



Guide to Lodgement Documentation

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1 Contents and Structure of the Lodgement Documentation

The lodgement documentation for the Peka Peka to Ōtaki Project is made up of five volumes and is structured as follows:

- 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

A full list of the contents of Volumes 1 - 5 is contained as Attachment 1 to this document.

1.1 Volume 1: Resource Management Act 1991 forms

The forms required under the RMA for the Notice of Requirement (designation) and resource consent applications are contained in Volume 1.

The forms relate to:

- The lodgement of matters with the Environmental Protection Agency (EPA) by the NZTA for the designation and resource consents sought;
- The lodgement of matters with the EPA for the designation;
- The Notice of Requirement by the NZTA;
- The Notice of Requirement by KiwiRail; and
- The applications for resource consent by the NZTA.

In general, the forms provide a reference to where in the lodgement documentation the required information is located.

1.2 Volume 2: Assessment of Effects on the Environment Report

This report covers all of the aspects required for the assessment of environmental effects in support of the NoRs and the applications for resource consent. Much of the technical information is from reports contained in Volume 3 and a cross-reference is provided to these reports where necessary.

The AEE report should also be read in conjunction with the plans contained in Volume 4 and the draft management plans contained in Volume 5. A cross-reference to relevant plans is provided in the AEE report where necessary.

1.3 Volume 3: Technical reports and supporting documents

Technical reports and supporting documents are contained in Volume 3.

Technical reports cross-reference to specific Management Plans in Volume 4 as necessary. In addition, some reports and management plans should also be read in conjunction with specific plans contained in Volume 5 as follows:

| Report/ Plan number | Report/ Plan name | To be read in conjunction with... | |
|---------------------------|--------------------------------------|-----------------------------------|-------------|
| 4 | Geotechnical Report | Geology Maps | GI01 - GI08 |
| 5 | Construction Methodology Report | Structure Plans | S01 - S16 |
| | | Road Layout Plans | GM01 - GM08 |
| 8 | Landscape and Visual | Landscape Plans | LA00 - LA27 |
| 10 | Stormwater Report | Drainage Plans | DR01 - DR08 |
| 14 | Operational Noise | Noise Contour Plans | NS01 - NS08 |
| 23 | Urban Landscape and Design Framework | Landscape Plans | LA00 - LA27 |

Note: Several of these plans are found in the appendices of the relevant Technical Report, Volume 3. They are included in the Plan set, Volume 5 for readability purposes.

1.4 Volume 4: Management Plans

All of the management plans lodged for the Project are contained in Volume 4.

The main types of management plan are:

- The Construction Environmental Management Plan (CEMP) which outlines the overarching Management Plan for managing the effects arising from the construction of the Project;
- The specific construction management plans to address particular effects (such as noise, traffic, ecology and sediment and erosion control); and
- Site Specific Environmental Management Plans (SSEMPs) which outline higher levels of design, appropriate monitoring and measures to manage environmental effects.

1.5 Volume 5: Plan Set

All of the plans and drawings are contained in Volume 5 and are referenced by other documents where necessary. Volume 5 also contains a number of appendices relating to technical reports contained in Volume 3.

2 Terminology used

A complete list of abbreviations used is provided as **Attachment 2** and a glossary of terms used is provided as **Attachment 3**.

2.1 Key terms

| Term | Meaning |
|----------------|--|
| The Project | <ul style="list-style-type: none"> ■ The construction operation and maintenance of the main Expressway alignment between Peka Peka and Ōtaki; ■ The realignment of part of the NIMT through Ōtaki; and ■ Construction and operation of associated local road connections. |
| The Expressway | A proposed 13km expressway between Te Kowhai Road, Peka Peka and Taylors Road, north of Ōtaki. |

3 Referencing conventions

3.1 Position along the Expressway Alignment

The position of features along the Expressway is given as a chainage distance from north of Ōtaki at Taylors Road, with Taylors Road being chainage 0m and the southern extreme of the Expressway being the tie in with the Peka Peka interchange at chainage 12250. For example, a feature described as being at chainage 3500m is located approximately 3.5km south of Taylors Road.

3.2 Sectors of the proposed Expressway alignment

The Project has been divided into four sections which are used to refer to specific lengths of the proposed Project route. Section 1 contains both the Expressway and the NIMT realignment, where sections 2, 3 and 4 only contain the Expressway:

| Section number | Section name | Chainage distance (m) | Length (km) |
|----------------|---|-----------------------|-------------|
| 1 | Ōtaki North through to Ōtaki River Bridge | 0000 - 3500 | 3.5 |
| 2 | Ōtaki River Bridge to Old Hautere Road | 3500 - 5250 | 1.75 |
| 3 | Old Hautere Road to Te Horo | 5250 - 8600 | 3.35 |
| 4 | Te Horo to Peka Peka Interchange | 8600 - 12250 | 3.65 |

3.3 Numbering of bridges

Bridges are numbered sequentially from the northern extent of the Project (Ōtaki) to the South (Peka Peka).

3.4 Hydrological catchments and watersheds affected by the Project

The Project involves work to various catchments throughout the Expressway alignment. There are four main catchments, with a further eight catchments in the 100ha to 500ha, range, and over ten catchments smaller than 100ha.

The four main catchments are:

- The Mangaone Stream, which drains a 38.6km² catchment (at the existing SH1 Bridge) in the lower foothills of the Tararua Ranges.
- The Ōtaki River, which drains a 335km² catchment (at the existing SH1 Ōtaki River Bridge) extending back to the main divide of the Tararua Ranges. The Ōtaki River is the most significant waterway in the area and responds rapidly to rainfall in the mountain range.
- The Mangapouri Stream, which passes through the Ōtaki Township, making it of particular interest even though it only drains an area of approximately 2.4km². Currently the existing culvert under the NIMT acts as a throttle to limit downstream flood flows.
- The Waitohu Stream, which lies to the north of the Ōtaki Township. The Waitohu Stream and its tributaries drain a 53km² catchment on the steeply sloping western side of the Tararua Ranges.

