Before a Board of Inquiry
MacKays to Peka Peka Expressway Proposal

*under:* the Resource Management Act 1991

*in the matter of:* Notice of requirement for designation and resource consent applications by the NZ Transport Agency for the MacKays to Peka Peka Expressway Proposal

*applicant:* **NZ Transport Agency**
*Requiring Authority*

Statement of evidence of **Andrew Goldie** (Construction Manager – MacKays to Peka Peka Expressway) for the NZ Transport Agency

Dated: 4 September2012

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**STATEMENT OF EVIDENCE OF ANDREW GOLDIE FOR THE NZ TRANSPORT AGENCY**

**QUALIFICATIONS AND EXPERIENCE**

1 My full name is Andrew Trevor Goldie.

2 I am currently employed by Fletcher Construction, a member of the MacKays to Peka Peka Expressway Alliance, as a Construction Manager.

3 I am the Construction Manager for the MacKays to Peka Peka Expressway Project.

4 I am a UK Chartered Civil Engineer. My qualifications are BEng CEng MICE (Member of the Institution of Civil Engineers).

5 I have 15 years' experience in the civil engineering industry.

6 My experience has been predominately in contracting, managing the delivery of physical works for major rail, port and road construction and maintenance contracts. In particular, I have been involved with the following projects:

6.1 Jubilee Line Extension, Contract 113: Trackwork (London Underground Limited): Installation of 16km of new railway track systems within tunnel sections.

6.2 9 Dock Alliance (UK Ministry of Defence): Design and construction of a nuclear submarine dock facility. Heavy reinforced concrete works in marine environment.

6.3 Technology Framework Contract (UK Highways Agency): Installation of motorway communications systems on live highways in south-east England.

6.4 Warwickshire County Council Highway Maintenance Contract: Road network maintenance and design and construction of local road improvement projects.

6.5 PSMC002 State Highway Maintenance Contract (NZ Transport Agency (*NZTA*)): State Highway network maintenance and design and construction of both State Highway and local road improvement projects in the Northland Region.

7 My evidence is given in support of the Notice of Requirement (*NoR)* and applications for resource consents lodged with the Environmental Protection Authority (*EPA)* by the NZTA for the construction, maintenance and operation of the MacKays to Peka Peka Expressway Proposal (*the Project)*.

8 I am familiar with the area that the Project covers and the State Highway and local roading network in the vicinity of the Project.

9 I have read the Code of Conduct for Expert Witnesses as contained in the Environment Court Consolidated Practice Note (2011), and I agree to comply with it as if this Inquiry were before the Environment Court. My qualifications as an expert are set out above. I confirm that the issues addressed in this brief of evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

**SCOPE OF EVIDENCE**

10 My evidence will deal with the following:

10.1 Background and role;

10.2 Construction methodology and programme;

10.3 Construction effects;

10.4 Response to submissions;

10.5 Response to section 149G(3) key issues report(s);

10.6 Proposed conditions; and

10.7 Conclusions.

**EXECUTIVE SUMMARY**

11 This statement outlines how the Project will be constructed, and describes facilities that will be established and maintained to enable the construction works. Construction of the Project consists of two main operations:

11.1 Ground improvements (preload and settlement of peat areas); and

11.2 Road construction (further ground improvement, earthworks, drainage, bridge construction, pavements, landscaping and ancillary works).

12 A project yard will be established on Otaihanga Road (*the Project Yard)*. This will be the central hub for construction activities in relation to the Project. The Project Yard will include the main office from which construction activities will be managed and will be used for storage and workshop activities. It will also provide an access point to the Expressway.

13 Generally construction works will begin from the Project Yard, with construction activities north and south from this central point, using the constructed sections of the Expressway as the main haul road.

14 The key environmental effects from the construction activities are summarised in Table 2 below. These effects and the mitigation proposed for them are discussed in detail in the evidence of a number of the technical witnesses and Table 2 includes cross references to those statements.

15 In reading this evidence, reference should be made to Technical Report 4 – Construction Methodology Report and the following drawing sets:

15.1 M2PP-AEE-DWG-CV-CM-100: Construction Sequence;

15.2 M2PP-AEE-DWG-CV-CM-200: Erosion & Sediment Control;

15.3 M2PP-AEE-DWG-CV-CM-300: Construction Traffic Management & Access;

15.4 M2PP-AEE-DWG-CV-CM-400: Construction Office & Yard Areas; and

15.5 M2PP-AEE-DWG-CV-CM-500: Waikanae River Bridge & Streamworks.

16 I have reviewed submissions lodged on the Project relevant to construction methodology and effects. Nothing raised in those submissions causes me to depart from the conclusions reached in my technical assessment of the Project.

**BACKGROUND AND ROLE**

17 As noted above, I am the Construction Manager for the Project. In this role, I am responsible for formulating the construction programme, construction sequencing and the development of operational methodologies for the designed works. My role requires a close interface with the designers, planners and technical experts to provide buildability advice during the design process.

18 I began working on the Project in February 2011, picking up the role from Stephen Wright of Fletcher Construction, who fulfilled the Construction Manager role from the beginning of the Project in June 2010. Since then, I have been involved with explaining to stakeholders and members of the wider community how the Proposal will be constructed and what the likely effects of construction would be. That includes:

18.1 Attending the second of the two Public Consultation Expos on 15 and 17 May 2011 and discussing the proposed construction programme and construction methodologies with interested persons;

18.2 Discussing with Kāpiti Coast District Council (*KCDC)* officers:

(a) Temporary Traffic Management arrangements on the local roads during construction;

(b) Feasibility of siting the main Project Office adjacent to the KCDC Otaihanga Resource Recovery Facility (*ORRF*), Otaihanga Road;

18.3 Meeting individual land owners/occupiers about issues such as access, construction methodology and monitoring works in the vicinity of their properties.

19 As I have stated, my evidence outlines the intended methods of and programme for the construction of the Project, and discusses related construction effects and the principal measures to be used for mitigation of those effects. I note that these are also matters which other witnesses have considered when assessing the environmental effects of the proposed construction activities on matters within their areas of expertise. In particular, I understand the following witnesses have relied upon Technical Report 4: Construction Methodology Report for their respective assessments:

19.1 Stephen Hewitt (construction traffic);

19.2 Julie Meade Rose (social);

19.3 Mary O'Keeffe (archaeology);

19.4 Boyden Evans (landscapes);

19.5 Keith Gibson (lighting);

19.6 Siiri Wilkening (noise);

19.7 James Whitlock (vibration);

19.8 Camilla Borger (air quality);

19.9 Ann Williams (groundwater);

19.10 Graeme Ridley (erosion and sediment control); and

19.11 Matiu Park (ecology).

## CONSTRUCTION METHODOLOGY

### Programme and Sequence

20 There are two main operations involved in construction of the Project: Ground Improvement (preload and settlement of peat[1] areas); and Road Construction (further ground improvement, earthworks, drainage, bridge construction, pavements, landscaping and ancillary works). It is estimated that the Proposal will take approximately 48 months to construct, with approximate timings in the current construction programme at each site set out in Table 1 below:

**Table 1: Forecast Construction timetable**

| Site | Operation | Approximate Time Period[2] |
|---|---|---|
| MacKays Crossing-Raumati Road | Ground Improvement (construction of preload embankments) | October 2013-October 2015 |
| MacKays Crossing-Raumati Road | Road Construction (including earthworks, Poplar Avenue and Raumati Road bridges and pavement construction) | July 2016 – September 2017 |
| Raumati Road-Kapiti Road | Ground Improvement (construction of preload embankments) | October 2013-September 2014 |
| Raumati Road-Kapiti Road | Road Construction (including earthworks, Wharemauku Stream bridge and pavement construction) | February 2015-September 2016 |
| Kapiti Road-Otaihanga Road | Ground Improvement (construction of preload embankments) | December 2013-June 2014 |
| Kapiti Road-Otaihanga Road | Road Construction (including earthworks, Kapiti Road and Mazengarb Road bridges and pavement construction, including Kapiti Road and Mazengarb Road) | April 2014 – January 2016 |
| Otaihanga Road-Te Moana Road | Road Construction (including earthworks, Otaihanga Road, Te Moana Road and Waikanae River bridges and pavement construction) | July 2013 – June 2015 |
| Te Moana Road-Smithfield Road | Road Construction (including earthworks, Ngarara Road, Smithfield Road and Kakariki Stream bridges and pavement construction, including Smithfield Road) | April 2014 – June 2016 |
| Smithfield Road- | Ground Improvement (construction of | July 2014- |

[1] As peat is an organic compressible material, if it is left untreated it can lead to an undulating and uneven road surface.

