the noise experts for this area.

#### **Other Traffic Noise Matters**

##### *Open Space Noise Levels*

- [512] In his evidence <sup>174</sup> Mr Hunt, the noise expert for KCDC, responds to submitter concerns about the potential for noise to impact on amenity within public and open spaces including parks and reserves. He notes that there is little guidance on the protection of such spaces in NZS 6806 or indeed in other New Zealand environmental noise standards. Having reviewed the NZTA evidence and discussed this matter with Ms Wilkening, he accepts the approach and outcomes adopted by NZTA for mitigating traffic noise from the proposed expressway at PPFs. In doing so, in a somewhat guarded way, he concludes that *"...he does not consider the potential noise and vibration effects on amenity within public and open space areas to be unreasonably or unacceptably reduced considering available policy guidance on the issue."*
- [513] As we heard no contradictory expert evidence on this matter, we accept this conclusion.

##### *Engine Braking*

- [514] In her evidence <sup>175</sup>, Ms Wilkening responded to submitter concerns about the effects of noise from engine braking from large trucks using the expressway.
- [515] She noted that the percentage of trucks projected to use the expressway is between 14 and 22% with between 3 and 14% expected to use the on and off ramps. She also noted that NZS 6806 does not provide for the

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<sup>174</sup> Hunt EIC, Section 10.

<sup>175</sup> Wilkening EIC, paragraphs 131-135.

assessment of individual vehicle noise from sources such as engine braking or modified exhausts. While acknowledging that individual truck noise will be audible above the general sound, she went on to point out that with most of the alignment of the expressway being flat, it was unlikely that trucks would use their engine brakes except for some who might use them when exiting at off ramps.

- [516] She went on to say that very limited mitigation options are available to restrict engine braking other than by the posting of advisory “*Engine Braking Restriction*” signs. In response to a question from us as to whether there had been any decision taken to post such signs, <sup>176</sup> Ms Wilkening advised that she did not think so and that in any case such restrictions would need to take account of issues much wider than those solely related to noise.
- [517] While we are not in a position to require the imposition of engine braking restrictions on the expressway, we encourage NZTA to do so wherever this is practical, although we acknowledge that as a responsible roading authority, NZTA is unlikely to require such a direction.

*Wider Evaluation Zone*

- [518] In response to a question from Dr O’Sullivan<sup>177</sup> about the effects of traffic noise on houses outside of the 100 metre band defined by NZS 6806 (a matter also raised by Mr Hunt in his evidence) Ms Wilkening advised that she had in fact assessed the noise levels at houses between 100 metres and 200 metres from the expressway. This showed that all of these houses would be in Category A except for one house which would be in Category B and that this 100 to 200 metre assessment did not change the choice of the selected noise mitigation options.

*Waterview Project*

- [519] We had been aware from reading the final decision and report on the Waterview Project that concerns had been raised by that Board on the suitability of the approach set out in NZS 6806 for the assessment of traffic noise. As Ms Wilkening had indicated in her evidence that these Waterview findings were inappropriate for Kāpiti, we requested her amplification on this<sup>178</sup>.
- [520] In response Ms Wilkening advised that there were very different circumstances between Waterview and Kāpiti. Waterview had traffic volumes of over 80,000 vehicles per day in an established urban area with a lot more houses. In terms of NZS 6806, this traffic volume lifts the Category A noise criteria from 57 dB (which applies for Kāpiti) to 64 dB and Category B from 64-67 dB.
- [521] Asked if there were any conditions imposed at Waterview which might be applicable to Kāpiti, Ms Wilkening advised that for Waterview the NZS 6806 Category C internal noise criteria had been reduced by the Board from 45-40

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<sup>176</sup> Hearing transcript, page 433.

<sup>177</sup> Hearing transcript, page 423.

<sup>178</sup> Hearing transcript, page 429.

dB. We note that after careful consideration a 40 dB limit was also imposed by the Board for TGP.

- [522] Ms Wilkening told us that did not see any particular problem with imposing such a reduction for Kāpiti (presumably because it would not be problematic).
- [523] This was opposed by NZTA in their closing legal submission<sup>179</sup> (we suspect because it would establish a further precedent against the 45 dB limit in the standard) although the reason given in the submission was that we had heard no evidence on this matter. Given Ms Wilkening's response, this is not correct.
- [524] On the basis that the imposition of a 40 dB limit was not opposed by Ms Wilkening and if after careful consideration two earlier Boards decided that a 40 dB limit should apply, our decision is that this same limit should also apply for the Kāpiti expressway.

*Nga Manu Trust*

- [525] In her representation to us on Day 19 of the hearing on behalf of the Nga Manu Trust<sup>180</sup>, Catherine Wright told us that NZTA had entered into an agreement to install OGPA in the vicinity of Ngarara Road once residential development was underway in the PC 80 area. Observing that Nga Manu was a noise sensitive environment and that the PC 80 development was likely to be some years away, Nga Manu requested that NZTA be required to seal the expressway with OGPA from the outset.
- [526] We understand that Nga Manu is some hundreds of metres from the expressway and well outside the NZS 6806 100 metre PPF limit. Also, we heard no evidence on the effect that OGPA might have on reducing noise limits at Nga Manu (if any) over a conventional chip seal surfacing. We are therefore not in a position to direct that NZTA accede to this request.
- [527] We do, however, encourage NZTA to continue to liaise with Nga Manu over the timing when OGPA might be laid.

*Non Expert Conferencing*

- [528] Matters raised relating to noise at the non-expert conferencing (all to do with traffic noise) were whether there should be a distinction between day time and night time noise; the contention that ambient noise in Kāpiti is considerably lower than in other urban communities; that WHO guidelines recommend an average noise level of 40 dB at night; the importance of night time noise levels between 2:00 am and 6:00 am from heavy freight vehicles; a lack of confidence in the effectiveness of noise mitigation measures and the impact of outside based lifestyles.
- [529] All of these matters have been responded to in one way or another in the different sections of our decision and we do not need to provide further comment here.

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<sup>179</sup> NZTA closing submissions, paragraph 175-17.

<sup>180</sup> Nga Manu Representation #090, page 17.

### Findings on Traffic Noise

- [530] As we noted in the introduction to this section, the effects of the enduring traffic noise from the expressway have been raised as a major area of concern by a large number of submitters and for this reason we have provided a detailed and extensive response to these concerns.
- [531] We acknowledge that the operation of the proposed expressway will result in many residents being subjected to increases in noise levels above existing ambient levels.
- [532] We accept that, with the proposed noise mitigation measures in place, the predicted traffic noise levels will be mitigated to an extent which meets the requirements of the RMA.
- [533] From our evaluation of the effects of traffic noise, a new condition is to be added to the final set of conditions attached to NZTA's closing submission to reduce the NZS 6808 Category C internal noise trigger level from 45 dB<sub>L<sub>Aeq</sub>(24h)</sub> to 40 dB<sub>L<sub>Aeq</sub>(24h)</sub>.

### 10.5.2 Construction noise

- [534] A detailed assessment of construction noise effects is set out in TR16 of the NoR application document. This assessment has been based on New Zealand standard NZS6803:1999 "*Acoustics-Construction Noise*". The noise levels have been predicted from noise data measured for different types of construction equipment used on previous projects and from information contained in NZS 6803.
- [535] The Kāpiti District Plan requires that construction noise standards comply with the limits prescribed in NZS 6803P:1984 "*The Measurement and Assessment of Noise From Construction*". TR16 notes that that for all intents and purposes, the two versions of the standard are the same with the 1999 version containing technical refinements over the 1984 version.
- [536] We accept TR16's adoption of the 1999 version of the standard for the assessment of construction noise which we will refer to as NZS 6803.
- [537] The noise levels in NZS 6803 are measured at a distance of 1 metre from the closest occupied building facade. These levels are defined as LA<sub>eq</sub> and are time based referenced to (T) with T being a representative assessment duration between 10 and 60 minutes. This is a quite different measure from that used for traffic noise which is the average over 24 hours.

- [538] The recommended noise limits from NZS 6803 are as set out in the follow table:

*Recommended Upper Construction Noise Limits for Residential Zones*

Time Of Week	Time Period	Duration of Work (Long Term dB)	
		L <sub>Aeq(T)</sub>	L <sub>AFmax</sub>
<b>Weekdays</b>	0630-0730	55	75
	0730-1800	70	85
	1800-2000	65	80
	2000-0630	45	75
<b>Saturdays</b>	0630-0730	45	75
	0730-1800	70	85
	1800-2000	45	75
	2000-0630	45	75
<b>Sundays and Public Holidays</b>	0630-0730	45	75
	0730-1800	55	85
	1800-2000	45	75
	2000-0630	45	75

- [539] A higher limit of 75 dB from 1800 to 0730 applies in industrial or commercial zones, presumably on the basis that no one will be working in these zones overnight.
- [540] All of these limits have been included in Designation Condition DC 31, although we do not recall hearing any evidence that the industrial/commercial limits would apply at any location along the route of the proposed expressway.
- [541] The construction noise limits are higher than for operational (traffic) on the premise that, unlike operational traffic, construction is a temporary activity which has a finite duration.
- [542] NZS6803 provides for these noise limits to be exceeded where it is not practicable to meet the limits (day and night) at which times site specific noise mitigation and management plans must be used. In the extreme this may require the temporary relocation of some residents until such time as the construction activity has been completed. The need (if any) for such temporary re-locations would primarily be at night during the placement of bridge beams—with this activity being undertaken at night to minimise disruption to traffic.
- [543] TR16 notes that the effects of construction noise will require active management throughout the construction period for the project and it is planned that this will be undertaken under an overarching Construction Noise and Vibration Management Plan supported by individual Site Specific Construction Noise Management Plans (SSCNMPs).
- [544] These SSCNMPs will include detailed information on communication with affected members of the community; training on noise minimisation practices

for construction plant and equipment operators; site specific noise mitigation measures including the early installation of the permanent noise barriers and the installation of temporary noise barriers; detailed maintenance programmes for all plant and equipment; and the detailed management of construction methodologies.

- [545] TR16 at Table 8-2 lists all buildings along the expressway route where construction noise criteria are potentially exceeded.
- [546] Rather than repeat all of the details from this table here, we refer instead to Ms Wilkening's evidence where she has included a helpful summary table<sup>181</sup> headed "Predicted noise levels and the recommended management and mitigation procedures". This covers construction activities at 27 different locations along the expressway route. For each of these, the table includes details of the location, the construction activity, its expected duration, the closest dwelling, the maximum predicted noise levels (night and day) in relation to the 70 dB daytime and 45 dB night-time noise limits in DC31, any non-compliance with these limits and if so potential mitigation option(s), and whether there would still be exceedance even with the mitigation measures in place.
- [547] From the information provided in this table some overall observations can be drawn:
- i) Because of the proximity to residences, the noise from construction of the earthworks and pavements from Poplar Avenue through to Mazengarb Road, even with the proposed noise mitigation measures in place, on occasions will exceed the day time noise limits for periods varying from 6 to 9 months depending on the location along the route;
  - ii) Conversely, because residences from about Mazengarb Road to Peka Peka are more distant from the expressway, the predicted day time noise levels are at about the noise limits with no construction noise mitigation barriers proposed;
  - iii) Bridge construction (primarily foundations) will result in day time noise limits being exceeded at Raumati Road for 10 months, at Kāpiti Road for up to 12 months, at Mazengarb Road for 4 months, at Otaihanga Road for 2 months, and at Te Moana Road for 8 months;
  - iv) Night time limits are expected to be exceeded in the vicinity of all bridge sites during the placement of bridge deck beams. These are shown as being 4 nights at Raumati Road, 12 nights at Kāpiti Road, 12 nights at Mazengarb Road, 4 nights at Otaihanga Road and 12 nights at Te Moana Road;
  - v) Night time limits are also shown as being exceeded at Peka Peka where the expressway connects with SH 1 presumably because of the need to undertake construction at night to minimise disruption to traffic using SH 1;

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<sup>181</sup> Wilkening EIC, Construction Noise Annexure B.

- vi) With the distance of the Waikanae River Bridge from El Rancho, no construction noise exceedances are predicted at this location; and
- vii) No noise exceedances (day or night) are predicted at any of the construction yards.

[548] From our review of Ms Wilkening's table:

- i) it would seem that in preparing this table, Ms Wilkening has allowed for NZTA's proposed condition DC.31 5dB tolerance level to apply to the condition DC 33 noise limits; and
- ii) the DC.33 day time noise limit at which SSCNMPs may be used refers only to the 70 dB limit which applies between the hours of 0730 and 1800 and not to the limits which apply outside of these hours.

[549] It is our view that the 5 dB tolerance would add further discomfort to the already high DC.33 noise levels which residents are being asked to tolerate and we do not accept this.

[550] NZTA is, therefore, required to review its predicted construction noise levels against the actual limits in DC.33 without the 5 dB tolerance. If this review results in exceedances being predicted at locations beyond those already provided for, SSCNMPs are to be developed for these locations with construction noise mitigation measures put in place.

[551] In addition, it is our view that where SSCNMPs are proposed, there should be a requirement for NZTA to consult with affected property owners.

[552] Mr Hunt for KCDC agrees with NZTA's proposed construction noise limits (including the 5 dB tolerance) and the concept of site specific management plans being used where noise limits are predicted to be exceeded. In his evidence, Mr Hunt did, however, suggest the need for some amendments to be made to NZTA's proposed management plan conditions, primarily to strengthen the role of KCDC in the oversight and certification of these plans.

[553] We note that these suggestions were worked through between the noise experts at their November 2012 conference and that agreement was reached on amendments to the conditions for all of the management plans. All of these have been included in the final condition set attached to NZTA's closing submission.

#### **Findings on Construction Noise**

[554] An inevitable consequence of the construction of the proposed expressway will be the exposure of many residents to construction noise, some for quite extended periods. We accept the reality of those concerns and as a consequence are satisfied that it is not appropriate to approve the 5 dB tolerance above the construction noise standard sought by NZTA.

[555] NZTA is directed to review its predicted construction noise levels against the actual limits in DC.33 without the 5 dB tolerance. If this review results in exceedances being predicted at locations beyond those already provided for, SSCNMPs are to be developed for these locations and construction noise mitigation measures put in place.

- [556] For example, for some residences in the Te Moana Road area (including Puriri Road), when the 5 dB tolerance is removed, our understanding from Ms Wilkening's evidence is that the predicted day time construction noise levels will be above the NZS 6803 limits and that this area would qualify for SSCNMPs.
- [557] Condition DC.33 is also to be amended to include the requirement to consult with affected property owners during the preparation of the SSCNMPs.
- [558] For the southern end of the expressway, exceedances have been predicted even with the 5 dB tolerance and SSCNMPs are to be developed and noise mitigation measures put in place. Here it is incumbent on NZTA (and KCDC) to give heightened attention to the implementation of these SSCNMPs and for the management and control of construction noise.
- [559] Overall, in RMA terms, while it will not be possible to avoid construction noise, we accept the advice of the noise experts that with the detailed suite of mitigation measures and noise management plans already included in the designation conditions, with the additions we have directed to be made to compensate for the removal of the 5 dB tolerance and with affected property owners to be consulted during the preparation of the SSCNMPs, acceptable levels of noise mitigation can be achieved during the construction of the expressway.

### 10.5.3 Vibration

- [560] In considering the effects of vibration from both the construction and operation of the proposed expressway we have drawn on TR18 to provide some general background.
- [561] The methodology described for assessing the vibration effects includes the selection of appropriate standards for establishing vibration performance measures; measuring current ambient vibration conditions for those properties along the route of the expressway likely to be affected by operation vibration; identifying construction activities likely to generate significant levels of vibration and establishing what these generated levels might be; analysing vibration data and using predictive modelling (incorporating distance and ground attenuation effects) to calculate risk contours for both the construction and operation phases; identifying sensitive receivers within the risk contours, assessing the potential effects on these receivers and developing management and mitigation measures for those receivers who are predicted to be subject to vibration levels in excess of the performance measures.<sup>182</sup>
- [562] TR18 has considered the effects of vibration on both human responses and potential building damage. In doing so, it notes that the risk of building damage is restricted to the construction phase as the operational vibration levels are well below building damage thresholds. Conversely the risk of human perception issues (e.g. discomfort, sleep disturbance, loss of

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<sup>182</sup> TR18, paragraph 3.

amenity) is most significant in the operation phase because of the ongoing nature of this vibration.<sup>183</sup>

- [563] There are no current New Zealand standards which set criteria for construction or traffic vibration and the KCDC District Plan (and those for GWRC and Wellington City) do not contain any such criteria.

### Construction Vibration

- [564] NZTA's vibration expert, Mr Whitlock, advises that he has been involved in an NZTA working group developing a vibration guide for the construction of road projects. He provides some background on this in TR 18 as it is these criteria which it is proposed should apply to this project. These follow an approach somewhat similar to that adopted in the New Zealand noise standard NZS 6806:2010:

- i) There is a Category A criteria which is based on the British Standard BS 5228-2:2009. This is designed to address the human response effects in dwellings both during daytime and night-time and for offices during daytime. For other building types and for offices at night-time, the policy reverts to the residential building damage criterion from German Standard DIN 4150-3:1999;
- ii) If vibration levels are measured or predicted to exceed Category A criteria then a suitably qualified expert must be engaged to assess and manage the construction vibration for this to comply with the Category A criteria;
- iii) If the Category A criteria cannot practicably be achieved, then Category B applies. Category B is generally designed to protect buildings against damage and adopts criteria from the British and German standards but retaining a higher degree of night-time protection for occupied dwellings at night; and
- iv) If vibration levels are measured or predicted to exceed Category B, then construction activity can only proceed if suitably qualified experts undertake continuous monitoring of vibration levels and its effects on at risk buildings.

- [565] The category criteria are set out in the following table:

Receiver	Time (hrs)	Category A	Category B
<b>Occupied Dwellings</b>	2000 - 0630	0.3 mm/s PPV	1 mm/s PPV
	0630-2000	1 mm/s PPV	5 mm/s PPV
<b>Other Occupied Dwellings</b>	0630-2000	2 mm/s PPV	5 mm/s PPV

- [566] Section 5.7 of TR18 identifies the closest receivers where there is a high or medium risk of the building damage assessment criterion of 5 mm/s PPV being exceeded. High Risk is defined as not necessarily implying damage to the building structure but for the identified receivers being subject to the highest vibration levels. Medium Risk is defined as being those buildings

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<sup>183</sup> TR18, paragraph 4.

close to the risk contour where some construction activities may produce vibration levels with possible intermittent exceedance.

- [567] The assessments are qualified as being primarily intended to inform the construction contractor of what are referred to as “hotspots” where particular care is required. TR18 also notes that there are a number of swimming pools on properties adjacent to the proposed expressway and that as these have not been covered by the risk assessment, they will need to be addressed in the CNVMP.
- [568] From the property risk assessments contained in the table at 5.7 of TR18, we have estimated the number of properties affected by High Risk or Medium Risk to be as follows:

Sector	High Risk	Medium Risk
1	8	7
2	80 (Rounded up)	30 (Rounded up)
3	4	9
4	2	2

- [569] TR18 notes that the construction envelope is also very close to commercial premises in Milne Drive, Kāpiti Road, Sheffield Street and Manchester Street. It also notes that construction vibration may be felt by properties not included in the above table which are at locations further from the expressway.
- [570] In the section of our report on construction noise, we noted that the effects of construction noise will require active management throughout the construction period for the project and that it is planned for this to be undertaken under an overarching CNVMP. For construction noise there will also be SSCNMPs to respond to specific site conditions.
- [571] Condition DC.34 requires that where Category B vibration criteria cannot practicably be met, SSCVMPs are to be prepared. The purpose of these plans is identified as being to provide targeted management and mitigation measures. The plans are to include details of the activity and location of the proposed works, their timing and duration; the equipment to be used; the predicted vibration levels; the dwellings at which compliance cannot be achieved with conventional mitigation measures; consultation with affected persons and any alternative management and mitigation measures proposed.
- [572] In his rebuttal evidence Mr Whitelock reports on the additional vibration measurements undertaken for certain types of construction machinery, as had been requested by Mr Hunt. This included an off-road truck, a Cat loader and an Allis Chalmers HD 16 bulldozer.<sup>184</sup> These measurements showed that the off-road truck and the loader were measured to have risk contours of around 3 metres, both within the 8 metre contour adopted for both machines in Mr Whitelock’s initial risk assessment.

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<sup>184</sup> Whitelock Rebuttal evidence, paragraphs 69-77

- [573] Conversely the measured data for the bulldozer indicated a risk contour of around 20 metres or beyond the 16 metre contour for a vibratory roller, the highest vibration item of mobile plant used in his initial assessment. Mr Whitelock notes that he discussed this with Mr Goldie, the project construction engineer, who advised that a bulldozer would not be used within 20 metres of dwellings. He suggested that this should be a requirement in the CNVMP.
- [574] From our review of Condition DC.29A we could not see that this limitation had been provided for.
- [575] Apart from this, we note that the other areas of concern raised by Mr Hunt in his evidence have all been satisfactorily resolved following conferencing among the experts, including the content and wording of the proposed designation conditions.

### **Findings on Construction Vibration**

- [576] An inevitable consequence of the construction of the proposed expressway will be the exposure of many residents to the adverse effects of this construction, some for quite extended periods.
- [577] As can be seen from our vibration risk exposure summary, the effects of construction vibration will be experienced at a large number of properties in Sector 2 north and south of Kāpiti Road. This is an area which overlaps the existing road designation.
- [578] Overlap with the existing designation would not have applied to residents who live at the southern end of the expressway until just north of Raumati Road and in the areas immediately to the north and south of Te Moana Road in Sectors 1 and 3. As for construction noise it is therefore incumbent on NZTA (and KCDC) to give heightened attention to the implementation of the measures proposed for the management and control of the effects of construction vibration in these areas.
- [579] We have directed that Condition DC.33 is to be amended to the effect that NZTA is to undertake consultation with affected residents during the preparation of SSCNMPs. We direct that the same provision is to be included in Condition DC.34 for SSCVMPs.
- [580] We direct also that Condition DC.29A(b) include an additional condition (b)(iii) " All machinery used in the construction of the expressway shall comply with the limits of the relevant regression curve set out in Appendix C of *TR18: Assessment of Vibration Effects*.
- [581] In RMA terms, while it will not be possible to avoid the effects of construction vibration, we accept the advice of the vibration experts that the detailed suite of measures proposed to manage the effects of vibration in the designation conditions reflect good construction practice and that these effects have been properly identified and adequately avoided, remedied or mitigated.

### **Operational Vibration**

- [582] TR18 notes that an assessment of the vibration effects from the operation of the proposed expressway has shown that these are expected to be

negligible provided that the road surface is monitored and maintained in accordance with the NZTA policy for road roughness. It goes on to say that it should not be implied that residents who live by the expressway will not feel vibration from traffic. Rather, the vibrations will be at a level deemed to be acceptable for human response to traffic.

- [583] In his evidence on behalf of KCDC, Mr Hunt accepted NZTA's assessment of traffic noise as set out in TR18 with a recommendation that a vibration standard (Norwegian Standard NS8176.E:2005) be specified in the designation conditions so that this can be used for assessing vibration effects in the event of complaints arising once the proposed expressway was operational. We note that this has been included in DC.48 of the condition set attached to NZTA's closing submission.
- [584] Mr Whitelock answered a wide range of questions from Dr O'Sullivan from APSOC. Having reviewed these questions and Mr Whitelock's responses, we have not seen any need to require any modifications to NZTA's proposed designation conditions for vibration (or noise).

#### **Finding on Operational Vibration**

- [585] We accept the advice of the vibration experts that the designation conditions will provide for the effects of operational vibration to be adequately avoided, remedied or mitigated.

## **10.6 AIR QUALITY AND RELATED HEALTH EFFECTS**

### **Evidence / Submissions**

- [586] Evidence and some principal submissions on this topic were received from a number of expert witnesses and submitters:

NZTA:	Ms Camilla Borger
	Dr Kerry Laing
	Dr David Black
APSOC:	Mr Paul Bruce
	Dr Marie O'Sullivan
	Associate Professor Simon Hales
Highway Occupants Group:	Ms Beth Lindsay

- [587] There were a number and range of submissions made in relation to air quality, and in particular the effects of dust and those related to CO<sub>2</sub> emissions. While we have addressed the related health effects of these here, as many submissions were concerned with the wider public health effects of air quality arising from the Project, these are addressed separately in section 10.8 on public health.

### **Issues Identified**

- [588] The issues identified through evidence and submission broadly fall into the following areas:

- i) Operational air quality, effects arising from operation of the Project;
- ii) Construction air quality, effects arising from construction activity; and
- iii) Air quality health effects, the effects arising from changes in air quality on public health (refer also section 10.8).

### Operational Air Quality

[589] Ms Borger's evidence addresses the effects of air quality on behalf of NZTA. She describes the existing air quality in the context that:

*"The entire Project area lies within the Kāpiti Coast airshed, which has been gazette under the AQNES [Air Quality National Environmental Standards], because ambient concentrations of PM<sub>10</sub> within this area may exceed the AQNES threshold concentration of 50 µg/m<sup>3</sup>."<sup>185</sup> She also describes "The existing ambient air quality close to the route of the proposed Expressway is typical of a mixture of rural and urban receiving environments. The rural areas are expected to have very low existing levels of air quality pollutants, while the urban areas are impacted by PM10 emissions from home heating (mainly wood burners) during winter time."<sup>186</sup>*

[590] Ms Borger also describes that GWRC undertook monitoring of PM10 and PM25 particulates in Glen Rd, Raumati South over a 9 week period in June and July 2010. The results of that monitoring indicated three exceedances of the AQNES (50 µg/m<sup>3</sup>) with a clear link to domestic solid fuel heating and the topography in that area. We understand from the evidence that the winter months, such as the period of this survey, are more likely to produce metrological conditions, such as thermal inversions, that can result in air quality effects being amplified for a relatively short period on some days, and generally during the night.

[591] The air quality analysis methodology is described in TR13 which accompanies the AEE. It is reported there that the *Ministry for the Environment: Good Practice Guide for Assessing Discharges to Air from Land Transport (MfE 2008)*<sup>187</sup>, as well as a draft NZTA standard has formed the basis on which the assessment has been undertaken. Section 5.1 of the report describes that a "Tier 3" assessment has been made. This is described as a *"full assessment, with increased complexity in both traffic emission and dispersion modelling and reliance on site specific data."*<sup>188</sup>

[592] The overall findings on Operational Air Quality, reported by Ms Borger are summarised in her evidence as follows;<sup>189</sup>

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<sup>185</sup> Borger EIC, paragraph 27.

<sup>186</sup> Borger EIC, paragraph 28.

<sup>187</sup> TR13: Assessment of Operational Air Quality Effects, Section 1, paragraph 4.

<sup>188</sup> TR13: Assessment of Operational Air Quality Effects, Section 5.1, paragraph 1.

<sup>189</sup> Borger EIC, paragraphs 57-59.

- *“The maximum predicted cumulative 24-hour average PM<sub>10</sub> with the Expressway is 36.3 µg/m<sup>3</sup>, including effects of existing background air quality sources.*
- *The proportion of this maximum PM<sub>10</sub> concentration which is related to vehicles using Kāpiti Road and the Expressway is 2.1 µg/m<sup>3</sup>. Predicted concentrations are well below the AQNES level of 50 µg/m<sup>3</sup>.*
- *Therefore, at the most affected sensitive receptors, the worst case 24 hour average PM<sub>2.5</sub> concentration due to the Expressway is estimated to be 1.2 µg/m<sup>3</sup> (i.e. 60% of 2.1 µg/m<sup>3</sup>). While there is no AQNES for PM<sub>2.5</sub>, there is a monitoring guideline of 25 µg/m<sup>3</sup>. The maximum predicted PM<sub>2.5</sub> concentration due to the Expressway is well below this guideline level.*
- *All predictions for other contaminants (NO<sub>2</sub>, CO and benzene) are considerably less than the relevant standards.”*

[593] Mr Bruce gave evidence *“as a meteorologist”*<sup>190</sup> on the Kāpiti weather patterns, in particular conditions with the potential to lead to temperature (or thermal) inversions, and therefore with the potential to contribute to cumulative air quality effects. In his analysis of the Raumati monitoring site, he identified 42 periods with light variable winds and cold stable night conditions, and on occasion extending through the day.<sup>191</sup> His evidence is also that the effects of temperature inversions occurs in local pockets, in low lying areas and that *“air quality can differ markedly from neighbourhood to neighbourhood.”*<sup>192</sup>

[594] Ms Borger and Mr Bruce participated in expert conferencing. The conferencing statement records that that *“matters have been resolved and are no longer disputed”*.<sup>193</sup> The key findings of the conference appear to us to be that modelling and prediction of temperature inversion effects involves fundamental uncertainty in the measurement and prediction of outcomes; there is the potential for temperature inversions along the alignment of the expressway; the peak traffic flows are unlikely to coincide with worst case inversion conditions and that matters have been adequately considered by the experts in this case. We accept the evidence of the experts as recorded in the expert conferencing statement.

[595] Dr O’Sullivan put the question to Ms Borger *“So in a temperature inversion condition with a combination of pollutants from the expressway, more congested local traffic and wood burning fires, is it likely that air quality guidelines will be exceeded?”*<sup>194</sup> The response from Ms Borger was *“No, I*

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<sup>190</sup> Bruce EIC, paragraph 4.

<sup>191</sup> Bruce EIC, paragraph 14 (2nd).

<sup>192</sup> Bruce EIC, paragraph 8.

<sup>193</sup> Expert conferencing joint witness statement – Air quality, paragraph 5.

<sup>194</sup> Hearing transcript, page 475.

*do not believe it is likely that air quality guidelines will be exceeded*".<sup>195</sup> We accept that response from Ms Borger.

[596] Dr O'Sullivan also presented in evidence an example of an air quality monitoring project for the Wellington Inner City Bypass (ICB) wherein the findings of that report indicated the potential for more adverse effects than had been assessed. We heard supplementary evidence from Ms Borger, and cross examination by Dr O'Sullivan on this matter. In short, we find there were material differences between the witnesses in the relevant interpretation of the ICB report and its applicability to this case. We accepted the second supplementary evidence (16 November 2012) of Ms Borger on this matter.

[597] We found no clear evidence linking the potential for thermal inversion conditions with frequency of occurrence of effects on defined parts of the expressway. Mr Bruce describes the potential for temperature inversions to arise and which can lead to:<sup>196</sup>

*"Local pockets of poor air quality in these airsheds during winter under light-wind, clear sky situations in low lying areas – as found in Raumati South during winter 2010."*

[598] He goes on to describe that the:<sup>197</sup>

*"...cumulative effects of wood-burning fires and vehicle emissions may result in exceedances of air quality criteria..."*

[599] We accept Mr Bruce's association of low lying wetland areas in the Raumati South and Waikanae area with occasional potential for temperature inversions. He describes that conditions commensurate with the potential for inversions exist, but we have no evidence that inversions actually resulted. We did not find evidential supporting analysis that adverse air quality effects would occur; where any such effect might specifically occur; to what extent persons or environments might be affected; whether the effect could be attributable to vehicle emissions; or if any effect would be more than minor or result in standards exceedance. Accordingly, while such "potentials" may exist, we have no basis on which to find that they would occur or that they would give rise to an unacceptable effect on air quality.

[600] There was no contradictory evidence to the conferencing statement under the heading *"Areas that have been resolved"*.<sup>198</sup> Ms Borger and Mr Bruce were ultimately satisfied that operational air quality effects had been adequately assessed. We accept that evidence.

[601] There were submissions and representations relating to concerns about carbon dioxide (CO<sub>2</sub>) and climate change.<sup>199</sup> Ms Borger notes *"I agree that transport energy consumption contributes to greenhouse gas emissions in*

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<sup>195</sup> Hearing transcript, page 475.

<sup>196</sup> Bruce EIC, paragraph 8.

<sup>197</sup> Bruce EIC, paragraph 9.

<sup>198</sup> Expert Caucusing Joint Witness Statement: Air Quality, paragraphs 5-10

<sup>199</sup> Hales (#677-3), Nisbet (#649), Baldwin (#617), Hinkley (#673) and others.

NZ. However, the Resource Management Act 1991 does not currently regulate the causes of climate change and greenhouse gases. Instead the government's principal policy tool is the New Zealand Emissions Trading Scheme.<sup>200</sup> Similarly, the assessment set out in the s42A report concludes "GHG [greenhouse gas] emissions are also not anticipated to significantly increase as a direct result of the operation of the Expressway. Furthermore it is our view that GHG emissions are best managed via government initiatives".<sup>201</sup> We accept that viewpoint.

- [602] Based on the evidence, we are satisfied that the operational emissions would improve in some areas, particularly along the existing SH1 corridor, and would degrade from that which exists in the proposed corridor. We accepted the evidence that any air quality effects will be within nationally accepted guidelines and, therefore, not result in adverse effects which are more than minor.

### Construction Air Quality

- [603] Ms Borger addresses construction air quality effects in the TR14, and in her evidence. This was the only expert evidence before us on this matter. She states "*During the construction phase of the Project there may be nuisance dust and some construction traffic related emissions not present in the current environment.*"<sup>202</sup> She also states that "*Due to the proximity of the construction activities to residential areas, a high standard of control will be required through implementation of the [Construction Air Quality Management Plan] CAQMP.*"<sup>203</sup>
- [604] There are a number of potential contributors to construction air quality effects that have been identified in TR14, the principal contributor is identified as arising from wind-blown dust. General air quality standards and guidelines are described at Section 4.2 of TR14, however in relation to dust and odour it is described that "*There are no specific assessment criteria for dust or odour. A number of "trigger levels" are contained in the MfE Dust GPG (MfE, 2001), and the "Good Practice Guide for Assessing and Managing Odour in New Zealand" (MfE, 2003) (MfE Odour GPG) ...*" It is described in Section 4.1 of the same report that "*The MfE Dust GPG states: The key point to recognise with most fugitive dust sources is that nuisance effects will almost certainly occur if the sources are not adequately controlled. Rather than spending time and money on extensive (and expensive) theoretical predictions of the possible effects, it is likely to be more appropriate to put effort into the design and development of effective dust control procedures.*"
- [605] There were many submissions made (such as the Harrisons Country Garden World Arthur Bills Resettlement Trust<sup>204</sup>) expressing concerns about

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<sup>200</sup> Borger Rebuttal evidence, paragraph 22.

<sup>201</sup> s42A report (1<sup>st</sup> Edition), Section 4.3.7, page 82.

<sup>202</sup> Borger EIC, paragraph 19.

<sup>203</sup> Borger EIC, paragraph 20.

<sup>204</sup> Harrisons Country Garden World / Arthur Bills Resettlement Trust representation, pages 2, 9 and 14

the air quality effects of construction. It is evident to us, from these submissions that the largely sand based environment and the loose nature of sand within the dunes presents a significant construction effects risk.

- [606] Dr O'Sullivan cross-examined Ms Borger on the risks of dust during construction. Ms Borger referred to the spring equinox, a period of typically windy conditions, that typically occurs between about mid-September to early November. Her evidence was "*...Andrew Goldie who is the construction manager for the project, recognises this and has proposed staging of works around Kāpiti Road intersection to be outside the spring equinox period, recognising there will be some significant excavations in sandy areas there.*"<sup>205</sup>
- [607] When asked by Dr O'Sullivan about how confident she was that dust management procedures would be adequately followed, Ms Borger's response was "*I'm confident that with the appropriate management tools and the appropriate contractor, then I'm confident that those management practices would be followed.*"<sup>206</sup>
- [608] Dr Laing's evidence addresses those matters principally related to contaminated land and ground water effects. He identifies the potential for odours and also for contaminants attached to dust particles to become airborne. He identifies 3 sites as of heightened potential to impact on air quality. These are 55 Rata Street, Kāpiti Road intersection and 124-154 Te Moana Road. His investigations have been undertaken in accordance with the Ministry for the Environment (MfE) Contaminated Land Guidelines. A contaminated Soils and Groundwater Management Plan (CSGMP) has been recommended and a draft presented as part of the application.<sup>207</sup> This Plan and his recommendations make effective cross reference to the monitoring and reporting requirements for air quality (through the CAQMP), and we consider this an essential linkage. His recommendations extend beyond the identified sites, to across the whole project, and specify that where investigations identify risk in excess of "*National Environmental Standard for Assessing and Managing Contaminants in the Soil for Assessing Human Health*", then these sites be included in the Contaminated Soils Management Plan (Human Health).<sup>208</sup> His conclusion is "*From these assessments I have concluded that the overall risk to human health and the environment from land contamination within the Project designation is low.*"<sup>209</sup> There was no expert evidence contrary to the suitability and appropriateness of Dr Laing's recommendations in this regard. We accept that evidence.
- [609] The AEE CEMP, at *Appendix G: Construction Air Quality Management Plan* describes, amongst other things, performance standards to be met for dust, contaminated soils, odour and construction vehicle exhaust emissions and

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<sup>205</sup> Hearing transcript, page 478.

<sup>206</sup> Hearing transcript, page 479.

<sup>207</sup> Contaminated Soils and Groundwater Management Plan, CEMP Appendix K, AEE and updated as Annexure B of Laing EIC.

<sup>208</sup> Laing EIC, Annexure A, page 34, NES.2.

<sup>209</sup> Laing EIC, paragraph 123.

the procedures to be followed in achieving them. It also describes operating and management procedures, monitoring, reporting, training and complaints handling procedures. In questioning from Ms Janissen about the need for greater clarity for performance measures, Ms Borger advised “...I think it would be appropriate to have one of those performance measures as a condition to satisfy the need for more certainty around performance of dust management”.<sup>210</sup> In response to submissions and the concerns addressed in the S42A report, NZTA has developed and proposed revised conditions that require the performance standards and outcomes described in evidence be achieved.

- [610] We accept Ms Borger’s evidence that construction air quality, and in particular dust effects in this environment will be difficult to manage. We conclude that dust effects must be managed at source and that the CAQMP and its implementation must be sufficiently robust to minimise the potential for adverse effects, in all but extreme (for example “...wind speeds above about 10 metres per second...”<sup>211</sup>) meteorological conditions. NZTA has volunteered methods and measures that accord with well-established New Zealand Standards, and the constraint of objectionable or hazardous airborne odours, dust, fumes, or pollutants to the site (Condition DC.28). The monitoring and measurement regime proposed by NZTA is specified in terms of accepted New Zealand Standards. Notwithstanding this, we consider it necessary there be independent review of the methods, systems and procedures within the CAQMP. We have required that there be independent peer review of the CAQMP in the final designation conditions (DC.26A).

#### **Air Quality Health Effects**

- [611] Further to the principal matter of air quality characteristics, and Dr Laing’s contaminated sites human health risks assessment we address above, Ms Borger presented a supplementary statement of evidence (14 September 2012) which she references as a Community Exposure Assessment. It was titled “*Assessment of Air Quality Health Effects*”. She describes the report as being undertaken in accordance with the MfE “Good Practice Guide for Assessing Discharges to Air from Land Transport” (2008). The study:<sup>212</sup>

*“...focused on the population exposed to exhaust emissions from vehicles on the Expressway between Kāpiti Rd and Te Moana Rd, which is predicted to be the busiest section of the Expressway.”*

- [612] The basis for measurement of the health effect in the study describes a relationship between a known rate of change in mortality, the change in exposure identified, the population exposed and the normal death rate in New Zealand (which is described as 3.8 persons per year per thousand people).<sup>213</sup> The principal findings of the study recognise that increased

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<sup>210</sup> Hearing transcript, page 470.

<sup>211</sup> Hearing transcript, page 478.

<sup>212</sup> Borger Supplementary evidence, Annexure A, Executive summary, page 1, paragraph 4.

<sup>213</sup> Borger Supplementary evidence, Annexure A, Section 2.2, page 4.

exposure is expected in areas adjacent to the expressway. The overall conclusion is that:<sup>214</sup>

*“...the results of this assessment indicated that vehicle exhaust emissions from vehicles travelling on the Expressway will have minor effects on human health within the study area.”*

[613] Considering this Project generated effect in some context, it is apparent to us that the study (while appearing to give some recognition to other areas of changing traffic outside of the “Study Area”), does not attempt to quantify the corresponding change in exposure that might be expected in other areas of the network, such as in the decreased traffic environment adjacent to the current SH1. The principal health based finding is that:<sup>215</sup>

*“...changes in concentration of air pollutants due to the Project do not exceed the MfE significance criteria.”*

[614] Health effects due to air quality were the subject of expert witness conferencing. We were presented with two conferencing statements, one signed only by the attending NZTA witnesses, and a second track changes version signed only by Dr O’Sullivan and Dr Wildmo-Seerup. We note also that while present for part of the conferencing, Associate Professor Hales (APSOC) did not sign either statement. We are left, therefore, to consider the merit and weight, if any, that can be attached to the content of these statements, and in this context, in particular statements related to air quality and related health effects.

[615] Dr O’Sullivan appears to have addressed the matters identified in the track changed version of expert conferencing to Ms Borger under cross examination. Ms Borger agreed with the statement put to her that:<sup>216</sup>

*“...motor vehicle emissions are a cause of morbidity and mortality in New Zealand, and we also agreed that in some instances there could be health effects, even if standards have not been breached, and we also agreed that proximity to the road is a factor contributing to health effects, and that that the issue of nitrogen dioxide levels and asthma is an important one, given the large body of research which now exists showing oxides of nitrogen are associated with asthma.”*

[616] We heard representations from a number of submitters expressing concerns about the health effects on them specifically, from the expressway’s operation. Ms Begovich and others described matters that particularly affect them including asthma, eczema, hay fever and dust allergies.<sup>217</sup> In addition to these examples of health effects, submitters presented concerns about airborne particulates finding their way into the food chain, particularly where

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<sup>214</sup> Borger Supplementary evidence, Annexure A, Section 4, page 10.

<sup>215</sup> Borger Supplementary evidence, Annexure A, Executive summary, page 1, paragraph 5.

<sup>216</sup> Hearing transcript, page 470.

<sup>217</sup> Hearing transcript, page 1152.

they are growing their own vegetables and fruits.<sup>218</sup> Dr Black, NZTA's public health expert, considers this potential and restates his conclusion that in his view the effects will be appropriately mitigated through the management plan methods proposed.<sup>219</sup>

[617] Associate Professor Hales addresses health effects due to air pollution. We consider his submission further in section 10.8. In so far as health effects due to air pollution are concerned, however, he cites references made by Ms Borger that "...the method may underestimate effects of transport related pollution".<sup>220</sup> He asserts that further improvements could be made to the assessment in order to present a "more accurate picture".

[618] Ms Borger observed in evidence that it:<sup>221</sup>

*"...is not strictly necessary to carry out such an assessment on the basis of the recommendations in the MfE Transport GPG..."*

[619] The potential for adverse air quality related health effects from the construction and operation of the Project are of significant concern in the community. It is also evident that there will in fact be a change in the air quality of the environment that people living near the proposed expressway will experience. Furthermore, the evidence is that these changes can be expected to impact on health. When considered in terms of the standards described to us, the effect will be to less than a minor degree. The evidence also describes that some persons or sectors of the community, are more susceptible to these effects than others. We have considered this matter in more detail in the section 10.8 of this report.

[620] Submissions described how certain levels of exposure could result in adverse health effects, however, there was no evidence making a direct linkage between the actual forecast air quality from the project and adverse health effects.

[621] The evidence describes well accepted New Zealand standards, practice, and National Environmental Standards. These establish levels of change or effect that are "acceptable". In having regard for these standards we are mindful, as Dr Black describes "...New Zealand's air quality standards are designed to provide protection to all members of the normal population, which includes those seen as vulnerable..."<sup>222</sup> We are also particularly mindful that the standards do not provide for "...individuals who have atypical sensitivities."<sup>223</sup>

[622] We heard evidence and submissions relating to the duration of construction effects. Many of the submissions in this regard were concerned with effects lasting in excess of the total Project construction period. NZTA presented an

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<sup>218</sup> Pomare EIC, paragraph 110.

<sup>219</sup> Dr Black Rebuttal evidence, paragraphs 85 and 87.

<sup>220</sup> Hales EIC, paragraph 7.

<sup>221</sup> Borger EIC, paragraph 112.

<sup>222</sup> Dr Black Rebuttal evidence, paragraph 73.

<sup>223</sup> Dr Black Rebuttal evidence, paragraph 92.

indicative construction work programme which demonstrated the forecast periods of construction at any one location would involve durations less than the total construction period for the project. Most of the submissions did not acknowledge how the project was proposed to be staged.<sup>224</sup> The staging and construction timetable is discussed in more detail in section 10.2 of this report.

- [623] No resource consent is required for operational air quality discharges. Our determinations on air quality and their effects are therefore to be considered in relation to the proposed designation. The key question for us is, therefore, whether the methods proposed will achieve the outcomes necessary and further whether the air quality effects will be adequately avoided, remedied or mitigated.
- [624] It is evident to us that the CAQMP is suitably specific and prescriptive in specifying methods and outcomes. Protection thresholds have been appropriately set, in response to the submissions we heard, at necessary and safe levels, and it is appropriate that avoidance is the primary objective of the Plan. Continuous monitoring and responses are appropriately planned and described. We are of the view that achievement of the Plan will involve significant effort and application. We consider the implementation aspect of the Plan critical to it being achieved.
- [625] Ultimately, we are satisfied that the health effects arising due to air quality changes will be appropriately within nationally accepted standards. We are also satisfied that the measures proposed by NZTA to avoid, remedy or mitigate the potential for such effects, is sufficiently robust. It is accepted that in some environments there will be a degradation of air quality from that currently experienced. This was acknowledged by NZTA and demonstrated to us in submissions. We did not find compelling evidence to indicate that the effects of this change would be of such a magnitude as to present at unacceptably safe levels, or that it would exceed accepted national health standards, including the relevant National Environmental Standards. We also accept that there will be some improvement to the quality of air in other parts of the environment, due principally to reduced traffic flows there. We, therefore, conclude the health effects due to operational or construction activities of the Project have been dealt with by NZTA in a manner which sufficiently avoids, remedies or mitigates adverse effects.

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<sup>224</sup> AEE Chapter 8: Construction of the Project.

## 10.7 SOCIAL IMPACTS AND WELLBEING

[626] Evidence on the subject of social impacts and wellbeing was received from a number of expert witnesses:

NZTA: Ms Julie Meade Rose

KCDC: Ms Mary Jane Rivers

Save Kāpiti Inc: Ms Dianne Buchan

[627] A submitter, Ms Bianca Begovich, gave evidence and made submissions. Ms Begovich has a Master of Science (Botany) and has expertise in sustainability and environmental education. All of the witnesses, including Ms Begovich, took part in the expert conferencing we directed that led to the conferencing statement of 30 October 2012.

[628] We will return to the impact of the conferencing in due course.

[629] Ms Begovich lives in the Ferndale ecological subdivision, adjacent to the designation. She considers the expressway is not the best solution to any traffic problems within the designation area, or indeed for the Kāpiti Coast area. She considers there will be significant ecological and other damage from the choice of this route. She believes an enhancement of rail services, the upgrade of SH1 and the construction of the WLR alternative, combined, will offer the best solution. She also considers, from her sustainability expertise, that society needs to decrease reliance on private motor vehicles, and the expressway will have the opposite effect by in fact encouraging private motor use.

[630] On a personal level, she is concerned at the loss of visual amenities, noise from construction and operation of the expressway, dust, other pollution and the deposits of chemicals on her property. All of this, she believes, will contribute to health risk to herself and her family, particularly her two young daughters.

[631] Ms Meade Rose gave evidence on behalf of NZTA. Of all of the witnesses in this area, she was the only one who had in fact carried out a social impact assessment. She described the methodological frameworks she used coming from the RMA and the International Association for Impact Assessment. She also stressed the multi-disciplinary approach taken towards the Project and how she worked closely with other disciplines when carrying out her assessment. It is apparent that she participated in the open days; reviewed stakeholder and public feedback; considered all submissions; reviewed reports on consultation and the project information distributed to the public; participated in workshops; and responded to social impact queries from the public. She also checked on a number of occasions with the communications team concerning responses from potentially affected parties to help ensure the accuracy in the assessment of the social effects and the mitigation put forward.

[632] She specifically mentioned she considered other expert evidence relating to construction and operational noise, temporary traffic, lighting, vibration, air quality, public health, operational transport, urban planning and design, landscape and visual, cultural impacts, archaeology and construction

methodology. In relation to the overall planning assessment, she took into account the evidence of the planner giving evidence for NZTA, Mr Schofield, and other expert evidence that was contained in the AEE reports and NZTA evidence. As well she considered in her rebuttal evidence other expert evidence.

- [633] In her evidence Ms Meade Rose describes the methodology used, and Ms Rivers and Ms Buchan, independent expert witnesses for KCDC and Save Kāpiti Inc respectively, accept the methodology is correct. However, they take issue with the application of it, which we will return to in due course. Ms Meade Rose considered four communities and sub-communities that she considered made up the relevant area for her report and evidence. The first was Raumati, which she divided into Raumati South and Raumati Beach. For Paraparaumu, she considered Paraparaumu Central, Paraparaumu Beach South, Paraparaumu Beach North and Otaihanga. For Waikanae she considered Waikanae East and Waikanae West, Waikanae Park and Waikanae Beach. For Peka Peka, which has a very low population and is mainly a rural area, there were no subsets considered separately.
- [634] Ms Meade Rose also took a regional view and considered the impact on the Wellington region. Her finding that the expressway will have a beneficial effect on the wellbeing of the Wellington region has not really been challenged by any of the other independent expert witnesses. Rather, their focus is on particular local conditions. We accept Ms Meade Rose's evidence of regional benefits.
- [635] Ms Meade Rose accepted that in the local area the properties adjacent to construction would be the most adversely affected with inconvenience, disruption and annoyance. Such properties, and their occupants, would also feel the greatest impact from the operation of the expressway. This is largely self-evident. She also accepted that the expressway would mean that some people in the local area could experience physical and psychological severance. However, in her view the east-west connections that will be maintained will lessen the impact of any physical severance, and the expressway itself will create new access and movement choices. Ms Meade Rose considered that any psychological severance, from her experience, would lessen as the community adapts to the physical changes. She noted, rather obviously, that communities are dynamic and constantly adapting to change.
- [636] She accepted that households required to relocate due to acquisition of their properties may well suffer from stress, and neighbourhoods affected will take time to adjust. However, she concluded that overall the operational effects in the local area are largely beneficial. She considered the expressway will provide another accessway within the local area and will enhance the cohesiveness in communities and community wellbeing. She said the considerable extension of cycleways, bridleways and pedestrian access will have a positive effect and will enhance community wellbeing. She also considered that transport-disadvantaged members of the community will benefit from the project.
- [637] None of the submissions, evidence or raised social issues caused her to alter the view expressed in her lengthy technical report, or in her evidence.

- [638] However, she did recommend an amendment to the conditions to ensure a community liaison officer was available for at least one year during and following the completion of the Project. She considered this was a means by which members of the public could contact NZTA to raise operational concerns that arise after construction has finished.
- [639] Ms Mary-Jane Rivers gave evidence for KCDC. She accepted that NZTA's broad description of the social environment was valuable as far as it went, but she considered there was insufficient information to make a thorough assessment of social impacts. She said an analysis needed to be undertaken, with appropriate mitigation action to follow the results of the assessment. She said there were areas requiring further assessment, including more detailed assessment of specific localities and activities and more detailed assessment of the social impacts of the construction phase.
- [640] In particular, she was concerned with what she described as a lower socio-economic area in Makarini Street, which will be one of those most affected by the expressway (One submitter who had resided in Makarini Street for more than 20 years, Mrs Whibley, appeared to us to consider such a description to be objectionable)<sup>225</sup>. Ms Rivers continued that she considered it warranted specific attention and analysis. She stated in her evidence that the assessment of social impacts on the construction was not fine-grained enough, particularly in relation to construction, vehicle and traffic movements in relation to schools. Nor was the impact of a 500-strong workforce adequately considered, given the housing implications that could arise from this. On behalf of the council, she said that a health and wellbeing assessment of the safety and health impacts was required. She said that impacts on social infrastructure needed to be assessed, in particular relating to the Paraparaumu Medical Centre. We note, however, that the medical centre is in negotiations with NZTA and this no longer appears to be a live issue.
- [641] Ms Buchan gave evidence on behalf of Save Kāpiti Inc. She considered that NZTA had given inadequate consideration to alternative options and that no social impact assessment was undertaken by a person qualified to make such judgments prior to the selection and announcement of the preferred route. She also considered that the baseline used for assessing the social effects should be the WLR, which has now been consented, notwithstanding that no application for funding has been made for such a road and some resource consents remain outstanding. The reality is now clear that the WLR will not be built by KCDC and we have dealt with the baseline issue in section 8.
- [642] On this basis Ms Buchan asserted that there was an error in the assessment of the benefits of the expressway, as such benefits would have been taken into account and been achieved by the WLR. However, notwithstanding such evidence, she did not seem to think it appropriate to take into account the negative aspects of the WLR, which frankly seems unusual.

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<sup>225</sup> Hearing transcript, page 1800.