The catchments are described further in Chapter 5.7 and illustrated in Figure 5-4 (also shown below) of Part C of the AEE Report in Volume 2. A map depicting all of the catchments can be found in the Site Layout Plans, sheet number GA07 found in the Plan Set, Volume 5.

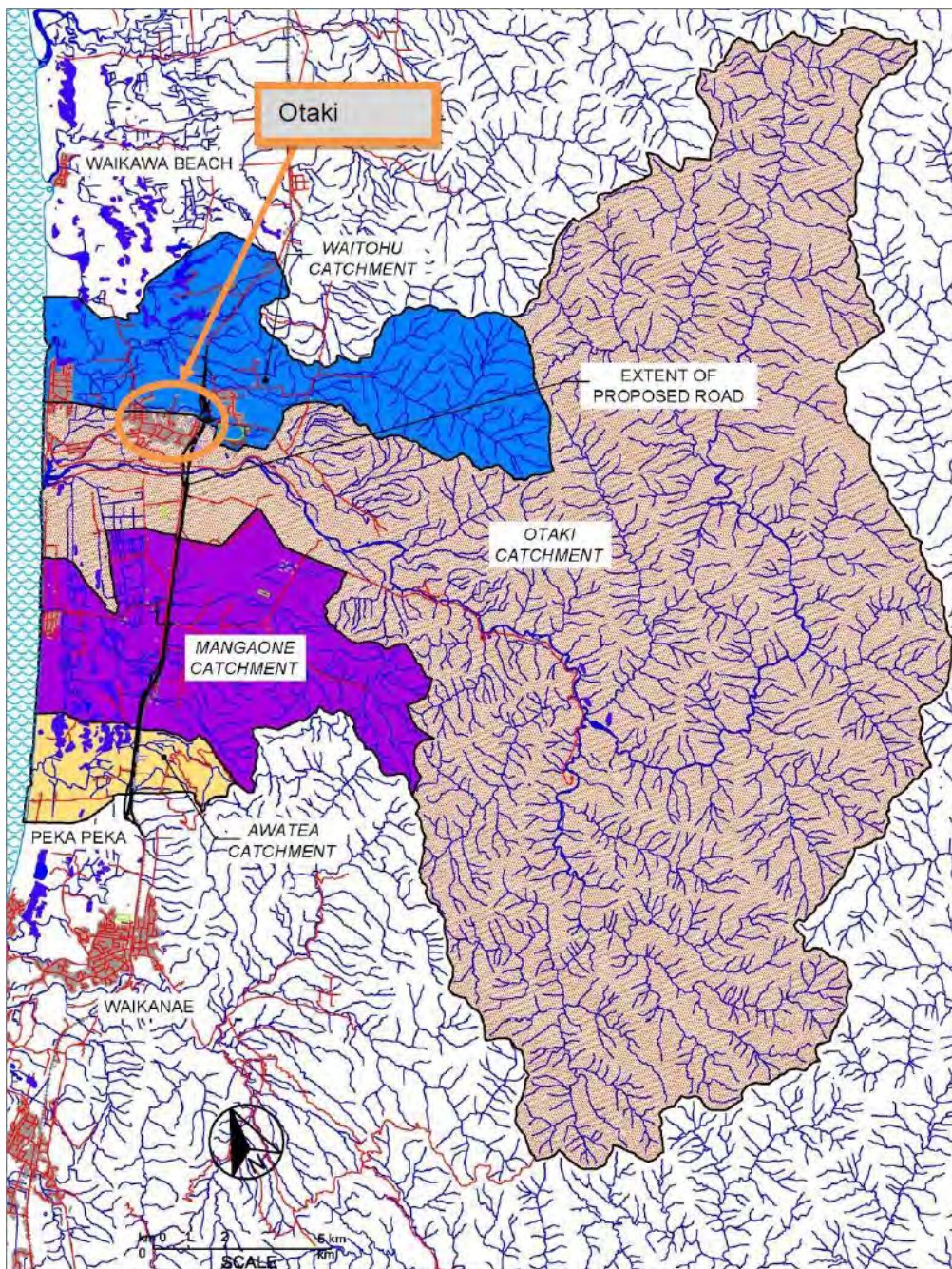


Figure 1: Main catchments in the Project area.

3.5 Referring to properties

Where all or part of a property is required it has been listed in the Land Plan Schedule (plans LR19 and LR20 of the Land Information Plans, Volume 5) and has been assigned a property number.

Plans LR01 – LR16 (Land Information Plans, Volume 5) show the maps of the Project alignment and these properties with the assigned numbers. The property numbers, which will be used to refer to a specific property, start at 1 and finish at 115.

Properties not listed on the schedule are referred to by their legal description.

3.6 Phases of the Project

Several phases have marked the development of the Project over the past 10 years. This has included scoping, consultation and scheme development stages.

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| Notice of Requirement by the NZ Transport Agency | NoR Form |
| Notice of Requirement by KiwiRail | NoR Form |
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| Noise Contour Plans | NS01 – NS08 |

Attachment 2: List of abbreviations

| Abbreviation | Meaning |
|-----------------|---|
| AADT | Annual average daily traffic (number of vehicles travelling in both directions per twenty-four hours) |
| ADP | Accidental Discovery Protocol |
| AEE | Assessment of Environmental Effects |
| AEP | Annual exceedence probability |
| AMP | Archaeological Management Plan |
| BECLMP | Bulk Earthworks Contaminated Land Management Plan |
| BLOS | Bicycle level of service |
| Bol | Board of Inquiry |
| BPO | Best practicable option |
| CAQMP | Construction Air Quality Management Plan |
| CAU | Census area unit |
| CBD | Central business district |
| CEMP | Construction Environmental Management Plan |
| CH ₄ | Methane |
| CIA | Cultural impact assessment |
| CLA | Contaminated land assessment |
| CLMG | Contaminated land management guidelines |
| CMA | Coastal marine area |
| CNMP | Construction noise management plan |
| CNVMP | Construction Noise and Vibration Management Plan |
| CO | Carbon monoxide |
| CO ₂ | Carbon dioxide |
| COPTTM | Code of practice for temporary traffic management |
| CPTED | Crime Prevention through Environmental Design |
| CRTN | Calculation of road traffic noise |
| CTMP | Construction Traffic Management Plan |
| dB | Decibels |
| DM | Do minimum |
| DoC | Department of Conservation |
| DPS | Design Philosophy Statement |
| EEM | Economic Evaluation Manual |
| EIA | Ecological impact assessment |
| EMP | Ecological Management Plan |