[2] Indicative of approximate durations and relative sequence but not necessarily actual start and finish dates.

| | | |
|---|---|---|
| Peka Peka Road | preload embankments), including Paetawa Stream bridge) | September 2015 |
| Smithfield Road-Peka Peka Road | Road Construction<br>(including earthworks, and pavement construction) | September 2014-<br>June 2015 |
| Peka Peka Road Interchange | Road Construction<br>(including earthworks, Peka Peka Road bridge and pavement construction, including Peka Peka Road) | July 2016 – September 2017 |

21 Technical Report 4 and the Construction Sequence Drawings (CV-CM-102-107) outline the proposed construction sequence in some detail, which is proposed to be scheduled as shown in Figure 1 below.

**Figure 1: General construction sequence**


22 The sequence shown in Figure 1 has been selected to enable construction work to progress in the central area (Paraparaumu-Waikanae) while areas of deep peat deposits settle under preload embankments at the northern and southern ends of the Project. It is expected to take between 6-12 months for the rate of settlement to reduce to an acceptable level.

23 A specific methodology has been developed regarding the sequencing of construction work and environmental protection measures for the Waikanae River works. This methodology is detailed in drawings M2PP-AEE-DWG-CV-CM-500-508, and section 7.10 of the Erosion and Sediment Control Plan (*ESCP*), Appendix H of the CEMP and is discussed in **Mr Ridley's** evidence.

24 The staging of operations shows how the environmental effects of working in close proximity to the Waikanae River will be controlled and minimised. These controls include the optimum timing for streamworks and access arrangements for construction traffic, particularly around the existing Waikanae Christian Holiday Park (El Rancho) access and public walkways along the river banks.

**General methodology**

25 Construction will not occur at the same time all along the entire route; for long periods during construction, sections of the Expressway will be inactive while settlement of the deep peat takes place, under the preload embankments.

26 During the preload construction and settlement periods at the northern and southern ends, completion of the Expressway and cycleway will proceed on two fronts working simultaneously away from the central Otaihanga Project Yard: north towards Peka Peka Road and south to Raumati Road (refer to construction methodology drawing M2PP-AEE-DWG-CV-CM-100-108).

27 The Project Yard will therefore be the central hub for all construction work. In order to manage the increase in traffic anticipated on Otaihanga Road, the existing intersection with State Highway 1 will be upgraded to a roundabout configuration. The design and planning for this improvement has already commenced, and therefore is not part of the Project.

28 Each section of the Expressway, including bridges across a local road or waterway, will be constructed connecting it to the next section consecutively and progressively away from Otaihanga. As each bridge and section is completed, it will provide passage to the next section. The Expressway will then be used as a haul route to move materials through the site.

29 This methodology will minimise both the volume of construction traffic on local roads and the disturbed land area within the designation. However, in order to achieve this objective, bridge construction and associated groundworks will need to be accessed from the local roads.

30 The major on-road and off-road haulage routes, including the haulage for the preload embankment fill material, are illustrated in M2PP-AEE-DWG-CV-CM-108.

**Peat Treatment: Preload**

31 In areas of deep peat deposits, a preload embankment and surcharge[3] load will be constructed directly over the existing ground to minimise the extent of peat excavation and the subsequent disposal of material off site.

[3] Preload embankment surcharge refers to additional fill material placed on the preload embankment to increase the rate of settlement, then removed following the settlement period.

32 The management of ground settlement effects to the surrounding ground, buildings and services during the preload settlement period is outlined in the Settlement Effects Management Plan, Appendix J of the CEMP, and in **Mr Alexander's** evidence.

33 Where possible, the embankments will be constructed using cut to fill material excavated from along the Expressway alignment. However, there will be a requirement for some imported fill to be used in the embankments. In particular, the bottom layer of the embankment will require an imported granular fill to facilitate groundwater drainage. In addition, in some locations, imported fill will be required to enable early completion of the embankments to allow settlement periods to be achieved within the overall project timeframe.

34 Potential sources of fill for the preload embankments include Kāpiti Quarry, Paraparaumu and Ōtaki Quarry.

35 The sourcing of material from each of these quarries will be carefully managed during construction to minimise both haul distances to each embankment and truck movements from each quarry.

36 Embankment fill material will be placed by working progressively from the nearest hard surface area (i.e. existing road or temporary access road), with the material being moved to the area via either a haul road or local road. Where possible, the permanent stormwater drainage, including wetland and flood offset storage areas, will be formed and installed prior to embankment construction to enable the drainage features to be used for erosion and sediment control (refer to the proposed ESCP, Appendix H of the CEMP and evidence of **Mr Ridley**). The ESCP details the construction methodology to be adopted for the preload embankments, including the provision of temporary drainage and the use of permanent drainage as sediment control devices.

37 Preload surcharge material will be removed and used as fill elsewhere along the Expressway corridor, thus minimising the overall use of imported fill on the Expressway.

**Peat Treatment: excavation and replacement**

38 Where peat is encountered at locations outside the identified preload areas, it will be removed and replaced with sand fill. These areas are identified in drawings M2PP-AEE-DWG-CV-EW-100-111 and are found mainly in the central section between Kāpiti Road and Smithfield Road. Peat will also be removed during the formation of wetlands and flood water storage areas. The detailed methodology for these operations is outlined in the ESCP. The management of groundwater levels during these excavations is detailed in the Groundwater (Level) Management Plan Appendix I of the CEMP.

39 Initially, the peat will be stockpiled within the designation, adjacent to the Expressway construction site. Stockpiling will allow the peat to dry and then be used, as far as possible, in landscaping and the formation of acoustic barriers. This will reduce haulage within the site and minimise disposal off site. Any excess peat will then be removed from the site, via the Expressway corridor haul route, to authorised off-site disposal areas. Possible sites could include:

39.1 Bright's Cleanfill, Kāpiti Quarry, Paraparaumu, via on-road haul route exiting from Poplar Avenue;

39.2 Waikanae Oxidation Ponds, Paetawa Road to assist in the rehabilitation of this area into a recreational reserve (refer to section 3.3.2 of the draft Ecological Management Plan, Appendix M of the CEMP), via an on-road haul route exiting onto Te Moana Road or Peka Peka Road; and

39.3 Otaihanga Landfill, via an off-road haul route exiting direct from the Expressway corridor.

40 The two methods of peat treatment: 'preload' and 'excavate and replace', are interchangeable.[4] Further geotechnical investigations may demonstrate different extents of peat deposits from those currently assumed. This further information may lead to changes in the type of peat treatment methodology used in each area of peat.

**Earthworks**

41 Following any treatment of peat and upon completion of any further cut to fill activities within each section (i.e. between bridges), any further earthmoving required between sections will be carried out. As much as possible, off-road dump trucks will utilise the completed Expressway corridor and bridges as a haul route.

**Bridge Construction**

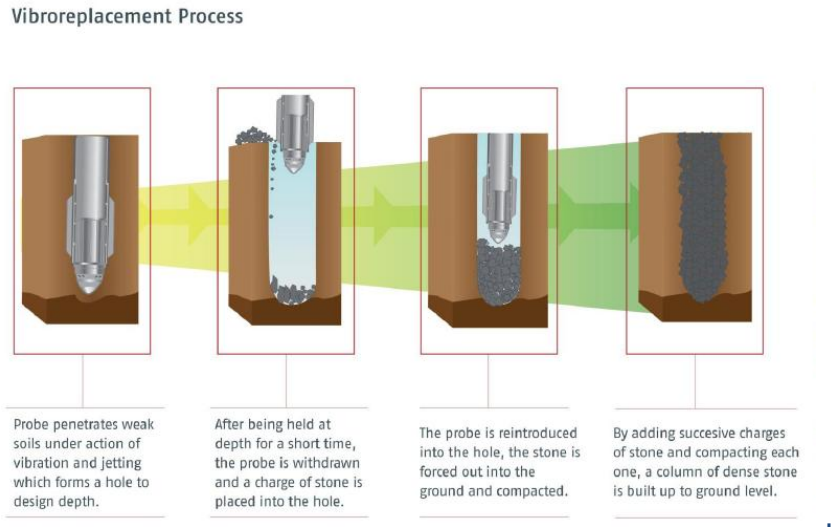
42 Bridge structures, whether a road crossing or stream/river crossing, will typically be constructed in the sequence outlined in the Construction Methodology Report.[5] Methods to be used include:

[4] As indicated in M2PP-AEE-DWG-CV-EW-100-111.

[5] Technical Report 4, section 1.2.1, page 7.