- [643] One gained the impression from the evidence of Ms Rivers and Ms Buchan that they consider it would have been appropriate to speak to virtually every directly, and indirectly, affected household in carrying out the assessment. It is to be noted, however, that they chose not to carry out a social impact assessment themselves. At one stage Ms Rivers seemed to suggest to us, notwithstanding that an appropriate noise condition would be in place, that noise could lead to an increase in domestic violence, which was the responsibility of NZTA. Without diminishing the concern, that seems a broad leap. Essentially, what was being suggested by Ms Rivers in this regard, and in others, was that even if proper mitigation was in place, a further step of mitigation to cover off these individual possibilities was required. This is the very double-counting that Mr Copeland spoke of.<sup>226</sup> One had the impression that Ms Rivers was seeking to have NZTA fund the already stretched social services (as she described them) in the area of the designation.
- [644] In her rebuttal, Ms Meade Rose dealt with the concerns expressed by Ms Rivers. First, she considered a sufficient assessment of the detailed impacts of construction and the operation of the expressway had been undertaken by Mr Schofield in his AEE and his EIC.
- [645] Secondly, in relation to walkways, she pointed out investigative work had already been done and that the project would result in two new connections for residents in the Makarini Street area. The first, a pedestrian cycle overbridge connecting Makarini Street to a new pedestrian cycleway in Te Roto Drive; the second, a walking path from the park on Makarini Street to Kāpiti Road. She expressed uncertainty as to whether Ms Rivers was aware of the multi-disciplinary approach taken to pedestrian/cyclist activity. She accepted that a crime prevention through “*environmental design audit*” was required for the walking path from the park on Makarini Street to Kāpiti Road, but stated this would be resolved through the designation condition proposed in the rebuttal evidence of Mr Baily.
- [646] Ms Meade Rose did not consider there was a requirement, as suggested by Ms Rivers, to develop agreed monitoring, mitigation and compensation for Makarini Street. This was for a number of reasons. The first, that the SCMP to be prepared before construction would include developments of methods to communicate with the residents in that area. The second was that during construction their liaison person, the community liaison group and the complaints process would be available. She also stressed her view that such a group should remain in place for at least one year after operation of the expressway commenced. Thirdly, she said she did not consider there was a need for compensation for remaining residents. Fourthly she said mitigation of effects had been proposed in a number of conditions relating to noise, vibration, dust, visual amenity and disruption.
- [647] She considered the community liaison group would meet the concerns raised by Ms Rivers relating to Makarini Street and its environments, building on and supporting local leadership.

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<sup>226</sup> Hearing transcript, page 525.

- [648] Following further conferencing and further consideration, the conditions now provide for the establishment of at least two neighbourhood impact forms and the appointment of an independent community development facilitator in Leinster Avenue and Makarini Street.<sup>227</sup>
- [649] Traffic concerns raised by the expert witness in this area are satisfactorily addressed in section 10.3 and the conditions relating to that section.
- [650] We have already noted that neither Ms Buchan nor Ms Rivers carried out a social impact assessment themselves. We also note that Ms Meade Rose's report was peer reviewed by Mr Quigley, Ms Linzey and Ms Barton.
- [651] A social impact assessment is not something done in isolation. In this case Ms Meade Rose has drawn on the expertise of other technical experts as a foundation of her views where she lacks specific qualification. It does not appear that either Ms Buchan or Ms Rivers has done that.
- [652] The criticism of Ms Meade Rose is effectively saying that her assessment was too coarse for detailed social impact analysis based on local impacts. However, what is important to us is that we have sufficient information to be able to assess the range of social effects, issues and concerns about the project, make determinations in relation to them and that be satisfied that proper and adequate mitigation is in place. What we have in front of us are the following:
- i) The Social Impact Assessment (TR20), encompassing:
    - a. research including site visits, literature review, review of technical reports, consultation with stakeholders and the public, participation in open days, observational surveys and in-depth discussions;
    - b. identification of the regional and local communities, their current community services and facilities, major transport networks and other facilities including pedestrian, cycle links and bridle paths;
    - c. analysis of the planning construction and operational phases as to their social effects; and
    - d. recommendations in relation to modes of mitigation that will address the identified adverse effects.
  - ii) The report of Ms Black of consultation outcomes which inform the AEE for the project;
  - iii) The various technical reports which inform the AEE for the project;
  - iv) The views of members of the community and key stakeholders as expressed in their written submissions. The representations made by those submitters who availed themselves of the right to address us in the course of the hearing. We note that approximately half of submissions support the project, and half oppose;
  - v) The EIC and rebuttal of Ms Meade Rose, other relevant witnesses, in particular the experts Ms Rivers and Ms Buchan, and submissions received;

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<sup>227</sup> See condition DC.13A.

- vi) The experts in other areas that provided the foundation for Ms Meade Rose's views and who provide further information and opinion relevant to the assessment of social impacts in a number of relevant areas;
- vii) Those other expert witnesses, including the urban design and noise experts for KCDC, have only small differences from the NZTA witnesses, and many such differences have been resolved in expert conferencing; and
- viii) The view of planners on the relevant associated matters, including the effects assessments and conditions.

[653] In Final Report and Decision of the Board of Inquiry into the Proposed Men's Correction Facility at Wiri, that Board stated:<sup>228</sup>

*"Because this difference [in professional opinion] really relates to the principles of approach and we discuss this further in the respective consultation and social effects chapters, we consider the detail of any methodological criticisms raised to have been overstated. We note at this stage that this is a classic instance of professionals talking past each other, because their start and finish points are different. **Whatever the merits of their respective charges, what really matters is whether we had sufficient information before us by the end of the hearing to be confident that we understood the full range of social effects, issues and concerns about the proposal.** As a consequence of the engagement of and by the submitters and the community throughout the process, we are satisfied that we have that understanding."* (Our emphasis)

[654] Given the huge amount of material referred to above placed before us, both by way of evidence, submissions and by documents, we are satisfied that we have sufficient information to understand the social effects and to decide whether the mitigation is adequate. We see no value in the recommendation from Ms Rivers for yet a further social assessment to be undertaken. We are also satisfied that social effects, despite Ms Buchan's comments, were factored into the alternative route assessment process.

[655] Mr Hassan cross-examined both Ms Buchan and Ms Rivers in relation to conditions and a number of other matters. Ms Buchan accepted, with some reluctance, that conditions put to her by Mr Hassan would be a step in the right direction. Ms Rivers was cross-examined at greater length regarding conditions and was somewhat more fulsome in her acceptance that the conditions put to her would assist in mitigating the social effects. However, it must be said that both considered that the conditions did not go far enough.

[656] There is also another issue in relation to the evidence of Ms Buchan and Ms Rivers. The concerns they express regarding the possible effect on residents of construction and the operation of the expressway cannot be fully confirmed until such events take place (it is for that reason that there are

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<sup>228</sup> Final Report and Decision of the Board of Inquiry into the Proposed Men's Correction Facility at Wiri 26 September 2011, paragraph 247.

such significant and proper reliance on adaptive management conditions by NZTA and planners from KCDC and GWRC). While assessments could indicate that some people would have greater impact on them from noise, dust and other matters, there is still an element of speculation in that as to the real effect. It is, as we have repeated, an attempt to obtain something more than the conditions in specific areas such as traffic noise, air quality and other areas where we have found factually that the conditions suggested adequately mitigate and where applicable, meet relevant New Zealand Standards or, where these do not exist, relevant international standards. While acknowledging that there could well be certain individuals where the impact will have greater effect, in many cases this will not become apparent until after construction commences. We consider the conditions put in place relating to community liaison people, groups and such like give ample opportunities to properly address these more individualised effects.

[657] We prefer the evidence of Ms Meade Rose. At the end of the day, she was the only expert who had carried out a social impact assessment. Neither of the other two experts had undertaken this exercise. Rather, they criticised the way in which she conducted this function, where a better course would have shown it to be wrong by carrying out a similar exercise (if such be the case).

[658] In any event, there are flaws in that evidence. We have already dealt with the baseline issue relating to Ms Buchan. We also consider that there is an unrealistic aspect to Ms River's evidence. It was apparent even at the hearing stage that if the NoR was approved specific conditions and management plans would be put in place to protect those affected by both the construction and operational effects of the expressway. These include noise, dust and other relevant matters. We consider that the conditions now in place to deal with these various impacts on affected persons are appropriate mitigation to protect persons from those effects. Essentially, it appears that Ms Rivers is arguing that, notwithstanding such mitigation, individual residents may still be affected to the extent where they may commit domestic violence, in the example she gave. But we fail to understand how a further survey could establish this until the impacts of the construction and operation are known.

[659] We are satisfied that the concerns expressed by Ms Rivers are real, but are more appropriately dealt with by the introduction of an appropriate adaptive management regime with the necessary monitoring. Central to that will also be the appointment of suitable personnel, properly trained and adequately resourced, to implement the adaptive management plans, through the appropriate certification process.

[660] We consider that the conditions now in place and the management plans under them create sufficient mitigation so that the social effects are appropriately mitigated. We understand these conditions are stronger than those imposed on any other project of this nature in New Zealand.

- [661] Overall, we accept Ms Meade Rose's evidence<sup>229</sup> that the overall net social effects of the construction of the expressway will be positive and that adverse effects will be appropriately mitigated.

## 10.8 PUBLIC HEALTH

- [662] Evidence on the subject of public health was received from a number of witnesses and expert witnesses:

NZTA:	Dr David Black
APSOC:	Dr Lisa Wildmo-Seerup Associate Professor Simon Hales Dr Marie O'Sullivan
Rational Transport Society:	Mr Kent Duston
KCDC:	Ms Mary Jane Rivers Ms Emily Thomson
Personal submission:	Ms Bianca Begovich

- [663] Dr Black summarised the potential health effects on the community from Project related activities as being air quality, ground contamination, lighting, noise, vibration and mental health.<sup>230</sup> To this we would add the effects of dust. He told us that having considered the evidence of the individual activity area experts; he had then assessed their evidence and reached his own conclusions from a health perspective.

- [664] A key conclusion we drew from Dr Black's evidence and responses to questions during cross-examination was that provided the effects from the construction and operation of the Project satisfy the relevant New Zealand (or international) standards then there should be no unacceptable adverse effects on public health. He told us that the achievement of acceptable health effects was the baseline for determining the requirements in the standards, for example in defining construction noise limits.

### Ground Contamination, Dust and Air Quality

- [665] In the context of health effects, ground contamination and dust and their potential effects of air quality are all inter-related.
- [666] In section 10.6, we have evaluated the potential for dust generated from contaminated ground (and for dust in general) to adversely affect air quality. This same section also evaluates NZTA's proposed methods for managing and mitigating these effects.
- [667] We repeat here some of the more salient points from this earlier section supplemented with additional evidence where this gives added emphasis to public health issues.

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<sup>229</sup> Meade Rose EIC.

<sup>230</sup> Dr Black EIC, paragraph 33.

- [668] Dr Laing's evidence is that the proposed CSGMP will address the monitoring and reporting requirements for air quality (through the CAQMP) across the whole project and that where investigations identify sites which exceed the "National Environmental Standard for Assessing and Managing Contaminants in the Soil for Assessing Human Health", these sites will be included in the Contaminated Soils Management Plan (Human Health).<sup>231</sup> In the absence of any evidence to the contrary, we have accepted Dr Laing's conclusion that the overall risk to human health and the environment from land contamination within the Project designation is low.
- [669] With respect to dust, as noted in section 10.6 we have found the requirements in the CAQMP for the management of dust effects to be suitably specific and prescriptive in specifying methods and outcomes and that in response to the submissions we heard, protection thresholds have been appropriately set.
- [670] For completeness we record that, in addition to those mentioned in section 10.6, the suite of management plans also includes:
- A Contaminated Soils and Groundwater Management Plan (CSGMP) which sets out standard procedures for the management of contaminated soil and groundwater.*
- A Contaminated Soils Management Plan (Human Health) (CSMPHH), which specifies the approach for the remediation or ongoing management of all sites identified as posing a risk to human health from the disturbance of contaminated soil.*
- [671] As a footnote, we must say that residents would have drawn little comfort from Dr Black's suggestion that if despite the adoption of the proposed management plans dust did become a problem, affected residents could resort to using personal protective equipment such as a dust masks or safety glasses.<sup>232</sup> However, despite his insensitivity, we accept his qualification that this is not a realistic probability and are satisfied the conditions adequately mitigate the effects of dust.

### **Traffic and Air Quality**

- [672] As noted in section 10.6 we heard representations from a number of submitters expressing concerns about the health effects on them from the operation of the expressway with Ms Begovich and others listing asthma, eczema, hayfever and dust allergies.<sup>233</sup> In addition, some submitters were concerned about airborne particulates finding their way into the food chain, particularly where they are growing their own vegetables and fruits.<sup>234</sup>
- [673] We accept the evidence of Ms Borger that maintaining a steady flow of uncongested traffic produces fewer pollutants than stop/start traffic.<sup>235</sup> The

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<sup>231</sup> Laing EIC, Annexure A, page 34, NES.2.

<sup>232</sup> Hearing transcript, page 669.

<sup>233</sup> Hearing transcript, page 1152.

<sup>234</sup> Pomare EIC, paragraph 110.

<sup>235</sup> TR13, section 6.4.

proposed expressway traffic is predicted to be free flowing and vehicle emissions should be less than those produced by the equivalent number of vehicles travelling on SH1.<sup>236</sup> Dr Black said where traffic flow and speeds are more constant and local roads can be bypassed this will lead to a decrease in the overall emissions produced in the Kāpiti region and have an overall benefit for public health.<sup>237</sup>

- [674] Further to this, Dr Black said that construction of the Project could be expected to expose dwellings within 200 metres of the Project to potentially greater levels of vehicle pollution, than they currently experience. Potentially this could lead to a small increase in respiratory health issues over time in a small number of individuals who are already susceptible, although there is no certainty this will occur.
- [675] It is Dr Black's assessment that while the emissions in the immediate vicinity of the new expressway may increase, the overall emissions in the community as a result of more efficient engine operation should not. The net effect is more likely to be an improvement in public health.
- [676] In response to a Board s92 request, supplementary evidence was prepared on the Assessment of Air Quality Health Effects<sup>238</sup> in relation to the Project. The supplementary report told us the health effects study area focussed on the population exposed to exhaust emissions from vehicles on the Project between Kāpiti Road and Te Moana Road, which is predicted to be the busiest section of the Project. We were also told the predicted traffic volumes on this section of the Project (i.e. most of Sector 2 and Sector 3) are higher than on any other part of the Project.<sup>239</sup> This evidence concluded that vehicle exhaust emissions from vehicles travelling on the Project will have minor effects on human health within the study area.<sup>240</sup> We accept that evidence.
- [677] Dr Black is also of the view that any potential effects from the construction of the expressway on health will be mitigated to acceptable levels through the management plan methods proposed.<sup>241</sup>
- [678] Overall, as we have set out in section 10.6, we are satisfied that the health effects from air quality changes during both construction and operation of the Project will be within nationally accepted standards. We are also satisfied that the measures proposed by NZTA to avoid, remedy or mitigate the potential for such effects, is sufficiently robust and that the predicted changes will not exceed accepted national health standards, including the relevant NESSs.

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<sup>236</sup> Borger EIC, paragraphs 84-88.

<sup>237</sup> Dr Black EIC, paragraph 47.

<sup>238</sup> NZTA commissioned Beca Infrastructure Limited to undertake this assessment.

<sup>239</sup> Borger Supplementary evidence, Annexure A, Executive Summary, paragraph 4.

<sup>240</sup> Borger Supplementary evidence, Annexure A, Section 4, page 10.

<sup>241</sup> Dr Black Rebuttal evidence, paragraphs 85 and 87.

### Potable Water

- [679] Dr Black told us that water quality could affect public health if there was contamination of personal bores or water takes. Private bores require a permit from the local council to operate, and if they are to be used for potable water, they are also required to be registered with the MoH on their national Register of Community Drinking Water Supplies in New Zealand.<sup>242</sup>
- [680] As recorded in TR23, investigations into the effects on shallow bores along the Kāpiti Coast, have concluded that there are no shallow boreholes identified as being used as a supply for drinking water. Ms A Williams told us that the deep aquifers identified in the area will not be affected by the Project.<sup>243</sup>
- [681] We note that the ESCP is designed to mitigate the potential for contamination of public water sources with contaminated soil.<sup>244</sup> We note also that condition GD.8A has specific requirements for ground water quality monitoring in the vicinity of the Otaihanga Landfill.
- [682] Overall we accept the evidence that the construction and operation of the Project will not cause unacceptable adverse effects on the quality of the existing potable water supplies in the Kāpiti area.

### Noise

- [683] Dr Black told us that the WHO has, in regard to the effects of noise on health and wellbeing, published two relevant documents, the 1999 “*Guidelines for Community Noise*”<sup>245</sup> and the 2009 “*Night Noise Guidelines for Europe*”.<sup>246</sup> Guidelines were then set for noise levels based on the lowest levels of noise which would have a critical effect on health for the general population. These guidelines aim to prevent both social impacts (such as disrupted communication) and health impacts (such as sleep disturbance) for all members of normal society, including more vulnerable groups such as children and the elderly.
- [684] He told us that the WHO guidelines inform the New Zealand noise standards which have been adopted for the Project.
- [685] In this context, Ms Wilkening and Mr Hunt have agreed that with the mitigation measures proposed, the predicted noise levels will meet the limits in the relevant standards (NZS 6806 and NZS 6803) as reflected in the designation conditions or where exceedances are predicted to occur at some locations during construction, site specific construction noise management plans will be developed and put in place.

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<sup>242</sup> Ministry of Health, Register of Community Drinking-Water Supplies in New Zealand 2011 Edition, Compiled by ESR Water Group, Editor. 2011, Ministry of Health: Wellington.

<sup>243</sup> Dr Black EIC, paragraph 64.

<sup>244</sup> Laing EIC.

<sup>245</sup> World Health Organization, Guidelines for Community Noise, B. Berglund, T. Lindvall, and D.H. Schwela, Editors. 1999.

<sup>246</sup> World Health Organization, Night Noise Guidelines for Europe. WHO Regional Publications European Series. 2009, Copenhagen: World Health Organisation Regional Office for Europe.

[686] Based on the evidence of Ms Wilkening, Mr Hunt and Dr Black, we accept that proposed measures for limiting traffic and construction noise should mitigate adverse effects on public health to acceptable levels.

### **Vibration**

[687] Dr Black told us that vibration produced during construction or operation of the expressway will not be of a magnitude which could conceivably cause any health effects.<sup>247</sup> We accept his evidence.

### **Lighting**

[688] In our section on lighting, we have concluded that the standards and controls proposed by NZTA to achieve compliance with accepted New Zealand Standards should ensure that the expressway lighting will not adversely affect those who live in the environs of the expressway.

[689] It is Dr Black's opinion that these standards are adequate to address public health issues and he does not consider the effects of light from the expressway will be an issue for public health, either during the construction or operation of the Project. We accept this opinion.

### **Mental health**

[690] We heard that whenever a new activity as significant as a roading project occurs in the community, many people become concerned over the potential risk of the activity.

[691] Dr Black told us that anxiety over new developments often centres on a fear of the unknown effects of the Project, whether they are health effects, financial effects or amenity and lifestyle effects. He said once a project is complete and the development is in place and the associated uncertainty is resolved, most people adapt to the change in their environment and accept the presence of the development. Dr Black said he believes this will be the case for the majority of the Kāpiti Coast community.<sup>248</sup>

[692] He went on to say that that anxiety, distress or misconceptions can be avoided or remedied in the context of this Project by the provision of full and complete information, investigation of special cases and careful communication of accurate and understandable information. He was satisfied that measures to best ensure clear and open communication with the public have been taken and they should minimise anxiety during the Project. He said this should minimise the risk of sensitisation to the Project and subsequent mental health effects following commissioning of the Project. Dr Black believes most of the community will adapt to the change in their environment and will not experience any long-term mental health effects.

[693] In response, we note that DC.11 to DC.13B provide for a comprehensive range of communication and information exchange measures. These

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<sup>247</sup> Dr Black EIC, paragraph 98.

<sup>248</sup> Dr Black EIC, paragraph 104.

include neighbourhood impact fora for Leinster Avenue and Makarini Street as well as additional fora for areas which KCDC considers require special attention.

- [694] As noted in the section of this report which addresses the social impacts, we are satisfied that social effects (to which we would add the “mental” effects) can be appropriately mitigated.

### Particular Evidence and Submissions

- [695] Dr Wildmo-Seerup<sup>249</sup> provided evidence on construction noise from her perspective as an audiologist. In responding to Dr Wildmo-Seerup’s evidence, Ms Wilkening limited her comments to one technical matter pointing out that Dr Wildmo-Serup had made an incorrect comparison between sound power levels and sound pressure levels.<sup>250</sup> She noted that sound power levels relate to moving earthwork’s equipment rather equipment which is starting up within a yard area. Ms Wilkening also disagreed with the scale used by Dr Wildmo-Seerup for assessing construction noise (C-weighted rather than A-weighted). She pointed out that her (Ms Wilkening’s) assessment had been undertaken in relation to environmental noise rather than hearing damage. In any case it is Ms Wilkening’s view that construction noise will not result in hearing damage for residents who live near to the Project.
- [696] Having been sworn in, Dr Wildmo-Seerup’s cross examination was limited to one question from Dr O’Sullivan who asked about the cost of hearing aids. We were unsure of the relevance of this to our inquiry.
- [697] We repeat our earlier finding that with the proposed measures in place, traffic and construction noise from the Project can be mitigated to acceptable levels.
- [698] Dr Wildmo-Seerup was one of those who expressed concern regarding the mental health of Kāpiti residents affected by from noise during construction of the Project. Our finding on this has also been set out above.
- [699] Associate Professor Hales had concerns about increased motor vehicle usage (and decreases in walking and cycling). Dr Black said that there is already a well-used rail service in the area, which is supported by bus services and these provide an alternative to motor vehicle usage. In addition to this, Dr Black said the Project includes cycle and walking paths. He did not believe that it is a given that, as a result of this Project, overall car usage will increase and outdoor physical activity decrease.<sup>251</sup> We agree with Dr Black’s assessment on these matters. In any case it is an individual’s choice as to whether they exercise or use a car and it is not up to us to decide on this.
- [700] Dr McNytre said that because of the bodies of water created by the Project there was the potential threat to human health from mosquitoes in the

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<sup>249</sup> Wildmo-Seerup EIC.

<sup>250</sup> Wilkening Rebuttal, paragraph 50.

<sup>251</sup> Dr Black Rebuttal, paragraph 62.

Waikanae area. Dr Black said this was a matter reasonably raised, however, any action required are matters for the Medical Officer of Health for the region at the time. Dr Black said the possibility of such an outbreak is one that is recognised throughout New Zealand and for which planning is already in place, under the auspices of the Ministry of Health (MoH) and vigilance in this regard is an on-going responsibility of MoH<sup>252</sup> see this as being of concern.

- [701] Given the extensive submissions we received about the extent of existing wetlands in the area of the Project, it seems to us to be most unlikely the Project would alter the status quo.
- [702] Dr O'Sullivan suggested that a further equity focussed health impact assessment is required for the Project.<sup>253</sup> In response, Dr Black noted that the WHO's definition of "health equity" (upon which Dr O'Sullivan relies) is not a concept which is in any way binding on the application of resource management practice in New Zealand. He said that while the principle of "health equity" is undoubtedly correctly described, the approach taken by orthodox public health practice<sup>254</sup> is the concept of providing the highest practically achievable level of protection to the "normal" population. That means that some individuals outside the normal group are best protected by providing special individualised care.
- [703] Dr Black concluded that that a further health equity assessment is not required and that the Project has "adequately taken account of the impacts on health and wellbeing of the population affected". We concur.
- [704] Mr Duston cited a Health Impact Assessment (HIA) which was based on the proposals in the draft Greater Wellington Regional Land Transport Strategy calling for increases in public transport and decreases in private car usage. Dr Black responded that this HIA was prepared for use in guiding the development of a long-term policy strategy for the region and was not specific to the Project. He said that in comparison he had formed his assessments based on the proposals put forward and the assessment of effects of the various experts.<sup>255</sup>
- [705] Ms Rivers also recommended that an HIA be undertaken for the Project and that KCDC certified the final approach of the HIA.<sup>256</sup> Ms Thomson supported this recommendation.
- [706] These recommendations were considered by Dr Black who said that New Zealand standards are designed to provide protection to all members of the normal population, which includes those seen as vulnerable, such as lower

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<sup>252</sup> Dr Black Rebuttal, paragraph 65.

<sup>253</sup> O'Sullivan EIC, page 3, paragraph E.4.

<sup>254</sup> Is practiced in New Zealand under the auspices of the Royal Australasian College of Physicians and the New Zealand College of Public Health Medicine and endorsed by the Ministry of Health.

<sup>255</sup> Dr Black Rebuttal, paragraph 68.

<sup>256</sup> Rivers EIC, paragraph 6.20, page 16.

socio-economic families. Dr Black did not consider an HIA was necessary.<sup>257</sup> We accept that evidence.

### **Medical Centre**

[707] The Paraparaumu Medical Centre expressed concerns that during the construction phase the medical centre will be unusable and after construction will remain severely compromised.

[708] We understand there is no hospital on the Kāpiti Coast and therefore the medical centre plays an important role in the community. Dr Fawcett told us that the majority of health care in this area is delivered by private providers with the medical centre being one of those providers. He said that the construction and operation of the Project will make the delivery of services from that site impossible.<sup>258</sup>

[709] In closing submissions, counsel for NZTA confirmed that issues and options concerning the on-going operation of the Medical Centre were the subject of on-going discussion with the NZTA. Counsel said NZTA remains committed to working through these issues fairly and in accordance with the Public Works Act 1981, cognisant of the importance of the Medical Centre to the communities of Kāpiti.<sup>259</sup>

[710] We rely on NZTA reaching agreement with the Medical Centre to reach a satisfactory outcome for the continued operation of the centre at an acceptable level of amenity throughout the construction and operation of the Project.

### **Overall Findings**

[711] We heard considerable concerns expressed by Kāpiti residents about the potential effects the Project may have on the health of their community.

[712] If consent is granted, NZTA has agreed to address these potential adverse health effects through a suite of conditions, mitigation measures, management plans and the application of relevant New Zealand standards and guidelines.

[713] We find that with these measures in place, the effects from the construction and operation of the Project on public health can be mitigated to acceptable levels.

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<sup>257</sup> Dr Black Rebuttal, paragraph 73.

<sup>258</sup> Hearing transcript, pages 2370-2371.

<sup>259</sup> NZTA closing submissions, paragraph 479.

## 10.9 GROUNDWATER

[714] The potential for adverse effects to occur from the changes in groundwater from the construction of the expressway was one of the more contentious issues raised during the hearing, as was evident from the number of expert witnesses who gave evidence on groundwater. These were:

NZTA: Ms Anne Williams

KCDC: Mr Brydon Hughes

GWRC: Mr Peter Callendar

Dearden's: Dr Helen Rutter

WOO: Mr David Roil

[715] Before we evaluate the competing opinions on this matter, as we have done for a number of the other ground and water related matters, we turn first to NZTA's NoR application documentation for some background, in this case to *TR21: Assessment of Groundwater Effects*.

[716] To recap, the construction of the proposed expressway will involve the pre-loading of peat areas; the excavation and replacement of peat in some locations requiring cuts below the groundwater table; the construction of ponds for the treatment; conveyance and attenuation of stormwater run-off; and the taking of water for construction from a number of bores along the route. All of these have the potential to cause changes in groundwater levels, particularly to the shallow systems. Typical changes could include reduced groundwater through flow, changes in groundwater levels in surface water bodies, reductions in the water levels in existing wells and changes in ecological habits.

[717] The main groundwater flow direction is from the foothills to the sea or roughly perpendicular to the line of the proposed expressway.

[718] A large number of surface water features interact with both the shallow and deeper groundwater systems. These include the Waikanae River, the Waimeha and Wharemakau Streams (both almost entirely spring fed),<sup>260</sup> and the Mazengarb drain. A large number of wetlands and lagoons have formed in areas where peat has deposited and where the groundwater is very close to the surface. These wetlands are thought to be points of groundwater discharge with flows largely sustained by shallow groundwater. There is also evidence that some of the wetlands are "recharge" wetlands fed by rainfall and run-off perching on low permeability peat.

[719] KCDC municipal water supply wells abstract water for the most part from the deep Waimea Aquifer. Around 3,000 domestic garden irrigation wells are spread across the populated area of the model with these estimated to be between 3 metres and 5 metres deep and cumulatively extracting between 3,000 and 15,000 cubic metres per day.

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<sup>260</sup> A Williams EIC, paragraph 49.

- [720] Regular water level monitoring along the expressway has been in place since October 2010 with the short term records correlating well with GWRC's longer term records which have been monitored since 2005 with some as far back as 1994.<sup>261</sup> This monitoring shows seasonal variations with the lowest water levels typically being recorded in April and the highest in October. The levels in the deeper bores appear to be rising slightly while those in the shallow bores have remained more or less constant year on year. Rainfall records at the KCDC wastewater treatment plant indicate that changes in water levels in the shallow unconfined aquifers have a strong correlation with rainfall events.
- [721] NZTA has developed a number of conceptual 2D and 3D hydrogeological models to assess the effects of the construction of the expressway on both regional and local groundwater flows. Inputs for these models have been obtained from investigative drilling, in-situ testing, piezometers and groundwater level monitoring. This has included data from GWRC monitoring stations and a combined total of 54 piezometers along the expressway alignment.
- [722] The regional 3D model covers an area of some 22.5 kilometres by 11.0 kilometres with 14 different sub surface layers representing 8 hydrogeological units. This model has been used to assess the likely regional effects from the construction of the expressway on groundwater, wetlands and river levels.
- [723] A series of 2D flow models have also been developed to assess the potential effects from embankment construction on aquifer through flows and groundwater levels perpendicular to the expressway. As for the 3D model, these have been calibrated to known water levels and known flooding. While the models cover significant areas, the data calibration points tend to be located near the alignment of the expressway and therefore the results of the model are best suited for the assessment of effects within about 200 metres of the alignment of the expressway.
- [724] The modelling indicates that the expressway embankment and the associated peat treatment will result in long term changes of between 0.3 metres and 0.6 metres in ground water levels and flow directions immediately adjacent to the expressway with no discernible changes at distances of 50 metres to 70 metres beyond the expressway.<sup>262</sup>
- [725] Turning to the construction of the stormwater ponds, three 3D models were also developed to consider the interactions between the proposed wetlands and storage areas and the existing groundwater regime. These were at Wetland OA/OB, Flood Offset Storage Area 2, 3A and Wetland 3 near the Wharemakau Stream and Wetland 9 near Puriri Road.
- [726] Where the construction of the stormwater ponds results in a lowering of the groundwater levels at Flood Storage Areas 2 and 3A and Wetland 3, the modelling shows that this will be no more than 0.5 metres immediately

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<sup>261</sup> TR21, paragraph 2.5.

<sup>262</sup> A Williams EIC, paragraph 18.1.

adjacent to the ponds with measurable drawdowns of 0.1 metres extending for some 200 metres to 300 metres from the ponds depending on the variations in ground conditions. Locally there is predicted to be a small effect on flow direction gradients but overall these will not be discernible.

- [727] Where the maintained water levels in ponds is more than 0.5 metres above or below the existing ground water level, the modelling indicates that constructing a low permeability lining in the ponds will be required to avoid lowering (or raising) the groundwater level beneath and adjacent to the ponds. This will apply to Wetland 4 and Wetland 9.
- [728] The abstraction of groundwater for construction is planned to be undertaken progressively along the expressway route. The modelling has shown that a lowering of groundwater levels of up to 2.0 metres can be expected within the aquifer from the draw off of water with the cone of depression reducing to less than 0.1 metres at less than 1 km. Drawdowns of up to 0.7 metres may also occur in the overlying and underlying aquifers in the vicinity of each well. The modelling indicates that groundwater levels can be expected to recover to 80% of pre-construction levels with a day of ceasing pumping.
- [729] The modelling also indicates that there will be maximum reductions of up to 0.2 metres in 6 existing wells although this level of drawdown is unlikely to impact on the use of these wells.<sup>263</sup>
- [730] We return later to consider the proposed designation conditions for protecting existing bore water supplies.
- [731] With the exception of the Wharemakau Stream, the groundwater modelling indicates that there should be no discernible long term effects on the groundwater contributions to rivers and streams including the Waikanae River. For the Wharemakau Stream, the ground water which would have discharged directly to the stream will instead discharge to Flood Offset Areas 2 and 3A before being discharging into the stream lower down. This will result in an expected 17% reduction in groundwater base flow over a length of 600 metres adjacent to the pond.
- [732] A groundwater monitoring programme has been in place since November 2010 to establish baseline data on seasonal and annual variations in groundwater levels. It is planned for this programme to be expanded and to continue throughout the construction period and afterwards. The programme will include the establishment of key indicators which if exceeded would trigger the need for the implementation of remedial mitigation measures.
- [733] Typical mitigation measures would include altering the excavation method to reduce the period of time that excavations are drained; changing the peat treatment methodology; installing active drainage measures beneath embankments such as pies to facilitate flows; the redirection of treated surface water to wetlands of other storage ponds; temporary arrangements to provide users with water if their water supply wells are affected; and the controlled recharge of groundwater to limit drawdowns.

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<sup>263</sup> A Williams EIC, paragraph 96.

### Submitter Concerns

- [734] In her evidence, Ms A Williams has summarised the key concerns raised by submitters (in response to NZTA's NoR application documents) about the effects from the construction of the proposed expressway on existing groundwater levels.<sup>264</sup> These are that the expressway will act as dam and exacerbate existing flooding issues on the eastern side; that even though there are predicted to be negligible effects, these could still be significant ecologically; the extent of the proposed monitoring period; the effects of construction water draw offs on existing supply wells; the effect of piling on aquifers and the potential for construction of the expressway to cause the draw in of saline water and/or cause flooding due to climate change.
- [735] Ms A Williams responds to each of these in turn<sup>265</sup> and we summarise these here.
- [736] She points out that while a small rise in groundwater levels up-gradient of the expressway is predicted, this is likely to be offset by reduced rainfall recharge to the ground over the width of the expressway. She also notes that the peat is underlain by sand and the modelling has shown that the groundwater "re-routes" through this sand layer. Also, the peat which is to be excavated beneath the embankment is to be replaced with sand which will have a much higher permeability than the peat. It is her opinion that it is highly unlikely that rises in groundwater levels will exceed those predicted from the modelling.
- [737] Turning to the potential effects on ecology from even small changes in groundwater levels, Ms A Williams defers to the expertise of NZTA's ecology expert, Mr Park. We respond to these matters in section 10.14.
- [738] In addition to submitters, the DOC and KCDC requested extended groundwater monitoring programmes from those originally proposed by NZTA. In particular DOC considered that there should be a 2 year pre-construction groundwater monitoring programme and KCDC a 3 year post construction period. DOC also requested 4 years post construction monitoring in five wetlands of higher ecological value. In responding, Ms A Williams noted that the proposed groundwater diversion consent conditions had inadvertently been omitted from the application documentation. While we do not need to record here the rationale of the two councils for making these requests, we note agreements were eventually reached among NZTA, KCDC and GWRC on the monitoring periods and that these are recorded in the groundwater diversion conditions GD.1 to GD.8A attached to NZTA's closing submission.
- [739] Submitter concerns on the effects of the extraction of groundwater for construction purposes on existing wells (including a particular concern raised by Mr Bills of Harrison's Garden Centre) were followed up in an interchange between NZTA's planning expert, Mr Schofield and the Board.<sup>266</sup> This

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<sup>264</sup> A Williams EIC, paragraph 105.

<sup>265</sup> A Williams EIC, paragraphs 106 and paragraphs ff.

<sup>266</sup> Hearing transcript, page 2546.

revolved around the need for the users of existing wells to have priority ahead of NZTA's needs. We note that the priority for existing users has now been recognised in the final wording of condition GD.6.

- [740] In response to the concerns raised about the potential effects of piling on aquifer inter connectivity and contamination of the aquifers, Ms A Williams advised that piles would be founded at depths well above the aquifers which supplied KCDC's water, and that the piles would have a very localised and minimal effect on groundwater flows.<sup>267</sup>
- [741] With respect to the potential for aquifers to be contaminated by saline intrusion, it was Ms A Williams' opinion that any changes to existing groundwater conditions from the construction of the expressway would finish well inland from the coastline and would not have any influence on the saline intrusion.<sup>268</sup>
- [742] Ms A Williams advised that the potential effects of climate change had been addressed in the evidence of Mr Levy (NZTA's surface water expert) and that climate change had not been considered in the groundwater modelling on the basis that the purpose of the modelling had been to assess the changes to the groundwater regime from the construction of the expressway.<sup>269</sup>
- [743] For our part we have responded to issues surrounding climate change in a separate section of this report.

#### **Opinions of Other Experts**

- [744] All of the groundwater experts as well as Mr Alexander NZTA's ground settlement expert and Professor Manning, a climate change expert, who gave evidence on his own behalf, participated in a groundwater expert conference held on 31 October 2012. The joint witness statement from this conference was set out in a tabular format under the headings of Issues and Statements and whether the individual experts agreed or disagreed on each of these.
- [745] Key agreements reached were that because of inherent uncertainties in modelling, groundwater effects must be managed through a programme of ongoing monitoring and mitigation; that the potential effects of changes in groundwater in wetlands need to be assessed by hydrologists and ecologists and mitigation measures developed to address these changes; that Wetland 9 is a sensitive area because of its proximity to residential properties with a history of flooding; that there are sufficient monitoring wells installed to monitor the effects of this wetland; that the effects of changes in groundwater levels are likely to be minor with the possible exception of the Wharemakau Stream; that there are some water supply wells which could experience a reduction in supply; that setting of alert levels for each of the groundwater monitoring bores is an appropriate method for initiating the mitigation/response process; that the proposed process whereby the

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<sup>267</sup> A Williams EIC, paragraphs 145-147.

<sup>268</sup> A Williams EIC, paragraph 148.

<sup>269</sup> A Williams EIC, paragraph 1149-150.

Manager reviews and certifies the alert levels is a reasonable approach; that mitigation and remediation measures can be defined in the GMP although the draft current at the time of the conference required better definition of mitigation options; that the groundwater modelling does not take account of potential climate change effects but only the relative changes in groundwater resulting from the construction of the expressway; and that raised groundwater levels from climate change are likely to exacerbate surface flooding from extreme events.

- [746] The key areas of disagreement were that Dr Rutter considered that the proposed mitigation measures had not been assessed in sufficient detail; that the practicality of drainage during high storm events could be compromised by connectivity of the gravels with the Waikanae River; and that short term monitoring is unlikely to capture very high or very low groundwater levels. Mr Roil supported WOO's bridge alternative between the Waikanae River and the Waimeha Stream to limit the effects of groundwater in this location.
- [747] A second conference was held on 23 November 2012 with the agenda restricted to the consideration of conditions. Neither Dr Rutter nor Mr Roil supported the conditions agreed by the experts from NZTA, KCDC and GWRC based on their disagreements with issues of fundamental design.

#### **Groundwater and the WOO Alternative**

- [748] Elsewhere in this report we have addressed WOO's proposed bridge and roading alternative. As this alternative was the focus of quite detailed evidence and submissions, we provide here our brief response on the case made by WOO as to the advantages a bridge would offer over NZTA's proposed embankment in the context of its effects on groundwater.
- [749] In response to questioning from Mr Mitchell, counsel for WOO, Ms A Williams agreed that in absolute terms, a bridge supported on piles would be less intrusive for the passage of groundwater than a trenched embankment.
- [750] While this is undoubtedly correct, it does not mean that an embankment solution as proposed by NZTA is not viable. Ms A Williams has pointed out that the modelling of flow through the proposed embankment has shown that groundwater will "re-route" through an underlying sand layer(s) and that the flow will also be assisted by the permeable pathway which is to be created by the sand layer to be laid beneath the embankment to replace the excavated peat.
- [751] Separately, when asked a similar question by Mr Mitchell about surface water,<sup>270</sup> NZTA's surface water expert Mr Levy responded that his best recollection of the WOO alternative proposal compared with NZTA's proposed embankment was that these are in areas where there is not a strong flow of surface water. In terms of a footprint within flood plain, Wetland 9 is in part to offset the loss of footprint taken up by the expressway. Even for the WOO alternative, a wetland would be required for

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<sup>270</sup> Hearing transcript, page 1338.

the treatment and attenuation of expressway runoff in addition to some offset storage.

- [752] We do not accept the WOO evidence and accept NZTA's evidence that the embankment will not unduly impede the flow of groundwater and stormwater. Therefore, even if we did have jurisdiction, on the evidence, we accept the NZTA proposal rather than the WOO alternative.

#### **Dr Rutter's Position**

- [753] When all is said and done, we have concluded that Dr Rutter's opposition to NZTA's approach for the mitigation of the effects of the changes in groundwater levels from the construction of the expressway can be sheeted home to her lack of confidence in the accuracy of NZTA's groundwater modelling and her concern that an inaccuracy in the predicted levels of only 0.2 metres above the seasonal high<sup>271</sup> could cause flooding problems for residents who live adjacent to Wetland 9, including her clients, the Deardens who live at 39 Puriri Road.
- [754] Dr Rutter is also concerned as to the effectiveness of the measures proposed by NZTA to mitigate these effects.
- [755] In response to questioning from Ms Janissen, Counsel for NZTA, Dr Rutter accepted that Mr Callendar, the groundwater expert for GWRC and Mr Hughes, the hydrogeologist for KDCD had both agreed with the groundwater modelling undertaken by NZTA including the groundwater levels predicted from this modelling.<sup>272</sup> In doing so both acknowledged that there was a degree of uncertainty in the accuracy of the levels.
- [756] Dr Rutter agreed that because of this uncertainty, the groundwater effects must be managed through an effective programme of monitoring and mitigation.<sup>273</sup>
- [757] Dr Rutter also agreed with Ms Janissen that she had agreed at the November expert conference that the setting of the alert levels for each of the groundwater level monitoring bores was an appropriate method for initiating the mitigation response process and that this should be contained in the groundwater level management plan.
- [758] Ms Janissen drew Dr Rutter's attention to paragraph 66 of her evidence where she had indicated that a precautionary approach was required due to the uncertainties associated with the groundwater modelling. She asked Dr Rutter whether, having reviewed the amended groundwater conditions and the general resource consent conditions, she was now comfortable that a precautionary approach was indeed being taken, particularly with respect to the wetlands including Wetland 9.
- [759] Dr Rutter responded that her concerns were more with setting the alert levels and making sure that they were appropriate for Wetland 9. She was also concerned that proposed condition G.29 should allow for potentially

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<sup>271</sup> Hearing transcript, page 1392.

<sup>272</sup> Hearing transcript, page 1393.

<sup>273</sup> Hearing transcript, page 1394.

affected residents in this area to have a say in any monitoring or mitigation options. As currently worded, this condition restricted their inputs to being routed through KCDC.

- [760] Ms Janissen drew Dr Rutter's attention to condition GD.2 which now included a specific provision for drainage capacity to be provided to avoid land drainage or flooding problems on properties in the vicinity caused by the operation of Wetland 9.<sup>274</sup> In response Dr Rutter said that this proposed measure needed to be linked to the setting of the alert levels and that as she had already stated, the setting of these levels should involve direct inputs from local residents.

### **Mr Roil's Position**

- [761] Mr Roil has the qualifications of BSc in geology and geophysics. In response to a question from Ms Janissen he advised that it was around 30 years since he had practised as a geologist and that he was not qualified as a civil engineer. Mr Roil is also an active member of WOO which has as a key objective moving the expressway in the section from the Waikanae River and the Waimeha Stream.<sup>275</sup>
- [762] In response to questions from Ms Janissen, Mr Roil agreed that he had placed considerable weight on Alistair Osborne's 2006 Master's thesis *Movement of Water within the Waikanae Shallow Gravel Aquifer and its Interaction with the Waikanae River* to his ground water concerns. He had also asked Mr Osborne whether he would give evidence to us but his request had been declined as Mr Osborne works for one of the consultants involved in the area and considered that there was a potential conflict of interest.<sup>276</sup>
- [763] Mr Roil agreed with Ms Janissen that, in her rebuttal evidence, Ms A Williams (NZTA's groundwater expert) had noted that Mr Osborne's thesis was available to the project team. Mr Roil also agreed that much of the NZTA project team's hydrogeological work had been carried out more recently than 2006. He also accepted that Ms A Williams disagreed with his interpretation of the material in the thesis. In particular, Ms A Williams also disagreed with his contention that there was great uncertainty in the hydrogeology of the region.

### **Mr Nordberg's Position**

- [764] We were particularly interested to hear the evidence of Mr Philip Nordberg, a civil engineer who was formerly employed by the Horowhenua District Council. Mr Nordberg told us that he had been involved with a number of subdivisions constructed at Waitarere Beach where peat had been removed and replaced with sand. He said that this had triggered rises in groundwater levels in some low lying areas. He explained that the peat had formed some kind of subterranean sponge so that when it rained heavily the water would

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<sup>274</sup> Hearing transcript, page 1402.

<sup>275</sup> Hearing transcript, page 1212.

<sup>276</sup> Hearing transcript, page 1216.

be soaked up in the sponge and then released gradually.<sup>277</sup> Once removed and replaced with sand, the groundwater flow rates had increased causing downstream flooding. This had been overcome with the installation of pumps to lower the groundwater in the affected areas.

[765] He noted NZTA's evidence that the measures proposed to manage the effects on groundwater from the construction of the expressway were designed to achieve hydraulic neutrality which means limiting any changes in groundwater in the immediate vicinity of the expressway. Mr Nordberg had doubts that this would be achieved.

[766] We were left with some concerns as to whether the effects Mr Nordberg described would occur from the construction of the expressway. In the event, we accept Ms A Williams evidence that the design proposed will in fact achieve hydraulic neutrality.

### **Climate Change**

[767] The effects of increases in sea levels and rain intensity from climate change will impact on both stormwater and groundwater. Rather than consider the effects of each of these in the separate stormwater and groundwater sections of this report, we have chosen to consider them together in one comprehensive section.

### **Discussion and Findings**

[768] Our evaluation of the evidence, joint witness statements, transcripts and the proposed conditions of consent indicate that since the NoR application documents were lodged, the experts for NZTA and the two councils have been able to reach agreement on all matters relating to groundwater including NZTA's proposed consent conditions. These parties are to be commended for this as the issues surrounding groundwater are very challenging.

[769] We also commend Mr Roil and Dr Rutter for their participation and contributions to the joint conferencing even though they have maintained different views on some of the outcomes agreed by the other parties.

[770] Starting with Mr Roil, we have been unable to give much weight to his evidence. We find his qualifications and experience to be only marginally related to groundwater. He has relied heavily on his own interpretation of Mr Osborne's 2006 thesis where Mr Osborne was not called to give evidence in his own right. We prefer the evidence of Ms A Williams which has included the application and assessment of extensive information gathered since 2006, directly relevant to the expressway and supported by the two council experts. And we find also that Mr Roil could hardly be considered to be independent given his clear support for the WOO bridge alternative.

[771] All of the experts have agreed that there needs to be caution around the accuracy of the ground water levels predicted from the groundwater modelling. Given the degree of subjectivity and judgment which must be

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<sup>277</sup> Hearing transcript, page 1663.

exercised in choosing parameters for many of the inputs to this modelling, we can only agree.

- [772] As for the prediction of other effects from the construction of the proposed expressway, for our part, we need to be satisfied that adequate safeguards have been built into the conditions. For example, there must be an extensive groundwater monitoring programme which must include “Alerts” and mitigation measures to respond if unexpected effects are detected. This needs to cover both the construction period as well as post construction. This has been satisfied in our view by the wording of condition GD.3.
- [773] In a more specific sense the safeguards must also respond to the concerns raised by a number of Puriri Road residents (and supported in Dr Rutter’s evidence) that construction of the expressway could exacerbate flooding of properties along Puriri Road adjacent to Wetland 9. We are satisfied that this has been addressed in the final wording of condition GD.2(b) where the actions for remediation and mitigation are to include:
- “...the provision of sufficient drainage capacity to avoid land drainage or flooding problems on properties in the immediate vicinity caused by the operation of Wetland 9.”*
- [774] Our findings on climate change as this affects groundwater are included in the climate change section of this report.
- [775] Overall, we are satisfied that the groundwater related conditions attached to NZTA’s closing submission should provide adequate safeguards for the management, control and mitigation of groundwater effects arising from the construction and operation of the proposed expressway.

## 10.10 HYDROLOGY AND STORMWATER

[776] Evidence on the subject of stormwater and hydrology was received by a number of witnesses:

NZTA:	Mr Graham Levy
GWRC:	Ms Sharyn Westlake
KCDC:	Mr Robert Van Bentum
St Heliers Capital Limited:	Mr Pranal Wadan Mr Vinod Chand

[777] NZTA's closing submission records that following conferencing of the stormwater/surface water experts only four issues remained unresolved between NZTA and the two councils. Subsequent discussions then narrowed these down to three issues.<sup>278</sup>

- i) With KCDC, whether there should be two-stage treatment at other defined locations along the expressway;
- ii) With GWRC, the condition relating to the maintenance and management of the Waikanae River Bridge; and
- iii) Whether NZTA's final stormwater management design and flood risk modelling should be certified by the Manager (at GWRC).

[778] Before we respond to each of these issues, drawing on *TR22: Assessment of Hydrology and Stormwater Effects* we provide a brief overview of hydrology and stormwater, or given that TR22 is over 100 pages long, what might be better described as a thumbnail sketch. This is written in the context that agreements have been reached among the experts on almost all issues and that our responses to the main submitter concerns on water are set out in the groundwater section of this report.

### Design and Operation Outcomes

[779] KCDC has calibrated models for the majority of the catchments affected by the proposed expressway and GWRC has a calibrated model for the Waikanae River and flood plain. With the expressway superimposed, these models were used by NZTA's project team to test the efficacy of the proposed expressway mitigation measures.

[780] The design and operation outcomes sought were to:

- i) achieve hydraulic neutrality within the confines of the expressway designation taking into account the increased run-off from the expressway footprint and the loss of floodplain storage under this footprint;
- ii) attenuate peak flows to achieve a target of 80% of pre-expressway run-off rates;

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<sup>278</sup> NZTA closing submissions, paragraph 296.

- iii) use deep flat-gradient roadside swales as the principal means for stormwater conveyance, the treatment of contaminants, and peak flow attenuation;
- iv) where swales are inadequate, provide wetlands and flood storage areas with the largest of these being Drain 7 South, Wharemakau Stream, Kakariki Stream and Paetawa Drain/Peka Peka Interchange;
- v) where there is a loss of floodplain storage within the expressway corridor, provide offset storage to mitigate the effects of increased flood levels;
- vi) base designs on a 100 year return period storm;
- vii) provide for the effects of climate change in accordance with the Ministry for the Environment, KCDC and GWRC requirements;
- viii) provide for fish friendly passages in cross-culverts; and
- ix) operate and maintain the completed stormwater systems in accordance with the principles set out in *NZTA's Stormwater Treatment Standards for Highway Infrastructure* with the addition of specific provisions for the expressway.

### **Rivers and Streams**

- [781] There are three different stream forms within the route of the expressway. These being the large coastal hill catchments which feed the Waikanae River and the Wharemakau Stream; low land catchments which feed watercourses such as the Mazengarb Drain; and spring-fed streams such as the Waimeha Stream, with some spring feeding also of other water courses such as the Wharemakau Stream.
- [782] The type of stream and its hydrological characteristics depend on the point at which it is crossed by the proposed expressway. Where there are steep gradients near to the hill catchments, there will be large flows and significant sediment and debris. Where the crossings of the expressway are further downstream, the flows slow down, the floods spread out across the flood plain and the larger sediments drop out and deposit on the floodplain.
- [783] These differing types of stream and their characteristics result in considerable complexity in the catchment modelling and design of mitigation measures for each crossing along the expressway.

### **Waikanae River Bridge**

- [784] As many submitters expressed concern about the impact of the proposed expressway bridge over the Waikanae River, we provide here some background on this. For context only we have also included some comparisons with the proposed WLR bridge if that had been built.
- [785] The location of the bridge has been determined from a number of considerations. These include road geometrics, property requirements, the need to avoid the Vector gas pipeline, the topography of the floodplain and iwi and wāhi tapu considerations. The chosen location is at the narrowest

point of the river, which is just downstream of the crossing point that was proposed for the WLR bridge.

- [786] In order to provide sufficient waterway space for a 100 year return period flood, the bridge needs to be 180 metres long with a freeboard of 2.2 metres (the clearance from the underside of the bridge to the 100 year return period flood level). The freeboard is required to allow for the free passage of debris in a major flood. The seismic design is based on a 1 in 2,500 year return period earthquake and there is a seismic hazard factor of 0.4 (which is twice as high as for any other region in New Zealand).
- [787] To provide for a higher design speed, the width of the proposed bridge is 5 metres more than that required for the WLR bridge.
- [788] The construction of a bridge over the Waikanae River, whether for the expressway or the WLR, will have major effects on the existing environment around the crossing point. Measures to mitigate these effects are described in other sections of this report.

### **Climate Change**

- [789] The effects of increases in sea levels and rain intensity from climate change will impact on both stormwater and groundwater. Rather than consider the effects of each of these in separate stormwater and groundwater sections of this report, we have chosen instead to consider them together in one comprehensive section.

### **Discussion and Findings**

- [790] TR22 describes the measures proposed to mitigate the overall effects from the expressway on stormwater and surface hydrology. These are through the attenuation of peak flows to no more than 80% of pre-expressway peaks, in some cases by quite large margins; the creation of the offset flood storage areas; the provision of rip rap rock protected bridges, culverts and outlets; the provision of swales and wetlands to treat stormwater prior to its discharge into streams and watercourses; and for all new open channel drains being designed to resemble natural streams, to be fish friendly and to be planted with riparian vegetation to provide shade and cover.
- [791] All of these measures have been provided for in NZTA's proposed designation and consent conditions which, with the three exceptions already noted have been accepted by the two councils.
- [792] We respond now to each of these exceptions.

### **Two-stage treatment**

- [793] It is Mr Levy's position that a two stage process (swales plus wetlands) is required to treat the run-off to the Kakariki Stream and Ngarara Creek only, whereas KCDC (Mr van Bentum) sought that the two stage process apply also to the Wharemakau and Waimeha Streams.<sup>279</sup>

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<sup>279</sup> NZTA closing submissions, paragraphs 297-304.

- [794] In simple terms Mr Levy's evidence is that inclusion of the two further streams is not warranted as the water quality effects of the discharges have been assessed as minor, NZTA's ecologists did not recommend it, and the costs of the additional land required to provide for the treatment is not warranted against the marginal improvement in quality that would result.
- [795] Having considered Mr van Bentum's counter arguments, we prefer the evidence of Mr Levy and find that two stage treatment is not required at the Wharemakau and Waimeha Streams.