| Abbreviation | Meaning |
|-----------------|--|
| EPA | Environmental Protection Authority |
| ESCP | Erosion and Sediment Control Plan |
| E&SCs | Erosion and Sediment Controls |
| FFR | Freshwater Fisheries Regulations 1983 |
| GATS | Greater Wellington Area Transportation Strategic review |
| GHG | Greenhouse gas |
| GIS | Geographic information system |
| GOV | Greater Ōtaki Vision |
| GPS | Government Policy Statement on Land Transport Funding 20012/13 - 2021/22 |
| GRPA | Government Rooding Powers Act |
| GWRC | Greater Wellington Regional Council |
| HAIL | Hazardous activities and industries list |
| HCM | Highway capacity manual |
| HCV | Heavy commercial vehicle |
| HDPE | High density polyethylene |
| HFC | Hydrofluorocarbons |
| HOV | High occupancy vehicle |
| HPA | Historic Places Act 1993 |
| HSNO | Hazardous Substances and New Organisms Act 2001 |
| HV | Heavy vehicle |
| Hz | Hertz |
| KCDC | Kāpiti Coast District Council |
| KCDP | Kāpiti Coast District Plan |
| km | Kilometre |
| km ² | Square kilometres |
| km/h | Kilometres per hour |
| KTM | Kāpiti Traffic Model |
| LAR | Limited access road |
| LCA | Life cycle analysis |
| LGA | Local Government Act 2002 |
| LINZ | Land Information New Zealand |
| LP | Landscape Plan |
| LTCCP | Long-term council community plan |
| kV | Kilovolt |
| LOS | Level of Service |

| Abbreviation | Meaning |
|-------------------|---|
| LTMA | Land Transport Management Act 2003 |
| LVA | Landscape and visual assessment |
| M2PP | MacKays to Peka Peka |
| m ³ | Cubic metres |
| MCAT | Multi-Criteria Analysis Tool |
| MfE | Ministry for the Environment |
| mg/m ³ | Milligrams per cubic metre |
| MHWS | Mean high water springs |
| MM # | Modified Mercalli scale |
| mm | Millimetre |
| mm/s | Millimetres per second |
| MOTSAM | Manual of traffic signs and markings |
| MoU | Memorandum of understanding |
| MSE Walls | Mechanically stabilised earth walls |
| MSL | Mean Sea Level |
| MSQA | Management, surveillance and quality assurance |
| MSS | Mechanically stabilised slopes |
| NAASRA | National Association of Australian State Road Authorities |
| NCHRP | National Cooperative Highway Research Program |
| NES | National environmental standard |
| NESAQ | Resource Management (National Environmental Standards Relating to Certain Air Pollutants, Dioxins, and Other Toxics) Regulations 2004 |
| NESCS | National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health |
| NESET | Resource Management (National Environmental Standards for Electricity Transmission) Regulations 2010 |
| NESSHDW | Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007 |
| NESTF | Resource Management (National Environmental Standards for Telecommunication Facilities) Regulations 2008 |
| NIMT | North Island Main Trunk Railway |
| NIP | National Infrastructure Plan |
| NLTF | National Land Transport Fund |
| NLTP | National Land Transport Programme |
| NO | Nitric oxide |
| N ₂ O | Nitrous oxide |
| NO ₂ | Nitrogen dioxide |

| Abbreviation | Meaning |
|-----------------|--|
| NO _x | Oxides of nitrogen |
| NoR | Notice of requirement for designation |
| NPS | National policy statement |
| NPSET | National Policy Statement on Electricity Transmission 2008 |
| NPSFM | National Policy Statement for Freshwater Management 2011 |
| NRS | National Rail Strategy 2002 - 2015 |
| NSHS | National State Highway Strategy |
| NTU | Nephelometric turbidity units |
| NUMP | Network Utilities Management Plan |
| NZCPS | New Zealand Coastal Policy Statement |
| NZGD | New Zealand Geodetic Datum |
| NZHPT | New Zealand Historic Places Trust |
| NZLRI | New Zealand Land Use Resource Inventory |
| NZRC | New Zealand Railways Corporation |
| NZRCA | New Zealand Railways Corporation Act 1981 |
| NZS | New Zealand Standard |
| NZTA | NZ Transport Agency |
| NZTABM | NZ Transport Agency Bridge Manual |
| NZTM | New Zealand Transverse Mercator |
| NZTS | New Zealand Transport Strategy 2008 |
| NZUDP | New Zealand Urban Design Protocol |
| OCB | Ōtaki Community Board |
| OGPA | Open graded porous asphalt |
| ONF | Outstanding Natural Features |
| ONL | Outstanding Natural Landscapes |
| ORC | Organochlorine |
| ORP | Organophosphate |
| ORN | Organonitrogen |
| OSH | Occupational safety and health |
| PAH | Polycyclic aromatic hydrocarbons |
| PCBs | Polychlorinated biphenyls |
| PCE | Parliamentary Commissioner for the Environment |
| PCP | Pentachlorophenol |
| PFA | Potential failure areas |
| PFC | Perfluorocarbons |
| PHO | Primary health organisation |

