



Assessment of Environmental Effects Proposed Relocation of a Stormwater Inlet

April 2020



Our water, our future.

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1 Introduction

This Assessment of Environmental Effects has been prepared to support a resource consent application made by Wellington Water Ltd (WWL) on behalf of the Wellington City Council (WCC) in accordance with section 88 of the Resource Management Act 1991 (RMA) for the relocation of a stormwater inlet on a tributary of the Waitangi Stream.

The proposed works are required as part of the construction of the Omāroro Reservoir, which comprises the construction of a 35,000m³ water supply reservoir within the Prince of Wales Park, Mount Cook, Wellington. The Reservoir itself is authorised by a Designation and Wellington Town Belt Act Licence and associated regional consents for groundwater take, stormwater discharge and earthworks (ref: WGN180065 [35008][35009][35010], granted 16th February 2018 (as set out in further detail in Section 2).

This application seeks consent for works associated with the relocation of the existing stormwater inlet on the Waitangi Stream tributary approximately 3m upstream from its current position. The existing stormwater inlet will be removed, and a new stormwater inlet and pipework installed which will connect into WCC's stormwater network. The proposed works are permitted under the Proposed Natural Resources Plan; however, they require consent under Rule 49 of the Regional Freshwater Plan (all remaining uses of river and lake beds) as a Discretionary Activity.

The purpose of this Assessment of Environmental Effects is to provide a description of the proposed activities, assessment of the effects on the environment and an assessment of the relevant provisions of the RMA, Regional Policy Statement (RPS) and the relevant Regional Plans for the Wellington Region.

1.1 Applicant

Wellington Water Limited

Established in 2014, WWL's role is to manage drinking water, wastewater, and stormwater services on behalf of six Councils, including WCC. Ownership of the assets remains with the Councils.

Although WCC is the Requiring Authority and consent holder and has overall financial responsibility for the Omāroro Reservoir, WCC have delegated to WWL, as a Council-controlled organisation, the development of the design and construction, operation, and maintenance of the Reservoir on behalf of WCC.

2 Background and Site Description

2.1 Omāroro Reservoir

Works associated with the construction, operation and maintenance of the Omāroro Reservoir are authorised under a Designation (the Designation) and Wellington Town Belt Licence (Town Belt Licence), issued 8th May 2018, and associated regional consents for groundwater take, stormwater discharge and earthworks (ref: WGN180065 [35008][35009][35010], granted 16th February 2018).

The Omāroro Reservoir comprises a 35,000m³ water supply reservoir within the Prince of Wales Park, Mount Cook, Wellington. The reservoir is required to service the Wellington Low Level Water Supply Zone, which provides potable water to approximately 70,000 residents and a range of significant commercial, industrial and critical community facilities. The Omāroro Reservoir will significantly expand water supply within this Zone to provide for:

- Network management and maintenance
- Operational resilience
- Disaster resilience
- Growth and well-being

Management of environmental effects during the construction of the reservoir is secured by the Designation Conditions, which require the preparation of a number of management plans to be certified by WCC and Greater Wellington Regional Council (GWRC). These plans include:

- Construction Management Plan (CMP)
- Earthworks Management Plan (EMP)
- Construction Traffic Management Plan (CTMP)
- Site Specific Traffic Management Plan (SSTMP)
- Construction Noise and Vibration Management Plan (CNVMP)
- Landscape and Ecology Management Plan (LEMP)
- Playing Fields Management Plan (PFMP)

Following construction of the reservoir, the site will be restored with landscaping, planting and reinstatement of tracks, pathways and playing fields

2.2 Site Location

The Omāroro Reservoir will be located within the Prince of Wales Park. The stormwater inlet (which is the subject of this application) is situated on the Waitangi Stream tributary, which flows down a gully to the west of the reservoir location.

The legal description of the land is Part Lot 2 DP 10337.

Prince of Wales Park is located in the Wellington Town Belt in the Brooklyn Hills, Wellington. The park is bordered by the suburbs of Mount Cook, Brooklyn, Vogeltown, and Newtown, with the Renouf Tennis Centre to the north and Macalister Park further to the south. The Wellington CBD lies to the north and northeast.

The Omāroro Reservoir, when constructed, will sit in a spur that generally slopes down from Dorking Road to a rounded knoll at the reservoir site and down again to the Prince of Wales Park playing fields. There are two playing fields that have been levelled along the toe of the spur: the upper field, which is accessed off Rolleston and Hargreaves Streets, and the lower field, which is accessed from Salisbury Terrace. There are no built facilities on the upper field, but there is an existing pavilion building on the lower field that include changing rooms. In addition, the Scottish Harriers clubrooms and a public car parking area are situated to the south of the lower field. The location of the reservoir location, playing fields and the Waitangi Stream tributary is shown on the figure below:



Figure 1: Site location plan

2.3 Waitangi Stream Tributary

The Waitangi Stream tributary flows down a gully to the west of the consented reservoir location and enters the stormwater network at the top of Rolleston Road. This tributary is perennial in its lower reaches near the upper playing field but reduces to intermittent pools upstream and eventually becomes ephemeral close to the southern end of the Designation.

