

**Before a Board of Inquiry  
Northern Corridor Improvements Project**

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Under the Resource Management Act 1991 ('the Act')

In the matter of a Board of Inquiry appointed under section 149J of the Act to consider notices of requirement for designations and resource consent applications by the New Zealand Transport Agency for the Northern Corridor Improvements Project

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**Statement of evidence of Andrew William Hale for the New Zealand  
Transport Agency (Construction)**

Dated 20 April 2017

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## STATEMENT OF EVIDENCE OF ANDREW WILLIAM HALE FOR THE NEW ZEALAND TRANSPORT AGENCY

### 1 Qualifications and experience

- 1.1 My full name is Andrew William Hale.
- 1.2 I am currently an Associate at Aurecon NZ Ltd (**'Aurecon'**) and have been the Aurecon Team Leader for the Northern Corridor Improvements Project (**'Project'**) since Aurecon was commissioned in January 2016. I am an experienced practitioner of civil engineering with a particular focus on transportation infrastructure.
- 1.3 I hold a Bachelor of Engineering (BEng) in Civil Engineering from the University of Liverpool. I am a Chartered Civil Engineer (CEng) and a Member of the Institution of Civil Engineers. I have been practising as a civil engineer for over 17 years both in New Zealand and the United Kingdom.
- 1.4 I am also an accredited Project Management Professional with the Project Management Institute and lead the Project Management Team in the New Zealand Transport Infrastructure Unit within Aurecon.
- 1.5 I have a broad range of experience across many projects, particularly in the transport sector. I have been responsible for both technical and professional input into projects and have for the past eight years undertaken more of a management and coordination role.
- 1.6 Of particular relevance to the Project is my recent role as Engineering Lead and Aurecon Team Leader during the pre-implementation phase for the Southern Corridor Improvements Project from 2014 to 2015. That project contained widening of 8km of existing State highway (**'SH'**) 1 motorway in a very congested motorway corridor, upgrade of the existing Takanini Interchange, construction of 4km of shared use path (**'SUP'**) and enhanced stormwater treatment and urban design. I provided leadership over all engineering workstreams and was responsible for gaining the necessary planning approvals, developing the preliminary design and

contract documentation as well as procuring the design and construct contract for construction.

- 1.7 Also highly relevant to the Project are my roles on the following projects:
- a Engineering Lead for the SH16 Causeway Widening and Te Atatu Interchange Upgrade which was part of the Waterview Connection planning approval application where I was responsible for delivery of the preliminary design, notices of requirement and applications for resource consents;
  - b Engineering Lead for the SH20 Waterview Tunnels and Great North Road Interchange where I was responsible for delivery of the preliminary design, minimum requirements and the associated contract documentation for the procurement of the \$1.4b contract;
  - c Engineering Lead for the SH16 Widening between Henderson Creek and Huruhuru Creek including the upgrade of Lincoln Road Interchange where I was responsible for delivery of the preliminary design, notices of requirement and applications for resource consents; and
  - d Engineering Lead for the SH16 Widening between Huruhuru Creek and Westgate including the upgrade of Royal Road Interchange where I was responsible for delivery of the preliminary design, notices of requirement and applications for resource consents.
- 1.8 I have also fulfilled the role of Project Controls Manager on the City Rail Link project from 2011 to 2013, and as the Principal Technical Advisor's Commercial Manager from 2014 to 2015.
- 1.9 My evidence relates to notices of requirement ('**NoR**') and resource consent applications lodged by the New Zealand Transport Agency ('**Transport Agency**') with the Environmental Protection Authority on 14 December 2016 for the Northern Corridor Improvements Project.
- 1.10 I am familiar with the area that the Project covers, the State highway and the local road transport network in the vicinity of the Project.

## **2 Involvement with the Project**

- 2.1 As the Aurecon Team Leader, I have overall responsibility for the delivery of the planning approval and procurement phases of the Project to the Transport Agency. I am responsible for the management and direction of the Project Team, including all the various professional and technical experts who are required to contribute to the delivery of the Project, a team of some 100+ persons. I am required to provide a leadership and management role in terms of the overall direction of the Project, with responsibility for both a timely and positive outcome.
- 2.2 In my role as Team Leader, I am the main point of contact with the Transport Agency and I similarly represent the Project Team to stakeholders and the public.
- 2.3 I undertook the technical verification of the *Design and Constructability Report* that formed part of the *Assessment of Environmental Effects* ('**AEE**') lodged in support of the Project. I confirm I agree with the contents of the report.