| Abbreviation | Meaning |
|--------------|--|
| PNPSIB | Proposed National Policy Statement on Indigenous Biodiversity |
| PPF | Protected premises and facilities |
| PPFM | Planning, programming and funding manual [NZTA] |
| PPM | Planning policy manual [NZTA] |
| PPV | Peak particle velocity |
| PRPS | Proposed Wellington Regional Policy Statement |
| PTMA | Public Transport Management Act 2008 |
| PWA | Public Works Act 1981 |
| QA | Quality assurance |
| QC | Quality control |
| RAP | Recommended area for protection |
| RATAG | Regulatory Authorities Technical Advisory Group |
| RAQMP | Regional Air Quality Management Plan for the Wellington Region |
| RCA | Road controlling authority |
| RCP | Regional Coastal Plan for the Wellington Region |
| RDLP | Wellington Regional Discharges to Land Plan |
| RFWP | Regional Freshwater Plan |
| RMA | Resource Management Act 1991 |
| RMP | Reserve management plan |
| RoNS | Road of national significance |
| RP | Route position |
| RPD | Relative percent difference |
| RPS | (Operative) Wellington Regional Policy Statement |
| RSE | Reinforced soil embankments |
| RSP | Regional Soil Plan for the Wellington Region |
| RSS | Risk screening system |
| SAR | Scheme assessment report |
| SARA | Scheme assessment report addendum |
| SATURN | Simulation and assignment of traffic to urban road networks |
| SCATS | Sydney co-ordinated adaptive traffic system |
| SES | Site of ecological significance |
| SH1 | State Highway 1 |
| SHAMP | State Highway Asset Management Plan 2012-2015 |
| SHGDM | State Highway Geometric Design Manual |
| SHP | State Highway Plan |
| SIA | Social impact assessment |

| Abbreviation | Meaning |
|-------------------|---|
| SIDRA | Signalised and un-signalised intersection design and research aid |
| SIMI | Statement of Identified Maori Interests |
| SLUR | Selected Land Use Register |
| SNA | Significant natural area |
| SSD | Sight stopping distance |
| SSEMP | Site Specific Environmental Management Plan |
| STA | Staging |
| SV | Station value |
| TCDD | 2,3,7,8-Tetrachlorodibenzo-p-dioxin |
| TDM | Travel demand management |
| TEF | Toxicity equivalence factor |
| TEQ | Toxicity equivalence |
| THRAC | Te Horo Road Action Committee |
| TIA | Traffic impact assessment |
| TMP | Traffic management plan |
| TPH | Total petroleum hydrocarbons |
| TRRL | Transport and Road Research Laboratory |
| TSP | Total suspended particulates |
| TSS | Total suspended solids |
| µg/m ³ | Micrograms per cubic metre |
| ULDF | Urban Landscape Design Framework |
| USLE | Universal Soil Loss Equation |
| VEPM | Vehicle emissions prediction model |
| VKT | Vehicle kilometres travelled |
| VMS | Variable message sign |
| WCMS | Wellington Conservation Management Strategy |
| WCP | Western Corridor Plan 2006 |
| WHO | World Health Organisation |
| WLR | Western Link Road |
| WPFMP | Wellington Parks and Forests Management Plan |
| WRENZ | Water Resources Explorer New Zealand |
| WRFP | Wellington Regional Freight Plan |
| WRLTP | Wellington Regional Land Transport Programme 2009 - 2012 |
| WRLTS | Wellington Regional Land Transport Strategy |
| WRS | Wellington Regional Strategy 2007 |

| Abbreviation | Meaning |
|--------------|-------------------------------------|
| WTSM | Wellington Transport Strategy Model |
| vpd | Vehicles per day |
| vph | Vehicles per hour |

Attachment 3: Glossary of terms

| Term | Definition |
|------------------------------|---|
| Abutment | An end support of a bridge or similar structure. |
| Access way | The driveway, walkway or other means of access to and/or from any part of a road by which vehicles and/or pedestrians enter and or leave property. |
| Alignment | The horizontal or vertical geometric form of the centre line of the carriageway. |
| Alluvial deposits | Unconsolidated sedimentary deposits laid down by a stream or river. |
| Alluvial fan deposits | Sedimentary deposits that accumulate at the mouth of a stream, generally fan shaped in plan, resulting from a diminution, or cessation, of sediment transport by the stream. |
| Amenity values | Defined in section 2 of the RMA as: <i>“those natural or physical qualities and characteristics of an area that contribute to people’s appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes.”</i> |
| Annual average daily traffic | The total volume of traffic passing a roadside observation point over the period of a calendar year, divided by the number of days in that year (365 or 366 days). Measured in vehicles per day. |
| Archaeological site | Defined in section 2 of the Historic Places Act as: <i>“(a) means - (i) Any land (including an archaeological site); or (ii) Any building or structure (including part of a building or structure); or (iii) Any combination of land and a building or structure; or (iv) any combination of land, buildings or structures, and associated buildings or structures (including any part of those buildings or structures, or associated buildings or structures) that forms a place that is part of the historical and cultural heritage of New Zealand and lies within the territorial limits of New Zealand; and (b) Includes anything that is in or fixed to such land.”</i> |
| At-grade crossing | Crossing at the same level, such as a railway crossing which is at the same level as a road, or a normal road intersection. |
| AUSROADS | A line source Gaussian plume dispersion model for predicting the near road impact of vehicle emissions. |
| Austroroads | The association of Australian and New Zealand road transport and traffic authorities. |
| Auxiliary lane | A portion of the carriageway adjoining through traffic lanes, used for speed change or for other purposes supplementary to through traffic movement. |
| Backfill | Fill material, such as clay, which is placed in an excavation. |
| Basecourse | The layer of material constituting the uppermost structural element of a pavement, immediately beneath the wearing course; or the graded aggregate that can be used in such a layer. |
| Bed | Defined in section 2 of the RMA as: <i>“(a) in relation to any river - for the purposes of esplanade reserves, esplanade strips, and</i> |

