Wellington Water

Prince of Wales/Omāroro Reservoir

Application for Town Belt Easement

Our water, our future.

Executive Summary

Wellington Water Limited (WWL) requires an easement from Wellington City Council (WCC) to locate, construct and operate a buried 35,000 m^3 concrete reservoir within the Prince of Wales Park in Mount Cook.

The proposed reservoir site is part of the Brooklyn Hills Town Belt Management Sector within the Wellington Town Belt (Town Belt). It is subject to WCC's management, as the Town Belt trustee, under the Wellington Town Belt Act 2016 (WTBA) and Wellington Town Belt Management Plan, 2013 (WTBMP). The WTBMP has anticipated that a reservoir could be developed at the site and includes a requirement that any future reservoir be buried.

The proposed reservoir, the Prince of Wales/Omāroro reservoir, is required for servicing the Wellington low level water supply zone, providing potable water to approximately 70,000 residents, a significant range of commercial and industrial businesses and various critical community facilities.

The zone's existing reservoir network currently holds less than one day's water storage in-zone. The reservoir network is therefore limited in its ability to maintain water supply following a significant disruption to the local or bulk water supply network.

The proposed reservoir is needed to significantly expand the zone's local water storage capacity, for the following purposes:

- Operational and strategic/disaster resilience:
  - To enhance Wellington's resilience to water supply disruption events
  - To enhance Wellington's resilience to and ability to recover from natural hazard events.
- Network management and maintenance:
  - To assist with improving network function
  - To enable Wellington Water to undertake network maintenance activities, without disrupting water supply.
- Growth and wellbeing:
  - To support existing economic activity and growth, along with community health and wellbeing.

As the Wellington Town Belt Trustee, WCC is empowered under the WTBA to grant easements and authorise activities in the Wellington Town Belt related to delivering public services.

In exercising this power the Council must consider various matters set out the WTBA. These include:

- Effects on the Town Belt.
- Benefits of the proposal.
- Alternative sites or methods for achieving the objectives of the public service.

WCC in its role as Trustee also has a duty before exercising its power to, amongst other matters:

- Recognise and provide for the protection and enhancement of the Town Belt for future generations
- Comply with the WTBMP, including policies managing network utilities in the Town Belt
- Consider the views of the public including persons with an interest in the exercise of its power.

This easement request covers:

- The need for the proposed reservoir (Section 1)
- The reservoir proposal (Section 2)
- Requirements under the WTBA and WTBMP (Sections 3- 4)
- An assessment of the benefits, alternatives considered and effects on the Town Belt of the proposed reservoir (Sections 5-7)
- An assessment of the proposal against the requirements of the WTBA and WTBMP (Section 8)
- A summary of consultation undertaken (Section 9)
- A conclusion and recommendation for WCC's consideration (Section 10)
- Proposed conditions for WCC's consideration in assessing this authorisation and easement request (Section 11).

WWL's assessment of the WTBA and WTBMP requirements is as follows:

- Benefits. The Prince of Wales/Omāroro reservoir will deliver significant benefits to the Wellington community. It will:
    - Significantly enhance community resilience to water supply disruption events, including hazard events
    - Assist with Wellington's recovery from hazard events
    - Support Wellington's economic development and community wellbeing by enhancing the effective and efficient functioning and operation of the Wellington water supply network.
- Alternative sites and methods:
    - The Prince of Wales/Omāroro reservoir development proposal is the preferred and most appropriate option, when assessed against other alternative sites and methods considered by WWL, for achieving the objectives of WWL's water storage and supply service.
- Effect on the Town Belt:
    - The completed Prince of Wales/Omāroro reservoir development will result in neutral to low (no more than minor) long term effects on the Town Belt
    - The raising and resurfacing of playing field/s associated with the development of the proposed reservoir will be a permanent beneficial effect of the development
    - During construction there will be temporary localised visual, landscape, noise, vibration and recreation effects on the Town Belt. Effects associated with construction will include:

        - Visual and landscape effects associated site excavation, earthwork and construction activity, vegetation and landform disturbance
        - Recreational effects associated with the temporary closure of sport fields and walkways
        - Noise and vibration effects associated with construction traffic activity.
    - Localised and temporary effects are expected to be remedied or mitigated by site and activity management plans and site remediation works
    - Following the commissioning of the reservoir it is anticipated that infrequent, temporary and largely no more than minor effects will periodically occur associated with reservoir and support service inspection, maintenance, repair and replacement activity. These potential effects will be remedied or mitigated with the development and implementation of site activity management, remediation and stakeholder communication plans, which require the prior approval of WCC's Parks Manager.
- WTBA protection and enhancement. The proposed reservoir development, and its future operation and management, will result in the development of a buried reservoir that:
    - Is consistent with the requirements of the WTBMP
    - Provides for the protection and enhancement of the Town Belt for future generations
    - Appropriately satisfies the principles of s4 of the WTBA
    - Appropriately satisfies the WTBMP rules and guidelines for use and development within the Town Belt.

Having regard to these conclusions WWL requests the following, under s20 of the WTBA:

That WCC grant WWL's easement request to locate, construct and operate the proposed Prince of Wales/Omāroro Reservoir adjacent to Prince of Wales Park:

- **In general accordance with the site easement and activity plans included in Appendix A, and**
- **In general accordance with the preliminary reservoir design proposal, and its supporting addendum and assessment documents, set out in Appendices C-L, and**
- **Subject to the proposed conditions outlined in Section 11 of this request, and**
- **Subject to public consultation in accordance with s16 of the WTBA, and**
- **Subject to WWL obtaining any consents required under the Resource Management Act and Building Act.**

WWL also requests:

- Approval to work with WCC's Parks' team and support WCC in its consultation with the public on this proposal under s16 of the WTBA
- That WWL be provided with an opportunity to review and respond to any additional or modified conditions proposed by WCC.

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1 Introduction

1.1 Request for Easement and Authorisation to Construct a Reservoir in the Town Belt

Wellington Water Limited (WWL) on behalf of the Wellington City Council (WCC), is seeking to locate, construct and operate a buried 35,000 m^3 concrete reservoir within the Prince of Wales Park in Mount Cook (Figure 1).

Figure 1: Proposed Prince of Wales/Omāroro Reservoir Site

The site is part of the Brooklyn Hills Town Belt Management Sector within the Wellington Town Belt (Town Belt) and is subject to management under the Wellington Town Belt Act 2016 (WTBA). The WTBMP has anticipated that a reservoir could be developed at the site and includes a requirement that any future reservoir be fully buried.

The proposed reservoir is required for servicing the Wellington low level water supply zone. The Wellington low level water supply zone covers the Wellington Central Business District (CBD); Thorndon, Newtown, Mount Cook, Hataitai, Kilbirnie, Miramar, Strathmore and Seatoun.

The proposed reservoir would join three existing key reservoirs servicing this zone, Macalister (20,000 m^3), Carmichael (7,800 m^3) and Aramoana (6,500 m^3). These provide potable water to around 70,000 residents, a significant range of commercial and industrial activities and various critical community facilities.

The zone's existing reservoir network is serviced by the Wellington region's bulk water supply system. The bulk water supply system also supplements reservoir water supply into the local supply zone by directly supplying water to the Thorndon area through a Pressure Reducing Valve (PRV).

On any given day there is currently less than one day's water storage in-zone to manage a significant network disruption event. The bulk supply network is also not capable of meeting peak demand where it is used to supplement supply in the zone, requiring sufficient in-zone reservoir storage to supplement peak demand.

The proposed Prince of Wales/Omāroro reservoir is required to significantly expand the zone's local water storage capacity, for the following purposes:

- Operational and strategic/disaster resilience:
    - To enhance the zone's resilience to both temporary and significant water supply disruption events, such as may be associated with a natural hazard event.
- Network management and maintenance:
    - To assist with optimising the function of the local water supply network and without disrupting water supply enable WWL to undertake needed maintenance activities on the existing reservoirs and network.
- Growth and wellbeing:
    - To support existing economic activity and growth, along with community health and wellbeing.

These functions are critical to supporting and sustaining Wellington's economy, the health of its communities, and the city's ability to withstand temporary water disruption supply events and recover from significant events, such as an earthquake.

Before WWL can proceed any further with developing this reservoir proposal, it requires an easement from WCC under s20 of the WTBA to locate, construct and operate the Prince of Wales/Omāroro Reservoir at Prince of Wales Park.

Section 20 of the WTBA enables WCC to grant easements related to delivering public services in the Town Belt. This includes granting a right to itself, or to a council controlled organization including WWL.

In exercising this power, WCC is required to consider the following (s 20(2)):

- The effect of the proposal on the Town Belt
- The benefits of the proposal
- Any alternative sites or methods for achieving the objectives of the proposal.

WCC as the Trustee of the Wellington Town Belt is required to also:

- "Recognise and provide for" the protection and enhancement of the Town Belt for future generations, under s4(1)(a) WTBA
- "Have particular regard to" the principles in section 4(1)(b) WTBA
- Comply with the Wellington Town Belt management plan in exercising its powers with respect to the Town Belt (s11 WTBA)
- Consider the views of the public and any persons likely to be affected by or have an interest in the proposed exercise of its power (s16 WTBA).

If an easement is granted for the Prince of Wales/Omāroro reservoir to locate, construct and operate in the Wellington Town Belt, the reservoir development will also need to obtain any required consents under the Resource Management Act 1991 (RMA) and Building Act (BA). WWL will be responsible for securing any required RMA and BA consents.

Once construction begins, the proposed reservoir is expected to take approximately two years to build. Subject to funding, and obtaining the required easement needed under the WTBA and required resource consents needed under the RMA, it is anticipated the reservoir construction could commence in 2018/19 and be completed by 2021.

This easement and authorisation request covers:

- WWL and the need for the proposed reservoir (Section 1)
- The reservoir proposal, including a description of works (Section 2)
- WTBA requirements (Section 3)
- WTBMA requirements (Section 4)
- Benefits of the reservoir (Section 5)
- The assessment of alternatives to the proposed reservoir (Section 6)
- An assessment of effects of the reservoir proposal on the Wellington Town Belt (Section 7)
- An assessment of the proposal against criteria within the WTBA and WTBMA (Section 8)
- Consultation undertaken in support of presenting the reservoir proposal (Section 9)
- A conclusion and recommendation for WCC's consideration (Section 10)
- Proposed conditions for consideration in assessing this authorisation and easement request (Section 11).

This easement request does not specifically assess and evaluate RMA consenting issues and requirements. RMA matters will be considered, following the conclusion of the WTBA process, through the specific consenting processes triggered by WCC's district plan and under Greater Wellington Regional Council's (GWRC) existing and proposed regional plans (the proposed Natural Resources Plan- pNRP). The RMA resource consent process provides for the consideration of a wide range of effects, as compared to the more confined focus of the WTBA. It is expected that detailed conditions to manage effects on the environment will be imposed on resource consents resulting from that process.

Specialist assessments included with this document have however assessed the proposal against both the requirements of the WTBA and RMA, for completeness.

1.2 About Wellington Water

Wellington Water Limited (WWL) is a shared service, council-controlled organisation jointly owned by the Wellington, Hutt, Upper Hutt and Porirua city councils along with the Greater Wellington Regional Council (GWRC).

Established in September 2014, WWL's role is to manage the drinking water, waste water and storm water services on behalf of its council owners.

WWL does not own any drinking water, storm water, waste water or bulk water assets. Ownership of these assets remains with the local councils including the GWRC.

WWL's purpose as described in its Statement of Intent (SoI):

"To create excellence in regional water services so communities prosper"

WWL's related service outcomes are:

- Safe and healthy water
- Respectful of the environment
- Resilient networks support the economy.

1.3 Why there is a need for a New Reservoir

1.3.1 Water Supply Network Resilience, Management, Maintenance and Growth

The need for the Prince of Wales/Omāroro reservoir within the Wellington low level water supply zone is driven by:

- Operational and strategic/disaster resilience:
    - The need to provide additional water reservoir storage capacity within the zone to enhance the zone's resilience to both temporary and significant water supply disruption events. This includes events associated with a disruption to the region's bulk water supply, including in response to a natural hazard event/s.
- Network management and maintenance:
    - The need to provide additional water reservoir storage capacity within the zone, to optimise the management of the existing water supply network. This includes enabling WWL to undertake required maintenance and upkeep activities on the existing reservoir and bulk water supply network, without disrupting water supply to residents, businesses and critical community facilities.

- Growth and wellbeing:
    - The need for additional water reservoir storage capacity to be developed within the zone to support existing economic activity and growth, along with community health and wellbeing.

1.3.2 Wellington's Existing Water Supply Network

Wellington City's water supply is entirely dependent on the potable water it receives through the region's bulk water supply network from Wainuiomata, Waterloo, and Te Marua.

The Wellington low level water supply zone is a subset of this network, and services an area covering Wellington Central Business District (CBD), Thorndon, Newtown, Mount Cook, Hataitai, Kilbirnie, Miramar, Strathmore and Seatoun.

This supply zone provides potable water to around 70,000 residents, the CBD, various industrial customers, and a range of critical community facilities.

Bulk water is supplied to this zone's three key reservoirs (Macalister, Carmichael, and Aramoana), via a bulk water supply pipeline in SH2, which then traverses the CBD to service the zone's reservoir network (Appendix B). This reservoir network receives, stores and subsequently supplies water, via gravity, back into the local supply zone.

Bulk water is also supplied directly into part of Thorndon via a Pressure Reducing Valve (PRV), to boost water zone supply and pressure in this area due to the area's distance from Macalister reservoir.

1.3.3 Operational Resilience and Network Maintenance and Management

A hallmark of good water supply networks is that they will cope with future population and business growth demands. They also need to be capable of providing reliable services to customers while undergoing maintenance, repair and upgrade. Finally, they need to be able to withstand, or be quickly repairable following, natural disasters such as earthquakes.

WWL has developed Target Levels of Service (TLoS) for the operational resilience of its water supply network.

Operational resilience is the ability of the network to continue, or be able to be quickly restored to continue, service in response to reasonably predictable 'business as usual' water disruption events. For example if a pipe breaks, a water main is severed, a flood event occurs, a water treatment plant stops, water quality is compromised or the power fails, the network must maintain supply.

WWL expects that its customers should not notice any service interruption as a result of events that should be typically anticipated within a modern water supply service. The tap stays on. This is Operational Resilience.

WWL's TLoS for water supply storage operational resilience is currently set at 2 days (48 hours) in-zone storage. That is 2 days storage based on average daily demand, with sufficient provision to meet fire-fighting water supply demand.

The three reservoirs within the Wellington low level water supply zone provide an average of just 24 hours total storage in-zone (50% of TLoS).

During times of peak demand, and while maintaining sufficient storage provision for firefighting demand, actual available storage in the zone reduces to around 8 hours.

The bulk water supply main which supplements reservoir water supply service to the zone through a PRV connection to Thorndon also has insufficient conveyance capacity to meet daily peak water demands (i.e. it cannot on its own provide enough water fast enough to meet demand at peak times). The zone is therefore reliant on its network of reservoirs, in combination with the PRV supply, to meet peak demand water supply in the zone.

Macalister reservoir is the largest of the zone's three reservoirs, at 20,000 m^3. Macalister accounts for approximately 60% of the zone's total in-zone storage capacity of 34,400 m^3.

Macalister reservoir has never been taken out of service for inspection or cleaning since it was commissioned in 1992. This is because the temporary removal of this reservoir from the existing storage network would significantly disrupt water supply to the entire zone. Taking Macalister offline would require the introduction of water rationing.

The development of the Prince of Wales/Omāroro reservoir (35,000 m^3) would:

- Double the existing zone's entire in-zone water storage and bring average in-zone storage up to 48 hours (consistent with WWL's TLoS for water supply storage operational resilience)
- Significantly enhance the zone's resilience to manage, through reservoir storage, any temporary disruption to bulk water supply
- Provide sufficient in-zone storage to enable Macalister reservoir to be taken offline for maintenance, repair and cleaning as required
- Enable WWL to better optimise the functioning of the zone's existing water supply network, reducing the existing network's reliance on the Thorndon PRV, and improving the reliability and safety of water supply and quality to customers.

Appendix B is a summary document produced by WWL which explains the operational resilience case behind the Prince of Wales/Omāroro reservoir in more detail.

1.3.4 Strategic/Disaster Resilience

Wellington's location, surrounded by sea, sitting above the interface of the Australian and Pacific tectonic plates, and at the southern end of the existing regional bulk water supply network that crosses the Wellington fault in several locations, means that its water supply network is vulnerable to a significant disruption following a hazard event.

In particular, the area is threatened by a movement of the Wellington Fault. GNS Science has estimated this fault to have a 10% probability of moving in the next 100 years [1].

[1] 1 GNS, NIWA, VUW & UC, 2009. Presentation to the NZ Society for Earthquake Engineering in 2009 - http://db.nzsee.org.nz/2009/Pres48.pdf

This could cause a very high intensity earthquake with movement of up to five metres horizontally and one metre vertically. Such an event is expected to sever the region's bulk water supply trunk mains in locations where they pass over the fault. It will result in widespread damage to the water supply network, cutting the supply of water to Upper Hutt, Wellington and Porirua.