#### **Maintenance management of the Waikanae River Bridge**

- [796] Agreement was reached during expert conferencing that NZTA maintenance activities should not compromise GWRC's management of the Waikanae River system.<sup>280</sup> In its closing submissions, NZTA submits that there is no effects based reason for NZTA to consult with GWRC on the standards and maintenance schedule for an asset which it is to retain.
- [797] Having reviewed Condition WS.7A attached to NZTA's closing submissions, it is not entirely clear to us as to where the final disagreement between the two parties actually lies. The condition provides for the consent holder to submit a maintenance plan to the Manager for certification and that construction cannot commence until this certification has been obtained. There is also a requirement for the consent holder to consult with GWRC about maintenance schedules for the bridge works.
- [798] In its closing submissions NZTA submitted that clause WS.7A(a)(ii) should be deleted. We can only assume that this clause was deleted after the closing submissions were prepared.
- [799] Also, we cannot find any reference to disagreement with this condition in GWRC's closing submission.
- [800] Our decision is that Condition WS.7A is confirmed based on wording set out in the condition set attached to NZTA's closing submission.

#### **GWRC certification of NZTA's final stormwater management design and flood risk modelling**

- [801] In Condition SW.2(e), NZTA disputes GWRC's request for the inclusion of a requirement for the final stormwater management design and flood risk modelling to be certified by the Manager, with this to follow an independent peer review and that work should not commence until the Manager has certified the peer review report.
- [802] The condition requires that the selection of the peer reviewer is to be agreed with KCDC and GWRC. NZTA argues that this will provide adequate protection for GWRC (and KCDC) with subsequent certification by the Manager being an unnecessary step.
- [803] Notwithstanding GWRC's input into the selection of the peer reviewer, given that GWRC is responsible for regional flood management and that NZTA's stormwater management and design flood risk modelling will need to

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<sup>280</sup> NZTA closing submissions, paragraph 308.

integrate with this, we do not consider it unreasonable for GWRC to require a certification role for NZTA's design and flood risk modelling.

- [804] We confirm that the wording of Condition SW.2 contained in the condition set attached to NZTA's closing submission should be amended to include a requirement for the final stormwater management design and flood risk modelling to be certified by the Manager, with this to follow an independent peer review. Work should not commence until the Manager has certified the peer review report.

#### **Climate change**

- [805] Our findings on climate change as this affects stormwater are included in the climate change section of this report.

## **10.11 GEOTECHNICAL, SEISMICITY AND SETTLEMENT**

- [806] Evidence on the subject of geotechnical, seismicity and settlement was received by a number of witnesses:

NZTA:	Mr Gavin Alexander
	Mr Graeme Ridley
WOO:	Mr David Roil
Save Kapiti Inc:	Dr Hugh Edward Cherrill

#### **Ground Conditions and Seismicity**

- [807] We have drawn on information contained in TR36 "*Geotechnical Interpretive Report*" for our overview of the ground conditions along the proposed expressway including a description of the expected seismicity.
- [808] The route traverses peat, sand dunes up to 20 metres high, swamp deposits and alluvium all underlain by a thick sequence of older marine and alluvial sand and gravel deposits. We observe that the ground conditions are similar from the foothills in the east to the coast in the west so that the construction of an expressway (or even an at grade road) on this coastal margin, irrespective of its location, will be both complex and challenging.
- [809] The peat deposits in the Raumati South area are described as being between 1.0 and 2.0 metres thick; in the area from Raumati Road to Mazengarb Road, from 1.0 to 3.5 metres thick; from Mazengarb Road to north of Te Moana Road, 1.0 to 2.5 metres thick and from Te Moana Road to Peka Peka, 0.5 to 4.5 metres thick.<sup>281</sup> These deposits are very soft with high water contents, compressibility and susceptibility to large settlements within the footprint of the expressway under embankment loadings.
- [810] The expressway is in an area of high seismicity. North-east and south-west oriented active faults surround the route and although none pass directly through it, there is the possibility that splinters of major active faults may be

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<sup>281</sup> TR35, paragraphs 3.2.1-3.2.4.

present. There are extensive loose to medium dense sands which where saturated are predicted to liquefy in a 250 year return period earthquake. Liquefaction has the potential to cause ground settlements, slope instability and the horizontal movement of new embankments although this potential will be mitigated with the proposed ground improvement techniques.

[811] The design will involve the determination of acceptable levels of damage to the expressway under different return period earthquakes, the likely extent and cost of repairs after each earthquake and the economics and risk profile of these decisions.

[812] To provide some context for this, we note from the evidence of Mr Nancekivell that the bridge structures on the expressway are to be designed to be undamaged in a 1 in 25 year earthquake and not to collapse under the maximum credible earthquake which could be expected in the locality. The designs must also allow for the passage of emergency vehicles within 3 days of the ultimate limit state design earthquake (1 in 2,500 years for the expressway bridges and 1 in 1000 years for bridges that carry local roads over the expressway); and for all bridge structures to be economically repairable and able to be reinstated with 12 months of the ultimate limit state earthquake.<sup>282</sup>

[813] These are very high and exacting criteria.

#### **Ground Settlements**

[814] TR35 "*Assessment of Ground Settlement Effects*" has provided us with a comprehensive assessment of the potential settlements associated with the construction and operation of the expressway and the expected effects of these settlements on existing buildings, services and transport infrastructure.

[815] The control of settlements within the embankment footprint is a key concern for NZTA with any significant settlement of the embankment after the expressway is paved likely to adversely affect the functionality of the pavement as well as any buried services. Construction activities will need to be managed in such a way as to accommodate the extended time periods which will be required to allow for the peat to settle following the placement of the pre-loading embankments and before the next stages of construction can commence.

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<sup>282</sup> Nancekivell EIC, paragraph 37.2.

- [816] Information from a number of trial embankments constructed in the area has been used to assist with the assessments of likely settlements. As background, this information is summarised in the following table:

Location	Peat Depth	Pre Loading Depth	Settlement
Adjacent to SH1 Raumati Straight*	3 metres	2 metres	0.3 metres – 0.5 metres
South of Poplar Ave	2.5 metres	3 metres	0.4 metres
Not Specified	6 metres	8.5 metres	2 metres

\*For the Raumati Straight site, wick drains were installed in the peat over half of the embankment width and the preloading left in place for 6 months. The rates of settlement for the drained and un-drained sections were much the same.

- [817] For the proposed expressway, up to 1,300 millimetres of consolidation settlement is predicted to occur beneath the higher embankments where these are underlain by several metres of peat.
- [818] If significant settlements were to occur beyond the edges of the embankment, these would have the potential to damage adjoining buildings and structures and it is on these settlements that we focus our attention in the paragraphs that follow.
- [819] The *consolidation* settlements are expected to reduce to around 20 millimetres at a distance of about 10 metres outside the toe of the embankment.<sup>283</sup>
- [820] The *lowering of groundwater* as a result of excavation will trigger *time dependent* settlements of around 12.5 millimetres within 70 metres of the embankment toe.
- [821] Vibrating compactors will be used to densify the sandy and gravelly soils along the expressway. The densification settlements resulting from this compaction will stop as soon as the compaction is completed and will not extend outside of the construction footprint.

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<sup>283</sup> TR35, Executive Summary, page 1.

- [822] Where specific stormwater management features such as wetland and storage areas are constructed without liners, settlements will extend over much greater distances. A summary of the predicted groundwater drawdowns and settlements for these wetland and stormwater storage areas is shown in the following table:

Wetland/Flood Storage Area	Predicted Drawdown at Edge of Area	Predicted Settlement	Comment
WOA and FSA OB	Less than 0.1 metre	Less than 5 millimetres	Low values as OA to be lined
FSA 2 and 3A, W 3	0.6 metre	Less than 12.5 millimetres	0.1 metre drawdown at 500 metre
FSA 6a	0.5 metre	Less than 12.5 millimetres	0.1 metre drawdown at 50 - 100 metre
W 8	0.5 metre	Less than 12.5 millimetres	0.1 metre drawdown at 50 - 100 metre
W 9	None predicted	None predicted	Low values as W 9 to be lined

### Assessment of Settlement Effects

- [823] The existing infrastructure which could potentially be affected by ground settlements from the construction of the proposed expressway includes residential buildings, the commercial and industrial buildings in Paraparaumu town centre, the buildings and structures at the KCDC wastewater plant, the buildings at El Rancho, underground services including KCDC's water supply, stormwater and wastewater networks, Electra's electricity network, Vector's local gas network, Telecom, Telstra Clear and FX Networks underground cabling, Vector's high pressure gas pipeline and its delivery point station at the Waikanae River, the Transpower Transmission Line and the NIMT main trunk railway.
- [824] All of the existing residential buildings have been characterised into two categories by their sensitivity to settlement effects, the first being those constructed of masonry and/or with brittle cladding (these being rigid and more sensitive to damage from settlements) and the second being those of timber construction with flexible claddings (these being more flexible and less sensitive).
- [825] The potential severity of damage to buildings from the predicted ground settlements has been ranked across 5 categories, 0 to 5, these being identified as Negligible, Slight, Moderate, Severe or Very Severe. Anticipated crack widths from settlement are a key measure for defining

each of these categories with these varying from less than 0.1 millimetres for Category 0 to greater than 25 mm for Category 5.<sup>284</sup>

- [826] The settlement modelling undertaken by NZTA and reported in TR35 has shown that the estimated ground settlements at all residential buildings are less than 25 millimetres and typically less than 12.5 millimetres. The estimated *differential* settlements across a building, which are the primary cause of building distress, are also relatively small such that no greater than Category 0 effects (or Negligible) are predicted to occur at any residential building.<sup>285</sup>
- [827] Even with these predictions, TR35 includes some notes of caution. These are that there are inherent uncertainties in the settlement predictions and that the dwellings with the greatest potential to be affected by settlements are those within 20 metres of the proposed peat treatments, those adjacent to the new stormwater features where the predicted groundwater draw down is greater than 0.2 metres, and those where the predicted settlements are greater than 12.5 millimetres, including as a precautionary measure, those that are within 10 metres beyond the predicted 12.5 millimetres contour.
- [828] With the agreement of the owners, it is proposed to inspect all of these buildings prior to construction starting to identify any pre-existing defects or sensitive features and as well these will be monitored at critical phases during construction.
- [829] All potentially affected commercial and industrial buildings have been subject to a preliminary structural assessment to determine potential building damage. These buildings are to be further assessed during detailed design.
- [830] The potential settlement effects on underground services, particularly on older pipes constructed of asbestos cement are being discussed by NZTA directly with the service providers. We accept this advice and as no residual concerns were raised with us on these matters by any of the service providers, we do not consider these services any further.
- [831] The settlements at all buildings and structures at the KCDC wastewater plant are estimated to be less than 12.5 millimetres. Given the sensitivity of a number of these buildings and structures to settlement, there are on-going discussions between NZTA and KCDC over potential settlements and potential mitigation options which might be required.
- [832] El Rancho is not within the area of predicted settlements but with the agreement of the owners, NZTA proposes to inspect a number of the buildings there to identify any pre-existing defects or sensitive features with this inspection to be repeated following the completion of construction.
- [833] While the NIMTR is outside of the area of predicted settlements, NZTA proposes to work closely with KiwiRail to develop appropriate mitigation measures in the event that these might be required. We agree with this proposed approach and for our part do not need to respond further on the potential effects (if any) on Kiwi Rail's NIMTR.

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<sup>284</sup> TR35, Table 10.

<sup>285</sup> TR35, paragraph 4.8.1 and paragraph 6.2.1.

### Monitoring Programme

- [834] TR35 describes the extensive ground settlement and ground water monitoring proposed to be undertaken along the route of the expressway prior to construction commencing, during construction and post construction. This monitoring will extend across all areas where settlements are expected to be greater than 12.5 millimetres and where ground water draw down has been predicted.
- [835] In general terms, the monitoring programme as confirmed in Designation Condition DC.71, is as follows:

Project Phase	Frequency
Pre-construction	Monthly for 12 months
During Construction	Quarterly
During Active Construction *	Monthly
Post Construction	Quarterly for 6 months, then half yearly for a further period of at least 2 years

\*Active construction is defined as being where earthworks commence within 500 metres of a particular location with this ending when pavement construction is complete at that location.

- [836] Monthly visual assessments will also be undertaken for dwellings where the total settlements are predicted to be more than 25 millimetres, for any buildings with a predicted building damage category greater than 0 (Negligible) – although none has so far been identified - the KCDC waste water plant buildings and structures and all other specifically identified buildings.

### Mitigation Measures

- [837] Various mitigation measures to reduce settlements have been identified should monitoring indicate that recorded settlements are being exceeded in magnitude or lateral extent. These measures include, where the expressway is constructed over peat, changing the ground improvement method from pre-loading to excavate and replace or vice versa; providing a more permeable starter/drainage layer under the embankment; for the excavate and replace method, reducing the length and drained duration of the excavation; using alternative ground improvement methods in localised areas to avoid the need for excavating or loading of the peat; and using geogrid reinforcement to allow the steepening of embankment slopes thereby increasing the distances to sensitive infrastructure.
- [838] Contingency measures have also been identified to limit ground water draw down. These include adopting alternative methods for construction over peat as described for the settlement mitigation; the temporary or permanent lining of cuts below ground water level; limiting the length and drained duration of temporary excavations; constructing cut off walls; and providing ground water recharge trenches or walls.

- [839] Despite NZTA's assessment that settlements will not cause building damage, if non-structural building damage did occur, then typical repairs would likely include re-pointing of brick work, repainting and decorating. While the assessment has identified no buildings with a predicted damage criteria of more than "Negligible", if structural damage did occur, then a detailed structural engineering evaluation would be undertaken followed by the necessary repairs.
- [840] TR35 notes that in the event of "a substantial injurious affection" to a person's land resulting from the construction of the expressway, s63 of the Public Works Act would entitle that person to compensation.<sup>286</sup>

### Counterview

- [841] In his evidence, Dr Cherrill the ground water expert for Save Kāpiti Inc disagrees with various aspects of the conclusions drawn by NZTA for the expected levels of ground water drawdowns and ground settlements, the effects of these settlements on adjoining infrastructure, the mitigation options to control settlements and the proposed monitoring approach.
- [842] In his rebuttal evidence, Mr Gavin Alexander, the ground settlement expert called by NZTA, identifies the particulars of Dr Cherrill's concerns and provides his response to each. These are:
- i) Dr Cherrill relies on the conclusions of Dr Rutter (the groundwater specialist called by Dr and Mrs Dearden) in contending that that little confidence should be placed on ground water models which interpret water levels of less than 1 metre. In Mr Alexander's view it is not credible for the ground water levels in the conditions which exist along the expressway to be lowered by more than the depth of the excavation. This would mean that for the proposed 0.5 metre depth of excavation the long term draw down would be no more than 0.5 metres. Mr Alexander also points out that the TR35 settlement predictions were based on a combination of detailed 2D and 3D ground water modelling undertaken by Ms A Williams (the NZTA ground water specialist) and that in his view this was an appropriate and reasonable methodology.<sup>287</sup> (We comment on this in more detail in our section on ground water).
  - ii) Dr Cherrill also contends that in a very dry summer, ground water levels may drop below the lowest previous ground water level leading to pre-consolidation pressure being exceeded and much larger settlements developing than predicted by NZTA. Mr Alexander responds that this effect has in fact been modelled and that this is demonstrated by the extensive areas of the predicted settlements at the southern and northern ends of the project. Again, it is Mr Alexander's view that the much greater settlements suggested by Dr Cherrill are not credible.<sup>288</sup>

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<sup>286</sup> TR35, paragraph 7.2.5.

<sup>287</sup> From Alexander Rebuttal evidence, paragraphs 14-18.

<sup>288</sup> From Alexander Rebuttal evidence, paragraphs 19-21.

- iii) A key area of disagreement is the degree of shrinkage and oxidation of the peat if the peat was to dry out and the effects of this on the settlement predictions. Mr Alexander responds that the NZTA ground water modelling has shown that there would be a maximum draw down of 0.5 metres from the winter high groundwater level in areas outside of the project limits and that this would not in his view be a sufficient change to cause significant shrinkage and drying of the peat. In his rebuttal evidence, Mr Alexander also disputes the applicability of Dr Cherrill's reference to the drying out of peat in agricultural land in the Waikato. He points out that this has occurred as a result of regular surface tilling and that there are drainage ditches there up to 5 metres deep or 10 times the depth of the change in ground water level modelled for the expressway.<sup>289</sup>
- iv) Dr Cherrill assessments of the total potential settlements (each of the components of which has been rebutted by Mr Alexander) is that these will be about 10 times more than those modelled by NZTA.<sup>290</sup>
- v) Mr Alexander agrees that if Dr Cherrill's total settlement predictions were correct (which he disputes), then building damage would result. However, having considered Dr Cherrill's evidence, it is Mr Alexander's view that Dr Cherrill's underlying assumptions and conclusions have no validity and that the predictions described in TR35 should stand.

[843] Following the lodging of Mr Alexander's rebuttal evidence, Dr Cherrill and Mr Alexander met in an endeavour to resolve their differences. The expert conference joint witness statement dated 9 November 2012 records that the two experts reached agreement on some matters but not others.

[844] In brief, the experts agreed:

- i) on the construction mitigation measures available to reduce ground water drawdowns and hence ground settlements;
- ii) that peat shrinkage and oxidation effects will be more rapid where the land is tilled, that tilling increases the potential for mechanical compaction but in the long term (over many years), oxidation settlements for a given draw down will be the same; and
- iii) if oxidation settlements were to occur, these can continue for many years after construction.

[845] The key residual areas of disagreement are:

- i) Dr Cherrill considers that damaging settlements are possible in the short term with the increasing likelihood of occurrence in the longer term (from shrinkage and consolidation in extreme dry periods and ongoing oxidation) and that as a result, the monitoring and mitigation measures proposed are not sufficient to manage potential ground settlement effects.

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<sup>289</sup> From Alexander Rebuttal evidence, paragraphs 22-28.

<sup>290</sup> From Alexander Rebuttal evidence, paragraph 29.

- ii) Conversely, Mr Alexander's view is that the ground water level changes are sufficiently small that short term settlements arising from consolidation will also be small; that long term settlement from peat oxidation or from extreme dry periods is extremely unlikely and that NZTA's proposed conditions for the duration of the monitoring of the settlement and ground water effects are sufficient to manage ground settlement effects.

### Discussion and Findings

- [846] When there are key differences of technical opinion between two experts it is helpful for a Board such as ours to have evidence from other experts to assist us with our evaluation. In this regard, even though KCDC and GWRC raised quite detailed concerns on NZTA's draft conditions for other water and ground related matters, neither of the councils presented evidence on ground settlements, neither chose to cross-examine either Mr Alexander or Dr Cherrill and neither has disputed the ground settlement conditions attached to NZTA's closing submission, which have been based on NZTA's TR 35 and Mr Alexander's evidence.
- [847] From this it would be reasonable for us to assume that the two councils either agree (or put another way, do not disagree) with the approach being proposed by NZTA for assessing and managing the effects of ground settlements.
- [848] This leads us to prefer the evidence of Mr Alexander over that of Dr Cherrill with the proviso that the designation conditions must contain
- i) adequate safeguards for contingency measures to be implemented if the progressive ground water and settlement monitoring should indicate that the ground water draw down and predicted settlements are likely to be exceeded; and
  - ii) for monitoring to continue for a reasonable period after construction has been completed.
- [849] Having reviewed NZTA's proposed ground settlement designation conditions, we require that a clarification modification be made to Condition DC.72. This condition lists the actions to be undertaken if a reassessment based on the ground water and settlement monitoring results indicate that a building has increased its damage category, with this being considered to be an Alert level and then if confirmed following further reassessment an Action level. Paragraph (d) of DC.72 sets out the actions to be taken if an Action level is confirmed. This includes "*..modification to the construction approach..*" For more specificity, the following words are to be added after "*approach*", "*..with a road embankment settlement contingency measure (or measures) in accordance with Section 7.2 of Technical Report 35..*"
- [850] We note that in response to a question from counsel for NZTA,<sup>291</sup> Dr Cherrill advised that he had not looked at NZTA's proposed settlement conditions in any detail particularly with respect to the proposed period of monitoring after

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<sup>291</sup> Hearing transcript, page 1243.

construction has been completed. This would seem to us to rather undermine Dr Cherrill's contention that NZTA's proposed monitoring regime is deficient.

- [851] Designation Condition DC.71 requires that monitoring continue for 2 ½ years after the completion of construction. Based on the evidence we heard about the potential for longer term settlements, we consider this to be a reasonable period for NZTA to continue its monitoring.
- [852] Overall, having reviewed NZTA's proposed ground settlement designation conditions DC.67-DC.81, and with the modification we have requested for Condition DC.72, we are satisfied that these conditions should provide adequate safeguards for managing and controlling the effects of ground settlements from the construction of the proposed expressway.

## 10.12 EROSION AND SEDIMENT CONTROL

- [853] Evidence on the subject of erosion and sediment control was received by a number of witnesses:

NZTA: Dr Vaughn Keesing  
Mr Graeme Ridley

GWRC: Mr Brian Handyside

- [854] Erosion and sediment control is focused on the reduction and minimisation of construction related erosion and the capture and retention to the maximum extent possible, of any sediment run-off activated by erosion primarily to protect aquatic life in the receiving environments.<sup>292</sup>
- [855] Erosion and sediment control Conditions G.26A to G.28 and E.1 to E.11 prescribe the erosion and sediment control measures proposed to achieve the outcomes defined in Condition G.26A. These outcomes include compliance with the most stringent provisions of three standards and guidelines, *The Erosion and Sediment Control Guidelines for the Wellington Region*, *NZTA's Draft Erosion and Sediment Control Standard for State Highway Infrastructure* and *the Draft Field Guide For Contractors*.
- [856] The achievement of these outcomes will be effected through an *Erosion and Sediment Control Management Plan (ESCP)* the purpose of which:
- “..is to describe the methods and practices to be implemented to avoid, remedy and mitigate the effects of sedimentation generation and yield on the aquatic receiving environments associated with the Project.”*<sup>293</sup>
- [857] It is not our intention to repeat here the record of the discussions which have taken place since the lodgement of the NoR application between the relevant experts for NZTA (Mr Ridley) and GWRC (Mr Handyside). These are well documented in the evidence and joint witnessing statements.

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<sup>292</sup> Ridley EIC, paragraph 8.

<sup>293</sup> See Condition G.27(a).

Suffice to say that, as noted in NZTA's closing submission, these discussions have led to substantive agreements having been reached on all but two of the consent conditions.

[858] Firstly, all of the E conditions have been agreed.<sup>294</sup>

[859] The G conditions remaining in contention are a new condition (G.26B proposed by GWRC's Mr Percy) and G.42.

#### **Condition G.26B**

[860] GWRC's proposed condition G.26B is that there should be a specified efficiency figure (95%) for the sediment removal at sediment control devices.

[861] NZTA opposes this condition for a number of reasons:<sup>295</sup>

- i) The level of turbidity monitoring in the streams has already been agreed in G.38A;
- ii) The condition is understood to have been based on a similar condition in the TGP which Mr Ridley contends was in a completely different environment and where a completely different set of circumstances prevailed; and
- iii) There would be significant expense with installing the devices required for this monitoring.

#### **Discussion and Finding**

[862] Condition G.38A(a) requires that continuous telemetered turbidity monitoring be undertaken in waterways upstream and downstream of potential earthwork discharge areas. G.38A(c) headed *Thresholds and response actions - earthworks* requires that if turbidity trigger levels are exceeded, within 24 hours a full audit is to be undertaken of the condition of all erosion and sediment control measures within the earthworks area discharging to the relevant stream and for remedial measures to be put in place at any site(s) identified as having contributed to the trigger breach.

[863] The issue then is whether this condition on its own is sufficient to protect water quality and whether the installation of the sediment removal measuring devices proposed by Mr Percy would be justified as a necessary further measure.

[864] Mr Ridley for NZTA thinks not.<sup>296</sup> Mr Percy did not discuss this proposed condition with Mr Handyside and we did not hear Mr Handyside's opinion on this.<sup>297</sup> We do note, however, the joint witness statement of 6 November 2012 between Mr Ridley and Mr Handyside under the heading *Monitoring of ESCP Measures and Receiving Environment Monitoring* did not propose the use of sediment removal measuring devices. Dr Keesing, NZTA's Freshwater Ecology Expert in response to a question from Ms Anderson,

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<sup>294</sup> NZTA closing submissions, paragraph 335.

<sup>295</sup> NZTA closing submissions, paragraphs 337-346.

<sup>296</sup> Hearing transcript, page 1177-1179.

<sup>297</sup> Hearing transcript, page 2471.

counsel for GWRC, as to whether he would accept that it would be logical to monitor the efficiency of the sediment control devices to ensure that the discharges, and therefore the predicted effects were within scope of what was predicted, replied that he would have expected so.<sup>298</sup>

- [865] Based on the absence of any real evidence as to the necessary added protection that sediment control measuring devices would afford, and NZTA's advice in their closing submission that there would be significant costs involved in their provision, (presumably at multiple sites), we find against including GWRC's proposed condition G.26B.

#### **Condition G.42B**

- [866] As set out in their closing submission,<sup>299</sup> in Condition G.42B, GWRC seeks a clearer definition as to what constitutes "*completion of construction*" in relation to the time lag of up to two years before mitigation works need to be in place.
- [867] In the final condition set attached to NZTA's closing submission, the earlier words "completion of work within each sector" have been replaced by "completion of work within each stage". In the definitions, "stage" is defined as:

*"Within a stage of the Project as identified by the Consent Holder in the Staging programme submitted to the Council in accordance with condition G.12".*

#### **Finding**

- [868] We agree with the final wording of condition G.42B in NZTA's final condition set with the word "*stage*" replacing "*sector*".

## **10.13 SOIL, GROUNDWATER AND SURFACE WATER CONTAMINATION**

- [869] The only expert evidence on potential soil, groundwater and surface water contamination was that from Dr Laing for NZTA. This evidence was unchallenged.
- [870] Public health considerations arising from this section are covered in section 10.8.
- [871] TR23 identifies four sites where potentially hazardous materials have been positively identified within the Project footprint and where special measures will be required to mitigate the effects from the construction of the Project. These sites are at 55 Rata Road, the Kāpiti Road Intersection, the Otaihangā Mountain Bike Park and 125-154 Moana Road.<sup>300</sup>

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<sup>298</sup> Hearing transcript, page 860.

<sup>299</sup> GWRC closing submissions, paragraph 9 – 11.

<sup>300</sup> TR23, Table 23.15.

- [872] The site at 55 Rata Road contains materials which exceed human health guidelines. It is identified on the GWRC Hazardous Activities and Industries List as a site where hydrocarbon fuel was stored and where a resource consent will be required, as applied for under NZTA's NoR application. There are specific conditions for this site (NES.1 and NES.3) which include a Contaminated Soils Management Plan (Human Health).
- [873] Intrusive investigations at the Kāpiti Road Intersection have identified the presence of arsenic. The Mountain Bike Park is adjacent to the Otaihanga landfill and there is a concern that leachate from the landfill might have contaminated the park in some way. The site at 125-154 Te Moana Road is currently used for market gardening and there is a risk of contamination from garden chemicals and sprays. None of these sites have been assessed.
- [874] Table 23.16 of TR23 sets out the potential environmental and human health effects at each of these sites and details of the mitigation measures proposed. The human health effects relate to construction workers and general public exposure to soil and groundwater contaminants with TR23 identifying that only 55 Rata Road contains materials which exceed human health guidelines.
- [875] Two sites in Sector 1 (16 Leinster Avenue and 150 Raumati Road) also have the potential to be contaminated from historical activities.<sup>301</sup> These two sites, which will be used for the construction of stormwater wetlands, have yet to be intrusively investigated. This also applies to two sites in Sector 2, 58 Kiwi Road (a former horticultural area) and 109 Kāpiti Road (a firewood storage area) both proposed as stormwater wetlands.
- [876] Conditions G.31 to G.33 relate to the proposed Contaminated Soils and Groundwater Management Plan for the Project as a whole including specific requirements for the investigations of these four sites.
- [877] TR23 records that once the expressway has been constructed and is operational; the contamination which has been identified is not likely to pose any adverse effect on human health or the environment. It notes that soils containing levels of contaminants in excess of guideline values will have been excavated and disposed to landfill or cement bound to prevent leaching.

### **Finding**

- [878] As we have noted in our introduction to this section, NZTA's evidence (Dr Laing's) on contaminated land and groundwater was unchallenged as are the related conditions in NZTA's final condition set.
- [879] We find that any adverse effects from the disturbance of contaminated land during the construction and operation of the Project can be appropriately mitigated through the application of the consent conditions and the mitigation measures proposed.

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<sup>301</sup> TR23, paragraph 6.2.

## 10.14 ECOLOGY

[880] Evidence on the subject of Ecology was received from a number of witnesses:

NZTA: Dr Lee Bull (avifauna)  
 Mr Matiu Park (terrestrial ecology)  
 Mr Stephen Fuller (ecological mitigation, management and monitoring)  
 Dr Sharon De Luce (marine ecology)

KCDC: Ms Shona Myers (terrestrial ecology)

GWRC: Mr Tim Porteous (biodiversity)

RSRA: Ms Melanie Dixon (wetland ecology)

Loretta Pomare: Ms Paula Warren (biodiversity)

[881] Not surprisingly, there is an overlap between this topic and others such as construction effects, stormwater, sediment etc.

[882] We record at this juncture that a submission was received from the Director General of DoC, The department adopted a neutral stance but on their behalf Mr Morrison expressed some concerns. We are satisfied that the conditions we have imposed adequately and properly address those concerns.

[883] As well, along with other expert areas, differences between many of the experts have been narrowed by the extensive conferencing that took place.

### Marine ecology

[884] There was only one witness called with expertise in this area, and that was Dr Sharon De Luca on behalf of NZTA. It was her evidence that during construction, sediment entering the marine environment would likely have a negligible effect. This was due to the high energy nature of the receiving environment, which provides significant dilution and dispersal.

[885] Dr De Luca had considered the expert evidence during the operation of the expressway, and considered potential stormwater discharges and their effect on the marine environment. She was satisfied they would be satisfactorily mitigated, (and in some areas may well be improved from the current situation), given the level of treatment proposed.

[886] We are satisfied that the effects on the marine ecological values with respect to the NZCPS have been adequately considered and addressed. We accept that the final conditions relating to sediment discharge, including duration and sampling methodology, successfully mitigate both construction and ecological effects on marine ecological values.

[887] There had been a dispute between the NZTA and GWRC's experts relating to sediment yield and other relevant matters, which we have resolved in that section. However, we note that in Dr De Luca's assessment, even if Mr Handyside's alternative assessment was accepted as appropriate, the

proportion of project sediment yield compared to the total catchment sediment yield “*became a very small figure*”.<sup>302</sup>

[888] We are satisfied that the conditions mitigate against all possible risk to the marine ecology and, for reasons addressed elsewhere, satisfy the relevant RMA principles.

**Terrestrial ecology (including avifauna)**

[889] Expert evidence was heard from:

NZTA:	Dr Lee Bull (avifauna)
	Mr Matiu Park (terrestrial ecology)
	Mr Stephen Fuller (ecological mitigation, management and monitoring)
KCDC:	Ms Shona Myers (terrestrial ecology)
GWRC:	Mr Tim Porteous (biodiversity)
RSRA:	Ms Melanie Dixon (wetland ecology)
Loretta Pomare:	Ms Paula Warren (biodiversity)

[890] Again, extensive conferencing narrowed the issues between the experts. The adverse effects arising from this project will be the result of vegetation clearance and disturbance and displacements of habitats and species.

[891] TR26 states that the ecologists worked closely with design teams to avoid potential adverse ecological effects. Some of the other experts acknowledged these attempts had been made. The NZTA experts assessed the construction effects on vegetation and habitat as low to moderate and of short-term effect.

[892] The NZTA witnesses also gave evidence that, where avoidance was not practicable, measures had been developed to mitigate any remaining adverse effects of the Project on terrestrial ecology. Apart from the effect on the north island fern bird population and habitat, other effects on vegetation and habitat were considered short-term. Substantial mitigation was to include careful construction methods; ecological offsetting (i.e. re-establishing areas of habitat loss consistent with existing values) with indigenous vegetation in some areas; and relocation and/or protection of fauna and an adaptive management regime.

[893] The witnesses also stated that the combination of mitigation and storm water management for the project will have a number of positive environmental outcomes. We accept that evidence.

[894] Ms Myers was the KCDC expert on terrestrial ecology, and accepted that the project alignment avoided ten ecologically significant wetlands and minimised the scale of dryland vegetation affected. She also agreed with other experts that, pursuant to the Regional Council’s Policy 22, all wetlands had been correctly identified. However, she disagreed with the way the

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<sup>302</sup> De Luca Rebuttal, paragraph 15.

NZTA experts had considered their ecological value. She accepted the inclusion of a plan set in the conditions and a like-for-like condition for any loss or modification of wetland or terrestrial habitat. She took issue with the ECR and referred to the TGP Inquiry where a ratio of 6:1 was applied for the loss of broad leafed forest. She accepted there were no original remnant forest ecosystems in the area of the designation, but said that they were a regenerated system that had formed from seed sources and existent processes that the forest had left behind. (We note in passing that on occasion Ms Myers had to be directed to answer the specific question put to her in cross-examination).

- [895] By the time of the third joint statement, Mr Park and Ms Myers recorded their position that the quantum and type of terrestrial mitigation was not outstanding.<sup>303</sup> We note that no expert present has noted disagreement with the statement.
- [896] In relation to conditions, she accepted that as a result of conferencing they were far more robust, and after being referred to a number of relevant conditions, accepted that they now specifically, and in more detail, addressed the potential impact on wetlands adjacent to the proposed expressway.
- [897] There was considerable cross-examination addressing the methods for calculating and assessing biodiversity offsets. Ultimately, Ms Myers was forced to accept that there were no standards or mandatory accepted tools in New Zealand for this. However, she considered that the approach of the NZTA experts in the technical report in applying the IEEM guidelines was simplistic and the ratio should be at least double. However, she accepted there was no specific model or science behind that statement, but believed the NZTA offset was not adequate given the ecological significance and values of what was being lost. She again referred to TGP and other examples, but did not seem able to link this to the specifics of the habitat here.
- [898] She accepted that the restoration suggested by the NZTA was appropriate, and also accepted that some flood storage areas could provide ecological mitigation if properly designed and planted.
- [899] Cross-examination also demonstrated that some of Ms Myers' concerns strayed into the expertise of hydrology, but she at least accepted that she would defer to experts on groundwater.
- [900] It can be seen that the quantum of wetland ecological mitigation to be provided was the subject of considerable debate. However, we note that the third ecology expert conferencing statement records:<sup>304</sup>

*"We agree that a solution to the outstanding quantum of freshwater and wetland ecological mitigation lies within the offset storage*

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<sup>303</sup> Expert Conferencing Third Joint Witness Statement to the Board of Inquiry: Ecology, 28 November 2012, page 7.

<sup>304</sup> Expert Conferencing Third Joint Witness Statement to the Board of Inquiry: Ecology, 28 November 2012, pages 5-6.

*areas proposed just south of the Wharemauku Stream (identified in maps CV-SW-508 and 509, shown in brown, Areas 3A and area 2)."*

- [901] We accept that agreement is now present in the conditions we have imposed. For the sake of completeness, we note that Mr Conway for KCDC and Ms Thomson for GWRC, confirmed that their relevant experts had been consulted, and agreed with the undisputed conditions that had been placed before us. Disputed conditions we deal with elsewhere.
- [902] Ms Myers, along with the other experts excepting Ms Warren, accepted adaptive management was important in projects such as this, and stated that if there were hydrological effects on wetlands which affected ecological values that cannot be avoided or remedied, it is appropriate that those effects are addressed through the adaptive management process. But she also said she would feel more comfortable if there was additional mitigation up front.
- [903] Many of the concerns raised by Ms Myers have now been addressed in the final set of conditions.
- [904] There was evidence from Dr Bull relating to the North Island fern bird, which was also addressed by Ms Myers, and it was agreed during expert conferencing that there needed to be an additional requirement to create specific fern bird habitat as part of territorial mitigation for loss of fern bird habitat. Monitoring of fern birds was to be agreed with the DoC. That has now refined itself into a condition that was accepted by the planners for NZTA, KCDC and GWRC, and again counsel for all three confirmed the relevant experts had been consulted and agreed with those conditions. It did leave one outstanding issue relating to predator control, to which we will turn to in the next paragraph.
- [905] It was agreed there should be a condition to control grazing animals to protect mitigated habitat. However, there was disagreement relating to predator control. KCDC sought a condition imposing predator control. This was notwithstanding that in many places the designation borders residential properties, the source of one of the major predators, domestic cats. We are satisfied that any predator threat, particularly in relation to the fern bird, is not an effect from the construction or operation of the expressway. Rather, such predator concerns exist at the moment. When Mr Conway was asked whether KCDC carried out any predator control of its own in these areas, he was unable to answer.<sup>305</sup> We assume, as we have no evidence to the contrary, that such predator control as was sought by KCDC is not carried out by them. It also seems to us, even accepting that predators are not an effect from the construction and operation of the expressway, that it is artificial to impose on NZTA a predator-control regime where a few steps away, outside the designation, no such control would take place.

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<sup>305</sup> Hearing transcript, page 2621.

### **Paula Warren**

- [906] Ms Warren was called as a witness by submitter number 309, Loretta Pomare. While Ms Warren worked for DoC, she was giving evidence in her own personal capacity. Her specific issues seemed to relate to original soils and remnant biodiversity. She was concerned that unique organisms could remain in the soils, notwithstanding the extensive human intervention throughout the Kāpiti area. She acknowledged in cross-examination that the issues that concerned her had not been raised by the ecologists on behalf of KCDC and GWRC. She was unaware of what was contained in the submission received from DoC.
- [907] It also became apparent in cross-examination that notwithstanding the conditions that arose from the second and third joint conferencing statements, she had not read these documents, just quickly skimmed them.
- [908] First, we consider it significant that the other ecologists and DoC did not consider Ms Warren's concerns worthy of mention. Secondly, condition G.34(m) requires the EMP to include the salvage of elements of any valuable habitat of indigenous flora and fauna. We consider this satisfactorily addresses Ms Warren's concerns.

### **Freshwater ecology**

- [909] Here, the expert witnesses were:
- NZTA Dr Vaughan Keesing  
Stephen Fuller (ecological mitigation, management and monitoring)
- KCDC Associate Professor, Dr Russell Death  
Shona Myers (mitigation)
- GWRC Dr Iain Boothroyd  
Alton Perrie
- [910] The NZTA evidence is that 3.12 kilometres of stream will be lost or modified as a result of the project. The effects are distributed over 15 water bodies (within five catchments) of generally low value and containing tolerant aquatic communities. The witnesses accepted that the exception was the Waikanae River, which has higher ecological values and more sensitive taxa.
- [911] Most of the larger streams will be bridged, and there will long culverts for smaller channels. It is accepted there will be some loss of stream length and in-stream habitat at a number of culverts, and as the installation of culverts will remove the opportunity for future restoration of these stream channels, mitigation is required.
- [912] The primary concern of submitters was the value of the impacted streams, the mitigation provided and the possibility and effects of earthquake-related sediment discharge (we note that sediment discharge has been appropriately dealt with in section 10.12).

[913] Associate Professor Death agreed with the NZTA expert that the waterways and habitats in the area, apart from the Waikanae River, were of low ecological condition. But he did not accept their evidence that this equated with low ecological value. He agreed with Dr Keesing of the need for high quality stream mitigation, and accepted that the conditions provided for a specific focus on mitigating the impact on fish in the project. It appeared cross-examination that his concerns regarding sediment were met by conditions he responded to a question from Ms Janissen as follows:<sup>306</sup>

*“MS JANISSEN: With those conditions in place, the ones we have just been referring to, do you feel now more comfortable that there are, in fact, more sufficient safeguards in place to both monitor sediment levels and to respond to sediment levels if there are any exceedances?”*

*PROFESSOR DEATH: Yes, I do.”*

[914] He accepted that conditions meant he was confident that sediment slough will not occur. He also accepted that if there was exceedance, the conditions provide for adequate and timely mitigation. Finally, he accepted that it is pointless attempting to mitigate that area of stream or waterway that will be affected by regular flood control processes.

[915] In clarification of an answer, to the Chair, Associate Professor Death stated:<sup>307</sup>

*“I don’t think there is any waterway in the region which has such a high value that it would mean the project couldn’t go ahead.”*

[916] We note that the experts on freshwater ecology gave evidence on 27 and 28 November 2012. They then met to further conference, and agreed all issues with the exception of the long-term protection of work required to mitigate effects on freshwater ecology. We are satisfied that the suite of ecological conditions now agreed is in accord with the experts’ agreement so that potential adverse effects on freshwater ecology are appropriately avoided, remedied or mitigated with the one noted exception.

[917] As with the terrestrial ecologists, there was disagreement in relation to quantum of mitigation, but that has been resolved in the third joint conferencing statement, where it was stated:<sup>308</sup>

*“We agree that a solution to the outstanding quantum of freshwater and wetland ecological mitigation lies within the offset storage areas proposed just south of the Wharemauku Stream...”*

[918] As a consequence of the Revised Second Freshwater Conferencing Statement,<sup>309</sup> agreed amendments were made to conditions dealing with

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<sup>306</sup> Hearing transcript, page 923.

<sup>307</sup> Hearing transcript, page 926.

<sup>308</sup> Expert Conferencing Third Joint Witness Statement to the Board of Inquiry: Ecology, 28 November 2012, page 5-6, agreed by Mr Boothroyd and Mr Porteous (GWRC), Ms Dixon (RSRA), Ms Myers (KCDC) and Mr Park and Dr Keesing (NZTA).

freshwater effects, trigger levels, fish rescue, fish passage, fish migration, mudfish surveys, fish trap and transfer, diversion construction, monitoring of fish passages at culverts, structures and diversions.

- [919] As noted in section 10.12, conditions to control turbidity and sediment have also been agreed.<sup>310</sup>
- [920] Mr Percy sought inclusion of an additional condition in WS.1A. The effect of this would be to specify the limit of reclamation or diversion allowed pursuant to the resource consent.
- [921] Mr Percy's condition was not suggested during general ecology or freshwater ecology conferences. It is Mr Percy's own view that a maximum threshold should be set out. However, we are satisfied that this would remove a significant degree of flexibility, as stream length may alter in final designs. Such loss of flexibility we do not consider appropriate. We agree with NZTA that there are sufficient limits on the reclamations and diversions that can occur pursuant to the resource consent as these will all be set out in the EMP. Mitigation proposed will also be in the EMP. As well, we note that condition G.34 requires that work will not commence until GWRC certifies the EMP. The condition imposed in G.1 is a further limit on abilities to extend reclamation and diversion.
- [922] Applying RMA considerations we are satisfied that any potential adverse ecological effects have been appropriately mitigated.
- [923] The issues raised by counsel for GWRC relating to Policy 22 of the proposed RPS are dealt with in section 12 of this report.<sup>311</sup>

## 10.15 ARCHAEOLOGY

- [924] The Kāpiti Coast is situated at the southern extent of a long band of coastal dunes on the southwest coast of New Zealand's North Island, running continuously from Paekākāriki north to Taranaki. The topography of the Kāpiti Coast is characterised by a relatively narrow flat coastal shelf largely covered in sand dunes and wetlands, with hills inland. The dunes along the entire coast (north and south of the Waikanae River) have formed during successive dune building phases. In the simplest terms, the dune sands are made up of material brought to the coast by rivers, moved along the coast by wave action. The material builds a foredune, this dune becomes unstable, and its material gets blown inland.<sup>312</sup> There are over 280 recorded archaeological sites on the Kāpiti Coast, most of which are located within sand dunes.

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<sup>309</sup> Revised Second Freshwater Caucusing Statement, 29 November 2012.

<sup>310</sup> Section 10.12: Erosion and sediment control.

<sup>311</sup> See paragraphs [1293] and following.

<sup>312</sup> TR9, Section 3.1.

[925] The following submitters, witnesses and expert witnesses gave evidence and representations on the effects of the Project in relation to archaeological sites and features:

NZTA:	Ms Mary O’Keeffe
NZHPT:	Ms Kathryn Hurren
Takamore Trust:	Mr Ben Ngaia
Te Āti Awa ki Whakarongotai Charitable Trust:	Mr Bill Carter
Te Āti Awa/Ngati Awa ki Waikanae nga Iwi:	Ms Ani Parata
Highway Occupants Group:	Ms Beth Lindsay

[926] Ms O’Keeffe said that she had participated in the Multi Criteria Analysis (MCA) process of analysing proposed routes, and alignments options within the preferred route for the expressway. She said participation in this process allowed her an opportunity to engage with the full Project team on the issues and implications of the Project on archaeology. It also allowed the archaeological issues to be fully discussed and understood in the context of all the environmental issues.

[927] Ms O’Keeffe said that she was able to ensure that archaeological values were appropriately scored under the MCA process. Equally the process allowed her to understand and participate in the overall decision making for the route and ensure archaeology issues were appropriately considered in this process.

[928] Ms O’Keeffe is the author of TR9, the Archaeological Assessment. We were told the methodology<sup>313</sup> used to inform TR9 included data and other analysis and information; site familiarisation visits; consultation with the NZHPT, the Kaumatua committee of Te Atiawa ki Whakarongotai, and with the Takamore Trustees. Iwi members (Ani Parata and Danny Mullen) accompanied Ms O’Keeffe on some site visits and geophysical investigations.

[929] Ms O’Keeffe had developed a predictive model for this Project to help predict the likely presence, nature and locations of archaeological sites in the vicinity of the proposed expressway.<sup>314</sup> A predictive model is of particular use and validity in an environment such as the Kāpiti Coast where the archaeological sites are present but not visible on the ground surface.

[930] This aspect of site visibility is in marked contrast to most other coastal areas of New Zealand where sites are moderately or highly visible, and it adds a dimension of complexity to archaeological research and management on the Kāpiti Coast. This, Ms O’Keeffe said, makes avoidance for any proposed alignment extremely difficult.

[931] She stated that there are over 280 recorded archaeological sites on the Kāpiti Coast. 20 recorded archaeological sites will be adversely affected by

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<sup>313</sup> TR9, Section 4, pages 16-18.

<sup>314</sup> Further information on the predictive model is set out at section 4.1 and 5.7 of TR9.

the construction of the Project and there is also the potential for further unrecorded sites to be adversely affected.<sup>315</sup>

### **Takamore Cultural Precinct**

- [932] The Takamore cultural precinct is an area in the vicinity of Puriri Road and Greenaway Road consisting of a several sites of archaeological importance and high cultural values. The precinct includes the Takamore urupa, Maketu tree, Tuku Rakau Village and the NZHPT registered wāhi tapu area.<sup>316</sup>
- [933] The Takamore wāhi tapu area is included in the HPT register. The Takamore Trust made an application to the NZHPT to review and increase the size of the wāhi tapu area. In December 2011, the application was reviewed and the area increased in size by the NZHPT's Māori Heritage Council, with the conditional support of NZTA.
- [934] Ms O'Keeffe stated that as the precinct is of particular significance to iwi she gave it particular attention in her assessment and recommendations to the Project team. Ms O'Keeffe noted the difference between archaeological and cultural values. She explained that high cultural values do not necessarily imply or result in associated high archaeological values.
- [935] The Takamore precinct is an area of known and potential archaeological sites so Ms O'Keeffe said it warranted extra attention to enable robust decision making on alignments through the area. She said the chosen route alignment, adjacent to the Takamore cultural precinct, was designed to avoid as many known archaeological sites as possible.
- [936] Ms O'Keeffe said that to further add to knowledge of the precinct, three geophysical surveys were undertaken. Geophysical surveying is a non-invasive archaeological technique that can provide data on subsurface features. Ms O'Keeffe said the three surveys were undertaken on land within or adjacent to the Takamore cultural precinct.<sup>317</sup>
- [937] We were told the known and potential archaeological values of the recorded sites likely to be impacted on by the Project had been determined by reference to a set of criteria, with the following outcomes:<sup>318</sup>

*“Condition/integrity value*

*The vast majority of midden sites are in intact condition, and can be examined or sampled to gain useful archaeological data. Earthwork sites, where found, are only in moderate condition and appear to have suffered from wind and stock erosion. Burials are generally in good intact condition, and can be examined or sampled to gain useful data.*

*Representativeness/rarity value – is this area unique?*

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<sup>315</sup> O'Keeffe EIC, Annexure A.

<sup>316</sup> TR9, Section 5.5, page 58.

<sup>317</sup> TR9, Section 5.5, page 66.

<sup>318</sup> O'Keeffe EIC, paragraphs 55 – 60.

*The proposed Expressway cuts through a range of different environments on the Kāpiti Coast, including dunes, current and former wetlands, and river flood plains. Archaeological sites are found in most of these environments. The known sites are not of themselves unique or rare, either on the Kāpiti coast or in New Zealand. However they have representative value in that their presence and occurrence presents a distinct picture of the nature of archaeology and human occupation on the coast, which can be compared and contrasted with other coastal environments such as, for example, the Bay of Plenty or Taranaki.*

#### *Contextual value*

*The majority of recorded sites are of local significance, in that they do not contain information or features that are different to the majority of the sites on the Kāpiti Coast. Some sites which are distinctive in some way may have regional significance, perhaps through the size or extent of the site, the density of shell in a midden, the presence of unusual shell or perhaps fish or mammal bone in a midden, or earthworks sites which are less common on the coast. However the sites collectively have regional significance beyond their individual values, as they cumulatively present a distinct picture of the archaeology of the Kāpiti Coast, which can be contrasted with other coastal environments.*

#### *Scientific value/information potential*

*Every site contains scientific value, for its type and nature, its location, its extent, its relationship with its environment and with surrounding sites, and its age if a radiocarbon date is sought. The data from each site cumulatively creates an archaeological picture for the Kāpiti Coast.*

#### *Amenity value – public interpretation/education*

*Not many sites revealed or recorded thus far have distinct public interpretation or education value in situ, as the majority are not large or “grand” or visually distinctive, by comparison with, say, the visually impressive large pa of the Auckland Volcanic cones or the Bay of Plenty.*

#### *Cultural associations*

*The author understands that the majority of sites have some cultural value with the iwi and hapu of the coast, but believes the nature of these associations is not for her to comment on.”*

- [938] Ms O’Keeffe gave evidence that based on current knowledge of the nature and location of known archaeological sites, and the predictive model, the inferred significance of known and probable individual sites on the coast is

local. The vast majority of the sites are similar in nature, size and environmental location.

- [939] The cumulative nature and values of the sites on the Kāpiti Coast as a collective whole is different to the values of the individual sites – individual sites have local significance, whereas the sites as a collective whole have regional significance, and can tell a regional story about the history of the Kāpiti Coast. Ms O’Keeffe said information is still being gathered and analysed and thus mitigation measures could assist in this process.<sup>319</sup>
- [940] Ms O’Keeffe stated that a table has been developed for each of the six sections of the Project and it describes the construction activities, and consequential probable effects on the archaeological resource, within each sector.<sup>320</sup>

### **Avoidance**

- [941] We accept that the design of the Project has resulted in avoidance of known archaeological sites with high cultural associations (such as the urupa and Maketu Tree) and if the Project is to proceed, further avoidance of sites is not realistic or achievable.
- [942] Ms O’Keeffe said construction of the Project inherently involves substantial excavation and other activities in the dunes. Because sites cannot be seen, and thus their locations are not known prior to construction, avoidance of these sites by construction activities for the Project will not be practicable. In addition the probable density of sites (based on known data) means that avoidance would not be practical.
- [943] Ms O’Keeffe said she did not consider that any of the recorded sites within or adjacent to the construction corridor require avoidance for protection due to their known or probable significance being so high as to prevent construction.<sup>321</sup> She said, in her view, the sites that will be damaged or destroyed do not represent unique examples of archaeological sites, some are already damaged and their excavation and recording will enhance our understanding of the archaeology of the Kāpiti Coast.
- [944] Ms O’Keeffe said that for those sites that will be adversely affected, proposed mitigation measures will appropriately contribute to the “protection” sought by the RMA, s6(f).
- [945] The proposed mitigation is formalised in the proposed designation conditions which include an accidental discovery protocol (DC.59E); roadside interpretation panels (DC.59F(b)(i)); travelling stories told in a set of smaller portable panels (DC.59F(b)(ii)); a highly illustrated booklet on archaeology of the Project (DC.59F(b)(iii)); open days (DC.59F(a)); and a detailed geophysical survey at Takamore urupa (DC.62).
- [946] Ms O’Keeffe stated that she endorsed the proposed designation conditions in regard to archaeological matters on the understanding that further HPA

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<sup>319</sup> O’Keeffe EIC, paragraph 61.

<sup>320</sup> TR9, Section 6.4, page 77-79.

<sup>321</sup> O’Keeffe EIC, Annexure A.

processes must follow, including possible conditions of archaeological authorities required by the NZHPT.