| Term | Definition |
|-------------------------|---|
| | <p><i>subdivision, the space of land which the waters of the river cover at its annual fullest flow without overtopping its banks: in all other cases, the space of land which the waters of the river cover at its fullest flow without overtopping its banks; and (b) in relation to any lake, except a lake controlled by artificial means,—</i></p> <p><i>for the purposes of esplanade reserves, esplanade strips, and subdivision, the space of land which the waters of the lake cover at its annual highest level without exceeding its margin: in all other cases, the space of land which the waters of the lake cover at its highest level without exceeding its margin; and (c) in relation to any lake controlled by artificial means, the space of land which the waters of the lake cover at its maximum permitted operating level; and (d) in relation to the sea, the submarine areas covered by the internal waters and the territorial sea.”</i></p> |
| Bench | A ledge cut or formed in the batter of a cutting or bank to provide greater security against slips. |
| Benefit-cost ratio | The ratio that compares the benefits accruing to land transport users and the wider community from implementing a project or providing a service, with that project's or service's costs. |
| Berm | The edge of a road reserve between the kerb or surface water channel and property boundary, exclusive of footpath. |
| Best practicable option | <p>Defined in section 2 of the RMA as:</p> <p><i>“in relation to a discharge of a contaminant or an emission of noise, means the best method for preventing or minimising the adverse effects on the environment having regard, among other things, to -</i></p> <p><i>(a) the nature of the discharge or emission and the sensitivity of the receiving environment to adverse effects; and</i></p> <p><i>(b) the financial implications, and the effects on the environment, of that option when compared with other options; and</i></p> <p><i>(c) the current state of technical knowledge and the likelihood that the option can be successfully applied.”</i></p> |
| Betterment | The increased value of land arising from improved access. |
| Box cut | Describes a situation where the road alignment is cut down into the natural ground surface to the extent that there are cut faces on both sides of the road. |
| Bridge | A structure designed to carry a road or path over an obstacle by spanning it. This includes culverts with a cross-sectional area greater than or equal to 3.4 square metres. |
| Bulking | The increase in volume of a material resulting from disturbance or from changes in its condition, in particular from an increase in moisture content. |
| Camber | A transverse slope given to the surface of a carriageway or footway to provide surface drainage. |
| Capacity | The maximum number of vehicles that can reasonably be expected to pass a given point on a lane or carriageway in a specified time, usually one hour. It varies with the prevailing traffic and carriageway conditions. |
| Carbon footprint | A carbon footprint is an assessment of the greenhouse gases (GHGs) emitted by a particular organisation, product, service or project. A carbon footprint includes assessment of the six GHGs |

| Term | Definition |
|------------------------------|--|
| | addressed under the Kyoto Protocol, and can include other gases if desired. A carbon footprint describes GHG emissions in carbon dioxide equivalents (CO ² e); that is, the global warming potential of the gas relative to CO ² . |
| Carriageway | That portion of the road devoted particularly to the use of travelling vehicles, including shoulders. |
| Centre line | Pavement marking on a road, which delineates opposing traffic flows. |
| Centreline | The basic line, at or near the centre or axis of a road or other work, from which measurements for setting out or constructing the work can conveniently be made. |
| Channel | The drain which accepts water directly from the pavement. |
| Chip seal | A wearing course consisting of a layer or layers of chips (stones) originally spread onto the pavement over a film of freshly sprayed binder (such as bitumen) and subsequently rolled into place. |
| Clear zone | An area adjacent to a road carriageway that is clear of fixed objects and other hazards, providing a recovery zone for vehicles that have left the carriageway. |
| Coastal marine area | Defined in section 2 of the RMA as: <i>“the foreshore, seabed and coastal water and the air space above the water:</i> <i>a) Of which the seaward boundary is the outer limits of the territorial sea</i> <i>b) Of which the landward boundary is the line of mean high water springs, except that where that line crosses a river, the landward boundary at that point shall be whichever is the lesser of:</i> <i>1 kilometre upstream from the mouth of the river; or</i> <i>The point upstream that is calculated by multiplying the width of the river mouth by 5.”</i> |
| Collector road | A sub-arterial road which collects and distributes traffic in an area, as well as serving abutting property. |
| Colluvium | Loose deposits of rock debris accumulated through the action of gravity found at the base of slopes. |
| Conditions | Conditions placed on a resource consent (pursuant to section 108 of the RMA) or conditions of a designation (pursuant to subsection 171(2)(c) of the RMA). |
| Construction management plan | A site or project specific plan developed to ensure that appropriate management practices are followed during the construction phase of a project. |
| Contaminant | Defined in section 2 of the RMA as: <i>“any substance (including gases, odorous compounds, liquids, solids, and micro-organisms) or energy (excluding noise) or heat, that either by itself or in combination with the same, similar, or other substances, energy, or heat -</i> <i>(a) when discharged into water, changes or is likely to change the physical, chemical, or biological condition of water; or</i> <i>(b) when discharged onto or into land or into air, changes or is likely to change the physical, chemical, or biological condition of the land or air onto or into which it is discharged.”</i> |
| Contaminated land | Defined in section 2 of the RMA as: <i>“land that has a hazardous substance in or on it that -</i> <i>(a) has significant adverse effects on the environment; or</i> |