42.1 **Installation of stone columns** to improve the ground under at each bridge abutment location, using vibro-replacement. This technique is explained in Figure 2 below. Vibration risks to the surrounding environment are outlined in the Assessment of Vibration Effects[6] and the evidence of **Mr Whitlock**. The proposed management of these risks is outlined in the draft Construction Noise and Vibration Management Plan Appendix F of the CEMP.

**Figure 2: Vibroreplacement process**




42.2 **Installation of piles**, using the following techniques:

(a) Bored, reinforced concrete piles, using bentonite. This is the preferred method for the bridge pier piles and retaining walls;

(b) Bottom driven permanent steel casing with reinforced concrete. This is an alternative to method (a) above and could be utilised if piling configurations using smaller diameter piles are adopted;

(c) Driven steel 'H' piles, for the bridge abutments;

(d) Continuous flight auger. This method could be utilised for any ground improvements that may be required under box culverts.

42.3 **Concrete construction**, including erection and dismantling of formwork using cranes and in-situ placement of concrete.

[6] Technical Report 18.

42.4 **Placement of prefabricated concrete units by crane**. Where the bridge crosses an existing road, lifting operations will typically be carried out during night-time road closures. Bridge deck beam units will be prefabricated in the Project Yard and transported by road to each site.

43 Prefabrication of bridge units has been selected for speed of construction and quality control. Establishment of a concrete precast yard within the designation will enable close management of concrete supply, quality and despatching of units to site.

44 Concrete supply will be from a supplier local to the Kāpiti Coast. Concrete deliveries will be to either the Project Yard for prefabrication activities or to the individual bridge sites. All sites will be accessed via SH1 and local roads.

45 Road bridges will have differing environmental controls to stream/river crossings and both are detailed in the ESCP. The Construction Traffic Management Plan details the proposals to control vehicular, pedestrian, cyclist and equestrian traffic at road crossings.

**Pavement construction**

46 Upon completion of the earthworks, drainage and bridges in each section, pavement materials will be laid. One carriageway of the Expressway will be completed and sealed to enable immediate protection of the subgrade and pavement layers. The other carriageway will be completed to subbase level, to protect the subgrade and create the Expressway corridor haul route for the bulk earthmoving activity and other construction traffic.

47 Potential sources of pavement aggregates include:

47.1 Kāpiti Quarry, Paraparaumu; and

47.2 Ōtaki Quarry.

48 The sourcing of material from each of these quarries will be carefully managed during construction to minimise both haul distances and truck movements from each quarry.

**Traffic Management**

49 Specific construction traffic management arrangements for works on each local road have been developed and are included in M2PP-AEE-DWG-CV-CM-300: Construction Traffic Management & Access. The proposed traffic management arrangements during construction are discussed in **Mr Hewett's** evidence.

**Construction Yard Areas**

50 Section 3.1 of the Construction Methodology Report, and Drawings CV-CM-401-411 identify the proposed construction yard locations and their general purpose.

51 The main project office and yard area (i.e. the Project Yard) will be established within the KCDC Otaihanga Resource Recovery Facility (*ORRF*) on Otaihanga Road (refer to M2PP-AEE-DWG-CV-CM-406). The Project Yard will provide:

51.1 The main administrative centre and welfare facility;

51.2 The main plant/equipment storage and workshop;

51.3 Pre-cast concrete yard;

51.4 The main access to the alignment;

51.5 The main delivery point for materials; and

51.6 Segregation and transfer of site and office waste.

52 As part of the establishment of the Project Yard, and to mitigate the effects of increasing traffic in this area, the existing intersection of Otaihanga Road with SH1 will be upgraded to a roundabout configuration. The design and planning for this improvement has already commenced, and therefore is not part of the Project.

53 The construction and operation of the Project Yard will be carefully managed to avoid disruption to the existing KCDC transfer station.

54 The Project Yard is located within the proposed Project designation and is likely to remain in place for the entire duration of construction. A specific stormwater plan has therefore been developed for this area, as shown in Drawing CV-CM-406 and as outlined in Technical Report 4, Section 3.1.1

55 The stormwater drainage for the Project Yard is shown on Drawing CV-CM-406 and consists of the following components:

55.1 Planted/grassed perimeter swales;

55.2 Rock lined/stone bed open channel drains where larger drains are needed;

55.3 Culverts under existing internal accessways;

55.4 Proprietary box culverts under existing internal accessways where the minimum cover requirement to a standard culvert cannot be achieved; and

55.5 A treatment and attenuation pond with outlet pipe draining to a stream.

56 The stormwater pond has been designed for treatment and attenuation of stormwater runoff from the construction yard and it is proposed to be positioned in the same location as an existing stormwater pond intended to serve the KCDC ORRF. Positioning the new stormwater pond in this location allows the existing operational issues to be addressed at the same time as providing stormwater treatment for the new yard. On completion of the Expressway, it would be possible to retain the construction yard stormwater pond as a permanent feature of the ORRF area. Therefore, it has been designed to the same standard as the other permanent stormwater areas along the Proposal.

57 At each bridge construction site, a compound will be established to provide facilities away from the main project office. Control of stormwater run-off from these yards will be through a combination of the use of nearby sediment retention devices or existing stormwater systems. Where an existing stormwater system is to be utilised, it will be checked for suitability including capacity. Any further measures required will be designed in accordance with normal requirements from KCDC for such sites.

**Water Supply**

58 During drier months and peak construction periods, total peak project water demand is estimated to be up to a maximum of 750 cubic metres per day from an individual bore. This demand has been based on the estimated requirements for dust suppression and for bridge abutment vibroreplacement operations. The effects of the construction water supply are outlined in the Assessment of Groundwater Effects[7] and in the evidence of **Ms Williams**.

59 Where possible, to minimise the impact on water resources, any water available in the sediment retention devices[8] will be re-used in construction operations. However, to ensure adequate continuity of supply of water, up to 9 deep water bores will be positioned along the Expressway route. This is discussed in the evidence of **Ms Williams**. Potential positions for the bores are at the following locations in order to spread the water-take and to minimise water transport around the site (refer to Drawings M2PP-AEE-DWG-CV-CM-400 series):

59.1 Poplar Avenue;

59.2 Raumati Road;

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[7] Technical Report 21.

[8] Devices are outlined in CEMP Appendix H – Erosion and Sediment Control Plan, Section 7.1 and Appendix H.B.

59.3 Ihakara Street;

59.4 Kāpiti Road;

59.5 Mazengarb Road;

59.6 Waikanae River;

59.7 Te Moana Road;

59.8 Ngarara Road; and

59.9 Peka Peka Road.

60 Where necessary, these bores will also provide water supply to the office/welfare facility in each construction yard.

**Noise**

61 Night works are expected during construction to install the bridge beams across the local roads. These works will be limited as far as possible. However, any noise generated will be managed in accordance with the Construction Noise and Vibration Management Plan, Appendix F to the CEMP.

62 **Ms Wilkening** discusses the management of construction noise in her statement of evidence on this topic.

**Lighting**

63 In general, construction operations will occur during the day, unless operations are being carried out on or adjacent to an existing road that requires working during off-peak traffic hours, i.e. at night. Operations that are expected to require work to be carried out at night are:

63.1 Installation of bridge beams at:

(a) Raumati Road;

(b) Kāpiti Road;

(c) Mazengarb Road;

(d) Otaihanga Road;

(e) Te Moana Road; and

(f) Ngarara Road.

63.2 Eastern and Western ends of Kāpiti Road Intersection.

64 At these locations, the site and adjacent construction yard will require full illumination during the night in order to complete the required operations. During the erection of the bridges at each of the above locations, the precast yard on Otaihanga Road will also need to be fully lit to enable loading of bridge units.

65 Each construction yard area will utilise temporary lighting to enable operations to proceed during the hours of darkness. When night works are not in operation in these locations, the purpose of this lighting will be primarily for security and to provide light for staff, plant and vehicles in particular at the beginning and end of each day and generally during winter months.

66 Where required, mobile lighting towers will be erected for these purposes and be specifically designed to allow workers, plant and vehicle movements to be safely carried out in darkness, while minimising the effects of light spill on neighbouring properties. Once towers are erected, the site engineer will be responsible for checking light spill nuisance effects on adjacent properties and changing the angle of set up to resolve any issues.

**Construction Stormwater Drainage**

67 In the period between the completion of earthworks and the commissioning of the Expressway (ie while the Expressway route is being used as a haul road) the installed stormwater devices will be retained to convey run-off. Appropriate sediment control will remain in place in the constructed swale drains and retention areas to control any potential sediment from the haul roads.

68 Stormwater drainage of the construction yard areas along the Expressway alignment will utilise nearby sediment control devices to carry and retain run-off.