A 2009 study by GNS estimated for a magnitude 7.5 Richter scale earthquake, there would be about 30 breaks on the main trunk pipelines and 60 breaks on the smaller branch lines. Wellington City could have as many as 8,000 breaks on its local supply network[2]. Bulk water supply and treatment facilities are also expected to suffer damage requiring repair.

WWL and GWRC have estimated it would currently take around 60-70 days to restore bulk water supply to parts of the Wellington metropolitan area[3].

It could take several years to fully repair damage to the local water distribution network resulting from a severe earthquake, as much of the network may have to be rebuilt.

WWL has developed a TLoS for the strategic/disaster resilience of its water storage network, following a significant disaster event. This has been developed and agreed around the network being sufficiently prepared to support a Survival & Stability State (from Days 8[4] to 30 after a large earthquake affecting the Wellington region) at a basic minimum level of service that consists of:

- Provision of 20 litres per person per day to residents via distribution points
- Providing major hospitals and CD centres with a basic water supply from Day 8
- Providing Aged Care and Medical Services with a basic water supply from Day 14
- Providing Education facilities with a basic water supply from Day 21.

Current in-zone water storage for the Wellington low level water supply zone is only capable of supplying rationed water at a basic minimum level of service to Day 19 (post event).

The addition of Prince of Wales/Omāroro reservoir to the Wellington low level water supply zone will address this storage shortfall.

A gap will still remain, however, between the TLoS and potential resumption of bulk water supply services to the zone. WWL is currently exploring a range of other network resilience initiatives, working with the region's councils, to assist with reducing the period within which bulk or alternative water supply could be restored to Wellington region's local water reservoir networks.

[2] GNS, April 2009. Post-earthquake restoration of the Wellington area bulk water supply
[3] GWRC, September 2010, Earthquake Risk Assessment – Wellington Region, Report 10.567
[4] From Day 0- Day 7 after a significant seismic, residents are be expected to be self-sufficient using their own personal storage of water, along with rain water, to get by.

2 Prince of Wales/Omāroro Reservoir Proposal

2.1 Proposed Reservoir Location and Temporary Construction Site Easement Areas

2.1.1 Proposed Reservoir Site Area

The proposed reservoir site's topography is that of a rounded spur landform sloping downhill from Dorking Road to the reservoir site on an open grassed and vegetated rounded knoll overlooking the upper Prince of Wales playing field.

The knoll slopes to its west down to a small vegetated gully containing a tributary of the Waitangi Stream.

To the north, a tree and grass vegetated bank slopes down to the flat grassed upper playing field.

To the east and south the knoll descends down a vegetated slope to a formed access track linking the upper and lower playing fields, and to the Papawai Stream which runs along the western edge of the lower playing field.

There are a number of existing pathways providing access through the Prince of Wales Park, ranging from 'tracks through grass' to gravelled or paved pathways.

2.1.2 Proposed Reservoir Location, Service Pipeline Location and Easement Area

The Prince of Wales/Omāroro reservoir proposed location is on a ridge sited to the south and above the Prince of Wales Park upper playing field.

The footprint and coverage of the proposed easement area for the reservoir site, and its supporting pipeline services, is detailed in Appendix A (*Figure 1: Proposed Reservoir and Support Service Easement Area*).

The proposed reservoir and support service site easement area (i.e. ongoing or 'permanent' easement area), to undertake reservoir and support service activity operation, is intended to cover:

- The entire extent of the proposed reservoir site excavation area, and the extent of earthworks required to bury the completed reservoir structure
- A reservoir construction and operation site 'buffer' area extending 10 m beyond the outermost edge of planned earthworks
- The service corridors needed for water inlet, outlet, overflow and scour flow pipeline services needed to support the operation of the reservoir. These will

cross the upper Prince of Wales Park playing field to Rolleston and Hargreaves Streets
- An area of surface paving, proposed on the western margin of the upper Prince of Wales Park playing field, to enable site access and servicing as required by heavy vehicles.

This easement area is proposed to provide for:

- Reservoir and service pipeline construction, operation, maintenance, repair and replacement activities, including:
    - Site investigation works
    - Related vehicle access
    - Site inspections and investigation works
    - Excavation earthworks
    - Temporary material and equipment storage
    - Site remediation and landscape management
    - Erosion and sediment management
    - Noise and vibration management activities
    - Temporary restrictions for public access to the easement area
    - Health and safety works (including temporary fencing and signage).

The process that has been followed to select this proposed site is outlined in Section 6 of this document.

2.1.3 Proposed Temporary Construction Site

Related to the preparation, excavation, construction and subsequent remediation of the proposed reservoir site, a temporary construction site area will be required that extends beyond the proposed reservoir permanent easement area described in Section 2.1.2 of this document. This area will be needed to support the development of the reservoir in the permanent easement area, and subsequent remediation of the easement site.

The extent of this temporary construction site area is shown in site maps included in Appendix A (*Figure 2: Temporary Construction Site*).

The area includes:

- The entire extent of the upper and lower Prince of Wales Park playing fields and their margins, located to the north and east of the proposed reservoir site. This includes the margin between upper playing field, Rolleston Street and the reservoir needed to facilitate site access
- The linking accessway between the upper and lower Prince of Wales Park playing fields
- The access lane linking the lower Prince of Wales Park playing field with Salisbury Terrace
- The car parking area to the south of the lower Prince of Wales Park playing field.

This area is proposed to provide for:

- Reservoir and service pipeline construction and site remediation activities including:
    - Site investigation works
    - Vehicle access and parking
    - Excavation earthworks
    - Temporary material and equipment storage
    - Playing field excavation and raising
    - Construction site office(s)
    - Site remediation and landscape management
    - Erosion and sediment management
    - Noise and vibration management activities
    - Restrictions for public access to the construction site area
    - Health and safety works (including fencing and signage).

These activities would only be allowed to occur within the temporary construction site area during the reservoir construction and site remediation phase.

2.1.4 Proposed Reservoir Maintenance, Repair and Service Support Area

The Prince of Wales/Omāroro reservoir design includes a service tunnel structure that is intended to enable robust access to the reservoir for both regular maintenance/inspection and in an emergency. This includes vehicle access to the door of the reservoir to allow the delivery of heavy valves and other components.

It is not intended that the developed reservoir will require servicing, maintenance or repair access beyond the use of the tunnel.

However events could potentially arise that give rise to a requirement to undertake intrusive excavation to gain access to some or all of the structure and/or its support services that are not accessible by the tunnel. This could include both emergency and planned works.

Where such events occur material covering some or all of the reservoir site and/or its support pipeline services may need to be removed to facilitate inspection, investigations, maintenance, and repair and/or replacement activity. Materials and equipment needed to undertake this activity may also need to be brought to the site and temporarily stored in proximity to the site as part of this activity.

A maintenance, repair and service support area will need to be associated with the reservoir to support this function in the event it is required.

The proposed reservoir maintenance, repair and service support area for the reservoir is also shown in Appendix A (*Figure 3: Service Support Area*). This area includes:

- The entire extent of the upper Prince of Wales Park playing field and its margins.

This area is proposed to provide for:

- Reservoir and service pipeline maintenance, repair, and service replacement and site remediation activities including:
    - Temporary vehicle access and parking
    - Excavation earthworks
    - Temporary material and equipment storage
    - Playing field excavation and remediation
    - Temporary site office activities
    - Site remediation and landscape management
    - Erosion and sediment management
    - Noise and vibration management activities
    - Temporary restrictions for public access to the easement area, and
    - Health and safety works (including temporary fencing and signage).

Proposed conditions covering how this area may be used following site construction are detailed in section 11 of this document.

2.2 Description of Proposed Reservoir and Ancillary Construction Works

The physical works for the proposed reservoir construction project are described in detail in Appendix C and D.

In summary, the works proposed to be covered by the Prince of Wales/Omāroro reservoir Wellington Town Belt easement include the following components:

Prince of Wales/Omāroro Reservoir construction:

- Excavation:
    - Excavation of a construction site on the knoll above the upper Prince of Wales playing field, capable of accommodating the construction and operation of the Prince of Wales/Omāroro reservoir. Excavation is expected to involve the creation of a platform, at approximately 81 m above sea level, to accommodate the reservoir, and will involve the removal of approximately 51,000 m^3 of insitu material[5].
- Reservoir construction:
    - The construction of a new 35,000 m^3, 67 m diameter buried, reinforced/pressed concrete circular reservoir structure. The roof structure of the reservoir will reach a maximum height of approximately 16m above the excavated platform. The roof is proposed to be sloped at a gradient of 1(v): 10(h) to better resemble the existing rounded form of Prince of Wales Spur within which it is to be located.

[5] Insitu material, means existing soil and compacted rock material in place on site. When this material is excavated it will generally bulk up, as it is broken up and mixed with air.

- Services:
    - The reservoir will be serviced with inlet, outlet, overflow and scour pipework, and drainage pipework installed partially in a pipe tunnel and in-ground trenches
    - Servicing pipework will extend underground across the upper Prince of Wales Park playing field to Hargreaves and Rolleston Streets to connect with water mains supply and outlet, and storm water.
- Backfilling and burying:
    - Following construction, the reservoir site will be backfilled and buried with 0.5 m – 1.0 m of fill, using approximately 25,000 m^3 of insitu material excavated from the construction site, plus imported subsurface drainage material and topsoil. The finished ground surface of the buried reservoir will extend approximately 2.5 m above the current spurs existing ground level once completed.
- Remediation and landscaping:
    - The finished reservoir site and its margins will be landscaped and remediated. This will include replanting, and reinstating or replacing any existing furniture within this area.
- Access to Rolleston Street:
    - Heavy construction vehicle access to the site for the duration of construction will be via Rolleston Street (the only suitable heavy vehicle access to the site).

Prince of Wales Park upper and lower playing fields construction support areas:

- Excavated material storage:
    - The upper and lower Prince of Wales Park playing fields are expected to be used for the duration of construction for the temporary storage of approximately 25,000 m^3 of excavated insitu material[6]. This material will be used to backfill and bury the constructed reservoir once it is completed.
- Field preparation:
    - The upper and lower playing fields will need be stripped of top soil to accommodate any temporary stockpiling of excavated material from the reservoir site, and to enable the raising of the fields using surplus excavated material from the reservoir site.
- Internal site access:
    - The existing access track running from the southeast corner of the upper playing field to the northern end of the lower playing field, will be upgraded to support heavy construction vehicle movement between the fields.
- Ancillary activities:
    - Parts of the upper and lower playing fields will also be temporarily used for the duration of reservoir construction for site compound buildings, erosion, sedimentation and construction noise mitigation measures, and

[6] Insitu material typically 'bulks up' when excavated, by a factor of up to 1.3. I.e. 10,000m^3 of instiu material when excavated could occupy a volume of around 13,000m^3, if it is not subject to recompaction.

temporary parking for workers (lower field) and displaced residents parking from Rolleston Street (upper field).

- Field raising:
  - It is anticipated that both the upper and lower playing fields will potentially be raised up to 1.5 m, using approximately 20,000 m^3 of excavated insitu material from the reservoir construction site.
- Field remediation:
  - Remediation of the upper and lower playing fields will be to a like-for-like or better condition and will occur following the backfilling and burying of the reservoir. This is expected to result in an improvement to playing surfaces, with improved contouring for shedding surface water. This will include the installation of appropriate playing field side drainage, supporting retaining walls (where required) and the replacement of any existing fencing and furniture.

Off-site activities associated with reservoir construction are not covered by this easement request, and are not subject to assessment under the WTBA.

However for completeness expected offsite activities are listed below, but will be subject to a separate assessment process under the Resource Management Act if a conditional easement is granted by WCC for the construction and operation of the Prince of Wales/Omāroro reservoir:

- Disposal of surplus excavated material:
  - Surplus excavated material from the site that is not required for field raising or the backfilling or raising of the reservoir will be disposed off-site. Subject to field raising, this could involve the disposal of approximately 10-11,000 m^3 of insitu material. In the event that the playing fields are not able to be raised using excavated material, the amount of surplus material to be disposed off-site could equate to approximately 31,000 m^3 of insitu material.
- Rolleston Street Parking:
  - Temporary removal of some roadside parking (as identified in the Traffic Impact Assessment, Appendix I) will be required along Rolleston Street for the duration of the construction, to enable safe heavy vehicle access to the construction site.
- Water supply and stormwater pipeline services:
  - Water supply and stormwater services will need to be upgraded in streets adjacent to the reservoir site to support its operation.

2.3 Potential Post Reservoir Construction Maintenance, Repair and Service Works

Associated with post reservoir construction maintenance, repair and service activities, some or all of the following activities could potentially occur within the proposed reservoir and service pipeline maintenance, repair and service support area:

- Excavation:
    - Excavation of material to gain access to all or parts of the Prince of Wales/Omāroro reservoir and/or its support pipeline services. Access to the pipeline services would directly, but temporarily, impact the upper Prince of Wales Park playing field.
- Excavated material storage:
    - Subject to the scale of required excavation some or all of the upper playing field may be required for the temporary storage of excavated material.
- Field preparation:
    - Subject to the extent to which the upper playing field may need to be used for temporary storage of excavated material, the field may need to be prepared to accommodate temporary stockpiling of excavated material.
- Ancillary activities:
    - Part of the upper playing field may also need to be temporarily used for support service activities needed to enable reservoir and service pipeline maintenance, repair, and/or replacement. This could include temporary site buildings, erosion, sedimentation and construction noise mitigation measures, temporary machinery storage and parking, and health and safety works (including temporary signage and fencing).
- Remediation and landscaping:
    - Reinstated excavation materials will be landscaped and remediated to a like standard.
- Field remediation:
    - Remediation of upper playing field areas subject to excavation, material storage or used for ancillary activities, will be to a like-for-like or better condition.

3 The Wellington Town Belt Act

3.1 Wellington City Council – Trustee for the Wellington Town Belt

The Wellington Town Belt Act 2016 (WTBA) came into effect on 9 May 2016.

Under the WTBA WCC holds the Wellington Town Belt on behalf of Wellington residents as trustee (s9 WTBA).

In managing the Wellington Town Belt, WCC has the full capacity, rights, powers and privileges to carry on or undertake any activity, do any act, or enter into any transaction (s13). It is however subject to the provisions of the WTBA, any other act and general law.

Under s14 (b) of the WTBA WCC has no power to grant any easement in respect of the Wellington Town Belt, including for public services, other than in accordance with s20 of the Act.

3.2 Authorisation to Undertake Public Services

Section 20 of the WTBA allows WCC to:

- Grant a lease, licence or easement for public services (including water supply).

This includes the ability to grant an easement right to itself (s20(4) WTBA).

3.3 Considerations in Exercising Powers to Grant Easements to or Authorise Public Services

Before deciding whether to exercise its powers to grant easements to a Public Service under the WTBA, WCC is required to consider a number of matters set out within the WTBA:

s20(2):
(a) the effect on the Wellington Town Belt of the proposed public service
(b) the benefits of the proposed public service
(c) alternative sites, routes, or other methods for achieving the objectives of the proposed public service.

In performing its role as Trustee, WCC must also:

s4(1)(a)
***Recognise and provide for** the protection and enhancement of the Wellington Town Belt for future generations; and*

s4(1)(b)

***Have particular regard to** the following principles:*

(i) The Wellington Town Belt should be managed in partnership with mana whenua:

(ii) The landscape character of the Wellington Town Belt should be protected and enhanced, including by recognising that it was the New Zealand Company's intention that the original Town Belt not be built on:

(iii) The Wellington Town Belt should support healthy indigenous ecosystems:

(iv) The Wellington Town Belt should be accessible to all and for all to enjoy:

(v) The Wellington Town Belt should be available for a wide range of recreational activities:

(vi) Community participation in the management of the Wellington Town Belt should be encouraged and supported:

(vii) The historic and cultural heritage of the Wellington Town Belt should be recognised and protected.

In exercising its powers in relation to the Town Belt, WCC must also comply with the Wellington Town Belt Management Plan (s11(2)WTBA).

3.4 Consultation Requirements

Section 16 of the WTBA also requires that prior to granting any easement for a public service, and prior to building or authorising the building of any public service or facility where the effect on the Town Belt will be more than minor, WCC must consider the views of the public and persons likely to be affected by or to have an interest in the proposed exercise of this power.

Where the effects on the Town Belt will be more than minor, this includes making information available on the proposed exercise of this power publicly available, and inviting submissions, giving submitters reasonable opportunity to be heard in support of their submission, and taking into account all submissions.

4 The Wellington Town Belt Management Plan

WCC produced the Wellington Town Belt Management Plan (WTBMP) in 2013.

The WTBMP provides the framework for WCC's management of the Town Belt. The WTBA requires the Council to comply with the management plan in exercising its powers in relation to the Town Belt.

4.1 Wellington Town Belt Principles

The WTBMP sets out a range of guiding principles established in 2011 by the Council (WTBMP section 2.2). These principles correspond to the principles that have subsequently become embodied in the WTBA.