These are some of the last remaining fragments of the original Waitangi Stream. The remainder of Waitangi Stream is culverted beneath the city and suburbs. The ultimate receiving environment for this waterway is Wellington Harbour.

3 Description of Proposal

The proposal comprises the relocation of the existing stormwater inlet approximately 3m upstream from its current location.

This relocation is required to accommodate works taking place as part of the construction of the Omāroro Reservoir, namely the realignment of the existing water mains on the reservoir's north side and installation of two buried flow meter chambers and one buried control valve chamber. This realignment is required to improve the functionality of the reservoir and pipe network and allow connection to the wider network. This work was always envisaged as part of the reservoir construction; however, the location of the proposed chambers has now been amended following an assessment of alternative locations, which identified the proposed location as the preferred option. The works associated with the realignment of the water mains and installation of the existing water mains do not require regional consent and will be authorised through a Notice of Requirement to alter the existing Designation and Town Belt Licence boundaries (which will be processed by WCC).

The existing stormwater pipe which runs to the west of the upper playing field is being replaced as part of the upgrade of the stormwater network. The preliminary design anticipated that the new stormwater pipe would connect to a stormwater inlet in a similar position to the existing inlet on the Waitangi Stream tributary. In order to provide separation from the works to realign the pipework and valve chambers it is necessary to extend the proposed stormwater pipe and relocate the stormwater inlet approximately 3m upstream of its existing position.

The proposed valve chambers location relative to the stormwater inlet is shown in Figure 2 below:

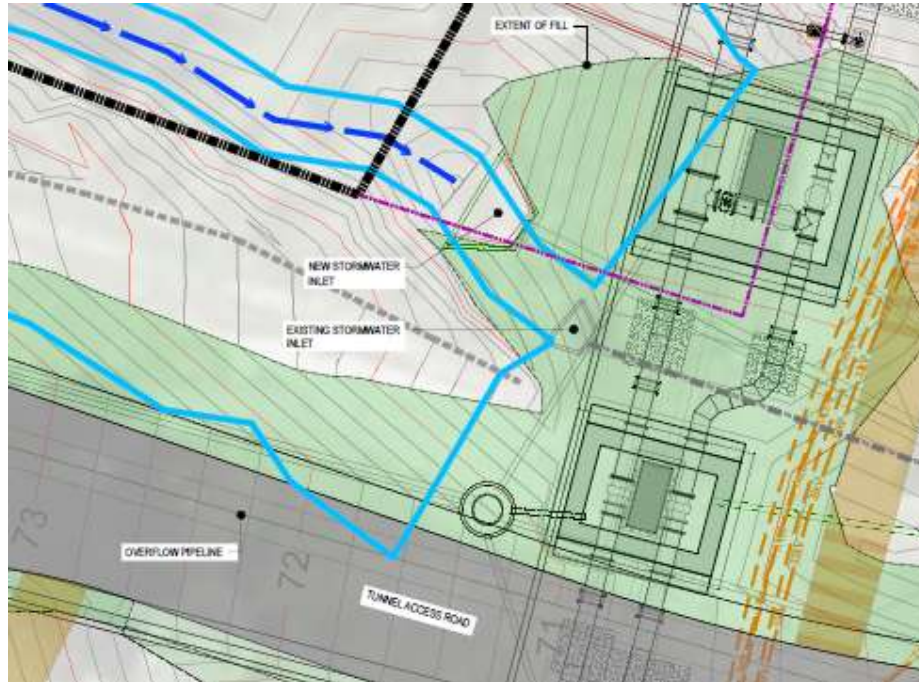


Figure 2: Proposed relocation of stormwater inlet

3.1 Proposed Works

The replacement stormwater pipe will be extended by approximately 3m further upstream. Once the new stormwater pipe has been installed, the stormwater inlet will be put in place.

An area will be cut to a minimum of 100mm depth into the existing stream bed, larger than the footprint of the new wingwall. This will then be lined with Geotextile Bidim A29 or similar and then filled with compacted hardfill to a suitable level for the installation of the wingwall. A Hynds WW0600L wingwall will be lowered into place using a crane. The preformed hole in the headwall will be knocked out and the wingwall fitted into the end of the new pipe and the gap between the headwall and pipe will be filled up using an epoxy mortar.

Rock Rip Rap of d50 150mm size will be placed immediately upstream and hard against the wingwall to prevent any undermining erosion. A lockable hinged grill will then be installed onto the wingwall. A debris arrestor will be installed at the entrance to the inlet to catch any debris and avoid blockage within the stormwater pipe. The debris arrestor grill will have 10cm spacing between the bars, which GWRC's Senior Environmental Scientist has advised is appropriate to allow for fish passage. Backfill will be placed around the back and sides of the wing wall to cover the exposed pipe and back of the wingwall.