**Works in culturally sensitive areas**

69 It is acknowledged that construction works will be carried out in culturally sensitive areas, particularly in the areas to the north of Waikanae River. The management of construction in the culturally sensitive areas is outlined in the Cultural Impact Assessments[9] and Archaeological Assessment[10] and is addressed further in the evidence of **Mr Kamo** and **Ms O'Keeffe**.

[9] Technical Reports 11 and 12.

[10] Technical Report 9.

**Contaminated land**

70 Known contaminated land sites are present at 55 Rata Road, Kapiti Road Intersection and 124-154 Te Moana Road. The ground improvement operations and earthworks in these locations will be programmed and managed in accordance with the protocols outlined in Contaminated Soils and Groundwater Management Plan[11] and as discussed in the evidence of **Mr Laing**.

## CONSTRUCTION EFFECTS

71 The table below summarises my understanding of the actual and potential effects of construction of the Proposal and the likely causes of those effects. These effects are discussed in the statements of evidence of a number of the NZTA's witnesses. I have included cross-references to the relevant parts of their evidence in the Table 2 below.

**Table 2: Summary of construction effects on the environment**

| Actual and Potential Effects | Cause of Effect | Evidence discussing effects and mitigation proposed |
|---|---|---|
| Discharge of sediment and contaminants to waterways | Construction plant, vehicles and equipment.<br><br>Earthworks and drainage works. | Mr Ridley |
| Dewatering of excavations | Excavation and replacement of peat with sand.<br><br>Excavation of sand below wetland/flood storage areas and replacement with peat. | Mr Alexander |
| Disruption to groundwater | Preload embankment settlement into peat.<br><br>Excavation and replacement of peat with sand.<br><br>Excavation of sand below wetland/flood storage areas and replacement with peat | Mr Laing and Ms Williams |
| Dust | Cut faces.<br><br>Fill embankments/faces.<br><br>Haul routes. | Ms Borger |

[11] Appendix K to the CEMP.

| Actual and Potential Effects | Cause of Effect | Evidence discussing effects and mitigation proposed |
|---|---|---|
| | Precast Yard. | |
| Oil and chemical spills | Construction plant, vehicles and equipment.<br><br>Construction materials. | |
| Noise and vibration | Construction plant, vehicles and equipment.<br><br>Site yards and concrete precast yard. | Ms Wilkening, Mr Whitlock |
| Light Spill | Site yards and night works. | Mr Gibson |
| Working adjacent to watercourses | Bridge construction at:<br>• Waikanae River;<br>• Wharemauku Stream;<br>• Waimeha Stream;<br>• Kakariki Stream; and<br>• Paetawa Drain.<br><br>Culverts of existing drains. | Mr Ridley |
| Diversion of waterways/disruption to fish movements | Permanent realignment of streams and drains, including installation of culverts.<br><br>Temporary diversion for drainage installation. | Mr Ridley, Dr Keesing, Mr Levy |
| Abstraction of water for construction | Dust suppression.<br><br>Compaction of granular materials.<br><br>Ground improvement and structural work. | Mr Levy, Ms Williams |
| Settlement | Ground improvement, earthworks construction & structural work. | Mr Alexander |
| Construction Traffic | Aggregate deliveries from local quarries.<br><br>Concrete deliveries from local sources.<br><br>Removal of peat from site.<br><br>Otaihanga Project Office:<br>• Export of structural | Mr Hewett |

| Actual and Potential Effects | Cause of Effect | Evidence discussing effects and mitigation proposed |
|---|---|---|
| | units;<br>• Material deliveries; and<br>• Administration and staff transportation | |
| Waste | Peat disposal.<br><br>General waste management.<br><br>Resource utilisation. | |
| Contaminated Land | Otaihanga Landfill:<br>• Project Office;<br>• Precast Yard; and<br>• Peat disposal.<br><br>Identified site west of Otaihanga Landfill, i.e. Otaihanga Mountain Bike Park.<br><br>Identified site at 55 Rata Road.<br><br>Kāpiti Road Interchange.<br>124-154 Te Moana Road | Mr Laing |

## RESPONSE TO SUBMISSIONS

### Construction methodology

#### *Ngarara Road area*

72 A number of submitters raise the issue of construction methodology and staging in the Ngarara Road area.[12] In response, the following points are made:

72.1 Traffic associated with the construction works will be minimised by accessing the Ngarara Road section via the route of the Expressway from SH1, near Peka Peka. Please refer also to the evidence of **Mr Hewett**.

72.2 While construction works in the area are likely to last for 26 months (refer to paragraph 20 of this evidence), disruption to Ngarara Road and the services that run along its corridor will be minimised as follows.

[12] Submissions include, for example, McCarroll (269) and Houston & Lord (566).

72.3 The intended method is to keep the existing Ngarara Road in place for as long as practicable and to have a temporary diversion of road and services in place for the purpose of the Ngarara Road Bridge construction, estimated to take 10 months. Please refer also to the evidence of **Mr Hewett**.

***Ferndale subdivision area***

73 One submitter[13] raises the issue of construction methodology, staging and working hours in the Ferndale subdivision area.

74 In response, the CEMP will enable specific details of earthworks management, control of dust and sand-blow and working hours to be addressed in the Ferndale area.

***Te Moana Road/Puriri Road area***

75 A number of submitters raise the issue of construction methodology, staging and working hours in the Te Moana Road/Puriri Road area.[14] In response, the following points are made:

75.1 Night-time work at both Waikanae River Bridge and Te Moana Road Bridge is expected to be limited to only the placement of bridge deck beams. These operations are expected to last for a number of days during the overall duration of the bridge construction. The majority of work will take place during daytime working hours

75.2 Hours of work are expected to be:

(a) 07.00-18.00, Monday – Saturday

Reducing the number of working hours available would serve to prolong the overall duration of construction.

75.3 Access to the worksite between Waikanae River and Te Moana Road (including the north bank of the Waikanae River) will be via the Expressway route from Te Moana Road. Only light traffic, such as a supervisor's vehicle, is expected to use Greenaway Road/Puriri Road/Kauri Road access route.

75.4 As a result the Expressway route between Waikanae River and Te Moana Road will be a busy haul road, both during construction of the section (estimated at 24 months[15]) and following completion of the section, when materials may need to be transported across the Waikanae River. While the

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13 Begovich (651).

14 Submissions include, for example, Pomare (309), Sisarich (328), Sisarich (331), Sisarich (332), Laing (337), Aregger (382), Leonard-Taylor (594) and O'Sullivan (675).

15 Refer to Table 1.

permanent noise mitigation measures will reduce the noise effects of the ongoing use of this haul route, temporary noise barriers could be provided during the construction of this section.

75.5 The access from Kauri Road into El Rancho will be under Temporary Occupation and, as such be the responsibility of NZTA to maintain this access.

75.6 While the access from Kauri Road into El Rancho is within the Temporary Construction Designation, many of the trees in this area will remain, as shown in the Appendix 7.A – Assessment of Visual and Landscape Plans, Figure 5. Construction yard areas and accesses will be formed around the trees to remain.

***Otaihanga Road and Yard area***

76 A number of submitters raise the issue of construction methodology, staging and working hours in the Otaihanga Road and Otaihanga Yard area.[16] In response to these submissions, the following points are made:

76.1 Noise walls are detailed for this section, but will not be able to be erected until embankment construction is complete. Temporary noise barriers could therefore be provided to mitigate construction noise effects on 115, 150 and 155 Otaihanga Road.

76.2 The location, construction and operation of the Otaihanga Project Office/Yard is outlined in paragraph 51 of my evidence and detailed in Technical Report 4, Section 3.1.1.

76.3 The yard will be fully fenced to separate its operations from the adjacent Otaihanga Resource Recovery Facility (*ORRF*).

76.4 CV-CM-406 shows the alternative accesses to be provided for continuous and safe access for residents to the ORRF and landfill areas.

76.5 CV-CM-406 shows the perimeter of the yard running along the access track for the dog club members. An alternative access for the dog club could be through the Compost NZ access.

76.6 As outlined in Section 3.1.1 of TR4, some cut into the dune adjacent to the ORRF entrance is proposed, but only on the ORRF side. The intent is to preserve the road side of the

[16] Submissions include, for example, Mansell (203), Waterhouse (432), Short & Schwass (531) and KCDC (682).

dune as far as possible, thus providing visual and noise shielding from Otaihanga Road and surrounding properties. The dunes adjacent to the mountain bike park entrance will be affected as temporary cutting into these dunes will be necessary for ground improvement works to the Otaihanga Road Bridge abutment.