## **3 Code of conduct**

- 3.1 I have read and am familiar with the Code of Conduct for Expert Witnesses in the current Environment Court Practice Note (2014), have complied with it in the preparation of this evidence, and will follow the Code when presenting evidence to the Board. I also confirm that the matters addressed in this statement of evidence are within my area of expertise, except where I rely on the opinion or evidence of other witnesses. I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

## **4 Scope of evidence**

- 4.1 This evidence addresses the following matters:
- a The construction methodology (including construction zones and support areas, causeway works, and temporary traffic management);
  - b Input into the alternatives assessment;

- c Comments on submissions lodged in relation to the Project;
  - d Response to section 149G(3) key issues report; and
  - e Conclusions.
- 4.2 In preparing this evidence, I have reviewed the following witnesses' evidence:
- a Mr Glucina, Transport Agency;
  - b Mr McGregor, Utilities;
  - c Mr Moore, Project Design;
  - d Ms Wilkening, Noise and vibration;
  - e Mr Dee, Contamination;
  - f Mr Ridley, Earthworks;
  - g Mr Hughes, Stormwater;
  - h Mr Amputch, Landfill;
  - i Mr Clark, Transportation;
  - j Mr Schofield, Alternatives;
  - k Mr Burn, Planning (designations); and
  - l Mr McGahan, Planning (resource consents).

## **5 Executive summary**

- 5.1 An indicative programme and construction staging have been prepared for the purposes of identifying and assessing the actual and potential environmental effects of the Project associated with construction. The construction of this Project will be undertaken concurrently in several locations along the Project alignment.
- 5.2 The construction of the Project is likely to take approximately 3.5 years, commencing around June 2018 with completion expected around

September 2021. This duration will be dependent upon the constructor's construction methodology and programme, and whether the land required for the Project is acquired at an appropriate time to suit the construction methodology. It is likely that some enabling works could commence prior to June 2018, potentially as soon as January 2018 when a constructor is set to be appointed.

- 5.3 The indicative construction methodology, staging and programme for the Project has considered the potential temporary traffic impacts arising from Project works on and around live transport corridors including SH1, SH18 and the surrounding local road network. As such, the construction of the Project will result in disruption to the existing transport network. A range of temporary traffic management measures have been proposed to mitigate these effects.
- 5.4 The concerns raised by Kiwi Self Storage Limited (Submission 126352) and National Mini Storage Limited (Submission 126165) can be mitigated through the Construction Environment Management Plan ('**CEMP**') and the Stakeholder and Communications Plan ('**SCP**') once a constructor has been appointed and their construction programme and methodology has been confirmed.

## **6 Construction methodology**

- 6.1 Construction methodologies have been developed based on adjacent land uses, existing structures, site investigations, topography, traffic management and identified risks and constraints.
- 6.2 Key considerations which are relevant to the NoRs and resource consents include the following:
- a General construction extent, sequencing, staging and working hours;
    - i Construction will generally occur within daylight hours;

- ii However, in order to minimise disruption to traffic, it is envisaged that night works will be undertaken on the existing motorway and local roads.<sup>1</sup>
- b Construction noise and vibration (refer to the evidence of **Ms Wilkening**);
- c Earthworks, including disturbed areas and cut/fill volumes;
- d Contaminated ground management (refer to the evidence of **Mr Dee**);
- e Construction water management (including stormwater collection and treatment measures) and works in or adjacent to overland flow paths (refer to the evidence of **Mr Ridley**);
- f Stormwater wetland construction and outfalls to streams; abandonment and diversion of existing manmade open channels and pavements and impervious areas (refer to the evidence of **Mr Hughes**);
- g Rosedale Road lowering;
- h Constellation Station reconfiguration from a terminus station to a through station; and
- i Utility diversions (refer to the evidence of **Mr McGregor**).