The guiding principles outline the wider community's values and aspirations for the Town Belt, and are intended to guide decision making.

The WTBMP's supporting objectives and policy framework explains the intended methods that will be used by WCC for the protection, management, development, operation and public use of the Town Belt.

4.2 Objectives and Policies

While there are a range of general and sector specific objectives and policies covering the management of the Town Belt, section 9 of the WTBMP specifically sets out the WTBMP's objectives, policies and rules that must be considered relating to the provision and management of all development and activities in Town Belt.

Section 9 of the WTBMP ("rules for use and development") is intended to support and give effect to the WTBMP's broader principles and general objectives and policies. Section 9 has a single objective:

Objective 9.1:

> *"Manage the Town Belt in a manner that reflects the principles of the Town Belt and recognises and protects key values: ecology, landscape, recreation, culture, and history".*

Key policies relevant to the Prince of Wales/Omāroro reservoir proposal that are related to this objective are set out within section 9.2, and include:

> *"9.2.1. Provide for environmentally sustainable activities and uses that are consistent with the objectives and policies of this plan.*

9.2.2. Manage and maintain discretion over activities to ensure appropriate allocation of resources, protection of Town Belt values and the safety of Town Belt users.

9.2.3. Maintain discretion over new activities and utilities to avoid or limit impacts on the environment and Town Belt values.

9.2.4. Follow a process for determining whether new activities and development are appropriate for the area directly affected and for the Town Belt in general.

9.2.6. Guide balanced decision-making when assessing potentially conflicting activities and/or when assessing effects of activity on the range of Town Belt values."

4.3 Rules for Use and Development: Public Utilities

The WTBMP provides for the use of the Town Belt for public utilities, which provide essential services to the public, where WCC's specific conditions have been met.

Section **9.4.5** of the WTBMP states that:

> *"Managed activities that require a lease, licence, concession or easement will be assessed by Council staff and Council (or a delegated Committee) will approve or decline. These include:*
>
> *... utilities (essential systems and networks that provide the city with water, energy, communications and wastewater removal) (see 9.5.4)"*

Section **9.4.6** (WTBMP) states that:

> ***Public notification**. Applications for managed activities will be publicly notified when:*
>
> *a. It is required under the Reserves Act 1977* [now superseded, but required by s16 of the Wellington Town Belt Act 2016]…
>
> *c. An application to construct or modify a permanent utility would significantly alter the nature, scale or intensity of the effect on the Town Belt*
>
> *d. Because the nature and/or scale of the proposed activity has the potential to adversely impact on Town Belt values, including permanent public access and open space.*

Section 9.5 of the WTBMP sets out the relevant **decision making guidelines** to be considered by WCC in its assessment of activities provided for under the WTBMP.

9.5.1 (WTBMP) provides that:

> *"Wellington City Council (Parks, Sport and Recreation) will consider the following when assessing applications for landowner approval:*

a. *if the activity and/or development could be co-located, in particular when associated with formal sports facilities*

b. *whether the proposal could reasonably be undertaken in another location, eg on non-reserve land, on another park, or at another location in the Town Belt where potential adverse effects would be less*

c. *the degree to which the proposal is consistent with the relevant objectives and policies of each section of this plan and the relevant sector plan*

d. *effects (positive and negative) on park infrastructure, approved activities, the surrounding environment and the enjoyment of other park users. Limits may be placed on the frequency of the proposed activity and the need for temporary closure.*

e. *the level of any additional benefits, enjoyment and use opportunities for park visitors, local and regional community and mana whenua*

f. *the extent to which the proposal affects current or future public access*

g. *potential to improve access to and interaction with the natural environment and promote personal and community health and wellbeing*

h. *the extent to which the proposal protects a predominance of open space over built development at the site and on the Town Belt generally*

i. *assessment of the effects of the location, extent, design and cumulative effect of any infrastructure (such as earthworks, lighting, fencing, car parking, access roads and so on) associated with a development or activity proposal*

j, *the potential to mitigate the effects of the development or activity in a way that is in keeping with existing Town Belt landscape character and values*

k. *the degree of risk associated with any activity (in relation to biosecurity, sustainability etc)."*

9.5.4 (WTBMP) specifically relates to managing Utilities, and states:

"Use of the Town Belt for public utilities is considered appropriate in some circumstances…. All new utilities and all replacements and upgrades of existing utilities, will be allowed on the Town Belt only where the Council's specific conditions have been met (see policies below):

a. *Public utilities:*

New utilities, replacement or upgrades of existing utilities may be permitted by granting leases or easements provided:

- *It is an essential service to the public*
- *It cannot be reasonably located elsewhere*
- *The recreational nature of the Town Belt is not significantly disturbed*
- *Where the public benefits outweigh any adverse impacts on this recreational nature.*

b. All new utilities and replacement or upgrades of existing utilities shall comply with the following conditions to the satisfaction of the Council:

(i) The impact of all utilities on Town Belt land and values shall be minimised.
(ii) Utility infrastructure shall be as unobtrusive as practicable with forms appropriate for the landscape and finished in low-reflective colours derived from the background landscape. Structures will be screened from view through planting where possible.
(iii) All utility services shall be placed underground, except where it is not practicable to do so.
(iv) Underground services shall be sited to minimise interference with existing features, facilities and vegetation.
(v) Utility services shall be located so as not to restrict areas usable for outdoor activities or required for future facilities or tree planting.
(vi) Any disturbance of the existing site during installation of a utility shall be minimised and made good immediately after completion.
(vii) Opportunities for the utility structure to benefit the Town Belt will be explored where appropriate (eg an essential maintenance track might provide an alternative walking route for the general public).
(viii) Recorded archaeological sites are avoided and any works may require an archaeological authority from the Historic Places Trust.

c. All utility companies wanting to build new or upgrade or replace existing structures on the Town Belt will need to obtain a lease and/or easement from the Council (as per Reserves Act 1977[now superseded, but required by s20 of the Wellington Town Belt Act 2016]*). Easements shall be granted for utilities that are located underground in terms of Section 48 of the Reserves Act. Leases shall be granted for utilities that are located on or above the ground and shall be for less than 20 years. This period shall include both the term of the current lease and the term of any right of renewal. Leases and easements will require the approval of the Council (or delegated committee).*

d. For existing utilities, where there is no lease or easement, utility companies will need to negotiate an agreement with the Council setting out the terms and conditions of access for inspection, maintenance and emergency repairs. Landowner approval will be required for any non-urgent earthworks.

…….

g. All existing and future public and private utilities (above and below ground) will be accurately mapped and documented."

4.4 Additional WTBMP Considerations

The proposed location of the Prince of Wales/Omāroro reservoir within the Brooklyn Hills sector of the Town Belt (Sector 4 of the Town Belt) also requires WCC to consider section 8.4 of the WTBMP.

The Brooklyn Hills area is made up of a complex series of gullies and spurs, which have been levelled in several places to form sports grounds.

The WTBMP identifies the hills to be a secondary, but important, backdrop to the city and notes that continuity of vegetation is needed to link the area visually (WTBMP section 8.4.1).

Importantly, this section of the WTBMP acknowledges the prospect of a proposed reservoir locating at Prince of Wales Park, and sets out policies for managing the reservoir's potential development. The WTBMP states that:

8.4.1 Character and Use

> *"… There is one small reservoir at Bell Road, with a much larger one proposed for the spur above Prince of Wales Park"*

8.4.3 Landscape and Ecological Management

> *Policies*
> *"8.4.3.4 Ensure the proposed water reservoir is buried and remedial planting done to mitigate its impact on the Town Belt."*
>
> *…*
>
> *"The Council is proposing to build a new 35 million litre reservoir above Prince of Wales Park. This will serve Wellington Hospital's emergency needs and provide bulk water supply for the city's growing inner city population. Work is planned to begin in 2015/2016. The reservoir will be buried to limit modification to the landscape. It will sit on the ridge above the sports field adjacent to Rolleston Street in Mt Cook."*

The proposal is assessed against the relevant requirements of the WTBMP at section 8 of this report below.

5 Benefits of the Reservoir

The Prince of Wales/Omāroro reservoir development will provide significant benefits to the Wellington community associated with the development of an infrastructure asset that will contribute toward supporting and sustaining the city's economy, essential community services, and general community health and wellbeing. The development will enhance the safety, reliability, and resilience of the city's water storage network.

The development will also directly contribute toward enhancing the city's ability to service expected future growth, out to 2060, and to withstand and recover from disaster events.

Specific benefits anticipated with the development of the reservoir are outlined in the following sections.

5.1 Operational and Strategic/Disaster Resilience Benefits

5.1.1 Network Resilience to Disruption Events

The supply zone's network resilience to both temporary and significant water supply disruption events, such as may be associated with a natural hazard event, will be significantly enhanced with the development of additional in-zone seismically resilient water storage capacity.

The Prince of Wales/Omāroro Reservoir structure will be designed to a standard enabling it to withstand seismic loads equivalent to a 1000 year return period seismic event.

This will enable the reservoir to remain operational following an event such as the rupture of the Wellington Fault.

Resilience also forms a key pillar of WCC's Long-Term Plan, with the Council outlining a long-term view to work to ensure infrastructure can deal with significant disruption as a result of natural hazards

5.1.2 Water Supply Reliability and Safety

Increasing the local water supply zone's reservoir storage capacity will improve the reliability and safety of the zone's day to day water supply service (as outlined in section 1.3.3 of this request).

The Wellington low level water supply zone's existing reservoir network averages less than 24hours storage. This falls short of WWL's TLoS for operational resilience of 48hours.

Development of the Prince of Wales/Omāroro reservoir will address this existing shortfall.

5.1.3 Community and Business Confidence in Infrastructure Services

Development of the Prince of Wales/Omāroro reservoir will directly contribute toward supporting, sustaining and growing the city's economy by improving water supply service safety and reliability, and increasing business and residential confidence in the quality and reliability of the city's water infrastructure.

5.1.4 Survival and Stability

The Prince of Wales/Omāroro reservoir will ensure sufficient local water storage capacity exists in-zone to assist with supporting the local community following a disaster event.

WWL has developed a target level of service (TLoS) for the strategic/disaster resilience of its water storage network set at supporting a **Survival & Stability State** (from Days 8 to 30 after an event) at a basic minimum level of service (described in 1.3.4 of this report).

Current in-zone reservoir water storage for the Wellington low level water supply zone is only capable of supplying water, at a basic minimum level of service, to Day 19 (post event).

The Prince of Wales/Omāroro reservoir will address this storage shortfall.

5.1.5 Recovery

The development of a modern seismically resilient reservoir, that has 'post event functionality', will directly assist with city and community recovery from a disaster event and the speed at which this can occur.

Reducing the time it takes to return to a business-as-usual economic state will contribute toward retaining many professional and public services within the Wellington region that are not inherently tied to the area and which could leave following a significant hazard event.

5.2 Network Management and Maintenance Benefits:

5.2.1 Water Supply Reliability and Safety

The development of the Prince of Wales/Omāroro reservoir will enable WWL to optimise its existing Wellington low level water supply network by reducing the use of the PRV at Thorndon, and enabling the local water storage to act as an appropriate buffer to the regional bulk water supply (by improving local network water storage from 24hours supply to 48 hours supply).

This will improve the reliability of the network's water quality, network function, reduce risks of network failure, and enable WWL to better manage operational and safety risks and responses to water quality issues and outages within the network.

5.2.2 Reservoir Maintenance and Management

The expansion of water storage capacity within the Wellington low level water supply network reservoir will also enable WWL to undertake needed maintenance of its existing reservoir network, including maintaining Macalister reservoir.

This will significantly contribute toward enhancing the reliability of water supply and in zone water quality.

It will also avoid the need to significantly disrupt local water supply associated with standard reservoir inspection, maintenance and repair activities.

5.3 Growth Benefits:

5.3.1 Capacity to Support Economic Growth and Development

The new reservoir will add capacity to the local water supply network, improving its capacity to support economic, residential and business growth within this zone.

It is projected that by 2043, there will be 24,000 more jobs and 46,000 more people living in Wellington City[7]. Without improvements, the current bulk water storage and network will be put under increased strain by this growth.

Development rules for Wellington in the Wellington City District Plan allow for significant increases in apartment living, business growth and other development in and around the CBD. WCC has identified that as many as 10,000 new apartments and homes could be concentrated in and around the areas to be serviced by the Prince of Wales/Omāroro reservoir[8].

[7] See http://getwellymoving.co.nz/the-problem/
[8] See www.getwellymoving.co.nz/about/documents/ for growth plans and strategies

6 Assessment of Alternatives

6.1 Prince of Wales/Omāroro Reservoir Objective

Before deciding whether to exercise its power under s 20 to grant an easement to enable the proposal, WCC is required to consider "alternative sites, routes, or other methods for achieving the objectives of the proposed public service."

Section 1.2 and 1.3 of this request describe WWL's purpose, its service outcomes and the case driving the need for the Prince of Wales/Omāroro reservoir within the Wellington low level water supply zone.

In summary the Prince of Wales/Omāroro reservoir is required to significantly expand the zone's local water storage capacity, for the following purposes:

- Operational and strategic/disaster resilience:
  - To enhance the zone's resilience to both temporary and significant water supply disruption events, such as may be associated with a natural hazard event.
- Network management and maintenance:
  - To assist with optimising the function of the local water supply network and without disrupting water supply enable WWL to undertake needed maintenance activities on the existing reservoirs and network.
- Growth and wellbeing:
  - To support existing economic activity and growth, along with community health and wellbeing.

The objective of the Prince of Wales/Omāroro reservoir project is to deliver an additional 35,000 m^3 of water storage within the Wellington low level water supply zone capable of addressing Wellington's water storage and supply resilience, growth and wellbeing needs. Providing this additional storage within the zone is the "objective" of the proposed public service, in terms of section 20 of the WTBA.

6.2 Water Storage Requirements

WWL has identified that 35,000 m^3 of additional water storage is needed within the Wellington low level water supply zone to meet the zone's operational and strategic/disaster resilience water storage needs.

This need can only be met through the development of a new centralised bulk water storage reservoir facility, located in the CBD/ Mount Cook /Newtown area. No other practical alternative method exists for meeting this in-zone water storage service and resilience requirement.

Alternative 'methods', such as promoting and supporting the development and installation of a dispersed network of publicly and privately owned micro water storage facilities (i.e. local community water tanks, and privately owned onsite water storage

tanks and bladders) within the zone, are not capable of delivering the cost efficiencies, service reliability, integrated network operation benefits, and community health and safety monitoring and management requirements demanded of a modern urban water storage and supply network.

The possible alternative 'sites' for achieving the objectives of the proposed public service are discussed below.

6.3 Gravity Based Water Supply Network

Wellington's existing low level water supply zone is a gravity-based local water supply system that is the result of decades of public investment.

The consequence of this is that introducing a significant new gravity based water storage reservoir into the network requires the height/elevation of all other existing gravity supply reservoirs, and their internal water storage levels, in the zone to be considered. This is needed to maintain the 'balance' of the network, and allow the best contribution to the system by each reservoir.

A significant new gravity based water storage reservoir located at an inappropriate elevation would, in the absence of additional design interventions (discussed in section 6.4), distort the balance, efficiency and optimisation of water draw down and water turnover rates within the zone's reservoir network (including the efficient use and function of the new reservoir), and could affect the consistency of water supply pressure and service across all or parts of the network.

In the case of the Wellington low level water supply zone, this results in a key design requirement for any new large scale *gravity based* water supply reservoir, such as the Prince of Wales/Omāroro Reservoir, to have a top water level (i.e. the elevation of the top internal water level within the reservoir when the reservoir is at its fullest) of at least 92 metres above sea level[9].

To achieve this top water level the only potential sites at this elevation near the Wellington low level water supply zone are located in or around the Town Belt.

The WTBMP includes provisions which have anticipated the potential for needing to accommodate public works in the form of a reservoir within the Town Belt.

The WTBA also includes provisions that enable WCC to consider easements within the Town Belt for public services, including water reservoirs.

[9] Within the Wellington low level water supply zone this is currently dictated by the elevation of the Macalister and Carmichael reservoirs, and their respective top water levels when they are at their fullest.

6.4 Reservoir Site Options Below 92 m RL and Outside of the Town Belt

WWL has considered the option of providing new bulk water storage with a top water level at lower elevations than the 92 metre above sea level design (92 m RL), opening the possibility of reservoir site options outside of the Town Belt.

A new reservoir with a top water level situated at a lower elevation than 92 m would however have to use significant additional auxiliary pumping to support its operation and effective function as part of the water storage network. Pumping would be needed to supplement the reservoir's input into and function as part of the water storage network, rather than the reservoir being entirely gravity based.