76.7 An outline traffic management plan for Otaihanga Road is provided in the evidence of **Mr Hewett**.

76.8 Hours of work are expected to be:

(a) 07.00-18.00, Monday – Saturday, except during the installation of bridge beams, when the beam units will be loaded in the yard during night-time hours.

***Mazengarb Road area***

77 A number of submitters raise the issue of construction methodology, staging and working hours in the Mazengarb Road area.[17] In response to these submissions, the following points are made:

77.1 Construction works in the Mazengarb Road area are expected to last for 12 months. Following completion, the Expressway route in this area may be used to transport materials in order to minimise the traffic effects on local roads, i.e. via the bridge over Mazengarb Road.

77.2 Hours of work are expected to be:

(a) 07.00-18.00, Monday – Saturday, except for the placement of bridge beams, which would occur during night-time hours.

77.3 Night-time work for the Mazengarb Road Bridge beam placement could be avoided by closing Mazengarb Road during off-peak daytime hours (e.g. 09.00-15.00) and diverting traffic as per CV-CM313.

77.4 As outlined in the evidence of **Mr Hewett**, 2 lanes of traffic and a footpath will be maintained on Mazengarb Road during construction works (except during road closures for the purpose of bridge beam installation – refer to paragraph 77.3).

77.5 Noise walls are detailed for this section, but will not be able to be erected until embankment construction is complete. Temporary noise barriers could therefore be provided to

[17] Submissions include, for example, Scrimshaw (307), Mountier (327), Metlife Care (608) and Alexander & Neilson (619).

mitigate construction noise effects on affected properties in the Mazengarb Road area.

77.6 The methods of peat treatment are interchangeable.[18] There is therefore potentially an option to excavate and replace the peat in the Mazengarb Road area, rather than construct preload embankments.

***Kapiti Road area***

78 A number of submitters raise the issue of construction methodology, staging and working hours in the Kapiti Road area.[19] In response to these submissions, the following points are made:

78.1 Night-time work for the Kapiti Road Bridge is expected to be limited to only the placement of bridge deck beams. These operations are expected to last for a number of days during the overall duration of the bridge construction. The majority of work will take place during daytime working hours.

78.2 Noise barriers along the designation boundary can be installed prior to construction commencing, which will reduce the effects of construction noise received by residents in the Kapiti Road area.

78.3 Hours of work are expected to be:

(a) 07.00-18.00, Monday – Saturday.

78.4 Consideration can be given to maintaining an east-west pedestrian connection between Te Roto and Makarini, e.g. construction of the pedestrian crossing early in the construction programme for this section.

78.5 To reduce wind-blow of sand, earthworks in this section will be programmed outside of the Spring equinox period, when prevailing winds will be at their strongest (refer to Technical Report 4, Section 2.3.5).

78.6 As outlined in the evidence of **Mr Hewett**, the intention is to maintain two-way traffic on Kapiti Road (except for night-time closures (see paragraph 78.1). There should therefore be limited occasions for traffic to seek alternative routes through Marine Parade, Matatua Road and Raumati Road.

78.7 Construction works in the Kapiti Road area are expected to last for 15 months. Following completion, the Expressway

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[18] As indicated in M2PP-AEE-DWG-CV-EW-100-111..

[19] Submissions include, for example, Smith (11), Watson (126), Wibley (482), O'Brien (518), Craig & Anderson (678) and Donaldson (683).

route in this area may be used to transport materials in order to minimise the traffic effects on local roads, i.e. via the bridge over Kapiti Road.

***Rata Road/Kiwi Road area***

79 A number of submitters raise the issue of construction methodology, staging and working hours in the Rata Road/Kiwi Road area.[20] In response to these submissions, the following points are made:

79.1 Construction works in the Rata Road/Kiwi Road area are expected to last for 12 months during the construction of the preload embankment, followed by a further 12 months to complete bridge works and road pavement after preload settlement period. Following completion, the Expressway route in this area may be used to transport materials in order to minimise the traffic effects on local roads.

79.2 The methods of peat treatment are interchangeable.[21] There is therefore potentially an option to excavate and replace the peat in the area to the south of the Wharemauku Stream, rather than construct the preload embankment. This would reduce disruption to the area.

79.3 Earthworks to the south end of the Raumati Road-Wharemauku Stream is in cut. The Rata Road side of the dune will remain intact, which will provide a barrier to the visual and noise impacts of construction in this area.

***Poplar Avenue/Raumati Road area***

80 A number of submitters raise the issue of construction methodology, staging and working hours in the Poplar Avenue-Raumati Road area, including Leinster Avenue[22]. In response to these submissions, the following points are made.

80.1 Construction works in the Poplar Avenue-Raumati Road area are expected to last for 24 months during the construction of the preload embankment, followed by a further 12 months to complete bridge works and road pavement after preload settlement period. Following completion, the Expressway route in this area may be used to transport materials in order to minimise the traffic effects on local roads.

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20 Submissions include, for example, Waterson (267), Fawthorpe (318) and Fisher (610).

21 As indicated in M2PP-AEE-DWG-CV-EW-100-111..

22 Submissions include, for example, Cornick (65), Evans (211), Tong (228), Te Ra School (340), Mackay (404), Daniell (417), Paraparaumu/Raumati Community Board (510), and Saint (607).

80.2 There is currently no intention to divert traffic through Leinster Avenue, as Leinster Avenue will be closed off and re-configured prior to the construction of the preload embankment at Poplar Avenue.

80.3 Technical Report 4, Section 2.5 outlines that the closure of Raumati Road and diversion of traffic along Poplar Avenue and Matai Road will be at night-time for the purpose of installing the bridge beams over Raumati Road. The majority of work will take place during daytime working hours with no restrictions on local roads. There is no intention to divert Poplar Avenue traffic via Matai Road during the construction of the Poplar Avenue Bridge.

80.4 Hours of work are expected to be:

(a) 07.00-18.00, Monday – Saturday, except for the placement of bridge beams on Raumati Road, which would occur during night-time hours.

80.5 Construction traffic from the Kapiti Quarry can be routed along Ruahine Street to SH1, thus avoiding amenities on Tongariro and Hinemoa Streets.

***Waikanae Christian Holiday Park (El Rancho) area***

81 Some submitters raise the issue of construction methodology, staging and working hours in the El Rancho area[23]. In response to these submissions, the following points are made:

81.1 Access to the worksite in the El Rancho area will be via the expressway route from Te Moana Road. Only light traffic, such as a supervisor's vehicle, is expected to use Greenaway Road/Puriri Road/Kauri Road access route.

81.2 Hours of work are expected to be:

(a) 07.00-18.00, Monday – Saturday.

***Nga Manu Nature Reserve submission***

82 In response to the submission by Nga Manu Nature Reserve (90), the construction management plans for the work in the Nga Manu area will be formulated in consultation with Nga Manu. Particular attention will paid to traffic management, noise management and the staging of work around peak visitor times.

[23] Submissions include, for example, Watson (241) and El Rancho (477).

***Communications during construction***

83 A number of submitters raise the issue of communication during construction.[24] I acknowledge the importance of providing a liaison service for neighbours impacted by construction.

84 A public communication plan and dedicated liaison person will ensure that the community is well-informed on construction progress and programme and the likely effects of the planned work. This will serve to minimise the disruption to businesses and local amenities. This is reflected in the proposed condition DC.13.

***General submissions***

85 A number of submitters raise the issue of the use of natural materials, overall construction duration and working hours in general.[25] In response to these submissions, the following points are made:

85.1 The overall construction duration of approximately 4 years will enable the works to be completed expediently, while balancing the negative effects on the area. By progressing the works by sequentially completing sections (refer to Technical Report 4, Section 1.2.3), the amount of 'open' worksites at any one time is minimised. Therefore, the exposure of surrounding areas to construction at any one time will be kept to a minimum.

85.2 The staged approach to the programme also ensures that demand on local material suppliers can be managed to ensure sufficient supply to the Project without over-burdening suppliers.

85.3 A cut-fill balance to the earthworks will be designed as far as possible in order to minimise the requirement for imported aggregates.

85.4 Further reduction in imported aggregates could be made by adopting the 'excavate and replace' method of peat treatment, rather than 'preload and surcharge', which requires imported aggregates to the base of the embankment.

85.5 Hours of work are expected to be:

[24] Submissions include, for example, Palmer (100).

[25] Submissions include, for example, Pomare (465), Cherry (492), Save Kapiti (505), Wilson (545), Beechey-Gradwell (597), Grey Power (624) and Ibell (640).