- [947] Ms O'Keeffe said the 16 kilometres of the Western Link Road designation has remained undeveloped for the last 50-odd years, and it passes through a variety of geomorphological and ecological environments. It is her view the Project constitutes an important and unique opportunity for high level archaeological research on major themes such as chronology, settlement, resource exploitation, cultivation and geomorphology.
- [948] Ms O'Keeffe recommended that high level investigations should be carried out in areas with high site probability, prior to construction of the Project.<sup>322</sup> These investigations should also include monitoring during construction in areas where site density is not expected to be high.<sup>323</sup> These investigations could be addressed through the HPA authority process, therefore, in her view conditions on the designation or resource consents were undesirable.
- [949] Ms O'Keeffe said whilst construction of the expressway will result in the permanent destruction of archaeological sites, this adverse effect can be offset against the information that can be extracted from the sites through high level detailed archaeological investigations. These proposed high level investigations are at the top of the range of archaeological mitigation, and they have the potential to extract and reveal a great deal of significant scientific information. Such information has the potential to add considerable information to the body of knowledge on the archaeology of the Kāpiti Coast, and to answer broad ranging and regionally significant research questions.<sup>324</sup>

#### **NZHPT**

- [950] Ms Hurren stated that her evidence relates to the archaeological considerations of the portion of the proposed expressway that proceeds through the Takamore wāhi tapu area. She said that there are 20 recorded archaeological sites that may be impacted on by the construction of the MacKays to Peka Peka proposed expressway. The majority of these sites consist of middens and there is the potential for further archaeological sites not presently recorded to be encountered during the proposed development.
- [951] Ms Hurren also said that NZHPT agree with the findings in TR9 prepared by Ms O'Keeffe in terms of the number of recorded sites that will be impacted on, site types and the predictive model used. She also said the archaeological investigation and management of the development of the proposed expressway can be undertaken under the HPA.

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<sup>322</sup> O'Keeffe EIC, paragraphs 86-87.

<sup>323</sup> O'Keeffe EIC, paragraph 90.

<sup>324</sup> O'Keeffe EIC, paragraph 111.

[952] In response to the Board's Minute and Directions dated 18 October 2012, an archaeological conferencing meeting was held on 31 October 2012, where Ms Hurren and Ms O'Keeffe agreed to the following:<sup>325</sup>

- *“That this hearing and discussion of archaeological conditions and outcomes is only in relation to the RMA process;*
- *That the proposed MacKays to Peka Peka expressway is an unprecedented opportunity for high level, strategic archaeological research across the whole region;*
- *That construction will result in the destruction of a non-renewable resource, but this is offset by the vast amount of potential information gained, and by the equally vast research potential of this information. This research potential is multidisciplinary – it will benefit archaeology, seismology, geology, regional future planning, iwi and others;*
- *That NZTA have a professional and ethical obligation to maximise this research opportunity, through wide dissemination of information.”*

[953] Ms Hurren and Ms O'Keeffe agreed during expert conferencing that as archaeologists, they acknowledge that the archaeological sites have both archaeological values and are of significance to iwi, but it is not their place to assess or comment on cultural significance.

#### **Takamore Trust**

[954] The Mr Ngaia on behalf of the Takamore Trust submitted that they are opposed to the Project, due to, among other things, the significant adverse effect on historical, cultural and archaeological values, which will not be avoided, remedied or mitigated by the Project. The Trust has completed a CIA which is appended to the application documents as TR11.

[955] s6 of the CIA lists traditional settlements, wāhi tapu areas and cultivation areas. Mr Ngaia said some of these places are also recorded as archaeological sites; many are not as there is no physical evidence of them. Mr Ngaia also said that immediate impacts on burials associated with the Takamore urupa, Maketu Tree and Tuku Rakau were unacceptable to the Trust.

[956] Ms O'Keeffe gave evidence that substantial work has already been undertaken to attempt to identify areas of burials in the vicinity of the Takamore urupa, Maketu Tree and Tuku Rakau village, including geophysical surveying. The results of the geophysical surveys in the vicinity of the urupa are as follows:<sup>326</sup>

*“Another survey was undertaken on the flat area at the base of the Takamore crescent dune to check for site presence. No anomalies*

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<sup>325</sup> Expert Conferencing Joint Witness Statement to the Board of Inquiry – Archaeology, dated 31 October 2012.

<sup>326</sup> O'Keeffe EIC, paragraph 45; these reports are appended to TR9.

*that could be interpreted as sites were recorded in the flat area at the base of the Takamore crescent dune; however the impact of construction of the Kapuni gas pipeline was apparent; and*

*A third survey was undertaken on the north-eastern end of the Takamore crescent dune ridge to see if any burials were present on this end of the ridge where the proposed Expressway will run. No anomalies that could represent sites were recorded. Several large areas of metal were discounted as were known waratahs (metal fence posts) or probable deposits of farming material (for example, fencing wire). Two small anomalies were recorded. The fluxgate gradiometer operator, an experienced archaeologist, suggested they might be burial pits, but considered it unlikely, given the small shape and size of the anomalies. I agree with this assessment. Even though there do not appear to be burials on this end of the ridge, in my view, it is likely there are middens located there. This is because, as established by the predictive model, middens are the most likely site type on the Kāpiti Coast and most often are located on the tops of high ridges.”*

- [957] We were told of the Maketu Tree which is a well-known landmark within the Takamore wāhi tapu. This burial ground rests on a sand dune based to the south of the driveway entrance to the Weggery estate. A large macrocarpa tree represents what is known as the Maketu Tree. For generations the area has been treated with utmost respect by local iwi.
- [958] Mr Ngaia said that what has always been stressed by the elders of Te Āti Awa ki Whakarongotai who have passed on and who are living today is that the Maketu Tree burial ground is a restricted place due to a number of deceased being present.
- [959] He also said that recent archaeological investigations carried out this year have confirmed the knowledge of their ancestors in the eyes of the Crown. A survey uncovered the strong possibility of a number of burials around the Maketu Tree. The findings have also uncovered the strong possibility that the deceased are buried in coffins. The obvious conclusion from these findings is that the deceased have been buried during the European settlement of New Zealand.<sup>327</sup>
- [960] Ms O’Keeffe in response to a question about the probability of burials in the area south of the urupa and down towards the Maketu Tree said,<sup>328</sup> that an archaeologist would never attempt to prove or disprove oral tradition or cultural values or cultural significance, that was not the role of archaeology. Ms O’Keeffe went on to say the archaeological evidence based on archaeological surveying and an understanding of the geomorphology of the ground surface in that area would suggest that on an archaeological basis the probability of burials is very low.

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<sup>327</sup> TR11, Section 4.8.

<sup>328</sup> Hearing transcript, page 760.

- [961] The proposed expressway traverses the area between the Maketu Tree and the Takamore urupa. Ms O’Keeffe, gave evidence that the geophysical survey undertaken on the Maketu Tree dune area revealed the presence of nine further probable graves, a metal installation beside the urupa that could be an entrance gate, and also a track leading up the dune to the urupa.<sup>329</sup>
- [962] Ms Hurren, in response to a question by Mr Watson, counsel for Takamore Trust, said that while it can never be discounted that there are burials south of the urupa, it is highly unlikely because of the Kapuni pipeline. The pipeline passed through an area south of the urupa between the Takamore urupa and the Maketu Tree. The installation of the pipeline involved very extensive excavations.<sup>330</sup> This is discussed further in section 10.17.
- [963] Mr Ngaia stated that, in the Trust’s view, they did not see much attention paid to the sites of cultural and archaeological significance in the Tuku Rakau area.<sup>331</sup>
- [964] Ms O’Keeffe said that she was satisfied that the expressway will avoid the main location of the Tuku Rakau village, so where the majority of the buildings, including the whare and the church and this house (the whareni Whakarongotai) were, it is entirely probable that there were gardens on the western side of the village, so she accepted, the expressway would pass through those gardens. Ms O’Keeffe said she did not know whether there were any archaeological remains of those gardens.<sup>332</sup>
- [965] She also said that as the locations of burials associated with Tuku Rakau Village are not known, avoidance becomes difficult. However, an appropriate protocol (DC.59E) for dealing with koiwi that may be encountered anywhere in the Project area will be developed in consultation with both the Takamore Trust and with Te Āti Awa ki Whakarongotai.
- [966] Mr Ngaia said that the Trust has reviewed the proposed ADP and recommended that all contractors are educated on its significance and procedures that are to be followed the event of an accidental discovery with the Takamore cultural precinct.
- [967] Ms Hurren gave evidence that the road is going to impact on the area of the Tuku Rakau Village. She said it is possibly not going to impact on the main area of the village, but it’s still going to adversely affect features of that village that were once there.<sup>333</sup>
- [968] We note, in expert conferencing<sup>334</sup> Ms O’Keeffe and Ms Hurren agreed that the main part of Tuku Rakau village is outside the road designation corridor and thus will not be adversely affected. It was also agreed that potential archaeological sites and features on the western periphery of the village will

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<sup>329</sup> O’Keeffe EIC, paragraph 45; this report is appended to TR9.

<sup>330</sup> Hearing transcript, page 799.

<sup>331</sup> Takamore Trust (Ngaia) EIC, paragraph 11.

<sup>332</sup> Hearing transcript, page 749.

<sup>333</sup> Hearing transcript, page 800.

<sup>334</sup> Expert Conferencing Joint Witness Statement to the Board of Inquiry: Archaeology, dated 31 October 2012

be adversely affected. They also agree that this western periphery has already been adversely affected by the Kapuni Gasline, which may have already destroyed sites that may have been present.

- [969] The Takamore Trust said in s8 of the CIA that they recommend the preparation of a comprehensive archaeological management plan for the Takamore cultural heritage precinct and this should be prepared by a suitably qualified archaeologist well versed in archaeological methodology with a sound appreciation of cultural practices.
- [970] Ms O’Keeffe said that she agreed with this recommendation from the Takamore Trust. She said that, in fact an archaeological management plan is very likely to be a condition of any authorities that may be granted for the Project by the NZHPT Pouhere Taonga, and that she would expect that provision around decision making for unexpected finds, protocols for discovery of kōiwi, iwi monitoring and other matters would be part of this plan.
- [971] We would support the recommendation for the preparation of a comprehensive archaeological management plan.<sup>335</sup>

#### **Te Āti Awa ki Whakarongotai Charitable Trust**

- [972] Te Āti Awa ki Whakarongotai Charitable Trust said that they were not formally opposed to the Project but noted their preference for an alternative route that would avoid impacts on the cultural landscape. However, Te Āti Awa ki Whakarongotai said that they were working towards a comprehensive mitigation agreement to offset the impacts of the Project which would include measures and mitigation for archaeology in terms of both the RMA and HPA. This issue is further developed in the section 10.17.

#### **Submitters**

- [973] Ms Ani Parata submitted that “*the Cultural Impact Assessments for this project from Te Atiawa ki Whakarongotai is not to be taken that there is agreement from whanau and hapu that they support this Expressway*”. Ms Parata also noted the disruption of sites of cultural significance from the Project.
- [974] Ms O’Keeffe stated, in relation to Ms Parata’s concerns that significant known archaeological sites have been avoided and that appropriate mitigation for the remainder of the sites and any unknown sites have been recommended. We accept that.
- [975] The Highway Occupants Group said they note the “*high probability of Maori artefacts*” adjacent to Poplar Avenue, because of the presence of Mataihuka Pā.
- [976] Ms O’Keeffe said that Mataihuka Pā was located nearby, but the Pā was on the top of the wave cut cliff overlooking Queen Elizabeth Park. We were told the archaeological sites already revealed in Queen Elizabeth Park have

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<sup>335</sup> See Condition DC.59E.

been within the coastal dunes. The road alignment through the Park runs through present and former wetlands, where the chance of archaeological sites is considered to be very low. Ms O’Keeffe said, in her view, there is a very low probability of archaeological sites in the vicinity of Poplar Avenue and Queen Elizabeth Park and the ADP will ensure that any sites that are discovered are appropriately managed.<sup>336</sup> We accept both statements by her.

- [977] Mr Hassan submitted in closing that both archaeologists were cross examined by Takamore Trust on the location of the former Tuku Rakau village, the extent of the Takamore urupa and burials on the Crescent Dune.
- [978] We were told both Ms O’Keeffe and Ms Hurren agreed that there is low probability of burials in the Crescent Dune and that the designation footprint avoids the “*main area*” of the Tuku Rakau village<sup>337</sup>. Mr Hassan submitted that Ms Hurren also gave evidence in response to Takamore Trust and questions from us that the very extensive earthworks involved in establishing the Kapuni Gasline has substantially reduced the possibility of intact archaeological remains.<sup>338</sup>
- [979] Ms O’Keeffe and Ms Hurren, the two archaeologists have reached agreement on all archaeological matters pertaining to the Takamore cultural precinct and the wider Project area. We accept the joint expert conferencing statement on 31 October 2012 outlining that agreement.
- [980] Takamore Trust, Te Āti Awa ki Whakarongotai Charitable Trust and Ms Ani Parata have expressed concerns regarding the adverse effects on archaeological sites and features within the Takamore cultural precinct. We have heard evidence to say that these (archaeological) concerns have been adequately addressed through the imposition of proposed conditions and mitigation measures. We concur with that.
- [981] The Highway Occupants group expressed concern regarding the possible effects on Mataihuka Pā. Ms O’Keeffe said that there is a very low probability of archaeological sites in the vicinity of Poplar Avenue and Queen Elizabeth Park and that the ADP will ensure that any sites that are discovered will be appropriately managed. We accept that.
- [982] Mr Hassan submitted in closing that the two archaeologists (Ms O’Keeffe and Ms Hurren) had reached agreement during expert conferencing on all archaeological matters and there are no outstanding issues between the experts. We agree with this submission.
- [983] The conditions submitted by NZTA in closing, as finally accepted by us, provide adequate mitigation for adverse effects.

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<sup>336</sup> O’Keeffe EIC, paragraph 105.

<sup>337</sup> Hearing transcript, pages 749, 759-761, and 799-800.

<sup>338</sup> Hearing transcript, pages 799.

## 10.16 BUILT HERITAGE

[984] We heard evidence from the following witnesses about the assessment of effects on built heritage arising from the proposed Project:

NZTA: Mr Ian Bowman  
 Ms Siri Wilkening  
 Mr James Whitlock

[985] The effects of noise and vibration on built heritage are dealt with in section 10.5.

[986] Mr Bowman was the author of *TR10: Assessment of Built Heritage Effects*. The role of the report was:

*“to identify any built heritage either included on the KCDC Heritage Register or the New Zealand Historic Places Trust Register of Historic Places that is within or in close proximity to the proposed MacKays to Peka Peka Expressway alignment;*

*to use national and international criteria, and assess the effects of the Project on any identified built heritage;*

*to make recommendations for mitigation if required.”*

[987] TR10 confirmed that there are ten structures entered on the NZHP Register and/or the KCDC Heritage Register that are within a distance of one kilometre from the proposed expressway alignment. The measure of one kilometre was selected as an appropriate distance within which there could be potential visual or physical effects, which might have an impact on heritage values.

[988] TR10 identifies that only 2 of the 10 heritage structures are potentially negatively affected by the Project. This was not disputed by anybody. These are the former St Luke’s church at El Rancho and the Greenaway Homestead, both located at Waikanae. We accept that.

### Former St Luke’s church

[989] Mr Bowman told us that the former St Luke’s Anglican Church was relocated to El Rancho in 1990, from its original location opposite 713 Oroua Valley Road at Apiti, Manawatu. Construction of the church began in 1896 and it was consecrated in 1902. He said the building had moderate heritage values of significance only to the local area, Apiti in the Manawatu.<sup>339</sup>

[990] We are satisfied on the evidence that the church is used occasionally for weddings and from time to time as a place of quiet reflection. There is a small private cemetery to the north of the church and it is not anticipated that it will be used for further burials. Mr Bowman told us that there would be no direct effects on the heritage values of the building as a result of the Project.

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<sup>339</sup> Bowman EIC, paragraph 24.

### Greenaway Homestead

- [991] Mr Bowman told us the former Greenaway Homestead was built in 1911 for locally significant figure, Leonard Greenaway. The house was designed by Cyril Mountfort, the son of widely recognised Christchurch architect Benjamin Mountfort. Cyril Mountfort used raft foundations for the house, an unusual technology for the period. A raft foundation is a reinforced concrete slab formed on the ground to enable a building to be constructed without piles. Such a foundation is often used when the ground under the building is not suitable for pile, strip or slab foundations. The raft foundation transmits the loads of the building evenly onto the ground.<sup>340</sup>
- [992] We were told there would be little change to heritage values of the homestead from the Project with a possible slight positive effect from the removal of four houses surrounding the homestead. Mr Bowman said this would create a more open environment more like the original setting that contributed to the significance of the house. The setting of the homestead will be modified to a minor extent with a bund, extending the existing sand dune to the north.
- [993] Mr Bowman told us that based on an on-site visual assessment; the proposed expressway should not be visible from the exterior or interior of the homestead because of the height of the existing sand dunes and the proposed new bund.
- [994] Mr Hooker, submitter #680, is a co-owner of Greenaway Homestead. Mr Hooker in his representation told us that he was opposed to the Project because of the effects on the setting and heritage values of the homestead. Mr Hooker also told us that if the Project was to go ahead then he had presented an option to NZTA for the homestead:<sup>341</sup>
- “to be moved because of the road, but if they’re going to put the road there, then I thought that the location that it could be relocated to would not take away the context of the house or the home and the environment that it was put there for”.*
- [995] Mr Bowman disagreed with Mr Hooker’s position and told us that Greenaway Homestead is affected by the Project but to a negligible extent and no conditions are proposed. NZHPT also disagreed with Mr Hooker saying, in their opinion, the mitigation and conditions offered by NZTA will sufficiently mitigate the adverse effect of the Project on the homestead.<sup>342</sup> We agree with Mr Bowman and NZHPT in their assessments.

### Stringer Wind Rain House

- [996] Mr Bowman told us that following a desk-top assessment of the Stringer Wind Rain house and a site visit conducted on 21 June 2012, he found the house has local to regional significance as the second of two Kāpiti Coast Wind Rain houses, designed by well-regarded Auckland architect, Nigel

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<sup>340</sup> Bowman EIC, paragraph 33.

<sup>341</sup> Hearing transcript, page 2184.

<sup>342</sup> Hearing transcript, page 1550.

Cook. The house is the second of nine constructed in the series, which explore the use of technology to create benign indoor living environments with a glasshouse core and surrounded by conventional rooms. Although the houses have an 'eco' element to them and the Stringer house has been a regular site visit for 'Sustainable Architecture' students, Cook's main concern was to create a vernacular New Zealand house.

- [997] We were told the Stringer Wind Rain House was located within the proposed designation and approximately 25 metres from the proposed expressway. It was not formally listed or registered as a place of heritage value. However, because a primary heritage value of the building is that it was designed as a home, retention of this use is recommended to retain heritage value. Mr Bowman recommended the relocation of the house to a compatible site. We agree with this condition.
- [998] Mr Bowman also told us that a new designation condition DC.62A is proposed to mitigate the assessed effect on the Stringer Wind Rain House. The condition provides for relocation to an appropriate location in accordance with a conservation report.
- [999] The NZHPT submission told us that the preferred solution for the Stringer Wind Rain House was for the house to be relocated at a distance from the expressway. The conditions and arrangements for the relocation of this house to an appropriate location will be finalised in a detailed relocation and conservation plan to be developed in the event that the expressway is approved in this location. NZHPT recommended to us that a heritage covenant be placed on the certificate of title of the Stringer Wind Ran House in its new location.<sup>343</sup>
- [1000] Mr Bowman disagreed with NZHPT placing a heritage covenant on the house and recommended the house be listed on the District Plan and/or registration by the NZHPT as this would provide certainty to an owner and is consistent with the house being of local to regional significance. We agree with this recommendation.

### **Heritage Impact Assessment**

- [1001] The NZHPT submitted a Heritage Impact Assessment<sup>344</sup> which considered the Project effects on the former St Luke's church, the Greenaway Homestead and the Stringer Wind Rain House. NZHPT told us it is their opinion that the mitigation and conditions offered by NZTA in the application will sufficiently mitigate the adverse effect of the Project on the former St Luke's church and the Greenaway Homestead.<sup>345</sup> We accept such conditions adequately mitigate.

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<sup>343</sup> NZHPT submission #0647, Heritage Impact Assessment, paragraphs 15-18.

<sup>344</sup> NZHPT submission #0647.

<sup>345</sup> NZHPT submission #0647, paragraph 200-204.

**Finding**

- [1002] We find that the potential adverse effects of the Project on archaeology and built heritage will be avoided, remedied or adequately mitigated by application of the conditions and the management plans proposed by NZTA.

**10.17 CULTURE AND HERITAGE**

- [1003] We heard evidence from the following witnesses, expert witnesses and submitters:

Te Āti Awa ki Whakarongotai Charitable Trust:	Mr William Carter
Takamore Trust:	Mr Ben Ngaia
NZTA:	Mr Amos Kamo
	Dr James Bentley
	Mr Robert Schofield
	Ms Mary O'Keeffe
NZHPT:	Ms Kathryn Hurren
	Mr Te Kenehi Teira

- [1004] In this section we draw from both TR11 "*The Takamore Trust Cultural Impact Assessment*" and TR12 "*Te Runanga o Āti Awa ki Whakarongotai Inc Cultural Impact Assessment*" and in particular the cultural assessments contained therein.

**Te Āti Awa ki Whakarongotai**

- [1005] The Project footprint lies within the tribal takiwā of Te Āti Awa ki Whakarongotai Charitable Trust.<sup>346</sup> The takiwā (or area of jurisdiction) of Te Āti Awa ki Whakarongotai extends from the Whareroa Stream at the southern end of Queen Elizabeth Park, to the Kukutauaki Stream north of Peka Peka Road.
- [1006] This takiwā is inclusive of the Takamore Trust's boundaries of responsibility which extend from the Waikanae River to Te Moana Road.
- [1007] We heard evidence about the migration of Te Āti Awa ki Whakarongotai from their traditional takiwā in Kawhia and Taranaki and the subsequent conquest and settlement of the Kāpiti Coast, circa 1820. These historical factors were covered in TR12, the CIA and provides context for the Te Āti Awa ki Whakarongotai relationship with and concerns for the well-being of the Project area.
- [1008] In the modern context, Te Āti Awa ki Whakarongotai is the mandated iwi authority for Te Āti Awa ki Whakarongotai iwi and the administrative body of iwi estates and assets. Te Āti Awa ki Whakarongotai deals with political and public issues of national and local interest through the management of relevant activities such as Treaty of Waitangi claims, fishing activities,

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<sup>346</sup> Formerly known as Te Runanga o Āti Awa ki Whakarongotai Inc.

tourism, health and medical services, vocational training, resource management, and relationships with central and local government.<sup>347</sup>

- [1009] The Takamore Trust is the recognised mandated body responsible for representing mana whenua (tribal authority) interests in the registered wāhi tapu called Takamore. The Takamore Trust was formed in 1969 by descendants of the Takamore wāhi tapu, as an entity who sought to protect the cultural and spiritual values of this wāhi tapu on behalf of particular hapū (sub-tribal) groupings that affiliate to the mana whenua of the Te Hapua to Paripari region, that being Te Āti Awa ki Whakarongotai.
- [1010] The takiwā of Takamore Trust is the area described under the NZHPT Act 1993 as the Registered Wāhi Tapu boundary. However, the traditional area of jurisdiction, includes certain lands east of Greenaway Road (Kawewai), north of Te Moana Road (Taewapirau and Upoko-te-Kaia pā sites), extending to the lands reaching south of the Waikanae River (inclusive of the Ngāhuru hūru cultivation ground, Kaitoenga and Kaiwarehou pā sites). Its western boundaries extend along Te Moana Road to the Waikanae Beach, and then heading south to the Waikanae River mouth (inclusive of the Waimea, Te Kuititanga and Waikanae pā sites).<sup>348</sup>
- [1011] Mr Carter told us that Te Āti Awa ki Whakarongotai acknowledge the Takamore Trust has been entrusted with the mandate to speak on issues within the Takamore wāhi tapu cultural precinct and that a separate cultural impact assessment had been completed for Takamore and it is endorsed by Te Āti Awa ki Whakarongotai.<sup>349</sup> The Takamore wāhi tapu is, for this Project, more commonly referred to as the Takamore cultural precinct.

### **Te Āti Awa ki Whakarongotai Concerns**

- [1012] Mr Kamo collated the collective concerns of Te Āti Awa ki Whakarongotai and Takamore Trust as:<sup>350</sup>

*“Discharges (particularly of waste) to water and air that could compromise the purity or mauri (spirit/life-force) of waters (inland, coastal or offshore);*

*Activities potentially compromising the integrity of or access to food resources (mahinga kai) and food gathering areas, wetlands, rivers and tributaries. This includes activities that disturb indigenous flora and fauna, such as the clearance of bush or damming or diversion of waterways; and*

*Disturbance or modification of traditional and ancestral sites. This includes incursions into the registered Takamore wāhi tapu area and cumulative effects of activities near the Takamore urupa and Maketu Tree.”*

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<sup>347</sup> TR12, Section 2.1.

<sup>348</sup> TR11, Section 2.3, Figure 1.

<sup>349</sup> TR12, Section 7.4.

<sup>350</sup> Kamo EIC, paragraph 75.

- [1013] The Te Āti Awa ki Whakarongotai submission outlined Te Āti Awa ki Whakarongotai concerns as the impacts on the environment (land, water bodies, wetland areas); impacts on the cultural landscape (heritage sites and places, wāhi tapu/wāhi taonga); impacts on cultural health; and Māori freehold land.
- [1014] We were told from the early 1830s the Te Āti Awa ki Whakarongotai communities would have been living in an environment rich with resources and opportunities. The coast and estuaries would have provided fish and shellfish, the forested dunes would have provided birds, rats and plant species, and the swamp areas would have yielded birds, eels and yet more plant species.<sup>351</sup>
- [1015] The Te Āti Awa ki Whakarongotai relationship with the environment is founded on generations of occupation, settlement and use of the cultural landscape over a long period of time. We heard that many of the resources and native species of plants, birds and fish that were traditionally harvested by Te Āti Awa ki Whakarongotai communities on the Kāpiti Coast are no longer available for cultural harvest.
- [1016] Te Āti Awa ki Whakarongotai said they are concerned for the protection of remaining traditional food gathering areas and are promoting environmental and ecological restoration initiatives within their tribal takiwā. Te Āti Awa ki Whakarongotai say that the environment may be exploited on the condition that it provides for current as well as future generations, hence the whakatauki or proverb; mo tatou mo nga uri a muri ake nei.
- [1017] As kaitiaki, Te Āti Awa ki Whakarongotai consider they should be actively supported in exercising their kaitiakitanga as it is important that they are involved in decision-making processes concerning the proposed expressway to ensure that their duty of care over sites and places of cultural importance is provided for.<sup>352</sup>
- [1018] Mr Kamo gave evidence that Te Āti Awa ki Whakarongotai have continued to exercise customary rights within their tribal takiwa. This has been maintained through the exercise of customary activities such as the gathering and use of resources, including those found in the vicinity of the Project and the exercise of kaitiakitanga in promoting the sustainable management of the environment.<sup>353</sup>

### **Cultural Landscape**

- [1019] Landscape features serve an important function in the spiritual and cultural beliefs of Te Āti Awa ki Whakarongotai. TR12 identified of the connection between maunga (mountains), awa (rivers) and that the life forms they support embody a significant aspect of iwi cultural identity. People's connection to landscape begins with the maunga which were personified as deities (gods) and the maunga provided a conduit between people and the

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<sup>351</sup> TR12, Section 4.8.

<sup>352</sup> TR12, Section 4.2.

<sup>353</sup> Kamo EIC, paragraph 46.

heavens; this is commonly recited in Te Āti Awa pepeha.<sup>354</sup> A common thread in the mythology of iwi throughout the country tells of maunga ascending to the heavens to retrieve knowledge and resources such as water and life forms to sustain people.<sup>355</sup>

- [1020] TR12 also identified that the connection between people and place is not always dependent upon tactile experience.<sup>356</sup> An example given was that places of historical importance such as pa that no longer retain physical remnants are still regarded as highly important, as the memory associated with the existence and lifestyles of their tipuna remain unchanged.<sup>357</sup>
- [1021] Evidence was given by Ms O’Keeffe which identified that the majority of (archaeological) sites have some cultural value for the iwi of the Coast, and she noted that archaeological values do not necessarily imply associated high cultural value. We accept that proposition.

### Cultural Health

- [1022] For Te Āti Awa ki Whakarongotai water is a taonga left by their ancestors to provide and sustain life; it is central to their wellbeing and plays a unique role in Te Āti Awa ki Whakarongotai culture and identity.<sup>358</sup>
- [1023] In traditional times, we were told, that water was an integral part of the economy; it supported a range of food and practical resources for daily living and trade. It was a preferred medium for transport; it was used in religious ceremonies and often determined preferred locations for villages and settlements.
- [1024] For Te Āti Awa ki Whakarongotai according to their traditions water is imbued with a mauri or life-force.<sup>359</sup> Mauri is often described as a special power possessed by Io (Supreme Māori deity) which makes it possible for everything to move and live in accordance with the conditions and limits of its existence. All things possess a mauri, including people, fish, animals, birds, forests, land, seas, and rivers; the mauri is that power which permits these living things to exist within their own realm.<sup>360</sup>
- [1025] The concept of mauri can be understood in the context of a healthy environment and healthy ecosystems.<sup>361</sup>

*“Maori perspectives on land and water can be distinct from those of the Pakeha. They are of increasing influence on the way all New Zealanders view their environment. The spiritual significance of place and the interconnectedness of people and land are increasingly strong influences on our perception of place. The*

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<sup>354</sup> Introduction.

<sup>355</sup> TR12, Section 4.6.

<sup>356</sup> TR12, Section 5.

<sup>357</sup> TR12, Section 5.

<sup>358</sup> TR12, Section 8.

<sup>359</sup> TR12, Section 8.

<sup>360</sup> TR12, Section 8.

<sup>361</sup> Flow Guidelines for in stream values, Ministry for the Environment, May 1998.

*significance that Maori give to rivers, adds depth and meaning to the river landscape.”*

- [1026] Te Āti Awa ki Whakarongotai have recommended NZTA undertake a suite of measures to avoid, remedy or mitigate any adverse impacts on the waterways. These recommendations include a baseline study of the flora and fauna in the waterways; the maintenance of high water quality; riparian planting to improve habitats; the management of storm water discharge and the development of an ecological management plan. We note here that the ecological management conditions G.33B to G.43A encapsulate these requirements and that condition G.34(a) includes provision for the specific input of Te Āti Awa ki Whakarongotai and the Takamore Trust to have involvement in monitoring the various ecological outcomes to be achieved.

### **Māori Freehold Land**

- [1027] Te Āti Awa ki Whakarongotai suggested that NZTA should seek to avoid all impacts on Māori freehold land, Māori owned general land and Māori reservations along the extent of the proposed expressway and that the iwi are prepared to support Māori landowners where impacts on their land interests are unavoidable.<sup>362</sup>
- [1028] We note Te Āti Awa ki Whakarongotai concerns and encourage NZTA to continue its engagement with Māori land owners, however, we acknowledge this matter is outside our jurisdiction.

### **Mitigation in General**

- [1029] We heard evidence that Te Āti Awa ki Whakarongotai had specific concerns regarding storm water impacts and recommended discharges should be treated to minimise the effect of contaminants on the water quality of freshwater and coastal environments. TR22 provides a range of mitigation methodologies for storm water treatment such as the use of swales, stormwater detention ponds and wetlands.<sup>363</sup> This is addressed further in section 10.10.
- [1030] Te Āti Awa ki Whakarongotai indicated that they would prefer natural processes be used to remove contaminants from stormwater and wetland treatment is the preferred option due to the creation of new habitats that can support native fish, birds and flora and fauna. This, Te Āti Awa ki Whakarongotai said, is considered a holistic approach consistent with tikanga Māori.
- [1031] Mr Schofield gave evidence which confirmed that proposed conditions had been formulated to address the following elements of mitigation regarding erosion and sediment control plans; monitoring of those plans and the preparation of a report on the effects of the failure of an erosion and sediment control device, or a storm event exceeding the design volume of the device.<sup>364</sup> The conditions we have imposed to the various consents for

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<sup>362</sup> TR12, Section 6.4.

<sup>363</sup> Kamo EIC, paragraph 105.

<sup>364</sup> Condition E.2, E.3, E.9 respectively.

earthworks, and discharges to land and water, require appropriate management, control and treatment measures to be applied both during the construction process and during the operation of the expressway. .

- [1032] Mr Kamo gave evidence that in regards to cultural concerns that derive from the need to maintain 'mauri' of the natural environment (affected by stream diversions, reclamations and discharges), that appropriate cultural ritual or protocols will be employed in accordance with the wishes of Te Āti Awa ki Whakarongotai and representatives of Takamore Trust.<sup>365</sup>
- [1033] Mr Schofield identified proposed conditions that were to ensure there are ongoing opportunities for Te Āti Awa ki Whakarongotai and the Takamore Trust to be consulted in the finalisation of the Ecological Management Plan and to be provided with results from the ecological monitoring. Reference to conditions in this respect has been made in paragraph [1026].
- [1034] Mr Kamo said that the proposed expressway alignment has avoided all but four wetland areas. Three of the affected wetlands lie within the Otaihangā South character area, and will be fragmented and reduced in size. Mr Kamo advised that an area of new wetland is proposed in the same character area and that this will go some way to offset this loss.<sup>366</sup>
- [1035] Dr Keesing gave evidence that when assessed in the round, the overall adverse aquatic ecological effects from the Project will be low to very low. He advised that approximately 5 kilometres of restorative and enhancement works should be provided to mitigate for an approximate loss or change to of around 3 kilometres of aquatic habitat. He said given the current environmental conditions, the robustness of the aquatic community assemblages and existing values, the proposed mitigation would represent a net aquatic ecological gain over the existing and current predictable future condition of those waterways.<sup>367</sup>
- [1036] To further address concerns about the impact of the Project on landscape and natural values, we have imposed condition DC.54 which requires that Te Āti Awa ki Whakarongotai and Takamore Trust shall be consulted in the development of the Landscape Management Plan.

#### **Takamore Cultural Precinct/Takamore Trust**

- [1037] The ancestral landscape of the Takamore cultural precinct represents a unique historical, cultural, and spiritual setting for the various Māori tribal groupings that have forged a relationship through the occupation and settlement of this area.<sup>368</sup> The overview provided in TR11 described the settlement of the Kāpiti region and in particular the Takamore cultural precinct.<sup>369</sup>

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<sup>365</sup> Kamo EIC, paragraph 115.

<sup>366</sup> Kamo EIC, paragraph 119.

<sup>367</sup> Keesing EIC, paragraphs 235 and 238.

<sup>368</sup> TR11, section 4.

<sup>369</sup> Aerial view in TR9, page 59, Figure 30. The significant cultural heritage sites are in TR11, page 28, Figure 8.

- [1038] The name of the wāhi tapu itself, Takamore, takes its origins from the ancient sub-tribal groupings of Te Kāhui Rua, Te Kāhui Rangi, Te Kāhui Tu and Te Kāhui Tawake. The genealogical branches of these sub-tribal groupings descend to the people of Te Āti Awa ki Whakarongotai.
- [1039] The term 'Takamore' means 'to caress' and is indicative of the relationship that the hapū of the Takamore Trust have with the Takamore wāhi tapu. Hence the proverbial saying:

*“Kia takamore ai i te whenua, kia takamore ai i te tangata*

*Kia takamore ai i te tara-ā-uma”*

*“To caress the land and its people*

*To caress the seat of affections”*

- [1040] This proverb highlights the holistic connection of the Takamore wāhi tapu to the hapū of the Takamore Trust. It is an area both innate and spiritual, and the deeds of Māori ancestors from times immemorial through to the descendants living today are well documented and celebrated. This proverb characterises the principles of the Takamore Trust as it strives to uphold the wisdom of its ancestors for the generations who are to follow.<sup>370</sup>
- [1041] In terms of the cultural effects regarding the Project, the Takamore Trust said that they could not support any immediate impacts on burials associated with the Takamore urupa, Maketu Tree and/or Tuku Rakau village; activities that contaminate or significantly affect water quality standards; irreversible impacts on the environment, biodiversity and ecology; and activities that adversely affect customary activities.

### **Expressway Alternatives within Sector 3**

- [1042] Mr Ngaia, on behalf of the Takamore Trust gave evidence that informed us that the Takamore Trustees have been involved with roading proposals to dissect the Takamore cultural precinct since 1954. The Trust had taken unsuccessful court action to challenge the existing WLR.<sup>371</sup>
- [1043] Mr Ngaia also advised that the announcement in late 2009, that NZTA was to utilise the existing WLR designation for the construction of an expressway provided the Trust with the opportunity to engage with NZTA from the outset of this particular Project regarding impacts within the Takamore cultural precinct.
- [1044] As a result of discussions between NZTA and the Takamore Trust, the Project team realigned the alignment within sector 3 of the Takamore cultural precinct, specifically with the objective of reducing as far as practicable the impacts on these lands and the associated cultural values. This alignment was called the western option.

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<sup>370</sup> TR11, Section 4.0.

<sup>371</sup> TR11, Section 4.9.

[1045] Throughout 2011, it is evident that the Trust and NZTA discussed two alternative alignment options in sector 3, referred to as the current western and eastern options.<sup>372</sup> The Trust advised that although both options had impacts on historical, cultural and spiritual values, it was the eastern option that was preferred by the Trust.<sup>373</sup>

[1046] More particularly, Mr Ngaia gave evidence that the Takamore Trustees were not opposed to a road (the expressway) but they were opposed to the road traversing the Takamore cultural precinct. He said that during the engagement process, Takamore Trust had indicated to NZTA that Takamore preferred the Greenaway option which avoided the Trust lands altogether.<sup>374</sup>

[1047] Dr Bentley gave evidence regarding the process associated with route selection for the Project.<sup>375</sup> He advised that in regards to the Takamore cultural precinct, the positioning of the alignment between the Waikanae River and Te Moana Road was narrowed down to either:

*“The western option (which):*

- *Intruded into the registered wāhi tapu;*
- *Separated the Maketu tree from the Takamore Urupā; and*
- *Required all or part of 15 properties.*<sup>376</sup>

*The eastern option (which):*

- *Avoided intrusion into the wāhi tapu, but*
- *Required the relocation of the historic Greenaway Homestead and the loss of its gardens; and*
- *Required all or part of 32 properties.*<sup>377”</sup>

[1048] Dr Bentley’s evidence was that the western option was chosen because:<sup>378</sup>

- i) *The eastern alignment would have required the acquisition of a much greater number of properties (25 as opposed to 11)<sup>379</sup>;*
- ii) *The eastern alignment would have required the removal of a scheduled heritage building (Greenaway Homestead) and the loss of its gardens;*
- iii) *While the western alignment would traverse a part of the registered Takamore wāhi tapu, it would avoid all culturally*

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<sup>372</sup> Routes illustrated in TR11, section 5.4, Figures 5, 6 and 7.

<sup>373</sup> AEE, Chapter 9, s9.5.4, Table 9.9.

<sup>374</sup> Hearing transcript, pages 764-766.

<sup>375</sup> Bentley EIC, paragraph 33.2.

<sup>376</sup> Number of properties that would have been required in whole or in part as estimated in late 2010 based on preliminary designs.

<sup>377</sup> Number of properties that would have been required in whole or in part as estimated in late 2010 based on preliminary designs.

<sup>378</sup> Bentley EIC, paragraphs 39 - 41.

<sup>379</sup> Number of properties determined to be required, in whole or in part, based on refined design.

*significant features (the Takamore urupā, the Maketu tree, and waipuna (spring));*

- iv) The entire area between the Waikanae River and Te Moana Road has a long history of occupation and cultural significance, and it would not be possible to avoid having some effect on these values; and*
- v) When taking the MCA scoring on its own, the eastern option was slightly preferred over the western option. However, when a more detailed qualitative weighing of the various factors was undertaken it was determined that the difference in relation to the cultural considerations was not sufficient to outweigh the additional social impacts of taking 14 additional private properties (which would have been required had the eastern option been pursued).*

[1049] Mr Baily gave evidence that he was involved throughout the project in looking at a range of route options, and this included looking at the Greenaway Road option. He explained that:<sup>380</sup>

*“At the actual Te Moana Road area we also drilled down, if you like, to examine the potential for the Greenaway Road connection and we looked at two options in a bit more detail at that point.”*

[1050] When discussing the Sector 3 options, Mr Baily referred to two concept drawings prepared to inform the preliminary assessment of options for the Waikanae Area.<sup>381</sup> These drawings were not included within the application.

[1051] Referring to Exhibit 21, Mr Baily explained the ramifications of the 2 options presented explaining that in the concept plan marked “*Option D5-1, dated 30.09.10*” that:<sup>382</sup>

*“The red lines are showing the on and off ramps coming down to Te Moana Road so again in this option the expressway is over Te Moana Road. In this option there is something like 670 properties affected and some 50 residential properties, by my count off the aerial photograph”.*

[1052] Mr Baily went onto say that the concept plan marked “*Option D5-2, dated 30.09.10*” again showed increased property take, urban design issues such as disconnection because of the on-off ramps and this particular alignment means a lot of the expressway sits outside of the designation to quite a large extent.<sup>383</sup>

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<sup>380</sup> Hearing transcript, page 1414.

<sup>381</sup> Exhibit 21 – *Waikanae Area Optioneering – Greenaway Road Area: Drawings D5-1 and D5-2.*

<sup>382</sup> Hearing transcript, page 1415.

<sup>383</sup> Hearing transcript, page 1416.

- [1053] In response to counsel for Takamore Trust, Mr Watson’s proposition that the use of Greenaway Road and the existing infrastructure would have lessened the property take, Dr Bentley disagreed and added:<sup>384</sup>

*“I’m not sure that you would be able to get a four lane expressway with the appropriate median width along the entire length there without taking significant extra property”.*

- [1054] Counsel for NZTA in closing submitted that NZTA carefully considered a range of route options in the vicinity of the Takamore cultural precinct, and that resulted in a long list of options to the west and east (including Greenaway Road). However, an alignment in that locality would have a number of severe and significant impacts.<sup>385</sup>
- [1055] While noting WOO’s concern regarding impacts on other cultures, we are satisfied that NZTA, in their route selection, remedies and mitigation have struck an appropriate balance.

### **Takamore urupa**

- [1056] We read that the Takamore cultural precinct included burials that pre-date the establishment of the urupa. Such burials include those in what was, until 1839, the Ngahuruhuru cultivation area. Wetland burials of kōiwi and taonga took place on other parts of Takamore.<sup>386</sup> In the period, circa 1800, the occupants of various pā sites within the Takamore cultural precinct site were utilising Takamore urupa for burial purposes.
- [1057] Mr Ngaia advised that it is not only Māori buried in the urupa. In 1915 local Māori gave permission to the Waikanae community to inter those people, both Māori and Pakeha, who had died as a result of a flu epidemic in Waikanae. Two mass burial graves were dug; one in the main hollow to the northern side of the cemetery and the other was just to the west of the Takamore cemetery fence line.

### **Maketu Tree**

- [1058] We conducted a site visit to the Takamore cultural precinct. We saw that the Maketu Tree is a large macrocarpa tree located at the end of Puriri Road, off Greenaway Road. We were advised by Mr Ngaia that within the bolus of the tree is a European-style grave of the Te Āti Awa tupuna, Maketu. It is assumed that the tree was planted beside the grave at much the same time as the grave was constructed, towards the end of the 19<sup>th</sup> century.<sup>387</sup> Mr Ngaia told us that a Te Āti Awa ki Whakarongotai ancestor, Maketu, lies buried in this place, however, there is conjecture of which generation that “Maketu” belongs to.
- [1059] Nevertheless, Mr Ngaia said that the Maketu Tree burial ground is a restricted place due to a number of deceased being present. Hence the

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<sup>384</sup> Hearing transcript, page 74.

<sup>385</sup> NZTA closing submissions, paragraph 28.3.

<sup>386</sup> Exhibit 8, page 17, paragraph 3.

<sup>387</sup> TR9, section 5.5.

reason that the generations of Te Āti Awa ki Whakarongotai who live today avoid going to the Maketu Tree.

[1060] We heard evidence to say that the Takamore Trust has no legal tenure or legal access to the land upon which the Maketu Tree stands. We were advised that the heritage protection measures for the Maketu grave (B78) and the tree (T105) are within the KCDC Heritage Register and that this wāhi tapu is not part of a reserve.<sup>388</sup> We accept this evidence.

[1061] Mr Kamo gave evidence that during discussions with Takamore Trust the proposal to provide access to the Maketu Tree was considered but was rejected on the basis that:<sup>389</sup>

*“The Maketu tree is landlocked and not a place that iwi regularly visit or undertake rituals or ceremonials activities, and*

*iwi would rather see mitigation provided in other locations within the cultural landscape.”*

[1062] Mr Kamo also said that there has been discussion with Te Āti Awa ki Whakarongotai and the Takamore Trust about the possibility of the land, now proposed to be included for protection in the designation, being vested as Historic Reserve under the Reserves Act 1981. A joint management and administration regime would then be put in place between the DoC and the Takamore Trust.<sup>390</sup>

[1063] Mr Schofield gave evidence that the designation boundary could be expanded so that it encompassed the land held by the Crown and KCDC and which NZTA has offered to the Takamore Trust to be set aside as a historic reserve. He advised that this would see the designation providing added protection of the subject land in a manner that would be consistent with, and advance, the intention of subsequently establishing an historic reserve over this land (should the Trust so wish).<sup>391</sup> In the light of this evidence the NZTA made a formal request to modify the designation to include this area of land, for the purposes described by Mr Schofield. We approve this in section 13.2.3.

[1064] Mr Ngaia acknowledged that the land identified in the *Restoring the Mauri* document had been the subject of discussion between the Takamore Trust and NZTA, and that there would be “some benefit to the Trust in that land being set aside as an historic reserve” (as is proposed).<sup>392</sup> Mr Ngaia acknowledged the concept of extending the reserve to encompass the Maketu Tree land (which is not land in the legal ownership of the Trust) was also something that had been discussed.<sup>393</sup>

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<sup>388</sup> Exhibit 8, page 21, section 4.4.

<sup>389</sup> Kamo Rebuttal evidence, paragraph 40.

<sup>390</sup> Kamo Rebuttal evidence, paragraph 36-39.

<sup>391</sup> Schofield Rebuttal evidence, Annexure B.

<sup>392</sup> Hearing transcript, pages 787 - 788.

<sup>393</sup> Hearing transcript, page 788.

- [1065] Mr James gave evidence that NZTA had given its qualified support to the Takamore Trust and NZHPT regarding the application by Takamore Trust for an extension to the current registered wāhi tapu area. This support was on the condition that the extension would be complementary to the realisation of the expressway.
- [1066] In addition, Counsel for NZTA told us that in 2011 the Takamore Trust applied to the NZHPT to extend the registered wāhi tapu area. NZTA submitted its conditional support of the Trust's extension application, recognising the importance of the area to tangata whenua. We were advised that NZHPT subsequently granted this request.<sup>394</sup>
- [1067] Mr Schofield also advised that the alignment of the expressway through the Takamore cultural precinct, between the Maketu Tree and the Takamore urupa, was planned so as to minimise the effects on this area's cultural values, while also mitigating the impacts on existing residential properties and the other values that prevail within the Trust administered lands. He expressed the opinion that compared with the previously approved designation for the WLR, the area of wāhi tapu affected is substantially reduced and now only traverses an area under which the Kapuni high pressure gas pipeline is located, and across which an access road is formed.<sup>395</sup>
- [1068] At Whakarongotai Marae, Ms Hurren gave evidence about the Kapuni pipeline. She stated:<sup>396</sup>
- “as I understand it the Kapune (sic) pipeline now passes through south of the urupa, in between Takamore urupa and the Maketu Tree, that's why it would be low now (archaeological values) because of the pipeline passing through”.*
- [1069] In response to a question in cross examination by Counsel for Takamore Trust, Ms Hurren said that a geophysical survey of the area of the crescent dune (at the bottom of the urupa) determined there was a low possibility of burials but that burials had not been discounted; it just meant that there is a lower chance of burials than other archaeological materials.<sup>397</sup>
- [1070] In regards to the Kapuni pipeline, Ms Hurren said that NZHPT had not been able to find any reports of the works in relation to archaeology but that she had seen photographs and *“the earthworks were very extensive, very, very extensive”*. She said that if you visualise it, lots of diggers and a very deep trench that has diggers within the trenches, because they (the diggers) are very large. Ms Hurren said she did not know the amount of earth that was moved.<sup>398</sup>

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<sup>394</sup> NZTA are aware that El Rancho Waikanae Christian Holiday Camp has lodged judicial review proceedings in the High Court on the decision of the NZHPT to extend the registered area. NZTA is not a party to those proceedings.

<sup>395</sup> Schofield EIC, paragraph 164.

<sup>396</sup> Hearing transcript, page 799

<sup>397</sup> Hearing transcript, pages 799-800.

<sup>398</sup> Hearing transcript, page 801.

- [1071] Ms O’Keeffe gave evidence that substantial work has already been undertaken to attempt to identify areas of burials in the vicinity of the Takamore urupa, Maketu tree and Tuku Rakau village, including geophysical surveying.<sup>399</sup> This evidence has been addressed in section 10.15.
- [1072] Mr Teira gave evidence that the Project will cause difficulties in gaining legal access to either the Maketu Tree or the Takamore urupa. We note that the Trust also does not have legal tenure to the land upon which the Maketu Tree and associated wāhi tapu site. We accept this evidence.
- [1073] Counsel for NZTA submitted that the development of the *Restoring the Mauri* document provides for the incorporation of the Maketu Tree and associated wāhi tapu into the Takamore cultural precinct and would also provide legal access to both the Maketu tree and the urupa. However, we note that Te Āti Awa ki Whakarongotai and the Takamore Trust have yet to agree to the mitigation proposed in the *Restoring the Mauri* document.

### **Tuku Rakau Village**

- [1074] Tuku Rakau village was established by Wiremu Parata in 1849, and occupied until 1886, when Wiremu, recognising the strategic advantage of proximity to the newly constructed main trunk rail line, moved the village to Waikanae town. The village is shown on early survey plans. A large kauri tree off Greenaway Rd now marks the village site.<sup>400</sup>
- [1075] Mr Ngaia advised that in 1884, the meeting house Pukumahi Tamariki, was shifted from its original site on land just east of the Takamore urupa. Pukumahi Tamariki was brought via bullock to its present site in which it still stands today. This is at Marae Lane in Waikanae and is the meeting house now known as “Whakarongotai”.
- [1076] Mr Teira gave evidence that the proposed expressway will destroy cultural and heritage values that are associated with the Takamore cultural precinct and that the route of the proposed expressway will destroy Tuku Rakau village. This would result in the impairment of the relationship Te Āti Awa ki Whakarongotai has with their ancestral lands and that they will have difficulty in gaining traditional access to the remnants of their wāhi tapu and particularly their urupa.
- [1077] Ms Hurren and Ms O’Keeffe agreed that the location of the main part of Tuku Rakau village is outside the road designation corridor and thus will not be adversely affected.<sup>401</sup> We accept that this is the case.

### **Mitigation in relation to the Takamore Cultural Precinct**

- [1078] The NZTA has been working with Te Āti Awa ki Whakarongotai and Takamore Trust to develop mitigation proposals that relate to the Takamore cultural precinct based on two initiatives which are documented in: *Restoring*

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<sup>399</sup> O’Keeffe EIC, paragraph 45.

<sup>400</sup> TR9, Section 5.5. See Figure 16 for Tuku Rakau village site.

<sup>401</sup> Expert Conferencing Joint Witness Statement to the Board of Inquiry – Archaeology, paragraph 16.

*the Mauri* and the *Takamore Masterplan*.<sup>402</sup> The *Restoring the Mauri* document attached to Mr Kamo's rebuttal evidence was revised on 30 November 2011 and the *Takamore Masterplan* was developed in May 2012.

- [1079] The *Restoring the Mauri* proposal was prepared in February 2011 in response to the Takamore Trust concerns regarding the impact of the Project on the Takamore cultural precinct. It was further developed in 2011 with Te Āti Awa ki Whakarongotai, Takamore Trust and NZTA. The proposal provides for a broad range of environmental, ecological and cultural heritage site enhancements within the Takamore cultural precinct.
- [1080] NZTA has also prepared the *Takamore Masterplan* for the precinct that provides for the reinstatement of kaitiakitanga, rangatiratanga and partnership with Crown in the management of wāhi tapu lands adjacent to the Takamore urupa.
- [1081] The *Masterplan* features the construction of a new whareniui; the adaptive reuse of existing buildings and the potential reuse of the glasshouses for commercial purposes. The *Masterplan* also provides for the creation of a formal access way to the landlocked Takamore urupa and future cultural complex. The proposal includes restoration of the Takamore wetlands west of the urupa. Other amenities such as landscaping and planting programmes for cultural harvest, walking tracks and ecological enhancements are also proposed.<sup>403</sup>
- [1082] Te Āti Awa ki Whakarongotai advised us that they supported and encouraged the preparation of mitigation plans for areas of cultural heritage importance such as the document *Takamore Cultural Heritage Precinct - Restoring the Mauri, March 2011*. Te Āti Awa ki Whakarongotai also supported the principles of low impact urban design (including wetland restoration native plantings and restrictions upon stormwater/sediment entering waterways).<sup>404</sup>
- [1083] The Takamore Trust recommended the preparation of a wetland, stream and river management strategy for the Takamore cultural precinct. They advised that the *Takamore Cultural Heritage Precinct – Restoring the Mauri, March 2011* comprised a first step in addressing cultural and environmental impacts in the immediate area. However the Trust noted that it was prepared in isolation from the Trust. The Trust recommended the refinement of the plan in consultation with the Trust to provide opportunities for its members to input their matauranga into the plan.<sup>405</sup>
- [1084] We note that the original *Restoring the Mauri* document was developed by NZTA, however, further refinement has occurred since then involving both Te Āti Awa ki Whakarongotai and the Takamore Trust.

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<sup>402</sup> Kamo Rebuttal evidence, Annexure A and B.

<sup>403</sup> Kamo Rebuttal evidence, paragraphs 34 and 35.

<sup>404</sup> TR12, Section 11.0, Recommendations.

<sup>405</sup> TR11, Section 8.0, Recommendations.