Topsoil will then be paced over the backfill and the area will be planted as specified in the Landscape and Ecology Management Plan and with the additional planting (described in Section 2.3.3).

While the works to the stormwater pipe and inlet are undertaken, the Waitangi Stream tributary will be dammed and pumped to the nearest manhole, to the east of the stream. It is anticipated that the works to install the new pipework will take between 3-4 days. The alterations proposed within this application are limited to a small extension to the pipe (approx. 3m) and the installation of a new stormwater inlet.

Maintenance

Routine inspections and maintenance of the stormwater inlet will take place on an ongoing basis. Maintenance of the inlet will include clearing any debris caught within the debris arrestor by hand. It is not anticipated that there will be large amounts of debris due to the small catchment area.

3.2 Assessment of Alternatives

Alternative locations were considered for the valve and flow chambers, however the proposed location is considered to be the preferred option. The relocation of the stormwater inlet is required to accommodate the preferred location of the chambers. Retaining the inlet in its existing location is not feasible.

The option of potentially relocating the inlet a reduced distance upstream was considered, however this required a larger headwall to address the change in ground level which is required as part of the works to install the chambers. The headwall would have a visual impact and due to the height of the drop it would require a safety barrier to ensure that people using the path are not at risk of falling into the stream. This barrier would be contrary to WCC's position which seeks to reduce structures within the Town Belt.

Relocating the inlet at a reduced distance upstream would also result in the inlet being located directly adjacent to the new valve chamber. A separation distance from the chamber to the inlet is preferred to mitigate the potential effects on the Waitangi Stream tributary from chamber maintenance activities.

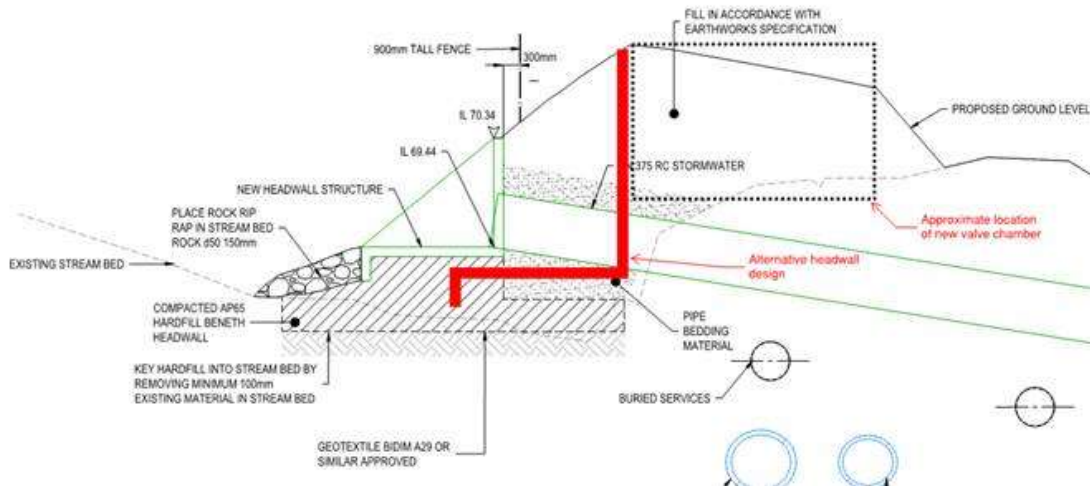


Figure 3: Alternative headwall location

The proposed location for the stormwater inlet is considered to be the best option as it will ensure that there is an appropriate separation between the stormwater inlet and the valve chambers and will require a smaller, less intrusive headwall structure.

3.3 Proposed Planting

The consented planting along the Waitangi Stream Tributary comprises ‘enrichment planting of current seral vegetation with potential canopy species’. This enrichment planting consists of tall growing native canopy trees widely spaced along the stream, that over time grow above the smaller growing trees and give a wider range of species in the area. The four species used within this enrichment planting are tawa, kahikatea, pukatea and nikau.

As part of this application, additional planting is proposed, which comprises dense planting of fast-growing riparian tree species that would rapidly provide a closed canopy over the stream. The purpose of this canopy is to shade out existing weeds and enhance the stream habitat. It is proposed that this dense planting would extend from the new stormwater inlet upstream for approximately 30m, which is to the point where there is a complete native canopy.

The proposed planting comprises:

- Carex - a single row of plants planted immediately beside the stream with 0.5m between each plant. This equates to a total of 120 plants. These grasses will overhang the waterway.
- Seral trees with bulking plants – a double row of plants with 1m between each plant. This equates to 120 plants. These small trees and large shrubs will be planted behind the Carex, to form a vegetation mass that will overtop and shade out the weeds; creating a similar environment that is found further up the stream. Close planting densities will ensure a dense canopy cover in a relatively short period. Where there is vegetation already growing in the proposed planting area, plants will be reallocated to adjoining open areas on the west bank of Waitangi Stream.
- Enrichment trees – a single row of tall growing canopy species spaced with approximately 5m between each tree will be planted amongst the Seral trees. This equates to a total of 12 trees. These slow, tall growing trees will ultimately grow through the smaller trees and shrubs to form a large canopy at upper levels and give a wider range of species for the area in the long term.