(a) 07.00-18.00, Monday – Saturday, except for the placement of bridge beams over live roads, which will generally be carried out during night-time hours

**Earthworks methodology**

***Waikanae River – Te Moana Road section***

86 Various submissions[26] question the earthworks methodology in the Waikanae River-Te Moana Road section. In response to these submissions:

86.1 Goodmans Contractors Limited is part of the Alliance and will be engaged to carry out the earthworks and drainage work in the area. That company has nearly 50 years of experience working among the soils and groundwater of the Kapiti Coast and has specific experience working in this particular area.

86.2 Work in the area will be scheduled for the drier months, when the water table is at its lowest.

86.3 Contouring of the land to provide the new stormwater management areas and surface water flow path will be carried out first in order to provide drainage to the area.

86.4 No deep deposits of peat are anticipated in this area, so the depths of excavation to form embankment foundation are not expected to be high.

86.5 The removal of approximately 1m of silt is expected along the route of the expressway in this area. This will be excavated and replaced as per the methodology outlined in CEMP Appendix H – Erosion & Sediment Control Plan, Section 7.2 in order to minimise the effects on groundwater and limit any pumping of groundwater out of the excavations.

**Construction Yards**

***Kapiti Road Intersection Yard***

87 In response to the submission by Baray Holdings (635), and following discussions with the property owner, it would be possible to remove the need for the Kapiti Road Intersection Yard from 108 Kapiti Road (as shown in CV-CM-404). The yard area shown on CV-CM-404 in the south-east corner of the intersection can be used to service the intersection works. However I understand a portion of the property may still be needed to construct the new access to this area. This is discussed in the evidence of **Mr Noel Nancekivell**.

[26] See Dearden (216), Waikanae On One (514) and O'Sullivan (675).

***Poplar Avenue Yard***

88 In response to submission by Raumati South Residents Association[27], the construction yard on Poplar Avenue will be restored to its designated use as a regional park.

89 Greater Wellington Regional Council seeks clarification on the intended use of the Poplar Avenue Yard area, in paragraph 13.1 of the 22 August 2012 without prejudice Discussion Document relating to their submission (684). In response, the following points are made:

89.1 This designation area is intended to be used as a stockpiling and storage area for the purposes of the Expressway construction, but in accordance with the existing agreement between GWRC and Goodmans Contractors Limited.

89.2 I am aware that one section of the area has recently been improved and leased to the Kapiti Pony Club. This section will not be used for any works.

## RESPONSE TO SECTION 149G(3) KEY ISSUE REPORTS

90 The Section 149G(3) report prepared by KCDC raised Hazardous Substances as an issue. Appendix L of the CEMP – Hazardous Substances Management Plan outlines how hazardous substances will be used, stored, transported and disposed of, in accordance with the Hazardous Substances and New Organisms Act 1996 (HSNO). The control and response to accidental discharges of hazardous substances is outlined in Section 8.8 and 8.9 of Appendix L of the CEMP – Hazardous Substances Management Plan.

## PROPOSED CONDITIONS

91 A number of the proposed designation and resource consent conditions are relevant to the construction of the Project. As the Construction Manager I will have responsibility for ensuring that these conditions are complied with.

92 I have set out the conditions I discuss in this section in **Annexure A.** I have suggested changes to the conditions below, in particular, DC.11(a), DC.16(c), DC.24A, G.8, G.11, G.12, and G23.

**Construction Environmental Management Plan**

93 The actual and potential construction methodology effects of the project will be addressed through the application of the CEMP, and the specific management plans which are appendices to the CEMP.

[27] Raumati South Residents Assoc Inc (707).

94 I support the use of a management plan framework to guide construction of the Project. In particular, I support proposed designation conditions DC.7, DC.10-DC.11 and proposed resource consent conditions G.15-G.26, all of which relate to the CEMP and the management plan framework, but with the following exceptions:

94.1 DC.7 refers to an 'initial consultation process with KCDC'. This opportunity for consultation will be provided in good faith and should not delay the certification timeframes outlined in this condition.

94.2 I think it is more practicable for condition DC.11(a) to specify that management plans will be available for public viewing on the Project's website, rather than hard copies in every site office.

94.3 G.23 provides 15 days for KCDC to comment on the CEMP prior to submission to GWRC. As this would impose a 6-week comment and certification process, I propose that a 1-day workshop is held with KCDC prior to submitting the CEMP to GWRC. A draft copy of the CEMP would be provided to KCDC 5 working days prior to the date of the workshop. Such a forum would enable the initial consultation and comment from KCDC in accordance with the Advice Note provided in DC.7.

94.4 The term 'certification' used in the conditions enables the relevant Manager to review and comment on the management plans prior to construction commencing.

95 **Mr Schofield** discusses the proposed management plan framework in his statement of evidence. However, as the Construction Manager for the Project, I have set out below how the CEMP, and the management plan framework generally, will work 'on the ground'.

96 Detailed design and construction methodology development will occur prior to construction commencing and so modification of the CEMP may be required once consents and designation are obtained and design and construction methods are finalised. It is intended that the CEMP will be a 'live' document and will be updated and will require certification by the relevant Manager as required during the construction phase (in accordance with proposed designation condition DC.10 and resource consent conditions G.16, G.17 and G.19). In this way, the mitigation actions outlined in the CEMP and its appendices will always be relevant as the construction phase evolves.

97 Extensive monitoring and reporting of environmental performance will be required during construction operations to ensure the objectives of the CEMP are achieved. This will either be general,

visual inspections carried out and recorded by the project team daily, weekly and monthly, or specific instrumental measurements, e.g. groundwater levels and noise levels.

**Communications and public liaison regarding construction**

98 Communications and public liaison is covered in condition DC.12, DC.13 and DC.15.

99 Construction of the Project will affect large parts of the Kāpiti Coast community. Having a public communication plan and dedicated liaison person will ensure that the community is well-informed on construction progress and programme and the likely effects of the planned work. This will serve to minimise the disruption to businesses and local amenities.

100 The contact number (DC.13 (a)(i)) will be an 0800-number, which will put members of the public in touch with the stakeholder management team. A roster of management staff will cover the 0800-number after hours.

101 With reference to DC.13 (c), the SCMP will be provided to the Community Liaison Group as it is recognised that there is value in ensuring good and regular information is made available to the community.

**Construction Traffic Management Plan**

102 In his evidence **Mr Hewett** proposes to split DC.24 into two conditions. Under the proposed DC.24A the Requiring Authority is required to carry out regular inspections of the road networks affected by the Project. I recommend the addition of an Advice Note stating that, prior to construction commencing, the Requiring Authority will agree with the Council Road Asset Manager the nature, extent and frequency of the inspections.

**Complaints**

103 Dealing with complaints is covered in DC.16 and G.8.

104 A complaints register is required to ensure all complaints are recorded, dealt with satisfactorily and by the appropriate person and closed out. It will also serve as an improvement tool to instigate operational changes to prevent reoccurance of similar complaints.

105 Under DC.16(c) and G.8, it would be more practical to provide GWRC with a copy of the complaints register every month.

**Hazardous Substances Management Plan**

106 The management of hazardous substances is covered in DC.51.

107 The requirement for a hazardous substances management plan will assist in ensuring that proper safety and environmental precautions

are followed in the storage, transport, handling, use and disposal of hazardous substances. The management plan will assist in preventing safety and environmental incidents.

**Pre-construction administration**

108 Condition G.3 requires the consent holder to hold a pre-construction meeting with GWRC 10 days prior to the commencement of any particular stage of construction.

109 These meetings will be attended by either myself or members of my construction team, alongside the NZTA. They will ensure that environmental concerns specific to that particular section or stage are discussed, controls agreed and appropriately documented in the CEMP.

**Incidents**

110 Condition G.10 relates to the review of management plans in response to complaints or incidents.

111 The post-incident review of management plans and procedures is standard practice to enable operational improvements to be made to prevent the re-occurrance of a similar incident. The response mechanism in G.10 is therefore an appropriate measure to ensure continual operational improvement.

**Staff training**

112 The Alliance structure and training provisions outlined in the Management Plans will enable the appropriate resourcing and skill level required to fully implement, monitor and record the required environmental protection measures.

113 A key tool in the environmental management of the construction phase will be the Environmental Maps described in the CEMP, Section 3.5. The maps will be used for induction and training purposes and also as a visual reporting medium.

114 The specific areas of training outlined in G.11, will form part of the Project Induction Training, so that staff commencing work on the project are clearly briefed on the value of erosion and sediment control, stream protection and the vegetation to be retained.

115 Project Induction Training will occur prior to staff commencing work on the project, but not necessarily 5 days prior to commencement. I therefore recommend that the 5 day lead in time is removed from condition G.11.

