

**IN THE MATTER OF** the Resource Management Act 1991

**AND**

**IN THE MATTER OF** A notice of requirement for a designation by Wellington Water Limited (WWL), on behalf of Wellington City Council (WCC) in accordance with section 168A of the Act, for the construction, operation and maintenance of a water supply reservoir within the Prince of Wales Park, Mount Cook Wellington.

Wellington City Council Reference  
SR394052

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## **RECOMMENDATION OF THE INDEPENDENT HEARINGS PANEL**

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11 April 2018

## SUMMARY OF THE PROPOSAL

A notice of requirement (NOR) for a designation is sought by Wellington Water Limited (WWL), on behalf of Wellington City Council (WCC) in accordance with section 168A of the Act. This provides for the construction, operation and maintenance of a 35,000 m<sup>3</sup> water supply reservoir within the Prince of Wales Park, Mount Cook Wellington.

These works include the associated access, pipework and tie-ins to the existing network. We were advised that the notified proposal of raising the height of both playing fields was now no longer part of the proposal. The reservoir is proposed to be buried being backfilled upon completion of excavation and construction to appear part of the landform. Landscaping of fill batters is proposed.

The construction activity for the reservoir is anticipated to take up to 3 years with the primary heavy vehicle access being via Rolleston Street.

The notice of requirement was publicly notified drawing 42 submissions from individuals and organisations primarily from residential property owners in the vicinity.

## SUMMARY OF THE HEARING

We were delegated authority from Wellington City Council as independent commissioners to hear the application and the submissions and to make the Council's recommendation on the above proposal as regulatory authority.

The hearing took place over two days on 5 and 6 of March 2018 in Committee Room 2 of the Council Buildings. After opening legal submissions, evidence was presented by the Requiring Authority, and their site selection, engineering, landscape, noise and vibration, transportation, ecology and planning advisers. Thirteen individuals and organisations then appeared at the hearing in support of their submissions. Provision made for a final written right of reply from the Requiring Authority at the conclusion.

A list of persons who attended the hearing is detailed in Appendix 1 of this report.

## SUMMARY OF THE RECOMMENDATION

We recommend that pursuant to s168A of the Resource Management Act 1991 that the Requiring Authority **confirm the Notice of Requirement** subject to conditions attached as Appendix 2, for the reasons summarised in Sections 5 to 13 of this decision. In particular:

### Reasonable necessity

- A new reservoir serving the Wellington Lower Level Water Supply Zone (LLZ) would firstly provide for additional operational and post disaster resilience. We also note the evidence that this project is one of a number being carried out in the region to improve security of supply.
- Overall the positive effects of the proposal and the reasonable necessity for the reservoir have been well outlined and we consider that the proposal is reasonably necessary to achieve the objectives of the Requiring Authority.

### **Alternatives**

- We accept the Requiring Authority's evidence that it has gone through a rigorous site selection process and that there are benefits in terms of cost and reductions in time post seismic event to restore water supply from having a single reservoir.
- We have concluded that the analysis of alternative sites has been robust, fit for purpose and has applied sensitivity testing to challenge the outcomes.

### **Effects**

- We note that cultural values have been considered and were not the subject of evidence or submissions.
- We consider that the risk of failure of the reservoir, leading to potential risk to the surrounding environment and the adjacent private property, is extremely low and therefore acceptable.
- The proposed backfill material around the reservoir is sufficiently modest in overall scale, in the context of the general surrounds, that any failure of the backfill material in a significant earthquake would be localised and unlikely to affect private property.
- We consider that the Requiring Authority's assessment is sufficiently detailed manage stormwater runoff to the appropriate industry standards.
- The nature of the rock and ground conditions on the site will mean that the presence of groundwater is likely to be relatively low. Any effects on groundwater patterns, resulting from the reservoir construction, are likely to be minimal.
- The footprint of the proposed construction can be contained within an area that avoids the Papawai and unnamed tributary of the Waitangi Streams.
- Appropriate industry standard controls will be employed on the site and enforced by way of both GWRC conditions and conditions agreed by the Requiring Authority on this NOR, to ensure that the risk of sediment release to the streams is sufficiently low to allow the proposed reservoir construction.
- Earthworks can be carried out in a manner that will minimise the risk of nuisance from dust and minimise adverse effects from erosion and sediment discharge to the streams, through the use of approved Management Plans and specific focus on these matters during construction.
- A Landscape and Ecology Management Plan (LEMP) will be prepared and this will deal with the reinstatement and restoration of disturbed vegetation, the enhancement of riparian planting along the Papawai Stream, and the planting of a seasonal food supply for birds.
- Ecological effects will be managed through good practice and monitored through the conditions of consent.

- We were generally satisfied that the reservoir could be developed in a manner consistent with the requirements of the Town Belt Management Plan.
- The objective of a requirement to bury the reservoir is to protect the natural character as perceived and enjoyed by the community. We agree that with suitable planting, this can be achieved.
- We accept that for some local residents, particularly those at the top of Rolleston and Hargreaves Streets, the visual effects of construction will be adverse and significant, and take some years to mitigate with planting. We consider it important that the LEMP pays particular attention to the early mitigation of visual effects along the northern and eastern flanks of the reservoir site.
- We are satisfied that in the longer term the visual effects of the reservoir can be suitably mitigated. We accept that during construction there will be significant and adverse visual effects that cannot be mitigated apart from ensuring that as much of the existing vegetation is retained as is possible.
- Throughout the hearing we were constantly reminded of the importance of the Prince of Wales Park for both the local residents and for users of the wider Town Belt recreational networks. We are satisfied that, accepting an interim and significant loss of access and amenity, in the longer term the values of the park will be reinstated, and potentially enhanced.
- Construction traffic and the associated effects of heavy traffic noise and disruption to Rolleston Street is one of the key effects of the proposal in our view. It is clear that existing residents on Rolleston Street in particular, will be inconvenienced to a greater or lesser extent by the requirement to service the construction activities at the park.
- Construction traffic effects are exacerbated by the 3 year proposed construction period although we note that traffic effects will vary from being relatively intense during the removal of excavated material to lesser volumes when no bulk earthworks are occurring.
- We are also satisfied that alternative means of access have been more than adequately explored and it is a matter of mitigating adverse effects to the greatest degree possible.
- We also note the best endeavours approach to providing alternative parking adjoining the construction site for residents in upper Rolleston Street and the requirement for reinstatement of existing parking once construction is completed.
- The requirement for a Construction Noise Management Plan is the most appropriate method of codifying the best practicable option approach to managing the adverse effects of construction noise. Much of the success of the

noise minimisation measures is through good contractor behaviour and recognition that the contractor is part of an affected community.

- In making our recommendation we consider that the adverse effects can be managed as best they can through best practice construction methods and implementation of the management plans. The wider benefits of the project are tangible and while they are potentially positive local positive effects, they do not become realised for a considerable period of time.

#### **Consultation and Liaison**

- We note that some submitters were complimentary about the consultation carried out. During the hearing it became clear to us that the relationship between the Requiring Authority, its' nominated contractor, and the affected community will also be critical in achieving a successful outcome. The Community Liaison Group shall be established to provide a frequent forum for issues.

#### **Policy Statements and Plans and any other matters**

- There is nothing in any of the applicable policy statements and plans under the Act that is contrary to the proposal proceeding. In our view the key matters relate to the necessity for the Project and management of adverse effects on the environment.
- We recognise that the Wellington Town Belt Management Plan 2017 acknowledges the proposed reservoir location at Prince of Wales Park as well as other initiatives beyond Prince of Wales Park. While we consider the main issue to be construction and landscape effects we do agree that the proposal is consistent with this component of the Town Belt Management Plan.

#### **Conditions and Part 2.**

- Conditions have been agreed by the Requiring Authority and the s42A writer and advisers. We consider that they are fit for purpose.
- In terms of s5 of the Act we consider that the proposed reservoir will enable the wider Wellington community to provide for its social, economic, and cultural well-being and for their health and safety while avoiding, remedying and mitigating adverse effects to the extent that is possible.
- We consider that relevant s6 matters have been recognised and provided for, we have had particular regard to relevant s7 matters and have taken into account s8.

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**Appendix 1** – Persons who attended and presented evidence or submissions at the hearing

**Appendix 2** – Recommended conditions

## 1. Introduction

This is the recommendation on a Notice of Requirement (NOR) from the Wellington City Council (WCC) as regulatory authority to Wellington City Council, (as a Requiring Authority and represented by Wellington Water Ltd (WWL)), to designate a portion of the Prince of Wales Park (the Park) to accommodate the construction, operation and maintenance of a 35,000m<sup>3</sup> water reservoir within the Wellington Town Belt. The proposed reservoir known formally as 'Omāroro Reservoir' will be hereafter referred to as the 'reservoir'.

To avoid confusion we refer to:-

- Our role as delegated commissioners on behalf of Wellington City Council as 'WCC' where we have been delegated authority to hear and make a recommendation on this notice of requirement on behalf of the Council as regulatory authority.
- Wellington City Council as Territorial Authority or in resource management terminology the 'Requiring Authority'. Wellington Water Limited (WWL) led the process on behalf of WCC as Requiring Authority reflecting the role WWL has in being a shared-service, Council controlled organisation jointly owned by the Wellington, Hutt, Upper Hutt and Porirua City Councils' and the Greater Wellington Regional Council.

This recommendation will therefore be considered by WCC as Requiring Authority who will make a decision whether to confirm the requirement, modify the requirement, impose conditions or withdraw the requirement.<sup>1</sup>

In making this recommendation we firstly record that we have read and considered the notice of requirement and further information supplied to WCC, all submissions and the Section 42A (s42A) report prepared by Ms Stephanie Steadman (WCC's appointed Reporting Officer) which incorporates other Council adviser comments.

We have also had particular regard to submissions received, legal submissions from the applicant, all evidence and representations presented at the hearing. We also record that we have visited the site and the surrounding area before and after the hearing.

## 2. Site Description and the Proposal

The following is based on the site descriptions and the proposal as described in the Assessment of Environmental Effects (AEE) and more particularly in the reporting officer's s42A report. It is provided here for context and as background to our consideration of the key resource management issues.

### 2.1 Site Description and Surroundings

Prince of Wales Park is located within the Town Belt between Mount Cook, Newtown, Brooklyn and Vogeltown. It consists of two playing fields known as the upper field and the lower field and other generally sloping land contained within the Town Belt. To the east

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<sup>1</sup> s168A(4) of the Resource Management Act 1991



of the Park are residential properties in Westland Road, Salisbury Avenue, Salisbury Terrace, Wright Street and Papawai Terrace. To the north are properties in Hargreaves and Rolleston Streets while to the west and elevated above the park are residential properties in Dorking Road Brooklyn. To the south is the Town Belt containing the Scottish Harriers clubrooms, the Poneke Karate Dojo and a parking area

The proposed site of the reservoir is on an elevated knoll between two playing fields. The upper field has a ground level of approximately 69 mRL, and has no built facilities. This field is accessed off Rolleston Street. The lower playing field has a ground level of approximately 60 mRL and is accessed off Salisbury Terrace. The lower field has a pavilion building including changing rooms.

There is a steep escarpment between the upper field and the reservoir site. This escarpment has established vegetation including some pohutukawa trees and ground cover. There are areas where the base soil is visible. A pedestrian path as part of the city to sea walkway leads from the upper field up the escarpment towards the knoll. This path is accessed from the south west corner of the upper field.

A wider path suitable for vehicles provides for vehicular and pedestrian access between the upper and lower fields. This path is located at the south eastern portion of the upper field and passes the sports pavilion and goes over a culvert of the Papawai Stream where it enters the lower field.

There are two streams that are located within the Town Belt. The Papawai Stream skirts the western and northern edges of the lower field in a modified channel before running northward along the eastern edge of the Town Belt before it enters a culvert near Papawai Terrace. An unnamed tributary of the Waitangi Stream is on the western side of the knoll before entering the stormwater system at Rolleston Street.

## **2.2 The Proposal**

The proposal as generally described in the s42A report and is provided here for context and as background to our consideration of NOR.

- The NOR is to create a designation for a public work to provide for the construction, operation and maintenance of a 35,000m<sup>3</sup> reservoir<sup>2</sup>. These works include the associated access, pipework and tie-ins to the existing network. We were advised that the notified proposal of raising the height of both playing fields was now no longer part of the proposal.
- The footprint of the reservoir is 3,800m<sup>2</sup>, and including the pipe tunnel this increases to 4,000m<sup>2</sup>.
- The proposed concrete reservoir structure would have an internal diameter of 67.0m. The wall height proposed is 12.1m, with a total height of 15.5m.
- The reservoir structure is proposed to be completely buried, with the exception of two small access hatches on the roof of the reservoir and a 2.5m x 2.5m

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<sup>2</sup> We noted the advice given to us that volumes and measurements are approximate, due to detailed design not having been completed at this stage.

doorway and 10m wide service access area to the reservoir's buried service and pipe tunnel.

- Cover over the reservoir roof is proposed to be 0.5 to 1.0m comprising a minimum of 0.2m drainage material and 0.3m topsoil to allow for grassing.
- The walls of the reservoir are also proposed to be covered, with a generally 2H:1V slope. We were advised that steeper slopes may be required to avoid some ecologically sensitive areas or to tie into the existing landform. Where steeper slopes are required, methods to reinforce and stabilise the slopes may also need to be used.
- The Requiring Authority outlined that the reservoir will be designed to cope with large seismic events. The NOR states that it will remain operational following a 1000-year return period earthquake, with no or minimal repairs needed. The proposed reservoir is also designed to retain water in the 'Ultimate Limit State' event of a 2,500-year return period event. The AEE stated that it may need to be repaired, but will not collapse or cause harm to people.
- The NOR identifies that the fill used to create the slopes on the side of the reservoir should be able to remain intact with a 25-year return period earthquake but may slump away from the reservoir walls and require repair following a 1 in 1000-year event.
- A tunnel structure is necessary to house pipework and electrical services required for the operation of the reservoir. The tunnel structure will have an internal width of 6.25m and a 2.2m internal height. Vehicle access will be provided to the tunnel across the western edge of the upper field. At the hearing we were advised that this tunnel structure will be excavated using a cut and cover technique.
- Inlet and outlet connection to the existing water supply network would be from the pipe tunnel and under the upper field to the top of Hargreaves Street.
- The overflow / scour drains from the reservoir are proposed to connect to an upgraded Rolleston Street stormwater drain. The overflow from the reservoir would be sized to allow 1200L/s while the scour would be sized to allow 400 L/s.
- In order to allow for the construction phase of the reservoir and associated infrastructure, some modifications to existing services will be required. These are likely to include water mains and electricity cables. The details of this are proposed to be determined at detailed design and construction planning stage.
- Landscape planting is proposed around the reservoir and associated infrastructure.
- Earthworks will take place over an area of approximately 2.6-3.6 ha, and will require the excavation of approximately 56,000m<sup>3</sup>, not including topsoil (approximately 3,000m<sup>3</sup>), or taking into account any bulking of materials when disturbed.
- Due to the level of excavation required, a large amount of fill would need to be either removed from the site, or be stockpiled and re-used.
- We were advised that a number of options for managing this excess fill were identified within the NOR and within the update to the NOR. The Requiring Authority informed us at the hearing, that due to concerns raised by submitters, the preferred option is for 25,000m<sup>3</sup> of suitable material to be stockpiled on both

the upper and lower sports fields and used as backfill once the reservoir is constructed. The surplus material (30,000m<sup>3</sup>) would be disposed of off-site.

- Approximately 5,500m<sup>3</sup> of earth/rock material will need to be imported for use as fill material for reservoir foundations and drainage material.
- The Requiring Authority specified that the above volumes are approximate only, and that they are based on the assumption that a reasonable percentage of excavated material will be suitable for reuse either as backfill. If this is not the case, then the volumes of material required to be imported increases as does the volume of cut to waste disposed of off-site.
- There will be stormwater drainage installed along the edges of the field where required.
- The vehicle access between the upper and lower fields is also proposed to be upgraded to ensure it can accommodate heavy vehicle use. This would require approximately 300m<sup>3</sup> of suitable material to be imported to the site.
- The applicant specifies that heavy vehicle earthwork related movements from Rolleston Street will be restricted to 0900 – 1800 Monday to Friday excluding public holidays with other construction activities being able to commence at 7.30am.

## **2.3 Preliminary Matters**

There are four preliminary matters prior to our detailed discussion on the NOR and the actual and potential effects on the environment.

### **2.3.1 Raising the Fields**

The NOR as notified left the option available of raising both the upper and the lower fields as a method of disposing of some of the excess material from the excavations required to construct the reservoir. Opposition to this was raised in a number of submissions and raising the lower field was abandoned by the Requiring Authority prior to the hearing.

At the hearing itself, the Requiring Authority informed us that it was also not pursuing an option of raising the upper field. This has the consequence of increasing the amount of material that ultimately would need to be trucked off the site with the consequential effect of increasing the period of time that there would be heavy truck movements on Rolleston Street.

In our view the amendment is within scope as it was an option or possibility raised in the NOR. We also note that a number of submitters were pleased with the Requiring Authority's decision not to proceed with the raising of the height of either field. We consider construction effects particularly the extent of truck movements later in this decision.

### **2.3.2 Regional Consents**

We were advised prior to the hearing that separate resource consents were lodged with Greater Wellington Regional Council and were granted immediately before the hearing. In an ideal world and in terms of 'integrated planning' it would have been preferable for us to also consider these as there potentially could have been a conflict between the

matters under a NOR particularly in relation to conditions, and the regional resource consents that primarily deal with discharges associated with construction and management of earthworks.

We have viewed the resource consents granted and consider that there is nothing within them that is contrary to our consideration of the NOR. We have also considered mitigation in respect of riparian planting offered by the Requiring Authority.