Full details of the planting and management of the trees are set out in the appended Ecological Memorandum.

4 Consultation

WWL has engaged with local residents through the Community Reference Group, GWRC and WCC.

4.1 Local Community

The local community have been consulted as part of the wider suite of amendments proposed to the Designation and Town Belt Licence. This engagement has included a presentation to the Community Reference Group on 12th March, attended by members of the WWL team including the Boffa Miskell ecology team. In addition, a site visit was held with Friends of the Wellington Town Belt and the Papawai Stream Group on 10th March. Three written responses have been received following this consultation. Comments relevant to the proposed stormwater inlet relocation are summarised below:

Papawai Stream Group

- Concern that ecological state of the Waitangi Stream tributary will be degraded, specifically by the loss of 3m of open stream.
- Request that any losses are off-set
- Concern that the values ascribed to the stream in the original Ecological Assessment (prepared by Boffa Miskell, dated 8th Sept 2017) have been underestimated as the assessment used a Physical Habitat Assessment (PHA) rather than a Stream Ecological Valuation (SEV).
- Request for the application to be peer reviewed by an ecological professional

Friends of Wellington Town Belt

- Support concerns raised by the Papawai Stream Group

Submission from a local resident

- Oppose the proposals and support concerns raised by other submissions

With regard to the comments made by the Papawai Stream Group, it is considered that their concerns about the value of the stream and mitigation/off-setting are addressed in the Assessment of Environmental Effects (Section 6).

The methodology used within the original Ecological Assessment has been discussed with GWRC's Senior Environmental Scientist, who is comfortable that the Physical Habitat Assessment method was selected due to the small size of the stream.

It is considered that the requested peer review is not required, as the pre-application ecological review process has been robust, with consultation undertaken with GWRC's Senior Environmental Scientist and WCC's Biodiversity Specialist, as detailed below.

4.2 Greater Wellington Regional Council

Consultation has occurred with GWRC. The draft Ecology Memorandum was issued for review and a conference call held on 30th March with GWRC's Senior Environmental Scientist and Resource Advisor (Compliance) and WCC's Parks Team.

The feedback received from GWRC's Senior Environmental Scientist is as follows:

- GWRC are comfortable with the Physical Habitat Assessment approach used to assess the condition of the stream and agree that the SEV assessment is not possible for this stream type.
- The results of the assessment correspond with a separate assessment undertaken by GWRC. While both assessments only found koura present, this does not mean that there are no other fish present (it just means they were not detected in this assessment). Species such as banded kokopu and eels are often present in similar urban streams.
- The proposed loss of 3m of urban stream is significant because there are only remnants of daylighted streams within Wellington. There is therefore a requirement for offsetting. GWRC are supportive of the proposed approach for additional planting and advised that this should account for the loss of 3m of stream.

4.3 Wellington City Council

Consultation has occurred with WCC relating to both the proposed relocation of the stormwater inlet and additional minor alterations to the Omāroro Reservoir Designation and Town Belt Licence.

Ongoing consultation has taken place with WCC as the proposals have been developed, including meetings held with WCC Parks Team and Planning Team on 24th May 2019 and 30th January 2020, and a site visit with WCC's Biodiversity Specialist on 23rd March 2020.

The feedback received from WCC to date is as follows:

- With regard to the stormwater inlet works and associated planting, WCC's Biodiversity Specialist is supportive of the proposed planting approach and has provided advice relating to suitable planting species. The proposed planting has incorporated these recommendations.
- WCC Parks Team have provided advice on the design of works, including confirmation that they would not support a fence at the headwall of the stormwater inlet

5 Approvals Required

The Regional Freshwater Plan (RFP) and proposed Natural Resources Plan (PNRP) set out the rules for works within streams and rivers. The activity status of the proposed activity under the RFP and PRMP is assessed in the table below.

Overall, consent is sought from GWRC as a **Discretionary Activity**.