| Term | Definition |
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| | <i>(b) is reasonably likely to have significant adverse effects on the environment."</i> |
| Crib wall | A retaining wall made of interlocking concrete or timber sections with earth or gravel fill between. |
| Crossfall | The slope, at right-angles to the alignment, of the surface of any part of the carriageway. |
| Cross-section | A vertical section, generally at right-angles to the centreline showing the ground. On drawings it commonly shows the road to be constructed, or as constructed. |
| Culvert | One or more adjacent pipes or enclosed channels running across and below road formation level having a cross-sectional area less than 3.4 square metres. |
| Cutting | That portion of the road where the finished road surface is below the natural surface. |
| Cycle lane | That portion of the carriageway devoted to the use of cycles only and marked accordingly (but which may occasionally be crossed by motor vehicles, turning at intersections or driveways or manoeuvring into parking spaces). |
| Cycle path | A separately formed path designed specifically for the use of cyclists, to which motor vehicles do not have access. |
| Deceleration lane | A speed-change lane provided to allow vehicles to decrease speed. |
| Designation | Defined in section 166 of the RMA as: <i>"a provision made in a district plan to give effect to a requirement made by a requiring authority under section 168 or section 168A or clause 4 of schedule 1."</i> |
| Design life | The period during which the performance of a pavement, e.g. riding quality, is expected to remain acceptable. |
| Design period | A period considered appropriate to the function of the road. It is used to determine the total traffic for which the pavement is designed. |
| Design speed | A speed fixed for the design of minimum geometric features of a road. |
| Design year | The predicted year in which the design traffic volume would be reached. |
| District plan | Defined in section 43AA of the RMA as: <i>"(a) means an operative plan approved by a territorial authority under Schedule 1; and (b) includes all operative changes to the plan (whether arising from a review or otherwise)."</i> |
| Divided highway | A road with physically separated carriageways for traffic travelling in opposite directions. |
| Edge line | A line painted on a road to indicate the outer edge of the traffic lane. |
| Effect | Defined in section 3 of the RMA as: <i>"(a) Any positive or adverse effect; (b) Any temporary or permanent effect; (c) Any past, present, or future effect; (d) Any cumulative effect which arises over time or in combination with other effects – Regardless of the scale, intensity, duration, or frequency of the</i> |

| Term | Definition |
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| | <i>effect and also includes – (e) Any potential effect of high probability; and (f) Any potential effect of low probability, which has a high potential impact.”</i> |
| Embankment | A construction work (usually of earth or stone) that raises the ground (or formation) level above the natural surface. |
| Embodied emission | An ‘embodied’ emission refers to the emission of GHGs that result from the production and transportation of a product and are therefore embodied in the product. For example, embodied emissions in a tonne of steel would include any fuel or energy (or other process causing emissions of GHG) resulting from the extraction and processing of raw materials, manufacture and transport of the item to the point of use. |
| Emission factor | An emission factor converts a specific quantity of emission source or activity (e.g. combusting a litre of diesel in an engine) to a measure of the GHGs (e.g. CO ₂) that would be emitted in kilograms or tonnes. When the GHG is not CO ₂ , the emission factor also includes a conversion of the GHG to a CO ₂ e. A range of emission factors exist, both in New Zealand and internationally. |
| Environment | Defined in section 2 of the RMA and includes: <i>“(a) Ecosystems and their constituent parts, including people and communities; (b) All natural and physical resources; (c) Amenity values; and (d) The social, economic, aesthetic and cultural conditions which affect the matters stated in paragraphs (a) to (c) of this definition or which are affected by those matters.”</i> |
| Environmental management plan | A site or project specific plan developed to ensure that appropriate environmental management practices are followed during the operation of a project. |
| Environmental monitoring guidelines | Site or project specific guidelines setting out the monitoring responsibilities for the project. |
| Environmental risk assessment | An evaluation of possible risk from a receptor contacting a source through a completed pathway. Risk may manifest in the form of acute (immediate) or chronic (long-term) adverse effects. Environmental risk is typically evaluated for human health and ecological receptors. |
| Estuarine deposits | Unconsolidated sedimentary deposits laid down in an estuary. |
| Exposure Pathway | A route by which contaminants can contact a receptor. Receptors can include people, flora and fauna, groundwater, surface water, or air. Examples of pathways for human receptors include routes such as ingestion, inhalation, dermal absorption, or injection. Environmental pathway examples include percolation of rainwater carrying contaminants to groundwater, stormwater runoff into surface water bodies, and uptake of contaminants through plant root systems. |
| Expressway | A road mainly for through traffic, usually dual carriageway, with full or partial control of access. Intersections are generally grade separated. |
| Footpath | That portion of the road reserve set aside for the use of pedestrians only. |
| Formation | The surface of the finished earthworks, excluding cut or fill |

| Term | Definition |
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| | batters. |
| Free-field (Acoustics) | Description of a location which is at least 3.5 metres from any significant sound reflecting surface other than the ground. |
| Furniture | A general term to describe features placed on or near the road to improve safety and assist drivers. Furniture includes barriers, guard rails, lighting, parking meters, poles, posts, signs, lights, etc. |
| Gabion | A rectangular wire-mesh cage filled with boulders, used to retain embankments and riverbanks. |
| Global warming potential | The global warming potential is an assessment of the warming potential of a particular GHG compared to carbon dioxide. For example, methane (CH ₄) has 21 times the global warming potential of CO ₂ over a time horizon of 100 years; therefore 1 tonne of methane would be expressed as 21 tonnes of CO ₂ e. For the purposes of this project the GWPs used are those set by the Intergovernmental Panel on Climate Change (IPCC) in 1995. These are the GWPs which are used for reporting under the Kyoto Protocol. |
| Grade separation | The separation of road, rail or other traffic so that crossing movements which would otherwise conflict are at different elevations. |
| Greenhouse gases | Greenhouse gases (GHG) are gases that influence the way in which the Earth's atmosphere traps heat. Increasing levels of GHGs in the atmosphere are causing the phenomenon of climate change, leading to adverse effects on the world's environment, and subsequent social and economic impacts. The Kyoto Protocol addresses six GHGs: carbon dioxide (CO ₂), methane (CH ₄), nitrous oxide (N ₂ O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF ₆). |
| Guard rail | A rail erected to restrain vehicles from physically leaving the road, including wire-rope barriers. |
| Grassed swale | An open vegetated drainage channel or shallow trough-like depression running alongside a road and explicitly designed to carry, detain, partly treat and promote the filtration of stormwater run-off. |
| Guideline values | Risk-based values for individual contaminants that are based on various studies. Guideline values are used to evaluate laboratory analytical data from soil and water samples to determine whether additional action is required. Guideline values are typically media-specific and provided for protection of human health and ecological receptors. |
| Hazardous activities and industries list | A list of activities and industries that are considered likely to cause land contamination resulting from hazardous substance use, storage or disposal. |
| Haul | The distance through which material is transported between points of loading and unloading. |
| Historic heritage | Defined in section 2 of the RMA as: <i>"(a) Those natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, deriving from any of the following qualities:</i> <i>Archaeological</i> <i>Architectural</i> <i>Cultural</i> |