#### *Groundwater management*

- 6.3 Only low yielding aquifers occur within the Project area, contained within the Waitemata Group and overlying alluvium along the valleys. Regional groundwater is deepest below topographically higher standing ridges such as Sunset Road in the southern end of the Project area, with shallower groundwater levels in low lying areas. Perched groundwater, evidenced as thin discontinuous lenses within the bedding of the rock, occurs in most areas above the regional groundwater.
- 6.4 During excavation in areas of shallow or perched groundwater, it may be necessary to carry out 'de-watering', to remove the relatively small

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<sup>1</sup> *Design and Constructability Report*, refer to section 7.2, page 33.

quantity of groundwater which seeps into excavation zones. This is a common practice and involves channelling groundwater seeps to surface water collection ponds from where it is discharged off site. Resource consent has been sought for the diversion of groundwater caused by excavation, and associated dewatering or groundwater level control.

*Construction zones and support areas*

- 6.5 The Project has been divided into eight construction zones ('CZ'). The key construction activities are briefly described below and further in Section 5 of the *Design and Constructability Report*.<sup>2</sup>
- a CZ1: Construction of the "SH18 eastbound to SH1 northbound" and the "SH1 southbound to SH18 westbound" connection ramps along with the new offline SH18 motorway alignment to connect to the existing SH18 at Paul Matthews Road;
  - b CZ2: Partial widening of SH18 and upgrade to motorway standard of the existing SH18 between Paul Matthews Road and Albany Highway, plus construction of a new bridge taking Paul Matthews Road over SH18 and construction of a new intersection at Caribbean Drive;
  - c CZ3: Widening of the SH1 motorway northbound between Constellation Drive and Oteha Valley Road;
  - d CZ4: Widening of the SH1 motorway southbound between Oteha Valley Road and Constellation Drive;
  - e CZ5: Upgrade of the SH1 motorway central median between Constellation Drive and Oteha Valley Road;
  - f CZ6: Construction of a new bridge connecting the new extension of the Northern Busway to the existing Albany Bus Station;
  - g CZ7: Construction of the new extension to the Northern Busway between Greville Road and Albany Station; and

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<sup>2</sup> *Design and Constructability Report*, Section 5, page 23.

- h CZ8: Construction of the new extension to the Northern Busway between Constellation Station to Greville Road.
- 6.6 In addition to the CZs, there are six Construction Support Areas ('**CSA**') which are required to support construction activities, as described below and further in Section 5 of the *Design and Constructability Report*.<sup>3</sup>
- a CSA 1 – Paul Matthews Road;
  - b CSA 2 – North-Facing Ramps;
  - c CSA 3 – Greville Road West;
  - d CSA 4 – McClymonts Road;
  - e CSA 5 – Rosedale Road; and
  - f CSA 6 – Greville Road East.
- 6.7 CSAs will provide a range of contractor offices, amenities, welfare facilities, plant/material storage and earthworks stockpiling as required. A description of each CSA and the likely activities envisaged is set out further in the *Design and Constructability Report*<sup>4</sup> and below:
- a All CSAs will be fully fenced and made secure. Site establishment activities will include site clearance, ground preparation, and establishing erosion and sediment control measures prior to any construction activities occurring. Upon completion of the works, the CSAs will be disestablished and the areas restored to at least their previous condition prior to construction;
  - b All CSAs are likely to be provided with water, telecommunications and power connections, and where required sewer connections. In most cases, these services are able to be connected directly to the existing adjacent networks. Where there is no existing network adjacent to the CSA, a temporary connection will be made. These connections will be removed after the completion of the Project;

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<sup>3</sup> *Design and Constructability Report*, Section 5, page 23.

<sup>4</sup> *Design and Constructability Report*, Section 7.3, page 33.

- c All CSAs are likely to be established on compacted hard-fill, (i.e. not impervious), unless impervious areas already exist;
  - d All CSAs are likely to be used for stockpiling of earthworks, including contaminated material. CSA 2 at the north facing ramps is the most likely location for specifically stockpiling contaminated material; and
  - e All CSAs are likely to be used as structures compounds (incl. laydown for bridge/ retaining wall construction materials).
- 6.8 The CSA's were located in areas which suited the major construction activities such as the construction of earthworks, bridges, retaining walls etc. These CSA's were positioned where possible away from residential areas, if practicable, however some of the CSAs are adjacent to existing residential areas, these being CSA1, CSA2 and CSA4.
- 6.9 The contractor will need to provide a suitable methodology to prevent dirt tracking from the CSAs onto adjacent roads.