### Submitters

- [1085] Ms Grace gave evidence that she opposed the Project and supported the Takamore Trust submission. Ms Grace also advised that she owns land that is within the Tuku Rakau village area and that the expressway will cut through her land. In her evidence Ms Grace said she had been served a Public Works Act notice in regards to the Crown acquiring a piece of her land. As previously discussed the acquisition of land by the Crown is a matter outside our jurisdiction.<sup>406</sup>
- [1086] Ms Higgott stated that she opposed the Project because of the adverse effects on cultural and environmental grounds. She also questioned the mandate of Te Runanga o Te Āti Awa ki Whakarongotai Inc to speak on behalf of Te Āti Awa ki Whakarongotai iwi members.<sup>407</sup> We note that Mr Carter<sup>408</sup> gave representation and stated that the Runanga was now in recess and that Te Āti Awa ki Whakarongotai Charitable Trust had the mandate to speak for Te Āti Awa ki Whakarongotai. We accept his submissions in regards to Ms Higgott's concerns; mitigation relating to cultural and environmental effects are discussed in paragraphs [1078] to [1084].
- [1087] Ms Parata gave evidence that she opposed the Project because of the adverse effects on cultural and environmental grounds.<sup>409</sup> Ms Parata described her relationship with the Takamore Trust and cultural precinct and her relationship with the wider Kāpiti takiwa. As stated previously, cultural and environmental effects and mitigation are discussed in paragraphs [1078] - [1084].
- [1088] In her submission Mrs Rikihana eloquently described her association with Te Āti Awa ki Whakarongotai and the local area. She submitted that this Project, like previous roading proposals, in the Takamore area, has raised both cultural and environmental concerns. We appreciated her kōrero.
- [1089] We deal with the concerns raised by other submitters in the main findings of this section.

### Relationship Agreements

- [1090] Mr Kamo gave evidence that as part of the mitigation of cultural effects for the Project, NZTA has entered into a MoU with Takamore Trust<sup>410</sup> and currently has a draft relationship agreement with Te Āti Awa ki Whakarongotai Charitable Trust.
- [1091] These relationship agreements formally recognise the mandate of Te Āti Awa ki Whakarongotai Charitable Trust to represent the interests of Te Āti Awa ki Whakarongotai and the role and responsibility of the Takamore Trust in the area described as the Takamore cultural precinct.

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<sup>406</sup> Grace #703-2.

<sup>407</sup> Submission #297 – 1.

<sup>408</sup> On behalf of Te Āti Awa ki Whakarongotai Charitable Trust Representation

<sup>409</sup> Submission #0625 – 1.

<sup>410</sup> Exhibit 12.

- [1092] Te Āti Awa ki Whakarongotai told us that it is important to the iwi that a long and enduring relationship is established with NZTA and as such reiterates the importance of formalising the relation arrangements articulated in the draft relationship agreement.<sup>411</sup>
- [1093] Takamore Trust said that it is important to the iwi that a long and enduring relationship is established with NZTA and as such reiterates the importance of formalising the relationship arrangements articulated in the Takamore Trust and NZTA MoU. The Trust went on to say that it is satisfied with the level of engagement to date and reemphasises the importance of maintaining and enhancing its relation with NZTA.<sup>412</sup>

### Main findings

- [1094] Te Āti Awa ki Whakarongotai told us they are not formally opposed to the Project but the preference is for an alternative expressway route. Notwithstanding this concern, we understood Te Āti Awa ki Whakarongotai to say that they accept NZTA has a broad range of considerations (social, economic, environmental) in ultimately selecting an appropriate route for the Project.
- [1095] Mr Kamo gave evidence that Te Āti Awa ki Whakarongotai and NZTA were working toward a comprehensive agreement aimed at mitigating and offset the impacts of the Project within the Te Āti Awa ki Whakarongotai tribal takiwa and that NZTA is committed to continued engagement with Te Āti Awa ki Whakarongotai.<sup>413</sup> We support and endorse that approach.
- [1096] We heard that if the Project is approved, Te Āti Awa ki Whakarongotai would expect to have their involvement in the Project “*entrenched in a formal relationship document (MoU/MoA)*”.<sup>414</sup> Counsel for NZTA confirmed that a draft MoU had been developed between Te Āti Awa ki Whakarongotai and NZTA but had not as yet been signed. Again we support and endorse the use of such methods.
- [1097] Counsel for Takamore Trust submitted that the Trust has also acknowledged the constructive engagement that has occurred with NZTA, and that the Trust remains open to good faith discussion to further explore mitigation options (this is also confirmed by the Expert Cultural Conferencing statement). However, he cautioned that no mitigation proposal has been agreed to, and consultation and engagement is a means to an end, and does not represent mitigation in itself.<sup>415</sup>
- [1098] The assessment within TR11 concludes that the Project will have an adverse impact on the Takamore wāhi tapu, and on the relationship of tangata whenua with their ancestral lands and taonga, including their

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<sup>411</sup> TR12, Section 11.0.

<sup>412</sup> TR11, Section 7.6 and 8.0.

<sup>413</sup> Kamo EIC, paragraph 152.

<sup>414</sup> Submission #708, section 8.4.

<sup>415</sup> Counsel for Takamore Trust, opening submissions, paragraphs 24 and 25.

obligations of kaitiakitanga for generations to come,<sup>416</sup> and as such (Takamore Trust) cannot support the Project.

[1099] However, we heard evidence that the Takamore Trust has engaged with NZTA in developing a suite of conditions to mitigate environmental effects from a cultural perspective. The Trust has also engaged with NZTA in the development of measures “*outside of the formal designation process*”<sup>417</sup> as described in the *Restoring the Mauri* and the *Takamore Masterplan* documents.

[1100] During cross examination Mr Ngaia acknowledged NZTA’s efforts.<sup>418</sup> However, he considered that these efforts fell short of what the Treaty intends as “*partnership*” in that inevitably there was an incapacity to fully understand the Trust’s “*world view, and ... the spiritual and cultural significance to our people*”.<sup>419</sup> Nevertheless, Mr Ngaia agreed that such engagement should continue, as intended under the designation and resource consent conditions, should we approve the Project.<sup>420</sup>

[1101] More particularly:<sup>421</sup>

*“I suppose one comment I do wish to make is that our conversations between the alliance and the Takamore Trust have been, as I’ve stated, amicable and robust, and all these things are all proposals that the alliance have done from their perspective to best enhance, mitigate and remedy this situation that the Takamore Trust face. So we’re willing to explore these things, we’re willing to actively engage and consult with the alliance, and these notions – our principles of Manaakitanga, in order to have this open and robust consultation. We are waiting despite these various proposals, as the Takamore Trust are waiting to see the restoration of our mauri. As it states by the alliance with regards to this mitigation, we’re waiting to see something in there that from the **(Māori content 02.35)**<sup>422</sup> is going to be the restoration of our mauri, and unfortunately the alliance cannot provide it because that would mean the road would not be there.*

*So although we wish to be a part of this process, cos [sic] we wish to know which – every bit of dirt, every bit of sand that has been moved around within the Takamore wahi tapu, and the people that we have been dealing with from the alliance are good people, they are good people. It has got nothing to do with the personalities of these people, they are very good people, and we wish to work with them. But unfortunately this road is the crux of the issue and*

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<sup>416</sup> TR11, summary of impacts at page 24; Hearing transcript, page 780.

<sup>417</sup> NZTA closing submissions, paragraph 89.

<sup>418</sup> Hearing transcript, pages 774 - 775.

<sup>419</sup> Hearing transcript, pages 774 - 775.

<sup>420</sup> Hearing transcript, page 775.

<sup>421</sup> Hearing transcript pages 785 - 786.

<sup>422</sup> This is a note where the transcriber could not pick up the exact word used.

*despite the various attempts on behalf of the alliance to try and beautify and enhance this area of the Takamore wahi tapu, the restoration of the mauri, as it stipulates within the alliance documents, cannot be found from our (Māori content 3.55)<sup>423</sup> perspective. Yes, thank you."*

- [1102] From the evidence of the Takamore Trust there is a firmly expressed view that the expressway should be re-routed so as to avoid adverse effects on the Takamore cultural precinct. Having weighed a broad range of relevant factors, NZTA has advised that this is not a practicable solution and have instead proposed a route which as far as is practicable mitigates the severity of adverse effects on this Takamore Trust administered lands. In order to best offset the concerns of the Trust, NZTA has proposed mitigation, the nature of which is generally supported by the Trust.
- [1103] We agree with legal counsel for NZTA a core issue for us to determine, is whether or not the proposed mitigation and offsetting measures proposed are sufficient for the purposes of satisfying Part 2 of the RMA, despite the fact that the Takamore Trust remains opposed to the Project going through the Takamore precinct.<sup>424</sup>
- [1104] There is clear law that Māori collectively and individually do not have veto powers over the determination of appropriate outcomes under the RMA. Cultural matters are to be weighted and determined objectively in the circumstances of any particular case and opposition may not deter an appropriate outcome consistent with the Act's overall purpose of sustainable management. The individual provisions of Part 2 (sections 6(e), 7(a) and 8) do however require us to undertake careful analysis of the evidence and assertions put forward by Te Āti Awa ki Whakarongotai and the Takamore Trust, as well as other parties including the NZTA, in relation to such values.

#### **s6(e) matters**

- [1105] s6(e) RMA requires the decision-maker to recognise and provide for the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and other taonga.
- [1106] In sector 3 we are satisfied on the evidence that the NZTA design has taken all practicable steps to lessen, or reduce, impact on the Takamore Cultural Precinct. We have imposed consent conditions that require cultural monitoring (landscape, ecology and archaeology); the requirement for ADP to be adhered to; and the implementation of protocols for engagement with Te Āti Awa ki Whakarongotai and the Takamore Trust through relationship agreements.
- [1107] It is acknowledged that there will be physical and metaphysical adverse effects on this cultural resource, and it is our duty to consider whether there are any viable alternatives to the Project, or whether conditions can be imposed to avoid, remedy or mitigate the adverse effects. On the evidence

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<sup>423</sup> This is a note where the transcriber could not pick up the exact word used.

<sup>424</sup> NZTA closing submissions, paragraph 92.

we have heard, we are satisfied that avoidance to the extent practicable has been achieved and mitigation adequately recognises and provides for the relationship of Māori with their ancestral lands, sites, wāhi tapu and other taonga.

#### **s7(a) matters**

- [1108] s7(a) RMA requires us to have particular regard to kaitiakitanga.<sup>425</sup> NZTA has acknowledged Te Āti Awa ki Whakarongotai as the kaitiaki of the Project area and the wider takiwa. NZTA also acknowledges Takamore Trust as the kaitiaki of the Takamore cultural precinct.
- [1109] As has been evidenced, Te Āti Awa ki Whakarongotai and the Takamore Trust have been engaged during the development of the route options for Project; the development of proposed designation and resource consent conditions; and would continue to be involved in the development of management plans affecting the natural resources of concern to them via the conditions which will apply to the designation.
- [1110] The commissioning of cultural impact assessments from both Te Āti Awa ki Whakarongotai and Takamore Trust has been in recognition of their positions as kaitiaki in the Kāpiti Coast takiwā and the Takamore cultural precinct respectively.
- [1111] Accordingly, we find the Project has met the requirements of s7(a) of the RMA.

#### **s8 matters**

- [1112] s8 RMA requires us to take into account the principles of Te Tiriti o Waitangi (the Treaty of Waitangi). The principles of the Treaty include: a duty to act in good faith; duty to make informed decisions through consultation; principles of redress and a duty not to create grievances; principle of reciprocity; and the principle of mutual benefit.
- [1113] Mr Ngaia when cross examined by Counsel agreed to those principles as being appropriate in that mitigation should be informed through consultation and engagement.<sup>426</sup> He accepted that mitigation should focus on the Project's construction and what it disturbs or desecrates (in this case the Takamore cultural precinct);<sup>427</sup> it should acknowledge the mauri of the area, and focus on at least mitigating what the Project takes from the integrity of the mauri or the spiritual values of the area;<sup>428</sup> mitigation should reflect Treaty principles; it should acknowledge and respect the kaitiaki role of the Takamore Trust; and it should recognise the principle of reciprocity.<sup>429</sup>

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<sup>425</sup> Kaitiakitanga is defined as the exercise of guardianship by the tangata whenua of an area in accordance with tikanga Māori in relation to natural and physical resources, and includes the ethic of stewardship.

<sup>426</sup> Hearing transcript, page 783.

<sup>427</sup> Hearing transcript, page 783.

<sup>428</sup> Hearing transcript, page 783 (note transcript typographical error: Maori should read mauri in both places).

<sup>429</sup> Hearing transcript, page 784.

- [1114] Tangata whenua in their evidence commented on the high level of consultation and engagement with NZTA. We consider the consultation that has been undertaken to be extensive and meaningful and in terms of the conditions we have imposed, this will continue. We are also satisfied that the mitigation and conditions will also assist in achieving the Treaty obligations inherent in s8. Overall we are satisfied that the s8 obligations are met. .
- [1115] We accept the cultural concerns put forward by Te Āti Awa ki Whakarongotai and the Takamore Trust. It is our finding in this case that the cultural effects are finely balanced. Having considered the evidence and submissions and having applied the overall balancing exercise required by Part 2 (as set out below and later in section 13.6 of this report), it is our view that subject to conditions, the cultural dimension will be appropriately accommodated and provided for as part of the Project. We come to this overall finding in the knowledge of the consultation and mitigation efforts to reduce as far as practicable the severity of adverse effects on cultural values. It is also our view that the mitigation that is to be secured via conditions (refer to cultural, ecology, landscape, archaeology) will result in a number of positive outcomes which are in our view significant in themselves.

## 10.18 ECONOMICS

- [1116] Evidence and submissions on economics and associated economic well-being were principally received from the following submitters and expert witnesses:
- |                             |                      |
|-----------------------------|----------------------|
| NZTA:                       | Mr Mike Copeland     |
|                             | Mr Craig Nicholson   |
|                             | Mr Andrew Murray     |
| Save Kāpiti Inc:            | Mr Adam Pekol        |
|                             | Dr Michael Pickford  |
| KCAH:                       | Mr Fraser Colegrave  |
| APSOC:                      | Ms Julie Anne Genter |
| Rational Transport Society: | Mr Kent Duston       |
| Personal submitter:         | Mrs Michelle Lewis   |
- [1117] In addition there were a number of submissions on economics with particular emphasis on the efficacy of the BCR for the Project.
- [1118] There was a dispute as to the appropriate baseline. We have resolved that at section 8.2. Where relevant in this section we have applied our findings at section 8.2.
- [1119] The RMA defines the “*environment*”, amongst other things as including “*economic*” conditions which affect or are affected by ecosystems and their constituent parts, people and communities, natural and physical resources and amenity values. The relevant RMA principles are set out in Part 2, s5(2) within the definition of “*Sustainable Management*” where it provides to

enable "...people and communities to provide for their social, economic, and cultural well-being..." They are also set out in Part 2, s7(b): "the efficient use and development of natural and physical resources".

[1120] Mr Murray states that his assessments of such matters as travel "time savings" and "crash reduction savings" have informed the economic analyses undertaken by Mr Nicholson.<sup>430</sup> In relation to predicted crash cost savings, Mr Murray describes in his EIC: "This analysis shows that the total crash costs in this corridor are expected to reduce by over \$3 million (38%) every year."<sup>431</sup> Overall Mr Murray concludes "...and journey time efficiency and reliability is expected to increase significantly, both for through and local traffic."<sup>432</sup>

[1121] Mr Nicholson advises that a BCR was calculated by NZTA in November 2011 of 0.95. He described that the BCR excluded "Agglomeration" benefits or wider economic benefits of employment.<sup>433</sup> He describes updating of the analyses accounting for escalations and inflation. The updated BCR's are described as "The updated BCR for the project is 0.93, while the updated BCR's for the other three options considered ranged from 0.57 to 0.67".<sup>434</sup> These are calculated on the basis of an 8% discount rate, according to the NZTA Economic Evaluation Manual (EEM) methods.

[1122] Mr Nicholson describes that:<sup>435</sup>

*"The BCR for the Wellington Northern Corridor RoNS package (of which the Project is an integral part) was evaluated in late 2009 as part of a "business case" for the package. At the time, the BCR for the package was calculated in accordance with the NZTA's EEM procedures to be 1.0 excluding "Agglomeration" benefits and 1.2 including "Agglomeration" benefits."*

[1123] He also describes the criteria that NZTA uses to nationally rank projects for funding. This is described as being based on a three tier system weighting strategic fit, effectiveness and efficiency according to a high (H), medium (M) or low (L) profile. The Wellington Northern Corridor RoNS package was evaluated in late 2009 and given a HHL profile. This ranks it as a "Priority 3"<sup>436</sup> project out of a possible 11 priority rankings, with one being the highest. The low ranking for efficiency is directly related to the BCR for the Project.

[1124] Mr Copeland addresses the wider context of economics in relation to the RMA. He notes that with a BCR of less than 1.0, the Project (as separate from the Wellington Northern Corridor RoNS package) does not achieve the

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<sup>430</sup> Hearing transcript, page 286.

<sup>431</sup> Murray EIC, paragraph 150.

<sup>432</sup> Murray EIC, paragraph 297.

<sup>433</sup> Nicholson EIC, paragraph 39.

<sup>434</sup> Murray EIC, paragraph 41.

<sup>435</sup> Nicholson EIC, paragraph 32.

<sup>436</sup> Nicholson EIC, paragraph 35.

Government's target for a rate of return of 8%.<sup>437</sup> He goes on to describe that the methodology adopts a national rather than regional viewpoint and that it has "...greater benefits and significantly lesser costs than the other three route options..."<sup>438</sup>

- [1125] In relation to the relevant viewpoint to be taken in an RMA context, for economic assessment, Mr Copeland describes that in his view local, regional and national perspectives are relevant.<sup>439</sup> He describes a financial or commercial business case analysis, undertaken from the viewpoint of the project proposer is generally irrelevant. He describes this is because such an analysis is restricted to private costs and benefits rather than the "...cost and benefits for "people and communities".<sup>440</sup>
- [1126] The Expert Conferencing Joint Witness Statement<sup>441</sup> described the broad areas of agreement and disagreement between the attending experts. The conference recorded agreement as to the merits of a long term approach and that forecasting growth projections was difficult. There was little of common collective view beyond that, and apparent disagreement as to technical elements and viewpoints of the evaluations.

### The Do Minimum

- [1127] Dr Pickford, supported by a number of submitters, was of the view that the WLR was one of the appropriate counter-factual (do-minimum) cases for comparative evaluation of the BCR. Mr Nicholson disagreed citing the EEM in his rebuttal:<sup>442</sup>

*"It is important not to overstate the scope of the do-minimum, ie it shall only include that work which is absolutely essential to preserve a minimum level of service."*

- [1128] He also indicated that in his experience:<sup>443</sup>

*"it would be unprecedented in New Zealand for a project such as the WLR, that is estimated to cost well in excess of \$100 million for Stage 1, or approximately \$200 million for the entire length, to be considered to be the "do-minimum" for another project."*

- [1129] Dr Pickford also addresses the NZTA assessment of maintenance costs, project costs, the calculation of the BCR, and intangible costs amongst other assessment method matters. In broad terms, Mr Nicholson describes that in his opinion, the differences stem largely from differences in assumption or approach methodology. It seems to us that Dr Pickford seeks for a broader

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<sup>437</sup> Copeland EIC, paragraph 12.

<sup>438</sup> Copeland EIC, paragraph 12.4.

<sup>439</sup> Copeland EIC, paragraphs 26 and 27.

<sup>440</sup> Copeland EIC, paragraph 28.

<sup>441</sup> Expert conferencing joint witness statement to the Board of Inquiry – Economics, dated 2 November 2012.

<sup>442</sup> Nicholson rebuttal evidence, paragraph 28.

<sup>443</sup> Nicholson rebuttal evidence, paragraph 30.

based quantification of all the costs and benefits associated with the project. He states:<sup>444</sup>

*“The inclusion of all costs, including wider community and environmental costs, is fundamental to the SCBA [Social Cost Benefit Analysis] process. As some costs are difficult to quantify, they are at risk of being overlooked.”*

[1130] Mr Hassan refers *Meridian Energy Ltd v Central Otago District Council* decision where:<sup>445</sup>

*“...the full High Court noted that Parliament had not mandated that the decisions of consent authorities should be “objectified” by some kind of quantification process. The RMA’s process of decision-making contemplated evaluative scrutiny of proposals under Part 2. It noted this was not “inferior” to a cost-benefit analysis. Hence, this cautions against over-playing matters under section 7(b) or assuming that a project must negotiate a cost-benefit (or BCR) test before it can satisfy the RMA’s purpose.”*

[1131] Ms Genter, Mr Duston and others expressed an alternate, principally public transport or mixed mode based philosophy was more appropriate and should be adopted. Ms Genter describes:<sup>446</sup>

*“The current method of evaluating the costs and benefits of proposed motorway projects as set out in the NZTA Economic Evaluation Manual (EEM) is flawed.”*

[1132] Mr Nicholson disagrees, describing the evolving nature of the EEM over the past two decades:<sup>447</sup>

*“in order to keep track with international research and to ensure the EEM is consistent with international best practice for project evaluation.”*

[1133] Submissions addressed a number of matters such as results of the transportation modelling, adverse effects on property values, effects on the local economy and businesses due to the road diverting through traffic away from the existing state highway, and in relation to the BCR being calculated at less than 1.0. There were also a number of submissions in relation to the adequacy of selection of the do-minimum case in the analysis, in particular that the WLR should be included within the do-minimum case. The primary contention on this point was that with the WLR in place, much of the benefit to be derived from the expressway would already be accounted for and the BCR for the project would be significantly diminished.

[1134] The s42A report and NZTA’s opening legal submission describe that the unresolved issue:<sup>448</sup>

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<sup>444</sup> Pickford EIC, paragraph 62.

<sup>445</sup> NZTA opening submissions, Annexure B, paragraph 61.

<sup>446</sup> Genter EIC, paragraph 14.

<sup>447</sup> Nicholson rebuttal evidence, paragraph 65.

*“...between the economics experts is as to “the relevance and weight to be afforded to the BCR under RMA decision making.”*

- [1135] Based on the breadth of evidence and submissions we have heard, we are of the view that the NZTA EEM tool is one part, and a valuable part of the assessments that are to be made in relation to *“economic well-being”* and *“efficiency”*. We understand the EEM BCR tool has been developed for a quite separate LTMA project evaluation and ranking purpose. Mr Copeland describes the BCR analysis that was undertaken as the *“business case”* part of the assessment for NZTA. He states:<sup>449</sup>

*“I would caution that the NZTA’s quantified assessment of the Project’s efficiency only in part addresses “... the efficient use and development of natural and physical resources” as required under the RMA...”*

- [1136] We accept the evidence that NZTA has properly excluded the WLR from the do-minimum case in terms of the definitions relevant to and for the purposes of its EEM assessments.

- [1137] It is also clear to us that it would not be possible, or appropriate, to specifically quantify each and every effect of the Project, and nor should there be any attempt to do so.<sup>450</sup> While it may be helpful for some attempt at quantification to be attached to, for example, social, economic or cultural matters, in each case we consider it could only provide a limited, and somewhat constrained view of the full range of matters to be considered. The BCR analysis in this case helpfully describes, in part, the national viewpoint on economic and efficiency merits of the Project by way of comparison with alternate options. This gives some context to the stand alone BCR for the project, in particular that, on this point, the Project proposed is significantly better than the alternatives considered. To the extent that it is relevant, we consider that the BCR for the Project ought to be considered on the basis that it is part of the wider Wellington Northern Corridor RoNS upgrade, of which it is an integral part.

- [1138] The Project objectives give some helpful direction to consideration of the viewpoint to be taken in considering both *“economic well-being”* and *“efficiency”*. They refer to the enhancement of *“inter-regional and national economic growth and productivity”*, *“efficiency and journey time reliability from, to and through Kāpiti District...”* and also to balancing *“competing functional performance requirements of inter-regional and local traffic movements...”* We consider the view point to be taken should accord with the stated Project objectives, and also with the extent that the project impacts on people and communities. In this instance, it is clear that the Project is one piece of a nationally significant infrastructure work. It also involves linking inter-regional communities and providing for local access.

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<sup>448</sup> NZTA opening submissions, Annexure B, paragraph 50.

<sup>449</sup> Copeland EIC, paragraph 29.

<sup>450</sup> *Final report and decision of the Board of Inquiry into the Turitea Wind Farm proposal*, September 2001, paragraphs 82 – 84.

We also acknowledge, however, that there are evident tensions between these competing perspectives, and this was made very clear to us by the divergent submissions made by the more locally representative persons/organisations (such as for example MacKay<sup>451</sup> and Roos<sup>452</sup> and others) when compared with those of groups (such as Kāpiti Chamber of Commerce and Road Transport Forum NZ) which have a wider purpose.

[1139] We accept the evidence of Messer's Copeland and Nicholson. We note that for NZTA's own evaluative and ranking purposes, the Project has a high strategic fit and high effectiveness. It is a matter for NZTA to establish whether funding is to be made available for the work as part of its statutory duty of managing the state highway transport system. In that context factors relating to inadequacies of the existing route, route security and the component part the project is in the Wellington Northern Corridor RoNS package appear to us to be of substantial weight in any such consideration.

## 10.19 URBAN DESIGN

[1140] The evidence and submissions in this regard came from the following submitters and expert witnesses:

NZTA:	Mr Marc Bailey
	Mr Kevin Brewer
KCDC:	Mr Ian Munro
Save Kāpiti Inc:	Mr Graeme McIndoe
	Mr James Lunday
Highway Occupants Group:	Ms Sarah Lindsay
WOO:	Ms Sue Smith

[1141] We note that NZTA has gone to some lengths in its design to address or mitigate many urban design concerns. As examples but not exhaustively:<sup>453</sup>

- i) there was avoidance of dunes and the cutting through the side of dunes where possible;
- ii) the carriageway and structures were lowered where possible to lessen visual effects;
- iii) the lighting design was to minimise light spill into residential and other light sensitive areas;
- iv) there was significant improvement in north/south connectivity and the continued provision and improvement to east/west connectivity throughout the district for all modes of transport; and

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<sup>451</sup> MacKay Submission #404, paragraph 13.

<sup>452</sup> Roos Submission #586, bullet points 3, 4, and 6.

<sup>453</sup> See TR5 (the UDLF).

v) there was provision of a walkway and cycleway with numerous local connections.

[1142] The technical reports were TR5 and TR6.<sup>454</sup> As with other areas of expertise, the conferencing usefully identified points of agreement and disagreement and by the end of the hearing the experts from NZTA and the two councils had reached agreement on all matters, including the conditions.

[1143] There was agreement that an overall urban design concept be developed relating to various individual contexts within the designation, reflecting the different character, such as rural, urban, dunes, wetlands and peatland. It was accepted that this was reflected in the design presented. It was also accepted that various principles should be applied with regard to mitigation concerning obvious features such as height; cross connections; application of crime prevention through environmental design; the design of interchanges; the future use of residual land and the future legal status of the existing state highway alignment; that the KCDC would have a certification role; and the cycle, walking and bridleway network would be constructed to generous standards, requiring detailed design that should address matters including the connection of such network through Queen Elizabeth Park.

[1144] However, Messrs Lunday and McIndoe considered height and bulk could not be mitigated. Ms Smith thought the same but only in relation to the area she was concerned about the Te Moana Road Interchange, and the area between that and the Waikanae River Crossing.

[1145] As a result of the alignment, there is an avoidance of physical effects on existing urban centres at Paraparaumu and Waikanae. Messrs Baily, Brewer and Munro and Ms Smith all supported the expressway going ahead, although Ms Smith, on behalf of WOO, contended that there was a need for a different design for the Te Moana Road interchange and the portion of road south of that interchange. Messrs Lunday and McIndoe and Ms Lindsay did not support the project. Notwithstanding that, the experts agreed on various principles of mitigation if the designation was approved.<sup>455</sup>

*“67.5 Agree on various principles for mitigation for the Project’s physical design (but without inference of agreement as to the Project). Those agreements include that:*

- (a) The route “passes through a variety of areas and each requires a specific design response from the project”.*
- (b) It is essential to have early and significant landscape, architectural and urban design input to the developed detail design process over and above any site-specific urban design master plans.*
- (c) There should be an overall urban design concept developed relating to individual contexts such as rural,*

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<sup>454</sup> TR5: UDLF; TR6: Assessment of Urban Planning and Design Affects.

<sup>455</sup> NZTA opening submissions, page 16.

*urban, dunes, wetlands and peatland that is reflected in the developed design.*

- (d) Various principles should be applied in regard to mitigation, concerning height, cross-connections, application of CPTED, design of interchanges, future use of residual land, and the future legal status of the existing SH1 alignment (with points of disagreement noted).*
- (e) KCDC should have a certification role.*
- (f) The Cycle, Walking and Bridleway (CWB) network should be constructed to generous standards, and that its detailed design should address certain matters, including connection through to Queen Elizabeth Park.”*

[1146] We are satisfied that the urban design assessment has placed sufficient information before us to enable us to draw the necessary conclusions as to the design effects. We are satisfied those effects can be adequately mitigated by the conditions set out. We simply do not accept Mr Lunday's claim that the assessment was fundamentally flawed in methodology and rigour. Such a comment could perhaps be addressed to Mr Lunday when he failed to understand Mr Pekol's evidence and seemed to refuse to accept his admitted lack of expertise in traffic matters. His attempts to establish some form of expertise because he had worked with lots of traffic and transportation experts were risible. He should not have strayed into areas outside his expertise, as he did.

[1147] The case for NZTA is that the current siting in the designation is the right location for all purposes, including urban design. This is supported by NZTA's witnesses and also supported by Mr Munro, the urban design expert for KCDC.

[1148] The evidence of NZTA points to the fact that a transport route for most of the route for which approval is now sought has been designated for more than 50 years. Mr Baily, in his evidence in rebuttal, explains that as a consequence the urban form has developed over time with a lack of connectivity across the designation and because of the inability for land uses to have frontages to the corridor. Thus, the evidence states that the environment is already more capable of receiving the expressway within the wide existing corridor which is wide enough to allow room for integration, mitigation and amenity enhancements. It was accepted by NZTA witnesses that a road such as the WLR would allow more opportunity for connectivity than an expressway would, given the completely different road function. But it is the NZTA's position that the comparison is pointless, because it is acknowledged, by most of the relevant witnesses, that the WLR alone could not resolve the community's problems arising from the operation, design and inadequacies of the existing SH. It is the view of the supporting witnesses that an upgrade of the existing SH1 to achieve the necessary transport result would more than cancel out any relative connectivity differences.

- [1149] It is clear to us that the existing east-west movement connectivity will be protected within the designation. There is also built into the design the ability for a further new connection at Ihakara Street. As well, there is pedestrian connectivity provided at Makarini Street and Te Roto Drive and other additional connections can be made in the future to integrate with the development of any new urban areas. The witnesses say that within the project area north-south connectivity is enhanced by the full interchanges at critical locations. Those witnesses also say that there is considerable enhancement of the walking, cycling and recreational horse-riding facilities.
- [1150] We accept that north-south connectivity is improved by the provision of full interchanges at critical locations, which we also accept will enhance east-west connectivity. The project provides for enhancement to walking and cycling amenities and horse-riding. There is an opportunity for town centre urban design enhancement. The project will improve access to those two centres by the uplifting of SH1 status from the adjacent road, and will allow the enhancement of the Paraparaumu and Waikanae town centres. This is in stark contrast with the Lunday preference which would effectively, in urban design terms, undermine the functioning of the Paraparaumu town centre. The route creates greater opportunity to enhance the integration of the town centres with their public transport arms, which would be significantly impaired by the Lunday proposal
- [1151] Further, the witnesses state that the project will allow for the enhancement of the quality of the town centres of Paraparaumu and Waikanae, including the proposed Paraparaumu town centre expansion. Access to these areas will be improved by enabling the uplifting of the SH1 status from the adjacent road. Mr Brewer, in his evidence, said the chosen route will create greater opportunity to enhance the integration of the town centres with public transport hubs.
- [1152] The expressway is closer to Kāpiti's largest industrial hub, and the witnesses consider that this will reduce freight trips on local roads, which is noted in the supporting submissions on behalf of the KCDC and the KCAH. For businesses in those urban centres, the witnesses consider that there will be advantages of enhanced frontage and ease of customer access.
- [1153] Mr Munro, for KCDC, in his evidence stated:
- “The location and provision of on/off vehicle access points proposed will have the least detrimental impact on established settlements and their planned expansion (growth).”*
- [1154] To the contrary, the evidence from Messrs Lunday and McIndoe on behalf of Save Kāpiti Inc said an improved state highway on the existing route will solve transportation problems, and will not create significant difficulties. It appears that they have not taken into account relatively basic traffic design requirements and they do not appear to be well informed of what is required in engineering terms. One of the major requirements would be the need to provide alternative access for all the very many properties that currently have direct access onto SH1. This would create a need for extensive parallel service roads to be constructed. In the town centres of Waikanae and, particularly, Paraparaumu it would cause the loss of a significant

number of commercial properties, and the properties that would remain would lose the current advantage of frontage. It would also require overbridges and other significant structures and would disconnect Paraparaumu, in particular, from rail services. It would badly impact on the town centres. We are satisfied that Messrs Lunday and McIndoe have accordingly undersized the adverse urban design impacts of their option.

- [1155] There are in fact additional urban design impacts that are set out in the evidence of Messrs Brewer and Bailey in rebuttal. There would be very significant visual and other amenity detriments for both town and residential areas because of the need to construct grade separated interchange and ramps in close proximity to, or in fact over, existing buildings and facilities which would include the railway station at Paraparaumu. There would be adverse impacts on public transport because of the reduced rail corridor and the accessibility to the station. We accept the evidence and submission of NZTA witnesses and counsel that the SH1 option would lock in and aggravate existing adverse features of having SH1 intervene between the town centres of Paraparaumu and Waikanae and their public transport hubs.
- [1156] Mr Lunday criticised the methodology used as fundamentally flawed and lacking rigour. However, having considered the rebuttal evidence of Mr Baily and the peer review of Mr Brewer, we do not agree (We note Mr Brewer was not cross examined). The Urban Design Effects Assessment enables us to draw conclusions as to those effects. We are satisfied that the mitigation responses are appropriate and adequate. Indeed, some of the amendments made to conditions during the course of the hearing answered all issues, including Mr Munro's concern about a lack of quantitative minimum standards for pedestrian, cycle and landscape proposals.
- [1157] For Save Kāpiti Inc, Mr McIndoe was critical of the project perpetuating a condition of poor east connectivity, with ongoing consequence. His view was that significantly greater neighbourhood connectivity should be provided. His frame of reference was to optimise benefits where the existing east-west and north-south connections were not good enough.
- [1158] We accept Mr Baily's rebuttal that this argument is unrealistic. It simply applies a benchmark deriving from a number of connections per linear metre, and fails to put the matter in the proper context. It does not take into account the reality that this route, for large portions of the designation, is not urbanised and remains rural or semi-rural. The criticism also fails to give proper account to the historic reality that the east-west connectivity has developed over time, influenced by the existing SH1, the historic 50-year designation and the urban form that has been a consequence of this. It also fails to take into account that a higher level of connectivity could lead to disruptions to existing properties and streets if Mr Baily's connectivity theories were implemented. As Mr Hassan submitted, the RMA test is not to optimise benefits in this way. Given the existing local road forms, we do not consider it realistic in any event. Many are culs-de-sac terminating adjacent to the existing designation, and few offer ready points of potential connection. Mr Baily's views on connectivity enhancement are practicable and are materially consistent with those of Mr Munro, the witness for KDCDC. In any event, we are satisfied the connectivity created by the interchange,

improvements of intersections, the installation of traffic lights and other matters would be a significant benefit and advantage.

### **The Southern Area**

- [1159] One of the few areas where the designation departs from the historic designation is the southern connection. This has had an impact on a number of properties, which is acknowledged by all of the witnesses. But the evidence of Mr Baily and Mr Schofield shows that this was only selected following careful considerations of alternatives. The choice will allow a large area of vacant land west of Leinster Avenue, as well as what has been called the '*Leinster Avenue enclave*', to join with Raumati South. We accept this is more appropriate in urban design terms than staying with the historic designated alignment.
- [1160] The witnesses fairly accepted that this choice of location impacts for residents who will not have anticipated such a choice. But we are satisfied, given the evidence and the recommendations in Mr Schofield's designation conditions, that this difficulty is adequately mitigated. There will, of course, need to be a final level of integration and, indeed, the landscape and other management plans will need to go further and, for some properties, include site-specific plans. The final conditions allow for this.

### **The WOO Proposal**

- [1161] WOO propose an alternative interchange design at Te Moana Road.<sup>456</sup> Their concern is that the plan for the project provides for a bridge over Te Moana Road. Waikanae on One consider that this will have a dominating visual impact in the area and will have an impact upon connectivity. A landscape architect, Ms Sue Smith, gave evidence in this regard for WOO. What was put forward was what could best be described as a concept sketch of an alternative for the area between the Waikanae River and the Waimea Stream. The concept was supported by a model.
- [1162] In urban design terms, the NZTA witness acknowledged Ms Smith's concept would offer potential benefits for walking and cycling. But it was their opinion that the proposed design remained a better option in urban design terms. We accept it would be better to keep Te Moana Road at grade for legibility reasons and to improve connectivity. The option was also better for access to the Ngarara growth area.
- [1163] There were a number of other design difficulties with the concept advanced by WOO. First, there would be additional costs of nearly \$47m (we accept this figure notwithstanding WOO's criticism and the need for Mr Nancekivell to correct figures in his original evidence).<sup>457</sup> Secondly, there would be a convoluted route for Te Moana Road, including a roundabout that was accepted by WOO to add 14 seconds to each journey along Te Moana Road. That road has over 10,000 vehicle movements a day.

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<sup>456</sup> See section 13.2.3.

<sup>457</sup> Nancekivell Supplementary statement of evidence, submitted 20 November 2012.

- [1164] While noting the concerns of WOO, they have not demonstrated that it is a better option than what is in the plan. We accept the evidence to the contrary. Their stated concerns regarding groundwater flow are addressed at section 10.3.
- [1165] It is, however, accepted by NZTA, that the Te Moana Road interchange warrants application of the site-specific design process that will allow more detailed consideration of design.<sup>458</sup>

### General

- [1166] Mr Munro, the witness for KCDC, supports NZTA's position of partial interchanges at the southern connection and at the Peka Peka end of the expressway. Having considered their evidence, we accept it and agree.<sup>459</sup>

### The SH1 Option

- [1167] All the witnesses in this area agreed the need for a second north-south connection and improved state highway. They also agreed that a road of expressway standard would have adverse urban design effects, and it is the expressway standard that causes those effects. We take from that that those effects would be evident, as pointed out earlier, on the existing SH1 route or the designation route.
- [1168] The problem facing the evidence of Messrs Lunday and McIndoe on behalf of Save Kāpiti Inc is that it appears they have failed to rely on the traffic and transportation opinions. Mr Lunday seems to have just ignored the wide adverse effects of an SH1 upgrade to an expressway standard which all traffic experts, except Ms Genter, agree was necessary. He ignored the properties involved. He even suggested he could solve the traffic problems without an expressway while reluctantly accepting he was not a traffic expert.
- [1169] Mr Lunday favoured his concept of a WLR with some vague idea of improvements to SH1 shown in the illustrations he produced. It seems that he was unaware that the Save Kāpiti Inc traffic and transportation witness, Mr Pekol, considered that both an expressway and a local road were necessary to fix the problems in this area<sup>460</sup>. We have dealt with that evidence in section 10.3 of the report. But suffice to say we are satisfied that in using the term '*expressway*', Mr Pekol was referring to the same type of road as the other traffic and transportation experts. He was an expert on traffic and transportation who we are entitled to presume had considered and read all the other evidence in this area. So it means that the evidence of Mr Lunday is in fact contradictory to that of Save Kāpiti Inc's own expert witness. Even although Mr Lunday conceded he lacked proficiency in traffic and transportation planning, he strayed into the areas well beyond his expertise when giving his powerpoint presentation explaining why he opposed any expressway through Kāpiti. It was certainly beyond his

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<sup>458</sup> Hearing transcript, page 607.

<sup>459</sup> See also Section 10.3

<sup>460</sup> Hearing transcript, page 403.

expertise to suggest that the problem could simply be solved by changing around some traffic lights.<sup>461</sup>

- [1170] We are also satisfied that Messrs Lunday and McIndoe, in their criticisms regarding the severance and connectivity effects of the proposal, failed to adequately take into account the historical reality created by the designation. That reality is that the urban form has developed away from the designation. In a sense, one could say houses have turned their backs on the designation. It has also had an impact on the level of connectivity, because many roads are culs-de-sac ending on the designation, and have not been designed to simply cross any local road that happened to be built on that. The greatest contribution to severance and lack of connectivity has occurred because of the historical fact of the designation, and knowledge of it. It is also apparent that the objectives of the project have not been adequately considered by Messrs Lunday or McIndoe. There was a failure to truly consider the urban design effects of the structures mentioned by Mr Lunday, that would remove some commercial property and effectively undermine the Paraparaumu town centre before one even started considering the deleterious effect of having to provide parallel roads for access.
- [1171] We accept the evidence of NZTA and KCDC witnesses. We are satisfied that any adverse effects are adequately mitigated by the conditions we have imposed.

## 10.20 LANDSCAPE AND VISUAL EFFECTS (AND PARKS)

- [1172] There are a number of respects where these effects are relevant to our inquiry. They can be broadly grouped into landscape and natural character matters referred to in s6(a) and (b) of the RMA, and amenity value and quality of the environment matters in s7(c) and (f).
- [1173] Evidence and submissions were heard from the following witnesses and expert witnesses:
- NZTA: Mr Boyden Evans
- GWRC: Ms Sharon Lee
- KCDC: Ms Jane Williams
- Mr Brad Coombs (coastal environment)
- WOO: Ms Sue Smith
- [1174] Once again, progress was made in reaching certain agreements as a result of the expert conferencing.
- [1175] First, it was agreed that the temporary designation on Queen Elizabeth Park should be minimised. In this regard, consideration would be given to alternative locations for the lay-down area or exploring a temporary alternative location for the Kāpiti Pony Club. Second, it was agreed that a

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<sup>461</sup> Notes of evidence page 1464, line 37 and following.

proposed condition may address concerns of how land in Queen Elizabeth Park adjacent to the expressway will be managed.

- [1176] There was agreement that the Waikanae River to Waimeha Stream section is an area of high landscape and visual sensitivity. This is the area where a number of other fundamental issues arise. Some of the witnesses disagreed as to the extent to which the details of the design can provide opportunity for this section. The witnesses also supported the proposed SSUDP for the Te Moana interchange, although Ms Smith noted concerns as to the specific design. There was disagreement whether or not the project was within the coastal environment, but there was agreement that:<sup>462</sup>

*“there are no area of high or outstanding natural character identified in the coastal report that will be affected in the footprint of the designation.”*

- [1177] Mr Evans’ and Ms J Williams’ conferencing statement focused on conditions, which left two outstanding issues between them relating to the practical completion of earthworks and the appropriate extent of landscape maintenance periods. Practical completion of earthworks is now been resolved and covered in the conditions. We are satisfied that the appropriate landscape maintenance period in condition DC.53C(c) is three years.
- [1178] We agree with the key questions identified by Mr Hassan in relation to this topic area.<sup>463</sup> First, given that unavoidably the expressway will have effects on the outstanding natural landscape of the Waikanae River, should the project be rejected? Secondly, if not, do the proposed conditions offer sufficient mitigation of the effects on that landscape? Thirdly, given the WOO preferred designs would reduce some landscape and visual effects in that locality, should the design be modified, notwithstanding the range of engineering costs and other very significant issues? Fourthly, are the conditions proposed for visual amenity effects in conjunction with proposed urban design conditions, adequate?
- [1179] We are satisfied that the concerns of many submitters relating to the area surrounding the Waikanae River bridge have been adequately mitigated in DC.59A.
- [1180] All experts accepted that the project would have visual impact. In doing so, they recognised the concerns of many of the submitters. While we accept that we are satisfied on the evidence that question 1 in [1178] should be answered no. Question 3 should also be answered no. Question 2 and 4 were answered yes. However, we accept that those impacts can be effectively and adequately mitigated, where necessary, by SSUDP.
- [1181] We note and accept the adverse effects but we are satisfied that they are adequately mitigated.

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<sup>462</sup> Expert Conferencing Joint Witness Statement – Landscape and Visual Issues, 1 November 2012.

<sup>463</sup> NZTA opening submissions, pages 27 & 28.

## 10.21 CLIMATE CHANGE

[1182] During the hearing we heard evidence from Professor Martin Manning on the potential effects of climate change on the proposed expressway. Professor Manning is one of New Zealand's leading experts on this subject.

[1183] Given that the potential effects of climate change are recognised as being one of the world's most pressing environmental concerns we summarise here what Professor Manning told us, his responses to questions under cross examination by counsel for NZTA and the responses to Professor Manning's evidence from NZTA's stormwater expert Mr Levy.

[1184] With references to the hearing transcript, we provide here some extracts from the presentation Professor Manning gave at the hearing on the potential effects of climate change and in particular from sea level rise and increases in rain intensity:

*“And one should think about the responses that may become necessary such as a managed retreat protecting natural defences. I think the key point is, does this apply to the expressway and to what extent does it apply to the expressway? I'm not saying this means the expressway is wrong at all. What I'm saying is I think one does need to consider it in a risk management context.” (Page 1367)*

*“Another thing from the coastal policy statement is it talks about the timeframes and I think this is particularly important for an issue of major infrastructure in the road in and out of the capital city. It is talking about hazard risks over at least 100 years to be assessed having regard to a series of things and one of them is cause of coastal change including sea level rise. Cumulative effects of sea level rise, storm surge and wave height. And so I think the key issue for considering the expressway is to think about how much the sea level will rise over at least 100 years and how does storm surge get affected by the positioning and design of the expressway. Again I am not saying that this means the expressway is totally wrong, I'm saying it's something that needs to be taken into account fairly carefully.” (Page 1368)*

*“And so coastal infrastructure investment may not be permanent but that doesn't mean to say it shouldn't go ahead anyway. You know, if something can last long enough to be really valuable then it should just go ahead but you need to understand that you have got to be a bit more dynamic in the planning process.” (Page 1369)*

*“The point is really now the uncertainty of not how much sea level will rise but rather when we'll get to a certain point and I think that this, I would say, does not exclude the expressway going ahead but it does mean that a certain amount of precaution needs to be taken in planning for the effects.” (Page 1369)*

*“I think a lot of the analysis that’s been done now for the expressway has gone into some of this stuff in detail and I would like to congratulate Graham Levy, for example, on taking account of a higher increase in extreme rainfall events than was given by the Ministry for the Environment guidelines copied by KCDC. But, at the same time, most of the analysis has assumed a sea level rise of only 0.8 metres and I don’t think that’s risk averse.” (Page 1371)*

*“I think the issue here really is that there’s been a lot of consideration by Ann Williams and others on looking at the fluctuations in the groundwater level of up to half a metre that would be caused by the expressway, particularly on this low-lying land region between the Waikanae River and the Waimeha Stream. But I think that not enough consideration frankly has been given to the fact that right over that region the whole water table will rise by let’s say a metre to give it a nice simple round number. That has not really been considered and the implications that it may have and so as I’ve said I think in some ways Graham Levy’s analysis is precautionary, but I think that it hasn’t included yet everything. The fact that that rising water table will exacerbate the flood risk and so the question becomes whether the way in which the water management around the expressway is being planned so far is adequate and I would say unfortunately I have not had nearly enough time to do the type of analysis that you know would be adequate for this because it’s not my job, but I would say having walked around this area a lot myself that really there needs to be a more diverse way of dealing with extreme flooding events and there are options for putting overflow water in the upper area on the seaward side of the expressway as well and I think that should be included in the planning framework.” (Page 1372)*

*“Groundwater level will rise by the same amount across this thing called the low elevation coastal zone which is generally accepted internationally as being land less than 10 metres above current sea level. And so the MacKays to Peka Peka expressway hasn’t considered that and so I think more needs to be done and I want to reiterate that I don’t think the expressway is wrong, I think it needs to be better designed. In fact a little sort of side-line, I think the western link road that was proposed, a smaller version of this, would be far less sustainable than the expressway. So I think the expressway is serious but it needs to be better considered.” (Page 1373)*

- [1185] In response to a question from Ms Viskovich, counsel for NZTA, Professor Manning agreed that the NZTA project team had applied the relevant MfE and KCDC guidelines on climate change in developing the project and that these guidelines are the only national guidance for local authorities which give a quantitative value for the amount of sea level rise. Professor Manning also agreed that the MfE document is based on a sea level rise of 0.5 metres out to the 2090s compared with the more conservative 0.8 metres

used by NZTA's project team. He also acknowledged that condition SW.2(b) includes a requirement for a sensitivity evaluation to be undertaken against high range climate change scenarios to 2115.<sup>464</sup>

- [1186] In answer to a question from us seeking amplification of the comment he made about the susceptibility of the WLR to the effects of climate change, Professor Manning pointed that the WLR would have been a smaller road on even lower lying land and this would have been even more debatable. He went on to say that he was not opposed to the expressway and that its advantage was that if the design was integrated with better flood management for the future and better ways of storing the water from floods and actually improving the water flow in the region, it may be a beneficial thing to do.<sup>465</sup>
- [1187] Having summarised Professor Manning's reservations about NZTA's design of the expressway to accommodate the effects of climate change, we respond with the approach adopted by the NZTA project team.
- [1188] TR 22 notes that the potential effects of climate change on the proposed expressway have been taken into account in two ways, changes in rainfall intensity and sea level rise. The climate change assessment has been based on the MfE guidelines "*Climate Change Effects and Impacts Assessment. A Guidance Manual for Local Government in New Zealand. 2<sup>nd</sup> Edition, Ministry for the Environment, May 2008*".
- [1189] TR22 also notes that these guidelines have been adopted by KCDC and GWRC.
- [1190] In his rebuttal evidence, Mr Levy points out that the closest distance from the expressway to the coast is 1.1 kilometres both south of the Wharemakau Stream and at the Waimeha Stream and that at the Waikanae River the distance is closer to 2 kilometres. He notes also that the lowest level of the expressway is at 6 metres (RL) and that there are urban areas between the expressway and the coast which are much more vulnerable to the effects of sea level rise and coastal migration than the expressway.<sup>466</sup>
- [1191] As acknowledged positively by Professor Manning, the stormwater designs for the expressway have been based on increases in rainfall of 16% to provide for the effects of climate change, with a 50% increase also considered.<sup>467</sup>
- [1192] For sea level rise, the MfE/KCDC guidance of 0.8 metres has been adopted. Mr Levy notes that Professor Manning quotes upper bounds of between 1.2 and 1.9 metres although this is not qualified in the context of a time horizon or probability of occurrence.<sup>468</sup> He notes also that in other parts of his evidence Professor Manning indicates that there is a very low probability of sea level rise in the Wellington Region reaching 1.3 metres by 2115

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<sup>464</sup> Hearing transcript, page 1376.

<sup>465</sup> Hearing transcript, page 1382.

<sup>466</sup> Levy Rebuttal evidence, paragraph 87.

<sup>467</sup> Levy Rebuttal evidence, paragraph 98.

<sup>468</sup> Levy Rebuttal evidence, paragraph 90.

although he has suggested a minimum rise of 1.5 metres should be considered for 2115.

- [1193] Mr Levy's flood river modelling shows that flood levels in the vicinity of the expressway are relatively insensitive to sea level rise although these have not been tested with the more extreme events suggested by Professor Manning. For the Wharemakau and Waimeha Rivers, modelled flood levels (including 0.8 metres for sea level rise) are 4.75 metres (RL) and 3.15 metres (RL) respectively and for the Waikanae River 4.9 metres (RL) (compared with the lowest level of the expressway of 6 metres (RL)).<sup>469</sup>
- [1194] Mr Levy notes that the low probability event of a sea level rise of 1.5 metres would be 0.7 metres higher than he has assumed in his designs with the effects being much less at the expressway. A 1.5 metre sea level rise would reduce the available flood flow freeboard towards the end of the design life of the bridges. With the expressway designed to have a minimum 0.5 metre freeboard above the design flood level, this freeboard would also reduce slightly towards the end of the project's economic life if the sea level did rise by Professor Manning's 1.5 metres.
- [1195] Ms A Williams has confirmed that the focus of NZTA's groundwater modelling was to assess the changes in the groundwater regime caused by the construction of the proposed expressway and as far as possible to avoid changes to that existing regime.<sup>470</sup> To recap from the section of our report on groundwater, Ms A Williams's modelling indicates that the expressway embankment and the associated peat treatment will result in long term changes of between 0.3 metres and 0.6 metres in ground water levels and flow directions immediately adjacent to the expressway with no discernible changes at distances of 50 metres to 70 metres beyond the expressway.
- [1196] Further, where the construction of the stormwater ponds results in a lowering of the groundwater levels at Flood Storage Areas 2 and 3A and Wetland 3, Ms A Williams's modelling shows that this will be no more than 0.5 metres immediately adjacent to the ponds with measurable drawdowns of 0.1 metres extending for some 200 metres to 300 metres from the ponds depending on the variations in ground conditions. Locally there is predicted to be a small effect on flow direction gradients but overall these will not be discernible.
- [1197] Based on the evidence of Ms A Williams, it is NZTA's submission that even if groundwater levels should rise at the expressway from sea level rises to the extent suggested by Professor Manning, the expressway would not exacerbate any flood risk.<sup>471</sup>

### Discussion and Findings

- [1198] As we said in our introduction to this section, the potential effects of climate change are recognised as being one of the world's most pressing

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<sup>469</sup> Levy Rebuttal evidence, paragraph 93.

<sup>470</sup> A Williams EIC, paragraph 150.

<sup>471</sup> NZTA closing submissions, paragraph 327.

environmental concerns and there is no disagreement that these effects must be accounted for if the expressway is to be built.