WWL has rejected the option of considering alternative reservoir sites with a top water level lower than 92 m RL (i.e. for a pump-supplemented water supply reservoir), for the following reasons:

- Pump station cost:
    - A significant new reservoir development with a top water level below 92m would need to be supported by a large auxiliary pump station. This would be required to supply water from the reservoir into the local water supply network at an appropriate pressure to optimise network function, and at a rate to meet water supply peak demands and ensure appropriate turnover of water stored within the reservoir. This would introduce significant additional capital and operational pumping costs[10] to any such reservoir development that would have to be passed on to the public and businesses.
- Reliability:
    - A pump supplemented reservoir would create challenging operational complexities and risks for WWL's supply network, associated with the need to develop, introduce and maintain additional control and monitoring systems for running any auxiliary pumping systems. Pumping systems would also need to be supported with back-up generators to maintain supply in response to power supply disruptions. This would materially increase management and system costs, as well as reducing the reliability of the water supply.
- Resilience:
    - A pump dependent reservoir would reduce the post-earthquake resilience of the city's water supply network. A reservoir requiring pumping support would also require substantial fuel storage to be maintained on site for the backup operation of standby electric generators needed to support the reservoir in the event of a power outage or following a significant natural hazard event.

[10]Additional pump station costs are estimated of the order of $7 M for building the pump station and $0.5 M per year in annual on-going running costs, based on Beca preliminary concept design estimates (2017).

- Private land acquisition:
    - Securing a reservoir site outside of the Town Belt would require the purchase of private land, and the need to disrupt existing well established neighbourhoods or business areas. This would also materially increase the development cost of such an option.
- Construction effects:
    - A reservoir location outside of the Town Belt, but within the Wellington low level water supply zone area, would give rise to construction effects that were likely to affect more neighbours than a reservoir location in the Town Belt.
- Operational effects:
    - A reservoir location outside of the Town Belt (requiring a pump) would give rise to ongoing operational effects such as noise and additional operational visits for maintenance, associated with the use of pumping systems.

For these reasons, sites that would require the water supply reservoir to be pump-supplemented rather than gravity based are not considered to be a practical or cost-effective alternative.

WWL's assessment of alternatives to the potential use and development of the Prince of Wales site for the Prince of Wales/Omāroro reservoir has therefore focussed on site options capable of accommodating the development of a reservoir with a top water level of 92 m above sea level (92 m RL).

6.5 Early Reservoir Investigations[11]

6.5.1 WRC/WCC 1978

Investigations for a new CBD reservoir extend back to 1974.

These were documented in a report on low level water storage for Wellington City in 1987. That report identified six possible sites, of which three were considered unsuitable. The report recommended the provision of 30,000 m^3 water storage in the central low zone.

6.5.2 Brickell Moss 1988

An investigation of ten sites was undertaken by Brickell Moss in 1988 in a scheme options assessment report that looked at 21 combinations to provide one or more reservoirs of 20,000 m^3 capacity.

This investigation formed the basis for driving the subsequent development of the 20,000 m^3 Macalister reservoir, situated at Macalister Park, which was commissioned in 1992.

[11] As summarised in MWH 2011, *Wellington City Council: Proposed CBD Reservoir Options Assessment*. See Appendix M.

6.5.3 WCC 2003

By 2002 a combination of issues lead WCC to consider further options for adding additional reservoir storage to the Wellington low level water supply network.

These issues included:

- Population growth
- Identification of a need for emergency water supply for the Wellington Regional Hospital
- An operational requirement for additional buffer reservoir storage, to reduce demand on the use of the PRV bulk water supply to Thorndon.

Several locations within the Town Belt were investigated including Government House, Fever Hospital and Alexandra Park. The Bell Road Reservoir site was later included and identified as the preferred location from an operational perspective. This assessment was subsequently superseded by a preliminary CBD reservoir investigation in 2004.

6.6 Preliminary CBD Reservoir Investigations, 2004

In 2004, SKM undertook a preliminary investigation[12] into the siting of a proposed new potable water reservoir in the vicinity of the existing Bell Road Reservoir in Brooklyn.

The proposed reservoir would have a storage capacity of 35,000 m^3 with a top water level of 92 mRL (to match the level in other key reservoirs in the low level zone- Macalister and Carmichael).

The purpose of the proposed reservoir was to fulfil three functions:

- As a terminal reservoir on the bulk water supply from the Wainuiomata Water Treatment Plant
- As a replacement for the existing Bell Road Reservoir
- As emergency storage for Wellington Hospital in the event of destruction of supply from the existing reticulation system.

The report investigated three sites, all within the Town Belt, being:

- Immediately north of the existing Bell Road Reservoir
- South of the Prince of Wales Park upper sports field (i.e. the location of the current proposal)
- South-east of the existing Bell Road Reservoir.

The investigation concluded that the Prince of Wales site was the preferred option.

The Prince of Wales site was identified as being significantly cheaper to construct, and had better access, both during construction and for ongoing operation and maintenance.

[12] SKM 2004, *Greater Wellington Water and Wellington City Council: Proposed Central Business District Reservoir*

6.7 Proposed CBD Reservoir Options Assessment, 2011

In 2011, MWH undertook an options assessment[13] for the purposes of recommending a preferred site for a proposed new reservoir. As for the 2004 study, the options assessment was based on developing a 35,000 m^3 reservoir with a top water level of 92mRL.

The Options Assessment noted that the altitude constraint (i.e. the requirement for a top water level of 92mRL), meant all potential site options were located on or around the Wellington Town Belt.

The reservoir sizing was based on growth projections through to 2060, and providing sufficient water for 30 days of emergency storage for the Wellington Regional Hospital site in the event of a significant disruption to supply.

WWL has reviewed the conclusions of this 2011 assessment, and although 6 years old, these are considered to still remain valid, notwithstanding that the TLoS delivery goals associated with the proposed Prince of Wales/Omāroro reservoir (described in section 1.3 of this request) have changed since 2011.

In particular, the purpose of the current proposed reservoir no longer includes a specific focus on meeting the emergency storage needs for the hospital and providing for growth. Instead, the hospital is now considered to be one of a number of critical community and emergency facilities within the Wellington low level water supply zone which need to be serviced by the reservoir, alongside the zone's resident population of 70,000 people, and key businesses, services and institutions within and adjacent to the CBD. All these activities require the development of the reservoir for improved water supply network operational and strategic/disaster resilience reasons.

The 2011 Options Assessment identified a long list of ten sites[14] considered in earlier reports outlined above. Sites considered included:

- Alexandra Park (Above Wellington College)
- Fever Hospital (current site of the SPCA)
- Government House
- Carmichael Reservoir
- Charles Plimmer Park
- Torquay Terrace
- Scottish Harriers (Southern end of Prince of Wales Park)
- Prince of Wales Park
- Bell Road
- Salamanca Road.

These are shown in Appendix M.

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[13] MWH 2011, *Wellington City Council: Proposed CBD Reservoir Options Assessment*. See Appendix M

[14] To achieve a top water level of 92m RL for a new gravity based reservoir, the only potential sites at this elevation were all on land either within the Wellington Town Belt, or on land proposed for inclusion in the Town Belt.

The positive and negative impacts at each location were considered to come up with a short list of options. Matters looked at included:

- Social
- Environmental
- Cultural
- Economic
- Locational factors.

Four sites were short listed for further investigation:

- Government House
- Carmichael Reservoir
- Torquay Terrace
- Prince of Wales Park.

These sites were selected for further investigation, over the other options considered, for the primary reasons of:

- Showing best potential to be integrated into and contribute to strengthening the wider water supply network for the Wellington Low Level Zone
- Having good ability to satisfy environmental and other considerations required under the Resource Management Act, Town Belt and other legislation. This includes matters such as landscape amenity, avoidance of high value natural areas, and cultural / social issues
- Practical ability to be constructed, and the costs associated with both reservoir and associated connecting pipework.

After considering a range of issues including constructability, economics, and social, environmental, and cultural effects, the 2011 report concluded that the Prince of Wales Park site was the preferred option from a network and operational flexibility perspective.

A summary of the short list ranking assessment of each site is included in the Prince of Wales Park Site Selection Summary included as Appendix M. These conclusions are still considered to be valid.

WWL has therefore identified the Prince of Wales Park site as the preferred site for a new reservoir for the following reasons:

- Its **central location** and proximity to the CBD, communities of Mount Cook and Newtown and critical public facilities (relative to other options considered)
- Its proximity to **bulk water supply mains** (relative to other options considered)
- Its favourable **elevation** for water supply purposes
- Its reasonable **working area** and **construction** access (relative to the other options considered)
- It was **not immediately adjacent to residential properties** (although it is visible from many areas)

- The site had the **lowest soil excavation requirements** of the options identified
- The site provided the **greatest network and operational flexibility** for the water supply network (relative to the other options considered)
- Its **ability to be integrated into the surrounding landscape** with appropriate earth-working and landscape design, including by burying some or all of the reservoir (relative to the other options considered)
- It required **minimal disturbance of valued vegetation** and **sensitive ecological** sites (relative to the other options considered)
- The site's development having **minimal cultural impact**
- From an operations and resilience perspective, WWL have also identified that the site and reservoir development:
    - Provides greater operational and future planning flexibility, relative to other options considered, due to its proximity to, and ability to deliver spare flow capacity through to the CBD
    - Reduces pumping requirements, providing greater energy efficiency
    - Reduces reliance on the Thornton Pressure Reducing Valve (PRV), due to the reservoir site's proximity to the CBD, improving turnover in the proposed reservoir and the Macalister Park Reservoir
    - Provides greater maintenance flexibility, relative to other options, by allowing a larger window of opportunity to shut down and maintain the bulk supply between Ngauranga and Thorndon.

6.8 Prince of Wales Reservoir Conceptual Design

In 2013, CH2M Beca undertook concept and preliminary design works [15] for a 35,000 m^3 buried reservoir at the Prince of Wales Park Site.

This report investigated a range of options for the shape (cylindrical or rectangular) and location (on the ridge or closer towards the gully) of the reservoir.

It concluded that a cylindrical reservoir, situated on the ridge, would be the preferred option.

This was because a cylindrical reservoir in this location:

- Avoided reservoir development, and excess excavated material disposal, in the gully system to the west of the proposed reservoir site, which forms an upper tributary for the Waitangi stream
- Provided a reservoir profile that could best fit with the existing ground profile.
- Was assessed to minimise the reservoir's environmental impact on the locality and landscape values associated with the Town Belt
- Was also identified as delivering a reservoir construction form best suited, relative to other reservoir shapes, to delivering optimal seismic resilience and water tightness operational outcomes.

This assessment is included in Appendix M.

[15] CH2M Beca 2013, *Hospital Prince of Wales Reservoir – Conceptual Design Options*.

6.9 Summary Assessment of Alternative Sites and Methods for Achieving the Objectives of the Proposed Public Service

Having regard to WWL's:

- Project objective to deliver an additional 35,000m^3 of water storage within the Wellington low level water supply zone capable of addressing the zone's water storage and supply resilience, growth and wellbeing needs
- Service objectives and target levels of service for the operational and strategic/disaster resilience of the Wellington low level water supply zone water storage network
- Operational and network management requirements for a reservoir development within the Wellington low level water supply zone
- Investigation and assessment of alternative reservoir site options to service the Wellington low level water supply zone
- Investigation and assessment of alternative reservoir site and construction configuration options for the proposed Prince of Wales/Omāroro reservoir
- Given that no new material considerations have arisen since 2011 that alter Prince of Wales Park as the preferred site for a new reservoir.

WWL considers that the proposed location and construction/design of the Prince of Wales/Omāroro reservoir at Prince of Wales Park, when assessed against other alternative sites and methods considered by WWL, is the most appropriate option for achieving the objectives of this service.

7 Assessment of Effects on the Wellington Town Belt

WCC is also required to consider "the effect on the Wellington Town Belt of the proposed public service" before deciding whether to exercise its power to grant an easement under s 20 WTBA.

7.1 Temporary Construction Effects

The development of the proposed Prince of Wales/Omāroro reservoir is anticipated to take up to two years.

During this construction period, the development will give rise to a range of potential temporary construction effects, of varying significance and nature, on the Wellington Town Belt.

These are expected to include:

- Landform, land cover and landscape modification (biophysical, landscape and visual effects), associated with:
    - Forming and preparing construction and service vehicle access to the reservoir site, and Prince of Wales Park playing fields
    - Reservoir site clearance and preparation for excavation earthworks, including vegetation removal
    - Reservoir site excavation
    - Reservoir construction
    - Excavation material stockpiling on the upper and lower Prince of Wales Park playing fields
    - Further reservoir site clearance, including vegetation removal, and preparation for backfill and burial earthworks (extending beyond the site area initially cleared for excavation activities)
    - Use of the upper and lower playing fields for worker accommodation, car parking, equipment storage, noise mitigation, and erosion and sediment management treatment.
- Vegetation removal and habitat modification (ecological effects), associated with:
    - Reservoir construction site clearance
    - Reservoir burial site clearance (extending beyond the site cleared to facilitate excavation).
- Earthwork management (erosion, sedimentation, dust management and water discharge effects), associated with:
    - Reservoir site clearance in preparation for excavation earthworks
    - Reservoir site excavation
    - Reservoir site backfilling and reservoir burial

    - Playing field topsoil clearance in preparation for field raising and temporary material stockpiling
    - Raising the upper and lower playing fields
    - Excavation material stockpiling on the upper and lower Prince of Wales Park playing fields
    - Playing field resurfacing, following the removal of material stockpiles for reservoir backfilling and burial.
- Public space and playing field accessibility (recreation effects), associated with:
    - Walkway closures through and across the proposed reservoir construction site area
    - Lookout closure on the knoll of the proposed reservoir site
    - Closure of the upper and lower Prince of Wales Park playing fields for the duration of reservoir construction.
- Effects associated with construction activity (noise and vibration within the Town Belt, and traffic effects), including machinery and vehicle activity involved in:
    - Reservoir site clearance in preparation for excavation earthworks
    - Playing field topsoil clearance, in preparation for field raising and temporary material stockpiling
    - Reservoir site excavation
    - Service pipeline excavation and reinstatement
    - Transportation of excavated material within the site for field raising, stockpiling, and backfilling and burial of the reservoir
    - Excavation material stockpiling on the upper and lower Prince of Wales Park playing fields
    - Raising the upper and lower playing fields
    - Transportation of surplus excavated material off site for disposal
    - Transportation of reservoir and pipeline construction materials to the site
    - Reservoir structure construction
    - Servicing pipeline construction
    - Reservoir site backfilling and reservoir burial
    - Playing field resurfacing, following the removal of material stockpiles for reservoir backfilling and burial
    - Worker vehicle access to the site
    - Site remediation and landscaping activity.

7.2 Long-term or Permanent Effects

Completion of the proposed Prince of Wales/Omāroro reservoir development is anticipated to give rise to a range of permanent long term effects (of varying significance and nature) associated with:

- Land form, land cover and landscape modification (landscape and visual effects), associated with:
    - Reservoir site backfilling and burial works permanently altering the existing landform contour and height of the site
    - Reservoir site landscaping and remediation works permanently altering the land cover of the site

    - Reservoir site backfilling and burial works and site landscaping and remediation works permanently altering the visual appearance and landscape character of the site
    - The raised profile of the upper and lower Prince of Wales Park playing fields, altering the visual profile of the playing fields.
- Vegetation removal and habitat modification (ecological effects), associated with:
    - Reservoir site landscaping and vegetation and habitat remediation works.
- Public space and playing field accessibility (recreation effects), associated with:
    - Restoration of the public lookout on the knoll of the finished reservoir site
    - Re-contouring, raising and remediation of the upper and lower Prince of Wales Park playing fields.
- Storm water management (discharge effects), associated with:
    - Reservoir site re-contouring
    - Reservoir operation (overflow and scour flows)
    - Playing field re-contouring.
- Reservoir operation activity (noise and traffic effects), associated with machinery and vehicle activity involved in:
    - Reservoir operation, maintenance, repair and servicing activities, including significant unplanned maintenance and repair activities
    - Service pipeline maintenance, repair and replacement activities.

7.3 Effects Beyond the Town Belt

The development of the proposed Prince of Wales/Omāroro reservoir will also give rise to a range of potential temporary and permanent effects beyond the Town Belt, which will need to be assessed and managed through the RMA consenting process.

WCC's consideration under s 20 WTBA is focussed on "effects on the Town Belt", rather than effects beyond it (such as on residents or the roading network). These wider "effects on the environment" (in RMA terms) will form part of any future RMA consent applications required by WCC and GWRC.

Identified effects beyond the Town Belt include both temporary and long term effects, of varying significance and nature, associated with:

- Construction activity (noise, vibration and traffic effects), associated with machinery and vehicle movement to, from and within the site
- Land form, land cover and landscape modification (biophysical, landscape and visual effects), described in 7.1 and 7.2
- Earthwork management (erosion, sedimentation, dust management and water discharge effects), described in 7.1 and 7.2
- Storm water management (discharge effects), described in 7.2.

7.4 Assessment of Effects on the Town Belt

Specialist reports appended within Appendices E-L have each assessed the potential temporary and/or permanent (long term) effects of the proposed Prince of Wales/Omāroro reservoir on the Town Belt.

A summary assessment of effects drawing from the findings and recommendations of each of these reports is presented in **Table 7.4**.

Mitigation or remediation measures proposed to remedy or mitigate any adverse (negative) effects are also summarised.