Activity	Assessment	Activity Status
Regional Freshwater Plan		
Removal of existing stormwater inlet	The removal of the existing stormwater inlet is permitted under Rule 33: Removal or demolition of structures , as it will disturb less than 10m ² of river bed material, results in the complete removal of the existing inlet structure and will not result in the diversion of water from any wetland.	Permitted
Construction of proposed stormwater inlet and pipe	<p>The proposed structure is not contained within the footprint of the existing structure and therefore cannot be a permitted activity under Rule 22: Maintenance, repair, replacement, extensions, additions and alterations to structures.</p> <p>The proposed structure is not within 2m horizontal and 1m vertical projection of the existing structure and therefore cannot be a permitted activity under Rule 43: Maintenance, repair, replacement, extensions, additions and alterations to structures.</p> <p>The proposed stormwater inlet is therefore considered under Rule 49: All remaining uses of river and lake beds.</p>	Discretionary Activity under Rule 49.
Proposed Natural Resources Plan		
Removal of existing stormwater inlet	The removal of the existing stormwater inlet is a permitted activity under Rule R118: Removing or demolishing structures , as it complies with the beds of lakes and rivers general conditions in Section 5.5.4 (see table below), does not disturb more than 10m ² of the river bed and results in the complete removal of the structure and will not result in the diversion of water from any wetland	Permitted
Construction of proposed stormwater inlet and pipe	The construction of the new stormwater inlet and pipe is a permitted activity under Rule R117: New structures , as it complies with the beds of lakes and rivers general conditions in Section 5.5.4 , is not within a site identified in Schedule C (mana whenua) and does not occupy a bed area of greater than 10m ² . This Plan is currently under appeal and the Regional Freshwater Plan is still operative.	Permitted

Assessment against the general conditions for activities in the bed of lakes and rivers (PNRP Section 5.5.4)

Condition	Assessment
(a) except where the discharge is expressly allowed by the activity description of a rule in this chapter there shall be no discharge of contaminants (including but not limited to oil, petrol, diesel, paint, or solvent) to water or the bed, other than sediment and other materials inherent to the water or bed, but excluding any discharge of heavy metals or other toxicants, and	No discharge other than sediment expected
(b) no cleaning or refuelling of machinery or equipment shall take place on any area of river or lake bed, nor will fuel storage occur at any location where fuel can enter any water body, and	Will comply
(c) all machinery, equipment and materials used for the activity shall be removed from the river or lake bed every night and on completion of the activity. This includes any excess material from the construction operation, any materials used during construction of any structure but not part of that structure, and any material removed or demolished from any structure, and	Will comply
(d) structures are designed, installed and maintained, and activities are carried out in a manner to ensure that fish passage is maintained at all times. This shall include avoiding any aggradation or scouring of the bed of the river or lake that may inhibit fish passage, and	Fish passage to be maintained on permanent basis but may be disrupted temporarily for a 3-4 day period as part of the construction works
(e) in any part of the river bed identified as inanga spawning habitat in Schedule F1 (rivers/lakes), no bed disturbance, diversions of water or sediment discharge shall occur between 1 March and 31 May, and	None of the streams are identified in Schedule F1
(f) in any part of the river or lake bed covered by water, which is identified as trout spawning waters in Schedule I (trout habitat), disturbance of the bed or diversions of water shall not take place during the spawning period of 31 May and 31 August, and	None of the streams are identified in Schedule I
(g) all reasonable steps shall be taken to minimise the generation and release of sediment from the activity, and the discharge of any sediment to water from any activity in, on, over or under the bed of a river or lake must comply with the following: (i) the release of sediment associated with the activity must not be undertaken for more than five consecutive days, and for more than 12 hours per day, and	All reasonable steps will be taken to minimise sediment generation with the use of best construction practice measures in accordance with an Erosion and Sediment Control Plan. In addition, the proposed

<p>(ii) there must not, after reasonable mixing, be any conspicuous change in the colour of water in the receiving water or a change in horizontal visibility of greater than 30%, more than 24 hours after the completion of the activity, and</p>	<p>construction works are estimated to take between 3-4 days, therefore any sediment generation will be temporary in accordance with g) i) and it is anticipated that the ESCP measures will ensure that there will not be any conspicuous change in water colour in accordance with g) ii).</p>
<p>(h) car bodies or demolition rubble shall not be used for any purpose on the bed of any river or lake, and</p>	<p>Will comply</p>
<p>(i) all reasonable steps shall be taken to minimise the duration of the diversion of water, and any diversion of water required to undertake the activity shall:</p> <p>(i) only be temporary and for a period no longer than that required to complete the activity, and</p> <p>(ii) must be contained within the bed of the river, and</p> <p>(iii) must not involve a lake, and</p> <p>(iv) any diversion channel required must have sufficient capacity to carry the same flow as the original channel, so as not to cause flooding or erosion of any neighbouring property, and</p>	<p>Diversion of the stream will take place temporarily, with the water being pumped to the nearest manhole and into the Council's stormwater network to the east of the stream. With regard to ii) the diversion of water will be contained within the stormwater network, which directly adjoins the stormwater inlet. It is anticipated that the works to install the new pipework and inlet will take between 3-4 days.</p>
<p>(j) the activity shall not result in erosion or scour of the river banks or shall not result in flooding of any neighbouring property, and</p>	<p>Will comply</p>
<p>(k) any structure shall be designed and maintained so that it does not reduce the ability of the river to convey flood flows. This includes the management of flood debris accumulated against the structure, and</p>	<p>The debris arrestor will be regularly inspected and maintained</p>
<p>(l) any structure shall not alter the natural course of the river, including any diversion of water from the natural course during floods. Tree planting or vegetative bank edge protection works that are limited to the banks of the river and do not extend into the active channel are not considered to alter the course of the river for the purpose of this condition, and</p>	<p>Will comply</p>
<p>(m) the river or lake bed shall not be disturbed to a depth or an extent greater than that required to undertake the activity.</p>	<p>Will comply</p>

6 Assessment of Environmental Effects

6.1 Ecology

An Ecology Memorandum has been prepared by Boffa Miskell and is included at **Appendix B**.