### **2.3.3 Outline Plan**

Under s176A of the Act an outline plan of the public work, project, or work to be constructed on designated land must be submitted by the Requiring Authority to the territorial authority to allow the territorial authority to request changes before construction is commenced<sup>3</sup>.

The Requiring Authority did not request that this process be waived as there were several matters that would be subject to detailed design and may be subject to change in relation to for example, the ground conditions, the finished batter slopes and the extent of existing vegetation that could be retained. We agree that not seeking a waiver at this time is prudent. However there is a considerable amount of detail to be provided in the various management plans to be prepared by the Requiring Authority to comply with conditions so this information could assist in an outline plan process in any event.

### **2.3.4 Easements under the Wellington Town Belt Act 2016**

It is noted that the Inner Town Belt is administered under the Wellington Town Belt Act 2016 and also the Wellington Town Belt Management Plan 2017. Prior to lodging the NOR a separate process under the Town Belt Act was undertaken in order for an easement for the reservoir and associated services to be obtained within the Town Belt. We were advised by Ms Steadman<sup>4</sup> that in her view Town Belt Act implications associated with the proposal have been dealt with as part of this process and any associated requirements relating to this.

In our view this process does not replace our consideration of the way the Town Belt is considered as Open Space B land under the District Plan but we do recognise that the Town Belt Act and the associated Town Belt Management Plan is a relevant other matter. We discuss this further under Objectives and Policies towards the end of this recommendation report.

## **3. Relevant RMA Provisions**

Our responsibilities are reflected in s168A of the Resource Management Act 1991. This is a section of the Act deliberately inserted to take into account where a territorial authority as a public work proponent was to submit a NOR to its own Council for consideration.

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<sup>3</sup> s176A(1)

<sup>4</sup> S42A report paras 140 and 160

Before considering our role in this s168A process, it is important to note that our recommendation on whether to recommend confirmation, modification, conditions on or withdrawal of the requirement, is subject to Part 2 of the Act.

### **3.1 Part 2**

The s42A report covered Ms Steadman's opinion in respect of Part 2 matters and we will consider those matters in more detail once we have considered s168A. However we agree that the following components of Part 2 are relevant.

#### **3.1.1 Section 5**

Section 5 defines the purpose of the RMA as being '*... to promote the sustainable management of natural and physical resources.*'

Sustainable management is then defined as

*(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—*

- (a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- (b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
- (c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

#### **3.1.2 Section 6**

In respect of s6 all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for matters of national importance: We agree with Ms Steadman that the following components of s6 are directly relevant to our consideration.

*6(a) The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development;*

*6(c) The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna;*

6(d) *The maintenance and enhancement of public access to and along the coastal marine area, lakes and rivers;*

6(e) *The relationship of Maori and their culture and traditions with their ancestral lands, water sites, waahi tapu, and other taonga;*

### **3.1.3 Section 7**

Section 7 includes additional matters that particular regard must be given to. Again we agree with Ms Steadman that a number of these Section 7 matters are of relevance to this proposal, which are:

*Section 7(aa) The ethic of stewardship;*

*Section 7(b) The efficient use and development of natural and physical resources;*

*Section 7(c) The maintenance and enhancement of amenity values;*

*Section 7(d) Intrinsic values of ecosystems;*

*Section 7(f) Maintenance and enhancement of the quality of the environment;*

*Section 7(g) any finite characteristics of natural and physical resources*

*Section 7(i) the effects of climate change*

### **3.1.4 Section 8**

Section 8 of the Act requires that all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

## **3.2 Section 168A**

Section 168A provides the statutory framework for a Notice of Requirement issued by a territorial authority. Of particular relevance to our recommendation are clauses 168A(3) and (3A):

***s168A Notice of requirement by territorial authority***

3) *When considering a requirement and any submissions received, a territorial authority must, subject to Part 2, consider the effects on the environment of allowing the requirement, having particular regard to—*

*(a) any relevant provisions of—*

*(i) a national policy statement:*

*(ii) a New Zealand coastal policy statement:*

*(iii) a regional policy statement or proposed regional policy statement:*

*(iv) a plan or proposed plan; and*

*(b) whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work if—*

*(i) the requiring authority does not have an interest in the land sufficient for undertaking the work; or*

*(ii) it is likely that the work will have a significant adverse effect on the environment; and*

*(c) whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought; and*

*(d) any other matter the territorial authority considers reasonably necessary in order to make a decision on the requirement.*

3A) *The effects to be considered under subsection (3) may include any positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from the activity enabled by the requirement, as long as those effects result from measures proposed or agreed to by the requiring authority.*

In making this recommendation we have structured this report in a different order to the ordering of s168A(3) to reflect the way that the hearing proceeded, in the following way:

1. s168(3)(c) in relation to whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority;
2. s168(3)(b) in relation to whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work.
3. s168A(3) in relation to considering the effects on the environment subject to Part 2 of the Act of allowing the requirement including any submissions received;

4. s168A(3A) in relation to any positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from the activity enabled by the requirement;
5. s168A(3)(a) in relation to having particular regard to the relevant statutory instruments; and
6. s168(3)(d) in relation to whether there are any other matters that are considered to be reasonably necessary to make a decision.

We then comment on conditions and make some brief conclusions as to Part 2.

## 4. Notification and Submissions Received

Prior to our assessment of effects and consideration of the NOR under the relevant planning instruments, it is important that we record the content of the submissions received.

### 4.1 Submissions

We note that a total of 42 submissions were received by the close of submissions with no late submissions received. Of the 42 submissions 6 were in support, 18 were opposed and 4 were neutral. The remaining submissions were either unclear, or provided a mixture of both support to some components of the application and opposition to other components.

Issues raised within submissions have been outlined by Ms Steadman in her s42A report and are generally categorised as follows:

#### Support

- Improve resilience of Wellington's water supply
- Improve usability of the playing fields

#### Opposition or raised as issue of concern

- Reservoir too big, 'eggs in one basket'
- Potential failure of reservoir in earthquake
- Destruction of the natural environment
- Adverse effects on flora and fauna
- Effects on resident's privacy
- Construction effects, including dust, noise, vibration, traffic and parking



- Visual impact
- Decrease in property values
- Significant financial cost and questionable costs/benefits
- Insufficient consideration of alternative routes
- Insufficient consideration of alternative options

**Opportunities:**

- Potential to create wetland area on lower field for educational and ecological purposes
- Potential to improve recreational values of immediate area

13 people including Ms Carol Comber who appeared on behalf of Mount Cook Mobilised and the Rolleston Street Residents, appeared at the hearing. The points made in the submissions and all of the evidence has been used to inform our analysis of the actual and potential effects of the NOR. Relevant evidence as to the applicability of any relevant policy matters and our overall conclusions including as to Part 2 are discussed in later sections of this decision.

## 5. Reasonable Necessity/ Positive Effects

The primary evidence on project need, 'reasonable necessity' in terms of s168A(c) and the positive effects of the proposed reservoir were primarily outlined in the evidence of Laurence Edwards, acting manager Potable Water at WWL. Matters of reasonable necessity for the NOR were also emphasised by counsel for the Requiring Authority in opening submissions and re-emphasised in closing.

Mr Edwards outlined the Requiring Authority's Project Objectives<sup>5</sup> which are:

*Objective 1:*

*To enhance network operations by:*

- Improving functioning of the Wellington Low Level Zone water supply network (including reducing or removing reliance on the direct bulk water supply connection and Thorndon Pressure Reducing Valves)*
- Enabling required maintenance activities to be undertaken without disrupting water supply (including allowing for Macalister Reservoir to be taken offline for maintenance)*

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<sup>5</sup> Edwards EIC section 7

- c. *Increasing the residence time of water in the network to allow for identification and isolation of contamination.*

*Objective 2:*

*To enhance operational resilience by providing sufficient storage to supply 48 hours of water to residents, businesses, and critical water users (including the fire service) under normal operating conditions*

*Objective 3:*

*To enhance disaster resilience by providing minimum water supply for 22 days (days 8 to 30) following a significant disruption event*

*Objective 4:*

*To integrate the chosen solution into the existing water supply network in a cost effective manner*

Mr Edwards explained that the reservoir is firstly a critical part of the wider strategy for increasing resilience of water supply in the Wellington region particularly in providing for preparedness from seismic events. We note that the purpose of the project is to provide significant additional storage capacity for the Wellington Low Level Water Supply Zone (LLZ). Mr Edwards<sup>6</sup> outlined that:

*The Low Level Zone services the Wellington CBD, Thorndon, Newtown, Mount Cook, Hataitai, Kilbirnie, Miramar, Strathmore, and Seatoun, and serves around 70,000 residents and businesses. The consumption from this zone averages around 32 million litres of water per day, but consumption can exceed 50 million*

Mr Edwards noted that the LLZ has a lack of existing reservoir storage and therefore has weak operational resilience. The LLZ also had a heavy reliance on the Thorndon pressure reducing valves (PRV's) that control bulk water supplies from the Hutt Valley.

There is also limited capacity to take any of the other reservoirs offline or to carry out maintenance. It was outlined that the MacAlister Park reservoir makes up 60% of current storage for the LLZ and has not had any significant cleaning or maintenance since it was constructed in the early 1990's. The importance of additional storage was also outlined in the case of an unanticipated outbreak of for example, e-coli in the water supply. If such an event was to occur it was explained that it would take a significant amount of time to drain, clean, sterilise, test and recommission a reservoir and that excludes any other maintenance.

In carrying out the construction of the project the Requiring Authority considered that the reservoir would almost double storage for local supply, allow maintenance activities to be

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<sup>6</sup> Edwards EIC para 5.3

carried out and therefore support business and residential growth and overall community wellbeing. Further several reservoirs (albeit smaller than the one proposed) will be supplying the low level area, so if one is out of operation there is still supply from the others.

It was explained that after an earthquake and after testing, sections of the supply would be brought back on line and used for critical customers and prioritising the needs of community, including Wellington Hospital. It was outlined that the hospital has 2.5 million litres of storage which is enough to cover them for 7 days. It was also outlined that WWL extensively consulted critical users to ensure they can manage their operations for 7 days. It was also emphasised that the reservoir would particularly assist in days 8 to 28 post-seismic event.

Mr Edwards also outlined that other water supply initiatives were being investigated by WWL. These included additional reservoirs and other options are being looked at for water resilience including a cross harbour pipeline, and investigating accessing water from the aquifer under Wellington Harbour.

There was consensus from all parties that it is proper to provide a strategy for providing for security of water supply. However some submitters explained that they had a problem with the detail of the strategy encompassed by the Requiring Authority. Ms Marina Smith was concerned with the Waiwhetu Aquifer and the overall approach to water supply for Wellington. Ms Smith also provided us with a number of, in our view, higher level research papers that considered resilience and the problems with possible contamination of urban water supply.

Mr Frank Cook also outlined what he considered were flaws in WWL approach. In particular that WWL's target level of service of 48 hours' worth of storage in the LLZ was unnecessary, contrary to standard practice and detrimental to water quality.

In closing counsel for the Requiring Authority was of the view based on the evidence of Mr Edwards that the recommendations contained within the 2016 AECOM report<sup>7</sup>, that considered the wider strategy for water storage, were taken into account. These recommendations were:

- a. Adopting a recommended regional residential storage volume of 700L/p for future growth demands or where existing demands are unknown,*
- b. Providing storage for two times average daily demand, when existing demand statistics are available;*
- c. A requirement for reservoir design to be completed with consideration of zone demand, usage, land use, and providing additional storage in case of a major network failure; and*

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<sup>7</sup> AECOM RSWS Reservoir Storage review 31 August 2016

- d. *Provision for fire flow be included.*

Counsel in closing stated the following.

*As Mr Edwards explained during the hearing, these factors combine to require a TLoS of 48 hours for the Low Level Zone, and a reservoir size of 35,000m<sup>3</sup>. Currently, two times average daily demand for the Low Level Zone exceeds 700 L/p, and water demand will be exacerbated by further population growth in the zone.<sup>8</sup>*

In relation to Mr Cooks concern that 48 hours stage would create a risk to water quality we were advised that:

*Paragraph 9.16 of Mr Edwards' evidence explains that short and long water residence times can create risks to water quality, but that an allowance of around 48 hours storage at average day demand for the zone is appropriate<sup>9</sup>.*

There was also concern raised by Ms Smith and Ms Judith Hutt who expressed the view that WWL was putting 'all its eggs in one basket' by not considering a strategy for a number of smaller reservoirs as opposed to one large one.

We were reminded in closing submissions<sup>10</sup> that the proposed reservoir will not replace the existing reservoirs, which will continue to operate. Counsel also used the analogy of eggs and baskets that '*the reservoir adds one large basket to the existing three*'. Further we note the evidence of Mr Edwards that explains why a single large reservoir is preferred over two, or several reservoirs of the same volume.<sup>11</sup> These reasons are:

*Compared to two separate reservoirs, a single reservoir:*

- a. Has around 40% lower design and construction cost;*
- b. Has around half the network upgrade cost;*
- c. Has lower annual operating costs;*
- d. Affects only one community and one area of the Town Belt; and*
- e. Reduces the time and resource required to restore water services post-seismic event.*

## **Findings**

We consider that the reasoning or necessity for the proposal was well made by the Requiring Authority. A new reservoir serving the Wellington LLZ would firstly provide for

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<sup>8</sup> Closing submissions para 3.6

<sup>9</sup> Closing submissions 3.5

<sup>10</sup> Closing submissions 3.7

<sup>11</sup> Edwards EIC paras 9.5 and 9.6

additional operational and post disaster resilience. We also note the evidence that this project is one of a number being carried out in the region to improve security of supply.

The Requiring Authority also expressed concern that there is an over reliance on the Thorndon pressure reducing valves (PRV's) for bulk water and more particularly the MacAlister reservoir which currently contains over 60% of the storage for the LLZ. There is also the additional resilience factor outlined that there can be more control of the reservoirs by isolation if required and hence safeguard water quality from potential contamination.

We also have no reason to prefer the view of Mr Cook over the views of the Requiring Authority on the issue of WWL's TLoS of 48 hours' worth of storage nor on the impact on water quality from a longer residence time.

We also accept the Requiring Authority's evidence that it has gone through a rigorous site selection process and that there are benefits in terms of cost and reductions in time post seismic event to restore water supply from having a single reservoir.

In terms of Project Objectives and whether 'the work and designation are reasonably necessary for achieving the objectives of the Requiring Authority for which the designation is sought' we consider based on the evidence that a single reservoir will:

- Improve the function of the LLZ supply network including the reliance on the bulk water supply connection and the Thorndon PRV's.
- Enable other parts of the supply network and in particular the MacAlister reservoir to be maintained without disrupting water supply to the LLZ.
- Increase the residence time of water so contamination can be identified and isolated.
- Provide operational resilience by providing sufficient storage for a number of users under normal operating conditions.
- Provide additional disaster resilience following a significant event.

We cannot comment on the cost effectiveness objective as in our view it is up to the project proponent to consider this. Overall the positive effects of the proposal and the reasonable necessity for the reservoir have been well outlined and we consider that the proposal is reasonably necessary to achieve the objectives of the Requiring Authority.

## **6. Alternative Sites Routes and Methods**

The next matter we considered is whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work under s168A(b) of the Act. We understand that the Requiring Authority does not need to demonstrate that it has

chosen the best option, rather it needs to demonstrate that there has been an adequate consideration of sites, routes and methods.

We were advised that there has been active consideration of additional storage for the Wellington LLZ for a considerable period of time. The history of the investigations was outlined in the Assessment of Environmental Effects (AEE) and reinforced by Mr Graham Spargo who presented the primary evidence on this matter.

*Early reservoir investigations are described in the AEE at 6.4.1 with investigations in 1978, 1988, and 2003. The 2003 investigations were superseded in 2004 by work by SKM for WCC that saw the Prince of Wales site identified as a viable option. Amongst other things, it was assessed to have advantages in terms of construction costs and providing better access both during construction and for ongoing operation and maintenance.*

*In 2011 consultancy firm MWH was commissioned by WCC to undertake an updated and RMA focussed options assessment of potential reservoir sites options. This confirmed a preference for the Prince of Wales site using multidisciplinary MCA as a key input to its recommendation.*

*As part of a wider Beca commission, in 2016 I was engaged by WWL to review the reservoir site selection aspects of the previous reports.<sup>12</sup>*

Mr Spargo also explained that criteria used in the 2011 multi criteria assessment framework were appropriate in this context, and encompassed social, environmental and cultural matters, as well as the operational outcomes that WWL are needing to achieve.

Mr Spargo outlined that he undertook a peer review of the previous processes and in particular undertook sensitivity testing of the multi criteria framework. He further explained that he took out project cost as a factor. He also conferred with experts on particular aspects of weighting. It was further explained that 11 sites were long listed, with four sites shortlisted and then revisited.

Mr Spargo and Mr Hewett, (in respect of traffic matters that we will discuss further below), also were comfortable that there had been significant assessment of alternative access routes. In Mr Spargo's view, as there were potential adverse effects from construction of the project, the use of designation tool through a notice of requirement was appropriate.

Site selection matters were also raised by some submitters at the hearing. Mr Cook questioned the process undertaken as well as the independence and reliability of the site selection reports. Dr Victor Anderlini requested that Mr Spargo's assessments be peer reviewed. Ms Marina Smith also questioned whether the site should be in the Town Belt.

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<sup>12</sup> Spargo EIC paras 7.2-7.4

In response to these concerns, the Requiring Authority's closing statement<sup>13</sup> was:

*Possible locations for the reservoir were dictated by the necessary 92mRL elevation for the reservoir. In Wellington much of the land at this elevation is in the Town Belt. WWL certainly does not consider the Town Belt to be 'free land'. On the contrary, locating the reservoir in the Town Belt has caused additional costs associated with burying the reservoir and going through the Wellington Town Belt Act 2016 process.*

*Mr Spargo's evidence was that alternatives assessments undertaken for the Project were robust and reliable. His review was in the nature of a peer review, and he also asked the experts now engaged on the Project to confirm they were comfortable with the work carried out prior to their engagement. WWL is therefore confident that the consideration of alternatives surpasses the statutory requirement of 'adequate'.*

Further in response to Mr Alex Gray's suggestion that WWL should look at the second highest scoring site we note Mr Spargo's evidence that the sensitivity testing he carried out still indicated that the Prince of Wales Park site was the best for the reservoir.