*Construction duration and staging*

- 6.10 An indicative programme and construction staging have been prepared for the purposes of identifying and assessing the actual and potential environmental effects of the Project associated with construction.<sup>5</sup>
- 6.11 As outlined in the *Design and Constructability Report*<sup>6</sup> and *AEE*<sup>7</sup>, construction of the Project is expected to take approximately 3.5 years. The Project construction is expected to commence in June 2018, however, some early enabling works could commence sooner, potentially as soon as January 2018 when the contract to construct the Project is expected to be awarded to a constructor. The majority of the construction works will be completed prior to September 2021, however this will be dependent on whether the land required for the Project is acquired at an appropriate time to suit the construction methodology.

<sup>5</sup> *Design and Constructability Report*, section 6, page 31.

<sup>6</sup> *Design and Constructability Report*, section 6.1 (page 31), Section 6.2 (pages 31 – 32), and Appendix C Indicative Construction Programme.

<sup>7</sup> *AEE*, section 5.9.1 and Table 16, pages 82 – 83.

- 6.12 The construction of this Project will be undertaken concurrently in a number of locations along the Project alignment, such that many elements in multiple CZs will be undertaken at the same time.
- 6.13 The key features and interdependencies that this programme must consider are:
- a The land required for the Project must be acquired and made available in advance to the constructor to suit their construction methodology. In particular, the location of the existing North Harbour Hockey Stadium and 9 Arrenway Drive (location of the existing Turners Car Auction business) are land availability constraints which will determine the overall construction methodology and programme;
  - b The protection and/or relocation of Transpower's 220kV line through Constellation Reserve;
  - c The protection and/or relocation of Watercare Services Limited's ('WSL') assets;
  - d The diversion of Paul Matthews Road to accommodate temporary traffic management requirements to allow construction of the new Paul Matthews Bridge and lowering of SH18;
  - e Commencing the Rosedale Road lowering prior to the SH1 bridge widening above to ensure that the sub-standard existing vertical clearance is not further reduced during construction; and
  - f Commencing the McClymonts Road bridge replacement offline to maintain bus operations on the existing bridge.
- 6.14 While there are some dependencies between the proposed construction stages, the specific staging of the work is subject to further development and refinement by the constructor. Nonetheless, I consider that the indicative durations given in the *Design and Constructability Report* represent a reasonable duration envelope for the purposes of assessing actual and potential environmental effects.

### *Causeway works*

- 6.15 Causeway works are proposed between the two WSL conveyance ponds (Ponds 1 and 2) to provide for the widening of SH1 and the addition of the Busway and SUP. The methodology described in the *Design and Constructability Report*<sup>8</sup> represents one feasible option for the proposed modifications to the existing causeway. The constructor may choose to develop an alternative methodology provided it complies with the requirements of the consent conditions and is agreed to by the Transport Agency and WSL.
- 6.16 Potential effects on the WSL conveyance Ponds 1 and 2 arising from the proposed causeway works may include:
- a A very small (insignificant margin) reduction in capacity of both ponds;
  - b A likely requirement to excavate soft foundation soils, including existing sediment/sludge, where the new embankment interfaces with the existing ground profile at the base of both conveyance ponds (this is dependent on the design and construction methodology undertaken by the constructor); and
  - c The use of temporary sheet piles which will penetrate the conveyance pond bed. This is required to dewater the area to allow construction of the causeway widening. If a temporary earth bund/revetment is required, new material will need to be placed temporarily at the base of both conveyance ponds.

### *Temporary traffic management*

- 6.17 The indicative construction methodology, staging and programme for the Project has considered the potential temporary traffic impacts arising from Project works on and around live transport corridors including SH1, SH18 and the surrounding local road network. As such, the construction of the Project will result in disruption to the existing transport network including Public Transport operations.

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<sup>8</sup> *Design and Constructability Report*, Section 7.16, pages 39 – 40.