Ecological Assessment (2017)

The Memorandum reviewed the conclusions of the Ecological Assessment (2017) carried out for the original Notice of Requirement for the Designation (NoR). This assessment considered the significance of the stream and concluded that it did not meet the criteria for significance under Schedule F1 as it was not a habitat for threatened or at-risk fish species or more than six migratory indigenous fish species and it did not have a high macro-invertebrate community index. The ecological value of the stream was considered to be moderate due to the fact it is one of a few fragments of daylighted stream in this area.

Ecological Condition

A Rapid Physical Habitat Assessment was undertaken on 19th February 2020. The RPHA provided an overall habitat condition score of 34/100 indicating that in this location that stream is of poor condition and quality. The stream channel is choked with dense *Tradescantia* which causes extensive silt accumulation. The stream bed is therefore covered by thick silt which limits habitat diversity and fish habitat is limited by minimal surface flows, although there is a high likelihood that koura (freshwater crayfish) inhabit the Waitangi Stream tributary. The Ecology Memorandum concludes that the portion of the stream which will be affected by the proposed relocation of the stormwater inlet has low ecological value. Full details of the RPHA are provided within the Ecology Memorandum at **Appendix B**.

Ecological Effects

The proposal will result in the permanent loss of approximately 3m of existing streambed and approximately 2m of bed through clearance of vegetation and installation of rip rap. The permanent loss of the stream equates to a loss of approximately 2% of the remaining daylighted length of this waterway (which comprises 140m in total). The Ecology Memorandum concludes that:

- The temporary impact of construction works will have negligible magnitude of effect on the stream. Given the identified low ecological value of this part of the stream the overall ecological impact is assessed to be low.
- The permanent loss of 3m of the stream will have a low magnitude of effect on the stream. Given the low ecological value of the stream the overall ecological impact is assessed to be low. In addition, further planting can further remedy the ecological effects.

Recommendations

The Ecological Memorandum recommends the following actions to avoid, minimise and remedy potential adverse effects:

- Best practice construction methodology should be used to reduce the impact on the stream environment, including reducing the footprint of the works as much as possible and carrying out excavation in an upstream manner to protect the remaining streambed.
- Additional planting is recommended, over and above the enrichment planting specified within the Landscape and Ecology Management Plan (LEMP). This planting should include

dense native vegetation which will provide shading over the stream channel which will, in time, reduce encroachment by *Tradescantia*. This will encourage flushing of muds and silts currently choking the stream bed, allowing gravel into the lower reaches which will create better and more complex habitat opportunities. This work will be secured through this conditions of this resource consent and reflected in the LEMP.

- Exposed soil should be stabilised by grassing immediately following works to minimise erosion.

The following approach is proposed in order to secure the recommended actions:

Construction Management Plan

A Construction Management Plan (CMP) is required under Designation Condition D.C 11, which requires the certification of the CMP by WCC prior to the commencement of any construction works. The CMP will include all work within the Designation boundary. The methodology for the proposed works within this application will be included within the CMP.

In addition, compliance with the proposed construction methodology can be secured by condition requiring works to be undertaken in general accordance with the information submitted within this Assessment of Environmental Effects.

Landscape Ecology Management Plan

A Landscape Ecology Management Plan (LEMP) is required under Designation Condition D.C 32. It is proposed that the proposed planting specified in Section 3.3 is incorporated into the LEMP. A Draft LEMP has previously been circulated to WCC for comment. The Ecology Memorandum included at Appendix D proposes changes to the Draft LEMP so that this includes site auditing requirements for the Waitangi Stream Tributary habitat and details of the additional planting. This text will be incorporated within the final LEMP which will be submitted to WCC for certification pursuant to Condition D.C 32.

The draft LEMP text is included at Appendix D, and compliance with this text can be secured by condition requiring works to be undertaken in general accordance with the information submitted within this Assessment of Environmental Effects.

Technical Planting Specification

A Technical Specification for the planting is included within the Ecology Memorandum at Appendix D which provides details of site preparation, plant propagation and planting. Compliance with this Technical Specification can be secured by condition requiring works to be undertaken in general accordance with the information submitted within this Assessment of Environmental Effects.

Stabilisation of Exposed Soil

The stabilisation of exposed soil as soon as practicable will be secured by the final Erosion and Sediment Control Plan (ESCP) (see Section 4.5 below for details). Condition 8 of GWRC resource consent (ref: WGN180065 [35008], [35009] and [35010]) requires an ESCP for the wider Omāroro Reservoir works, and it is suggested that the measures associated with the stormwater inlet works are included within this ESCP. Alternatively these can be secured by a standalone ESCP for these works, to be secured by condition.