## **Findings**

Finding a site for a large component of community water supply infrastructure can be challenging. There are many variables that need to be weighed including whether the site is suitable for what the project proponent is trying to achieve. Also of considerable importance in differentiating sites is the extent that actual or potential adverse effects can be adequately addressed.

Considering the importance of the water supply network and the size of the investment in a large reservoir, it is prudent to go through a rigorous examination of potential sites. From our reading of the evidence we consider that the various reports and Mr Spargo's, peer review, lead us to the conclusion that the analysis of alternative sites has been robust, fit for purpose and has applied sensitivity testing to challenge the outcomes of an analysis of alternatives. We also acknowledge that Mr Spargo has considerable experience in alternatives assessment processes.

We do not agree that the work done to date has been superficial or cursory. We also accept the view of the Requiring Authority that sites are limited and that a Town Belt location is the only one potentially available that is at the right height above sea level to achieve the objective of providing additional storage for the Wellington LLZ. Additionally we note that there is a substantial history of site investigation and technical information gathering behind this proposal.

Therefore, we consider that there has been a more than adequate assessment of alternative sites, routes and methods for the purposes of s168A(b) of the Act.

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<sup>13</sup> Requiring Authority's closing submissions para 4.3 and 4.4

## 7. Actual and Potential Adverse Effects

The following is our assessment of the evidence and our findings on what we consider to be the actual and potential adverse environmental effects of the NOR. Setting aside any positive effects and reasonable necessity that have been discussed above, we now focus on the matter of potentially adverse effects and available methods of avoiding, remedying or mitigating any adverse effects.

We also note that there was consultation with both the Port Nicholson Block Settlement Trust and Te Runanga o Toa Rangitira prior to lodgement and the production of a Cultural Impact Statement<sup>14</sup> as part of the Assessment of Environmental Effects. As no submissions on cultural values have been received nor was it raised at the hearing we have not considered this matter further except to acknowledge cultural values as part of our consideration of Part 2 matters.

In our view, after considering the evidence presented in the hearing, the principal issues that were in contention and subject to submissions and evidence were in respect of the following matters:

- a. Geotechnical Issues
- b. Stormwater
- c. Groundwater
- d. Stream Issues
- e. Earthworks Activities
- f. Ecology
- g. Natural Character
- h. Visual Effects
- i. Recreation
- j. Traffic and Parking
- k. Noise and Vibration

### 7.1 Geotechnical Matters

A number of submitters raised concerns regarding the stability of the surrounding ground due to its steepness in parts and concern that the presence of the reservoir on the proposed site could lead to the land becoming unstable. Marina Smith expressed concern

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<sup>14</sup> Raukura Consultants Prince of Wales Park Reservoir 2012



that she felt the Requiring Authority had not adequately proven that slope stability matters had been dealt with sufficiently to avoid risk of slope failure. Amanda D'Souza was concerned that the lower playing field adjacent to her house could become unstable with the proposed retaining walls and proposed temporary filling on the playing field. She was also concerned that a failure of the reservoir could lead to the escaping water flowing through her property.

The NOR included a Geotechnical Report prepared by CH2M Beca<sup>15</sup>, from 2013 and a plan showing the position of the various investigations carried out on the site, which included bore holes, test pits, assessment of jointing and bedding and an assessment of slope stability in three different alignments across the site.

Mr Edmonds, a Chartered Professional Engineer, presented evidence for the Requiring Authority on engineering matters. Mr Edmonds evidence also included a copy of a geotechnical report<sup>16</sup> completed by CH2M Beca in 2012. Mr Edmonds stated that, based on the research and information they had used in their analysis, there are no active or second order earthquake faults identified and mapped that cross the proposed reservoir structure footprint. The geotechnical investigations confirmed the reservoir will be founded on rock. Mr Edmonds also stated that the reservoir would be designed to withstand an earthquake with an expected return period of no less than 2500 years without collapse. However, there could be some damage to the reservoir and some leakage in the design event, but the leakage would be controlled, through design, to avoid rapid loss or risk to people or property.

Mr Edmonds explained that the removal of the existing top section of the ground, to construct the reservoir, would result in less loading on the underlying rock because the weight of the reservoir and water in it would be less than the weight of the existing soil above the base of the reservoir. He considered that the surrounding land was not at risk of instability resulting from the construction of the reservoir.

Mr Edmonds outlined that the backfill material against the reservoir walls was being provided for landscape purposes and may slump in a significant earthquake. However, he concluded that any slumping of the backfill material would not have any effect on the structural performance of the reservoir. He also concluded that the performance of the backfill material, in a significant earthquake, would be generally equivalent to the existing spur slope performance in its current state and the possibility of any slip material reaching private property would be remote.

Mr Edmonds explained that there are some areas where the slope of the ground adjacent to the reservoir is quite steep. In these areas the use of the normal design fill batter of 2 horizontal to 1 vertical for the backfill material could not be used as it would result in the fill batter extending to the stream or to the lower playing field/Papawai stream. In these

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<sup>15</sup> CH2M Beca - Geotechnical Basis of Design 1 February 2013

<sup>16</sup> CH2M Beca Hospital Prince of Wales Reservoir Geotechnical report 3 October 2012

areas it was proposed to use a steeper batter on the backfill material. He explained that the current concept design has considered a batter of approximately 1.7 horizontal to 1 vertical in the steeper areas but there may be sections of the backfill material steeper than this where they tie in to surrounding land or if needed to avoid the stream or sensitive areas of vegetation. The steep sections of batter might require the use of geotextile materials to reinforce the fill batter to achieve the required stability.

Mr Davies, the Council's Earthworks Engineer, stated that he is comfortable that the earthworks can be engineered to ensure appropriate stability is achieved.

## **Findings**

We understand the nervousness of the submitters regarding potential reservoir or slope failure, given the overall size and scale of the reservoir. The site is steep in parts and previous cut batters around the playing fields heightens the risk of slope failure in a major earthquake.

However, we were satisfied that the design has adopted a very high earthquake loading criteria, indeed much higher than other reservoirs in Wellington. The concept design work completed by the Requiring Authority to date has been extensive and includes an assessment of the Structural Basis of Design (31 May 2013), Mechanical Basis of Design (31 May 2013), Preliminary Design Report and iterations of design options. We are satisfied that the investigations and reporting that supports the NOR and the evidence presented at the hearing, by the Requiring Authority, is robust and can be relied upon to assess overall stability matters.

We are satisfied that the risk of failure of the reservoir, leading to potential risk to the surrounding environment and the adjacent private property, is extremely low and therefore acceptable. We are also satisfied that the proposed backfill material around the reservoir is sufficiently modest in overall scale, in the context of the general surrounds, that any failure of the backfill material in a significant earthquake would be localised and unlikely to affect private property.

We have some concern that if a very steep batter on parts of the backfill material is used then it may look un-natural and adversely affect the natural character of the area. We sought the Requiring Authority's view on imposing a designation condition that limited the maximum steepness of the backfill material. The Requiring Authority has stated that they would not support such a condition because it might result in an undesirable restriction during detailed design and could lead to greater impacts on vegetation clearance. We have considered their reply and are satisfied that the current proposed designation conditions adequately manage the expected outcomes.

Condition DC20 will also ensure that the Requiring Authority obtains appropriate Peer Review of the final design geotechnical work to confirm that appropriate design procedures are implemented.

## **7.2 Stormwater**

Ms Marina Smith was concerned that the assessment of stormwater runoff from the reservoir area had not used the correct catchment area and had underestimated the potential impact of the proposal on stormwater runoff. She was also concerned that the topsoil and replanting after construction would not absorb nearly as much rainfall as existing and therefore lead to increased stormwater flows that could lead to flooding or increased erosion in the stream.

Ms Amanda D'Souza explained that her property had been flooded several times. She explained that recent improvement works carried out by Council seem to have reduced the flooding problem but was worried that the proposal could lead to further flooding.

The Application included a stormwater assessment from CH2M Beca<sup>17</sup>. The report stated that reinstating a grass and planted surface over the reservoir will not result in any increase in stormwater runoff peak flows or increase in volume from the existing situation, for the replanted areas.

Mr Edmonds stated in his evidence that the soil layers placed over the roof of the reservoir are similar in thickness to the existing situation and the surface infiltration rates through the soils are expected to be similar. The additional paved surface of the accessway will increase the impervious surface area by approximately 530m<sup>2</sup> and this will result in a small increase in surface water runoff. The primary stormwater runoff from the reservoir accessway will be piped to Rolleston Street, as happens at present.

### **Findings**

We are satisfied that the Requiring Authority's assessment is sufficiently detailed to have assessed the stormwater runoff to the appropriate industry standards and methodology. We consider that the Requiring Authority's conclusion that there is unlikely to be any noticeable increase in stormwater runoff, other than from the additional area of the paved accessway, is reasonable. While there may be some small change in the soakage characteristics from the existing vegetated cover to the proposed re-planting cover after construction, this is likely to diminish over time as the replanting becomes more established.

## **7.3 Groundwater**

Several submitters and in particular Mr Frank Cook, expressed concern about the possible effects of the project on the two streams. An aspect of their concern was that the excavation for the reservoir could intercept ground water and perhaps that ground water flow might be changed in a way that reduced the flow to the streams.

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<sup>17</sup> CH2M Beca Prince of Wales/Omaroro Reservoir – Stormwater Assessment 20 April 2017.

The Application included drawings which showed drainage metal and subsoil drains constructed on the outside of the reservoir walls and on top of the roof of the reservoir to manage external water pressure on the reservoir and to assist with the stability of the surrounding land. Mr Edmonds explained in evidence that the infiltration water flow into the reservoir roof drainage layer will be collected by the side drainage system and piped to Rolleston Street. He stated that some of the infiltration water will seep back into the rock mass fractures as per the existing situation.

## **Findings**

We are satisfied that the proposed design of side wall and roof drainage with subsoil drains is necessary for managing groundwater and is a standard industry solution for this type of situation. The extent of the drainage system around the reservoir may intercept a greater amount of groundwater and direct that to the Rolleston Street drainage system than currently seeps from the ground in that area. However, we are satisfied that the nature of the rock and ground conditions on the site will mean that the presence of ground water is likely to be relatively low and hence any effects on groundwater patterns, resulting from the reservoir construction, is likely to be minimal.

### **7.4 Stream Issues**

Several submitters voiced concerns regarding potential adverse effects on the two streams, particularly Papawai Stream. Their concerns included possible loss of stream flow, sedimentation from the earthworks getting into the streams, works (such as vegetation clearing for construction, earthworks excavation, backfilling, stockpiling on the Playing fields, etc) extending into the streams, increased erosion resulting from increased storm flows and changes to the streams or hydraulic aspects of the streams increasing the risk of flooding.

Ms Carol Comber presented evidence on behalf of Mt Cook Mobilised and Rolleston Street Residents and stated very clearly that the local community has devoted a lot of energy into restoring and improving the Papawai reserve and the adjacent stream. Their group places a high value on the two streams and does not want them to be affected by the proposed reservoir.

Mr Cook was also concerned that the site selection assessment had not placed enough weight on the possible risks to the two streams and the overall proposal had not fully considered the potential adverse effects on the streams.

Mr Robert Ayson was concerned that the assessment of potential risks to the stream was insufficient and had not been covered in sufficient detail by the Reporting Officer.

Ms Mary Hutchinson was concerned about the Papawai Stream and considered that it was important and must not be degraded.

Even though it became clearer to some submitters during the course of the hearing that the possible raising of the playing fields was no longer being proposed, many submitters

remained concerned that runoff from the stockpiles on the playing fields, to the streams, could contain large volumes of sediment and therefore adversely affect the streams.

The Application included a detailed description of how the work would be carried out and how sediment and erosion control would be managed. Mr Trlin the Planner for the Requiring Authority, tabled a copy of the resource consents granted by Greater Wellington Regional Council (GWRC) which permit water take of groundwater during construction, discharge of sediment laden water to adjacent streams in large rainfall events and a land-use consent to carry out the proposed earthworks. The Requiring Authority also tabled a copy of the Draft Construction Erosion and Sediment Control Plan (dated 1 September 2017), which sets out how the earthworks will be carried out and how the discharge of sediment from the earthworks areas (including the temporary stockpiles) will be managed. GWRC has granted resource consents with conditions requiring the works to be carried out in accordance with the Construction Erosion and Sediment Control Plan.

Mr Davies, Council's Earthworks Engineer, stated that he considered the GWRC conditions of consent for earthworks to be fairly robust, in terms of managing the risk of sediment runoff to the streams.

## **Findings**

The NOR included the possibility of leaving a large proportion of the excavated material permanently on the two playing fields, resulting in the playing fields being permanently raised. The potential raising of the playing fields increased the risk of the works adversely affecting the two streams, particularly the raising of the lower playing field adversely affecting Papawai Stream. Through the course of the hearing, the Requiring Authority confirmed that neither playing field would be raised. Consideration of potential adverse effects on the two streams is therefore influenced by activities such as ensuring the construction works have sufficient separation from the streams and that appropriate management of runoff from the stockpile areas to avoid sediment washing into the streams is achieved.

We are satisfied that sufficient separation on earthworks activities from the streams can be achieved. We note that the preliminary design drawings show that completed backfilling batters can be formed with separation distances between the toe of proposed areas of fill and the streams. The stockpiling activity on the lower playing field can be managed with a high degree of control to achieve separation distances between earthwork stockpile areas and Papawai Stream. We also note that the proposed conditions require the Requiring Authority to carry out the works in accordance with approved Construction Management Plans and those Plans include a requirement to minimise disturbance, avoid the streams and control sediment runoff and erosion. We are therefore satisfied that the footprint of the proposed construction can be contained within an area that avoids the streams.

We consider that the greatest risk of adverse effects on the streams is the potential occurrence of uncontrolled sediment laden water from the earthworks/stockpile areas to the streams during significant rainfall. We note that the erosion and sediment control systems proposed are designed for a specific rainfall event and events greater than the design event can result in sediment passing through the sediment retention ponds and on to the streams. However, the proposed sediment and erosion control meets the requirements of GWRC and GWRC have granted a consent for earthworks. We are therefore satisfied that appropriate industry standard controls will be employed on this site and enforced by way of both GWRC conditions and conditions agreed by the Requiring Authority on this NOR, to ensure that the risk of sediment release to the streams is sufficiently low to allow the proposed reservoir construction.

## **7.5 Earthworks Activities**

The earthworks excavation required to construct the reservoir is approximately 56,000m<sup>3</sup>. Approximately 35,000m<sup>3</sup> will be transported off-site and the remaining 25,000m<sup>3</sup> will be used as backfill material around and on top of the reservoir after construction. The Application presented a scenario where one or both playing fields might be raised several metres with excess excavated material to avoid transporting the excess material off-site. During the hearing the Requiring Authority clarified that both playing field would not be raised, and all excess excavated material would be transported off-site.

Several submitters were concerned about the scale of the earthworks activity, the time duration of it, the impacts of trucks on Rolleston Street transporting the excess material from the site, potential impacts from the stockpiling activity on both playing fields, sediment runoff from the stockpiles and the excavation site and the potential nuisance from dust being blown from the earthworks area onto private property. Other significant concerns relating to earthworks activities such as traffic and noise are addressed in other sections of this recommendation report.

Ms Comber outlined the consultation process with the Requiring Authority and was pleased that the proposed raising of the playing fields was no longer proposed by the Requiring Authority. Ms D'Souza was concerned that the temporary stockpile on the lower playing field could lead to a slip or failure that could impact on her property. Stability matters are discussed in a separate section of this decision.

Mr David Tildesley, who lives next to the upper playing field in Hargreaves Street, was concerned about the potential raising of the playing field but felt more comfortable once he learnt that it was no longer proposed to raise the field.

Mr Edmonds for the Requiring Authority explained that they had assessed different reservoir shapes and positions to optimise the earthworks required and considered that the proposed position and size of the reservoir (height vs diameter) provided the best solution for this site. The resulting volume of excavation required could not be reduced without reducing the size of the reservoir as raising the reservoir was not an option, due to the need to have the top water level of the reservoir at the same height as the LLZ. In

addition, due to the constraints on the site in terms of the adjacent streams, it was not feasible to use more of the excavated material as backfill material.

Mr Edmonds explained that it was likely that the majority of the excavated material to be transported off-site would be double-handled as it was unlikely road trucks would be able to access the excavation site directly due to difficulties of gradient on the construction haul road and managing a clean load out area. He expected excavated material to be transported to the upper playing field stockpile, where it would then be loaded into road trucks for removal off site. Excavated material to be used as backfill would be stockpiled on the lower playing field and on the area of the upper playing field not required for other activities (such as materials handling area, a load-out/temporary storage area etc).

Mr Edmonds explained that good management of the material on the two playing fields would be essential to avoid problems with dust and sediment runoff. He envisaged the material for backfilling being placed in the temporary stockpile on the lower playing field, clear of the Papawai Stream and with the required minimum 10m clearance from the eastern boundary of the playing field. The stockpile would be stabilised with grass, metal or cloth (or a combination of these) and maintained until the material could be transported back on to the reservoir site for back filling. He noted that activity on the lower playing field included provision for a sediment retention pond and a parking area for construction staff.

Mr Edmonds explained the upper playing field area was a more active construction zone with temporary stockpiling for load out, an area for construction materials to be unloaded/stored, some storage of backfill material, a small carpark area for Rolleston Street residents, construction workers activities, a sediment retention pond and the minimum clearances from the northern and eastern boundaries required by the proposed designation conditions. Management of dust and sediment runoff from this working area would require constant focus due to the level of activity on the site.