A Traffic Impact Assessment report has also been included with this application (Appendix I). This assessment and its recommendations largely relate to traffic effects that will occur outside of the Town Belt. However the report covers:

- Heavy transport access to the reservoir site from Rolleston Street
- Temporary residential parking for Rolleston Street residents, for the duration of reservoir construction, on the top north-west corner of the upper Prince of Wales Park playing field
- Worker access and temporary parking on the south east corner of the Lower Prince of Wales Park playing field for the duration of the reservoir construction.

The assessment of traffic effects contained in this easement request remains confined to the specific activities that will occur within the Town Belt.

A broader assessment of wider traffic effects will occur as part of a future resource consent application required for the reservoir under the RMA.

***Table 7.4**: Assessment of the effects of the proposed Prince of Wales/Omāroro reservoir development on the Town Belt and Prince of Wales Park.*

Effect Type	Stage	Description of Change/Effect	Duration of Effect	Significance of Effect[16]	Nature of Effect	Mitigation / remediation
Landscape and Visual (Source: Landscape and Visual Assessment- **Appendix E**)						
Physical effects on Landform (Site)	Construction	Modification to the existing landform will substantially transform a localised spur and adjoining playing fields for a period of up to two years.	Temporary	**High** (More than Minor)	Adverse (Negative)	Construction Management Plan- Landscape, Planting and Playing Field management plan.
	Completion (Prince of Wales Spur)	The completed landform will resemble the steep sided gullies and a gently rolling rounded dome top within Prince of Wales Spur albeit of a noticeably more regular modified appearance.	Permanent	**Moderate – Low** (Minor)	Adverse (Negative)	Construction Management Plan- Landscape, Planting and Playing Field management plan.
	Completion (Upper and Lower Playing Fields)	Completed playing fields will be well integrated within the existing benched landform at approximately 1.5m metre above existing ground level.	Permanent	**Low** (Less than Minor)	Neutral (Benign)	Construction Management Plan- Landscape, Planting and Playing Field management plan.
Physical Effects on Vegetation (Site)	Construction	Removal of exotic and native vegetation will contrast with surrounding areas and disrupt part of the larger green backdrop of the Town Belt.	Temporary	**Moderate** (Minor)	Adverse (Negative)	Construction Management Plan- Landscape, Planting and Playing Field management plan.
	Completion (Year 5)	Revegetation will assimilate the Site within surrounding areas and support a more diverse canopy of native vegetation. Playing fields will be grassed and assimilated within their established open space context with improved drainage.	Permanent	**Low** (Less than Minor)	Beneficial (Positive)	Construction Management Plan- Landscape, Planting and Playing Field management plan.
Landscape Character	Construction	Construction activity will substantially affect the open space character and amenity of a local area of the Town Belt, associated with temporary earthwork, reservoir construction and play field raising activities.	Temporary	**High** (More than Minor)	Adverse (Negative)	Construction Management Plan- Landscape, Planting and Playing Field management plan.
	Completion (Year 5)	The completed reservoir and associated landform rehabilitation will become increasingly reintegrated with surrounding areas of vegetation and re-establish recreation opportunities within a broader green backdrop context.	Permanent	**Low** (Less than Minor)	Neutral (Benign)	Construction Management Plan- Landscape, Planting and Playing Field management plan.
Visual	Construction	During construction, the existing Prince of Wales Spur will be transformed through earthworks and operation of machinery to the extent that this will be visible from many public and private vantage points, and in some cases dominate some foreground views. The foreground of open space on the upper and lower playing fields will also be disrupted through earthworks, vehicle parking and machinery operation. The significance of visual effects will vary depending on vantage point, but range from very low (not visible) to high (residential sites immediately adjacent to construction activity. A full summary of effects is detailed in the landscape and visual assessment report.	Temporary	**High- Very Low** (More than Minor)	Adverse (Negative)	Construction Management Plan- Landscape, Planting and Playing Field management plan.
	Completion (Year 5)	Once completed, the reservoir will reinstate an open rounded form which will merge into the existing spur landform. It will also enable broad panoramic views across Mount Victoria, Te Aro and Wellington Harbour to be retained. The open upper and lower playing fields in the foreground while raised, will also be reinstated. The significance of visual effects will vary depending on vantage point. From most vantage sites the reservoir development will merge with the wider Town Belt. A full summary of effects is detailed in the landscape and visual assessment report.	Permanent	**Moderate – Low** (Minor)	Adverse (Negative)	Construction Management Plan- Landscape, Planting and Playing Field management plan.
Ecology (Source: Ecological Impact Assessment – **Appendix F**)						
Terrestrial Ecosystems and Habitat	Construction	Three terrestrial habitat systems will be disturbed by construction activity. **Regenerating forest:** A small area of regenerating native forest and scrub (0.09ha) will be affected by works to the south of the reservoir knoll. The magnitude of this effect, within the Town Belt, has been assessed as negligible. **Planted natives:** A larger area of planted natives will also be affected by works (0.36ha). The effect of this disturbance, within the Town Belt, has been assessed to be medium, and low to very low with planting mitigation.	Permanent	**Very Low** (Not more than Minor)	Adverse (Negative)	Construction Management Plans- Landscape, Planting and Playing Field management plan . Consideration to be given, during detailed design and construction phase, to avoiding disturbance of regenerating forest area.

[16] The terminology used in assessing the significance of effects varies between each of the specialist reports. Specialist reports should be referred to for a full description and explanation of assessed environmental effects.

		Exotic Communities: A small area of forest will be affected by works (0.7ha). The loss of this small area of trees is not considered to limit bird populations given the extensive exotic forest which occurs elsewhere in the inner and outer Town Belt. The effect of this disturbance has been assessed as low to very low with planting mitigation.				
Avifauna	Construction	Kaka are seen daily at this site, and have historically nested near to the proposed works in a large pine. Several large pines and eucalypts will be cleared to make way for works. The loss of these trees is not expected to impact kaka in the area, given the extensive exotic forest which occurs elsewhere in the inner and outer Town Belt. The effect of this disturbance has been assessed as negligible.	Permanent	**Low** (Minor)	Adverse (Negative)	Construction Management Plan-Landscape, Planting and Playing Field management plan.
Aquatic and Marine Habitats	Construction	The proposed reservoir construction and design, including backfilling and burial works, material stockpiling on the upper and lower playing fields, and raising of the upper and lower playing fields is not anticipated, with appropriate erosion and sediment control, to have any direct negative effects on the either the Waitangi Stream tributary or Papawai Stream. With robust sediment management any effects on the stream have been assessed to be negligible.	Permanent	**Very Low** (Not more than Minor)	Adverse (Negative)	Construction Management Plan-Construction erosion and sediment control management plan.
Recreation (Source: Assessment of Effects on Recreation- **Appendix G**)						
Organised Recreation	Construction	The upper and lower Prince of Wales Park playing fields will be closed for up to 2 years. No change is proposed to users of the club rooms at the south end of the lower playing fields.	Temporary	**High- Very High** (More than Minor)	Adverse (Negative)	Construction Management Plan-Landscape, Planting and Playing Field management plan Temporary relocation of organised recreation during the construction period.
	Completion	The existing upper and lower Prince of Wales Park playing fields will both be raised by up to 1.5m, regraded, and reinstated with improved drainage performance, to the level of service identified by Wellington City Parks. Both fields will have improved side drainage installed, and where required retaining walls.	Permanent	**High- Very High** (More than Minor)	Beneficial (Positive)	Playing fields to be raised, regraded and reinstated, to provide improved playing surfaces. Construction Management Plan-Landscape, Planting and Playing Field management plan
Casual Recreation	Construction	The upper and lower Prince of Wales Park playing fields will be closed for up to 2 years. The circular path network through the park via the playing fields will be closed. The lookout area will be closed.	Temporary	**Moderate - High** (More than Minor)	Adverse (Negative)	Construction Management Plan-Alternative tracks, playing fields and play grounds are available for use in the immediate neighbourhood.
	Completion	All parts of the park and paths will be re-opened and accessible including the lookout area. The lower playing field is anticipated to be available for more days in year due to improved drainage.	Permanent	**Negligible – Very Low** (Less than minor)	Neutral – Beneficial (Benign-Positive)	Construction Management Plan-Landscape, Planting and Playing Field management plan. Playing fields to be raised, regraded and reinstated, to provide improved playing surfaces.
Connectivity	Construction	The Town Belt pathway between Asquith Terrace/Dorking Road in Brooklyn and Rolleston and Hargreaves street to Mt Cook will be closed. The main route between Brooklyn and Newtown will remain open. The route next to the lower playing field and along Papawai Stream to Salisbury and Papawai, and paths in the southern area of the park to Connaught Terrace and Hutcheson Road will remain open. Access onto the playing fields from the top of Hargreaves street will be closed.	Temporary	**Low – High** (More than Minor)	Adverse (Negative)	Construction Management Plan-Temporary redirection of path connections
	Completion	All access points, paths and tracks will be reinstated.	Permanent	**Negligible – Very Low** (Less than minor)	Neutral – Beneficial (Benign-Positive)	Construction Management Plan-Reinstatement of connectivity and in some cases improvement to paths, tracks and trails

Noise and Vibration (Source: Construction Noise Assessment – **Appendix L**)						
Construction activity	Construction	Construction activity noise will involve soil excavation from the reservoir site, reservoir construction, the topsoil stripping and raising of playing fields, and movement, storage and disposal of surplus excavated material from the site, and eventual site remediation. Park users will be excluded from the construction area, but may be exposed to noise and vibration effects when using the Scottish Harriers clubrooms on the car park at the south east corner of the lower playing fields, and the pathway between Asquith Terrace/Dorking Road and the Scottish Harriers clubrooms, Adjacent residential sites will be the closest noise sensitive activities to reservoir construction activities. A broader assessment of noise and vibration effects will occur as part of a future resource consent application required for the reservoir under the RMA. However for the purpose of assessing noise and vibration effects on the users of the Scottish Harriers clubrooms, and on users of the walkway between Asquith Terrace/Dorking Road and the club rooms, the assessed effects on adjacent resident sections have been used as a poxy for assessing effects on park users. Continuous construction noise levels measured at adjacent residential assessment sites bordering the upper and lower Prince of Wales Playing Fields are predicted, without the implementation of mitigation measures, to generally be within, but in some cases may marginally exceed, the NZS 6803 limit for the hours of 0730-1800 (70 dBA Leq). Expected maximum noise levels, Lmax, for earthworks are predicted to comply with NZS 6803- Lmax85 dBA, without the use of mitigation measures, between 0730 and 1800 hours. Outside those hours, instances of noise standard exceedance for such activities would be higher, as the relevant noise limits reduce. The proposed construction does not involve any activities which would typically generate high levels of vibration (such as piling or blasting). Vibration standards (DIN 4150-3: 1999) are not expected to be exceeded, based on the proposed activities. A full description of predicted noise and vibration effects, assessed against NZ6803, and DIN 4150-3: 1999, associated with construction is detailed in the construction noise assessment report.	Temporary	**Moderate – Low** (Minor)	Adverse (Negative)	Restrict hours of operation for construction activities to 0730 – 1800. Develop and implement a Construction Noise and Vibration Management Plan. This would include (but not be limited to) details regarding: -Community liaison; -Mitigation measures (including truck loading practices, equipment maintenance, use fo reversing alarms, fencing and screening); -Monitoring; -Contingency measures; and -Staff training.
Traffic (Source: Traffic Impact Assessment – **Appendix I**)						
Construction activity	Construction	Associated with construction activity heavy vehicle traffic will access the site via Rolleston Street. Worker vehicles will access the site via the lower Prince of Wales Playing field. Temporary parking will be provided on the upper field for residential parking displaced from Rolleston Street. Temporary worker vehicle parking will be provided on the lower playing field for the duration of construction. Effects of traffic include machinery and vehicle activity within the park during construction, including vehicle parking and machinery storage on site, and vehicle movements requiring the closure of pedestrian access across the site entrance at Rolleston Street. Worker vehicles accessing/departing the lower playing field may also temporarily disrupt access to and from the Scottish Harrier clubrooms.	Temporary	**Low** (Minor)	Adverse (Negative)	Develop and implement a Construction Traffic Management Plan.
Reservoir operational activity	Completion	Individual vehicles will need to periodically access the site for site inspection, and maintenance activity.	Temporary	**Very Low** (Less than Minor)	Adverse (Negative)	

Discharge – Earthwork and Storm Water Management (Source: Storm Water Assessment Report and Construction Erosion and Sediment Management– **Appendix J**)						
Sediment discharge to water and air	Construction	The proposed reservoir construction and design, including excavation and backfilling and burial works, and material stockpiling on the upper and lower playing fields, is not anticipated, with appropriate erosion and sediment control, to generate sediment laden discharges to local streams. Dust suppression will be required on exposed earthwork surfaces and stock piles. With appropriate site management dust effects are expected to be low, and less than minor.	Temporary	**Low – Very Low** (Less than Minor)	Adverse (Negative)	Construction Environmental Management Plan, and Construction erosion and sediment management plan,
Storm water discharge from Reservoir structure, and reservoir structure failure.	Completion	Once completed, the buried reservoir will reinstate an open rounded form which will merge into the existing spur landform generally maintaining existing on-site storm water drainage patterns. Reservoir overflow and scour flow will drain to upgraded storm water drainage on Rolleston Street. Reservoir structure design will be developed to Building Code Importance Level (IL) 4, with the reservoir designed as a water retaining structure capable of withstanding seismic loadings associated with a 1 in 1000 year seismic event. Risk of structure failure is considered to be very low. Risk of pipe failure is considered to be low.	Permanent	**Low- Very Low** (Less than Minor)	Adverse (Negative)	Storm water drainage from completed reservoir connected to upgraded Rolleston Street storm water drainage. Reservoir designed to Building Code IL4 standard.

7.5 Effects Assessment Conclusion and Recommendations

7.5.1 Assessed permanent effects on the Town Belt.

Overall the completed Prince of Wales/Omāroro reservoir development, with reservoir burial, related site landscaping, playing field resurfacing and remediation, and walkway reopening, is expected to result in **neutral to low** (no more than minor) **long term** (permanent) adverse (negative) effects on the Town Belt.

The raising and resurfacing of playing fields, a by-product of the reservoir development, will be a **beneficial** (positive) **long term** (permanent) effect of the development.

7.5.2 Assessed temporary effects on the Town Belt.

During construction there will be temporary localised adverse (negative) visual, landscape, noise, and recreation effects on the Town Belt.

Adverse temporary effects on the Town Belt will typically be associated with construction activities and will include:

- Landscape and visual effects: associated with site excavation, earthwork and construction activity, temporary buildings, vegetation and landform disturbance
- Ecological effects: associated with vegetation disturbance and removal, and the management of erosion and sedimentation, prior to site remediation and mitigation planting
- Recreation and social effects: associated with the temporary closure of sport fields and walkways, and noise and construction traffic activity within the park (although these effects won't be experienced first-hand by park users due to site closure).

These potential adverse effects are expected to be remedied at the conclusion of construction, or mitigated through the development and appropriate application of site and activity management plans, and site remediation works, proposed as part of the development or required as conditions of consent.

The specialist reports included in Appendices E-L provide recommendations for remediating or mitigating effects associated with the reservoir development.

Where these recommendations have not featured as a specific element of the preliminary design (Appendix C and D) they have been proposed as conditions in Section 11.

7.5.3 Off-site Effects

There will be also be temporary offsite adverse effects associated with the development proposal, principally during the construction phase, associated with landscape, visual, construction traffic, noise and vibration effects.

'Offsite' issues associated with traffic, noise and vibration, while not within the sphere of the Town Belt Act management process, will be managed through the provisions of the Resource Management Act and the consideration of consents needed under the Wellington City District Plan and Greater Wellington Regional Plans (operative and proposed).

Landscape and visual impacts will be addressed under both the WTBA, as direct effects on the Town Belt, and also as offsite effects under the RMA.

7.5.4 Future Temporary Effects Post Construction.

Following reservoir commissioning it is anticipated that potential temporary adverse effects will still periodically occur associated with future reservoir and support service inspection, maintenance, repair and replacement activities.

These effects are expected to be infrequent and of low to moderate significance (i.e. no more than minor).

As with temporary effects generated during the reservoir construction phase, future temporary effects are also capable of being remedied or mitigated by developing and implementing site activity management, remediation and stakeholder communications plans.

Conditions covering these matters are included in Section 11.

8 Assessment Against Requirements of the Wellington Town Belt Management Plan

8.1 Decision-Making Guidelines - General

The WTBMP sets out a number of general decision-making guidelines to be considered by the Council when assessing applications for easements (termed landowner approval within the WTBMP). These are set out in Section 4 of this Report.

Table 8.1 assesses the proposed Prince of Wales/Omāroro reservoir construction development and operation activity against these matters.

This includes the development and operation of the reservoir, its supporting pipeline services, and the associated raising of the upper and lower Prince of Wales Park playing fields.