Given the conclusions within the Ecological Memorandum at Appendix D, the actual and potential ecological effects of the proposed stormwater inlet are considered to be no more than minor.

Given the conclusions within the Ecological Memorandum, the actual and potential ecological effects of the proposed stormwater inlet are considered to be no more than minor.

6.2 Erosion and Sediment Control

A Draft Erosion and Sediment Control Plan (ESCP) was submitted with the original GWRC consent application (ref: WGN180065 [35008], [35009] and [35010]) which set out an overview of the erosion and sediment control measures to be implemented during construction of the reservoir. These included perimeter controls around the edge of the playing fields, sediment retention ponds, stabilised site entrances, progressive stabilisation and monitoring of discharges. This Draft ESCP is included at **Appendix C**, and it is considered that the key principles of erosion and sediment control within this document are also applicable to the construction works for the relocated stormwater inlet.

The principles and measures set out within the Draft ESCP can be incorporated into and expanded within a final ESCP for the proposed works, which can be secured by condition.

It is anticipated that the final ESCP may include the following erosion and sediment control principles to reduce soil erosion, particle transport and sedimentation:

- Minimise disturbed areas and time of exposure by completing the works within 3-4 days and working only those areas required for construction to take place
- Undertake the planting of disturbed areas as soon as practicable
- Control erosion at the source
- Retain sediment on site
- Prevent dust nuisance through dampening exposed surfaces regularly
- Inspect and maintain control measures

Works within water bodies have a high potential for erosion and sediment discharge. To minimise the potential for sediment discharge, the relocation of the stormwater inlet will be undertaken in dry weather, preferably when there hasn't been any rain in the upstream catchment for the previous three days. The following controls may be included within the final ESCP:

- Works to be undertaken in fine weather
- Works to be undertaken quickly with soil appropriately stabilised as soon as practicable
- Silt fences or stabilised earth bunds may be implemented between the works area and the active stream channel, if required

The final ESCP will apply to the proposed works and ensure that these are managed appropriately. The potential erosion and sediment control effects of the proposed works are therefore considered to be less than minor.

6.3 Stormwater Network

A Stormwater Assessment was submitted with the original GWRC consent application (ref: WGN180065 [35008], [35009] and [35010]). This assessment identified capacity issues with the existing stormwater system and acknowledged that detailed design work to progress this upgrade was underway. The upgrade and replacement of the existing stormwater pipework (which runs alongside the upper playing field) is currently underway.

The proposal comprises the extension of the upgraded pipework by an additional 3m and replacement stormwater inlet. The pipework will be sized to match the capacity of the upgraded stormwater pipe. It is not considered that the extension to the stormwater pipe by 3m will impact upon the capacity of the stormwater network, which can accommodate flows associated with the Omāroro Reservoir. The potential effects on the stormwater network are considered to be less than minor.

6.4 Cultural and Heritage

A Cultural Impact Assessment was submitted with the original NoR application. This assessment concluded that there was no need for archaeological examination of the site, but an Accidental Discovery Protocol should be put in place prior to the commencement of construction and the site should be blessed by Port Nicholson Block Settlement Trust.

In accordance with these recommendations, the preparation of an Accidental Discovery Protocol in consultation with Port Nicholson Block Settlement Trust and Te Rūnanga o Toa Rangātira Inc was secured by Designation Condition 43. This protocol will be implemented for the stormwater inlet works in the case of any archaeological finds.

The blessing by Port Nicholson Block Settlement Trust took place on 9th April 2019.

The proposed works will accord with the Accidental Discovery Protocol and the cultural and heritage effects and are considered to be less than minor.

7 Statutory Assessment

7.1 Resource Management Act

The purpose of the RMA is to promote the sustainable management of natural and physical resources.

Section 5: Purpose

Sustainable management is defined in Section 5(2) as:

“...managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –

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

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

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

This proposal is for the relocation of a stormwater inlet on a tributary of the Waitangi Stream. The proposed works are required as part of the construction of the Omāroro Reservoir, which comprises the construction of a 35,000m³ water supply reservoir within the Prince of Wales Park, which will provide a safe and resilient water supply for residents of Wellington. The proposal represents the use and development of physical resources in a way that remedies potential adverse effects on the aquatic and terrestrial environment, while securing the development of the new reservoir which will support the water supply needs of future generations.

Section 6 – Matters of National Importance

Section 6 of the RMA relates to recognising and providing for matters of national importance such as preservation of natural character, protection of indigenous vegetation/fauna, maintaining public access to coastal marine areas and recognising the importance of heritage and cultural values.

None of the section 6 matters are considered directly relevant to the current proposal.