Mr Davies, on behalf of Council, stated that there will need to be robust dust control measures employed on the site to avoid nuisance from dust and well-executed primary and secondary controls for erosion and sediment control.

## **Findings**

We consider that the earthworks activities required for the construction of the reservoir will result in notable impacts, the greatest being construction noise and transportation effects on Rolleston Street. We are satisfied that the Requiring Authority has carried out a robust assessment of the earthworks required for the construction of the reservoir, including detailed survey, geotechnical investigations, detailed earthworks plans and has obtained consent for earthworks from GWRC. These steps give confidence that the scale of the earthworks are well defined. Notwithstanding this, the scale of the earthworks combined with the complexities of storage of backfill material on-site and load-out of excess material, on what is a relatively small construction zone, raises the risk of nuisance from dust and sediment discharge to the adjacent streams.

We consider that the requirement to carry out the earthworks in strict accordance with approved Management Plans will go some way to minimising adverse effects associated with the earthworks activities. In addition, we note from the construction programme contained in the NOR, the excavation and removal off site of material from earthworks activities are programmed to be completed within a period of approximately 8 months. While this is a long period for the residents to endure the impacts of earthworks activity, it is a modest period in terms of the contractor maintaining the stockpiles in an appropriate manner to avoid nuisance from dust and erosion and sediment loss, given the conditions of the GWRC consent and the Management Plans requirements that the stockpiles be stabilised as soon as it is practical to do so.

We are therefore satisfied that the earthworks can be carried out in a manner that will minimise the risk of nuisance from dust and minimise adverse effects from erosion and sediment discharge to the streams, through the use of approved Management Plans and specific focus on these matters during construction. The proposed designation conditions provide for these outcomes.

## **7.6 Ecology**

Mr Stephen Fuller, consultant ecologist for the Requiring Authority, provided a comprehensive description of the sites terrestrial and aquatic ecological values supported by a map showing the current vegetation cover. In attributing significance to the values he identified, Mr Fuller made reference to an assessment methodology accepted by qualified ecologists and supported by Greater Wellington's Regional Policy Statement<sup>18</sup>. The evidence of Mr Fuller provided clear direction on protecting existing values, aquatic values in particular. Mitigation planting is to be undertaken where vegetation is removed or damaged during the construction of the reservoir. At the hearing Mr Fuller was able to elaborate on some of the more complex and controversial issues as well as respond to the concerns of submitters.

Mr Fuller's assessment was reviewed by Mr Keith Hamell, a qualified and experienced ecologist. Mr Hamell generally supported the findings of Mr Fuller's assessment and his suggested amendments were incorporated. Mr Fuller's assessment and recommendations were similarly endorsed by Wellington City Council's ecologist Jonathan Anderson. Mr Anderson picked up some of the concerns of submitters, in particular threats to bird habitat and nesting sites. Mr Anderson also raised the possibility of there being skinks and geckos on the site. The revised conditions provide for the concerns raised by Mr Anderson. The applicant has accepted a condition requiring a site survey to establish whether there are skinks or geckos before any work commences, and appropriate action should this prove to be the case. There will be no tree removal during the nesting season and all trees removed will be checked for nesting sites. Nesting boxes will be located in protected areas to provide alternative nesting sites.

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<sup>18</sup> Regional Policy Statement for the Wellington Region 2013 Policy 23



A written statement from Dr Mike Joy, a well-known ecologist and Senior Lecturer in Ecology at Massey University, raised questions about the rigour of Mr Fuller's assessment methodology. Dr Joy believes a more quantitative measure of ecological values is needed in order to better mediate any offsets in the event of adverse effects resulting in a loss of vegetation. Mr Fuller's opinion was that quantification would not assist in providing direction to the protection and restoration proposed in conditions. Dr Joy's statement also called for more stringent monitoring during the construction process to ensure that adverse effects on aquatic environments were not occurring and, in the event that they were, what action was to be taken. The conditions set out by Greater Wellington Regional Council provide for this.

Dr Paul Blaschke, another well respected ecologist who is familiar with the site, endorsed the assessment of Mr Fuller, particularly his recognition of in stream values. Dr Blaschke drew attention to the recent discovery of a Galaxid in the Papawai stream. Koaro (*Galaxias brevipinnis*) is a threatened species and its presence is a very positive indicator of stream health recovery. Dr Blaschke has considerable experience in stream restoration and a number of submitters talked about the successful restoration work undertaken by community groups in the Papawai and Waitangi catchments.

The values of the streams in this section of the Town Belt are widely recognised. The Papawai and Waitangi streams are representative of waterways that would once have drained tall forest extending across the western hills of the city. Restoration work by community groups over the past decade, supported by Wellington City Council, has resulted in much enhanced in stream values, as evidenced by the return of species not found for many years. The requiring authority has recognised the commitment and work of the community and Mr Fuller is of the view that the protection afforded during earthworks and the planting following completion will result in enhanced terrestrial and aquatic habitats.

Mr Fuller provided a summary overview of ecological values in his assessment. The Indigenous seral forest is found to be both significant and of moderate ecological value. Other vegetation has ecological value including flowering eucalypts, some of which will be lost. Five species of bird with a national threat status that are present, or likely to be present, on the site are identified. The habitat values of the Papawai and Waitangi streams are acknowledged as high and moderate respectively. In the Requiring Authority's AEE the challenge of integrating the reservoir into the limited space between the two significant waterways is acknowledged:

In the Assessment of Ecological Effects<sup>19</sup> Mr Fuller concludes, on the basis of the values he ascribes to the various vegetation types and what will need to be removed (some 0.9 ha in total), that the effects will for the most part be negligible. The effects on planted native communities will however be moderate. Mr Anderson's concerns were acknowledged with regard to birds breeding in taller trees destined for removal and

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<sup>19</sup> At Section 7

suitable conditions proposed. A further recommendation was that any tree removal be carried out by a qualified arborist to minimise damage to surrounding vegetation.

With the proposed design Mr Fuller told us that there will not be any direct effects on streams, however, the toe of the batter slope comes into close proximity to the Waitangi Stream and the construction methodology will need to allow for protection of this waterway. With good sediment management he anticipates that any effects on streams will be negligible

## Findings

In summary we accept Mr Fuller view that ecological effects will be acceptable and can be adequately managed. We agree with Mr Fuller's findings and the conditions he recommends. The boundaries of vegetation clearance will be clearly marked on the ground before any work commences and control measures will ensure that streams are protected from sedimentation.

A Landscape and Ecology Management Plan (LEMP) will be prepared and this will deal with the reinstatement and restoration of seral forest, the enhancement of riparian planting along the Papawai Stream, and the planting of winter flowering eucalyptus as a seasonal food supply for birds. Ecological effects will be managed through good practice and monitored through the conditions of consent.

## 7.7 Natural Character

Landscape and visual matters were comprehensively traversed by Mr Rhys Girvan, consultant landscape architect, for the Requiring Authority. Mr Girvan's evidence was reviewed by Ms Julia Williams for Wellington City Council. Ms Williams generally endorsed the evidence of Mr Girvan but expressed reservations about some of the proposed planting.

Central to Mr Girvan's evidence is an acknowledgement of the significance of the proposed reservoir site within Wellington's Town Belt. The Town Belt Management Plan anticipates the location of a reservoir on the proposed site. Mr Girvan refers to Policy 8.4.3.4 of the plan and the requirement to:

*Ensure the proposed water reservoir is buried and remedial planting done to mitigate its impact on the Town Belt.*<sup>20</sup>

The implications of this requirement are discussed in his evidence where he noted the key features of the landscape character to be recognised and protected.

In his evidence Mr Girvan provided an overview of how the requirements of the Town Belt Management Plan are to be met <sup>21</sup>: He acknowledged that some batter slopes will be steeper than 1(h):2(v) and may require stabilisation with geotextile materials, or something similar.

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<sup>20</sup> Girvan EIC s3.5.5

<sup>21</sup> Girvan EIC s7.2.4

In her review of Mr Girvan's evidence Ms Julia Williams raised concerns about whether the natural character of the area would be reinstated following completion of the planting proposed, and in particular, whether this planting would be appropriate on steeper slopes where geotextiles were incorporated into the batters to provide stability. Ms Williams was of the view that larger specimen trees may not grow through a geotextile mesh. This matter was discussed at the hearing, as were further concerns raised by Ms Williams regarding slope stability generally.

Ms Williams recommended a condition requiring an inspection of planting success, particularly on batter slopes, after three years, and if necessary, a review of planting strategies and species. She also recommended planting to create a variation in canopy height. A further recommendation was made to deal with wind fall in the event of forest edges being exposed due to vegetation clearance. These matters have been considered by Wellington Water and suitable conditions incorporated to address them.

Mr Frank Cook provided us with a three dimensional model he had produced that showed the differences between the existing natural form and the final form of the reservoir once completed. He noted that there was a significant amount of difference in terms of the natural form.

## **Findings**

We were generally satisfied that the reservoir could be developed in a manner consistent with the requirements of the Town Belt Management Plan. Our main reservation related to the scale of the reservoir, both its depth and diameter. While we accept that the proposal 'buries' the reservoir, the form will remain clear for most of its circumference because there is a clear change in slope where the batters covering the sides of the reservoir fall away from the top. There is also some uncertainty about the steepness of the batters, whether they would reflect the natural topography, and their stability. Mr Girvan acknowledged in his evidence the possibility of some batters being steeper than ideal and requiring geotextile mesh or similar for stability.

It was clear from the evidence provided and from discussion with the various experts at the hearing that some sections of the fill slopes would be steeper than 1.7H: 1V. A proposed condition setting an absolute limit of 1.5H: 1V was not accepted by the applicant. We were however assured that fill on batter slopes would not fall away from the walls of the reservoir if suitable drainage and stability treatment was incorporated at the interface.

The objective of a requirement to bury the reservoir is to protect the natural character as perceived and enjoyed by the community. Mr Girvan was of the view that, with suitable planting, this can be achieved. While we accept that, given time, the form and scale of the reservoir will be softened and planting will generally reflect the naturally evolving patterns anticipated by the Town Belt Management Plan, we remain concerned that at least some batter slopes may not be well integrated into the existing topography and may not be suitable for the planting proposed. All of the parties support a condition requiring a Landscape Management Plan and this will need to address these matters in detail, along with ecological effects associated with earthworks and planting.

## **7.8 Visual Effects**

Mr Girvan provided a very comprehensive assessment of the visual effects of the proposal, both during construction and following planting. Mr Girvan anticipated that the adverse effects from all of the viewpoints he assessed will be low or very low five years after planting is completed. Ms Williams was of the view that achieving the mitigation Mr Girvan expects in five years will take somewhat longer, perhaps ten years.

During the construction period the adverse visual effects for residents at the bottom of Dorking Street with views down onto the reservoir site were assessed as moderate by Mr Girvan. For some residents at the top of Rolleston Street and adjoining the park in Hargreaves Street, he however assesses the adverse effects tending towards moderate-high. This is because views are directly onto the reservoir site and playing fields.

### **Findings**

Since Mr Girvan completed his assessment the requiring authority advised that the playing fields would not be raised. They will however be used to store excavated material during construction, and restored once all of the earthworks have been completed. This means that many of the concerns raised by Ms Williams and submitters are no longer relevant. In the long term the visual effects for both neighbours and for viewers within the wider view-shed will be minimal. For those who live and walk in the immediate area of the reservoir the form of the structure and the entrance to the access tunnel will remain obvious but careful planting will eventually screen obvious structural elements and soften the visual impact of others.

Views from Dorking Road are from higher ground and tend to take in a broader vista within which Prince of Wales Park is a relatively minor component. Earthworks on the reservoir site will never the less attract attention in views from Dorking Road, especially the movement and sound of machines.

For residents along the eastern boundaries of the upper and lower playing fields who have views into the park the visual effects will vary. Stored material will dominate the foreground view but the mounds of dirt will be seen against the backdrop of vegetation across the slopes above the playing fields. A condition to contain the visual effects requires that stored material is set back at least 10 metres from the northern and eastern boundaries of the upper playing field, and 10 metres from the eastern boundary of the lower playing field. Mounding is not to exceed 5.5 metres on the upper playing field and 7.0 metres on the lower field.

The storage mounds are proposed to be stabilised to minimise dust and any sedimentation. Hydro-seeding will be the favoured option where storage is longer term. This will assist in reducing the visual prominence of mounding; the green cover will provide for some integration with the bush backdrop. For all viewers, the movement and sounds of machinery will draw attention to the earthworks. The same applies to those pursuing recreational activities in the area.

We accept that for some local residents, particularly those at the top of Rolleston and Hargreaves Streets, the visual effects of construction will be adverse and significant, and take some years to mitigate with planting. We consider it important that the Landscape

and Ecological Management Plan (LEMP) pays particular attention to the early mitigation of visual effects along the northern and eastern flanks of the reservoir site. Larger 'specimen trees' must be planted to reduce the visual scale of the reservoir batters and break up, but not entirely screen, the geometric form of the upper edge where the walls meet the top of the structure. Detailed design is also required to ensure that the access tunnel and associated access road is suitably integrated into the natural ground form and softened with planting.

We are satisfied that in the longer term the visual effects of the reservoir can be suitably mitigated. We accept that during construction there will be significant and adverse visual effects that cannot be mitigated apart from ensuring that as much of the existing vegetation is retained as is possible.

We endorse the relevant revised conditions as outlined by the Requiring Authority following the hearing. We also support the Landscape and Ecology Management Plan (LEMP) being combined with the Playing Fields Management Plan to provide one integrated document. While ensuring a coherent approach to site restoration, this would also make community consultation more efficient and effective.

We note that Wellington Water has established an excellent relationship with the community and this needs to be protected and sustained. Importantly the conditions anticipate CLG input into any management plan including the Earthworks Management Plan (EMP). We agree that this input has been clearly provided for and the community can be engaged in all relevant planning and design matters. Specifically this shall include the EMP, as this will determine the opportunities and constraints in developing the LEMP which dictates the final outcome for the site, post construction.

## **7.9 Recreation Effects**

Ms Cheryl Robilliard, a registered Landscape Architect and experienced recreation planner, provided a comprehensive overview of values associated with the Prince of Wales Park, supported by information gathered in meetings and discussions with park users and people living in close proximity. Ms Robilliard did not appear at the hearing but we were satisfied that her written assessment of the effects of the proposal, as well as the thoughtful submissions we received, provided sufficient information for the purposes of our deliberations.

Ms Robilliard explored the values of the park for essentially three user groups; those who enjoy the park as natural open space, those who engage in organised sport, and those who enjoy walking through the park. In her assessment she explored the effects of the proposed reservoir development both during construction and following completion and restoration of the park.

It was noted that during the construction period the sports fields will be unusable. For other activities associated with the park the constraints will be relatively minor. Ms Robilliard anticipates access to the clubrooms will remain. Walkway access will be largely unaffected unless there are safety issues and it was noted that there will be temporary diversions during the construction period. The City to Sea Walkway and Te Araroa Trail will be redirected to the existing path from Bell Road to Dorking Road and through the Town Belt to the Scottish Athletics Clubroom where it rejoins the existing City to Sea

Walkway and Te Araroa Trail. For regular users of walkways between Brooklyn and Wakefield/Taranaki Streets via Bidwell and Rolleston Streets there will be diversions to avoid the construction site

While there were many submitters that referenced the active and passive recreational benefits of the park, and the adjoining Town Belt, Craig Starnes was concerned that the tracks through the park will be closed during construction which will be an inconvenience for commuters and schools who use the park for cross countries. He also advised us that he is part of a group who have made 15 km of tracks from the top end of Aro Street to the south coast and that 100,000 trips are made over these tracks. He was of the view that the reservoir project was an opportunity to provide much better city tracks and could be a legacy project.

## **Findings**

The park is clearly valued by a very diverse range of users, is highly valued by locals as a gathering place and by visitors who engage in organised sport. As an integral part of the Town Belt, the Park is traversed by a number of walking tracks. The Requiring Authority advised that Wellington City Council can provide an assurance that alternative venues for organised sport will be able to accommodate current users for the two to three years during which the park is out of commission.

We were satisfied that the outcomes anticipated by Ms Robilliard can and will be achieved. We do note however that subsequent to her assessment the Requiring Authority decided not to raise the levels of the playing fields. Ms Robilliard anticipated that doing so would provide an opportunity to improve the drainage and that this would be a positive outcome. A number of submitters who appeared at the hearing were of a similar view; improved drainage would be a very positive outcome for both neighbours and for park users. We believe that such an outcome can be achieved without the fields being raised; reinstatement of the fields once they are no longer required for earth storage will include an improvement of drainage.

The mitigation measures recommended by Ms Robilliard will be incorporated into the Landscape and Ecology Management Plan and if necessary as a single document the Playing Fields Management Plan, as appropriate. In terms of Mr Starnes advocacy for a Grade 2 cycle track to be incorporated we consider that this is outside the scope of the NOR. While his suggestion may well have merit it may be better considered by WCC through another forum.

Throughout the hearing we were constantly reminded of the importance of the Prince of Wales Park for both the local residents and for users of the wider Town Belt recreational networks. We are satisfied that, accepting an interim and significant loss of access and amenity, in the longer term the values of the park will be reinstated, and potentially enhanced.

## **7.10 Traffic and Parking Effects**

The proposal relies on the use of Rolleston Street for heavy vehicle access. The greatest traffic effect identified being the noise and disruption caused by heavy vehicles particularly those removing excess excavated material from the site. We were advised

that staff access will be via Salisbury Terrace and staff parking will be on the lower field to provide safe secure parking.