- [1199] While Professor Manning has serious reservations about building the expressway, provided his reservations can be mitigated, we have concluded that he would not oppose it. Professor Manning has said:<sup>472</sup>

*“If something can last long enough to be really valuable then it should just go ahead, but you need to understand that you have got to be a bit more dynamic in the planning process.”*

*“The expressway’s advantage over the earlier WLR proposal was that if its design was integrated with better flood management for the future and better ways of storing the water from floods and actually improving the water flow in the region, it may be a beneficial thing to do.”*

- [1200] Starting with rainfall intensity, Mr Levy has told us that the stormwater designs for the expressway have been based on an estimated increase in rainfall of 16% but with a 50% increase also considered in accordance with KCDC’s climate change guidance. We note that Professor Manning has complimented Mr Levy for taking this approach, and has not suggested any higher (or other) figures.
- [1201] Mr Levy has also told us that the available freeboards of the bridges and the expressway, while designed for a 0.8 metre rise in sea level can also accommodate a further rise of 0.7 metres which satisfy Professor Manning’s suggested 1.5 metre rise towards the end of the project’s economic life.
- [1202] We agree with Mr Levy that the proposed expressway can be designed to accommodate the flood levels which would result from the increase in rainfall intensity and rises in sea levels caused by the effects of climate change.
- [1203] We have been told that a key outcome for NZTA’s design of the expressway stormwater has been to achieve hydraulic neutrality within the confines of the expressway designation taking into account the increased run-off from the expressway footprint and the loss of floodplain storage under this footprint. We have also been told that the design approach for the groundwater regime caused by the construction of the proposed expressway has been as far as possible to avoid changes to the existing regime and that this has been achieved.
- [1204] Overall, it is NZTA’s submission that the construction of the project will not exacerbate the existing flood risk, and that this is supported by the evidence. We agree.
- [1205] Overall we agree with the measures taken by NZTA in its planning and design of the proposed expressway to respond to the potential effects of climate change. There is also the protection afforded by condition SW.2(b) which requires NZTA to undertake a sensitivity evaluation against high range climate change scenarios to 2115.

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<sup>472</sup> Hearing transcript, pages 1369 and 1382.

## 11. CONDITIONS

- [1206] We received a number of iterations of proposed conditions incorporating amendments agreed during the conferencing of experts and following from the planners' final conferencing session. A final set of proposed conditions was provided by the NZTA in closing.
- [1207] By agreement, Mr Dunn did not participate in any of the planning conferencing relating to conditions. He was to comment on the latest set of conditions by 14 January 2013, but we have received no information to indicate that he did so.
- [1208] As we have noted earlier in this report Ms Thomson, said KCDC supported the applications in part, but raising concerns. It is apparent, however, that when the planners addressed us on the question of conditions at the conclusion of inquiry, that those concerns had by and large been met.
- [1209] Mr Percy took a similar position to Ms Thomson. Overall, GWRC supported the Project due to its overall benefits to the region's transport network. Again, when he initially gave evidence there remained a number of outstanding concerns, which have been resolved in the same way as those expressed by Ms Thomson. We note that there was still some outstanding issues for both Ms Thomson and Mr Percy, we have resolved these matters in our commentary set out below relating to conditions.
- [1210] Ms Walters gave evidence on behalf of NZHPT. As set out earlier in this report, the effect of that was that NZHPT opposed the portion of the proposed expressway that proceeds through the wāhi tapu area, and supports in part the remainder of the proposed expressway. Her involvement in conferencing relating to conditions was against that background.
- [1211] For completeness, we note that Mr Birkenshaw, who has planning experience in New Zealand, USA, Thailand and the Cook Islands, gave evidence on behalf of Messrs Brent Mackay and Tordis Flath. It has to be said that his evidence could hardly be called independent, as what he was seeking was compensation on behalf of his clients. One would expect a planner to understand that was outside the jurisdiction of a Board of Inquiry. He sought that the NoR not be granted until there was satisfactory evidence of NZTA's financial ability to carry out the work; that it not be confirmed until all property negotiations were finalised on a fair and equal basis; and that the interchange revert to Sub Option S1 or appropriate compensation be paid to his clients, taking into account the long-term potential of that property. It is obvious that this evidence did not advance the issues in any significant way whatsoever. Mr Birkinshaw did not attend witness conferencing and thus had no input into the conditions.
- [1212] It is to be noted that St Heliers Capital effectively withdrew from the inquiry to pursue their concerns direct with NZTA and KCDC. Transpower also took no part in the inquiry as they had reached separate agreement with the relevant parties.
- [1213] As we have noted earlier in this report, there is a high level of unanimity between the NZTA, GWRC and KCDC planners as to the conditions.

However, there remained a few in dispute, which we resolve in this section. Conditions not specifically referred to in this section, or elsewhere in the report, meet with our approval to provide adequate mitigation for adverse effects in terms of the requirements of the RMA.

## 11.1 DESIGNATION CONDITIONS: AMENDMENTS AND CHANGES

### Independent Monitoring and Auditing

#### DC.16

[1214] For the reasons given we not consider such a condition necessary.<sup>473</sup>

### Construction noise and vibration management

#### DC.31

[1215] This condition requires that construction noise shall comply with criteria set out in NZS:6803:1999. Measurement and assessment of construction noise is to be undertaken in accordance with NZS:6803:1999.

#### DC.33

[1216] This condition provides that where the specific criteria in condition DC.31 cannot practicably be met, the requiring authority has to prepare an SSCNMP in accordance with the CNVMP. It then goes on to state that the purpose of a SSCNMP is to provide a targeted management and mitigation measure for specific circumstances where noise exceeds the construction noise limits of DC.31 by 5 dBA or more. Effectively, it allows for a 5 dBA margin over and above the levels set in DC.31. We are satisfied that there should be no tolerance above the limitations set out in DC.31, and that portion of the condition is deleted. We have also amended the condition to include a requirement for the Requiring Authority to consult with affected persons in the preparation of the SSCNMPs. These amendments are discussed in more detail in section 10.5.2 of this report.

#### DC.34

[1217] We have also amended this condition to include a requirement for the Requiring Authority to consult with affected persons in the preparations of the SSCVMPs. This amendment is discussed in more detail in section 10.5.3 of this report.

### Operational noise and vibration

#### DC.37A

[1218] Ms Thomson, the planner for KCDC, and Mr Hunt, their noise expert, sought the condition include a reference to a relevant vibration standard criteria. They made specific reference to the Norwegian standard NS8176.E:2005. We agree and the condition has been amended to include the reference to

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<sup>473</sup> See Section 8.2.1.

the Norwegian standard which we understood was acceptable to NZTA in any event.

**DC.37C**

[1219] This condition arises from paragraph 67 of the rebuttal evidence of Ms Wilkening, and her statement in evidence that there was a focus on achieving Category A where this is practicable. Based on the submissions and evidence we received, and our concerns, we have re-worded the provision to require adherence to a best endeavours approach to achieve Category A.

**DC.38(a)(ii)**

[1220] The condition has been amended so that if the result of applying the BPO approach is to change a noise category, then there is a requirement on NZTA to consult with the property owners impacted by that change. The amendment reflects this need to consult.

**DC.49**

[1221] DC.49(b) has been amended to require an alteration to structural mitigation for operational noise if monitoring shows that such refinement is necessary.

**Landscape and vegetation management**

**DC.53C(c)(i)**

[1222] For reasons given earlier we have set the maintenance period at three years for terrestrial planting.<sup>474</sup>

**Urban design**

**DC.59A(j)(viii) and (ix)**

[1223] Additional parties have been added to those to be consulted in the preparation of the SSUDPS.

**DC.59F**

[1224] Amendments have been made to correct the names of the two trusts in (b), and to correct some general editorial matters in this section.

**Transport – Operational**

**DC.64(b)**

[1225] KCDC, in closing, submitted that future east-west road connections should be dealt with in a condition. We are satisfied that the side agreement between NZTA and KCDC is sufficient, and no condition is required to specifically cover this.

**DC.66**

[1226] This condition has been amended to include follow up actions to be undertaken after the Park Avenue post-construction survey.

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<sup>474</sup> See section 10.14.

## 11.2 REGIONAL CONSENT CONDITIONS: AMENDMENTS AND CHANGES

### Consent lapse and enquiry

#### G.6

[1227] We have amended the term of the resource consents required for construction activities to allow a 15 year timeframe before construction must commence, followed by a 10 year construction period.

### Erosion and sediment control

#### G.26A

[1228] Mr Percy, on behalf of GWRC, sought the imposition of a sediment removal standard which was based on the NZTA witness, Mr Ridley's rebuttal evidence. That evidence was to the effect that 95 per cent removal was an appropriate efficiency figure that can be achieved overall throughout the project implementation.

[1229] We consider that what Mr Percy seeks is not appropriate due to the range of other sedimentation management controls required by the conditions, and we have not added the condition sought by Mr Percy.

### Groundwater (level) management

#### G.29(b)

[1230] The condition is to protect existing water extraction bores. This has been amended to make the suite of non-derogation conditions more precise and more consistent with one another.

### Ecological mitigation

#### G.42B

[1231] Mr Percy sought a more specific and refined wording for this condition. We agree, and have amended accordingly, although not following his wording exactly. We have not included the second part of his suggestion, as we are satisfied it is covered by G.12.

#### G.42C

[1232] For reasons given earlier, we have not imposed a condition relating to predator control as sought by KCDC.<sup>475</sup>

### General conditions

#### WS.1A

[1233] Having considered the evidence, we are satisfied that the 3120 metre specification should be deleted.

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<sup>475</sup> See section 10.14

**Stormwater****SW.1**

[1234] KCDC sought secondary treatment for all waterways. The NZTA submitted that this was not supported by the technical evidence. We agree, and accept the NZTA position, so no change to this condition has been made.

**SW.2(f)**

[1235] We agree with Mr Percy that NZTA should be required to have certified by GWRC both modelling and final design of storm water management devices. Accordingly, we have added a condition to that effect.

**Groundwater diversion****GD.6**

[1236] We have refined this wording so there is a consistency with G.29 (b), which we consider better expressed. However, there is the same quantity/quality safeguard against sudden loss.

**11.3 OTHER MATTERS**

- [1237] A number of amendments have been made throughout the conditions to minimise repetition, and to improve clarity to ensure that the conditions are unambiguous and can easily be understood, implemented and monitored. For example the universal obligation to submit the management plans to the Consent Manager at least 15 working days prior to the commencement of construction as set out in condition DC.7 has been removed, on the basis that the specific conditions relating to the preparation of the management plans also require that such plans be submitted to the Manager 15 working days prior to the commencement of construction.
- [1238] In DC.19, DC.26A, DC.52, DC.55A and DC.69, we are satisfied on the evidence that it is appropriate to add to the condition a requirement for an independent peer review. The conditions have been amended accordingly.
- [1239] However, in relation to DC.59A, we are satisfied that no independent peer review is required as there are significant consultative obligations inherent in DC.59A(j).
- [1240] In relation to resource consent G.19(c), we consider it simpler to insert a peer review of MPs rather than where each MP appears in the conditions. This condition has been re-worded accordingly.
- [1241] Earlier in this report we determined that it was appropriate to delete a draft condition at DC.16. For consistency, the portion of DC.39(c) dealing with this has also been deleted.

## 12. NATIONAL AND REGIONAL/DISTRICT POLICY ASSESSMENT

### 12.1 RELEVANT STATUTORY DOCUMENTS

[1242] The applicants, submitters and the s42A authors identified a range of statutory documents relevant to our consideration. The planners' expert witness statement also agreed that all of the relevant statutory and non-statutory documents to be taken account of had been identified in the s42A report and in the evidence of planning witnesses.

[1243] The following are the relevant statutory documents that have been identified:

- i) National Environmental Standards for Air Quality;
- ii) National Environmental Standard for Sources of Human Drinking Water;
- iii) National Environmental Standards for Electricity Transmission Activities;
- iv) National Environmental Standard for Assessing and Managing Contaminants in Soil;
- v) New Zealand Coastal Policy Statement 2010;
- vi) NPS Freshwater Management 2011;
- vii) NPS on Electricity Transmission 2008;
- viii) Wellington RPS (operative and proposed);
- ix) Regional Freshwater Plan for the Wellington Region;
- x) Regional Air Quality Management Plan for the Wellington Region;
- xi) Regional Coastal Plan for the Wellington Region;
- xii) Regional Soil Plan for the Wellington Region;
- xiii) Regional Plan for Discharges to Land for the Wellington Region;
- xiv) Operative Kāpiti Coast District Plan; and
- xv) Proposed Kāpiti Coast District Plan.

[1244] As would be expected, the objectives within the various statutory documents promote multifaceted outcomes, covering a broad spectrum of resource management issues. Some objectives are consistent with many others, whilst others pull in a different direction altogether.

[1245] Mr Schofield gave evidence on behalf of the NZTA. He concluded that the project met RMA requirements, particularly the Part 2 considerations. On balance he considered the overall benefits exceeded long term adverse effects. Mr Dunn, for Save Kāpiti Inc, in his analysis of the RMA provisions, draws on the planning evidence of Mr Schofield in the main, and cites those key findings. However, he came to a different conclusion, the primary differences relating to two matters. The first concerns the NoR and the requirements in s107 (whether the designation was reasonably necessary, and whether there had been adequate consideration of alternatives). Both of these factors we have addressed elsewhere. The second difference is whether the NoR and some of the resource consents are consistent with

Part 2 of the RMA and parts of the underlying national, regional and district policy statements. He also did not consider that the NZTA evidence demonstrated the key interrelated provisions of s7 are met – notably those contained in subsections (b), (c) and (f).

- [1246] It also became apparent to us that Mr Dunn had not read all of the relevant expert evidence and cross-examination.<sup>476</sup> We prefer the evidence of the NZTA, KCDC and GWRC planners to that of Mr Dunn. His specific criticisms relating to the meeting of objectives and alternative routes have been answered elsewhere, as are his conclusions on the effects of the biophysical landscape character and visual amenities. We do not accept his criticism that the project is inconsistent with regional policy statements on regional growth form and function and the KCDP provisions on ecology, landscape, transport, residential zone and rural zone.

## 12.2 NATIONAL ENVIRONMENTAL STANDARDS

- [1247] National Environmental Standards (NES) comprise regulations issued under ss43 and 44 RMA. The following standards are in force as regulations:

- i) NES for Air Quality;
- ii) NES for Sources of Human Drinking Water;
- iii) NES for Telecommunication Facilities;
- iv) NES for Electricity Transmission Activities (NESETA); and
- v) NES for Assessing and Managing Contaminants in Soil.

- [1248] We have considered each of these and determined that the NES for Air Quality, the NES for Human Drinking Water and the NES for Assessing and Managing Contaminants in Soil are relevant to the subject applications. Additionally, the NESETA is relevant where the Project may affect assets owned by Transpower New Zealand Limited (a submitter).

### **National Environmental Standard for Air Quality (NES AQ)**

- [1249] The NES AQ sets the boundaries of Regional air sheds and requirements for management of air quality within those air sheds. The regulations in the NES AQ are intended to protect public health and the environment of New Zealand. A number of amendments to the NES AQ have been made since it came into force in 2004, with the most recent amendments made in 2011. The NES AQ sets out ambient air quality standards for the following five contaminants:

- i) Carbon monoxide;
- ii) Nitrogen dioxide;
- iii) Ozone;
- iv) PM<sub>10</sub>; and
- v) Sulphur dioxide.

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<sup>476</sup> Hearing transcript, page 1592.

- [1250] The threshold concentrations set out for these contaminants are relevant to the assessment of air quality for the project. TR13 (Assessment of Operational Air Quality Effects) of the application provides an assessment of the Project against the relevant thresholds in the NES AQ.
- [1251] Our evaluation of air quality effects is set out in section 10.6 of this report.
- [1252] The project area is located within the Kāpiti Coast airshed which is gazetted under the NES AQ. As outlined in Ms Borger's evidence<sup>477</sup> the airshed has been gazetted under the NES AQ because ambient concentrations of PM<sub>10</sub> within this area may exceed the standard's threshold concentration of 50µg/m<sup>3</sup>.
- [1253] Ms Borger sets out in her evidence that the project will comply with the national air quality standards and that on a regional scale the impacts on the Kapiti airshed from the project will be insignificant.<sup>478</sup> It is noted that in some locations, the project is predicted to slightly increase the exposure of people living, working or spending time in the project area to vehicle related contaminants in comparison to a scenario without the expressway. However it is the evidence of Ms Borger and the air quality assessment that has been undertaken, that with the expressway in place, exposure levels will comply with the NES AQ. We refer to our conclusions on this in section 10.6.

#### **National Environmental Standard for Sources of Human Drinking Water (NES DW)**

- [1254] This Standard is intended to reduce the risk of activities contaminating drinking water sources such as rivers and groundwater. It does this by requiring regional councils to consider the effects of activities on drinking water sources in their decision making. An assessment of the drinking water sources downstream of the Project has been provided in TR21 of the application. Section 6.2 of that report details the current resource consents for water takes for drinking water purposes. KCDC's groundwater take at Waikanae is a registered drinking water supply for more than 501 people, and so is subject to the provisions of regulations 7, 8 and 12 of the NES DW. The only other registered drinking water supply directly downstream of the works is at the El Rancho Christian Camp (for 200 people). The provisions of regulation 12 of the NES DW apply to this supply.
- [1255] The evidence of Mr Wood for KCDC confirmed that subject to appropriate conditions being imposed,<sup>479</sup> and subject to concluding discussions with NZTA about protecting the water and waste supply infrastructure, he was satisfied that the KCDC's concerns about the Project's impact on drinking water sources could be addressed.

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<sup>477</sup> Borger EIC, paragraph 27.

<sup>478</sup> Borger EIC, paragraph 60.

<sup>479</sup> Wood EIC, paragraph 5.19.

- [1256] We have found that with the proposed conditions relating to groundwater and the requirement to prepare the Groundwater Management Plan,<sup>480</sup> existing drinking water supplies will not be adversely affected.

**National Environmental Standard for Electricity Transmission Activities (NESETA)**

- [1257] The NESETA came into force on 14 January 2010, and it sets out a national framework for the operation, maintenance and upgrading of existing transmission lines. The NESETA is relevant in respect of the relocation of Transpower's Bunnythorpe to Haywards A and B 220 kV transmission lines north of Smithfield Road across the expressway alignment. In that regard, we note that regulations 4, 14, 15 and 16 are relevant to the relocation, as identified by KCDC in their Key Issues Report.
- [1258] The evidence of Mr Warburton for Transpower NZ Ltd was that if consents are to be granted, and the designation confirmed, appropriate conditions would be required to adequately manage the actual or potential adverse effects of the proposed works on the electricity network.<sup>481</sup> The Project will be consistent with the policies and regulations of the National Policy Statement for Electricity Transmission and the regulations of the NESETA.
- [1259] During conferencing Mr Warburton advised that agreement had been reached in respect of Transpower's interests and appropriate conditions (DC.53A) had been drafted.<sup>482</sup> We are therefore satisfied that the requirements of the NESETA have been met.

**NES for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS)**

- [1260] The NESCS came into force on 1 January 2012. It sets out regulations to ensure land affected or potentially affected by contaminants in soil is identified and assessed prior to soil disturbance and land development activities taking place to ensure the protection of human health. The NESCS classifies permitted activities and those that require resource consents from the respective territorial authority.
- [1261] We have addressed soil contamination in section 10.13 and concluded that adverse effects from the disturbance of contaminated land during the construction and operation of the Project can be appropriately mitigated through the application of the consent conditions and the mitigation measures proposed.

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<sup>480</sup> See Condition G.29.

<sup>481</sup> Warburton EIC, paragraph 7.4.

<sup>482</sup> Expert Witness Conferencing Statement Planning, 2 November 2012, paragraph 6.

## 12.3 NEW ZEALAND COASTAL POLICY STATEMENT 2010

- [1262] The purpose of the NZCPS is to state policies for achieving the purpose of the RMA in the coastal environment. The issues, objectives and policies of the NZCPS apply to both the coastal marine area (below MHWS) and the wider coastal environment. There is some debate amongst some of the parties as to whether the expressway is within the coastal environment. We note also the proposed KCDP identifies the area subject to the Project as being within the coastal environment. This is, however, subject to the ongoing Schedule 1 process and has not yet been confirmed by decisions.
- [1263] Despite the views of others, Mr Schofield did not consider that the Project was within the coastal environment. We think nothing turns on this. And despite Mr Conway's invitation we do not consider this is something we need to answer definitively. We have reviewed the Project against the NZCPS and are satisfied that it is not inconsistent with the relevant policies. So even if the Project is accepted to be within the coastal environment our assessment would not alter.
- [1264] We note that the expert planning witnesses on behalf of various parties also all agree that the relevant objectives and policies of the NZCPS have been well traversed and that the proposed expressway is generally consistent with the NZCPS.<sup>483</sup> On this basis we have decided that we do not need to determine whether the expressway location is within the coastal environment or not. The key effect of the expressway stems from sediments generated by construction related activities which might ultimately enter the receiving coastal marine area via streams and river sources.
- [1265] Objectives 1, 2, 3 and 6, of the NZCPS as identified by NZTA,<sup>484</sup> GWRC<sup>485</sup> and KCDC,<sup>486</sup> are relevant. They set out the overarching direction to safeguard the life-supporting capacity of the coastal environment, preserve natural character, take into account the principles of the Treaty of Waitangi and provide for the social, economic and cultural wellbeing of people and communities.
- [1266] Policy 4 seeks to achieve the integrated management of natural and physical resources in the coastal environment. Construction activities and stormwater run-off from the operational expressway could potentially affect the estuaries of the Waikanae River, Ngarara Stream and Wharemauku Stream. The effects of erosion and sediment control are discussed in section 10.12 of this Report. Conditions G.26A-G.28 relate to erosion and sediment control and include requirements to prepare and adhere to CESCPS.<sup>487</sup>
- [1267] The effects on the marine ecological values have been adequately considered and addressed and we concurred that NZTA has had proper

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<sup>483</sup> Expert Witness Conferencing Statement Planning, 2 November 2012.

<sup>484</sup> AEE, Section 35.4.1.

<sup>485</sup> GWRC Key Issues Report.

<sup>486</sup> KCDC Key Issues Report.

<sup>487</sup> See Conditions E.2 – E.11.

regard to Policies 21, 22 and 23 of the NZCPS which relate to water quality in the coastal environment, sedimentation and the discharge of contaminants.

- [1268] Objective 6 of the NZCPS recognises the importance of providing for the social, economic and cultural wellbeing of people and communities, and to provide for appropriate development without compromising the values of the coastal environment. In that regard, the project is not inconsistent with these provisions, although we hold the view that this objective relates more specifically to use and development within the coastal environment as that environment is described by Policy 1.
- [1269] GWRC has noted in its Key Issues Report that Policy 11, which was not identified in the AEE, is also a relevant consideration, given the potential for discharges, culverts and diversions to adversely affect indigenous taxa and the migration of freshwater fish to and from the sea. With the extensive set of ecological conditions agreed among the parties, we are satisfied that this satisfies the requirement of Policy 11.
- [1270] Overall, we have concluded that the Project is generally consistent with the relevant matters set out in the NZCPS.

## 12.4 NATIONAL POLICY STATEMENTS

### National Policy Statement for Freshwater Management 2011 (NPS FM)

- [1271] Objectives A1 and B1 of the NPS FM seek to safeguard the life supporting capacity of freshwater ecosystems. Objective C1 seeks to improve the integrated management of freshwater and the use and development of land in whole catchments.
- [1272] It is evident that there will be adverse effects on streams and freshwater ecosystems arising from habitat disturbance or removal, construction of structures, discharges, diversions, reclamations and stream realignment associated with the project. Works in the bed of the Waikanae River, a regionally significant water body with high ecological value, are expected to result in a short-term loss of habitat and biota.<sup>488</sup>
- [1273] However, we have concluded that the proposed mitigation measures, such as stream enhancement works, wetland restoration and the implementation of erosion and sediment control mechanisms will satisfactorily avoid, remedy or mitigate these effects. These mitigation measures are discussed in the previous section of this report. In a number of instances freshwater ecosystem values will be enhanced.
- [1274] Part D of the NPS FM relates to tangata whenua roles and interests. We note that waterways in the project area are of significance to Te Āti Awa Ki Whakarongotai. With respect to the management of freshwater for the project, it is evident that NZTA has consulted and has indicated that it will continue to work with Te Āti Awa Ki Whakarongotai and Takamore Trust.

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<sup>488</sup> Keesing EIC, paragraph 110.

Various conditions require consultation to occur with both Te Āti Awa Ki Whakarongotai and the Takamore Trust, particularly in relation to the preparation and finalisation of ecology based management plans.<sup>489</sup>

[1275] In our view, the project is consistent with the objectives and policies of the NPS FM.

### **National Policy Statement on Electricity Transmission 2008 (NPS ET)**

[1276] The NPS ET is relevant to the Project with respect to potential construction related effects on assets owned by Transpower. The objective of the NPS is:

*“To recognise the national significance of the electricity transmission network by facilitating the operation, maintenance and upgrade of the existing transmission network and the establishment of new transmission resources to meet the needs of present and future generations, while:*

- *Managing the environmental effects of the network; and*
- *Managing the adverse effects of other activities on the network.”*

[1277] The policies that support this objective and that are relevant here seek to:

- i) Recognise the benefits of electricity transmission; and
- ii) Manage the adverse effects of third parties on the electricity transmission network.

[1278] The NPS ET is relevant to the Project in that the expressway may necessitate works to ensure the continued safety and capacity of Transpower’s Bunnythorpe to Haywards A and B 200 kV transmission lines. In this regard, we understand NZTA has been working with Transpower and any work required will be undertaken with the agreement of Transpower. The agreed conditions require that the Network Utilities Management Plan include specific consideration of means to avoid or mitigate effects on Transpower’s high voltage infrastructure.<sup>490</sup>

## **12.5 WELLINGTON REGIONAL POLICY STATEMENT**

[1279] There is both an operative and a proposed regional policy statement (RPS) for the Wellington Region.

[1280] The NZTA has conducted an assessment of the expressway against these two policy documents in the application. In addition the report from GWRC<sup>491</sup> has identified the relevant matters without drawing any particular conclusion as to whether or not the project is consistent with the relevant matters.

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<sup>489</sup> See Condition G.34.

<sup>490</sup> See Condition DC.53A,

<sup>491</sup> GWRC Key Issues Report

[1281] Section 4.5.2 of the AEE states that the proposed RPS is currently subject to appeals to the Environment Court, although none of the points of appeal relate to provisions that are directly relevant to the Project. A number of consent orders have been signed by the Environment Court. However, as there are still a number of issued and draft consent orders, the proposed RPS cannot be treated as fully operative. It appears that it is opinion of the planning witnesses that greater weight should be given to the proposed RPS when considering the Project.<sup>492</sup> We agree and therefore have focussed our assessment on the matters within the proposed RPS.

### **Proposed Regional Policy Statement (RPS)**

[1282] The objectives and policies of the proposed RPS which are relevant are:

- i) Air Quality (section 3.1);
- ii) The coastal environment (section 3.2);
- iii) Energy, infrastructure and waste (section 3.3);
- iv) Freshwater (including public access) (section 3.4);
- v) Historic heritage (section 3.5);
- vi) Indigenous ecosystems (section 3.6);
- vii) Landscape (section 3.7);
- viii) Natural hazards (section 3.8);
- ix) Regional form, design and function (section 3.9);
- x) Resource management with tangata whenua (section 3.10); and
- xi) Soils and minerals (section 3.11).

### **Air Quality**

[1283] Air Quality Objectives 1 and 2 seek to ensure that the discharge of dust to air does not adversely affect amenity values and people's wellbeing and that human health is protected from unacceptable levels of discharged particulate matter. In accordance with our earlier findings, with the measures agreed to mitigate the effects of dust migrating onto adjacent properties (residential in particular) throughout the construction period, the outcomes sought by these objectives will be achieved.

### **Coastal**

[1284] As set out above, some of the activities associated with the expressway construction have the potential to cause effects on the coastal environment (i.e. streams ultimately discharge to the coastal environment). Relevant objectives and policies in the proposed RPS<sup>493</sup> relating to the coastal environment seek to protect habitats and features of the coastal environment that have significant indigenous biodiversity values; to ensure that the quality of coastal water is maintained or enhanced to a level that is suitable for the health and vitality of coastal and marine ecosystems; and seek that the

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<sup>492</sup> Expert Witness Conferencing Statement, Planning, November 2012, paragraph 15.

<sup>493</sup> Objectives 3 – 6.

integrity, functioning and resilience of physical and ecological processes in the coastal environment are protected from the adverse effects of subdivision, use and development.

- [1285] As already noted in our consideration of the NZCPS we have concluded that there has been adequate consideration of the effects on the coastal environment and we are satisfied that the proposed ecological conditions will avoid, remedy or mitigate any adverse effects of the expressway on this environment.

### **Energy, Infrastructure and Waste**

- [1286] Objective 10 states that the social, economic, cultural and environmental benefits of regionally significant infrastructure are recognised and protected. The definition of regionally significant infrastructure includes the “*Strategic Transport Network, as defined in the Wellington Regional Land Transport Strategy 2007 – 2016*”, and includes the State Highway network. Policy 6 seeks to specifically recognise the benefits from such infrastructure.
- [1287] We are satisfied that the NZTA’s proposed conditions will recognise and protect this infrastructure.

### **Freshwater**

- [1288] Relevant objectives and policies seek to ensure that water in the region meets the range and uses and values for which water is required, safeguards the life supporting capacity of water, and minimise effects on water quality and ecology arising from land use and development activities.<sup>494</sup> Policy 42 relates to protecting the aquatic ecological function of water bodies, and notes that particular regard shall be given to (among other matters): maintaining or enhancing the functioning of ecosystems in the water body and riparian margins; minimising the effect of groundwater recharge areas that are connected to surface water bodies; maintaining or enhancing the amenity and recreational values of rivers and lakes including those listed in Table 15 of Appendix 1; and protecting the significant indigenous ecosystems and habitats with significant indigenous biodiversity values of rivers and lakes, including rivers and lakes listed in Table 16 of Appendix 1.
- [1289] We note that the Waikanae River is listed in Table 15 of Appendix 1 of the proposed RPS with the cited recreational uses of fishing, swimming and camping. Table 16 of Appendix 1, Rivers and lakes with significant indigenous ecosystems, lists the Waimeha Stream, Waikanae River, Wharemauku Stream and the Whareroa Stream.
- [1290] NZTA has recognised that adverse effects associated with the Project will need to be appropriately managed, and we note that in relation to the management of freshwater values the proposed RPS favours a cautious approach. Extensive mitigation to manage the effects of the project on freshwater have been identified in the application and the evidence including stream and wetland restoration and enhancement, fish passage

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<sup>494</sup> Objectives 12 – 14 and Policies 13, 14, 39 – 41.

requirements, fish relocation and controls relating to sediment and stormwater discharges. We are satisfied that all of these matters have been satisfactorily addressed in the conditions.<sup>495</sup>

### **Indigenous Ecosystems**

- [1291] Objective 16 seeks that indigenous ecosystems and habitats with significant biodiversity values are maintained and restored to a healthy functioning state. Policies 22 and 23 seek to identify and protect indigenous ecosystems and habitats with significant biodiversity values. A number of the submitters raised concern that the NZTA assessment had not been adequate against Policy 22.
- [1292] Mr Fuller responded to these criticisms. It is Mr Fuller's view that the assessment undertaken by the NZTA's ecological project team has resulted in an outcome that is similar to the result that would have been obtained if Policy 22 criteria had been strictly relied upon.<sup>496</sup> Mr Fuller and others on behalf of the NZTA also set out their concerns with strictly relying upon the criteria set out in Policy 22.<sup>497</sup>
- [1293] Mr Schofield also provided a discussion of Policy 22. He set out that Policy 22 has not yet been made operative. We note that this was also acknowledged at the expert planning witness session on 2 November 2012. Mr Schofield also considers that Policy 22 is directed at the preparation of district and regional plans and is not intended to apply to specific projects and development proposals.<sup>498</sup> Mr Kyle in his s42A report also agreed with this position.<sup>499</sup>
- [1294] Again we refer to section 10.14 that deals with our assessment of effects on terrestrial indigenous ecosystems, particularly on species such as fern birds. There are also specific conditions that address these matters.<sup>500</sup> We accept that the mitigation and management measures agreed by the expert witnesses and encapsulated in conditions will generally ensure consistency with the relevant objectives and policies in this regard.

### **Landscape**

- [1295] The objectives and policies seek to identify and protect outstanding natural landscapes and features from inappropriate subdivision, land use and development.<sup>501</sup> The Waikanae River is identified as an outstanding natural feature and this will be affected by the Project. It is proposed that the river will be crossed by a bridge. In order to mitigate the effects of that structure the application sets out that the bridge will be designed to sit low in the

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<sup>495</sup> See Conditions G.33B – G.43A.

<sup>496</sup> Fuller Rebuttal evidence, paragraph 9.

<sup>497</sup> See for example the evidence of Mr Park and Dr Keesing.

<sup>498</sup> Schofield Rebuttal evidence, paragraphs 127 and 128.

<sup>499</sup> s42A Report Addendum, page 20.

<sup>500</sup> See Condition G.38.

<sup>501</sup> Objective 17, Policy 49.

landscape, and the structure will only be visible for only a small length of the river, and proposed planting will assist in mitigating visual effects.

- [1296] The planners were in agreement that only the area of the Waikanae River was an outstanding natural feature and the planners whose evidence we have accepted all agree that the conditions are appropriate in mitigating any adverse effects on this area.
- [1297] We are satisfied that the effects from the proposed bridge on the landscape in general and on the Waikanae River in particular have been satisfactorily addressed and provided for in the conditions.

### **Natural Hazards**

- [1298] Relevant objectives<sup>502</sup> seek to reduce the risks and consequences from natural hazards, ensure that these risks are not exacerbated by hazard mitigation measures, and ensure that communities are more resilient to natural hazards, including from the impacts of climate change.
- [1299] The application sets out that the expressway will significantly improve the existing level of resilience for the State Highway network by providing a second crossing over the Waikanae River and providing a road that will considerably improve safety and travel reliability.
- [1300] The application also sets out that the expressway will be designed and constructed to ensure natural hazards are not exacerbated in any way. We have considered the risks, consequences and NZTA's proposed conditions for earthquakes at section 10.11, tsunamis at section 10.3, climate change at section 10.21, groundwater at section 10.9, and stormwater at section 10.10, and have concluded that each of these risks has been properly considered by NZTA and that each can be adequately mitigated.

### **Regional Form and Function**

- [1301] Objective 21 sets to achieve a compact, well designed and sustainable regional form that has an integrated, safe and responsive transport network. Relevant policies seek to maintain and enhance the vitality and vibrancy of identified centres including Paraparaumu and Waikanae and seek to integrate land and transport networks.
- [1302] The application includes an urban design and landscape framework. This framework sets out an overall urban design vision and principles for the Project and its wider surrounding context. The application sets out that this incorporates aspirations from KCDC, GWRC and the local community. The impact of the expressway on town centres has also been assessed. The application identifies that there are both positive and negative effects arising from this. Diverting the highway from these areas will result in a reduction in heavy traffic and will improve the overall amenity levels in these centres. A number of submitters, including Save Kāpiti Inc were particularly concerned about urban design effects arising from the expressway. These matters have been evaluated in sections 10.19 and 10.20 and we have concluded

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<sup>502</sup> Objectives 18, 19 and 20.

that adequate measures have been included in the conditions to remedy or mitigate adverse effects (DC.52B – DC.58)

### **Cultural and Heritage**

- [1303] The proposed RPS contains a number of objectives and policies for the recognition of cultural and heritage values.
- [1304] Objective 22 promotes working together with iwi on resource management issues, and Policy 66 seeks to enhance the involvement of iwi in decision making processes. Objective 23 and Policy 47 emphasise the statutory requirement to take into account the principles of the Treaty of Waitangi and Objective 25 seeks to ensure the concept of kaitakitanga is integrated into the regions resource management. Policy 48 seeks to avoid adverse effects on matters of significance to tangata whenua.
- [1305] Objective 15 seeks to identify and protect historic heritage from inappropriate modification, use and development. Policy 45 sets out those matters that should be assessed when considering an application or NoR that may affect a place, site or area with historic heritage value, and sets out a number of matters that are relevant in determining whether an activity is inappropriate (including irreversibly of effects; degree to which the values will be lost, damaged or destroyed; degree to which previous changes have respected and retained the heritage value).
- [1306] Consultation with relevant iwi has been undertaken and the applications have been accompanied by a comprehensive Cultural Impact Assessment. A particularly sensitive area has been identified by iwi, the Takamore Trust and NZHPT as being the Takamore urupa. The Trust's landholding is also important as a wāhi tapu area. The alignment minimises as far as is practicable the impact of construction and the requirement to cross the Trust's lands.
- [1307] We have undertaken a comprehensive evaluation of the potential effects of the Project and cultural and heritage values and we have decided that the mitigation concepts that have been proposed will address the adverse effects on these values. These measures have been encapsulated by the conditions.<sup>503</sup>

### **Soils**

- [1308] Objective 29 seeks to maintain the desirable characteristics of soils that enable them to have an ecosystem function. Supporting policies seek to minimise effects from earthworks and vegetation disturbance on aquatic ecosystem health from silt and sedimentation.<sup>504</sup> Other policies seek to maintain the productive capacity of soils for agricultural purposes.<sup>505</sup>
- [1309] The application and evidence discusses the techniques that would be employed to ensure that adverse effects from construction and earthworks

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<sup>503</sup> See Condition DC.61.

<sup>504</sup> Policies 14 and 40.

<sup>505</sup> Policy 59.

are contained and appropriately managed with respect to land stability and sediment runoff and we accept these. We are satisfied that the conditions will provide for such effects to be appropriately managed. We also agree with NZTA's assessment that the Project will not result in the significant loss of productive land, as grazing is currently limited by the quality and nature of the underlying soil resource.

## 12.6 REGIONAL FRESHWATER PLAN FOR THE WELLINGTON REGION

- [1310] The Regional Freshwater Plan came into effect on 17 December 1999. The relevant objectives and policies emanating from this plan have been identified in the application and GWRC's key issues report.
- [1311] Objectives 4.1.1 to 4.1.3 of that Plan seek to ensure that the relationship of tangata whenua with freshwater is recognised and provided for, that the mauri of water is protected, and that the principles of the Treaty of Waitangi are taken into account. Ensuing policies seek to manage sites of special value,<sup>506</sup> and to encourage applicants to consult with tangata whenua.<sup>507</sup> Objectives 4.1.4- 4.1.6 of the Freshwater Plan relate to the natural values of water ways. These objectives generally seek to deliver outcomes that are consistent with the RMA Part 2 requirements and broadly relate to the identification of key environmental values (i.e. natural character, life supporting capacity and significant indigenous vegetation and habitats). The general framework for the objectives seeks to identify the key environmental values or issues and require that these be protected or preserved from inappropriate development and activities. Policy 4.2.9 seeks to have regard to various values (ecosystems, water quality, flow, topography) within water bodies when considering the protection of their natural character from adverse effects of subdivision, use and development.
- [1312] Policy 4.2.10 seeks to avoid the adverse effects on natural character values of water bodies listed in Appendix 2 of the Freshwater Plan. The Te Harakeke Swamp is included in Part B of Appendix 2 and is to be managed for aquatic ecosystem purposes. The application sets out that this wetland is not within the proposed route alignment, but is the main receiving environment for stormwater and sediment runoff (construction) at the northern end of the expressway. Given this, a high level of treatment in terms of sediment and stormwater runoff is necessary. This is discussed in the application and evidence and we refer to our earlier discussion and findings relating to sediment and stormwater management in sections 10.10 and 10.12.<sup>508</sup>
- [1313] Policy 4.2.13 requires that nationally threatened indigenous aquatic plants and freshwater fauna identified in Appendix 3 be protected by managing water quality, and avoiding adverse effects on habitats that are important to

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<sup>506</sup> Policy 4.2.1.

<sup>507</sup> Policy 4.2.2.

<sup>508</sup> Sections 10.10 and 10.11 of this report.

the life cycle and survival (including spawning areas) of fish and birds. There are rivers and streams listed in this Appendix 3 that will be affected by the expressway (Waikanae River and Muapoko Stream). The policy seeks that these waterbodies are protected largely through appropriate management techniques (i.e. managing water quality to specified standards set out in Policies 5.2.1 to 5.2.7) to minimise adverse effects. This is addressed in our findings under ecology.<sup>509</sup>

- [1314] Policies 4.2.14 and 5.2.3 are also relevant as these related to water bodies with trout habitat as identified in Appendix 4 of the Freshwater Plan. The Waikanae River is listed in Appendix 4.
- [1315] Objectives 4.1.7 and 4.1.8 relate to the amenity and recreational values of waterways and provide for access to them being maintained or enhanced where appropriate. Objectives 4.1.11-4.1.17 are associated with the use and development of freshwater resources. Policy 4.2.23 requires that regard be given to the social, economic and cultural benefits arising from any proposal to use and develop a waterbody. In our view the Project is consistent with these provisions given that the works are necessary to give effect to the expressway which will have national and regional benefits.
- [1316] Chapter Five of the Freshwater Plan includes objectives and policies regarding water quality and discharges to freshwater. In particular, Objectives 5.1.1- 5.1.3 seek to have freshwater quality meet the range of uses and values for which it is required (including tangata whenua values) while safeguarding the life supporting capacity of water and aquatic ecosystems, and being available to meet the reasonably foreseeable needs of future generations. Policy 5.2.4 seeks to manage water quality for contact recreation purposes in listed water bodies (Waikanae River). Policies 5.2.6 to 5.2.9 relate to managing the water quality of all surface water bodies in the Region for aquatic ecosystem purposes and to manage the quality of groundwater. Policies 5.2.14 seeks to encourage the treatment of stormwater discharges to reduce the adverse effects of such discharges on the receiving water body.
- [1317] Chapter 6 sets out the water quantity objectives and policies. These relate to the taking, use, damming, or diversion of freshwater and managing water abstraction and water takes, along with protecting other lawful water users. We are satisfied that the effects have been identified and appropriate management responses provided for in the conditions. The conditions also explicitly require that no derogation of existing water supplies occurs.<sup>510</sup>
- [1318] Chapter Seven includes objectives and policies relating to the use and development within beds of rivers and lakes. Objective 7.1.1 provides for the use of beds of rivers and lakes while ensuring that adverse effects are appropriately avoided, remedied or mitigated. Objective 7.1.4 seeks to ensure that the use of rivers and lake beds are, as far as practicable, consistent with the values of tangata whenua. Policy 7.2.1 seeks to allow structures for transportation uses within river and lake beds, provided that

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<sup>509</sup> Section 10.14

<sup>510</sup> See Condition G.29.

any adverse effects are avoided, remedied or mitigated, and that the adverse effects listed in Policy 7.2.2 are avoided. Policy 7.2.2 sets out the circumstances when certain activities within river and lakes beds might not be allowed, including if there are significant adverse effects on the values held by tangata whenua, natural or amenity values, or water quality. Policy 7.2.15 seeks to ensure that any reclamation or drainage of any water body is only carried out when it is consistent with Policy 4.2.10.

- [1319] There will be temporary adverse effects arising from the disturbance to beds of streams and rivers during the construction of the expressway. There are also areas of streams and water courses that will be permanently lost and/or altered as a result of the Project. These are identified as adverse effects in the application and in the evidence of both NZTA and submitters. These effects are proposed to be mitigated through site specific construction related controls (i.e. such as sediment and stormwater controls) and also through the restoration and enhancement of streams, including offsetting measures. Having considered the mitigation, including the offsetting proposals in the round (much of which will enhance the ecological health of streams and wetlands in the vicinity of the Project) and referring to our earlier assessment relating to such values, we consider that the Project is generally consistent with these objectives and policies.

## 12.7 REGIONAL AIR QUALITY PLAN FOR THE WELLINGTON REGION

- [1320] The Air Quality Management Plan came into effect on 8 May 2000.
- [1321] Relevant objectives and policies seek to maintain and enhance existing air quality of the region,<sup>511</sup> and to avoid, remedy or mitigate adverse effects on amenity values.<sup>512</sup> Policy 4.2.5 seeks to avoid or minimise adverse effects by managing the discharge at its source. The application identifies a number of sensitive receptors as being within 200 metres of the expressway including El Rancho Holiday Camp. There will also be residential activities within reasonably close proximity to the construction activities. Ms Borger in her evidence in chief has highlighted the proposed methods for managing the effects on air quality. The conditions relating to air quality management require monitoring during construction of total suspended particulate, wind speed and direction, temperature and rainfall. The preparation and implementation of a CAQMP is also required. The purpose of this plan is to establish procedures for monitoring of dust, methods to be used to limit dust and odour nuisance during construction, and procedures for responding to complaints. We agree with the conditions that if adverse effects relating to dust are detected or experienced, contingency measures such as cleaning of water tanks, house and other buildings are required.<sup>513</sup> Implementing the plan and associated measures will ensure consistency with the general

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<sup>511</sup> Objective 4.1.1.

<sup>512</sup> Policy 4.2.7.

<sup>513</sup> See Conditions DC.25 – DC.29.

thrust of the objectives and policies, which envisage that mitigation relating to air quality will be necessary.

- [1322] Turning to the effects of vehicle emissions on air quality, relevant policies seek to avoid, remedy or mitigate the adverse effects of discharges to air from mobile transport sources, and to promote improved air quality by encouraging public transportation efficiencies, alternative transportation methods and an aim to reduce vehicle congestion in urban areas.<sup>514</sup> We refer to our earlier findings in relation to air quality (section 10.6) and public health (section 10.8) in addressing these matters.

## **12.8 REGIONAL COASTAL PLAN FOR THE WELLINGTON REGION**

- [1323] The Project does not require any resource consents under the Regional Coastal Plan. However, because construction activities have the potential to influence the coastal marine area through discharges, the Regional Coastal Plan is of relevance to our considerations. This is consistent with the approach adopted in the application.
- [1324] The most relevant provisions are set out within the general objectives and policies in Chapter 4 of the Plan, and the water quality objectives and policies set out in Chapter 10. Relevant objectives seek to protect important ecosystems and other natural and physical resources in and adjacent to the CMA, from inappropriate use and development.<sup>515</sup> Objective 4.1.23 seeks that conditions are placed on consents to avoid, remedy or mitigate adverse effects on the CMA.
- [1325] As we have discussed earlier in this section of our report, we agree that NZTA's conditions will protect important ecosystems and other natural and physical resources in and adjacent to the CMA.

## **12.9 REGIONAL SOIL PLAN FOR THE WELLINGTON REGION**

- [1326] Provisions of this Plan are particularly relevant to consideration of bulk earthwork activities. The most relevant provisions relate to the involvement on tangata whenua in decision making, the management of erosion and sedimentation, water quality, monitoring, cultural effects and effects on ecology.
- [1327] In particular, Objective 4.1.8 seeks that the adverse effects of accelerated erosion are avoided, remedied or mitigated. Objective 4.1.11 seeks that land management practices are adopted for the effective control of sediment runoff to water bodies. Similarly, Policy 4.2.16 seeks to ensure that recognised erosion and land rehabilitation techniques are adopted to avoid, remedy or mitigate any adverse effects resulting from soil disturbance activities.

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<sup>514</sup> Policies 4.2.22 and 4.2.23.

<sup>515</sup> Objective 4.1.6.

- [1328] Again we refer to section 10.12 of this report where we deal with erosion and sediment control. It is our view that with the conditions, the works will be consistent with the relevant objectives and policies of the Regional Soil Plan.

## 12.10 REGIONAL PLAN FOR DISCHARGES TO LAND

- [1329] This Plan is particularly relevant for consents necessary for earthworks and vegetation removal, discharges to land and the use of contaminated land. Again these issues have been dealt with in section 10 of this report.

## 12.11 OPERATIVE KĀPITI COAST DISTRICT PLAN

- [1330] When considering the notice of requirement and any submissions received, we are obligated, subject to Part 2, to consider the effects on the environment of allowing the requirement, having particular regard to any relevant provisions of the KCDP.<sup>516</sup> In addition, as we have set out earlier NZTA is seeking resource consent from KCDP for undertaking works on contaminated land. When considering this application, we must, subject to Part 2, have regard to any relevant provisions of the KCDP.<sup>517</sup>
- [1331] The NoR seeks to designate land that is within the jurisdiction of the KCDP. The KCDP became operative on 30 July 1999 and is subject to three operative plan changes including Plan Change 79 and Plan Change 80.
- [1332] During the course of the hearing KCDP notified its proposed District Plan. This too is a relevant consideration to our deliberations and we provide a discussion of this later.
- [1333] The application provides an assessment of the Project in relation to the operative KCDP<sup>518</sup> and concludes that the Project is considered to be consistent with the relevant objectives and policies. The Key Issues report by KCDP provides a comprehensive overview of the relevant objectives and policies and identifies key issues in relation to each section.

### Residential Zone

- [1334] The relevant objectives and policies relating to the residential zones are particularly concerned with protecting residential amenity. Provisions also seek to create safe, pleasant and healthy spaces by providing for walkways, cycleways and public transport. Subject to avoiding, remedying or mitigating adverse effects on amenity values, Policy 3 (to Objective 2) encourages non-residential activities that have public benefit.
- [1335] Policy 2 (to Objective 2) seeks to prohibit activities which have significant adverse effects on the character and amenity values of the residential environments and which cannot be avoided, remedied or mitigated in an appropriate or practicable manner.

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<sup>516</sup> s171(1)(a)(iv) of the RMA.

<sup>517</sup> s104(1)(b)(vi) of the RMA.

<sup>518</sup> AEE, Chapter 4, Section 7, and Chapter 35, Section 13.

- [1336] Matters relating to urban form are relevant here. We have addressed these issues earlier in this report in section 10.19 and refer to those findings.

### **Rural Zone**

- [1337] The relevant objectives and policies of the rural zones are particular concerned with effects on the natural and physical environments, including the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna and the maintenance, enhancement and protection of outstanding natural landscapes.
- [1338] The KCDC Key Issues report was concerned about the loss of fertile soil and alterations to the natural landform, in particular the dunes.
- [1339] We refer to our earlier assessment in relation to effects on indigenous vegetation and significant habitats, and landscape.

### **Town Centre Zone**

- [1340] The relevant objectives and policies of the Paraparaumu Town Centre zone are particularly concerned with the development and maintenance of the Paraparaumu Town Centre. We consider this section of the Plan to be relevant insofar as the expressway will substantially reduce traffic using this area. Policy 1 seeks to ensure that adverse effects of all developments on the overall form and function including the roading network is avoided, remedied or mitigated. Policy 2 seeks to avoid, remedy or mitigate adverse effects on the dune system which contribute to the coastal landscape of the town centre.
- [1341] Again we refer to earlier sections of this report (sections 10.19 and 10.20) where we address urban design and landscape matters and accept that any adverse effects can be adequately mitigated by the conditions we have imposed.

### **Ngarara Zone**

- [1342] The Ngarara Zone is identified in the District Plan as a special part of the Kāpiti Coast providing for a variety of residential clusters integrated into its rural, coastal, conservation and forest setting. The Zone was made operative in 2010. The relevant objectives and policies of this zone provide general guidance as to how development within the zone should be laid out. The expressway will adversely affect the form and function of this zone by reducing the areas within the zone that have been identified as being suitable for development. Mr Kyle in his s42A report identified that the WLR designation also traverses through this area and the Project only deviates from the WLR designation in this locality to primarily avoid identified wetlands. In a similar vein, Mr Schofield identified for us that the Structure Plan for the zone sought to realign the WLR in order to minimise its impacts on wetlands and dunes, and to provide a better fit with the proposed location of the various neighbourhoods envisaged by the Plan.<sup>519</sup> We note here that the designation relating to the WLR would no longer be required with the

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<sup>519</sup> Schofield Rebuttal evidence, paragraph 280.

expressway designation in place and that this does not form part of the permitted baseline.

### **Tangata whenua**

- [1343] The relevant objectives and policies of the tangata whenua section are particularly concerned with taking into account the principles of the Treaty of Waitangi, having particular regard to kaitiakitanga and ensuring the relationship of the tangata whenua with the natural environment (including the coastal and riverine environments) is provided for. Te Āti Awa ki Whakarongotai is recognised as the authorised voice of the tangata whenua and objectives and policies endeavour to secure their involvement in resource consent decision-making and planning processes.
- [1344] We have undertaken a comprehensive evaluation of the potential effects of the Project on cultural and heritage values and refer to this section 10.17 of our findings on these matters.

### **Heritage**

- [1345] Objective 1.0 of the Heritage section seeks “to identify and protect heritage features of significance to the Kapiti Coast District” while objective 2 seeks “to recognise the relationship a heritage resource may have with the land surrounding the resource”.
- [1346] The Takamore Wahi Tapu Area is listed in the District Plan as a registered heritage/cultural feature. We have addressed matters relating to this area earlier in this report.
- [1347] The NZTA has also agreed to investigate, record and provide interpretative material for sites or features of cultural or archaeological significance found within the vicinity of the designation. There is also the possibility that during construction of the expressway, unknown wāhi tapu or archaeological sites of significance will be discovered. This has been secured via conditions.<sup>520</sup>

### **Coastal Environment**

- [1348] The relevant objectives of the Coastal Environment Section are particularly concerned with the protection and enhancement of natural character, natural values and associated amenity values of the coastal environment. They also seek to maintain public access to and along the coast and recognise the relationship of tangata whenua with the coastal environment. Various policies support these objectives which relate to landforms, dunes, wetlands, vegetation and flora, visual dominance, heritage and cultural sites and discharges.
- [1349] We refer to section 12.3 of our report where we record our acceptance of the proposed conditions for mitigating the effects of the Project where these might impact on the natural values and associated amenity values in the coastal environment.

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<sup>520</sup> See Conditions DC.61 and G.44.

### Landscape

- [1350] The relevant objectives of Landscape Section are concerned with the identification and protection of outstanding landscapes. Policy 4 specifically seeks to ensure that the river landscape of the Waikanae River is protected from inappropriate use and development. Policy 2 of the Rural Zone seeks to maintain, enhance and protect the District's outstanding landscapes from inappropriate use and development. The application acknowledges that the expressway bridge will have a moderate effect on the Waikanae River outstanding natural landscape, and an impact upon the natural and landscape values in the immediate vicinity of the river crossing.
- [1351] Again, we refer to section 10.20, landscape where we set out our findings on these matters.