| Term | Definition |
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| | <i>Historic Scientific Technological; and (b) Includes: Historic sites, structures, places and areas; Archaeological sites; Sites of significance to Maori, including wahi tapū; and Surroundings associated with the natural and physical resources.”</i> |
| Hertz | Unit of frequency, used for sound and vibration. |
| Horizontal curve | A curve in the carriageway alignment in the horizontal plane. |
| Interchange ramp | A carriageway within an interchange providing for travel between two arms (legs) of the intersecting roads. |
| Interchange | A grade separation of two or more roads with one or more interconnecting carriageways. |
| Intersection | A place at which two or more roads cross at grade or with grade separation. |
| Judgmental sampling strategy | A sampling strategy that involves sample collection at areas that, in the judgement of the environmental professional, may be contaminated. The goal of this strategy is to provide a “worst case” sampling result. |
| KiwiRail | KiwiRail is the trading name of the NZ Railways Corporation / KiwiRail Holdings Ltd. There are a number of divisions within KiwiRail, with KiwiRail Network being responsible for railway infrastructure such as tracks, bridges and tunnels. The NZ Railways Corporation / KiwiRail Holdings Ltd. is the requiring authority for all railways designations. |
| LAeq(24h) | Time-average sound level over a twenty-four hour period, measured in dB. |
| LAeq(1h) | Time-average sound level over a one hour period, measured in dB. |
| LAFmax | Maximum sound level, measured in dB. |
| Lane line | A line, usually painted, other than the centre line which divides adjacent traffic lanes. |
| Limited access road | Limited access roads are declared by the NZTA under section 88 of the Government Roding Powers Act 1989 as a means of controlling access between state highways and adjoining properties. Territorial authorities may also declare limited access roads under section 346A of the Local Government Act 1974. |
| Local road | A road (other than a State highway) in the district, and under the control, of a territorial authority, as defined in Section 5 of the Land Transport Management Act 2003. |
| Loess | Fine grained silt or clay formed by glacial activity and subsequently transported and deposited by wind. |
| Long-term council community plan | A long-term council community plan adopted under section 93 of the LGA. |
| Mangapouri Stream | The stream that passes through Pare-o-Matangi reserve adjacent to Mill Road. This stream has been referred to as Mill Road creek in some reports. |
| Mangaone Stream | The stream that passes through the north side of Te Horo. |
| Mean high water springs | The average of the levels of each pair of successive high waters during a period of about 24 hours over approximately each fortnight of the phases of the moon, when the range of tides is |

| Term | Definition |
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| | greatest. |
| Median barrier | A device used on multi-lane roads to keep opposing traffic within their prescribed carriageways. |
| Modified Mercalli scale | A scale designed to describe the effects of an earthquake. |
| MX | Software programme used in road design. |
| National environmental standard | A standard prescribed by regulations made under section 43 of the RMA. There are currently four NES's relating to air quality; sources of human drinking water, telecommunications facilities; and, electricity transmission. |
| National policy statement | A statement issued under section 52 of the RMA. Currently the only NPSs are for Renewable Electricity Generation and Freshwater Management. |
| New local arterial road | The former SH1 when it becomes an arterial local road as a result of the Project. |
| Noise | Noise may be considered as sound that serves little or no purpose for the exposed persons and is commonly described as 'unwanted sound'. |
| Notice of requirement for designation | A notice given to a territorial authority (under section 168 of the RMA) or by a territorial authority (under section 168A of the RMA) of a requirement for land, water, subsoil or airspace to be designated. |
| Ōtaki Main Street | The local town centre on Main Street, or the 'old town'. |
| Ōtaki Railway Retail area | The Ōtaki Railway Retail Area is located along the existing SH1 in the form of a specialist and outlet retail strip between Waerenga Rd and the roundabout at SH1/ Rahui intersection. |
| Ōtaki River | The largest waterway in the project area, located on the southern side of Ōtaki. |
| Ōtaki Township | The whole Ōtaki town. The urban boundaries of Ōtaki are the Ōtaki River to the south and the Waitohu Stream to the north. |
| Outline plan | A plan of the public work, project, or work to be constructed on designated land provided to a territorial authority, pursuant to section 176A of the RMA, prior to the work being undertaken. |
| Overpass | A grade separation where the expressway traffic passes over an intersecting road or railway, e.g. at Mary Crest. |
| Pavement | The road structure that is constructed on the subgrade and supports the traffic loading. |
| Pavement markings | Any markings on the road to control traffic movement or parking. |
| Peka Peka to North Ōtaki Expressway | The proposed expressway from Peka Peka Road in the South to Taylors Road in the North. |
| Peka Peka to North Ōtaki Expressway Project (or the Project) | The project to assess, design and construct a proposed expressway from Peka Peka Road in the South to Taylors Road in the North. |
| Pier | Vertical support structure for a bridge. |
| PM10 | Fine particulate matter with an equivalent diameter of less than 10 micrometres. |
| Proposed plan | Defined in section 43AAC of the RMA as: <i>"(a) means a proposed plan, a variation to a proposed plan or change, or a change to a plan proposed by a local authority that</i> |