On Rolleston Street the proposal is to remove approximately 20 to 23 on street parking spaces in three areas. These are immediately adjacent to the Wallace Street intersection, at the bend on Rolleston Street, and at the end adjacent to the upper field of the Park. This is required to allow for heavy vehicles to travel safely into, out of, and along Rolleston Street.

The Requiring Authority in recognition of the parking disruption particularly in upper Rolleston Street have included a replacement residents carparking area consisting of 8 temporary carparking spaces with an undertaking within the proposed conditions to increase that number where space allows. In addition the existing combination of residents and coupon parking areas on Rolleston Street is proposed to be reinstated within one month of completion of construction activities.

The primary expert traffic evidence was presented by Mr Stephen Hewett. His role was to assess the traffic and transportation effects of the proposal which focused on the impacts of construction traffic. He also had a role with Mr Spargo in reviewing the previous work that was done in terms of site selection from a transportation perspective and assessing whether or not the use of Rolleston Street for heavy vehicles during construction of the reservoir was the optimum solution.

In terms of alternative access arrangements Mr Hewett was strongly of the view that Rolleston Street is the clear preferred option for access in terms of gradient and road width. He also advised that the intersection of Rolleston and Wallace Streets was very important and for heavy vehicles to turn left out from and turn right in to Rolleston Street, some parking would need to be removed to accommodate the turning manoeuvres.

Mr Bill Barclay, traffic engineer, who was advising Ms Steadman's s42A report was also of the view that Rolleston Street and Wallace Street could sufficiently assimilate the heavy vehicles required for construction activities.

Mr Alex Gray questioned the use of Rolleston Street as the preferred route for heavy vehicles to and from the site. He is a civil engineer and project manager, and informed us that he worked on the MacAlister Park reservoir in 1991, which is a 20 million litre reservoir. He observed that the use of the Rolleston Street access would have trucks going past 90 dwellings whereas at McAllister Park they went past 8. His preferred option was for trucks going into the site from Westland Road past three houses and out again down Salisbury Terrace past 40 houses.

Many submitters who live on Rolleston Street including Ms Hutt, Dr Anderlini and Mt Cook Mobilised and the Rolleston Street residents represented by Ms Comber at the hearing were concerned with the amount of heavy traffic and the resulting significant disruption to those who live in close proximity to the site of the proposed reservoir or in areas where on street parking further downhill was to be removed. This in their view was exacerbated by the considerable length of time that it would take for construction to occur.

In terms of traffic generation and the periods of time when construction would occur Mr Hewett provided a useful table<sup>22</sup> which is replicated below.

**Table 1 - Vehicles movement type by programme phase**

	Initial Excavation	Reservoir Construction + Remaining Excavation	Reservoir Construction + Pre-Cast Deliveries	Reservoir Construction	Backfill
Indicative Construction Timeline	Early Year 1 – Mid Year 1 (5 months)	Mid Year 1 – Late Year 1	Late Year 1 – Early Year 2	Early Year 2 – Late Year 2	Late Year2 – Early Year 3 ( 3 Months)
Earth moving trucks	✓	✓			✓
Concrete trucks	✓	✓	✓	✓	
Pre Cast Deliveries			✓		
Other Deliveries	✓	✓	✓	✓	✓
Staff	✓	✓	✓	✓	✓

We also note that in terms of traffic and transportation effects Mr Hewett concluded<sup>23</sup>:

*I consider that the proposed draft conditions will be sufficient to mitigate the traffic effects of the Project. In particular, the implementation of a Construction Traffic Management Plan will ensure that the impact on the traffic network, parking, vehicle access and pedestrian / cycling activity within the area can be managed appropriately.*

*I consider that there should be specific provision in the conditions to ensure that:*

- a. *Mechanisms are included to co-ordinate heavy vehicle movements to minimise instances where two construction vehicles meet at key intersections at the same time;*

<sup>22</sup> Hewett EIC Table 1.

<sup>23</sup> Hewett EIC Para 4.3



- b. The P10 carpark that is outside the dairy at the Rolleston Street / Wallace Street intersection is retained and is specifically considered in the Construction Traffic Management Plan; and*
- c. On the completion of construction, the carparks on Rolleston Street removed to allow for heavy vehicle access should be restored so that there is no loss of on-street and off-street public car parking.*

In his evidence Mr Hewett outlined the contents of a Construction Traffic Management Plan which also encompassed Site Specific Traffic Management Plans. He was confident that the use and implementation of such processes would ensure that traffic related effects from construction can be kept to a minimum.

As outlined WCC commissioned Mr Barclay to review the traffic assessment and provide a report that was included in Ms Steadman's wider s42A report. Mr Barclay also concluded that with the imposition of suitable conditions, the traffic effects could be appropriately managed.

Finally, due to the expected deterioration of the road surface the Requiring Authority agreed that Rolleston Street would be resurfaced once construction is complete as soon as practicable after the completion of construction.

## **Findings**

Construction traffic and the associated effects of heavy traffic noise and disruption to Rolleston Street is one of the key effects of the proposal in our view. It is clear that existing residents on Rolleston Street in particular, will be inconvenienced to a greater or lesser extent by the requirement to service the construction activities at the park. This is exacerbated by the 3 year proposed construction period although we note that traffic effects will vary from being relatively intense during the removal of excavated material to lesser volumes when no bulk earthworks are occurring.

We have also considered the evidence in relation to whether the Rolleston Street access is the most appropriate. As outlined at the hearing Mr Hewett was firmly of the view and that this was superior from a safety, practicality and efficiency perspective to other options identified by Mr Gray. This view was endorsed by Mr Barclay. We are therefore satisfied that alternative means of access have been more than adequately explored and it is a matter of mitigating adverse effects to the greatest degree possible.

The production of the Construction Traffic Management Plan and its subsequent implementation will be key. This shall include procedures to minimise inevitable disruption to some residents and other users to the greatest extent possible without compromising safety. In terms of disruption to residents it will be important that there is a clear line of communication between the contractor and the residents. As such the Community Liaison Group will be key to this success.

We also note the best endeavours approach to providing alternative parking adjoining the construction site for residents in upper Rolleston Street and the requirement for reinstatement of existing parking once construction is completed.

In light of the extensive time for construction and the disruption this will cause, we put the option of a low noise final road surface to the Requiring Authority and this was strongly rejected. We accept that after construction is complete that Rolleston Street will return to a low noise environment as it currently is.

## **7.11 Noise and Vibration Effects**

There are two aspects to noise from construction activities noting that once the reservoir is completed, the noise environment will return to what it is currently. These aspects are:

- Noise and vibration from machinery carrying out the excavations, backfilling, the stockpiling of material and the reservoir construction at the site.
- Noise and vibration from heavy vehicles entering and leaving the construction site particularly along Rolleston Street.

As with traffic effects, noise was identified as being an acute issue for those who live closest to the reservoir site particularly at the top end of Rolleston Street. The Requiring Authority's noise adviser Mr Bill Wood, in referencing the New Zealand Standard for Construction Noise (NZS6803), outlined to us that the noise environment is currently quiet and that:

*Construction noise levels are predicted to be within, or to marginally exceed the NZS 6803 limits for the hours of 0730-1800 (70 dBA Leq and 85 dBA Lmax) at all assessment points. However, outside those hours, any exceedance for such activities could be higher, as the relevant noise limits reduce.*

*Were this to be a permanent activity, these noise levels would represent a severe adverse effect for the most exposed properties. However, it is noted in NZS 6803 that a community will usually tolerate higher noise levels for a temporary activity (such as construction) than would be tolerated for permanent activities. This is the basis for the limits set out in Table 2 of NZS 6803.*

*Regardless of compliance with any Standards, there is a general obligation in terms of section 16 of the RMA which, in summary, states that an activity shall adopt the best practicable option to ensure that the emission of noise does not exceed a reasonable level. Section 17 of the RMA also states that there is a duty to avoid, remedy or mitigate any adverse effect on the environment. I note that the RMA includes "vibration" under its definition of "noise".<sup>24</sup>*

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<sup>24</sup> Wood EIC para 4.2

Mr Wood was in favour of using the best practicable option for managing noise and this should be codified as part of the Construction Noise and Vibration Management Plan (CNVMP). This document provides in his view, the best mechanism to ensure construction noise and vibration will not exceed a reasonable level. There are contractor procedures to minimise noise such as careful machinery operators making less noise or the staging of activities so no two noisy activities are occurring at the same time.

Further Mr Wood was of the view that the closest houses could benefit from noise barriers as they are around the same height as the reservoir. If a noise barrier covers the line of sight it should reduce the noise.

Mr Wood also advised that there is no way to mitigate truck noise on Rolleston Street but it will not be a constant noise. There could be consideration of not using engine breaks and a 30km/hr limit in the street that would assist.

There was less discussion at the hearing on vibration effects but we note Mr Wood's conclusion that

*The proposed construction does not involve any activities which would typically generate high levels of vibration (such as piling or blasting). From my experience, I do not expect the vibration limits as set out my report to be exceeded, based on the proposed activities.*

*To that end, it is important that the Rolleston Street road surface is maintained in good condition, i.e., no holes or uneven surfaces. This will control vibration from construction traffic. I consider that a CNVMP should contain measures to ensure that the road surface is maintained in such a condition.<sup>25</sup>*

Alex Gray also stated that he worked as an acoustic engineer for a number of years and anticipated truck noise being deflected straight to the houses on Rolleston Street and therefore acoustic mitigation should be provided. He outlined that it was possible to put hush glass in houses which are 100 years old, noise will probably still get through the walls and ceilings.

We were advised in the s42A<sup>26</sup> report that due to the construction period potentially extending to three years, the construction noise levels were assessed against the "long term duration" limits of New Zealand Standard NZS 6803:1999 Acoustics— Construction Noise, which are the most stringent of this construction noise standard. This approach was confirmed as appropriate by the Council's Senior Environmental Noise Officer, John Dennison, both in terms of the use of this standard and the approach taken.

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<sup>25</sup> Wood EIC paras 7.8 and 7.9

<sup>26</sup> S42A Report para 57

Further Mr Dennison considered that the contractor should be briefed on mitigating noise as much as possible and that Council compliance officers will be both certifying the CNVMP and monitoring noise.

## **Findings**

From our site visit we agree with submitters that the noise environment is currently quiet, reflecting the sites' location in the Town Belt. Residential properties in close proximity are also distant from major roads or other sources of significant daytime noise. The construction of the reservoir will inevitably entail activities that are noisy including the use of heavy machinery, the transportation of material to and from stockpiles or offsite and the transportation of materials to the site.

We are of the view that the construction impact on neighbouring properties will vary from significant for the closest properties during the 7.30am to 6pm Monday to Friday (excluding public holidays), timeframe for general construction activities to more minor effects on residential amenity values the further an individual property is from the site. We also acknowledge that heavy traffic road noise from the transportation of material to and from the site may lead to a level of annoyance particularly due to the extended period of construction of up to three years. It should be noted that the off-site removal of bulk cut material is from 9.00am Monday to Friday.

Given that the noise effects are confined to the hours of operation specified in the conditions residents will get evening and night time respite. We also recognise that there will be times when construction noise may be higher than others depending on the particular construction activity at the time.

The requirement for a Construction Noise Management Plan is the most appropriate method of codifying the best practicable option approach to managing the adverse effects of construction noise. Much of the success of the noise minimisation measures is through good contractor behaviour and recognition that the contractor is part of an affected community. To this end and as noted by Mr Wood the Community Liaison Group is a key conduit between the contractor and the community.

## **8. Positive Effects to offset or compensate**

Under recent revisions to the Act a new s168A(3A) was inserted

*The effects to be considered under subsection (3) may include any positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from the activity enabled by the requirement, as long as those effects result from measures proposed or agreed to by the requiring authority.*

We have identified that the primary adverse effects relate to disruption caused by a construction period of up to three years with other adverse effects relating to the change and subsequent rehabilitation of the site post construction. Other adverse effects

including loss of vegetation, or effects on the Papawai Stream and the unnamed tributary of the Waitangi Stream can be managed through adherence to conditions, sound construction practices, good communication, and monitoring.

Positive effects for water supply and resilience to the Wellington Community are outlined above under our assessment of s168A(c) being reasonable necessity for the project. Positive effects to the community are all post construction with a rehabilitated site including some enhancements to the stream environment and improved playing field surfaces.

We note that implementation of the Town Belt Management Plan 2017 also has a number of initiatives designed to benefit the open space and recreation values of the Town Belt. Acknowledging that these are outside the ambit of this NOR, some of these initiatives will provide local benefit in time.

In making our recommendation we consider that the adverse effects can be managed through best practice construction methods and implementation of the management plans as best they can. The wider benefits of the project are tangible and while they are potentially positive local positive effects, they do not become realised for a considerable period of time.

## **9. Consultation and Community Liaison**

At the hearing Mr Ulvi Salayev, the Project Director for WWL, gave an outline of the efforts WWL have made to engage with the potentially affected Mount Cook residents. This has consisted of public open days, information sessions and street meetings. He advised us that experts on traffic and seismic issues attended to answer questions from the community.

Mr Salayev confirmed to us that the option of raising the playing fields was 'not on the table' initially, it was brought up to reduce vehicle movements. He also confirmed that as a result of a petition from Rolleston Street residents the Requiring Authority would no longer be raising the playing fields.

At the hearing some submitters, particularly Ms Comber on behalf of Mount Cook Mobilised and the Rolleston Street residents were complimentary about the level of community engagement that has been carried out to date. We observe that this is not always the position of affected communities when there is a large project with potentially adverse effects on a locality.

We have already identified that continued and ongoing community liaison will be important and note that a Community Liaison Group was to be established through the Town Belt Easement process that was carried out in advance of notification of the NOR. Mr Salayev advised that in respect of the Community Liaison Group, a terms of reference has been agreed in principle with the Friends of the Town Belt. The group would meet as

required to deal with key milestones post RMA process and during construction. The CLG will be a forum to get feedback from the community.

During the hearing it became clear to us that the relationship between the Requiring Authority, its' nominated contractor, and the affected community will be critical in achieving a successful outcome. This was endorsed by both the Requiring Authority's evidence and by submitters. We also note that there are specific conditions proposed including several actions such as contractor briefings and a 'one stop shop' where any complaints that are received can be resolved.

We also consider that the Community Liaison Group should have input into the various Management Plans proposed by the Requiring Authority prior to submission to WCC compliance officers for certification. Mr Salayev advised that he expected that an employee from WWL and perhaps two representatives from the contractor would be community liaison officers depending on the stage of project.

## 10. Analysis of Statutory Instruments

The resource management planners who presented evidence to the hearing (Mr Trlin for the Requiring Authority and Ms Steadman for WCC), provided an analysis of the relevant planning instruments which the proposal is required to be assessed against. These were included in the AEE as notified and commented on by Ms Steadman in her s42A report and Mr Trlin in his evidence.

We note that there was little discussion or contention about the contents of the planning instruments during the hearing. In our view the key matters relate to the necessity for the Project and management of adverse effects on the environment.

For completeness we note the evidence of Mr Trlin<sup>27</sup> who identifies the following matters as being relevant in terms of our consideration of the NOR and in particular the matters to be considered under s168A(3)(a). These instruments are:-

- a. The New Zealand Coastal Policy Statement ('NZCPS');
- b. The National Policy Statement on Urban Development Capacity ('NPSUDC');
- c. The National Policy Statement for Freshwater Management ('NPS-FM');
- d. Wellington Regional Policy Statement;
- e. Wellington City District Plan.

We note that the operative Regional Plans and the proposed Natural Resources Plan are not included in the list, rather they are relevant matters in relation to the resource consents for the Project already granted by Greater Wellington Regional Council. Mr Trlin

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<sup>27</sup> Trlin EIC para 10.2

also identifies the Wellington Town Belt Act 2016 and the Wellington Town Belt Management Plan 2017 as being relevant other matters in terms of s168A(3)(d) of the Act.

### **10.1 National Policy Instruments Statements**

In respect of the New Zealand Coastal Policy Statement, the National Policy Statement on Urban Development Capacity and the National Policy Statement for Freshwater Management we agree with Mr Trlin's synopsis of these in his evidence<sup>28</sup>.

*Discharges from the site during construction will enter freshwater (Papawai Stream and the unnamed tributary of the Waitangi Stream) and eventually the coastal environment. The erosion and sediment controls required by the regional resource consents will appropriately manage the potential for discharge of sediment from bulk earthworks and effects on fresh and coastal water quality are expected to be less than minor. Overall, I consider that the proposal is consistent with the relevant objectives and policies of the NZCPS and the NPS-FM.*

*The proposed reservoir will improve WCC's water supply network with the network management, operational and hazard resilience, and growth and well-being benefits set out in section 2.3 of the AEE. Overall, I consider that the proposal is consistent with the relevant objectives and policies of the NPSUDC and will support future urban growth.*

We do not consider in terms of the recommendation that we are making that these instruments are overly directive but support both the 'reasonably necessary' and effects conclusions that we have made.

### **10.2 Wellington Regional Policy Statement 2013 (RPS)**

We note that the RPS is a broad document as it also provides direction to regional and district plans on the coastal, air, land and the freshwater resource in the Wellington region. The s42A report identifies the key matters for consideration. In the context of this NOR we note that 'local authority water supply network and water treatment plants' is listed as a component of regionally significant infrastructure.

We note Ms Steadman's outline<sup>29</sup> of the relevant Objectives and Policies which are as follows.