**Staging and programme conditions**

116 Conditions G.12 and G.13 refer to providing the Manager with an outline of how construction of the Project will be staged.

117 Following the formulation of the overall Construction Programme, the Project will be split into key stages, each with a commencement date and discrete scope of work. This information will be provided to the Manager under G.12 and G.13. This staging information will be important in establishing appropriate submission dates for the management plans for each stage to enable compliance with conditions DC.7, G.3 and G.17.

118 I recommend that the requirement in G.12 for obtaining certification of the staging plan prior to submitting the CEMP under G.20 is removed. The staging plan and CEMP can be submitted simultaneously, preferably 10 days prior to construction commencing.

**CONCLUSIONS**

119 The objective of the construction phase is to deliver a high quality product, in the most cost-effective and efficient manner, with zero harm to those involved, whilst working to minimise the effects on the environment and the local community.

120 To achieve this objective, the construction methodology includes the following key features:

120.1 Preloading of the large peat deposits at the north and south ends to minimise waste material removed from site.

120.2 Construction of the central section of the Expressway during preload settlement period to minimise the overall construction duration.

120.3 Use of the Expressway route and new bridges to transport materials, including earthwork materials, thereby maintaining east-west connectivity and minimising construction traffic on local roads.

120.4 Sequencing of construction to achieve cut to fill balance of earthworks and reuse of preload surcharge material, in order to minimise the demand for imported aggregate from local quarry sources and the volume of waste material removed from site.

120.5 Selection of aggregate sources to reduce disruption of quarry traffic on local roads.

120.6 Traffic management arrangements that consider all road users, including pedestrians, cyclists and horse-riders.

Andrew Trevor Goldie
4 September 2012

## ANNEXURE A – PROPOSED DESIGNATION AND RESOURCE CONSENT CONDITIONS DISCUSSED IN MY EVIDENCE

### Proposed designation conditions

| Reference | Draft conditions |
|---|---|
| | **Management Plans - General** |
| DC.7 | All works shall be carried out in general accordance with any of the management plans required by these conditions. The draft management plans lodged with the Notice of Requirement that are listed below in this condition shall be updated and finalised by the contractor and submitted to the Manager for certification at least 15 working days prior to the commencement of construction of the relevant stage or stages:<br>a) Construction Noise and Vibration Management Plan<br>b) Construction Air Quality Management Plan<br>c) Construction Traffic Management Plan<br>d) Hazardous Substances Management Plan<br>e) Landscape Management Plan.<br>***Advice Note: Relationship of Management Plans with the Construction Environmental Management Plan***<br>*These management plans are part of a suite of plans that are required to manage the effects of construction of the Project on the environment, and that come under an overarching Construction Environmental Management Plan (CEMP). The CEMP will confirm final Project details, staging of Work, and detailed engineering design to ensure that the Project remains within the limits and standards approved under this designation and that the construction and operation activities avoid, remedy or mitigate adverse effects on the environment in accordance with the conditions of this designation, and any resource consents granted to assist the Requiring Authority in constructing the Project.*<br>*The CEMP will also provide details of the responsibilities, reporting frameworks, coordination and management required for Project quality assurance; final detailed design; construction methodologies; timeframes and monitoring processes and procedures.*<br>*The CEMP is required to be certified by the Greater Wellington Regional Council only, in accordance with the conditions of regional resource consents. Under those conditions, the CEMP is to be supplied to the Kāpiti Coast District Council for an initial consultation process, and then the final document is required to be supplied for information, and displayed in any site office.* |
| DC.10 | The Requiring Authority may request amendments to any of the management plans required by these conditions by submitting the amendments in writing to the Manager for certification at least 10 working days prior to any changes taking effect. Any changes to management plans shall remain consistent with the overall intent of the relevant management plan. |
| DC.11 | a) The management plans shall be made available for public viewing ~~at one or more of the Project site offices.~~ on the Project's website.<br>b) Where practicable, electronic copies of the management plans shall be made available upon request. |
| | **Communications and Public Liaison – Construction** |
| DC.12 | A liaison person shall be appointed by the Requiring Authority for the duration of the construction phase of the Project to be the main and readily accessible point of contact at all times for persons affected by the construction work. The Requiring Authority shall take appropriate steps to seek to advise all affected parties of the liaison person's name and contact details. If the liaison person will not be available for any reason, an alternative contact person shall be nominated, to seek to ensure that a |

| Reference | Draft conditions |
|---|---|
| | project contact person is reasonably available by telephone during the construction phase of the Project. |
| DC.13 | a) Prior to the commencement of construction and/or enabling works, the Requiring Authority shall prepare and implement, a Stakeholder and Communications Management Plan (SCMP) that sets out procedures detailing how the public and stakeholders will be communicated with throughout the construction period. As a minimum, the SCMP shall include:<br>i) Details of a contact person available on site at all times during works. Contact details shall be prominently displayed at the entrance to the site(s) so that they are clearly visible to the public at all times.<br>ii) Methods to consult on and to communicate the proposed hours of construction activities outside of normal working hours and on weekends and public holidays, to surrounding residential communities, and methods to deal with concerns raised about such hours.<br>iii) Methods to record concerns raised about hours of construction activities and, where practicable, methods to so far as is practicable avoid particular times of day which have been identified as being particularly sensitive for neighbours.<br>iv) Any stakeholder specific communication plans required<br>v) Monitoring and review procedures for the Communication Plan<br>vi) Details of communications activities proposed including:<br>1. Publication of a newsletter, or similar, and its proposed delivery area.<br>2. Newspaper advertising<br>3. Notification and consultation with individual property owners and occupiers with dwellings within 20 metres of construction activities.<br>c) The SCMP shall include linkages and cross-references to methods set out in other management plans where relevant. The SCMP shall be provided at least 15 working days prior to construction commencing, to the Manager and Community Liaison Group. |
| DC.15 | The Requiring Authority shall provide the Manager with an updated schedule of construction activities at monthly intervals during the construction of the Project. |
| | **Complaints** |
| DC.16 | a) At all times during construction work, the Requiring Authority shall maintain a permanent record of any complaints received alleging adverse effects from, or related to, the exercise of this designation. The record shall include:<br>i) the name and address (as far as practicable) of the complainant;<br>ii) identification of the nature of the complaint;<br>iii) location, date and time of the complaint and of the alleged event;<br>iv) weather conditions at the time of the complaint (as far as practicable), and including wind direction and approximate wind speed if the complaint relates to air quality.<br>v) the outcome of the Requiring Authority's investigation into the complaint;<br>vi) measures taken to respond to the complaint; and<br>vii) Any other activities in the area, unrelated to the Project that may have contributed to the ~~compliant~~complaint, such as non-Project construction, fires, traffic accidents or unusually dusty conditions generally.<br>b) The Requiring Authority shall also keep a record of any remedial actions undertaken. |

| Reference | Draft conditions |
|---|---|
| | c) This record shall be maintained on site and shall be made available to the Manager and Greater Wellington Regional Council, upon request. The Requiring Authority shall ~~notify the Manager and Greater Wellington Regional Council in writing of any such complaint within 5 working days of the complaint being brought to the attention of the Requiring Authority.~~ provide the Manager and GWRC with a copy of the complaints register every month. |
| DC.24 /DC.24A | The Requiring Authority shall contribute fair and reasonable costs toward the maintenance of Otaihanga Road caused by the increased heavy vehicle movements related to the construction of the Project. The Requiring Authority shall carry out regular inspections of the road networks affected by the Project during construction to ensure that all potholes and other damage resulting from the construction of the Project are identified as soon as practicable.<br>***Advice note:*** *Prior to construction commencing the Requiring Authority will agree with the Council Road Asset Manager the nature, extent and frequency of the inspections.* |
| | **Hazardous Substances Management Plan** |
| DC.51 | a) The Requiring Authority shall finalise, submit and implement through the CEMP, the Hazardous Substances Management Plan (HSMP) to be submitted to the Manager for certification at least 15 working days prior to works commencing.<br>b) The purpose of HSMP is:<br>i) to provide information to the contractor in regard to acceptable management methodologies to incorporate during construction; and<br>ii) to provide information to the Regional Council and Kāpiti Coast District Council to demonstrate that the risks of storing and using hazardous substances within the Project area will be appropriately managed by the Requiring Authority.<br>c) The HSMP shall include information relating to:<br>i) implementation and operating procedures including the keeping of a hazardous substances register and preparation of a spill response plan;<br>ii) monitoring requirements; and<br>iii) review procedures |