### Ecology

- [1352] Objective 1 of the ecology section seeks to "protect and enhance the natural environment and ecological integrity of the district, including protection of significant indigenous vegetation and significant habitats for indigenous flora and fauna". Policy 4 seeks to ensure that significant native vegetation is not removed and any disturbance is avoided, remedied or mitigated. Policy 5 seeks to ensure that the effects of land use and development do not alter the water table of significant wetlands and lakes to a significant extent. Policy 6 seeks to ensure that land use activities avoid or minimise disturbance to native fauna and their habitats and Policy 7 seeks to ensure that land use activities do not adversely affect water quality.
- [1353] Again we refer to our earlier findings in section 12.3 with respect to a broad range of matters relating to ecology.

### Open Space and Reserves

- [1354] The general objective seeks to identify, maintain and enhance the open space and recreation resources of the District to ensure that the present and future needs of the District for recreational opportunities and open areas are met without adverse effects on the physical values of the natural environment. There is also an objective and policies that recognise the importance of Queen Elizabeth Park.
- [1355] In order to mitigate effects on open space and recreational resources (including the small loss of Queen Elizabeth Park) conditions require the preparation of Site Specific Urban Design Plans and a Landscape Management Plan. These conditions include provision of opportunities for recreational walking, cycling and riding.<sup>521</sup>

### Noise

- [1356] The relevant objectives of Noise Section are particularly concerned with effects of noise on public health and amenity. In particular objective 2 seeks to "*ensure that the adverse effects of road traffic noise on the amenity values of the residential environment are avoided, remedied or mitigated*". Policies

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<sup>521</sup> See Condition DC.59.

2 and 4 relate to new roads and seek that new roads are designed to avoid, remedy or mitigate adverse effects of traffic noise in residential areas without restricting the movement of traffic, and that adverse effects of road traffic noise on inhabitants of existing residential accommodation are avoided, remedied or mitigated.

- [1357] The potential effects of noise on residential amenity have been a key consideration in our deliberations and we have addressed these in section 10.5 of this report.

### **Natural Hazards**

- [1358] The relevant objectives and policies in the natural hazards section are particularly concerned with managing activities and development within natural hazard prone areas to avoid or mitigate adverse effects of natural hazards. Again, we refer to our consideration of these hazards earlier in this report.

### **Transport**

- [1359] Objective 1 seeks “*to achieve a transport infrastructure that provides for efficient and safe movement of people and goods throughout the district and which avoids, remedies or mitigates adverse effects of existing and new traffic routes*”. The various supporting policies require environmental impact reports for river crossings of the Waikanae or Otaki rivers, consideration of pedestrian and cycleway as well as the use of public transportation. Policy 12 seeks to protect the existing and proposed State Highway network.
- [1360] These matters have been referred to comprehensively at section 10.3 of this report.

### **Network Utilities**

- [1361] The relevant network utility objectives and policies seek to provide for network utilities while addressing their potential adverse effects.
- [1362] NZTA has consulted with various utility operators who are potentially affected by the Project. Conditions requiring the preparation and implementation of the Network Utilities Management Plan adequately address any concerns in our view.

## 12.12 PROPOSED KĀPITI COAST DISTRICT PLAN

[1363] As set out earlier, the proposed KCDP was notified in December 2012, which was during the course of the hearing. It is therefore a relevant matter for our consideration pursuant to s171 of the RMA, which requires particular regard to be had to any plan or proposed plan. The weight to be attached to the proposed plan is in the view of both Mr Schofield<sup>522</sup> and Mr Kyle<sup>523</sup> low, given that the plan is yet to go through the public submission and hearing process required by the First Schedule of the RMA. We agree.

[1364] The proposed KCDP contains 12 chapters relating to the natural, coastal, living, working and rural environments of the Kāpiti Coast. Chapter 2 sets out the twenty proposed objectives which set out the direction the Council intends to take in relation to Resource Management issues on the Kāpiti Coast. The remaining chapters set out the policies, rules and other methods that are intended to give effect to the proposed objectives. A brief summary of the content of the Plan is set out below.

[1365] The relevant objectives relate to:

- i) Working with tangata whenua of the District in order to maintain kaitiakitanga of the District's resources and to ensure that decisions affecting the natural environment in the District are made in accordance with the principles of the Treaty of Waitangi;<sup>524</sup>
- ii) Improving biological diversity and ecological resilience through the protection of areas of significant indigenous vegetation and habitats of indigenous fauna; restoration of the ecological integrity important degraded environments and habitats, and the enhancement of the health of terrestrial and aquatic ecosystems and the mauri of waterbodies;<sup>525</sup>
- iii) The maintenance of a consolidated urban form within the existing urban areas;<sup>526</sup>
- iv) Having a coastal environment where natural character, natural systems, landforms and natural processes are protected, and restored where degraded;<sup>527</sup>
- v) Ensuring the safety and resilience of people and communities by avoiding exposure of risk to natural hazards;<sup>528</sup>
- vi) Sustaining rural productivity;<sup>529</sup>
- vii) Protecting historic heritage;<sup>530</sup>

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<sup>522</sup> Schofield Supplementary evidence, paragraph 38.

<sup>523</sup> Supplementary s42A report, 6 December 2012.

<sup>524</sup> Objective 2.1.

<sup>525</sup> Objective 2.2.

<sup>526</sup> Objective 2.3.

<sup>527</sup> Objective 2.4.

<sup>528</sup> Objective 2.5.

<sup>529</sup> Objective 2.6.

- viii) Support a cohesive and inclusive community where people have (among other matters) easy access and connectivity to public places and local community services and facilities;<sup>531</sup>
- ix) Protecting the District's natural landforms and valued landscapes;<sup>532</sup>
- x) The management of hazardous substances;<sup>533</sup>
- xi) The promotion of an urban and rural character which is consistent with a range of values;<sup>534</sup>
- xii) The efficient development, maintenance and operation of an adequate level of social and physical infrastructure within the District, while maximising community resilience and minimising potential adverse effects;<sup>535</sup>
- xiii) Access and transportation and providing a system which integrates with the urban form of the District and maximises accessibility, improves efficiency of travel and maximises mode choice to enable people to act sustainably, contributes to a strong economy, minimises adverse on land uses, and is safe, fit for purpose, cost effective and provides good connectivity for all communities;<sup>536</sup>
- xiv) The encouragement of development that demonstrates a net environmental benefit in the areas of water quality, biodiversity and energy;<sup>537</sup>
- xv) Methods for promoting the sustainable and ongoing economic development of the local economy;<sup>538</sup>
- xvi) Providing urban centres such that these places are vibrant, safe and economically viable;<sup>539</sup>
- xvii) Providing a rich and diverse network of open spaces within the District;<sup>540</sup> and
- xviii) Seeking to achieve liveable and safe public and private places which enhance the local economy, environment and community.<sup>541</sup>

[1366] We have addressed each of these matters in earlier sections of this report and refer to those findings with respect to our assessment against these objectives.

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<sup>530</sup> Objective 2.7.

<sup>531</sup> Objective 2.8.

<sup>532</sup> Objective 2.9.

<sup>533</sup> Objective 2.10.

<sup>534</sup> Objective 2.11.

<sup>535</sup> Objective 2.13.

<sup>536</sup> Objective 2.14.

<sup>537</sup> Objective 2.15.

<sup>538</sup> Objective 2.16.

<sup>539</sup> Objective 2.17.

<sup>540</sup> Objective 2.18.

<sup>541</sup> Objective 2.19.

[1367] The designation traverses through a number of different land use zonings that are set out in the proposed KCDP. This includes zones within the natural, living, rural and open space environments that are identified within the District Plan Maps. A summary of the key provisions in these chapters is set out below.

### **Natural Environment**

[1368] The proposed KCDP maps identify a number of sites within the defined alignment of the expressway designation as being identified ecological sites, or areas containing other sensitive natural features. The expressway designation traverses areas of the District which have been identified as being outstanding or significant amenity landscapes. The proposed KCDP sets out that there are two main types of mapped or scheduled features. These are sensitive natural features which are described as areas where additional buildings, relatively small landform modification or changes to vegetation could result in significant adverse visual, amenity or ecological effects. Features in this group include:

- i) Ecological sites;
- ii) Geological features;
- iii) Outstanding natural features and landscapes;
- iv) Significant amenity landscapes;
- v) Rare and threatened vegetation species; and
- vi) Key indigenous tree species.

[1369] The proposed KCDP also notes that some natural features are not sensitive natural features, but that provisions are necessary to manage effects on these features. These features include but are not limited to:

- i) Dominant ridgelines/dominant dunes;
- ii) Ecological domains;
- iii) Landscape character areas;
- iv) Priority areas for restoration;
- v) Locally indigenous vegetation; and
- vi) Look out points.

[1370] Policies within Chapter 3 of the proposed KCDP relate to the natural environment. Policies seek that subdivision, land use and development is undertaken in a manner that ensures that any adverse effects on *ecosystems services* are avoided, or where they cannot be avoided are remedied or mitigated.<sup>542</sup> It is also noted that not all sensitive natural features in the District have been identified and listed or mapped in the KCDP and that these will continue to be identified as further information becomes available during the resource consent process.<sup>543</sup>

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<sup>542</sup> Policy 3.1.

<sup>543</sup> Policy 3.2.

[1371] Policy 3.3 seeks to ensure that all new subdivision, land use or development in the District shall protect sensitive natural features, significant locally indigenous vegetation, look out points, dominant ridgelines and dominant sand dunes and avoid significant adverse effects on these features, in accordance with the following principles:

- a) *“Development will be located away from mapped and scheduled features;*
- b) *Tangata whenua will be consulted to ensure kaitiakitanga is maintained;*
- c) *Development form will be shaped by natural landforms and waterbodies including coastal dunes, inter-dune wetlands, rivers and streams, coastal hills and escarpments; and*
- d) *Active management will be applied through environmental strategies to maintain the integrity of mapped and scheduled features.”*

[1372] The policies also set out the process that should be adhered to if adaptive management is proposed to manage adverse environment effects arising from any proposed development. Measures identified include the promotion of robust baseline assessments, the identification of clear triggers for action and subsequent monitoring and feedback. Adaptive management proposals are required to be well documented and properly costed and funded for the duration of the proposed effects.<sup>544</sup>

[1373] The applicability and form of environmental offsetting is also set out in the policies.<sup>545</sup> This policy sets out that environmental offsetting will be considered as part of remediation or mitigation where certain principles can be demonstrated to be achieved. The principles require that:

- a) *“It (offsetting) should only be considered where remediation or mitigation onsite is not possible;*
- b) *It should be as close as possible to the site (because benefit diminishes with distance) so that it is in the same area, landscape or environment as the proposed activity;*
- c) *There should be substantial, significant, demonstrable and measureable net environment benefit as opposed to mere mitigation of effects;*
- d) *It must be effective; usually there should be conditions (a condition precedent or a bond) to ensure that it is completed or supplied;*
- e) *There should be public consultation or at least the opportunity for public participation in the process by which the environmental compensation or offsetting is set; and*

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<sup>544</sup> Policy 3.4.

<sup>545</sup> Policy 3.5.

- f) *The methodology for setting the degree of biodiversity offset shall be recognised and transparent, and shall include best practice monitoring and adaptive management procedures and processes.”*

- [1374] Policy 3.11 sets out the criteria that is relevant in identifying significant indigenous vegetation and significant habitats of indigenous fauna in the District. Policy 3.12 sets out the management approach to minimising adverse effects of land use and development activities within such areas including by avoiding removal, developing buffer zones, and managing sediment and contaminant runoff.
- [1375] Policy 3.17 seeks to protect outstanding natural features and landscapes from inappropriate subdivision, land use and development.
- [1376] Policy 3.22 relates to earthworks. It sets out that all earthwork activities will be managed to:
- a) *“protect waahi tapu and archaeological values from disturbance; and*
  - b) *avoid contaminants (including dust, sediment or any hazardous substance) from entering a waterbody causing contamination, discolouration, or siltation.*
  - c) *Ensure that any development activity disturbing the soil is carried out in a way to prevent soil erosion and to stop silt and sediment from entering the stormwater system or watercourses.”*
- [1377] The issues relating to natural features, indigenous ecosystems, cultural values and earthworks have all been discussed in earlier sections of this report. We refer to those earlier findings.

### **Coastal Environment**

- [1378] The proposed KCDP sets out that a study undertaken by Isthmus Group has identified the landward extent of the coastal environment and that this is depicted on the relevant District Plan Natural Features maps. The natural features maps identify that the Project designation route is within the coastal environment. We note that this differs from the findings of some of the experts in relation to the area affected by the Project.
- [1379] Policies seek to identify the coastal environment and to identify and protect areas of high natural character.<sup>546</sup> Policy 4.4 seeks that subdivision and development in the coastal environment will support restoration of natural character values through:
- a) *“Creating or enhancing indigenous habitats and ecosystems, using local genetic stock;*
  - b) *Encouraging natural regeneration of indigenous species, while effectively managing weed and animals pests;*

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<sup>546</sup> Policies 4.1 - 4.3.

- c) *Rehabilitating dunes and other natural coastal features or processes, including saline wetlands and intertidal saltmarshes;*
- d) *Restoring and protecting riparian and intertidal margins; or*
- e) *Removing coastal structures and materials that do not have heritage or amenity values; or*
- f) *Redesign of structures that interfere with ecosystems processes.”*

[1380] Other policies relate to coastal hazards and seek to identify and manage such risks.

[1381] Again, we refer to section 12.3 for our findings on the coastal environment.

### **Living Environment**

[1382] The majority of policies within this chapter of the proposed KCDP relate to residential development and amenity. That is, management of the effects that emanate from residential activity on neighbouring properties, and the residential environment more generally. Therefore such policies have limited relevance to a consideration of the merits of the expressway designation.

[1383] Policy 5.31 applies to non-residential activities occurring in Living Zones and appears to be focussed on “out of zone” activities that might be proposed within Living Zones, such as commercial activities. It sets out that non-residential activities will be allowed in the Living Zones only if the activities are compatible with residential activities and the amenity values of residential areas, and if they provide a function which:

- a) *“Minimises the need to travel for daily goods and services;*
- b) *Supports the resilience of the local neighbourhood;*
- c) *Provides a service or function to the local neighbourhood; and*
- d) *Does not detract from the vitality of the District’s centres and other working environments.”*

[1384] The same policy also sets out that in determining whether or not the scale of effects of non-residential activities is appropriate, particular regard shall be given to:

- i) *“The appropriateness of the scale, size and intensity of the proposed buildings and activities and visual or landscape mitigation proposed;*
- ii) *The effects generated by the buildings and activities of the safety and efficiency of the local transport network, including the extent to which the activities make efficient use of the transport network by minimising the need to travel;*
- iii) *The appropriateness – in the design and amount – of proposed access and car parking for staff, customers, visitors and service/delivery vehicles;*

- iv) *The hours of operation, including the timing and frequency of delivery/service vehicles;*
- v) *The effects on residential character and amenity values of the surrounding environment generated by the proposed building or activity;*
- vi) *The effects of environmental nuisances (including noise, odour, light, glare, hazardous substances and dust) produced on site;*
- vii) *Whether or not any proposed signage on the site is associated with the activity, visually distracting to motorists or dominating or detracting from the amenity of the surrounding environment;*
- viii) *Whether the activities adversely affect the vitality of centres and the working environment; and*
- ix) *Whether the activity provides goods and services to meet the daily needs of the local neighbourhood.”*

[1385] Policy 5.33 also requires that landscaping is provided for all non-residential activities occurring within the living zones.

### **Rural Environment**

[1386] Policies within the rural environment chapter of the Plan seek to ensure that primary production activities are provided for as the predominant use in the District's rural area<sup>547</sup> and the protection of versatile and specialised soils.<sup>548</sup>

[1387] Policies also seek that development in the rural environment is undertaken in a manner that protects the District's rural character, including the retention of the general sense of openness, natural landforms and the defining landscape characteristics and values, and the natural darkness of the night sky.<sup>549</sup>

[1388] The expressway designation will cross through the Rural Eco Hamlet zone which is described in the proposed KCDP as land adjacent to identified urban growth areas at Waikanae North and Otaki. The Plan anticipates that land use and development within this zone will be carried out in a manner that enhances the carrying capacity of the area in terms of productive activities or ecological restoration, and recognises the sensitive landscape and ecological character of the area. Policy 7.17 requires that subdivision and development in this zone is undertaken in accordance with the structure plan that is contained in Volume 2 of the Plan. It is noted that the proposed KCDP maps show both the WLR designation and the expressway designation traversing through this zone.

[1389] We have received no evidence that the Project will impact on primary production activities. As we have found when we have considered related

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<sup>547</sup> Policy 7.1.

<sup>548</sup> Policy 7.2.

<sup>549</sup> Policy 7.4.

statutory documents, we are satisfied that the conditions provide adequate mitigation for the protection of the landscape and ecology of the rural environment.

### Open Space

[1390] Policies relating to open space seek to maintain active transport and connectivity within the District through public cycle ways, walkways and bridleway networks.<sup>550</sup> Policy 8.6 seeks that new subdivision, land use and development of reserves and areas of significant scenic, ecological, cultural, scientific, and national importance will provide the intrinsic amenity value of these areas, including (but not limited to) values associated with:

- a) *“A sense of openness and visual relief from more intensive urban areas;*
- b) *Indigenous vegetation;*
- c) *Significant landforms; and*
- d) *Natural character.”*

[1391] In all other areas outside those identified above, the policy seeks that new subdivision, use and development will be undertaken in a manner that does not compromise the intrinsic amenity values of those areas.

### Hazards

[1392] The proposed KCDP identifies natural hazards in the area including flood risk, and policies relate to the identification of such hazards. Policy 9.2 sets out that a risk based, all hazards approach will be taken to subdivision, land use and development within areas subject to the following natural hazards:

- a) *“Flood hazards;*
- b) *Earthquake hazards;*
- c) *Fire hazards;*
- d) *Slope instability and erosion; and*
- e) *Coastal erosion hazards.”*

[1393] The policy notes that hazard risk categories will be developed for flood, earthquake and erosion hazards to guide minimising the risk of loss of life and damage to property due to these hazards, while allowing appropriate use in lower risk areas.

[1394] The natural hazards planning maps identify that the expressway designation will traverse areas of potential flood risk.

[1395] Policies also require that a precautionary approach is adopted when considering developments where there is uncertainty about the potential effects of a hazard until further detail information has been obtained.<sup>551</sup>

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<sup>550</sup> Policy 8.5.

<sup>551</sup> Policy 9.4.

- [1396] We have already responded to natural hazards in Section 12.5 of this report. We have not found that any of these hazards would require the adoption of a precautionary approach.

### Historic Heritage

- [1397] This chapter includes a schedule of historic heritage sites. The Takamore Wāhi Tapu Area (W4) is included in this schedule. The scheduled sites are also depicted on the planning maps. The expressway crosses through the southern extent of this identified area. The effects of the expressway on this site have been discussed in the evidence of Te Āti Awi ki Whakarongotai in particular and we refer to our earlier findings in relation to these matters.
- [1398] Other historic heritage sites that are listed and are situated adjacent to the expressway designation route include the Whakarongotai Marae (WTS0316). There is also a notable tree identified as being just within the proposed designation boundary. This is identified as T105 as shown on Plan Map 07B (the Maketu Tree).
- [1399] The proposed KCDP notes that while sites of historic heritage and other features have been scheduled in the proposed KCDP, the list is not exhaustive and the identification of historic heritage sites will be an ongoing exercise as new information becomes available. A number of the policies therefore relate to the identification of sites of historic heritage and other feature such as notable trees within the District.<sup>552</sup>
- [1400] Policy 10.5 requires that subdivision, development and land use involving the District's historic heritage and its surroundings will be managed in a way that protects historic heritage values from adverse effects.
- [1401] Policy 10.10 relates to waahi tapu sites. This policy sets out that:
- “waahi tapu and their surroundings will be recognised as particularly sensitive to any subdivision, development or change in land use, as these activities may affect the physical features and non physical values of the place or area, and will be protected from any adverse effects of these activities”.*
- [1402] The policy promotes working:
- “in partnership with the relevant iwi authority for the ongoing and long term management and protection of waahi tapu. Relevant iwi authorities will be consulted on all resource consent applications affecting waahi tapu identified in the Schedule of Historic Heritage”.*

### Infrastructure

- [1403] This chapter identifies the existing WLR designation and identifies this as D0102. The expressway designation is also shown in the designation section of the proposed KCDP with the qualifier that it is proposed and subject to a decision.

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<sup>552</sup> Policies 10.1 -10.4.

- [1404] Policies in this chapter recognise the national, regional or local importance and benefits of the sustainable, secure and efficient provision of infrastructure throughout the District. Such infrastructure referred to in this section includes road and rail networks as mapped in the Regional Land Transport Strategy and Council's transport hierarchy in the District Plan, provided that these networks have been development within a sustainable management framework.<sup>553</sup>
- [1405] Policies also recognise that reverse sensitive effects will adversely affect the form and function of infrastructure within the District and also that the adverse effects arising from the development of infrastructure need to be appropriately managed.<sup>554</sup>
- [1406] Section 11.6 specifically relates to access and transportation activities. This section sets out that there are changes proposed to the State Highway Network as a result of the Government's identification of seven roads of national significance. The Plan notes that the Wellington Northern Corridor (Levin to Wellington Airport) is one of these, and requires upgrading to reduce traffic congestion, improve safety and support economic growth in New Zealand and that the NZTA is charged with delivering these highway projects within the next 10 years. The Plan observes that as of 2012 there are four NZTA projects within the Kāpiti Coast District which are in various stages of development, including the expressway project.
- [1407] Policy 11.29 seeks that development and subdivision will be integrated with and consistent with the transport network hierarchy, and undertaken in a manner and at a rate to ensure:
- a) *"The transport network is capable of serving the projected demand;*
  - b) *The location of development is appropriate, including the co-location of compatible developments and land use and transport networks to reduce unnecessary travel;*
  - c) *Travel time and distance to services are minimised;*
  - d) *Development is consistent with Council's Subdivision and Development Principle and Requirements (SDPR); and*
  - e) *Enhanced community connectivity is achieved, resulting in more efficient travel patterns from the community."*
- [1408] Once again with respect to the proposed KCDP, we refer to our findings in earlier sections of this report dealing with matters relating to ecology, landscape, urban design, cultural effects, natural hazards and other matters.

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<sup>553</sup> Policy 11.1.

<sup>554</sup> Policies 11.2 – 11.4.

## 12.13 RELEVANT NON STATUTORY DOCUMENTS – OTHER MATTERS

- [1409] Pursuant to s104(1)(c), regard must also be had to any other matter that is considered relevant and reasonably necessary to determine the resource consent applications. s171(1)(d) also requires regard to be had to any other matter considered reasonably necessary in order to make a recommendation on the notice of requirement.
- [1410] s35.14 of the application identified the following as being relevant other matters to consider:
- *“Government Policy Statement on Land Transport Funding 2009/2010 – 2018/19 – prepared under the LTMA;*
  - *New Zealand Transport Strategy 2008;*
  - *National Infrastructure Plan 2011;*
  - *Western Corridor Plan 2006;*
  - *Wellington Regional Land Transport Strategy 2010 – 2040 – prepared under the LTMA;*
  - *Wellington Regional Strategy 2007;*
  - *National Land Transport Programme (2009 – 2012) – prepared under the LTMA;*
  - *National State Highway Strategy (2007);*
  - *The 2011/2012 State Highway Plan;*
  - *NZTA Environmental Plan (2008);*
  - *Getting There – On Foot, By Cycle Strategic Implementation Plan 2006 – 2008 – Ministry of Transport;*
  - *New Zealand Urban Design Protocol (2005);*
  - *Wellington Conservation Management Strategy (1996);*
  - *Greater Wellington Parks Network Plan (2011);*
  - *Draft Regional Freight Plan – Greater Wellington Regional Council (2011);*
  - *Kapiti Coast Choosing Futures: Community Plan (2009);*
  - *KCDC Development Management Strategy (2007);*
  - *KCDC Sustainable Transport Strategy (2008);*
  - *KCDC Subdivisions and Development Principles and Requirements (2005);*
  - *Kapiti Coast Streetscape Strategy and Guideline (2008) and*
  - *Proposed National Policy Statement on Indigenous Biodiversity.”*
- [1411] KCDC’s Key Issues Report also identifies some of the same items listed above as being a relevant consideration.

[1412] Mr Kyle in his s42A report correctly identified that in some instances the documents are wholly supportive of the expressway and in others they are not supportive or are neutral. There was no dispute that the Project is an integral component of the Governments RoNS and WRLTS. It is our view that the Proejct will meet some of the identified outcomes in relation to these aspects. Consistency of the Project with other documents is also largely dependent on the management of adverse effects and appropriately targeted conditions. We have addressed such matters earlier in this report.

## 13. FINAL APPRAISAL

[1413] In this section of the report we consider whether we ought to confirm the NoRs sought and grant consent to the applications made by NZTA. In doing so we will:

- i) Identify various factual findings as to the effects of the Project which are relevant to our determination;
- ii) Consider the provisions of s171(1) RMA (except for Part 2 matters);
- iii) Consider the provisions of s104B and 104C;
- iv) Consider the provisions of s105;
- v) Undertake a Part 2 assessment on an overall basis; and
- vi) Determine the various requests and applications.

### 13.1 MAJOR FACTUAL FINDINGS

[1414] We set out here the major factual findings that inform our conclusions. In doing so we do not overlook any other findings made under various subject matter headings, the evidence or submissions received, both written and in presentations to us. The findings below are, in the main, also taken from section 10.

[1415] We make the following factual findings, which will inform our other determinations:

- i) The existing SH1 provides an inadequate level of service due to issues of congestion, poor accessibility, use of inappropriate routes, safety, vulnerability of pedestrians and cyclists and risk of closure in the event of accident, earthquake or tsunami (section 10.3).
- ii) The expressway will rectify those inadequacies by the provision of a new four-lane route, in the main following the historical designation. This expressway will avoid congestion, reduce travel times and achieve consistency in travel times. It will be safer than the existing route. By SH1 becoming a local road, connectivity will be improved. There will be an improvement to walking and cycling facilities. The expressway will have more resilience and there will not be the congestion at the present caused by traffic volumes, breakdowns and accidents (section 10.3).
- iii) The Project will significantly improve north-south connectivity. East-west connectivity will be adequately maintained. There is protection for future connections and enhancement of east-west connectivity (section 10.19).
- iv) The expressway will cause adverse effects on terrestrial ecology. Some areas of indigenous vegetation will be destroyed. There is one threatened species known to be present on or near the site. Potentially, there are unidentified smaller organisms of unknown significance which could be destroyed. The comprehensive ecological

mitigation package contained in the conditions will protect the wider habitat, replace indigenous vegetation and adequately mitigate adverse effects. There will be an overall net gain in terrestrial ecology (section 10.14).

- v) There will be no adverse effects on the marine ecology caused by additional sedimentation. Mitigation steps will prevent any potential for adverse effects to the marine ecology (section 10.12 and 10.14).
- vi) The expressway and its construction will cause adverse effects on rivers, streams, waterways and wetlands. The conditions adequately mitigate these adverse effects and the mitigation package will achieve a net gain in freshwater ecology (sections 10.12 and 10.14).
- vii) The noise mitigation measures contained in the conditions will mitigate the predicted operational traffic and construction noise to acceptable levels (section 10.5).
- viii) The effects of vibration have been properly identified and adequately mitigated by the conditions (section 10.5).
- ix) The effects of construction and expressway operation on air quality are adequately mitigated by the extensive conditions imposed (section 10.6).
- x) The potential adverse public health effects from the construction and operation of the Project can be mitigated to acceptable levels through the conditions, mitigation measures, management plans and the application of relevant New Zealand standards and guidelines (section 10.8).
- xi) The groundwater related conditions will provide adequate safeguards for the management, control and mitigation of groundwater effects arising from the construction and operation of the proposed expressway (section 10.9).
- xii) The ground settlement designation conditions DC.67 to DC.81 will provide adequate safeguards for managing and controlling the effects of ground settlements from the construction of the proposed expressway (section 10.11).
- xiii) Any adverse effects from the disturbance of contaminated land during the construction and operation of the Project will be appropriately mitigated through the application of the consent conditions and the mitigation measures proposed (section 10.13).
- xiv) The measures taken by NZTA in its planning and design of the proposed expressway have responded to the potential effects of climate change including the protection afforded by condition SW.2(b) which requires NZTA to undertake a sensitivity evaluation against high range climate change scenarios to 2115 (section 10.21).
- xv) Although finely balanced, the adverse cultural effects on tangata whenua have been adequately avoided, remedied or mitigated by the design and conditions (section 10.17).

- xvi) The potential adverse effects of the expressway on archaeological sites and built heritage have been adequately remedied or mitigated by the conditions and management plans (sections 10.15 and 10.15).
- xvii) Potential adverse social effects on communities arising from construction and operation of the expressway have been adequately avoided, remedied or mitigated by the operation of conditions and management plans (section 10.7).
- xviii) The expressway will have adverse landscape and visual effects at the Waikanae River crossing. Those effects cannot be avoided. The effects have been appropriately mitigated. Adverse landscape and visual effects on other parts of the route have been adequately avoided, remedied or mitigated through the choice of alignment and incorporation of design features, and by the implementation of conditions and management plans (section 10.20).
- xix) The Project has a high strategic fit, and high effectiveness. Through construction and operation, the Project, will generate local, regional, and national economic benefits (section 10.18).

[1416] The above factual findings, and our further findings earlier in this report, inform our following discussion of relevant provisions of the RMA.

## 13.2 S171 RMA

[1417] s171 reads:

*“When considering a requirement and any submissions received, a territorial authority must not have regard to trade competition or the effects of trade competition.*

*(1) When considering a requirement and any submissions received, a territorial authority must, subject to Part 2, consider the effects on the environment of allowing the requirement, having particular regard to—*

*(a) any relevant provisions of—*

*(i) a national policy statement:*

*(ii) a New Zealand coastal policy statement:*

*(iii) a regional policy statement or proposed regional policy statement:*

*(iv) a plan or proposed plan; and*

*(b) whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work if—*

*(i) the requiring authority does not have an interest in the land sufficient for undertaking the work; or*

*(ii) it is likely that the work will have a significant adverse effect on the environment; and*

*(c) whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought; and*

*(d) any other matter the territorial authority considers reasonably necessary in order to make a recommendation on the requirement.*

*(2) The territorial authority may recommend to the requiring authority that it—*

*(a) confirm the requirement:*

*(b) modify the requirement:*

*(c) impose conditions:*

*(d) withdraw the requirement.*

*(3) The territorial authority must give reasons for its recommendation under subsection (2)."*

### **13.2.1 Alternatives**

[1418] We heard many submissions, and indeed some evidence, expert and lay, stating that NZTA had failed to adequately consider alternative routes and methods to those for which the NoR applied. Factually, we do not accept that. For reasons given in the Traffic and Transportation section of this report, we accept that NZTA has given adequate consideration of alternatives, for the reasons given there.

[1419] Notwithstanding what we have said earlier regarding the circumscribed nature of our jurisdiction, many submitters seemed to think that we had power to order NZTA to carry out further investigations into alternative sites or even require a different route. For the reasons given earlier, we do not.

[1420] As well, it appears those submitters were unaware of the relevant law under the RMA relating to this question. We have set out above s171(1)(b) and it is conceded by NZTA that the pre-requisites set out at (i) and (ii) apply in this situation.

[1421] The predecessor of s171(1)(b) was s118(8) of the Town and Country Planning Act 1977. This was amended to include (d), which stated:

*"The extent to which adequate consideration has been given to alternative sites, routes, or methods of achieving the objectives of the Minister or local authority..."*

[1422] Although worded slightly differently, it is clear it is a section to the same import as s171(1)(b) RMA. In a much-applied decision, *Waimairi District*

*Council v Christchurch City Council*, the Court considered the predecessor section in some considerable detail:<sup>555</sup>

*“Finally under this head, we wish to say something more about the provisions of s 118(8). In some respects they are overlapping. For example, economic, social and environmental effects of a proposal may be considered along with site suitability. Alternative sites, routes and methods may be considered along with site suitability and the economic, social and environmental effects. We think it is wrong to be too rigid in examining the matters set out in this subsection. What is important is that each of them is given consideration. Then too, so far as the matters in s 118(8)(d) are concerned, we do not consider that Parliament intended that alternatives should necessarily be excluded before the Tribunal can be satisfied that the matters set out in that part of the subsection have been given adequate consideration. We think the purpose of that part of the subsection is to enable the Tribunal to be satisfied that a requiring authority has not acted arbitrarily in selecting its site, its route or its method of achieving its objective. Assuming that there are alternatives, the decision as to which one is selected involves a consideration of matters of policy which are outside the Tribunal’s ability to adjudicate upon. That is not to say that the Tribunal should not give close attention to these matters where they are relevant. But Parliament has stopped short of giving this Tribunal the jurisdiction to direct that any other alternative must be selected. In the absence of that power, we think, in the end, it would become an exercise in futility if the Tribunal were required to examine, in detail, and adjudicate upon, in detail, the merits of various alternatives. In satisfying itself that adequate consideration is being given to alternatives, inevitably the Tribunal will find itself considering various land use planning merit aspects. But we repeat and stress that the wording of this part of the subsection requires us to have regard to the extent to which adequate consideration has been given. It does not require us to be satisfied that there are no alternative sites, routes or methods.”*

[1423] This was applied in *Quay Property Management Ltd v Transit New Zealand*.<sup>556</sup>

[1424] Further, in *Report and Decision of the Board of Inquiry into the Upper North Island Grid Upgrade Project*, that Board stated:<sup>557</sup>

*“Adequacy of consideration of alternatives*

*176. By section 171(1)(b) in certain conditions, particular regard is to be had to whether adequate consideration has been given*

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<sup>555</sup> *Waimairi District Council v Christchurch City Council* C30/82, 13 July 1982, pages 24-25.

<sup>556</sup> *Quay Property Management Limited v Transit New Zealand* W28/2000 29 May 2000 (EnvC) at [148].

<sup>557</sup> *Report and Decision of the Board of Inquiry into the Upper North Island Grid Upgrade Project*, September 2009

*to alternative sites, routes or methods of undertaking the work. Transpower accepted that it was required to consider alternative sites, routes and methods of undertaking the grid upgrade.*

177. *Transpower made these submissions, based on case law, about the imposed (sic) by section 171(1)(b):*

- a) the focus is on the process, not the outcome: whether the requiring authority has made sufficient investigations of alternatives to satisfy itself of the alternative proposed, rather than acting arbitrarily, or giving only cursory consideration to alternatives. Adequate consideration does not mean exhaustive or meticulous consideration <sup>33</sup>*
- b) the question is not whether the best route, site or method has been chosen, nor whether there are more appropriate routes, sites or methods*
- c) that there may be routes, sites or methods which may be considered by some (including submitters) to be more suitable is irrelevant*
- d) the Act does not entrust to the decision-maker the policy function of deciding the most suitable site; the executive responsibility for selecting the site remains with the requiring authority <sup>34</sup>*
- e) the Act does not require every alternative, however speculative, to have been fully considered; the requiring authority is not required to eliminate speculative alternatives or suppositious options. <sup>35</sup>*

*Who chooses from the alternatives?*

178. *Counsel for the Manukau City Council submitted that the Judgment of the Privy Council in *McGuire v Hastings District Council* <sup>36</sup> allows room to argue that the territorial authority is to fully evaluate the merits of the various alternatives against Part 2 of the Act, with a view to determining which alternative ought to be adopted. <sup>37</sup> However, counsel properly conceded that it is very difficult to reconcile such an approach with the later High Court Judgment in *Auckland Volcanic Cones Society v Transit New Zealand*. <sup>38</sup>*

179. *The opinion of the Privy Council in *McGuire* is of course binding authority as far as it goes. As the Environment Court held in *Nelson Intermediate School v Transit New Zealand*, <sup>39</sup> the passage in paragraph [23] of that opinion may allow room for the Council's argument. The Environment Court did not determine that this is the correct interpretation of section 171(1)(b).*

180. *The words of a judgment should not be interpreted and applied to another case as if the phrase in issue were part of a statute.*<sup>40</sup>

181. *The Privy Council Judgment did not contain a specific and unequivocal declaration to the effect that a territorial authority is to determine which alternative is to be adopted. Their Lordships' reasoning did not address the particular wording "...whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work..."; nor did they address the consistent meaning given to that phrase over many years.*<sup>41</sup>

182. *In the Auckland Volcanic Cones Society case, the Full Court found that the observations of Lord Cooke in delivering the Privy Council Judgment were obiter dicta (not necessary to the reasoning on the question of law in issue). Counsel for the Manukau City Council acknowledged that the traditional view that the role under section 171(1)(b) – which they described as being of oversight rather than evaluative judgment – stands.*

183. *Therefore, the Board applies the law as declared by the higher Courts in other cases, and consistently applied and followed; and holds that section 171(1)(b) does not confer authority on a territorial authority to substitute its own choice among alternative sites routes or methods of undertaking the work, for the choice of the requiring authority."*

[1425] In *Re Queenstown Airport Corporation Ltd*,<sup>558</sup> the Court cited paragraph [177] of that Board's decision, set out above, and adopted what was said as the law. We concur with all of those comments, notwithstanding that, as Mr Mitchell pointed out that, paragraph [177] was in fact Transpower's submission. However, in our view, that submission accurately states the correct legal position.

[1426] Finally there is the authority of the decision of the full bench of the High Court in *Meridian Energy Ltd v Central Otago District Council*, where the Court stated:<sup>559</sup>

*"Next we have ss 168A(3) and 171(1)(b) concerning designations. These are mirror provisions and it will suffice if we quote the relevant parts of s 171(1)(b):*

*171 Recommendation by territorial authority*

...

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<sup>558</sup> *Re Queenstown Airport Corporation Ltd* [2012] NZEnvC 206 at [50].

<sup>559</sup> *Meridian Energy Ltd v Central Otago District Council* [2011] 1 NZLR 482 at 507, paragraph 81.

(1) *When considering a requirement and any submissions received, a territorial authority must, subject to Part 2, consider the effects on the environment of allowing the requirement, having particular regard to—*

...

(b) *whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work if—*

(i) *the requiring authority does not have an interest in the land sufficient for undertaking the work; or*

(ii) *it is likely that the work will have a significant adverse effect on the environment; and*

...

*Over time the Courts have taken a relatively narrow approach to this provision. If the Environment Court is called upon to review the decision of the territorial authority, it is required to consider whether alternatives have been properly considered rather than whether all possible alternatives have been excluded or the best alternative has been chosen. See, for example, the decision of this Court in *Friends and Community of Ngawha Inc v Minister of Corrections*.<sup>48</sup>*

[1427] Applying the tests set out above, we are satisfied that, within the terms of s171(1)(b), adequate consideration has been given to alternative routes in this case.

### 13.2.2 Objectives of the Requiring Authority

[1428] We are required under the provisions of s171(1)(c) RMA to have particular regard to:

(c) *whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought.*

[1429] As noted by the Board in the TGP decision, the objectives identified by NZTA to be appropriate must fall within their statutory mandate.<sup>560</sup>

[1430] The relevant legislation is the Land Transport Management Act 2003 (LTMA), and in particular:

*“94 Objective of Agency*

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<sup>560</sup> *Final Report and Decision of the Board of Inquiry into the Transmission Gully Proposal*, EPA0175, June 2012

*The objective of the Agency is to undertake its functions in a way that contributes to an affordable, integrated, safe, responsive, and sustainable land transport system.*

95 *Functions of Agency*

(1) *The Agency has the following functions:*

(a) *to promote an affordable, integrated, safe, responsive, and sustainable land transport system:*

...

(c) *to manage the State highway system, including planning, funding, design, supervision, construction, and maintenance and operations, in accordance with this Act and the Government Roding Powers Act 1989.”*

[1431] Despite issue being taken by some submitters, and witnesses called on their behalf, we are satisfied that it cannot be disputed that the objectives set out above are ones which have been set or identified to enable NZTA to undertake its statutory function or roles.

[1432] s171, set out above, requires us to consider whether the work and the designation are reasonably necessary for achieving NZTA’s objectives. In the TGP decision,<sup>561</sup> the Board referred to the Environment Court authority of *Countdown Properties (Northlands) Ltd v Dunedin City Council*.<sup>562</sup> After noting that the common usage of the word ‘necessary’ implies that something may be essential, the Board noted that the High Court concurred with the Planning Tribunal finding that ‘necessary’ should be interpreted in relation to achieving the purpose of the Act and the functions of the local authorities identified in s32(2) RMA (now amended). The High Court held the word had a meaning similar to ‘expedient’ or ‘desirable’, rather than ‘essential’.

[1433] We concur, and like the Board in TGP, we propose to adopt a similar meaning of ‘necessary’ in this proceeding. s171(1)(c) is to be interpreted as that of NZTA seeking to undertake their statutory functions and exercising judgment and discretion in so doing. We agree with the following passage from TGP:

*“[104] Use of the term reasonably necessary (our emphasis) in s171(1)(c) indicates that something less than absolute necessity or essentiality is contemplated in application of the provision. In any event, the evidence of NZTA and PCC satisfied us that the construction of TGP was essential to achieve the objectives of the two authorities in this case and so would satisfy any higher test if*

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<sup>561</sup> *Final Report and Decision of the Board of Inquiry into the Transmission Gully Proposal*, EPA0175, June 2012, paragraph 103.

<sup>562</sup> *Countdown Properties (Northlands) Ltd v Dunedin City Council* [1994] NZRMA 145 (HC) at [103].

*we were found to be mistaken in our interpretation of the term reasonably necessary.”*

[1434] First, we agree with the first sentence cited above. Secondly, we would also be satisfied on the evidence before us in this matter that the construction of the project is essential to achieve the objectives of NZTA. So like TGP, the evidence would satisfy us of any higher test if the stronger meaning was given to ‘reasonably necessary’ in this section.

### 13.2.3 Modification

[1435] We have set out s149P RMA in section 4. Subsection (4)(b)(iii) allows us to modify the requirement, or to impose conditions as we think fit. s166 RMA provides that a designation is “a provision made in a district plan to give effect to a requirement made by a requiring authority”. Here, typically, the designation encompasses a physical footprint which has been shown in the plans of the requirement. A modification can, therefore, include a change to the footprint or boundary of the designation.

[1436] A minor modification of boundary was suggested by NZTA to increase the area of the Takamore cultural precinct so that it would enjoy greater protection. No-one opposed such a course. A similar minor boundary change was requested in relation to the property owned by Mr and Mrs Leonard-Taylor.

[1437] In neither case will the land be used for construction or operation of the expressway. There is no impact on adjoining land. In both cases we approve these minor modifications.

[1438] We note that additional properties that previously did not adjoin the designation now do so in the area of the Takamore Cultural Precinct. Given it is for cultural protection it will have no additional impact on their land or rights pertaining thereto. Two properties adjoin the designation in what was previously the Leonard-Taylor property. Given this property has been acquired by NZTA for hardship reasons, there will be no additional impact on those adjoining owners. This property has been acquired by NZTA.

[1439] NZTA sought an additional minor modification reducing the area of the designation within Queen Elizabeth Park adjoining Poplar Avenue. This did not impact on any other properties and we allow that minor modification.<sup>563</sup>

[1440] Appendix 6 contains maps delineating the modified boundaries of the designation in these areas.

[1441] However, an alternative layout put forward by WOO is a different matter altogether. On their behalf, Mr Mitchell submitted that this was a modification which easily sat within our power as set out above.

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<sup>563</sup> Goldie Rebuttal evidence, Annexure C.

[1442] The term 'modify' is not defined by the RMA, but the Environment Court has held:<sup>564</sup>

*“The power of the court to modify the requirement does not have any particular explicit limitations. I agree that in circumstances where new parties are involved then the power to modify could not encompass such substantive change. In Quay Property Management Limited v Transit New Zealand:*

*A “modification” is defined as “an act of making changes to something without altering its essential nature or character.”*

*With respect, I adopt that as an appropriate test in this case.”*

[1443] We concur. It is apparent to us that the low level bridge immediately south of the Te Moana interchange and the interchange design suggested by WOO goes much further than a modification. There is a significant change to the design. The NZTA proposal has Te Moana Road at grade. WOO propose closing parts of that road and relocating it to a roundabout to the south that would go over the expressway. The area immediately south of the interchange would become a low-level 600 metre piled bridge. We were only provided with a concept drawing of this proposal and shown a model. It is unclear to us from the evidence given on behalf of WOO whether or not their proposal could fit within the Project designation. On our assessment it appears unlikely. For these reasons, both the bridge and, in particular, the interchange, alter the essential nature and character of this portion of the designation. We do not consider the WOO proposal could be approved by us as a modification. However, there are other reasons for rejecting it, which appear in sections 10.3 and 10.9 of this report.

[1444] In section 12 of this decision we have identified and discussed a range of national, regional and district planning instruments. In various sections there is an extensive discussion as to the potential effects of the Project. We conclude the Project does not conflict with, or is in opposition to the outcomes sought by the instruments which we are required to have particular regard to, to the extent that would preclude confirmation of the NoR. The Project is consistent with many of the instruments in question. A number of non-statutory documents have been identified and considered. These could fall within s171(1)(i)(d) above. We are satisfied the Project is broadly consistent with those documents, to the extent to which they are relevant to our determination.

[1445] In terms of s171, we have considered the effects of the environment and as noted have particular regard to the matters set out in that section. We are satisfied the Project is in accord with the section.

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<sup>564</sup> *Hope t/a Victoria Lodge v Rotorua District Council* [2010] NZEnvC 7 at [40].

### 13.3 WAIVER OF THE OUTLINE PLAN

[1446] Pursuant to s149P(4)(c) we have the power to waive the requirement of an outline plan to be submitted under s176A.

[1447] We have considered NZTA's application for waiver. We are satisfied, having considered the vast bulk of material and information provided to us and the conditions in Volume 2 to approve such a waiver.

### 13.4 S104, 104B AND 104C RMA

#### *"104 Consideration of applications*

(1) *When considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to—*

*(a) any actual and potential effects on the environment of allowing the activity; and*

*(b) any relevant provisions of—*

*(i) a national environmental standard:*

*(ii) other regulations:*

*(iii) a national policy statement:*

*(iv) a New Zealand coastal policy statement:*

*(v) a regional policy statement or proposed regional policy statement:*

*(vi) a plan or proposed plan; and*

*(c) any other matter the consent authority considers relevant and reasonably necessary to determine the application.*

(2) *When forming an opinion for the purposes of subsection (1)(a), a consent authority may disregard an adverse effect of the activity on the environment if a national environmental standard or the plan permits an activity with that effect.*

(2B) *When considering a resource consent application for an activity in an area within the scope of a planning document, a consent authority must have regard to any resource management matters set out in that planning document.*

(2C) *Subsection (2B) applies until such time as the regional council, in the case of a consent authority that is a regional council, has completed its obligations in relation to its regional planning documents under section 93 of the Marine and Coastal Area (Takutai Moana) Act 2011.*

(3) *A consent authority must not,—*

...

*(c) grant a resource consent contrary to—*

- (i) section 107, 107A, or 217:*
- (ii) an Order in Council in force under section 152:*
- (iii) any regulations:*
- (iv) wāhi tapu conditions included in a customary marine title order or agreement:*
- (v) section 55(2) of the Marine and Coastal Area (Takutai Moana) Act 2011:*

...

*(5) A consent authority may grant a resource consent on the basis that the activity is a controlled activity, a restricted discretionary activity, a discretionary activity, or a non-complying activity, regardless of what type of activity the application was expressed to be for.*

*(6) A consent authority may decline an application for a resource consent on the grounds that it has inadequate information to determine the application.*

*(7) In making an assessment on the adequacy of the information, the consent authority must have regard to whether any request made of the applicant for further information or reports resulted in further information or any report being available.”*

[1448] In terms of s104B, a “bundling” approach has been adopted, and overall the Project has been treated as requiring regional resource consent on a discretionary activity basis. With the bundling approach, multiple (and sufficiently related) consent applications are assessed together, based on the most stringent activity status.

[1449] There is only one territorial authority resource consent, and this is also a discretionary activity.

[1450] s104B gives the Board discretion to grant or refuse consent applications and, if granting consent, to do impose conditions under s108, which it is unnecessary to set out.

[1451] We refer also to the matters set out in paragraph [1428].

[1452] We accept the submission from Mr Hassan that for a condition pursuant to s108 to be valid it must:

- i) be for resource management purposes and not for any ulterior purpose;

- ii) fairly and reasonably relate to the proposal which is the subject of the consent;
- iii) not be so unreasonable that no reasonable consent authority could have approved it; and
- iv) not involve an unlawful delegation of a consent authority's duties.<sup>565</sup>

[1453] The evidence makes it plain that NZTA sought as far as possible to avoid adverse effects in their route selection. This was particularly so in relation to the choice of route in the area of the Takamore Cultural precinct. Where adverse effects could not be avoided, NZTA has advanced a comprehensive package of mitigation proposals that have sought to remedy or mitigate those effects. The adequacy of that mitigation was, in our view, accepted by the majority of the relevant witnesses, and we consider the package to be extremely comprehensive and appropriate. We would note that in fact the conditions imposed could be said to be stringent.

## 13.5 S105 RMA

*“105 Matters relevant to certain applications*

- (1) *If an application is for a discharge permit or coastal permit to do something that would contravene section 15 or section 15B, the consent authority must, in addition to the matters in section 104(1), have regard to—*
  - (a) *the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and*
  - (b) *the applicant's reasons for the proposed choice; and*
  - (c) *any possible alternative methods of discharge, including discharge into any other receiving environment.*
- (2) *If an application is for a resource consent for a reclamation, the consent authority must, in addition to the matters in section 104(1), consider whether an esplanade reserve or esplanade strip is appropriate and, if so, impose a condition under section 108(2)(g) on the resource consent.”*

[1454] In relation to the matters set out in this section there is a comprehensive discussion on these matters in the relevant portions of section 10 of this report. We adopt the findings in those various sections with regard to the evidence on those matters.

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<sup>565</sup> *Newbury District Council v Secretary of State for the Environment* [1980] 1 All ER 731 (HL) expressly endorsed in the context of RMA in *Housing New Zealand v Waitakere City Council* [2001] NZRMA 202 (CA).

## 13.6 S107 RMA

[1455] We are required to have regard to the restriction on the granting of certain discharge permits that would contravene ss15 or 15A of the RMA. s107(1) of the RMA places restrictions on the granting of certain discharge permits. It is evident that the Project will not give rise to the effects listed in that section.

## 13.7 PART 2 RMA

[1456] We now turn to the preeminent considerations of Part 2 of the Act and the balancing of competing considerations.

### ***“Purpose and principles***

#### 5 *Purpose*

(1) *The purpose of this Act is to promote the sustainable management of natural and physical resources.*

(2) *In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—*

(a) *sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*

(b) *safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*

(c) *avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

#### 6 *Matters of national importance*

*In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:*

(a) *the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:*

(b) *the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:*

- (c) *the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:*
- (d) *the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:*
- (e) *the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:*
- (f) *the protection of historic heritage from inappropriate subdivision, use, and development:*
- (g) *the protection of protected customary rights.*

## 7 Other matters

*In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to—*

- (a) *kaitiakitanga:*
  - (aa) *the ethic of stewardship:*
  - (b) *the efficient use and development of natural and physical resources:*
    - (ba) *the efficiency of the end use of energy:*
  - (c) *the maintenance and enhancement of amenity values:*
  - (d) *intrinsic values of ecosystems:*
  - (e) *[Repealed]*
  - (f) *maintenance and enhancement of the quality of the environment:*
  - (g) *any finite characteristics of natural and physical resources:*
  - (h) *the protection of the habitat of trout and salmon:*
  - (i) *the effects of climate change:*
  - (j) *the benefits to be derived from the use and development of renewable energy.*

## 8 Treaty of Waitangi

*In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical*

*resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi)."*

- [1457] We are required to apply ss104 and 171. However, both sections are subject to Part 2 of the Act, and in the event of conflict, the Part 2 considerations will override the ss104 and 171 considerations.
- [1458] The Part 2 considerations involve a balancing between considerations. Often these are competing considerations. There can be, and indeed in this case there are, tensions between cultural, social and economic wellbeing. Economic and social benefit may be achieved, but at a cultural cost. Of course, the reverse can also apply. There is also obviously competition between the various matters set out in ss6 and 7.
- [1459] The balancing act required has been considered in a number of decisions. First, in *New Zealand Rail Ltd v Marlborough District Council*, Greig J stated:<sup>566</sup>

*"Inappropriate" has a wider connotation in the sense that in the overall scale there is likely to be a broader range of things, including developments which can be said to be inappropriate, compared to those which are said to be reasonably necessary. It is, however, a question of inappropriateness to be decided on a case by case basis in the circumstances of the particular case. It is "inappropriate" from the point of view of the preservation of natural character in order to achieve the promotion of sustainable management as a matter of national importance. It is, however, only one of the matters of national importance, and indeed other matters have to be taken into account. It is certainly not the case that the preservation of the natural character is to be achieved at all costs. The achievement which is to be promoted is sustainable management and questions of national importance, national value and benefit, and national needs, must all play their part in the overall consideration and decision.*

*This Part of the Act expresses in ordinary words of wide meaning the overall purpose and principles of the Act. It is not, I think, a part of the Act which should be subjected to strict rules and principles of statutory construction which aim to extract a precise and unique meaning from the words used. There is a deliberate openness about the language, its meanings and its connotations which I think is intended to allow the application of policy in a general and broad way. Indeed, it is for that purpose that the Planning Tribunal, with special expertise and skills, is established and appointed to oversee and to promote the objectives and the policies and the principles under the Act."*

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<sup>566</sup> *New Zealand Rail Ltd v Marlborough District Council* [1994] NZRMA 70 (HC), paragraphs 85-86.