***Table 8.1**: WTBMP general decision-making guidelines (derived from s9.5.1 WTBMP)*

WTBMP Provision-9.5.1		Assessment
(a)	Can the proposal be co-located?	The hydraulic requirements of the Wellington low level water supply zone require the Prince of Wales/Omāroro reservoir development to be located on a site capable of supporting a water reservoir with a top water level of 92 m RL. WWL's assessment of alternatives (Section 6) has not identified an alternative site or reservoir delivery option that would practically support co-locating or combining the reservoir with another reservoir asset.
(b)	Can the proposal be reasonably undertaken in another location, e.g. on non-reserve land, on another park, or at another location in the Town Belt where potential adverse effects would be less?	WWL has undertaken a detailed consideration of alternative site options (Section 6). Suitable site options for accommodating a gravity based 35,000 m^3 reservoir, with a top reservoir water level of 92 mRL, capable of servicing the Wellington low level water supply zone, are all located in the Town Belt. WWL has identified that the proposed Prince of Wales site is the most appropriate site option to accommodate this reservoir proposal for the following reasons: • Network function, and operational flexibility • Requires the least amount of soil to be excavated compared to other options • Provides the ability to integrate the reservoir into the surrounding landscape with appropriate earthworks and landscape design • Has minimal disturbance of valued vegetation or on sensitive ecological sites, relative to other options • Has minimal cultural impact.

WTBMP Provision-9.5.1		Assessment
(c)	The degree to which the proposal is consistent with the relevant objectives and policies of the WTBMP, and the relevant sector plan.	Section 8.2 provides an assessment of the proposed Prince of Wales/Omāroro reservoir's consistency with the WTBMP's decision making guidelines for utilities. s8.4.3.4 of the WTBMP includes an objective: *Ensure the proposed water reservoir is buried and remedial planting done to mitigate its impact on the Town Belt.* The proposed reservoir will be buried, with remedial planting undertaken on the site in general accordance with the preliminary design landscape plan included Appendix C, and the conditions proposed in Section 11. Subject to the above, and having regard to the specialist assessment reports included with this easement request application, the Prince of Wales/Omāroro reservoir is considered to be consistent with the relevant objectives and policies of the WTBMP and its relevant sector plans, as discussed in sections 8.1-8.3 of this easement request.
(d)	Effects (positive and negative) on park infrastructure, approved activities, the surrounding environment and the enjoyment of other park users.	The proposed Prince of Wales/Omāroro reservoir will result in a temporary localised disturbance to the Town Belt and recreational activities in Prince of Wales Park, during its construction period. WWL's assessment of the long term or permanent effects of the development on the Town Belt (Section 7) has concluded that following the completion of reservoir construction and site remediation works, including the raising and resurfacing of the Prince of Wales Park upper and lower playing fields, the development will result in neutral to low (no more than minor) long term effects on the Town Belt, and generate beneficial effects associated with the development of improved playing surfaces at Prince of Wales Park.
(e)	The level of any additional benefits, enjoyment and use opportunities for park visitors, local and regional community, and mana whenua.	The proposed Prince of Wales/Omāroro reservoir development will generate significant public benefits associated with: • Enhanced community resilience to water supply disruption events, including hazard events • Enhanced water network capacity to assist with Wellington's recovery from hazard events • Supporting Wellington's economic development and community wellbeing by enhancing the effective and efficient functioning and operation of the WWL supply network. Once the proposed Prince of Wales/Omāroro reservoir development is completed, the completion of site remediation and landscaping works and the development of improved playing surfaces on Prince of Wales Park's upper and lower playing fields is expected to improve the recreational utility of Prince of Wales Park. The benefits provided by the reservoir development are expected to significantly outweigh any temporary adverse landscape, visual, recreation and noise effects on the Town Belt associated with site excavation and backfilling works, and temporary closure of the Prince of Wales playing fields, and local walkways during reservoir construction.
(f)	The extent to which the proposal affects current or future access.	The proposal will have a temporary effect on access to and through the Prince of Wales Park associated with local walkway closure during construction. Following completion of the reservoir development full access to and through the site will be restored.

WTBMP Provision-9.5.1		Assessment
		Future access restrictions may be temporarily required associated with future reservoir and pipeline service maintenance, repair and equipment replacement. Future access restrictions will be subject to the conditions proposed in Section 11, and will require the approval of WCC's Parks Manager.
(g)	The potential to improve access to and interaction with the natural environment and promote personal and community health and wellbeing.	The finished reservoir development will be buried, with a remediated surface that will provide a well maintained expansive grassed area, for passive recreation, with a panoramic outlook across to Mount Victoria, the CBD, and Wellington Harbour.
(h)	The extent to which the proposal protects a predominance of open space over built development at the site and on the Town Belt generally.	The completed reservoir development, including supporting pipeline services will be buried, protecting the open space character of the Town Belt.
(i)	Assessment of the effects of the location, extent, design, and cumulative effect on any infrastructure (such as earthworks, lighting, fencing, car parking, access roads, etc) associated with the proposal.	The proposed Prince of Wales/Omāroro reservoir will result in a temporary localised disturbance to the Town Belt and recreational activities in the vicinity of Prince of Wales Park, during its construction period. Section 7 provides an assessment of potential temporary effects associated with site excavation, construction activity, site remediation and localised sports field and walkway closures. WWL's assessment of the long term or permanent potential effects of the development on the Town Belt has concluded that, following the completion of reservoir construction and site remediation works, including the raising and resurfacing of the Prince of Wales Park upper and lower playing fields, the development will result in neutral to very low (no more than minor) long term effects on the Town Belt. The development will also generate beneficial effects associated with the development of improved playing surfaces at Prince of Wales Park. Section 11 sets out proposed conditions designed to remedy or mitigate effects generated by the development.
(j)	The potential to mitigate the effects of the development in a way that is in keeping with the existing Town Belt landscape character and values.	The completed reservoir development, including supporting pipeline services will be buried, protecting the open space character of the Town Belt. Subject to the development being undertaken in general accordance with the preliminary design proposal included in Appendices C and D, specialist assessments undertaken in conjunction with this easement request have assessed that the development will result in neutral or low (no more than minor) localised long term effects on the Town Belt, and will in keeping with the existing Town Belt landscape character and values. The proposal will result in positive beneficial effects associated with the resurfacing of the upper and lower Prince of Wales Park playing fields.

WTBMP Provision-9.5.1		Assessment
		Proposed conditions are included in section 11 aimed at mitigating or remediating any potential temporary effects associated with reservoir construction, including any vegetation clearance associated with the reservoir's development.
(k)	The degree of risk associated with the proposal (in relation to biosecurity, sustainability, etc).	The proposed Prince of Wales/Omāroro reservoir development is not expected to present any risk to park biosecurity, or significant values associated with the Town Belt. The proposed development's primary risk to the Town Belt, Prince of Wales park and park users relates to its possible risk of structural failure. The Prince of Wales/Omāroro Reservoir structure will be designed as an IL (importance level) 4 structure under the Building Code. This requires the reservoir to be designed to a standard enabling it to withstand seismic loads equivalent to a 1000 year return period seismic event. This design standard is intended to enable the reservoir to remain operational following an event such as the rupture of the Wellington Fault (predicted magnitude M7.5). This event, while considered to be a 1 in 1000 year event, has been assessed by GNS, through the 'it's our fault' programme[17], as having a 10% probability of occurring in the next 100 years. Structural failure risk associated with the proposed development is considered to be extremely low.

8.2 Decision-Making Guidelines - Utilities

The WTBMP states that public utilities will be allowed on the Town Belt only where (among other matters) they provide an essential service to the public. All new utilities are subject to a number of conditions.

Table 8.2 assesses the proposed Prince of Wales/Omāroro reservoir development and operation activity against WTBMP matters outlined in Section 4 of this report.

Table 8.2: WTBMP decision-making guidelines for utilities (WTBMP s9.5.4)

WTBMP Provision-9.5.4		Assessment
a. Public Utilities: New utilities, replacement or upgrades of existing utilities may be permitted by granting leases or easements provided:		
(i)	It is an essential service to the public	Water supply is an essential public service. The proposed Prince of Wales/Omāroro reservoir will form an integral and essential addition to the Wellington low level water supply zone reservoir network (refer to report section 1.3).

[17] The "It's our fault programme" is a jointly funded programme by the New Zealand's Earthquake Commission (EQC), Accident Compensation Corporation (ACC), Wellington City Council, Wellington Region Emergency Management Group, Greater Wellington Regional Council, and the Natural Hazards Research Platform. Details of this programme can be found at https://www.gns.cri.nz/Home/IOF/It-s-Our-Fault

WTBMP Provision-9.5.4		Assessment
(ii)	It cannot be reasonably located elsewhere	WWL has completed an assessment of alternative sites and methods for adding expanded reservoir capacity to the Wellington low level water supply zone network (Section 6). After considering a range of alternative site options and issues, including constructability, economics, and social, environmental, and cultural effects, WWL has identified that the proposed Prince of Wales/Omāroro reservoir cannot be reasonably located outside of the Town Belt, and that the location of the proposed reservoir at Prince of Wales Park, is the most appropriate site option for this public service, and meeting its service objectives. WWL has identified that the Prince of Wales site is the most appropriate site option for accommodating this reservoir for the following reasons: • Network function, and operational flexibility • Requires the least amount of soil to be excavated, compared to other options • Provides the greatest ability to integrate the reservoir into the surrounding landscape with appropriate earthworks and landscape design, compared to other options • Has minimal disturbance of valued vegetation or on sensitive ecological sites, compared to other options • Has minimal cultural impact.
(iii)	The recreational nature of the Town Belt is not significantly disturbed	The proposed Prince of Wales/Omāroro reservoir development will result in a temporary localised disturbance to the Town Belt and recreational activities at Prince of Wales Park, during its construction period. Specialist assessments, undertaken in conjunction with this easement request, -of the effects of the development on the Town Belt (Section 7) have concluded that following the completion of reservoir construction and site remediation works, including the raising and resurfacing of the Prince of Wales Park upper and lower playing fields, the development will result in neutral to low (no more than minor) long term effects on the Town Belt. The development will generate permanent beneficial effects associated with the development of improved playing field surfaces.
(iv)	Where the public benefits outweigh any adverse impacts on this recreational nature	The proposed Prince of Wales/Omāroro reservoir development will generate significant public benefits associated with: • Operational and Strategic/Disaster Resilience: o Enhancing Wellington's resilience to water supply disruption events o Enhancing Wellington's resilience to and ability to recover from natural hazard events. • Network management and maintenance: o Improving network function, and enable Wellington Water to undertake network maintenance activities, without disrupting water supply. • Growth and wellbeing: o Supporting existing economic activity, growth along with community health and wellbeing. Post construction, reservoir site remediation and landscaping, and the development of improved playing surfaces on Prince of Wales Park's upper and lower playing fields, are expected to improve the formal and informal recreational utility of Prince of Wales Park.

WTBMP Provision-9.5.4		Assessment
		The benefits of the development are expected to significantly outweigh any adverse temporary effects caused by reservoir construction and temporary sports field and walkways closures during reservoir construction. Permanent effects of the reservoir development on the town belt and recreation values are expected, with proposed site remediation and landscaping mitigation measures, to be neutral or low (no more than minor).
b. All new utilities ... shall comply with the following conditions to the satisfaction of the Council:		
(i)	The impact on Town Belt land and values shall be minimised	Specialist assessments, undertaken in conjunction with this easement request of the effects of the development on the Town Belt (Section 7) have concluded that following the completion of reservoir construction and site remediation works, including the raising and resurfacing of the Prince of Wales Park upper and lower playing fields, the development will result in neutral to low (no more than minor) long term effects on the Town Belt. The project design has endeavoured to minimise impacts on the Town Belt. The development will generate beneficial effects associated with the development of improved playing field surfaces.
(ii)	Utility infrastructure shall be as unobtrusive as practicable with forms appropriate for the landscape. Structures will be screened from view through planting where possible.	The Prince of Wales/Omāroro reservoir will be buried, and integrated with the local landscape. The assessment of the landscape and visual effects of the reservoir proposal (Appendix E) concludes that *".. the proposal will include measures to integrate the reservoir with the existing spur landform….. Once proposed planting has become established, it will ensure that there will be neutral and no more than minor long term adverse landscape or visual effects".* Accordingly, the reservoir will be as unobtrusive as practicable and screened from view.
(iii)	All utility services shall be placed underground, except where it is not practicable to do so	The Prince of Wales/Omāroro reservoir and its supporting pipeline services, with the exception of an access door into the reservoir's service tunnel, required for practical service access to the reservoir, will be buried.
(iv)	Underground services shall be sited to minimise interference with existing features, facilities, and vegetation	The Prince of Wales/Omāroro reservoir will be sited on a knoll overlooking the upper (northern) playing field at Prince of Wales Park. The reservoir location has been sited to minimise earthworks, vegetation removal and disturbance of other facilities. The reservoir will be fully buried (with the exception of its service tunnel entrance) once constructed. An existing outlook point on the knoll will be fully reinstated as part of the development. Water inlet, outlet, overflow and scour flow pipeline services will be constructed and buried beneath the upper playing field. These services have been located to maximise service efficiency and effectiveness to the reservoir, and to minimise their impact on the Town Belt.

WTBMP Provision-9.5.4		Assessment
(v)	Utilities shall be located so as not to restrict areas usable for outdoor activities or required for future facilities or tree planting	The Prince of Wales/Omāroro reservoir will be buried, and integrated with the local landscape. The finished buried roof surface of the reservoir will provide an open expansive grassy knoll maintaining a popular public outlook area. Service pipelines to the reservoir will be fully buried beneath existing play surfaces, and will not restrict outdoor activities.
(vi)	Any disturbance of the existing site during installation of a utility shall be minimised and made good immediately after completion	The Prince of Wales/Omāroro reservoir development is anticipated to take up to 2 years to construct. Construction of the reservoir will require site excavation works, access closure to the site, and closure of the Prince of Wales Park playing fields for this entire duration. Once complete the reservoir will be buried, and the site and playing fields remediated in general accordance with the preliminary design included in Appendix C and D, and the conditions outlined in Section 11 of this request. Access to the site and use of the playing fields will be fully restored.
(vii)	Opportunities for the utility structure to benefit the Town Belt will be explored where appropriate	Development of the Prince of Wales/Omāroro reservoir will create an opportunity to resurface and enhance the drainage profile of both the upper and lower Prince of Wales Park playing fields. This will be possible through using surplus excavated material from the reservoir site that is not required for reservoir backfilling and burial. The resurfacing of both playing fields is expected to improve local drainage of stormwater, and enhance the utility of both playing fields.
(viii)	Recorded archaeological sites should be avoided	There are no identified archaeological sites in or around the Prince of Wales Park or the proposed reservoir location. Works will take place under an Accidental Discovery Protocol. Should there be any unexpected finds, any required archaeological authorities will be sought from Heritage New Zealand.
All utility companies wanting to build new .. structures on the Town Belt will need to obtain a .. easement from the Council (as per Reserves Act 1977 [now superseded, but required by s20 of the Wellington Town Belt Act 2016]**). Easements shall be granted for utilities that are located underground. Easements will require the approval of the Council (or delegated committee)**		
		This WTBMP assessment matter refers to the Reserves Act, which no longer applies to the Town Belt following the assent of the WTBA. An easement will however be required under the WTBA for the reservoir development. WWL is requesting that an easement is approved by the Council to locate, construct and operate the proposed Prince of Wales/Omāroro reservoir within the Town Belt at Prince of Wales park.
(g)	**All utilities will be accurately mapped and documented**	
		Accurate as-built drawings of the proposed reservoir and associated pipework services will be produced by the Contractor and held by WWL on behalf of WCC.

8.3 Sector 4 – Brooklyn Hills

Sector 4 Policies	Assessment
8.4.3.4: Ensure the proposed water reservoir is buried and remedial planting done to mitigate its impact on the Town Belt	The proposed reservoir will be buried, with the exception of an access door into the reservoir's service tunnel, with remedial planting undertaken on the site in general accordance with the preliminary design landscape plan included Appendix C. Prior to commencing landscaping works of the buried reservoir site, a detailed landscape management plan will be prepared and submitted to the WCC Parks Manager for approval in accordance with the requirements of the proposed conditions in Section 11.

8.4 Proposal's Alignment with the Requirements of the WTBMP

Having considered the matters outlined in 8.1-8.3 above, WWL considers that the proposed reservoir development, and its future operation and management, will result in the development of an essential public service network utility within the Town Belt that is consistent with the principles, objectives, policies and guiding requirements of the WTBMP.

WWL considers that the reservoir proposal can be delivered in a manner that would:

- Provide for the protection and enhancement of the Town Belt for future generations
- Appropriately satisfy the principles of s4 of the WTBA
- Appropriately satisfy the WTBMP rules and guidelines for use and development within the Town Belt.

9 Consultation

Associated with the preparation of this easement application, WWL has directly engaged with, and consulted, the Port Nicholson Trust, Te Runanga O Toa Rangatira Inc, and a range of groups and organisations with direct interests in the Wellington Town Belt, Prince of Wales Park, Papawai Stream and the surrounding residential area.