| Term | Definition |
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| | <i>has been notified under clause 5 of Schedule 1 but has not become operative in terms of clause 20 of Schedule 1; and (b) includes a proposed plan or a change to a plan proposed by a person under Part 2 of Schedule 1 that has been adopted by the local authority under clause 25(2)(a) of Schedule 1.</i> |
| Proposed policy statement | Defined in section 43AA of the RMA as: <i>“a proposed policy statement that has been notified under clause 5 of Schedule 1 but has not become operative in terms of clause 20 of Schedule 1.”</i> |
| Q ₁₀₀ Stream Event | Peak flow for the 100 year average re-occurrence interval storm or 1% AEP storm event |
| Railway retail area | SH1 ‘high street retail strip’ between Waerenga Road and Mill Road/Rahui Road. |
| Ramp | Carriageway within an interchange providing for travel between two arms (legs) of the intersecting roads. |
| Recreational cycling | The riding of cycles for enjoyment or fitness (i.e. the main purpose of the trip is the ride itself). |
| Regional plan | Defined in section 43AA of the RMA as: <i>“(a) means an operative plan approved by a regional council under Schedule 1 (including all operative changes to the plan (whether arising from a review or otherwise)); and (b) includes a regional coastal plan.”</i> |
| Regional policy statement | Defined in section 43AA of the RMA as: <i>“(a) an operative regional policy statement approved by a regional council under Schedule 1; and (b) includes all operative changes to the policy statement (whether arising from a review or otherwise).”</i> |
| Relative percent difference | The relative difference between concentrations of contaminants in duplicate samples. This is used as a measure of sampling and analytical precision. |
| Requiring authority | Defined in section 166 of the RMA as: <i>“(a) Minister of the Crown; or (b) a local authority; or (c) a network utility operator approved as a requiring authority under section 167”</i> The NZ Transport Agency was approved under section 167 as a requiring authority by Resource Management (Approval of New Zealand Transport Agency as Requiring Authority) Order 1992, notified in the Gazette on 10 December 1992. There are two requiring authorities for the PP20 Project. The NZ Transport Agency is the requiring authority for the Expressway alignment. KiwiRail is the requiring authority for the NIMT. |
| Retaining wall | A wall constructed to resist lateral pressure from the adjoining ground or to maintain in position a mass of earth. |
| Reverse sensitivity | The vulnerability of an established activity to objection from a new sensitive land use. |
| Road | An area formed for vehicle traffic to travel on. The term ‘road’ describes the area between kerbs or surface water channels and includes medians, shoulders and parking areas. |
| Road capacity | Refer to capacity. |
| Road controlling authority | Defined in section 5 of the LTMA as: <i>“in relation to a road, means the Minister, Department of State,</i> |

| Term | Definition |
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| | <i>Crown entity, State enterprise, or territorial authority that controls the road.</i> |
| Road reserve | A legally described area within which facilities such as roads, footpaths and associated features may be constructed and maintained for public travel. |
| Roundabout | An intersection where all traffic travels in one direction around a central island. |
| Shoulder | That portion of the carriageway outside the traffic lanes. |
| Sight distance | The distance measured along the carriageway over which objects of defined height are visible to a driver. |
| Sound | Sound (pressure) levels are an objective measure of changes in pressure levels that may be heard by humans. Unwanted sound can be considered as noise. |
| Station value | Distance along the Main Alignment from a set location measured in metres. The northern most point at of the design alignment (located 300m north of Taylors Road) is 00000m. |
| Statement of Identified Maori Interest | A mechanism developed under the NZTA’s Guidelines for Managing Stakeholder Relationships and Consultation with Maori (Part 2 of Public Engagement Manual) which sets out the NZTA’s expectations and methods for consulting and recording consultation outcomes. |
| Stormwater detention ponds | Basins constructed to temporarily store water run-off in order to reduce peak flows and to allow some contaminants to settle out. They are often dry between rain events. |
| Subway | A structure constructed to permit the passage of pedestrians and/or cycles beneath a road. |
| Substructure | The piers and abutments (including wing walls) of a bridge, which support the superstructure. |
| Superstructure | That part of a bridge structure that is supported by the piers and abutments. |
| Surface water channel | An open drain or ditch along the side of the road that collects water running off the road’s surface. |
| Systematic sampling strategy | A sampling strategy that involves laying out a grid over an area and collecting samples from each grid location. This sampling pattern is used where there is no “point source” of contamination, but instead there is potential for widespread contamination, such as from pesticide application. |
| Tangata whenua | Defined in section 2 of the RMA as: <i>“in relation to a particular area, means the iwi, or hapu, that holds mana whenua over that area.”</i> |
| Territorial authority | Defined in section 5 the LGA as a city or district council listed in Part 2 of Schedule 2 of that Act. The Project involves land under the administrative jurisdiction of one territorial authority Kapiti Coast District Council. |
| Traffic flow | The number of vehicles passing a given point during a specified period of time. |
| Traffic lane | A portion of the carriageway allotted for the use of a single line of vehicles. |
| Traffic volume | The number of vehicles flowing in both directions past a particular point in a given time (e.g. vehicles per hour, vehicles per day). |

| Term | Definition |
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| Transition curve | A curve of varying radius used for the purpose of easing a change of direction. |
| Underpass | A grade separation where the expressway passes under an intersecting highway or railway; e.g. at Rahui Road. |
| vw,95 | Statistical maximum weighted velocity, used in the assessment of road-traffic vibration. |
| Vehicle crossing | A formed area where vehicles can cross over channel and footpath. |
| Vehicles per day | The number of vehicles observed passing a point on a road in both directions for 24 hours. |
| Vertical curve | A curve in the carriageway alignment in the vertical plane. |
| Wahi tapu (also referred to as Waahi tapu) | Defined in section 2 of the HPA as: <i>“a place sacred to Maori in the traditional, spiritual, religious, ritual or mythological sense.”</i> |
| Waitohu Stream | The stream and its surrounding flood plain located at the north end of the project area. |
| Water channel | A channel for the purpose of conveying water, whether lined or unlined. |
| Water body | Defined in section 2 of the RMA as: <i>“fresh water in a river, lake, stream, pond, wetland, or aquifer, or any part thereof, that is not located within the coastal marine area.”</i> |
| Water table | The level at which ground water will finally stand in an unpumped bore hole, well or other depression. |
| Wetland | Defined in section 2 of the RMA as: <i>“permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions.”</i> |
| Wellington Transport Strategic Model (WTSM) | The transportation model developed for the Wellington region using EMME/2 software. |