[1460] In *Ngati Ruahine v Bay of Plenty Regional Council*, Priestley J stated:<sup>567</sup>

*“Turning to Part 2 of the Act, Mr McCarthy submitted that although the Environment Court was obliged to weigh the relevant factors to which that Part applied, the tangata whenua did not have a veto right. Sections 6, 7, and 8 of the Act were all prefaced with the words “in achieving the purpose of this Act”. That purpose is found in s 5. In carrying out the purpose of the Act to promote sustainable management of natural and physical resources, a Court had to reach a balanced result, having considered and weighed relevant Part 2 factors. I accept this submission. **The job of the Environment Court involves exercising a broad evaluative judgment on whether a proposal promotes sustainable management of natural and physical resources. The judgment involves weighing competing considerations.** (our emphasis)”*

[1461] So in this report, we have considered the obligatory matters in ss104 and 171 and in section 13.1 have made factual findings that will allow us to carry out the weighing of competing considerations.

[1462] Our overall conclusions on Part 2 considerations are set out at the end of this section following our evaluation on ss6, 7 and 8 matters. In addition to the matters stated hereunder, we have also taken into account all of the findings in section 10 and section 13.1.

#### **s6 RMA**

[1463] We have decided that we do not need to determine whether the expressway is within the coastal environment or not. In any case, the key effect from the construction and operation of the expressway stems from sediments generated by construction related activities which might ultimately enter the receiving coastal marine area via streams and river sources. With the erosion and sediment control measures contained in the conditions we are satisfied that there will be no adverse effects on the marine area including its ecology.

[1464] While there will be adverse effects on a number of rivers, streams, waterways and wetlands, we are satisfied that the conditions will adequately mitigate these effects and that the proposed package of mitigation measures will achieve a net gain in freshwater ecology.

[1465] The only outstanding natural feature affected by the Project is in the area of the Waikanae River and we are satisfied that the effects on this have been adequately considered and acceptable mitigation provided for in the conditions.

[1466] No areas of significant indigenous vegetation will be affected by the Project and there are no significant habitats of indigenous fauna. Some areas of indigenous vegetation growth will be destroyed. There is one threatened

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<sup>567</sup> *Ngati Ruahine v Bay of Plenty Regional Council* [2012] NZHC 2407, paragraph 55.

species known to be present on or near the site. Potentially, there are unidentified smaller organisms of unknown significance which could be destroyed. We are satisfied that the comprehensive ecological mitigation package contained in the conditions will protect the wider habitat, replace indigenous vegetation and adequately mitigate adverse effects. There will be an overall net gain in terrestrial ecology.

- [1467] The Project will provide improved walking, cycling and bridleway facilities. It will not affect public access to and along the coastal marine area, streams or rivers.
- [1468] As we have set out in Section 10.17, all practicable steps have been undertaken to lessen or reduce impact of the Project on the Takamore Cultural Precinct. We have imposed consent conditions that require cultural monitoring (landscape, ecology and archaeology), the requirement for ADP to be adhered to, and the implementation of protocols for engagement with Te Āti Awa ki Whakarongotai and the Takamore Trust through relationship agreements.
- [1469] We acknowledge that there will be physical and metaphysical adverse effects on this cultural resource. On the evidence we have heard, we are satisfied that avoidance to the extent practicable has been achieved and mitigation adequately recognises and provides for the relationship of Māori with their ancestral lands, sites, wāhi tapu and other taonga.
- [1470] The only two heritage structures that are potentially affected by the Project are the former St Luke's Church at El Rancho and the Greenaway Homestead. It is NZHPT's advice, which we accept, that any adverse effects on these two buildings will be adequately mitigated by the measures provided for in the conditions.
- [1471] We do not consider that the Project runs counter to the provisions of s6 RMA.

## **S7 RMA**

- [1472] In Section 10.17 we set out our findings on s7(a) matters. Given the importance we attach to these, they are repeated here in full:

*"[1108] s7(a) RMA requires us to have particular regard to kaitiakitanga . NZTA has acknowledged Te Āti Awa ki Whakarongotai as the kaitiaki of the Project area and the wider takiwa. NZTA also acknowledges Takamore Trust as the kaitiaki of the Takamore cultural precinct.*

*[1109] As has been evidenced, Te Ati Awa ki Whakarongotai and the Takamore Trust have been engaged during the development of the route options for Project; the development of proposed designation and resource consent conditions; and would continue to be involved in the development of management plans affecting the*

*natural resources of concern to them via the conditions which will apply to the designation.*

*[1110] The commissioning of cultural impact assessments from both Te Ati Awa ki Whakarongotai and Takamore Trust has been in recognition of their positions as kaitiaki in the Kapiti Coast takiwa and the Takamore cultural precinct respectively.*

*[1111] We find the Project has met the requirements of s7(a) of the RMA."*

- [1473] The conditions provide for extensive community communications and impact monitoring during the construction of the project. They include for the preparation and implementation of a stakeholder communications and management plan, the establishment of community liaison groups, (one for each of the northern and southern areas of the project), and neighbourhood impact fora for Makarini Street and Leinster Avenue with additional fora to be established if KCDC considers these to be necessary. These provisions satisfy the requirements for the Project to have particular regard to the ethic of stewardship.
- [1474] Traffic using the existing SH1 is subject to congestion, poor accessibility and many delays from accidents. All of these will be reduced by the expressway with the consequence of more efficient use of natural and physical resources over the life of the Project.
- [1475] There will be adverse effects on the amenity values of many of Kāpiti residents during both the construction and operation of the expressway. Key amongst these will be noise, vibration, landscape and visual impacts, social impacts, and public health. While most of these effects cannot be avoided, we have found that with the measures contained within the conditions, they will be mitigated to acceptable levels.
- [1476] The effects of the Project on the intrinsic values of ecosystems will be adequately mitigated through the measures proposed in the conditions.
- [1477] Some aspects of the environment will not be maintained or enhanced by the Project. These include for example the area where the expressway crosses the Waikanae River. Where there are adverse effects on the environment, we are satisfied that these have been mitigated through the extensive suite of mitigation measures contained in the conditions. However, overall there will be environmental enhancement.
- [1478] The planning and design of the expressway has had particular regard to, and taken adequate consideration of, the potential effects of climate change.
- [1479] We do not consider that the Project runs counter to the provisions of s7 RMA.

**s8 RMA**

[1480] As for s7(a) matters, we repeat here in full our findings on s8 matters (as set out in Section 10.17):

*“[1112] s8 RMA requires us to take into account the principles of Te Tiriti o Waitangi (the Treaty of Waitangi). The principles of the Treaty include: a duty to act in good faith; duty to make informed decisions through consultation; principles of redress and a duty not to create grievances; principle of reciprocity; and the principle of mutual benefit.*

*[1113] Mr Ngaia when cross examined by Counsel agreed to those principles as being appropriate in that: mitigation should be informed through consultation and engagement.<sup>568</sup> He accepted that mitigation should focus on the Project’s construction and what it disturbs or desecrates (in this case the Takamore cultural precinct),<sup>569</sup> it should acknowledge the mauri of the area, and focus on at least mitigating what the Project takes from the integrity of the mauri or the spiritual values of the area;<sup>570</sup> mitigation should reflect Treaty principles; it should acknowledge and respect the kaitiaki role of the Takamore Trust; and it should recognise the principle of reciprocity.<sup>571</sup>*

*[1114] Tangata whenua in their evidence commented on the high level of consultation and engagement with NZTA, We consider the consultation that has been undertaken to be extensive and meaningful and in terms of the conditions we have imposed, this will continue. We are also satisfied that the mitigation and conditions will also assist in achieving the Treaty obligations inherent in section 8. Overall we are satisfied that these obligations are met.*

*[1115] We accept the cultural concerns put forward by Te Āti Awa ki Whakarongotai and the Takamore Trust. It is our finding in this case that the cultural effects are finely balanced. Having considered the evidence and submissions and having applied the overall balancing exercise required by Part 2 (as set out below) it is our view that subject to conditions, the cultural dimension will be appropriately accommodated and provided for as part of the Project. We come to this overall finding in the knowledge of the consultation and mitigation efforts to reduce as far as practicable the severity of adverse effects on cultural*

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<sup>568</sup> Hearing transcript, page 783.

<sup>569</sup> Hearing transcript, page 783.

<sup>570</sup> Hearing transcript, page 783 (note transcript typographical error: Maori should read mauri in both places).

<sup>571</sup> Hearing transcript, page 784.

*values. It is also our view that the mitigation that is to be secured via conditions (refer to cultural, ecology, landscape, archaeology) will result in a number of positive outcomes which are in our view significant in themselves.”*

[1481] We repeat that we are satisfied that the obligations set out in s8 have been met.

## **13.8 CONCLUSION ON PART 2 CONSIDERATIONS**

[1482] We have been informed by, considered and applied Part 2 matters throughout the various sections of this report. For the reasons there given, we do not consider the Project runs counter to any of the provisions of ss6, 7 and 8 of Part 2.

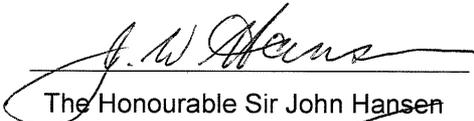
[1483] We have noted in the Cultural section that issues relating to the Takamore Trust and the Takamore Precinct were finely balanced. However, standing back and applying the overall evaluative balancing act as required by Part 2 and the authorities cited, we are more than satisfied that the Project meets the requirements of Part 2. We are satisfied that approval of the notice of requirement and resource consents on the basis of that evaluative balancing will promote the sustainable management of natural and physical resources. The expressway, and associated roading matters, will introduce a safer, more resilient route for SH1 which will enable people in communities to provide for their social and economic wellbeing, and for their health and safety. While accepting that there are a number of adverse effects and the scale of those effects, we are satisfied, they do not outweigh the benefits identified. The Project has avoided adverse effects on the environment to the greatest extent possible. Where such avoidance is not possible, remedial or mitigatory measures proposed are appropriate, and in a number of instances will constitute environmental gain.



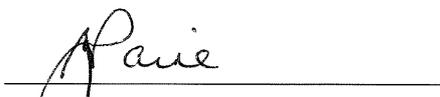
## 14. DECISION

[1516] We confirm the notice of requirement sought by NZTA and grant the resource consents subject to the imposition of conditions contained in Volume 2.

Dated this 1st day of March 2013

  
The Honourable Sir John Hansen  
(Chairperson)

  
Environment Commissioner David  
Bunting

  
Glenice Paine

  
Mark Apeldoorn



## **APPENDIX 1: GLOSSARY OF TERMS**



## Glossary of terms

Abbreviation	Meaning
ADP	Accidental Discovery Protocol
AEE	Assessment of Environmental Effects
APSOC	Action to Protect and Sustain our Communities
AQNES	Air Quality National Environmental Standards
BCR	Benefit Cost Ratio
BOI	Board of Inquiry
BPO	Best Practicable Option
CAQMP	Construction Air Quality Management Plan
CEMP	Construction Environmental Management Plan
CIA	Cultural Impact Assessment
CNVMP	Construction Noise and Vibration Management Plan
CPTED	Crime Prevention Through Environmental Design
CSGMP	Contaminated Soils and Groundwater Management Plan
CSMPHH	Contaminated Soils Management Plan (Human Health)
CTMP	Construction Traffic Management Plan
CWB	Cycle, Walking and Bridleway
dB	Decibel (measurement of noise)
DOC	Department of Conservation
ECR	Environmental Compensation Ratio
EEM	Economic Evaluation Manual
EiC	Evidence in Chief
EMP	Ecological Management Plan
EPA	Environmental Protection Authority
ESCP	Erosion and Sediment Control Management Plan
GMP	Groundwater Management Plan
GPS	Government Policy Statement
GWRC	Greater Wellington Regional Council
HIA	Health Impact Assessment
HPA	Historic Places Act
IEEM	Institute of Ecology and Environmental Management
KCAH	Kāpiti Coast Airport Holdings

KCDC	Kāpiti Coast District Council
KCDP	Kāpiti Coast Plan
LAR	Limited Access Road
LTMA	Land Transport Management Act
MCA	Multi Criteria Analysis
MoC / MoA	Memorandum of Counsel / Memorandum of Agreement
MoH	Ministry of Health
MoU	Memorandum of Understanding
NIMT	North Island Main Trunk
NIMTR	North Island Main Trunk Railway
NIP	Network Integration Plan
NoR	Notice of Requirement
NZCPS	New Zealand Coastal Policy Statement
NZHPT	New Zealand Historic Places Trust
NZS	New Zealand Standard
NZTA	New Zealand Transport Agency
OGPA	Open Graded Porous Asphalt
PCC	Porirua City Council
PPF	Protected Premises and Facilities
RCA	Road Controlling Authority
RL	Reduced Level
RMA	Resource Management Act
RoNS	Road of National Significance
RPS	Regional Policy Statement
RSRA	Raumati South Residents' Association
s and ss	Section and Sections
SCBA	Social Cost Benefit Analysis
SCMP	Stakeholder and Communication Management Plan
SH1	State Highway One
SSCNMP	Site Specific Construction Noise Management Plans
SSCVMP	Site Specific Construction Vibration Management Plans
SSTMP	Site Specific Traffic Management Plan
SSUDP	Site Specific Urban Design Plan
TGP	Transmission Gully Project

the Alliance	Collaboration of NZTA, Beca, Fletcher Construction, Higgins Group and Kāpiti Coast District Council, supported by Goodmans Contractors, Incite and Boffa Miskell, to design and deliver the Project
the Project	NZTA's proposal to designate land and obtain resource consents to construct, operate and maintain a section of road between MacKays Crossing and Peka Peka, on the Kāpiti Coast. The road will be constructed to expressway standards, and become part of State Highway 1
TR	Technical Report
WHO	World Health Organisation
WLR	Western Link Route or Road
WOO	Waikanae on One



## **APPENDIX 2: PROJECT APPLICATION DOCUMENTATION**



## Project documentation

The project application documentation comprised a suite of five volumes as set out below -.

- Volume 1: Resource Management Act 1991 forms;
- Volume 2: Assessment of Environmental Effects report;
- Volume 3: Technical reports and supporting documents;
- Volume 4: Management Plans;
- Volume 5: Plan Set.

Thirty-six technical reports (TR) were included in Volume 3. These were:

- TR1: Design Philosophy Statement;
- TR2: Analysis of Policy Framework Objectives and Policies;
- TR3: Consultation Summary Report;
- TR4: Construction Methodology Report;
- TR5: Urban and Landscape Design Framework [contained with Volume 5];
- TR6: Assessment of Urban Planning and Design Effects;
- TR7: Assessment of Landscape and Visual Effects;
- TR8: Assessment of Lighting Effects;
- TR9: Archaeological Scoping Report;
- TR10: Assessment of Built Heritage Effects;
- TR11: The Takamore Trust Cultural Impact Assessment;
- TR12: Te Runanga o Āti Awa ki Whakarongotai Inc Cultural Impact Assessment;
- TR13: Assessment of Operational Air Quality Effects;
- TR14: Assessment of Construction Air Quality Effects;
- TR15: Assessment of Traffic Noise Effects;
- TR16: Assessment of Construction Noise Effects;
- TR17: Pre-Construction Noise Level Survey;
- TR18: Assessment of Vibration Effects;
- TR19: Ambient Vibration Assessment Report;
- TR20: Assessment of Social Effects;
- TR21: Assessment of Groundwater Effects;
- TR22: Assessment of Hydrology and Stormwater Effects;
- TR23: Assessment of Land and Groundwater Contamination Effects;
- TR24: Baseline Water and Sediment Quality Investigation Report;
- TR25: Contaminant Load Assessment;
- TR26: Ecological Impact Assessment;

- TR27: Ecological Technical Report 1: Terrestrial Vegetation and Habitats (including Wetlands);
- TR28: Ecological Technical Report 2: Herpetofauna;
- TR29: Ecological Technical Report 3: Avifauna Studies – Description and Values;
- TR30: Ecological Technical Report 4: Freshwater Habitat and Species - Description and Values;
- TR31: Ecological Technical Report 5: Marine Habitat and Species – Description and Values;
- TR32: Assessment of Transport Effects;
- TR33: Assessment of Temporary Traffic Effects;
- TR34: Traffic Modelling Report;
- TR35: Assessment of Ground Settlement Effects;
- TR36: Geotechnical Interpretive Report.

The following Draft Management Plans were included in Volume 4:

- CEMP: Construction Environmental Management Plan;
- Appendix A: Resource Consent and Designation Conditions;
- Appendix B: NZTA Environmental Objectives;
- Appendix C: Environmental Maps;
- Appendix D: Environmental Risk Register;
- Appendix E: Environmental Risk Assessment Procedures;
- Appendix F: Construction Noise and Vibration Management Plan;
- Appendix G: Construction Air Quality Management Plan;
- Appendix H: Erosion and Sediment Control Plan;
- Appendix I: Groundwater (Level) Management Plan;
- Appendix J: Settlement Effects Management Plan;
- Appendix K: Contaminated Soils and Groundwater Management Plan;
- Appendix L: Hazardous Substances Management Plan;
- Appendix M: Ecological Management Plan;
- Appendix N: Resource Efficiency and Waste Management Plan;
- Appendix O: Construction Traffic Management Plan;
- Appendix P: Example Environmental Incident Form;
- Appendix Q: Example Environmental Complaint Form;
- Appendix R: Environmental Monitoring Requirements;
- Appendix S: Stakeholder Communication Management Plan;
- Appendix T: Landscape Management Plan.

## **APPENDIX 3: PARTIES WHO FILED EVIDENCE**



## Parties who provided evidence

The following parties presented evidence at the hearing:

**Applicant - NZTA** (represented by Mr John Hassan and Ms Suzanne Janissen) provided evidence from:

Name	Topic
Mr Rod James	State Highways Manager, NZTA
Mr Andrew Quinn	Project Manager, NZTA
Dr Jim Bentley	Alliance Manager
Mr Noel Nancekivell	Design
Mr Andrew Goldie	Construction Manager
Ms Jane Black	Consultation
Mr Andrew Murray	Traffic/Transportation
Mr Stephen Hewett	Construction Traffic
Mr Amos Kamo	Cultural/Heritage assessment
Ms Mary O'Keeffe	Archaeology
Mr Ian Bowman	Heritage (Did not appear at the hearing)
Mr Keith Gibson	Lighting (Did not appear at the hearing)
Ms Siiri Wilkening	Construction and Operational Noise
Mr James Whitlock	Vibration
Mr Marc Baily	Urban Planning
Mr Kevin Brewer	Urban Design
Mr Boyden Evans	Landscape, visual design
Ms Camilla Borger	Air quality
Dr Kerry Laing	Contaminated land and groundwater (Did not appear at the hearing)
Mr Gavin Alexander	Ground settlement
Mr Graeme Ridley	Erosion and sediment control
Ms Ann Williams	Groundwater
Mr Graeme Levy	Hydrology
Dr Vaughan Keesing	Freshwater ecology
Dr Leigh Bull	Avifauna
Mr Matiu Park	Terrestrial ecology and herpetofauna
Dr Sharon DeLuca	Marine ecology (Did not appear at the hearing)
Mr Stephen Fuller	Ecological mitigation (Did not appear at the hearing)
Ms Julie Meade Rose	Social Impact

Dr David Black	Public health
Mr Craig Nicholson	Project management services manager
Mr Mike Copeland	Economics
Mr Robert Schofield	Planning

**Parties** – the following parties filed evidence from:

Submitter Name	Represented by	Witness	Topic
Transpower NZ Ltd (178)	Brian Warburton	Mr Brian Warburton (Did not appear at the hearing)	Planning
Miss Wendy Eleanor Batterbee (223)	self	Ms Wendy Eleanor Batterbee	General
Fourways Enterprises Ltd (230)	Mr Russel Walker and Ms Sandra Walker	Mr Russell Walker & Ms Sandra Walker (Did not appear at the hearing)	General
Dr Christopher William and Mrs Monica Dearden (261)	self	Dr Christopher Dearden & Mrs Monica Dearden	General
		Dr Helen Rutter	Stormwater
Ms Hariata Mei Higgott (297)	self	Hariata Mei Higgott	Cultural
Ms Loretta Anne Pomare (309)	self	Loretta Pomare	General
		Ms Paula Warren	Ecology
		Mr John Christopher Horne (Did not appear at the hearing)	General
Mr Neil Saxby & Ms Barbara Breta Mountier (327)	self	Mr Neil Saxby & Ms Barbara Mountier	General
Ms Elizabeth Ann Laing (337)	self	Mr Philip Nordberg	General
Public Transport Voice (441)	Mr Gregory Bodnar & Ms Paula Warren (Joint representation with 503 & 611)	Mr Gregory Bodnar	General
Living Streets of Aotearoa, Wellington (503)	Ms Paula Warren and Mr Gregory Bodnar (Joint representation with 441 & 611)	Mr Michael Mellor (Did not appear at the hearing)	General
Save Kāpiti Incorporated (505)	Mr Richard Fowler	Mr James Lunday	Urban Design
		Mr Graeme McIndoe	Urban Design
		Dr Hugh Edward Cherrill	Groundwater
		Ms Dianne Buchan	Social Impact Assessment
		Dr Michael Pickford	Economics

Submitter Name	Represented by	Witness	Topic
		Mr Maxwell Dunn	Planning
		Mr Adam Pekol	Traffic/ Transportation
Waikanae on One (514)	Mr Chris Mitchell	Ms Sue Smith	Visual/ landscape
		Mr Aldous MacIvor	General
		Mr David Roil	Geology
Kāpiti Coast Airport Limited (525)	Ms Sue Simons	Mr Tim Kelly	Traffic/ Transportation
		Mr Fraser Colegrave (Did not appear at the hearing)	Economics
		Sir Noel Robinson (Did not appear at the hearing)	General
Highway Occupants Group (542)	Mr Graham C T Bathgate	Ms Sarah Lindsay	Urban Design
		Ms Beth Lindsay	General
Rational Transport Society (611)	Mr Gregory Bodnar & Ms Paula Warren (Joint representation with 441 & 503)	Mr Kent Duston (Did not appear at the hearing)	General
Te Āti Awa/Ngati Awa ki Waikanae nga Iwi (625)	Ms Ani Parata	Ms Ani Parata	General
St Heliers Capital Limited (644)	Ms Joanna van der Bergen	Mr Pranil Wadan (Did not appear at the hearing)	Stormwater
		Mr Vinod Chand (Did not appear at the hearing)	Stormwater
		Mr Gerald Thompson (Did not appear at the hearing)	Planning
		Mr Gregory Martin Oliver (Did not appear at the hearing)	General
NZ Historic Places Trust (647)	Ms Aleyna Hall	Kathryn Hurren	Archaeology
		Te Kenehi Teira	Culture/heritage
		Ms Sacha Walters	Planning
Mr Brent Mckay & Ms Tordis Flath (654)	self	Mr Grant Birkenshaw	Planning
Ms Bianca Dragica Begovich (669)	self	Ms Bianca Dragica Begovich	Sustainability
Mr Brendon (Bos) Francis O'Sullivan (674)	self	Mr Brendon O'Sullivan	General
Action to Protect and Sustain our Communities	Dr Marie O'Sullivan	Ms Julie-Anne Genter MP	Transportation Economics & Planning

Submitter Name	Represented by	Witness	Topic
(APSOC) (677)		Paul Bruce	Weather patterns & air particulate pollution levels
		Dr Mary McIntyre	Mosquitoes, public health & social effects
		Dr Marie O'Sullivan	Public health & social effects
		Research Associate Professor Simon Hales	Air pollution & social effects
		Dr Lisa Wildmo-Seerup	Noise & hearing loss
Kāpiti Coast District Council (KCDC) (682)	Mr Matt Conway	Mr Malcolm Hunt	Noise & vibration
		Mr Ian Munro	Urban Design
		Ms Julia Williams	Visual & Landscape
		Mr Brad Coombs	Coastal Environment
		Mr Brydon Hughes	Groundwater
		Mr Robert van Bentum	Stormwater and sediment control
		Mr Travis Wood	Council Water Supply
		Associate Professor Russel Death	Freshwater Ecology
		Ms Shona Myers	Terrestrial Ecology
		Ms Mary-Jane Rivers	Social effects
		Ms Emily Thomson	Planning
Mr Don Wignall	Traffic/ Transportation		
Ms Helene Donaldson (683)	self	Ms Helene Donaldson	General
Greater Wellington Regional Council (GWRC) (684)	Ms Kerry Anderson	Mr Brian Handyside	Sediment
		Mr Tim Porteous	Biodiversity
		Dr Ian Boothroyd	Stream ecological valuation
		Dr Wayne Hastie	Traffic/ Transportation
		Mr Tim Kelly	Traffic/ Transportation
		Ms Sharon Lee (Did not appear at the hearing)	Parks

Submitter Name	Represented by	Witness	Topic
		Mr Alton Perrie (Did not appear at the hearing)	Ecology
		Mr Peter Callendar (Did not appear at the hearing)	Groundwater and hydrology
		Ms Sharyn Westlake (Did not appear at the hearing)	Flood protection
		Mr Richard Percy	Planning
Professor Martin Richard Manning (687)	self	Professor Martin Manning	Climate Change
Takamore Trust (703)	Mr Leo Watson	Mr Benjamin Ngaia	Culture
		Ms Patricia Grace	Culture
Raumati South Residents' Association Inc (RSRA) (707)	Mr Tom Bennion	Ms Mary Campbell-Cree	General
		Ms Jayne Staple	General
		Ms Melanie Dixon	Ecology

**Board – Expert witnesses who appeared for the Board:**

Mr John Kyle, Mitchell Partnerships appeared as writer of the s42A independent planning report.



**APPENDIX 4: PARTIES WHO MADE  
REPRESENTATIONS**



## Representations

151 submitters made representations speaking to their submissions at the hearing. These submitters have been categorised into the following groups:

1. Local Authorities and Government
2. Businesses and Business Groups;
3. Community and interest groups;
4. Iwi Groups; and
5. Individual submitters;

Five Local Authorities and Government groups made representations (submitter number shown in brackets):

1. Implementation Group of the Kāpiti Coast District Council Advisory on Cycleways, Walkways and Bridleways (485)
2. NZ Historic Places Trust (647)
3. Kāpiti Coast District Council (KCDC) (682)
4. Wellington Regional Council (GWRC) (684)
5. Porirua City Council (694)

12 Businesses and Business Groups made representations:

1. NZ Contractors Federation (29)
2. Road Transport Forum NZ (60)
3. Marico Marine NZ (92)
4. The Trustees of the Arthur Bills Resettlement Trust (property owner) and Directors of Harrison's Country Gardenworld Ltd (tenant) (243)
5. Automobile Association Wellington District (AA) (266)
6. Te Ra School (340)
7. Waikanae Christian Holiday Park Inc. (477)
8. Paraparaumu Medical Centre (521)
9. Kāpiti Coast Airport Holdings Limited (525)
10. St Heliers Capital Limited (644)
11. Kāpiti Coast Chamber of Commerce (665)
12. Lorax Partnership (730)

16 Community and interest groups made representations:

1. Friends of the Waikanae River Inc. (59)
2. Nga Manu Nature Reserve (90)
3. Public Transport Voice (441)
4. Smart Transport Network (484)
5. Living Streets of Aotearoa - Wellington (503)
6. Save Kāpiti Incorporated (505)
7. Waikanae on One (514)

8. Generation Zero (537)
9. Highway Occupants Group (542)
10. Alliance for a Sustainable Kāpiti Inc (572)
11. Friends of the Wharemauku Stream (580)
12. Kāpiti Cycling Incorporated (601)
13. Rational Transport Society (611)
14. Kāpiti Coast Grey Power Association Inc. (624)
15. Action to Protect and Sustain our Communities (APSOC) (677)
16. Raumati South Residents' Association Inc (RSRA) (707)

Three Iwi Groups made representations:

1. Te Āti Awa/Ngati Awa ki Waikanae nga Iwi & Ms Gabrielle Rikihana (625)
2. Takamore Trust (703)
3. Te Āti Awa ki Whakarongotai Charitable Trust (708)

115 submitters made representations:

1. Mr Peter and Mrs Mary-Anne Smith (11)
2. Ms Jean Murray (13)
3. Mr C. T. Brown (17)
4. Mrs E. M. Brown (18)
5. Ms Ruth McKenzie (46)
6. Ms Amanda Hager and Mr Brian Laird (56)
7. Dr Robin Falconer (71)
8. Ms Dinah Hawken (72)
9. Ms Vicki Schleider Bunch (124)
10. Mr Jeff Wastney (154)
11. Mr Robert and Mrs Christine McGechan (161)
12. Mr Krzysztof Zajackowski and Ms Aleka Beaumont (172)
13. Mr David John Hare (207)
14. Miss Marie Hare (209)
15. Miss Wendy Eleanor Batterbee (223)
16. Mr Lennard James and Mrs Pamela Elaine Tong (228)
17. Mr William Mansfield (251)
18. Mr Nigel White (255)
19. Dr Christopher William and Mrs Monica Dearden (261)
20. Dr Sabien van Riessen (265)
21. Mr Ruben Blok (268)
22. Mr Michael Hanbury-Sparrow (287)
23. Mr David Swann (291)
24. Dr Joy Anderton and Ms Jill Abigail (293)
25. Ms Hariata Mei Higgott (297)

26. Ms Loretta Anne Pomare (309)
27. Mrs Linda Caroline Schager (312)
28. Mr Neil Saxby & Ms Barbara Breta Mountier (327)
29. Mrs Prue Sisarich (328)
30. Ms Christine Cecil Lenk (329)
31. Mr Warren David Sisarich (331)
32. Mr Warren & Mrs Prue Sisarich (332)
33. Ms Elizabeth Ann Laing (337)
34. Mr John Downie (346)
35. Mr Alan Roy & Mrs Ann Margaret Parsonnage (347)
36. Ms Marion Isabel Sherley (350)
37. Mr Kevin H Henderson (351)
38. Mrs Petra Aregger (382)
39. Mrs Rachel Mackay (404)
40. Mr John Wraight (409)
41. Mr Anthony Britton (423)
42. Mrs Michelle Lewis (427)
43. Mr Ian Michel Bagshaw (431)
44. Mrs Elizabeth and Mr Brent Waterhouse (432)
45. Mrs Amanda Raymond (456)
46. Mr David Groves (461)
47. Mr Kane Joseph and Mrs Mary Ann Pomare (465)
48. Mr Wilson Edward and Mrs Deborah Mary Lattey (466)
49. Mr Christopher Glover (471)
50. Mr Ian G Jensen (472)
51. Dr Dennis Page (473)
52. Mr Quentin Haines (476)
53. Mr Jonathan Paul Gradwell (481)
54. Ms Karen Whibley (482)
55. Dr Viola Palmer (486)
56. Mr Brent Hume Cherry (492)
57. Mr Nigel Wilson (499)
58. Ms Paula Keene (516)
59. Miss Lisa White (522)
60. Mr Gary Peter Allen (523)
61. Dr Janet Weber (529)
62. Mr Wayne Hamilton (532)
63. Mr Michael and Mrs Queenie Hyland (533)
64. Dr Rochelle J Wilson (545)
65. Mr Reece Baker (549)
66. Miss Kimbra Taylor (552)

67. Ms Sandy Houston and Mr Rod Lord (566)
68. Ms Judy Frost-Evans (568)
69. Miss Susanne Hurst (571)
70. Mr Jake and Dr Rebekah Roos (586)
71. Miss Nicki Young (590)
72. Mrs Elizabeth Jane Leonard-Taylor (594)
73. Mr John Harding (595)
74. Mr Kath Saint (607)
75. Mr Nick Fisher (610)
76. Ms Tink Stephenson (613)
77. Ms Diane Connal (616)
78. Mr John & Mrs Diane Baldwin (617)
79. Mr Neville Graham Alexander & Ms Rosemary Anne Neilson (619)
80. Ms Beth Lindsay (622)
81. Dr Adele Cherrill (630)
82. Mr Kevin Gardner (634)
83. Ms Jan Lattie (641)
84. Mr Stafford Robert Coombe (645)
85. Ms Jan Nisbet (649)
86. Mr Brent Mckay & Ms Tordis Flath (654)
87. Ms Anna Carter (656)
88. Mr Christopher John Benge (659)
89. Mr Brian Karl & Ms Robyn Usmar (660)
90. Mr Gerhard Pallo (661)
91. Ms Nicky Beechey (663)
92. Mr Mercia & Mrs Bernadette Clarke (667)
93. Ms Bianca Dragica Begovich (669)
94. Ms Ellen Dale Hinkley (673)
95. Mr Brendon (Bos) Francis O'Sullivan (674)
96. Dr Marie Therese O'Sullivan (675)
97. Mr Martin Craig & Ms Jennifer Ann Anderson (678)
98. Mr Glen Raymond Hooker (680)
99. Ms Helene Donaldson (683)
100. Dr Martin Richard Manning (687)
101. Mr James Chappèll (691)
102. Mrs Donna & Mr John Peters (693)
103. Mr Jon Marten Nicholas Kooij (697)
104. Mrs Errolyn Jones (709)
105. Mr Dominic Saint (710)
106. Mrs Jocelyn Thornton (711)
107. Mr Mark & Mrs Julia Harris (713)

- 108. Mrs Jocelyn Prvanov (716)
- 109. Mr Derek Schulz (718)
- 110. Mr Howard Farr (727)
- 111. Ms Joy Maree Svendsen (733)
- 112. Mrs Jenny Scott (735)
- 113. Ms Elaine Engman (736)
- 114. Mr John Axe (741)
- 115. Ms Jill Short (742)



**APPENDIX 5: MAP OF ALTERNATIVE ROUTE  
ALIGNMENTS CONSIDERED**





**LEGEND:**

-  M2PP PROPOSED EXPRESSWAY ALIGNMENT
-  M2PP PROPOSED EXPRESSWAY DESIGNATION
-  WESTERN LINK ROAD DESIGNATION
-  EXISTING STATE HIGHWAY 1
-  EXISTING RAILWAY (NMITL)
-  NZTA ALTERNATIVE ROUTE ALIGNMENTS CONSIDERED
-  ROUTE 1 - WESTERN LINK
-  ROUTE 2 - WESTERN OPTION
-  ROUTE 3 - EASTERN OPTION
-  ROUTE 4 - STATE HIGHWAY
-  DASHED LINE = 100m DESIGNATION

SCALE: 1:20,000 (A1) 1:40,000 (A3)





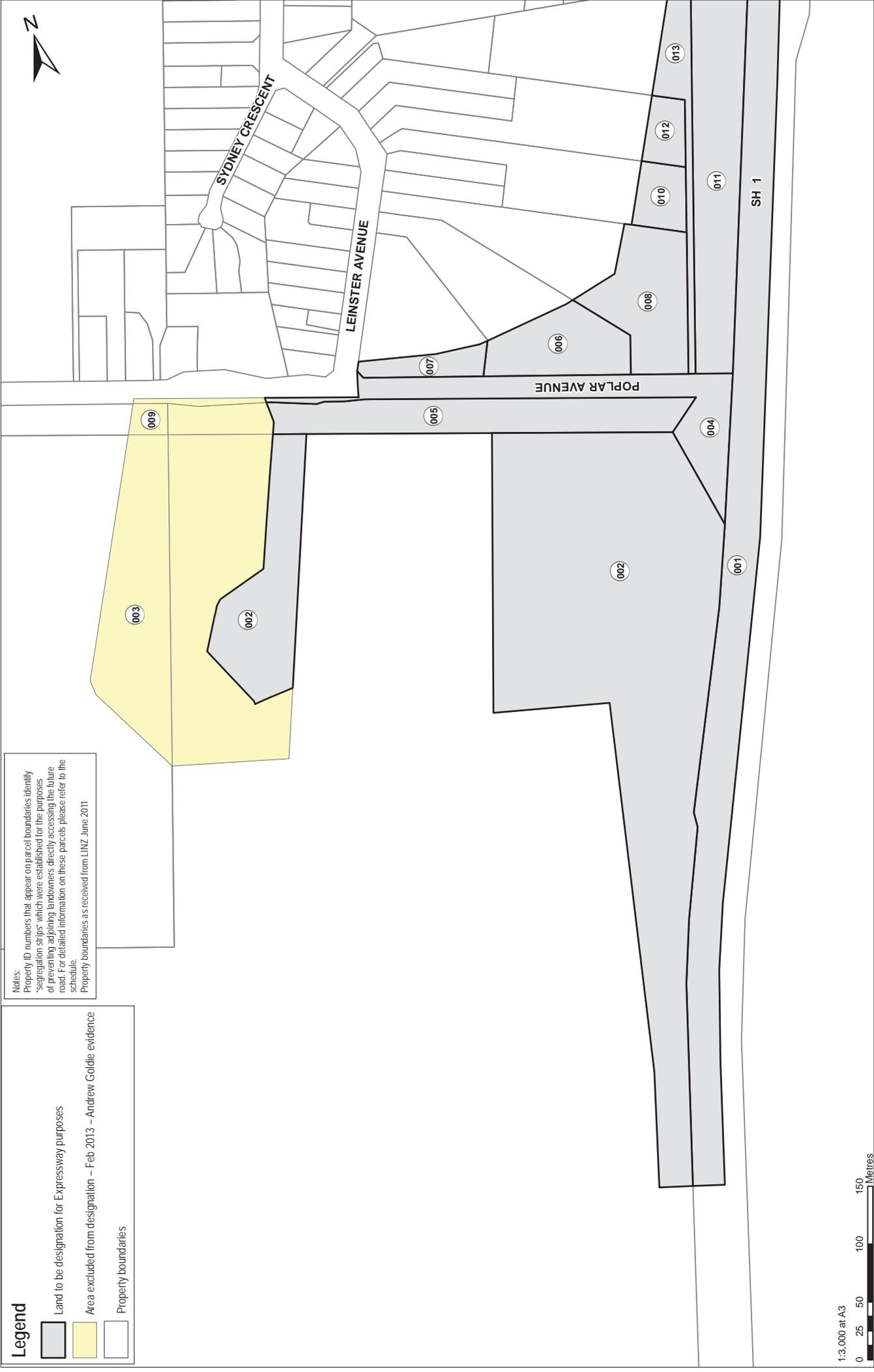
**APPENDIX 6: ALTERATIONS TO PROPOSED  
DESIGNATION BOUNDARY**



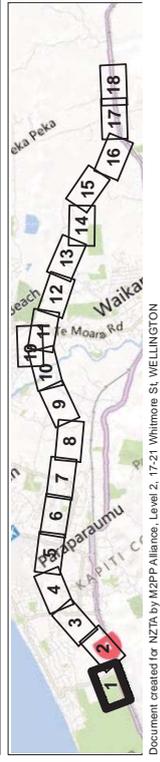
**Notes:**  
 Property ID numbers that appear on parcel boundaries identify 'segregation strips' which were established for the purposes of preventing adjoining landowners directly accessing the future road. For detailed information on these parcels please refer to the schedule.  
 Property boundaries as received from LINZ - June 2011

**Legend**

-  Land to be designation for Expressway purposes
-  Area excluded from designation - Feb 2013 - Andrew Goldie evidence
-  Property boundaries



1:3,000 at A3



Rev.	Date	Description
2	30/01/13	A&E LODGEMENT
1	10/03/12	A&E LODGEMENT
		Approved: [Signature]



Project: **MACKAYS TO PEKA PEKA EXPRESSWAY**

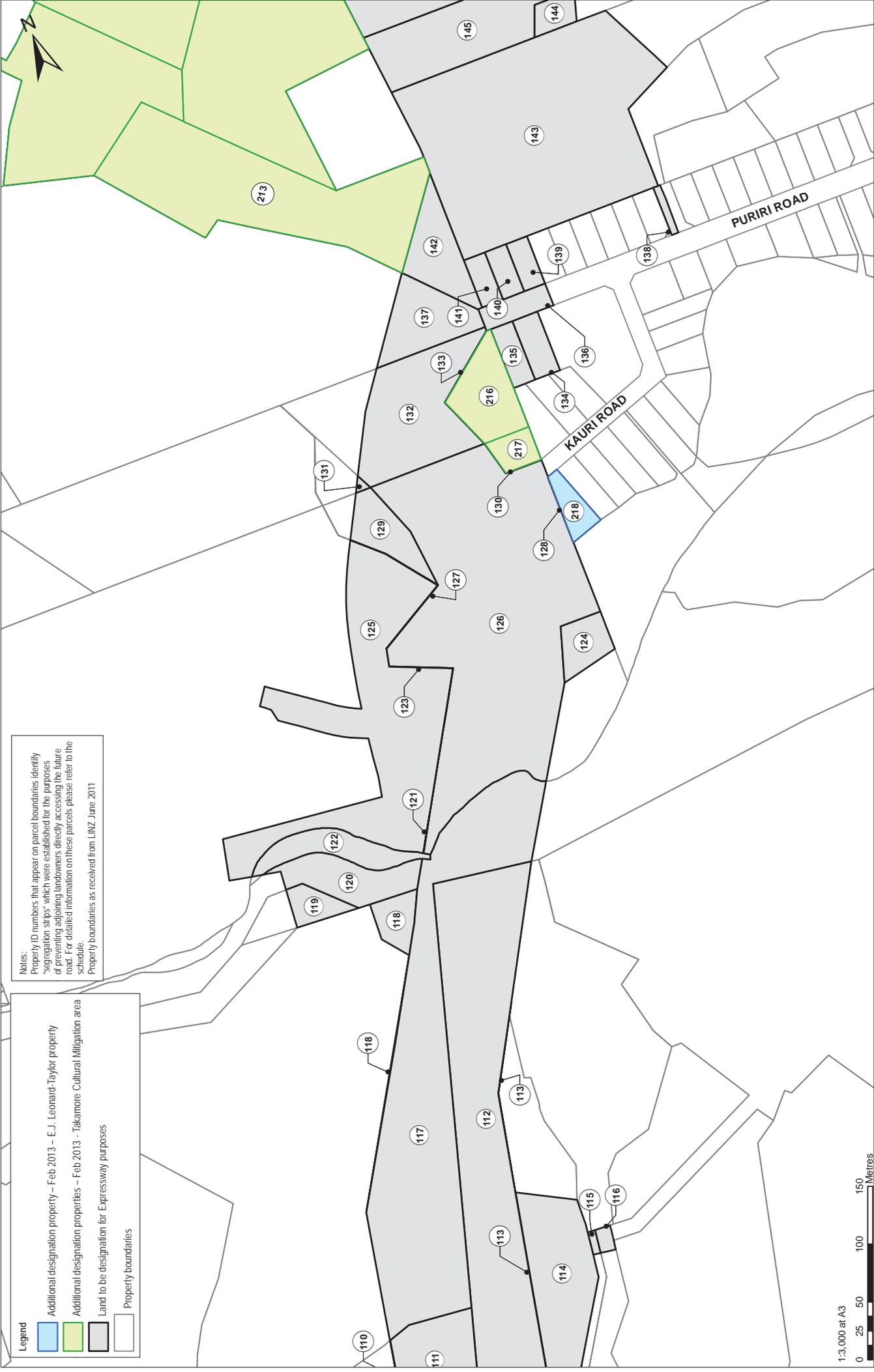
Title: **Property Requirement Plans**

Stage: FOR CONSENTING

Document ID: MPPPA&E.DWG

Drawing No: GI-PR-01

Rev. 2

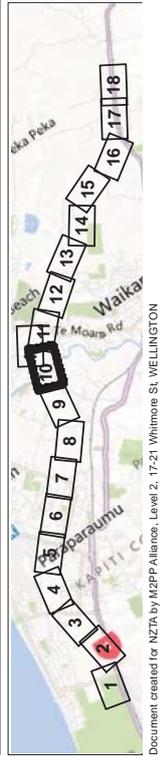


Notes:  
 Property ID numbers that appear on parcel boundaries, identify 'segregation strips' which were established for the purposes of preventing adjoining landowners directly accessing the future road. For detailed information on these parcels please refer to the schedule.  
 Property boundaries as received from LINZ, June, 2011

**Legend**

- Additional designation property – Feb 2013 – E.J. Leonard-Taylor property
- Additional designation properties – Feb 2013 – Takamore Cultural Mitigation area
- Land to be designation for Expressway purposes
- Property boundaries

1:3,000 at A3



Rev.	Description	Date
2	A&E LODGEMENT	30/01/13
1	A&E LODGEMENT	10/03/12
	Approved	Date



Project: **MACKAYS TO PEKA PEKA EXPRESSWAY**

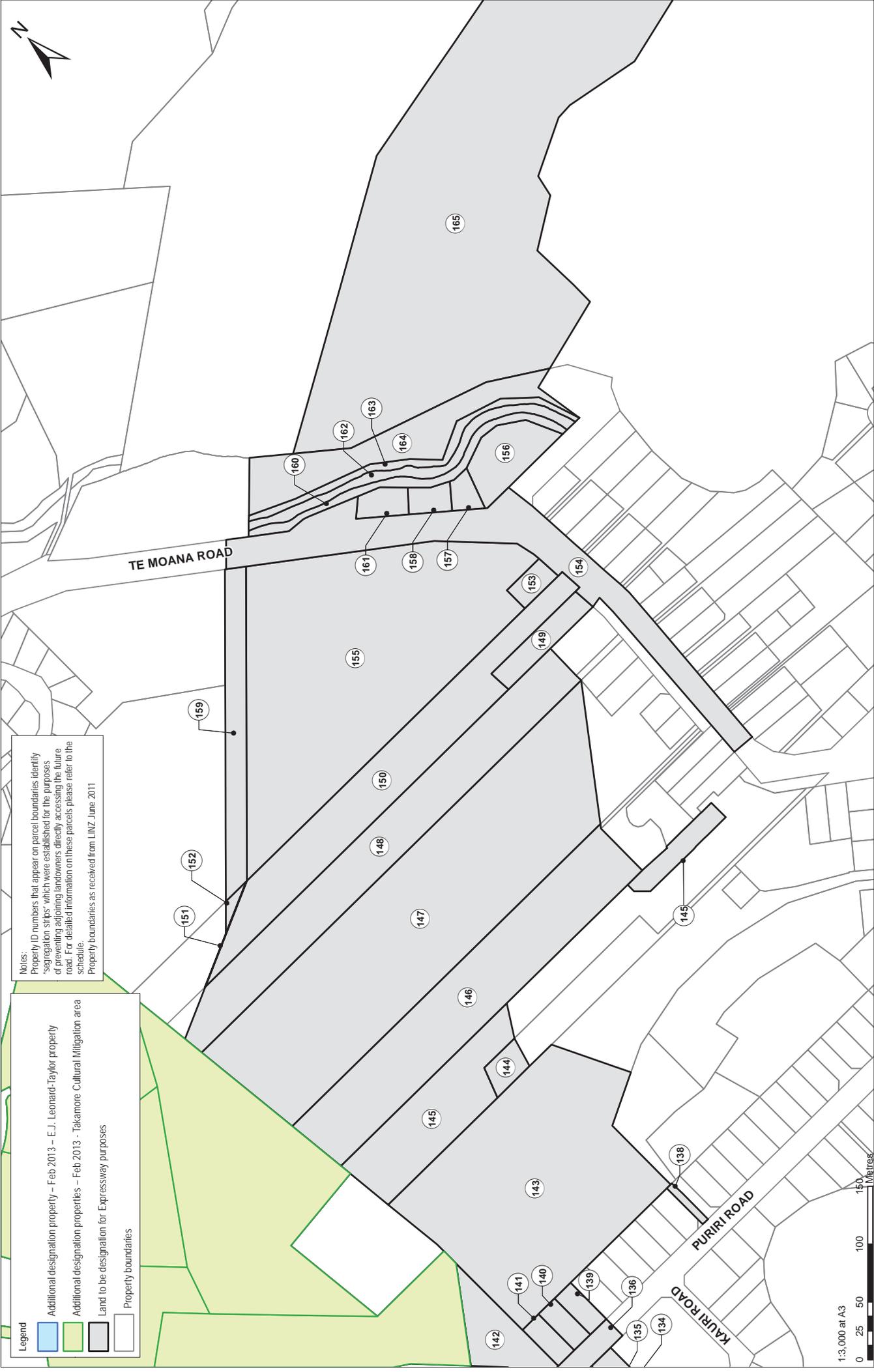
Title: **Property Requirement Plans**

State: FOR CONSENTING

Document ID: MZPP-A&E.DWG

Drawing No: GI-PR-10

Rev. 2



Notes:  
 Property ID numbers that appear on parcel boundaries identify 'segregation strips' which were established for the purposes of preventing adjoining landowners directly accessing the future road. For detailed information on these parcels please refer to the schedule.  
 Property boundaries as received from LINZ, June, 2011

**Legend**

- Additional designation property – Feb 2013 – E.J. Leonard-Taylor property
- Additional designation properties – Feb 2013 - Takamore Cultural Mitigation area
- Land to be designation for Expressway purposes
- Property boundaries

1:3,000 at A3

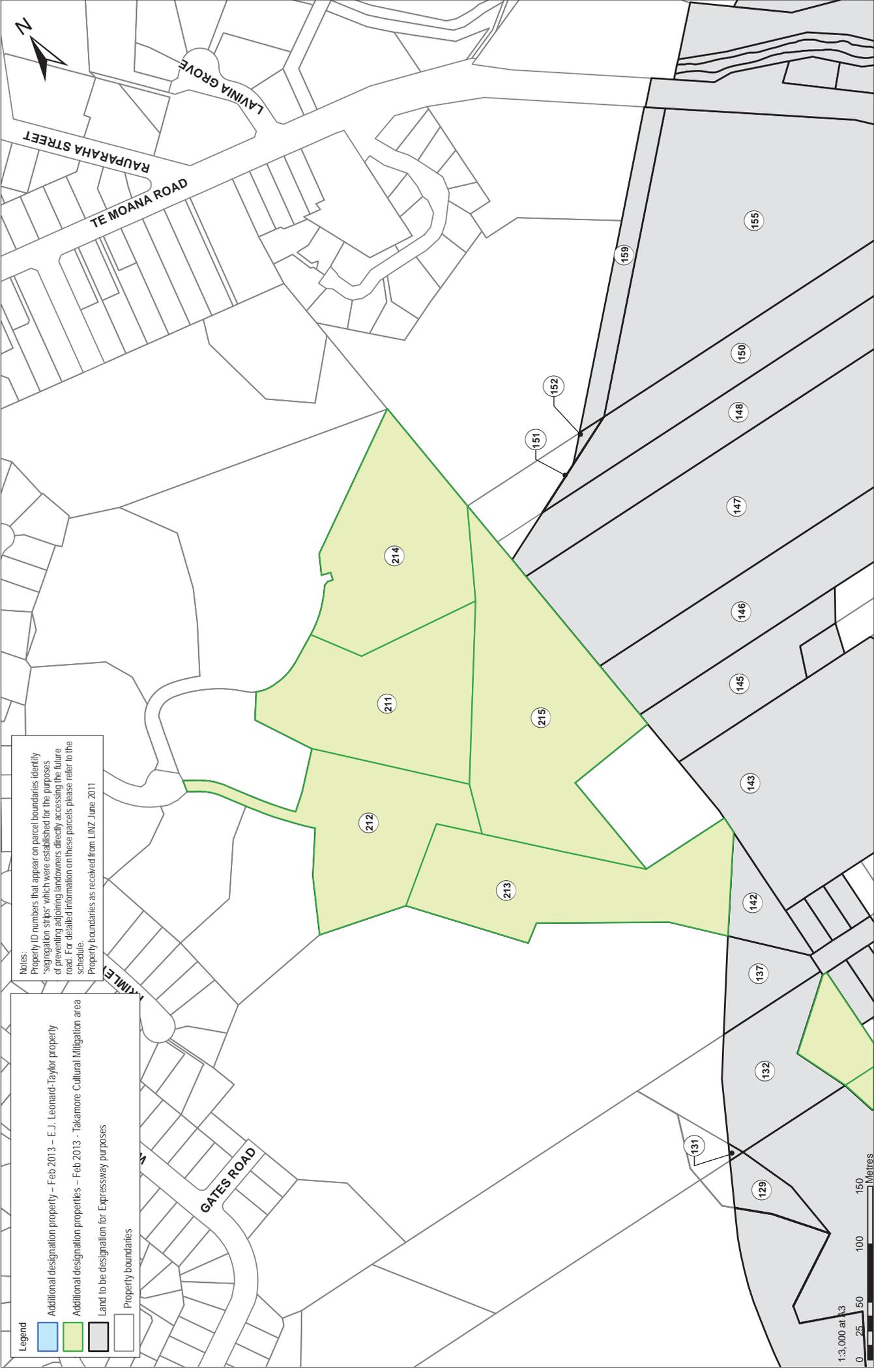


Rev.	Description	Date
2	A&E LODGEMENT	30/07/13
1	A&E LODGEMENT	10/03/12
	Prepared	2011



Project: **MACKAYS TO PEKA EXPRESSWAY**  
 Title: **Property Requirement Plans**

State: FOR CONSENTING  
 Document ID: MZPP-A&E-DWG  
 Drawing No: GI-PR-11  
 Rev: 2



Notes:  
 Property ID numbers that appear on parcel boundaries identify 'segregation strips' which were established for the purposes of preventing adjoining landowners directly accessing the future road. For detailed information on these parcels please refer to the schedule.  
 Property boundaries as received from LINZ June 2011

**Legend**

- Additional designation property – Feb 2013 – E.J. Leonard-Taylor property
- Additional designation properties – Feb 2013 – Takamore Cultural Mitigation area
- Land to be designation for Expressway purposes
- Property boundaries



Rev.	Description	Date
2	A&E LODGEMENT	30/01/13
1	A&E LODGEMENT	10/01/12
	Approved	Date



Project: **MACKAYS TO PEKA PEKA EXPRESSWAY**

Title: **Property Requirement Plans**

State: FOR CONSENTING  
 Document ID: MZPP-A&E-DWG  
 Drawing No: GI-PR-19  
 Rev: 2