- 6.18 A range of temporary traffic management measures have been proposed, which in summary include:
- a SH1 and SH18 - Lane widths on SH1 and SH18 will be temporarily reduced in order to provide adequate space for construction;
  - b Rosedale Road - The lowering of the vertical alignment of Rosedale Road beneath SH1 will require restrictions to the existing traffic operations for approximately 6 months to allow construction access. Due to existing traffic movement constraints and modelling, a traffic signal controlled one way is proposed, allowing alternating movement in both directions (one direction at a time). This is predicted to result in lesser effects than a one way operation;
  - c McClymonts Bridge – Construction of an off-line bridge is proposed for the reasons explained in **Mr Moore's** evidence.<sup>9</sup> Off-line construction will result in minimal disruption to the pedestrian, bus and car users of the existing McClymonts Bridge during the construction period; and
  - d Paul Matthews Road - Construction of the proposed new Paul Matthews Bridge over SH18 will require the temporary relocation of the Paul Matthews Road and Upper Harbour Highway intersection. As a result of the requirement to lower the vertical alignment of SH18 to tie in to the new ramp connections to SH1, right turn restrictions into and out of Paul Matthews Road will likely be required for a period of 3 to 6 months. This is predicted to result in travel time increases.
- 6.19 These temporary traffic management measures are described in detail in the *Design and Constructability Report*,<sup>10</sup> the *Assessment of Transport Effects*,<sup>11</sup> and in the evidence of **Mr Clark**.<sup>12</sup>

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<sup>9</sup> Paragraphs 8.9 – 8.11 of Mr Moore's evidence in chief (Project design).

<sup>10</sup> *Design and Constructability Report*, Section 7.18.2, page 41 - 42.

<sup>11</sup> *Assessment of Transport Effects*, Section 8, page 80.

<sup>12</sup> Paragraphs 13.1 – 13.2 of Mr Clark's evidence in chief (Transportation – General overview).

## 7 Input into the alternatives assessment

- 7.1 The constructor appointed to carry out the works may choose an alternative construction methodology and programme, provided this complies with the relevant designation and resource consent conditions.
- 7.2 Nonetheless, alternative construction methodologies have been considered when developing the Project design and determining the methodology set out in the application documents:
- a Alternative construction water management tools are available. These are discussed in the evidence of **Mr Ridley**;<sup>13</sup>
  - b Alternative construction methods may be developed in order to mitigate the effects of construction noise and vibration. These are discussed in the evidence of **Ms Wilkening**;<sup>14</sup>
  - c Off-line construction of the McClymonts Bridge was developed as a means of mitigating effects of the Project construction on local traffic (including bus routes). The development of this alternative is described in the evidence of **Mr Moore**;<sup>15</sup>
  - d The construction programme has been developed to ensure the North Harbour Hockey Stadium is able to be used for international tournaments scheduled for later this year. Alternative programmes which would prevent this have been discounted; and
  - e Alternative methods of widening the causeway have been considered, in order to develop a method with the fewest effects.

## 8 Response to submissions

### *Kiwi Self Storage Limited*

- 8.1 Kiwi Self Storage Limited (Submission 126352) opposes the Project based on the effects on its site at 12 Holder Place. I respond to the

<sup>13</sup> Section 9 of Mr Ridley's evidence in chief (Earthworks).

<sup>14</sup> Section 7 of Ms Wilkening's evidence in chief (Noise), and Section 7 Ms Wilkening's evidence in chief (Vibration).

<sup>15</sup> Paragraphs 8.5 – 8.11 of Mr Moore's evidence in chief (Project design).

following concerns relating to construction of the Project raised by the submitter:

- a During the construction period an additional strip of land along the western boundary of the site of approx. 53 m<sup>2</sup> is required and that this will impact on the ability of its facility to operate as all vehicle traffic circulates around the site and along the western boundary to exit the site;
  - b The AEE does not provide sufficient detail of the effects of construction on the site, in particular, sufficient detail of how long the construction activities adjacent to the site will take. The submitter further states that it is *“not sufficient for these matters to be addressed in construction management plans, without sufficient certainty of how the adverse effects are going to be managed, and how the objectives of any conditions are to be achieved”*;
  - c The construction of the proposed 7.2m high retaining wall close to the buildings, and immediately adjacent to the on-site vehicle circulation route, will have a significant impact on the ability of customers to access the storage units during the construction period; and
  - d The submitter also wants to be consulted on the CEMP and seeks *“clear objectives and standards to address how effects on the operation of the facility are to be managed during the construction period”*.
- 8.2 The location of Kiwi Self Storage Limited is within CZ8. CZ8 covers the construction of the new extension to the Northern Busway between Constellation Station to Greville Road. The initial construction programme developed for the Lodged Design for CZ8 indicates a construction period of approximately 21 months, commencing around November 2019.
- 8.3 The temporary occupation of the additional Kiwi Self Storage Limited land will be for approximately 2-3 months to allow construction of the new retaining wall that supports the Busway adjacent to Kiwi Self Storage Limited. However, this duration will be confirmed by the constructor once appointed and their construction methodology has been confirmed.