## Proposed resource consent conditions

### *General conditions*

1 These conditions are intended to apply to all resource consents as relevant

| Reference | Wording of Draft Conditions |
|---|---|
| | **Pre-construction Administration** |
| G.3 | The consent holder shall seek to arrange a pre-construction site meeting between the GWRC and any other relevant party nominated by the GWRC, including the primary contractor, at least 10 working days prior to commencement of any stage (as identified in the staging plan submitted under condition G.12).<br>In the case that any of the invited parties, other than the representative of the consent holder, does not attend this meeting, the consent holder will have been deemed to have complied with this condition, provided the invitation requirement is met.<br>The consent holder shall ensure that additional site meetings are held between the consent holder, the Manager and any other relevant party nominated by the Manager, at appropriate internals, and not less than annually. |

| Reference | Wording of Draft Conditions |
|---|---|
| | **Complaints** |
| G.8 | During construction Work, the consent holder shall maintain a permanent record of any complaints received alleging adverse effects from, or related to, the exercise of this consent. The record shall include:<br>a) the name and address (as far as practicable) of the complainant;<br>b) identification of the nature of the complaint;<br>c) location, date and time of the complaint and of the alleged event;<br>d) weather conditions at the time of the complaint (as far as practicable), including wind direction and approximate wind speed if the complaint relates to air discharges;<br>e) the outcome of the consent holders investigation into the complaint;<br>f) measures taken to respond to the complaint; and<br>g) any other activities in the area, unrelated to the project that may have contributed to the ~~compliant~~complaint, such as non-project construction, fires, or unusually dusty conditions generally.<br>The consent holder shall also keep a record of any remedial actions undertaken.<br>This record shall be maintained on site and shall be made available to the Manager and the Territorial Authority, upon request. The consent holder shall provide the Territorial Authority and the Manager with a copy of the complaints register every month.~~notify the Manager and the Territorial Authority of any such complaints as soon as practicable after the complaint is received by the consent holder, or any representatives. This notification shall be either by telephone or email, or via an alternative electronic method as agreed with the Manager.~~ |
| | **Incidents** |
| G.10 | The consent holder shall, if requested by the Manager in response to a complaint, incident or other reasonable request that relates to managing an adverse effect that is directly related to the construction of the project, carry out a review of any management plan required by these conditions. The consent holder shall submit the reviewed management plan to the Manager for certification that:<br>a) The reason(s) for requiring the review have been appropriately addressed; and<br>b) Appropriate actions and a programme for implementation are provided for if required. |
| | **Staff Training** |
| G.11 | The consent holder shall ensure that earthworks contractors responsible for supervising site staff shall undergo environmental awareness training, required by the CEMP. This training shall occur ~~at least five working days~~ prior to the commencement of any earthworks or earthworks stage and shall be given by a suitably qualified and experienced person certified by the Manager to deliver a practical on-site training session. Specifically, contractors shall be briefed as follows:<br>a) Contractors likely to be involved in the construction and maintenance of erosion and sediment control devices shall receive training on the performance standards to be achieved by the erosion and sediment control devices; and<br>b) Contractors likely to be involved in the construction of any stream diversions or other in-stream works shall be briefed on the values of the stream, the objectives of stream design, the requirements of native fish for fish passage, and the sensitivity of the receiving environment to sediment discharge.<br>Contractors likely to be involved in any works involving vegetation clearance shall be briefed on the values of any significant areas of vegetation that are to be retained, and the methods that shall be used to identify and protect them during construction. |
| | **Staging and Programme Conditions** |

| Reference | Wording of Draft Conditions |
|---|---|
| G.12 | The consent holder shall prepare an overall staging plan for the whole project for certification by the Manager at least 15 working days prior to the commencement of any Work authorised by this consent. The staging plan shall set out the proposed total construction period and demonstrate how the project will be staged.<br>~~Certification of the overall staging plan required under this above is necessary prior to the submission of the CEMP) required under Condition G.20.~~<br>***Advice Note:*** *Condition G.17 below provides for the updating and certification of any Management Plan for which details of various stages of works may not be known at the time the Management Plan is submitted for original certification. In particular, more detailed area specific staging plans are to be prepared and submitted for certification as part of the CEMP under condition G.20. In addition, Construction Erosion and Sediment Control Plans for specific sites along the route are provided under Condition G.28.* |
| G.13 | The consent holder shall provide the Manager with an updated schedule of construction activities for the Project at monthly intervals throughout the construction phase of the entire Project. Each monthly update schedule shall demonstrate how it fits into the overall staging plan required by Condition G.12. |
| | **Management Plans – General** |
| G.15 | All works shall be carried out in general accordance with the management plans required by these conditions. |
| G.16 | Any changes to management plans specified in Condition G.15 that may be sought by the consent holder shall remain consistent with the overall intent of the relevant management plan and shall be submitted to the Manager for certification at least 10 working days prior to any changes taking effect. |
| G.17 | The management plans may not include all details for every stage of works at the time the plan is submitted for certification to the Manager. If further details are to be provided for later stages of construction, the management plan shall specify which stages require further certification at a later date. Further details shall be submitted to the Manager at least 10 working days prior to works commencing in the relevant construction stage. Any changes to the relevant Management Plan that may be required as a result of further design details shall be submitted to be certified by the Manager at least 10 working days prior to works commencing in the relevant construction stage in accordance with the relevant condition(s).<br>The further details submitted shall be consistent with the original purpose and objectives as outlined in the relevant conditions below. |
| G.18 | Where a management plan is required to be prepared in consultation with any third party, the management plan shall demonstrate how the views of that party (or parties) have been incorporated, and where they have not, the reasons why. |
| G.19 | The management of key environmental effects associated with the construction phase of the Project shall be detailed within environmental management plans that are included in the appendices to the CEMP (draft Plans were submitted with the applications). The finalised management plans shall be submitted to the Manager for certification at least 15 working days before the commencement of construction. Works shall not commence until the consent holder has received the Manager's written certification for the management plan(s).<br>This suite of management plans consist of:<br>a) Erosion and Sediment Control Plan<br>b) Groundwater (Level) Management Plan<br>c) Settlement Effects Management Plan |

| Reference | Wording of Draft Conditions |
|---|---|
| | d) Contaminated Soils and Groundwater Management Plan<br>e) Ecological Management Plan |
| | **Construction Environmental Management Plan** |
| G.20 | The consent holder shall update and finalise the draft CEMP submitted with the application (dated XX 2012), which shall include the suite of Management Plans listed under condition G.19. The finalised CEMP shall be submitted to the Manager for certification at least 15 working days before the commencement of construction. Works shall not commence until the consent holder has received the Manager's written certification of the CEMP. |
| G.21 | The certification) shall confirm that the CEMP (and its appendices) shall confirm that the CEMP gives effect to the relevant conditions and that includes details of:<br>a) Staff and contractors' responsibilities<br>b) Training requirements for employees, sub-contractors and visitors;<br>c) Environmental incident and emergency management (including the procedures required under condition G.9);<br>d) Communication and interface procedures;<br>e) Environmental complaints management (required under Condition G.~~1~~8);<br>f) Compliance monitoring;<br>g) Environmental reporting;<br>h) Corrective action;<br>i) Environmental auditing; and<br>j) CEMP review.<br>The CEMP shall also confirm construction methodologies and construction timeframes, including staging. |
| G.22 | The CEMP shall confirm final project details, staging of work, and sufficient engineering design information to ensure that the Project remains within the limits and standards approved under this consent and that the construction activities avoid, remedy or mitigate adverse effects on the environment in accordance with the conditions of this consent. The CEMP shall identify where design information for a particular stage will be submitted at a later stage(s), in accordance with condition G.17. |
| G.23 | ~~At least 15 working days before submitting the CEMP to GWRC for certification the consent holder shall submit a copy of the draft final CEMP required by Condition G.20 to KCDC for comment.~~ Prior to submission of the CEMP to GWRC, a workshop will be held with KCDC to enable comments to be provided. A draft copy of the CEMP shall be provided to KCDC 5 working days prior to the date of the workshop. Any comments received shall be supplied to the Manager when the CEMP is submitted, along with a clear explanation of where any comments have not been incorporated and the reasons why. |
| G.24 | The CEMP shall be implemented and maintained throughout the entire construction period, and updated if further design information is provided |
| G.25 | A copy of the CEMP shall be held on each construction site at all times and be available for inspection by GWRC. |
| G.26 | If the CEMP (including any of its constituent management plans) required to be revised as a result of any updated or new design information, the changes shall be certified by the Manager in accordance with the relevant condition. The revisions shall be submitted for certification at least 10 working days before the commencement of works in that part of the Project to which the information relates. |