WWL has also endeavoured to raise local community awareness of the proposal, and obtain feedback on key issues to the community that should be addressed by the application and as part of any eventual reservoir development activity.

Awareness raising and local community engagement has occurred through the use of hand and mail distributed flyers, local shop displays, social media, engagement with community groups including residents' groups, and holding several publicly advertised open days, and a BBQ drop in session.

Feedback received has assisted with confirming key issues requiring attention within this application. Feedback has confirmed issues of significance to the community that will need to be sensitively managed related to the development of the reservoir within the Town Belt, and related to the site being accessible via Rolleston Street. Feedback has assisted in refining the proposal, and shaping proposed conditions that should feature as part of any approved easement.

Further feedback received as a result of formal public consultation and consideration of the proposal under the WTBA will also be used to assist with refining any subsequent applications for resource consent.

A summary of key community engagement events held so far is outlined below.

Open Day 1 - November 2016

An Open Day was held on 24 November 2016 at the Massey University campus on Wallace Street. The purpose of this Open Day was to:

- Raise awareness of and re-introduce the Prince of Wales/Omāroro Reservoir Project to the community
- Obtain feedback on the issues of importance to the community prior to commencing an assessment of the effects of the reservoir proposal.

Over 30 people signed an attendance register; however, the total number of attendees was higher as a number of people did not sign in.

Key issues raised by residents included:

- Water security and resilience
- Constructing the reservoir without delay
- Site selection – why was the Prince of Wales Park site the best site option? Why one large reservoir and not several smaller structures?
- Effects on the Papawai Stream, which has high value to the community

- Fixing existing scour issues in the Papawai Stream
- Traffic effects of the development on Rolleston Street, including parking
- Coordinating the WWL's various water supply, waste water and storm water pipe renewal, maintenance and upgrade programme work streams within the area to prevent streets being dug up multiple times, and potentially enable this work to be undertaken in a coordinated and integrated manner
- Noise, vibration and dust effects during construction
- Effects on birds and fish with habitat in the project area
- Ensuring the reservoir was buried
- Ensuring that the Town Belt values were being appropriately looked after
- What will happen to water if there is a rupture in the reservoir?
- The playing fields have insufficient drainage – can that be remedied as part of the Project?

Many people who attended the Open Day thought that the advertising of the Open Day was insufficient. Although the Open Day was advertised through the local papers, on Facebook, and via a letter drop to the surrounding streets, it appears that some letters were not delivered to the full area. In order to ensure that residents were not disadvantaged by some issues that appeared to exist with the letter drop, a second Open Day was organized and held in December.

Open Day 1.1 - December 2016

A second version of the first Open Day was held on 16 December 2016, also at the Massey University Campus on Wallace Street, in response to concerns that some local residents were not aware of the Open Day held on 24 November.

This Open Day presented the same information as the Open Day on 24 November.

Over 20 people signed the attendance register, but again the total number of attendees was higher as a number of people did not sign in. Similar concerns were raised at this Open Day as at the initial Open Day.

BBQ and drop-in session - March 2017

A community BBQ and drop in session was held at Rolleston Street, on 25 March 2017, to coincide with Neighbour's Day. This event was run in conjunction with Wellington City Council and Housing New Zealand. The purpose of this session was to maintain a community awareness of the reservoir project, and to provide community access to the project team to provide feedback and discuss issues of importance to the community.

This event was informal. Over 50 people attended over the course of the morning. Attendees were not required to sign an attendance sheet.

Similar concerns were raised as at the Open Days. Feedback received strongly focused around community concerns and interests in loss of car parking and traffic implications associated with heavy vehicles on Rolleston Street.

Interest Groups
The Project Team has provided information on the Project to a number of local interest groups either in person, over the phone, or via email. Groups invited to meet prior to the Open Day included:

- Friends of Papawai Stream
- Bell Rd Restoration Group
- Action for the Environment
- Friends of the Wellington Town Belt
- Newtown Residents' Association
- Brooklyn Residents' Association
- Mt Cook Mobilised
- Newtown Business Group
- Mount Victoria Residents' Association.

Members of the Project Team attended the regular meetings of Mt Cook Mobilised and the Newtown Residents' Association, met with the Friends of the Town Belt Committee and met on site with the Papawai Restoration Group.

In general, the local interest groups have raised the same issues as the attendees of the Open Days.

Wellington City Council (WCC)

Various members of the Project Team have met with Wellington City Council staff. In particular:

- WCC Communications Team to agree an engagement approach (26 October 2016)
- WCC Roading Team to discuss and agree matters in the Traffic Effects report (27 October 2016 and a number of occasions since)
- WCC Consents Planning team to discuss the proposed consenting approach (27 October 2016 and a number of occasions since)
- WCC Open Space and Parks Team to discuss the Easement Application (16 January 2017 and a number of occasions since)
- WCC Parks and Gardens Team to discuss impacts on the sports fields during construction and the proposed raising of the sports fields (17 January 2017).

Iwi

Meetings have been held with both Ngati Toa and Port Nicholson Trust.
Ngati Toa confirmed that they do not need to be involved in the process but would like to be kept informed. Port Nicolson Trust have indicated in principle support for the Project.

10 Conclusion

Wellington Water (WWL) requires an easement from Wellington City Council (WCC) to locate, construct and operate a buried 35,000 m^3 concrete reservoir within the Prince of Wales Park in Mount Cook.

The proposed reservoir site is part of the Brooklyn Hills Town Belt Management Sector within the Wellington Town Belt. It is subject to WCC's management, as Town Belt trustee, under the Wellington Town Belt Act 2016 (WTBA), and Wellington Town Belt Management Plan, 2013 (WTBMP).

The WTBMP has anticipated that a reservoir could be developed at the site and includes a requirement that any future reservoir be buried.

The proposed reservoir is required for servicing the Wellington low level water supply zone, providing potable water to around 70,000 residents, a significant range of commercial and industrial activities, and various critical community facilities.

The zone's existing reservoir network currently holds less than one day's water storage in-zone, and is limited in its ability to maintain water supply following a significant network event.

The proposed Prince of Wales/Omāroro reservoir is needed to significantly expand the zone's local water storage capacity, for the following purposes:

- Operational and Strategic/Disaster Resilience:
    - To enhance Wellington's resilience to water supply disruption events
    - To enhance Wellington's resilience to and ability to recover from natural hazard events.
- Network management and maintenance:
    - To assist with improving network function, and enable Wellington Water to undertake network maintenance activities, without disrupting water supply.
- Growth and wellbeing:
    - To support existing economic activity, growth along with community health and wellbeing.

WCC, as the Wellington Town Belt Trustee, is empowered under the WTBA to grant easements and authorise activities in the Wellington Town Belt related to delivering public services.

In exercising this power WCC must consider various matters set out the WTBA. These include:

- Effects on the Town Belt
- Benefits of the proposal
- Alternative sites or methods for achieving the objectives of the public service.

In its role as Trustee WCC also has a duty to, amongst various matters, recognise and provide for the protection and enhancement of the Town Belt for future generations, comply with the WTBMP (which is it is required to prepare) and consider the views of the public and persons with an interest in the exercise of its power.

WWL has completed an assessment of the proposed Prince of Wales/Omāroro proposal, including its anticipated construction phase activities and effects, against the requirements of the WTBA and WTBMP.

This has included the preparation of specialist assessments of the proposal and recommendations for remedying, mitigating or avoiding any adverse effects that it may generate. These specialist assessments are appended to this easement and authorisation request for WCC's review and for discussion and review in conjunction with public consultation on this request under s16 of the WTBA.

WWL's assessment of WTBA and WTBMP requirements is that:

- Benefits. The Prince of Wales/Omāroro reservoir will deliver significant benefits to the Wellington community. The reservoir will:
    - Significantly enhance community resilience to water supply disruption events, including hazard events
    - Assist with Wellington's recovery from hazard events
    - Support Wellington's economic development and community wellbeing by enhancing the effective and efficient functioning and operation of the Wellington water supply network.
- Alternatives:
    - The Prince of Wales/Omāroro reservoir development proposal is the preferred and most appropriate option, when assessed against other alternative sites and methods considered by WWL, for achieving the objectives of WWL's water storage and supply service.
- Effect on the Town Belt:
    - The completed Prince of Wales/Omāroro reservoir development, following the conclusion of reservoir construction and burial, related site landscaping, playing field resurfacing and remediation, and walkway reopening, will result in neutral to low (no more than minor) long term effects on the Town Belt
    - The raising and resurfacing of playing fields, a by-product of the reservoir development, will be a permanent beneficial effect of the development
    - During construction there will be temporary localised visual, landscape, noise, vibration and recreation adverse effects on the Town Belt. Effects associated with construction will include:
        - Visual and landscape effects associated site excavation, earthwork and construction activity, vegetation and landform disturbance
        - Recreational effects associated with the temporary closure of sport fields and walkways
        - Noise and vibration effects associated with construction traffic activity.
    - Localised and temporary effects will be remedied or mitigated by site and activity management plans and site remediation works.

    - Following reservoir commissioning it is anticipated that infrequent, temporary and largely no more than minor effects will periodically occur associated with reservoir and support service inspection, maintenance, repair and replacement activity. These potential effects be remedied or mitigated by requiring the development and implementation of site activity management, remediation and stakeholder communication plans which require the prior approval of WCC's Parks Manager.
- WTBA protection and enhancement:
  The proposed reservoir development, and its future operation and management, will result in the development of a buried reservoir that:
    - Is consistent with the requirements of the WTBMP
    - Can be delivered in a manner that would provide for the protection and enhancement of the Town Belt for future generations
    - Can appropriately satisfy the principles of s4 of the WTBA and
    - Can appropriately satisfy the WTBMP rules and guidelines for use and development within the Town Belt.

Having regard to these conclusions WWL requests, under s20 of the WTBA:

That WCC grant WWL's easement request to locate, construct and operate the proposed Prince of Wales/Omāroro Reservoir adjacent to Prince of Wales Park:

- **In general accordance with the site easement and activity plans set out in Appendix A.**
- **In general accordance with the preliminary reservoir design proposal, and its supporting addendum and assessment documents, set out in Appendices C-L,**
- **Subject to the proposed conditions outlined in Section 11 of this document, and**
- **Subject to public consultation in accordance with s16 of the WTBA, and**
- **Subject to WWL obtaining any consents required under the Resource Management Act and Building Act.**

WWL also requests:

- Consultation:
    - Approval to work with WCC's Parks team and support WCC in its consultation with the public on this proposal under s16 of the WTBA.
- Conditions:
    - That WWL is provided with an opportunity to review and respond to any conditions proposed by WCC.

11 Proposed conditions

Section 20 WTBA provides that WCC may grant easements, leases, or licences "on any conditions that it considers appropriate".

WWL requests that WCC consider imposing the following proposed conditions detailed in this section, subject to public consultation, in granting the Prince of Wales/Omāroro reservoir easement request.

Should WCC consider that these conditions need amendment, or that additional conditions are required to appropriately manage the development and any effects it may have on the Town Belt, WWL requests that it be provided with an opportunity to review and respond to these before they are confirmed.

11.1 General

a) The Council is approving the easement request to locate, construct, operate and maintain the Prince of Wales/Omāroro reservoir within the Town Belt in accordance with its duties and responsibility as the Trustee for the Wellington Town Belt under the Wellington Town Belt Act 2016. Nothing herein implies any regulatory consent or resource consent.

b) All relevant laws, regulations and bylaws must be complied with and relevant resource consents and other approvals obtained.

c) WWL is responsible for ensuring that all work is carried out in accordance with all relevant Acts, Regulations and Bylaws, including the Health and Safety at Work Act 2015, the Building Act 2004, and the Resource Management Act 1991.

d) WWL is responsible for ensuring that all work is carried in general accordance with the:

   i. Site easement and activity plans set out in Appendix A,
   ii. Preliminary reservoir design proposal, and its supporting addendum and assessment documents, set out in Appendices C, D, E, F, G, H, I J, K, and L.

e) Only suitably qualified or experienced Contractor(s) shall work at the site.

f) During the reservoir and service pipeline construction and site remediation phase, WWL must provide quarterly updates to the Parks Manager covering:
   i. Project progress against project schedule,
   ii. Design refinements and alterations,
   iii. Compliance with conditions associated with the easement, including plans requiring the approval of the Parks Manager,
   iv. Identification of any issues likely to affect project timelines and project completion, and

v. Identification of steps being taken to manage identified issues.

11.2 Temporary Construction Site Area

a) The Temporary Construction Site Area, as shown on the site maps included in [Appendix A] will no longer be used after the construction and operationalisation of the reservoir, and the completion of all agreed site remediation works, including reservoir burial and playing field reinstatement, as confirmed under condition [11.12].

b) The maximum period that this temporary construction site area will be used for is **3 years** from the commencement of site preparation works for reservoir construction (unless an extension is granted). Any request to extend the duration for using this area beyond 3 years must be made in writing to and approved by the Parks Manager. Any extension request must state:

i. The extension period sought.
ii. Reasons for the extension request.
iii. Any practical alternatives to the extension period, and why these are not favoured over the request for the extension.
iv. Measures to be taken by WWL to ensure works requiring the use of this area will be completed within the extension period.
v. Provision for community liaison and engagement, where the extension, in the opinion of the Parks Manager, is not in general accordance with WCC's issued easement for the PoW/Omāroro reservoir development.

11.3 Service Support Area

a) WWL is authorised to use the Service Support Area as shown on the site maps included in [Appendix A] following the initial Reservoir and pipeline construction and site remediation phase, for future Reservoir and pipeline maintenance, servicing and repair activities, subject to conditions [3 (b)-(e)].

b) Prior to undertaking any Reservoir and pipeline maintenance, servicing and repair activities that will utilise the Service Support Area, WWL must consider all practicable measures and alternatives available for undertaking works to minimise disturbance to the reserve land and members of the public. WWL must provide details in writing of any planned activities that are intended to utilise the service support area and of its assessment of practical alternatives, to the Parks Manager. This must include confirmation that the use is directly related to the maintenance, repair or operational needs of the Prince of Wales/Omāroro reservoir and its support services, and is the best practicable option.

c) Proposals to utilise the Service Support Area must be directly related to the maintenance, repair or operational needs of the Prince of Wales/Omāroro reservoir and its support services, and must include details of:

i. The works to be undertaken,
ii. The activities to be undertaken within the support service area,
iii. The time period the service area will be required for,
iv. An assessment of practicable alternatives considered to using the support service area,
v. A justification for using the service support area, over any alternatives considered,
vi. A management plan to be applied to the management of works and activities within the support service area, including managing recreational, noise, vibration, sediment and erosion, and traffic effects, and
vii. An engagement and communication plan for working with adjacent residential landowners,
viii. Reinstatement and remedial actions that will be taken at the completion of works.

d) For planned works involving the use of the service support area, the WCC Parks Manager may request that up to 6 months' notice is provided by WWL to the Parks team, prior to the use of the service support area, to assist with re-scheduling summer and winter sports field planning involving the use of this field.

e) Where it is necessary to utilise the Service Support Area for emergency repair work following an emergency event, such as a natural disaster, condition (d) above will not apply. WWL will comply with conditions (b) and (c) to the extent practicable, but a written report will not be required before carrying out the work.

f) Any disturbance of the service support area must be reinstated in a like for like fashion, to the satisfaction of the Parks Manager.

11.4 Hazard Management

a) It is the responsibility of WWL to ensure all its Contractors and employees take all practicable measures to ensure the Health and Safety of all persons at the site and to identify all hazards associated with the site. Hazards associated with this work will include, but are not limited to:

i. Work carried out in proximity to the public
ii. Work carried out in proximity to traffic (Road)
iii. Work carried out in area exposed to high winds
iv. Work carried out in proximity to water (Papawai Stream, and Waitangi stream tributary)
v. Work on steep slopes.

11.5 Reservoir and Pipeline Services Design Detail

a) Final detailed design plans for the reservoir and any supporting services, including power supply and inlet and outlet water supply pipelines, and overflow and scour flow pipelines, must be submitted to the Parks Manager prior to the commencement of reservoir and pipeline construction.

b) The Parks Manager shall be advised of any subsequent minor alterations or changes to detailed design plans, which must remain in general accordance with the preliminary design and design addendum set out in [Appendix C and D].

c) The Parks Manager shall be provided with access to final as built plans at the conclusion of reservoir and service support construction and site remediation. This shall include information on final reservoir and pipeline location, reservoir and pipeline dimensions, and depth of structures and services below finished ground levels.

11.6 Earthworks and Landscape Design

a) Prior to commencing final landscaping of the buried reservoir site, Wellington Water must submit a detailed landscape design and implementation plan to the Parks Manager for approval.

b) The Plan is required to be consistent with any relevant conditions or management plans required under a resource consent or other Resource Management Act approval for the Prince of Wales/Omāroro reservoir. WWL may elect to provide a management plan prepared under the RMA requirements to the Parks Manager in order to satisfy this condition of the easement.