8.4 This additional strip of land, 1.0m away from the face of the retaining wall, may not be required permanently by the constructor throughout the construction duration. The allowance for this strip to be occupied by both the constructor and Kiwi Self Storage Limited during construction could potentially be negotiated. The use of temporary traffic management measures could allow for vehicular circulation around the facility, as per the existing facility, which would mitigate the potential accessibility issues to storage units.

8.5 The construction activities and durations at this location can be covered specifically within the CEMP and the SCP once a constructor has been appointed and their construction programme and methodology has been confirmed.

*National Mini Storage Limited (Paul McFadzien)*

8.6 National Mini Storage Limited (Submission 126165) partially supports the Project but is concerned about disruption from general construction work:

a Along the boundaries of its sites, particularly at 6 Miro Place and 1 Titoki Place; and

b On the access point from Rosedale Road to the side of SH1.

8.7 The submitter states that previous construction work often activated or damaged the security fencing and monitoring system to the storage facility and this was not adequately dealt with by the constructor.

8.8 The submitter seeks conditions that the CEMP details processes and measures the constructor will take when working alongside neighbouring properties (in particular the submitter's sites) to keep any disruption from construction work to an absolute minimum and further steps to take should any disruption occur.

8.9 The construction activities and durations at the National Mini Storage Limited location can be covered specifically within the CEMP and the SCP once a constructor has been appointed and their construction programme and methodology has been confirmed.

*Auckland Council*

- 8.10 Auckland Council (Submission 126345) asks how the stormwater that usually passes through the Constellation and ARC refuse ponds will be managed during construction and operation, to ensure continuity of stormwater management at all times.<sup>16</sup> In response to this, I note that the indicative programme and construction staging allows for the proposed Constellation and ARC refuse ponds to be constructed and commissioned, or appropriate temporary ponds constructed if the permanent ponds cannot be constructed in time, prior to the decommissioning of the existing Constellation and ARC refuse ponds. The detail around commissioning the new ponds will be dependent upon the constructor's construction methodology and programme which will be confirmed upon appointment of a constructor in 2018.

*Grant Young*

- 8.11 Mr Grant Young's submission (Submission 126329) seeks that the Northern Busway Extension is opened prior to the SH improvements being constructed. I accept that this would be desirable, as it would provide an alternative means of travel during the construction period. However, to enable the Northern Busway Extension to open prior to the SH improvements would mean extending the total construction period for the Project by approximately 18-24 months. This is mainly due to the time to undertake the construction of several large retaining walls that relate only to the Northern Busway Extension. Opportunities to stage the opening of the Northern Busway Extension during the construction period are expected, for example the southbound section of the Busway from the WSL conveyance ponds into Constellation Station. However, this opportunity will be dependent upon the constructor's construction methodology and land required for the Project being acquired and made available in advance to suit their construction methodology.

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<sup>16</sup> Auckland Council's submission (Submission 126329) at page 55.

## **9 Response to section 149G(3) key issues report**

- 9.1 Paragraph 184 of the Key Issues Report states that the extended lapse date is a key issue. I understand that the Transport Agency has sought a lapse date of seven years (instead of the default period of five years). This would give the Transport Agency seven years in order to give effect to the consents and designation.
- 9.2 Construction is scheduled to commence in 2018, and work is already underway to appoint a construction team. Nonetheless, I consider an extended lapse date would be sensible because a project of this size and complexity can be delayed for a number of reasons, such as:
- a Delays in acquiring land;
  - b Delays in obtaining approval from requiring authorities with pre-existing designations in the Project area;
  - c Discoveries of unexpected ground conditions, archaeology or contamination; and
  - d Natural disaster.

## **10 Conclusions**

- 10.1 The indicative programme and construction staging has been prepared using New Zealand best practice that has helped identify the effects of the Project associated with construction. This has resulted in the construction effects of the Project being mitigated as practicably as possible.
- 10.2 Further details around the construction methodology and programme will be confirmed once a constructor has been appointed. These details can then be covered specifically within the CEMP and the SCP providing certainty around the construction effects and their durations.



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**Andrew William Hale**

20 April 2017