*Table 14 of the NOR includes an assessment against the relevant objectives and policies of the RPS. Objective 10 and Policies 7 and 39 of the RPS relate to recognising the benefits of, and protecting regionally significant infrastructure. The proposed*

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<sup>28</sup> Trlin EIC paras 10.4 and 10.5

<sup>29</sup> S42A report paras 129-131

*reservoir will be a key component in the water supply network, and as such is considered to be regionally significant infrastructure.*

*The NOR also identifies a number of other objectives and policies of the RPS which relate to air quality (dust during construction), coastal environment (silt management during construction), waste (cleanfill), fresh water (stormwater management and vegetation clearance), landscape (visual amenity), natural hazards (resilience), tangata whenua, soils and minerals (during construction). The conclusion within the NOR is that overall the proposed works are consistent with the RPS. I concur with this conclusion.*

*Table 14 also identifies Objective 16 and Policies 23, 24 & 47 which relate to indigenous ecosystems. Policy 23 determines that any indigenous vegetation that occurs on a Land Environment classified as 'At-Risk' (20-30% indigenous cover remaining) is significant. The areas of seral native forest and scrub within the Prince of Wales Park are therefore "areas of significant indigenous vegetation and significant habitats of indigenous fauna". Neither the native planted communities nor the introduced exotic communities (including pohutukawa) are considered significant under Policy 23. Areas of vegetation that are significant under Policy 23 must be assessed against Policy 47. This assessment is provided in Section 10 of the Ecological Impact Assessment (Appendix G), which concludes that the reservoir construction will have low to very low effects in the short term and will have mid to long term benefits. This conclusion is also reached by Mr Anderson.*

We therefore adopt the above and note that Mr Trlin also supported Ms Steadman's view that the proposal is consistent with the relevant components of the RPS.

### **10.3 Wellington City District Plan**

There are three chapters of the District Plan which are relevant being Chapter 22 - Utilities, Chapter 16 – Open Space and Chapter 29 – Earthworks. These have been extensively outlined in the AEE, the s42A report and in Mr Trlins evidence.

#### **10.3.1 Utilities**

In her s42A report Ms Steadman outlines<sup>30</sup>:

*This chapter identifies the importance of utilities to ensure the successful functioning of a city. These provisions apply to utilities throughout all parts of the City. The area based objectives, policies and rules do not apply with the exception of those that relate to noise, dust, lighting, electromagnetic radiation and hazardous substances.*

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<sup>30</sup> s42A report paras



*I do note that a key policy which is relevant to the NOR is Policy 22.2.1.1B which states that utilities are generally discouraged within the Open Space B and C land, unless there are no reasonable siting alternatives and where adverse visual effects can be appropriately mitigated. As discussed previously, the adverse visual effects can be appropriately mitigated, although the timeframes for achieving full mitigation through the use of vegetation may take decades. The potential alternative sites for the reservoir are outlined and assessed within Appendix E of the NOR. Based on this assessment, it appears there are no reasonable siting alternatives for a reservoir of this size*

We agree with Ms Steadman on the key policy 22.2.1.1B generally discouraging utilities on Open Space land. However we are satisfied that the Requiring Authority has been able to demonstrate that feasible alternatives have been considered and this is the only site that can achieve the Requiring Authority's objectives.

### **10.3.2 Open Space**

While the utilities chapter applies in all parts of the city, consideration of Open Space objectives and policies is also required. We agree with Ms Steadman's conclusions below<sup>31</sup>.

*Table 16 of the NOR<sup>32</sup> outlines the relevant Objectives and Policies within the Open Space chapter. I concur that Table 16 identifies the relevant objectives and policies. The key matter is whether the proposal will preserve the special quality of the town belt for the benefit of future generations. The burial of the reservoir, the proposed contouring and landscaping / planting will minimise the impacts of the proposal. Overall I am satisfied that once the construction works have been completed and all remediation / planting have become established, the proposal will be consistent with these objectives and policies.*

We acknowledge the significant but temporary effects on Open Space values during construction that cannot be avoided. However, we also consider that the proposal once complete will achieve open space values of the site and will then be consistent with these policies.

### **10.3.3 Earthworks**

We have extensively considered overall earthworks effects under our assessment of effects and consider that the conditions can minimise adverse effects to the extent possible. Like Ms Steadman and Mr Trlin we are confident that proposal is consistent with the District Plan Objectives and Policies relating to earthworks that are largely around excavation management as well as minimising effects to natural character and to the natural environment.

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<sup>31</sup> s42A Report para 140

<sup>32</sup> Section 10.5, Page 75 of NOR

We note that there is significant crossover between the regional consents granted in relation to earthworks activities and the earthworks provisions of the District Plan and are satisfied that there is no inconsistency between them.

## 11. Other Matters

We have considered whether there were any other matters that were significant to our recommendation. While other matters were raised such as the Wildlife Act provisions and the Wellington City Resilience Strategy we do not consider that these were overly helpful to our deliberations.

However as outlined in the s42A report the Wellington Town Belt Act 2016 and the Town Belt Act 2017 are considered to be particularly applicable.

### 11.1 Wellington Town Belt Act 2016 and Management Plan 2017

We note that this recommendation to the Requiring Authority is not the only formal approval process with WCC approving an easement under the Town Belt Act 2016 last year.

Ms Steadman in discussing the Town Belt Management Plan further explains<sup>33</sup>

*The Town Belt Management Plan provides for the Council to grant rights over the Town Belt for “public services”. The Prince of Wales Park is identified as being within Sector 4 – Brooklyn Hills. Within section 8.4 of the Town Belt Management Plan, Prince of Wales Park is identified as containing two sports fields and the Wellington Harriers Club Building. It also states “There is one small reservoir at Bell Road, with a much larger one proposed for the spur about Prince of Wales Park...” Policy 8.4.3.4 states “Ensure the proposed water reservoir is buried and remedial planting done to mitigate its impact on the Town Belt”. As such, noting the intention to bury the reservoir and undertake remedial planting, the proposal is in alignment with the Town Belt Management Plan.*

We recognise that the Wellington Town Belt Management Plan 2017 acknowledges the proposed reservoir location at Prince of Wales Park as well as other initiatives beyond Prince of Wales Park. While we consider the main issue to be construction and landscape effects we do agree that the proposal is consistent with this component of the Town Belt Management Plan.

## 12. Conditions

As our recommendation is for the Requiring Authority to confirm the requirement subject to conditions, the conditions are a fundamental part of avoiding, remedying or mitigating adverse effects on the environment and as such have been given due consideration.

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<sup>33</sup> S42A Report para

The Requiring authority's closing included an agreed set of conditions between Ms Steadman and her advisers and the Requiring Authority. Apart from my making minor formatting edits the Conditions attached as Appendix 2 have been adopted and recommended to be imposed on the NOR.

## 13. Part 2 Consideration

In terms of whether the proposal represents the sustainable management purpose of the Act we have outlined our findings on the principal matters and constituent parts of s168A above. As s168A is subject to Part 2 we have also considered Part 2. the following are our findings.

### 13.1.1 Section 5

s5 defines the purpose of the Act as being '*... to promote the sustainable management of natural and physical resources.*'

In terms of the clauses in s5(2) we comment as follows.

*5(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—*

We consider that the proposed reservoir will enable the wider Wellington community to provide for its social, economic, and cultural well-being and for their health and safety. In particular, the reservoir enables significantly greater operational and post disaster event resilience for people and communities within the Wellington City Lower Level Zone.

*(a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*

The water reservoir project is also about sustaining the potential of the natural and urban components of Wellington City by proving more reliable water storage and this will provide for the reasonably foreseeable needs of future generations.

*(b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*

The project also seeks to safeguard the life supporting capacity of water in an urban community. Effects on terrestrial, freshwater and avian ecology can be managed through the conditions of consent in particular through the management plan requirements.

*(c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

As has been stated construction effects of a project of this size and time scale need to be minimised to the extent reasonably possible. There will be times when construction activities cause potential noise, dust and traffic annoyance to nearby residents. However we consider that the implementation of conditions represents the best way to avoid, remedy or mitigate the effects. The success of this project will be measured by the use of good practice, a clear set of outcomes encompassed in a set of Management Plans as well as effective and community engagement and communication.

### 13.1.2 Section 6

In respect of s6 all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for matters of national importance.

In terms of the identified s6 matters we comment as follows:

*6(a) The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development;*

The final form of the reservoir will be different to the existing landform however it will be buried and landscaped. In terms of the Papawai Stream and the unnamed tributary of the Waitangi Stream we are confident that any adverse effects can be managed and consider that there will be an improvement to the existing stream environment with riparian planting.

*6(c) The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna;*

We are satisfied that with careful management there will be a no more than minor effect on significant indigenous vegetation and habitats of indigenous fauna.

*6(d) The maintenance and enhancement of public access to and along the coastal marine area, lakes and rivers;*

The park will be a working construction site until the reservoir project is completed. For health and safety reasons as well as security, public access to the park and it's stream environment will be restricted. After completion of construction public access will be at least maintained in this location.

*6(e) The relationship of Maori and their culture and traditions with their ancestral lands, water sites, waahi tapu, and other taonga;*

The Cultural Impact Report and attached correspondence does not give us any reason to consider that there are any s6(e) matters of particular significance in this location.

### 13.1.3 Section 7

Section 7 includes additional matters that particular regard must be given to. Again we agree with Ms Steadman that a number of these Section 7 matters are of relevance to this proposal, which are:

*Section 7(aa) The ethic of stewardship;*

As with s6(e) the proposal does not raise any s7(aa) matters.

*Section 7(b) The efficient use and development of natural and physical resources;*

The Requiring Authority has explained the reasonable necessity for the NOR and why the water storage project is an efficient use and development of natural and physical resources being the water resource for the Wellington community. It was also demonstrated that utilising the Town Belt location is the optimum solution due to its height above sea level, and the lack of suitable alternatives.

*Section 7(c) The maintenance and enhancement of amenity values;*

This is a key matter and for some particularly those in closest proximity, construction effects will be adverse. It will be important that the site is actively managed through the conditions of consent to maintain amenity levels to the extent reasonably possible.

*Section 7(d) Intrinsic values of ecosystems;*

We consider that the intrinsic values of ecosystems can be maintained during construction and enhanced post construction.

*Section 7(f) Maintenance and enhancement of the quality of the environment;*

While there are localised effects during construction these in our view can be managed. Upon completion of construction the local environmental qualities can be maintained and enhanced. There is definitely an improvement to the Wellington community's quality of the urban environment by having a more resilient water supply.

*Section 7(g) any finite characteristics of natural and physical resources*

We have considered the existing landforms which have been modified to an extent through the flattening out of the playing fields. Although the completed reservoir will present as a more regular landform we are satisfied that it is appropriate in this location.

*Section 7(i) the effects of climate change*




Managing the effects of climate change is a key matter for the Requiring Authority. Security of sources of supply of potable water is a key driver for this Project

#### 13.1.4 Section 8

There are no particular s8 matters that we need to take into account.

### 14. Recommendation

In accordance with the authority delegated to us by the Wellington City Council as regulatory authority, and pursuant to section 168A of the Resource Management Act 1991, we recommend to Wellington City Council as Requiring Authority that it **confirms the requirement** for a designation for the construction, operation and maintenance of a water supply reservoir within the Prince of Wales Park, Mount Cook, Wellington subject to the conditions set out in Appendix 2 (Council reference SR No. 394052).

		
Lindsay Daysh (Chair)	Ray O'Callaghan	Clive Anstey

**Independent Commissioners**

**For the Wellington City Council**

Recommendation dated **11 April 2018** at Wellington

## Appendix 1

# **Persons who attended and presented evidence or submissions at the hearing**

### **Requiring Authority Advisors**

- Nicola McIndoe/ Akane Sandom, Kensington Swan - Legal Counsel;
- Laurence Edwards, acting Chief Advisor Potable Water at Wellington Water Limited – Project Need and Objectives;
- Ulvi Salayev – Wellington Water Limited - Project Director;
- Graham Spargo, Beca – Site Selection;
- Simon Edmonds, Beca – Engineering Matters;
- Rhys Girvan, Boffa Miskell - Landscape Architecture;
- Bill Wood, Marshall Day – Noise and Vibration
- Stephen Hewett, Beca - Traffic Engineering;
- Stephen Fuller Boffa Miskell – Ecology; and
- Matthew Trlin, Beca - Planning.

### **Submitters**

- Marina Smith;
- Judith Hutt;
- Victor Anderlini;
- Frank Cook;
- Carol Comber on behalf of Mt Cook Mobilised and Rolleston Street Residents
- Craig Starnes;
- Amanda D’Souza;
- Robert Ayson;
- Pru Dryburgh;
- Mary Hutchinson;
- Colin Taylor; and
- David Tildesley.

### **WCC Advisors**

- Stephanie Steadman, WCC - Senior Planner;
- Bill Barclay, Barclay Traffic Planning - Traffic Engineering
- Julia Williams, Drakeford Williams Ltd - Landscape Architecture -
- Jonathan Anderson, WCC - Terrestrial Ecology;
- John Davies, WCC - Earthworks Engineer.
- John Dennison WCC - Senior Environmental Noise Officer
- Krystle Leen, WCC – Organisational and Administrative support.



## Appendix 2

# Conditions

## SR 366241 - Recommended Conditions

### Definitions, abbreviations, acronyms and terms

Term	Definition
AEE	Assessment of Environmental Effects for the Prince of Wales / Omāro-ro Reservoir Project
CMP	Construction Management Plan
CLG	Community Liaison Group
CLP	Community Liaison Person
CMO	Wellington City Council's Compliance Monitoring Officer
CNVMP	Construction Noise and Vibration Management Plan
CRG	Community Reference Group
CTMP	Construction Traffic Management Plan
Commencement of construction	The time when the Works that are the subject of this designation (including any enabling works) start
Completion of construction	Completion of reservoir earthworks, restoration of the reservoir site and sports fields, and completion of planting (not including any further planting that may be required as part of the maintenance and monitoring period)
EMP	Earthworks Management Plan
Enabling works	Works that may be carried out in advance of bulk earthworks that include site establishment, vegetation clearance, fencing, and installation of accesses and erosion and sediment control measures.
Geotechnical Professional	A Chartered Professional Engineer (CPEng) with specialist geotechnical skills and experience in the design and construction of excavation and retaining works on steep slopes similar to those proposed and in similar ground conditions
GWRC	Greater Wellington Regional Council, including any officer of Greater Wellington Regional Council
LEMP	Landscape and Ecology Management Plan
Outline Plan	An Outline Plan prepared in accordance with section 176A of the Resource Management Act 1991
PFMP	Playing Fields Management Plan
Project	The design, construction, maintenance, and operation of the Omāro-ro Reservoir as in the AEE and these designation conditions
SSTMP	Site Specific Traffic Management Plan
WCC	Wellington City Council
Work or Works	The construction, maintenance, or operation of the Project, including where relevant any stage or part thereof
Working day	Has the same meaning as under Section 2 of the Resource Management Act 1991

## Proposed conditions

No.	Proposed designation condition
	<b>General conditions and administration</b>
DC.1	<p>a) Except as modified by the conditions below, and subject to final design and Outline Plan(s), the Project shall be undertaken in general accordance with the information provided by the Requiring Authority in the Notice of Requirement and supporting documents being:</p> <ul style="list-style-type: none"> <li>i) AEE Report, dated 15 September 2017</li> <li>ii) Notice of Requirement Update, dated 29 January 2018</li> </ul> <p>b) Where there is conflict between the documents listed above and these designation conditions, these conditions shall prevail.</p> <p><i>NOTE: The conditions of this designation have been specifically prepared to manage the construction of the Project. With the exception of DC.1 a) all conditions will expire, and may be removed from this designation in accordance with s182 of the RMA, upon completion of the Works.</i></p>
DC.2	<p>As soon as reasonably practicable following the completion of construction of the Project, the Requiring Authority shall:</p> <ul style="list-style-type: none"> <li>a) Review the area designated for the Project</li> <li>b) Identify any areas of designated land that are no longer necessary for the on-going operation or maintenance of the Project or for ongoing mitigation measures</li> <li>c) Give notice to WCC in accordance with section 182 of the RMA seeking the removal of those parts of the designation identified in DC.2 b) above</li> </ul>
DC.3	The designation shall lapse if not given effect to within 10 years from the date on which it is included in the District Plan under section 175 of the RMA
DC.4	<p>The Requiring Authority shall submit to the Council's Compliance Monitoring Officer (CMO) at least 2 months prior to commencement of construction, a detailed programme outlining:</p> <ul style="list-style-type: none"> <li>a) The proposed staging of the works</li> <li>b) The anticipated submission dates of the management plans and outline plans required by these conditions</li> </ul>
DC.5	<p>Prior to commencing any construction works, the Requiring Authority shall arrange and conduct a pre-construction site meeting with the contractor (at a minimum the Project Manager and Site Manager) undertaking the works and invite, with a minimum of 10 working days' notice, WCC's CMO and any other key WCC representatives determined by the CMO.</p> <p><i>Note: In the case that any of the invited parties, other than the representative of the Requiring Authority and the contractor, do not attend this meeting, the Requiring Authority will have complied with this condition, provided the invitation requirement is met.</i></p>
DC.6	An Outline Plan/s shall be submitted to the Territorial Authority for each stage of works, unless a waiver for this requirement is provided in writing by the WCC ResourceConsents Team.
	<b>Community liaison</b>
DC.7	Prior to commencement of construction, the Requiring Authority shall appoint an