11.7 Construction Management

a) Prior to commencing any work at the site, WWL must prepare and submit a Construction Management Plan prepared in consultation with the Parks Manager.

b) The Plan is required to be consistent with any relevant conditions or management plans required under a resource consent or other Resource Management Act approval for the Prince of Wales/Omāroro reservoir. WWL may elect to provide a management plan prepared under the RMA requirements to the Parks Manager in order to satisfy this condition of the easement.

c) When preparing this plan WWL must consider all practicable measures available for undertaking works to minimise disturbance to the reserve land, in particular to the areas identified within the recommendations of the Ecological Impact Assessment [Appendix F], and to members of the public. This plan must detail:

i. Construction methodology and programme.
ii. Working hours.
iii. How public access will be maintained or redirected to and around the work site including the closure of any existing accesses, and any related signage.
iv. How public safety will be maintained at all times while providing the least possible disruption to public access and use of walkways.
v. Removal, storage and reinstatement of existing infrastructure (e.g. gates, barriers, signs etc.).
vi. Site fencing and arrangements to restrict public access to the site.
vii. Site signage.
viii. Habitat management vegetation clearance- provisions agreed with the Parks Manager, in conjunction with approved final detailed design of the reservoir, to address avoidance, remediation and mitigation recommendations contained in the Ecological Impact Assessment ([Appendix F]- section 8 recommendations).
ix. Temporary stockpile management, including dust management procedures.
x. Erosion and sediment control management.
xi. Site contact details.
xii. How public complaints will be managed and responded to.
xiii. Contractor induction and briefing requirements.

11.8 Traffic Management

a) Prior to commencing any work on the site, WWL must prepare and submit a Traffic Management Plan prepared in consultation with the Parks Manager. The Plan is required to be consistent with any relevant conditions or management plans required under a resource consent or other Resource Management Act approval for the Prince of Wales/Omāroro reservoir. WWL may elect to provide a management plan prepared under the RMA requirements to the Parks Manager in order to satisfy this condition of the easement.

b) When preparing this plan WWL must consider all practicable measures available for traffic management to minimise disturbance to the reserve land and members of the public. This plan must detail:

i. How the entrances to the site off Rolleston Street and Salisbury Terrace will be managed.
ii. What type of vehicle and contractor access will be required through each entrance and how this will be managed on a day to day basis.

iii. Frequency of heavy machinery and heavy vehicle access.
iv. Limits to contractor access.
v. Alternative parking/access/material storage locations.
vi. Temporary parking arrangements, including parking formation and design.
vii. Safe entry and exit from Rolleston Street and Salisbury Terrace.

11.9 Noise and Vibration Management

a) Prior to commencing any work on the site, WWL must prepare and submit a Noise and Vibration Management Plan prepared in consultation with the Parks Manager. The Plan is required to be consistent with any relevant conditions or management plans required under a resource consent or other Resource Management Act approval for the Prince of Wales/Omāroro reservoir. WWL may elect to provide a management plan prepared under the RMA requirements to the Parks Manager in order to satisfy this condition of the easement.

b) When preparing this plan WWL must consider all practicable measures available for undertaking works to minimise disturbance to the reserve land and members of the public.

c) The Noise and Vibration Management Plan must include:

i. A site activity plan, showing proposed activity areas within the approved construction site area.
ii. Provision for community liaison and engagement associated with finalising the noise and vibration management plan.
iii. Proposed mitigation measures.
iv. Proposed monitoring provisions.
v. Contingency measures.
vi. Staff training.

11.10 Working Hours

a) Working hours will be between 7:00am and 6:00pm Monday to Saturday. Outside of this period only small vehicles (such as utes and cars) will be permitted - except as provided for in condition (c) below.

b) No works will be undertaken on Sundays or Public Holidays.

c) Deliveries of specialised machinery, vehicles, equipment, reservoir construction materials (including precast elements) and site remediation materials to or from the site, that are not otherwise able to reasonably and practically occur within the hours in (a) above, may occur in accordance with any approved Construction, Traffic and Noise and Vibration management plans, or as provided for under the conditions of any resource consent.

11.11 Vegetation Management and Clearance

a) The maximum extent of vegetation clearance must be clearly marked on site prior to any work commencing. This must be minimised as far as possible and must not extend beyond the earthworks buffer area described in the Ecological Impact Assessment contained in [Appendix F].

b) Should any variation be required to the maximum extent of vegetation clearance specified in Appendix F, WWL must prepare and submit a Vegetation Clearance Variation Plan for approval by the Parks Manager. When preparing this plan WWL must consider all practicable measures available for undertaking works to minimise disturbance to reserve land and vegetation. This plan must detail:
   i. An assessment of the ecological significance, or otherwise, of the area/s to be cleared, prepared by a recognised ecologist.
   ii. A site vegetation clearance, management and reinstatement and mitigation plan, showing proposed areas to be cleared and replanted or offset.
   iii. Provision for community liaison and engagement,
   iv. Proposed mitigation measures.
   v. Proposed monitoring provisions.
   vi. Contingency measures.

11.12 Site Remediation and Maintenance

a) Prior to any work commencing on site, a Landscape, Planting and Playing Field Management Plan and supporting documentation must be developed in consultation with and submitted for approval to the Parks Manager. When preparing this plan WWL must consider all practicable measures available for undertaking works to minimise disturbance to areas of vegetation and habitats, with particular regard to be given to areas identified in the ecological impact assessment in [Appendix F], and to members of the public. The Landscape, Planting and Playing Field Management Plan must include:

   i. Confirmation of the Waitangi Stream tributary location by survey.
   ii. Finished ground levels across the site, including the temporary stockpile areas, the reservoir site, the playing fields and any other areas disturbed during the work.
   iii. All non-playing field slopes must have gradients that enable suitable establishment of planting.
   iv. Soil build-up details on newly contoured land and on the top of the reservoir that will ensure the site will properly drain and can be appropriately maintained.
   v. A planting and landscape layout for all remediation and mitigation planting areas.
   vi. A maintenance programme for non-playing field landscape and planting areas, of no less than 5 years with the first 2 years included in this project and the 3 years beyond that carried out (in accordance

with the maintenance plan) by Parks under a specific maintenance contract . The appointed landscaping contractor for the initial 2 years must contact the Parks Manager at the start of the maintenance period and for annual inspections at which time dead or diseased plants will be replaced and any other landscaping defects remedied. Final inspection will be arranged in good time to allow remedy of defects before hand over to Parks for the remaining maintenance period. Prior to handover WWL must provide the Parks Reserves Planner with the contract variation documents that show the remaining 3 years of maintenance will be completed at their cost.

vii. Eco-sourced native plants will be required.

viii. A playing field remediation plan may be prepared separately, and approved by the Parks Manager, detailing the methodology to be followed to remediate playing fields (raised or otherwise) and to return these to full use once they are no longer required for reservoir related construction activities.

11.13 Reservoir Maintenance, Servicing and Repair

a) WWL shall provide reasonable notice to the Parks Manager of any planned maintenance, servicing and repair activities associated with the reservoir and it's supporting pipeline services.

b) WWL shall meet with the Parks Manager, once the reservoir is operationalised, at least annually to discuss and agree on a reservoir and support service maintenance, servicing and repair programme, and note expectations and requirements to be followed by WWL and Parks when undertaking activities in, on, over or immediately adjacent to the reservoir site. This activity may be undertaken in conjunction with discussions for managing other WWL managed water assets within the Wellington Town Belt.

11.14 Complaints

a) WWL shall keep a full record of all feedback and complaints it receives in relation to the proposed reservoir development. These shall be available at the request of the Parks Manager. This shall include:

i. The details of all feedback and complaints received, including date, time, contact details (where provided) and detail of complaint or feedback.

ii. Who provided the feedback or complaint.

iii. Nature of complaint/feedback.

iv. Acknowledgement of complaint and the time period within which this occurred.

v. Who responded to the feedback or complaint.

vi. Steps taken to resolve complaint.

vii. Details of how this was resolved, including when it was resolved.

11.15 Amendment of these easement conditions

a) WWL and the Council may vary these easement conditions by mutual agreement at any time, provided the Council is satisfied that character, scale, and intensity of the activity/s remains consistent with the activity approved by this easement.

b) WWL and the Council will review these easement conditions and consider whether any amendments are required to ensure the conditions are consistent with the requirements of the resource consents or other Resource Management Act approvals for the Prince of Wales/Omāroro reservoir:

    a. At any time that those resource consents or approvals are granted;
    b. Any time the conditions of such approvals are amended under the Resource Management Act.

c) To avoid doubt, the need to ensure that the conditions of the easement are consistent with the Resource Management Act requirements does not preclude these easement conditions (or plans prepared under them) from containing requirements that may be additional to what is required under the Resource Management Act in some cases.

Appendix A

Site and Construction Site Maps

Figure 1: ***Prince of Wales/Omāroro Reservoir and Support Service Easement Area***

Figure 2: ***Temporary Construction Site Area***

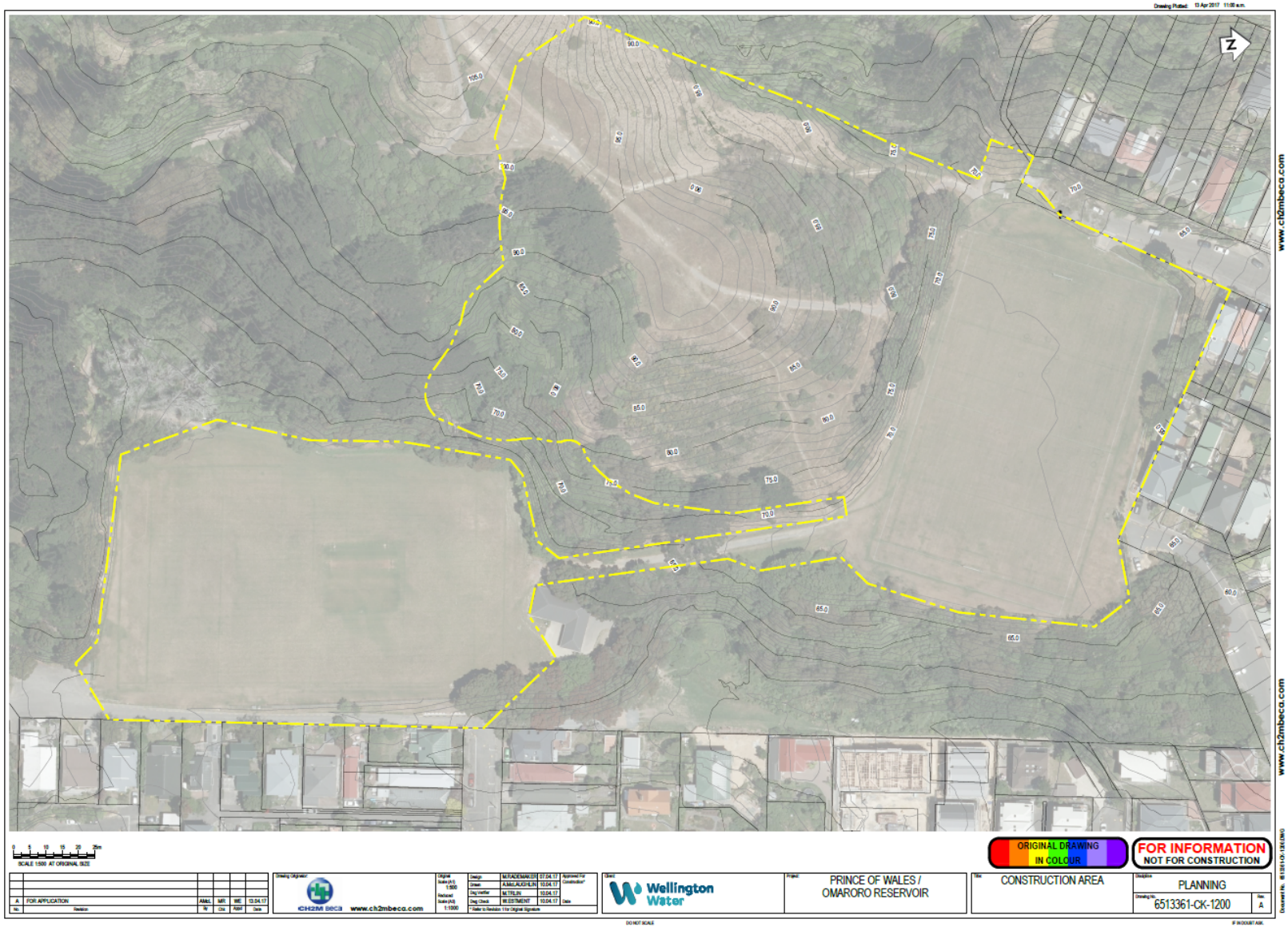
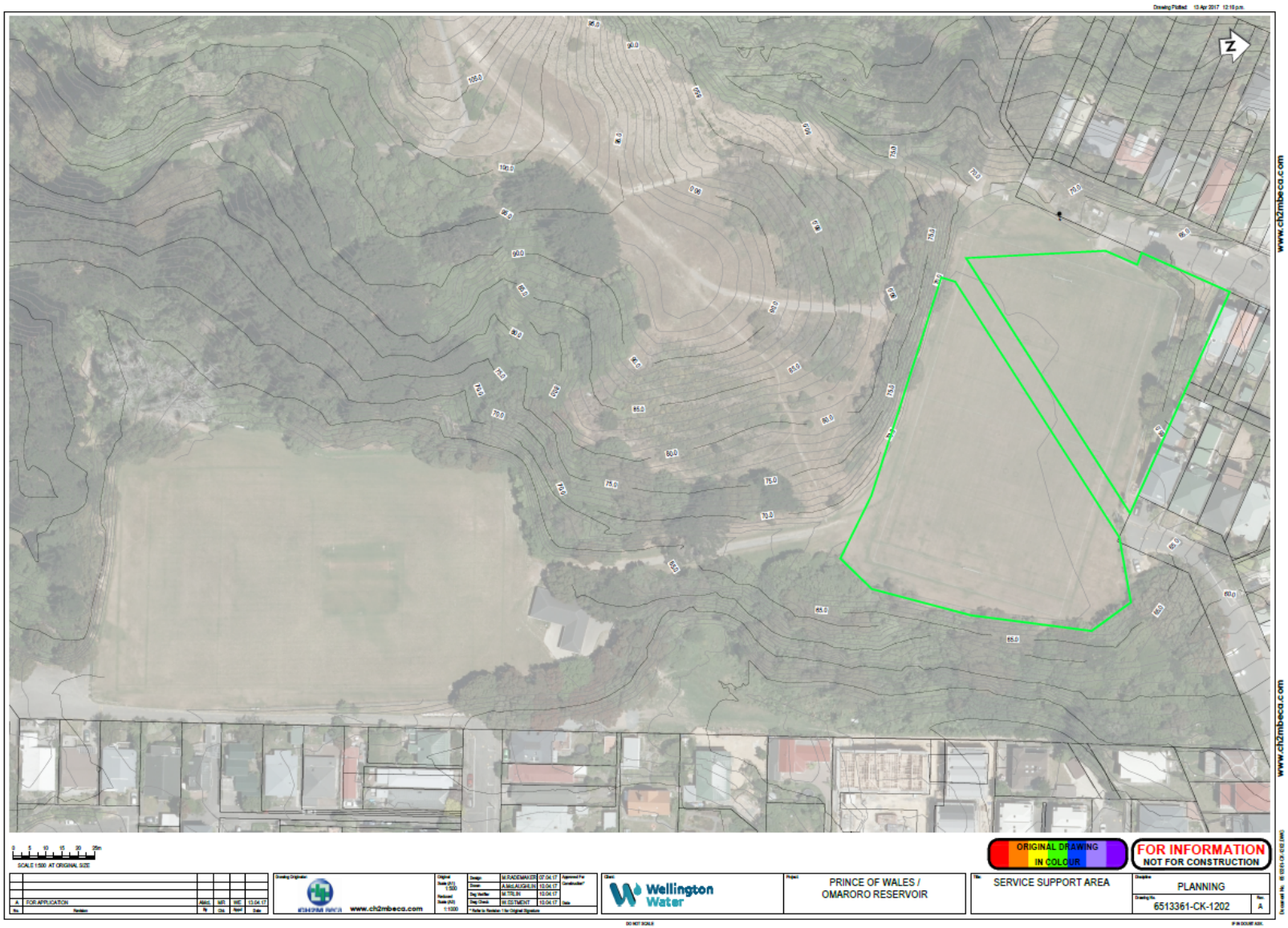


Figure 3: ***Service Support Area***



Appendix B

Wellington Water Summary Document

Appendix C

Reservoir Preliminary Design 2013

Appendix D

Reservoir Preliminary Design
Addendum 2017

Appendix E

Landscape and Visual Assessment

Appendix F

Ecological Impact Assessment

Appendix G

Assessment of Effects on Recreation

Appendix H

Cultural Impact Report

Appendix I

Traffic Impact Assessment

Appendix J

Draft Construction Erosion and Sediment Plan

Appendix K

Construction Noise Assessment

Appendix L

Stormwater Assessment

Appendix M

Site Selection Summary 2017