	<p>appropriately qualified Community Liaison Person (CLP) in accordance with the following provisions:</p> <ul style="list-style-type: none"> <li>a) The CLP shall be appointed in consultation with the CMO (the CMO may consult with other parties within Wellington City Council as appropriate).</li> <li>b) Notwithstanding conditions DC7(c) and (d), the CLP shall be responsible for proactively engaging with stakeholders and the community throughout the construction phase of the reservoir, including by arranging a community BBQ with residents, Project staff and contractors prior to the commencement of construction.</li> <li>c) Where a Community Reference Group (CRG) for the Prince of Wales/Omāroro reservoir project is established under the Wellington Town Belt Act, the CLP shall: <ul style="list-style-type: none"> <li>(i) attend CRG meetings, and</li> <li>(ii) be responsible for presenting draft management plans to the CRG for feedback, prior to submission to the CMO</li> <li>(iii) be responsible for working with the CRG to identify opportunities for the Project to create education opportunities associated with the Project.</li> </ul> </li> <li>d) Contact details of the CLP shall be made readily available to the CMO, other stakeholders and the community surrounding the subject site.</li> <li>e) The CLP shall be engaged until the completion of construction.</li> </ul> <p><i>Note: For the avoidance of doubt the CLP shall be an individual person and the Requiring Authority shall be responsible for meeting all costs associated with this role.</i></p>
	<b>Community Liaison Group</b>
DC.8	<p><b>Community Liaison Group Formation</b></p> <ul style="list-style-type: none"> <li>a) In the event that a CRG for the Prince of Wales/Omāroro reservoir Project is not established under the Wellington Town Belt Act, or that it is disestablished prior to completion of construction, the Requiring Authority shall be responsible for the establishment and coordination of an alternative Community Liaison Group (CLG) and shall appoint an independent chairperson for the CLG in consultation with the CMO.</li> <li>b) Where a CRG has not been established, a CLG shall be formed prior to the lodgement of any management plan/s or any outline plan/s.</li> <li>c) Where a CRG was formed but has been disestablished, invitations to establish a CLG shall be sent to prospective CLG members within 1 month, and an establishment meeting held as soon as reasonably practicable.</li> </ul> <p><b>Community Liaison Group Membership</b></p> <ul style="list-style-type: none"> <li>d) Where a CLG is required the CLG shall include as a minimum the following parties: <ul style="list-style-type: none"> <li>(i) A representative from WCC's Compliance Monitoring Team</li> <li>(ii) A representative from WCC's Parks, Sports and Recreation Group</li> <li>(iii) The CLP</li> <li>(iv) The Requiring Authority's Project Manager</li> <li>(v) The Construction/Site Manager</li> <li>(vi) A representative from Mt Cook Mobilised</li> <li>(vii) A representative for Rolleston Street residents</li> <li>(viii) A single representative for residents for the Hargreaves Street, Westland Road, Salisbury Terrace, Salisbury Avenue and Wright Street areas, and</li> <li>(ix) A single representative for residents above the Project site for</li> </ul> </li> </ul>

	<p>the Asquith Terrace and Dorking Road areas.</p> <p>e) Where a CLG is required the Requiring Authority shall also invite representatives from the following parties to join the membership of the CLG:</p> <ul style="list-style-type: none"> <li>(i) A Greater Wellington Regional Council Compliance representative</li> <li>(ii) Port Nicholson Block Trust</li> <li>(iii) Te Rūnanga o Toa Rangātira Inc.</li> <li>(iv) A representative from the users of the Scottish Harriers Building</li> <li>(v) A representative from the Friends of the Town Belt</li> <li>(vi) A representative for the local business community</li> <li>(vii) In consultation with WCC's PSR group a representative for sports field users.</li> <li>(viii) A representative from the Papawai Reserve Group.</li> </ul> <p><b>Community Liaison Group Purpose</b></p> <p>f) Where a CLG is required the purpose of the CLG will be as follows:</p> <ul style="list-style-type: none"> <li>(i) To provide a forum for community and stakeholder involvement through which any issues of community interest or concern can be raised and responded to in relation to the construction of the reservoir.</li> <li>(ii) To provide a forum for the Requiring Authority to inform the CLG and its members about progress with management plans and to provide an opportunity for feedback on any draft management plan or outline plan prior to submission to the CMO or WCC.</li> <li>(iii) To consider issues relating to compliance with designation conditions, including management plans and outline plans.</li> <li>(iv) To consider education opportunities associated with the project.</li> </ul> <p><b>Community Liaison Group Meetings</b></p> <p>g) Where a CLG is required the CLG meetings shall be held at times and locations that maximise representation and attendance.</p> <p><b>Community Liaison Group Costs</b></p> <p>f) The Requiring Authority shall be responsible for any direct costs in running the CLG and CLG meetings.</p> <p><b>Community Liaison Group Attendance</b></p> <p>g) Where a CLG is required the Requiring Authority shall not be in breach of conditions DC.8a)-g) and j), if any one or more of the CLG parties either do not wish to be members of the CLG or do not attend particular meetings.</p> <p><b>Community Liaison Group Terms of Reference</b></p> <p>h) Where a CLG is required the CLG shall formulate its terms of reference that will include:</p> <ul style="list-style-type: none"> <li>(i) Defined roles and responsibilities of its members to achieve the purpose of the CLG</li> <li>(ii) Procedural matters for the running and recording of any meetings including recommendations from the CLG to the Requiring Authority relating to draft management plan/s and outline plan/s</li> <li>(iii) Determining the frequency of meetings.</li> </ul>
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	<p><b>Community Liaison Group Dis-establishment</b></p> <p>Where a CLG is required the CLG shall be dis-established following the completion of construction and the expiry of any related defect liability and landscape/planting maintenance period associated with the Project.</p>
	<b>Complaints</b>
DC.9	<p>a) At all times during the Works, the Requiring Authority shall maintain a permanent register of any complaints received alleging adverse effects from, or related to, the Works. As far as practicable the register shall include:</p> <ul style="list-style-type: none"> <li>i) The name and address (where this has been provided) of the complainant</li> <li>ii) The nature of the complaint</li> <li>iii) Location, date and time of the complaint and also of the alleged event</li> <li>iv) Weather conditions at the time of the event and including wind direction and approximate wind strength if the complaint relates to air quality or noise</li> <li>v) The outcome of the Requiring Authority's investigation into the complaint</li> <li>vi) Measures taken to respond to the complaint</li> <li>vii) Any other activities in the area, unrelated to the construction, which may have contributed to the complaint (such as non-Project construction, fires, traffic accidents or unusually dusty conditions generally)</li> </ul> <p>b) The Requiring Authority shall:</p> <ul style="list-style-type: none"> <li>i) Acknowledge the complaint within 2 Working Days</li> <li>ii) Promptly investigate, identify the urgency associated with the complaint and communicate that to the complainant</li> <li>iii) Take reasonable steps to remedy or mitigate the matters giving rise to the complaint if there are reasonable grounds for the complaint within 10 Working Days of receiving the complaint or such sooner time as may be reasonably necessary in the circumstances</li> <li>iv) Maintain a record of its responses and any remedial actions undertaken</li> <li>v) This record shall be maintained on site and shall be made available to the CMO and GWRC upon request</li> </ul>
DC.10	The complaints process outlined in condition DC.9 shall continue until the completion of construction. Any complaints received after this period shall be managed by the Requiring Authority in accordance with its standard complaints procedures
	<b>Management Plans</b>
DC.11	<p>a) The following Management Plans shall be submitted to the CMO for certification either at the same time or post-acceptance of outline plans associated with the construction of the Omāroro Reservoir:</p> <ul style="list-style-type: none"> <li>i) Construction Management Plan (CMP)</li> <li>ii) Earthworks Management Plan (EMP)</li> <li>iii) Construction Traffic Management Plan (CTMP)</li> <li>iv) Site Specific Traffic Management Plan (SSTMP)</li> <li>v) Construction Noise and Vibration Management Plan (CNVMP)</li> <li>vi) Landscape and Ecology Management Plan (LEMP)</li> </ul>

	<p>vii) Playing Fields Management Plan (PFMP)</p> <p>b) Works must not commence until certification of the management plans is received in writing</p> <p>c) All construction of the Project shall be carried out in accordance with the certified management plans required by these conditions</p> <p>d) The management plans provide the overarching principles, methodologies, and procedures for managing the effects of the Works to achieve the environmental outcomes and performance standards required by these conditions</p> <p>e) The management plans apply to the entire Project (including where it is constructed in Stages) and, for some matters, are sufficient to address construction management without the need for more specific plans. For other matters, there is a need for site- specific plans to provide the necessary level of detail to address requirements within each of the Stages</p> <p>f) The management plans shall be in general accordance with any draft management plan included as part of the AEE</p> <p>g) A copy of the certified management plans shall be made publicly accessible on the Requiring Authority's website</p> <p>h) During the construction period, a copy of all certified management plans shall be kept on site at all times, and be made available to the CMO upon request.</p> <p><u>Advice Note:</u></p> <p><i>Certification of the management plans shall be on the basis that they are consistent with the conditions of the designation.</i></p> <p><i>The CMO will consult with relevant Council staff/consultants in determining the appropriateness of the management plans, and in order to provide any comments back to the Requiring Authority.</i></p>
DC.12	The Requiring Authority shall submit draft copies of all management plans (as required by condition DC.11) to the CMO for comment at least 20 Working Days prior to the management plans being lodged for certification. If an Outline Plan has not been submitted prior to this occurring, or an outline plan waiver granted, a draft Outline Plan shall also be provided.
DC.13	The management plans are not required to include all details for every stage of Work at the time the plan is submitted for certification to the CMO. If further details are to be provided for later Stages of Work, the management plan shall specify which Stages require further certification at a later date. Further details shall be submitted to the CMO for certification prior to construction commencing in the relevant Stage (and work on each stage shall not commence until the relevant management plans are certified).
DC.14	The Requiring Authority may request amendments to any of the management plans required by these conditions by submitting the amendments in writing to the CMO 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 management plan and relevant conditions and achieve the outcomes required by these conditions. The changes sought shall not be implemented until the consent holder has received the CMO written certification for the relevant management plan(s).
DC.15	Where any condition requires that a management plan or other plan be certified, if the Plan has not been certified within 3 months of lodgement, or with the agreement of the CMO, the Requiring Authority may elect as an alternative to submit the management plan to WCC Resource Consents Team as an Outline Plan in accordance with section 176A of the RMA, and compliance with section 176A shall be deemed to satisfy the

	certification requirement.
	<b>Construction Management Plan</b>
DC.16	<p>a) At least 15 Working Days prior to Commencement of Construction the Requiring Authority shall submit a CMP to the CMO for certification</p> <p>b) The CMP shall address the matters in condition DC.17</p>
DC.17	<p>The CMP shall include details of:</p> <p>a) Construction methodologies and construction timeframes, including staging</p> <p>b) Normal working hours, shall be:</p> <p>i) For on-site construction activities: 7:30am to 6.00pm Monday to Saturday (excluding public holidays)</p> <p>ii) For earthworks related heavy vehicle movements on public roads: 9:00am - 6:00pm Monday to Friday (excluding public holidays)</p> <p>iii) For all non-earthwork related heavy vehicle movements on public roads: 9:00am - 6:00pm Monday to Friday (excluding public holidays)</p> <p>c) An exemption process for approval by the CMO, for any construction work and specialised heavy vehicle movements that cannot be undertaken during normal working hours.</p> <p>d) Staff and contractors' responsibilities</p> <p>e) Public safety</p> <p>f) Training requirements for employees, sub-contractors and visitors</p> <p>g) Environmental incident and emergency management</p> <p>h) Communication and interface procedures</p> <p>i) Complaints management (in accordance with condition DC.9)</p> <p>j) Compliance monitoring</p> <p>k) Environmental reporting</p> <p>l) Corrective action</p> <p>m) Site inspection and environmental auditing procedures</p> <p>n) Contact details for the person in charge of the works</p> <p>o) Contact details for the CLP</p>
	<b>Earthworks Management</b>
DC.18	<p>a) At least 15 Working Days prior to Commencement of Construction the Requiring Authority shall submit an Earthworks Management Plan (EMP) to the CMO for certification</p> <p>b) The EMP shall address the matters in condition DC.19</p>
DC.19	<p>The EMP must include (but not be limited to) the following matters:</p> <p>a) An illustrated plan that records the key features of the EMP</p> <p>b) A description of measures to be used to prevent and minimise adverse effects associated with:</p> <p>i) dust</p> <p>ii) sediment that may track onto the road network</p> <p>iii) sediment that may enter the stormwater system (including Papawai Stream and the Waitangi Tributary), including secondary sediment and</p>



	<p>erosion protection measures that will be provided.</p> <ul style="list-style-type: none"> <li>c) The methodology to minimise the surface area of un-stabilised earthworks, including stockpiles. The purpose is to decrease the potential for erosion related dust and sediment generation.</li> <li>d) Measures to ensure temporary and permanent excavations, fill areas, and stockpiles remain stable.</li> <li>e) Evidence shall be provided with the EMP demonstrating that measures in condition DC.19 d) have been peer reviewed by a Geotechnical Professional, from a second geotechnical consultancy, and confirming that they are in accordance with current industry best practice and the geotechnical assessment specified in condition DC.20.</li> <li>f) A minimum 10m setback from stockpiles to the northern and eastern boundary of the upper field and the eastern boundary of the lower field unless otherwise recommended in the peer reviewed geotechnical report required by condition DC.20</li> <li>g) Measures to minimise the visual effect of stockpiles though hydro-seeding or other methods where the stockpile will be undisturbed for a period of longer than 2 months</li> <li>h) Nomination of a site person responsible for the implementation of the EMP.</li> </ul> <p><i>Note: Condition DC.19(b)(iii) is intended to be given effect to through an Erosion and Sediment Control Plan that is required as a condition of GWRC's consent ref WGN180065 [35008], [35009], [35010]. It is expected that the ESCP will detail primary and secondary sediment and erosion protection measures to protect the Papawai Stream and the Waitangi Stream tributary. The ESCP will form part of the EMP.</i></p>
DC.20	<ul style="list-style-type: none"> <li>a) A geotechnical assessment of the final detailed design shall be prepared by a suitably qualified Geotechnical Professional. The assessment shall review the geotechnical hazards and risks associated with: <ul style="list-style-type: none"> <li>i) Stability of existing banks or retaining walls located below the playing fields</li> <li>ii) Stability of the roadway between the playing fields</li> <li>iii) Differential settlement and potential associated erosion of the proposed fill</li> <li>iv) Stability of proposed fill covering the reservoir and existing slopes to the south east and north of the reservoir</li> <li>v) The conceptual design for the tunnel excavation and access stability</li> </ul> </li> <li>b) The geotechnical report shall be peer reviewed by a Geotechnical Professional from a second geotechnical consultancy, to ensure that the methodology is in accordance with current industry best practice.</li> <li>c) The Requiring Authority shall either implement any recommendations in the peer review, or where any recommendations are not implemented, the Requiring Authority shall explain the reasons why – including the engineering rationale.</li> <li>d) The geotechnical report and the results of the peer review, including any Requiring Authority explanation for not implementing recommendations of the peer review, shall be provided to the CMO at least 15 working days prior to commencement of construction.</li> </ul>

DC.21	<p>By 6pm every working day earthwork stockpiles shall not exceed the following height limits, measured from the base of each stockpile:</p> <ul style="list-style-type: none"> <li>a) Upper Playing field- 5.5m in height</li> <li>b) Lower Playing field - 7m in height.</li> </ul>
<b>Construction Traffic Management Plan</b>	
DC.22	<ul style="list-style-type: none"> <li>a) At least 15 Working Days prior to Commencement of Construction the Requiring Authority shall submit a CTMP to the CMO for certification</li> <li>b) The CTMP shall address the matters in condition DC.23</li> <li>c) The CTMP shall be prepared in accordance with the version of the New Zealand Transport Agency Code of Practice for Temporary Traffic Management (COPTTM) that applies at the time the CTMP is prepared (where there is a change in the normal operating condition of a road). Where it is not possible to adhere to this standard, the COPTTM's prescribed Engineering Exception Decision (EED) process will be followed, which will include appropriate mitigation measures agreed with the Council's Road Asset Manager</li> <li>d) Construction shall not commence until the Requiring Authority has received the Manager's written certification of the CTMP</li> </ul>
DC.23	<p>The CTMP shall confirm the procedures, requirements and standards necessary for managing the traffic effects during the Work so that safe, adequate, and convenient routes for local movements by all transport modes are maintained throughout the construction of the Project. In particular, the CTMP should include methods to:</p> <ul style="list-style-type: none"> <li>a) Minimise the disruption to users of local travel routes</li> <li>b) Minimise the disruption to local residents' parking, including methods to minimise interference between heavy vehicles and cars using the P10 parking outside the dairy on Wallace Street</li> <li>c) Maintain a safe passage for all travel routes, including road and footpath users affected by the Work</li> </ul> <p>In particular, the CTMP shall describe:</p> <ul style="list-style-type: none"> <li>i) Access to the site for heavy vehicles and contractors' vehicles</li> <li>ii) Details of the 8 temporary car parks for residents on the upper playing field. The Requiring Authority must aim to provide more than 8 car parks where space allows.</li> <li>iii) Access restrictions for bulk earth import and export from the site</li> <li>iv) Mechanisms to coordinate heavy vehicle movements to minimise instances where two construction vehicles meet at the Rolleston Street – Wallace Street Intersection</li> </ul>
DC.24	<ul style="list-style-type: none"> <li>a) Prior to construction commencing the Requiring Authority shall carry out a preconstruction survey of Rolleston Street</li> <li>b) Prior to construction commencing, the Requiring Authority shall agree in writing with the CMO (who shall consult with the WCC Road Asset Manager) the nature, extent, frequency and any reporting requirements related to the inspections referred to in condition DC.24(c)</li> <li>c) The Requiring Authority shall carry out inspections of Rolleston Street, the Rolleston/Wallace Street intersection, and Salisbury Terrace to ensure that any potholes and other damage resulting from construction of the Works are identified and fixed as soon as practicable. These inspections will be carried out at the following frequency, unless otherwise agreed in writing by the CMO</li> </ul>

	<p>(who shall consult with the WCC Road Asset Manager):</p> <ul style="list-style-type: none"> <li>i) Fortnightly during the earthwork excavation period</li> <li>ii) Every two months during the remainder of the construction period, through to the completion of any project defects and liability period.</li> </ul> <p>d) The Requiring Authority shall repair pot holes and other damage resulting from the Project to Rolleston Street within 7 days of them being notified to the CLP or CMO. This timeframe may be extended if agreed in writing by the CMO.</p> <p>e) Unless otherwise agreed in writing by the CMO (who shall consult with the WCC Road Asset Manager), within 1 month of the completion of construction, the Requiring Authority shall organise with the CMO and Road Asset Manager a joint inspection of Rolleston Street to determine remedial/repaving works required to reinstate the road surface.</p> <p>f) Any identified remedial works, including repaving, shall be completed within 6 months of the completion of construction, unless otherwise agreed in writing with the WCC Road Asset Manager. The Requiring Authority shall meet all fair and reasonable costs of undertaking this work.</p>
DC. 25	The Requiring Authority shall ensure that any on street parking removed or relocated during construction of the Project is reinstated within 1 month of completion of construction.
	<b>Site Specific Traffic Management Plans</b>
DC.26	<ul style="list-style-type: none"> <li>a) The Requiring Authority shall submit SSTMPs to the CMO for certification at least 5 Working Days prior to commencement of the relevant traffic management Works.</li> <li>b) The SSTMPs shall address the matters in condition DC. 27.</li> <li>c) Traffic management shall not be implemented until the Requiring Authority has received the CMO written certification of the SSTMP.</li> </ul>
DC.27	<p>SSTMPs shall describe the measures that will be undertaken to manage the traffic effects associated with construction of specific Stages of the Project prior to construction of the relevant Stage(s) of the Project commencing. Each SSTMP must be consistent with, and be implemented in accordance with, the CTMP. In particular, SSTMPs shall describe, where appropriate:</p> <ul style="list-style-type: none"> <li>a) Temporary traffic management measures required to manage impacts on road users during proposed working hours</li> <li>b) Measures to maintain existing vehicle access to adjacent properties</li> <li>c) Measures to maintain safe and clearly identified pedestrian and cyclist access on roads and footpaths adjacent to the Works</li> <li>d) Any proposed temporary changes in speed limits</li> <li>e) Provision for safe and efficient access of vehicles to and from the construction site</li> </ul>
	<b>Construction Noise and Vibration Management Plan</b>
DC.28	<ul style="list-style-type: none"> <li>a) At least 15 Working Days prior to Commencement of Construction the Requiring Authority shall submit a CNVMP to the CMO for certification</li> <li>b) The CNVMP shall address the matters in conditions DC.29-31</li> <li>c) The CNVMP shall be prepared in accordance with the requirements of Annexe E to NZS 6803:1999 'Acoustics – Construction Noise'</li> </ul>

	<p>d) Construction shall not commence until the Requiring Authority has received the CMO's written certification of the CNVMP</p> <p>e) The CNVMP must be prepared by (or certified by) a suitably qualified acoustic specialist</p> <p>f) The CNVMP must be modified at the reasonable request of the CMO to deal with any deficiencies in its operations</p>
DC.29	<p>The purpose of the CNVMP shall be to provide methods to manage noise/vibration appropriately for the variety of circumstances within the Project area by outlining the measures, procedures and standards for mitigating the effects of noise and vibration during construction of the Project so they will meet:</p> <p>The noise criteria set out in condition DC. 31, where practicable. Where it is not practicable to achieve those criteria, alternative strategies should be described to achieve the best practicable option to minimise the effects of construction noise on neighbours</p> <p>a) The vibration criteria set out in Table 3 of DIN 4150-3: 1999, where practicable. Where it is not practicable to achieve those criteria, a suitably qualified expert shall be engaged to assess and manage construction vibration during the activity that exceed the criteria</p> <p>b) Where on-site construction works and/or heavy vehicle movements need to be undertaken outside of normal working hours (as defined in DC17) night time (8:00pm – 6:30am) work shall be avoided where practicable. Where avoidance is not practicable, the best practicable option shall be adopted to minimise or mitigate noise and vibration effects.</p> <p><i>NOTE: The intent of DC.29c) is to clarify that activities required to be undertaken outside of normal working hours (defined in DC17) should preferably occur between either 6:30am-7:30am or 6:00pm-8:00pm. Night time activities (8:00pm- 6:30am) should be avoided where practicable.</i></p>
DC.30	<p>The CNVMP shall, as a minimum, address the following:</p> <p>a) Description of the Works, anticipated equipment/processes and their scheduled durations</p> <p>b) Hours of operation (in accordance with condition DC.17), including times and days when activities causing noise and/or vibration would occur</p> <p>c) The construction noise and vibration criteria for the Project</p> <p>d) Identification of affected houses and other sensitive locations where noise and vibration criteria apply including a list of Noise Sensitive Receivers (as defined in NZS 6803:1999 'Acoustics – Construction Noise')</p> <p>e) Requirements for monitoring road surface condition to minimise noise and vibration from trucks travelling over potholes and uneven surfaces</p> <p>f) Requirements for building conditions surveys at locations close to activities generating significant vibration, prior to and after completion of construction and processes for repair of any damage caused by the Work</p> <p>g) Mitigation options including alternative strategies where full compliance with the relevant noise and/or vibration criteria cannot be achieved</p> <p>h) Methods and frequency for monitoring and reporting on construction noise and vibration</p> <p>i) Operator training procedures and expected behaviours under the CMP as required by condition DC.17</p>

	j) Consultation and notification procedures k) Specify an exemption process for approval by the CMO for any construction work that cannot be undertaken during approved working hours.																																											
DC.31	<p>Construction noise shall be measured and assessed in accordance with NZS 6803:1999 'Acoustics – Construction Noise'. The construction noise shall where practicable comply with the following criteria for the purposes of the CNVMP:</p> <table><tr><td>Time of week</td><td>Time period</td><td>dB LAeq(15 min)</td><td>dB LAFmax</td></tr><tr><td rowspan="4">Weekdays</td><td>0630-0730</td><td>55</td><td>75</td></tr><tr><td>0730-1800</td><td>70</td><td>85</td></tr><tr><td>1800-2000</td><td>65</td><td>80</td></tr><tr><td>2000-0630</td><td>45</td><td>75</td></tr><tr><td rowspan="4">Saturdays</td><td>0630-0730</td><td>45</td><td>75</td></tr><tr><td>0730-1800</td><td>70</td><td>85</td></tr><tr><td>1800-2000</td><td>45</td><td>75</td></tr><tr><td>2000-063</td><td>45</td><td>75</td></tr><tr><td rowspan="4">Sundays and public holidays</td><td>0630-0730</td><td>45</td><td>75</td></tr><tr><td>0730-1800</td><td>55</td><td>85</td></tr><tr><td>1800-2000</td><td>45</td><td>75</td></tr><tr><td>2000-0630</td><td>45</td><td>75</td></tr></table>	Time of week	Time period	dB LAeq(15 min)	dB LAFmax	Weekdays	0630-0730	55	75	0730-1800	70	85	1800-2000	65	80	2000-0630	45	75	Saturdays	0630-0730	45	75	0730-1800	70	85	1800-2000	45	75	2000-063	45	75	Sundays and public holidays	0630-0730	45	75	0730-1800	55	85	1800-2000	45	75	2000-0630	45	75
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DC.32	<p>a) At least 15 Working Days prior to Commencement of Construction or vegetation removal, the Requiring Authority shall submit a LEMP to the CMO for certification</p> <p>b) The LEMP shall be in general accordance with the Landscape Strategy and Ecological Impact Assessment provided in the AEE and address the matters in condition DC. 33</p> <p>c) Construction shall not commence until the Requiring Authority has received the CMO written certification of the LEMP</p> <p><i>Advice note: The LEMP may be part of a combined document including the Playing Fields Management Plan.</i></p>																																											
DC.33	The purpose of the LEMP is to outline the methods and measures to be implemented																																											

	<p>prior to the Works, during the construction phase, and for a defined period thereafter to avoid, remedy, and mitigate adverse effects of the construction and the Project on landscape amenity, use and function. The LEMP shall document the permanent mitigation measures, as well as the necessary monitoring and management required to successfully implement those measures during construction and the transition to the Operational phase of the Project.</p> <p>The LEMP shall, as a minimum, address the following:</p> <ul style="list-style-type: none"> <li>a) Final landscape strategy</li> <li>b) Confirmation of an appropriate buffer between the earthworks and waterways including confirmation of waterway location by longitudinal and cross-section survey. In the case of the Papawai Stream the buffer shall be no less than 10m on the stream's west bank (hillside). In the case of the Waitangi Stream Tributary, to the west of the Project site, no buffer shall be less than 5m.</li> <li>c) How the final reservoir backfill design will support a smooth integration with adjacent topography and optimise effective revegetation conditions</li> <li>d) Details of replaced pathways through the site, which shall be designed with reference to the WCC "Short Walk Standard"</li> <li>e) Consideration of CPTED principles in relation to the pipe tunnel access door</li> <li>f) Identification of vegetation to be retained, including retention of as many as practicable significant trees and areas of regenerating indigenous vegetation</li> <li>g) Protection measures for vegetation to be retained and vegetation clearance methodology as outlined in condition DC.34, including specifying a requirement that the removal of large trees shall be undertaken by an arborist to minimise damage to adjacent vegetation.</li> <li>h) Under conditions DC.33 f) and (g) above, particular attention shall be given to minimisation of the loss of trees in the Seral Forest B and to the protection of trees in the Seral Forest B that do not need to be removed. Where any vegetation is required to be removed from Seral Forest B, the Requiring Authority shall provide the CMO with a written explanation for why the removal is needed.</li> <li>i) A methodology for the monitoring of the nest boxes required by condition DC. 34 during construction, to be prepared by a suitably qualified and experienced ornithologist</li> <li>j) A methodology for surveying lizard presence prior to vegetation clearance, and minimising effects on lizard populations as required by condition DC.35.</li> <li>k) Details of proposed mass planting and specimen tree planting including plant species, plant/grass mixes, spacing/densities, sizes (at the time of planting) and layout and planting methods. The intention is to achieve a dense canopy of complementary plant communities which will achieve a variation in plant height.</li> <li>l) Planting programme – the staging of planting in relation to the construction programme which shall, as far as practicable, include provision for planting within the first planting season following completion of the Project</li> <li>m) Detailed specifications relating to (but not limited to) the following: <ul style="list-style-type: none"> <li>i) Weed control and clearance</li> <li>ii) Ground preparation</li> <li>iii) Mulching</li> <li>iv) Plant supply and planting, including hydro-seeding and grassing</li> <li>v) Proposed maintenance of plantings, including the replacement of</li> </ul> </li> </ul>
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	<p>unsuccessful plantings</p> <p>vi) Response maintenance for existing vegetation affected by opening of the canopy during construction (this is required to address potential windfall effects that may arise as a result of peripheral tree removal)</p> <p>n) Subject to achieving the success standards in paragraphs i), ii) and iii) below, there shall be a five year defects liability and maintenance period for all terrestrial planting but the maintenance period may be shorter if the success measures have been achieved earlier. At the end of that period, the Requiring Authority shall provide information to the CMO to demonstrate that the planting has been successful, with success defined as follows:</p> <p>i) In relation to mass planting, successful planting shall be defined as 80% canopy closure whereby a sustainable plant community has been established and where plants have grown to create a canopy that shades the ground and suppresses weed growth;</p> <p>ii) In relation to the planting of specimen trees, successful planting shall be defined as 100% plant survival, with 100% of trees in full leaf (if the relevant species is typically in leaf at that time of year) with the trees to have a habit of growth that is normal to the species and are to be sound, healthy and vigorous with normal and well-developed branch systems;</p> <p>iii) Success in relation to wetland and riparian planting shall be defined as nearly as practicable to the criteria in i), or ii) and in any event as agreed by expert ecologists.</p>
DC.34	<p>Prior to any vegetation clearance occurring:</p> <p>a) The maximum extent of clearance is to be clearly identified and confirmed by the Project Ecologist in consultation with the Project Landscape Architect and Project Construction Manager</p> <p>b) Vegetation to be retained will be clearly marked on site, with special attention given to large trees and Seral Forest B</p> <p>c) As far as practicable, vegetation clearance will occur outside the breeding season of kaka, falcon, kakariki, and morepork (1 September to 30 March)</p> <p>d) If vegetation clearance must occur during the period identified in condition DC.34 c), a survey shall be undertaken prior to clearance by a suitably qualified and experienced ornithologist to determine if a nest or nests are present. If a nest of any of the species identified in DC. 34c) is located on a tree to be felled, that tree must not be felled until the chick(s) has left the nest</p> <p>e) The Requiring Authority shall engage a suitably qualified and experienced ornithologist to provide a recommendation on the type, location and number of nest boxes that must be installed in adjacent areas of vegetation specifically for resident kaka and morepork.</p> <p>f) Nesting boxes required under DC.34 e) shall be installed under the supervision of the ornithologist prior to the commencement of any tree removal.</p> <p><u>Advice Notes:</u></p> <p><i>Evidence that the above process has been followed is to be provided to the CMO upon request. The CMO shall consult with an ecologist within the Council.</i></p>
DC.35	<p>a) Prior to any vegetation clearance occurring, a lizard survey is to be undertaken of the Project site and surrounding area by a herpetologist.</p> <p>b) If any lizards are found or their presence is suspected measures must be developed to minimise the effect of the Project on the lizard population, this may include lizard</p>

	relocation prior to vegetation clearance, and habitat re-creation associated with post construction site remediation and landscaping. These measures must be included in the Landscape and Ecology Management Plan required under conditions DC.32 and DC.33.
DC.36	Prior to commencing construction the Requiring Authority shall remove and store the existing bench seat and plaque located on the reservoir site. Within six months of the completion of construction the bench seat and plaque shall be re-instated.
DC.37	A planting review must be undertaken by a suitably qualified and experienced landscape architect within 3 years of completion of construction of the reservoir. The review will focus on the revegetation and assess the effectiveness of plant growth, particularly on mechanically stabilised slopes. Where required, remedial works shall be undertaken to ensure that planting treatments are successful and have the potential to improve the landscape values of the site. Evidence of this review must be provided to the CMO.
<b>Playing Fields</b>	
DC.38	<p>a) At least 15 Working Days prior to Commencement of Construction the Requiring Authority shall submit a Playing Field Management Plan (PFMP) to the CMO for certification</p> <p>b) The PFMP shall address the matters in condition DC.39</p> <p>c) Construction shall not commence until the Requiring Authority has received the CMO written certification of the PFMP</p> <p><i>Advice note: The PFMP may be part of a combined document including the Landscape Ecology Management Plan</i></p>
DC.39	<p>The purpose of the PFMP is to outline the methods and measures to be implemented prior to the Works, during the construction phase, and for a defined period thereafter to avoid, remedy, and mitigate adverse effects of the construction and the Project on the Upper and Lower Prince of Wales Park playing fields.</p> <p>The PFMP shall, as a minimum, address the following:</p> <p>a) Final design of the fields including levels and improved drainage (where practicable)</p> <p>b) Surface specifications</p> <p>c) Retaining works, including any retaining structure design, where necessary</p> <p>d) Permanent access for maintenance vehicles to both fields</p> <p>e) Fencing</p> <p>f) Design of the access track between the upper and lower playing fields.</p>
DC.40	<p>a) The PFMP shall be prepared in consultation with the Manager, Open Space and Recreation Planning and the Manager, Sports and Recreation Operations and Contracts.</p> <p>b) The PFMP shall demonstrate how the outcomes of the consultation have been incorporated and, where they have not, the reasons why.</p>
DC.41	<p>The Requiring Authority shall not permanently raise the upper and lower playing fields as part of the Project for the expressed purpose of permanently storing surplus excavated material from the proposed reservoir site.</p> <p>This condition shall not affect or limit any reasonable works required as part of field reinstatement, involving field re-shaping or re-profiling, required to appropriately reinstate playing surfaces as agreed with the Manager Open Space and Recreation Planning and the Manager, Sports and Recreation Operations and Contracts.</p>
DC.42	a) There shall be a 1 year defects liability period for works associated with the



	<p>reinstatement of each of the upper and lower playing fields, including access tracks, retaining walls (where required), fencing and drainage. This 1 year period will commence from the date that the CMO (in consultation with the Manager, Open Space and Recreation Planning and the Manager, Sports and Recreation Operations and Contracts), confirms in writing that the reinstated field or fields, and related tracks, retaining walls, fencing and drainage are suitable for organised sports use and public activities to commence.</p> <p>b) Within the defects liability period the Requiring Authority is responsible for meeting all reasonable costs associated with ensuring the successful reinstatement of the fields.</p> <p>c) At the end of the period in DC.42 a), the Requiring Authority shall provide confirmation to the CMO that the playing field reinstatement, including any required retaining works, permanent maintenance vehicle access works (including the access track between the upper and lower field), fencing and any required defect remedial work/s has been successful. This confirmation shall involve an appropriately qualified and experienced sports turf specialist.</p> <p><i>NOTE: DC42a) includes flexibility to separately stage the reinstatement of the upper and lower playing fields. For the avoidance of doubt, where this occurs the 1 year defects liability period will vary (in terms of its start and end date) for each field.</i></p>
	<b>Accidental discovery</b>
DC.43	<p>At least 15 Working Days prior to Commencement of Construction the Requiring Authority shall, in consultation with Port Nicholson Block Trust and Te Rūnanga o Toa Rangātira Inc, prepare an accidental discovery protocol and provide a copy to the CMO and GWRC for information at the time the CEMP is submitted. The protocol shall be implemented in the event of accidental discovery of cultural or archaeological artefacts or features during construction of the Project. The protocol shall include, but not be limited to:</p> <p>a) Identification of parties to be notified in the event of an accidental discovery, who shall include, but need not be limited to Port Nicholson Block Trust, Te Rūnanga o Toa Rangātira Inc, HNZ, WCC, GWRC, and, if kōiwi are discovered, the New Zealand Police</p> <p>b) Setting out of procedures to be undertaken in the event of an accidental discovery (these shall include immediate ceasing of all construction in the vicinity of the discovery until authorised to proceed)</p> <p>c) Training procedures for all contractors regarding the possible presence of cultural or archaeological sites or material, what these sites or material may look like, and the relevant procedures if any sites or material are discovered</p>