Section 7 – Other Matters

Section 7 of the RMA lists the matters to which particular regard must be had in making resource management decisions. The relevant matters are:

- (c) The maintenance and enhancement of amenity values
- (f) Maintenance and enhancement of the quality of the environment

The proposed works are considered to be consistent with the relevant Other Matters, in particular:

- The proposal will accommodate the construction of the Omāroro Reservoir, which will enhance the health and wellbeing of local residents by providing a safe and resilient water supply.
- The proposal will enhance the aquatic environment of the Waitangi Stream tributary with additional planting, which will create a canopy to shade out existing weeds and enhance the stream habitat. The design of the stormwater inlet will allow fish passage to be maintained.

Section 8 – Treaty of Waitangi

Section 8 of the RMA provides for the principles of the Treaty of Waitangi to be taken into account in resource management decisions.

It is considered that there are no matters of relevance to the principles of the Treaty of Waitangi that relate to the proposed activity.

7.2 Section 104 Considerations

In regard to applications for resource consent, section 104 of the Resource Management Act 1991 (RMA) requires a consent authority to have regard to, subject to Part II, any relevant provisions of:

- a national policy statement
- a national environmental standard
- a New Zealand coastal policy statement
- a regional policy statement or proposed regional policy statement
- a plan or proposed plan
- other regulations
- any other relevant matter.

7.3 National Policy Statements

There are currently five National Policy Statements (NPS) in effect:

- National Policy Statement on Urban Development Capacity
- New Zealand Coastal Policy Statement
- National Policy Statement for Freshwater Management
- National Policy Statement for Renewable Electricity Generation
- National Policy Statement on Electricity Transmission

National Policy Statement on Urban Development Capacity

The NPS on Urban Development Capacity recognises the national significance of well-functioning urban environments. The proposed works will accommodate the construction of the Omāroro Reservoir, which will improve WCC's water supply network, operational and hazard resilience, and has growth and well-being benefits. Overall, the proposal is consistent with the objectives and policies of the NPS on Urban Development Capacity.

New Zealand Coastal Policy Statement

The proposed works are not within the Coastal Marine Area, however, any discharge of sediment associated with the activities proposed in this application will discharge to the coastal environment, as the ultimate receiving environment for the Waitangi Stream is Wellington Harbour.

Policies 22 and 23 seek to manage the effects of sedimentation and the discharge of contaminants to the coastal environment. Discharge of sediment will be avoided and minimised by using good practice erosion and sediment control measures in accordance with Omāroro Reservoir draft ESCP and final ESCP (to be secured by condition).

The discharge of sediment as a result of the proposed construction work is expected to be temporary and, after reasonable mixing, less than minor such that the works are not inconsistent with the NSCPS.

National Policy Statement for Freshwater Management

The NPS for Freshwater Management recognises the national significance of freshwater for all New Zealanders and Te Mana o te Wai. As set out above, erosion and sediment control measures will be implemented in accordance with best practice guidance and a final ESCP.

The discharge of sediment as a result of the proposed construction work is expected to be temporary and, after reasonable mixing, less than minor such that the works are not inconsistent with the NPSFM.

National Policy Statement for Renewable Electricity Generation and Electricity Transmission

The NPSs for Renewable Electricity Generation and Electricity Transmission are not relevant to this application.

7.4 Wellington Regional Policy Statement

The Regional Policy Statement for the Wellington Region (RPS) became operational in 2013. The RPS identifies regionally significant issues related to the management of the region’s natural and physical resources and sets out objectives, policies, and methods. Regional and district plans are required to give effect to the RPS.

The relevant objectives and policies are set out in the table below:

Regional Policy Statement	Assessment
<p>Objective 6 and Policies 5 & 40 seek to maintain and enhance the quality of coastal water for the health and vitality of coastal and marine ecosystems.</p>	<p>Discharge of sediment to coastal water will generally be avoided or minimised by using good practice erosion and sediment control measures in accordance with the Omāroro Reservoir draft ESCP and final ESCP (to be secured by condition).</p> <p>Overall, the effects of the discharge of sediment, should this occur, are expected to be temporary and, after reasonable mixing, less than minor.</p>
<p>Objectives 12 & 13 and Policies 15, 18, 40, 41, & 43 seek to safeguard the life supporting capacity of water and aquatic ecosystem function and health.</p>	<p>The proposal will result in the permanent loss of 3m of stream bed. In order to offset this loss, additional planting is proposed, comprising dense planting of fast-growing riparian tree species that will rapidly provide a closed canopy over the stream. The purpose of this canopy is to shade out existing weeds and enhance the stream habitat, which will have a positive effect on the aquatic ecosystem function and health.</p>
<p>Objective 16 and Policies 23, 24 & 47 seek to identify, protect, and manage ecosystems with significant indigenous biodiversity values.</p>	

<p>Objective 10 and Policies 7 & 39 seek to recognise the social, economic, cultural and environmental benefits of regionally significant infrastructure.</p>	<p>The relocation of the stormwater inlet is necessary to allow for the construction of the regionally and nationally significant Omāroro Reservoir, which will improve the resilience of WCC’s water supply network for the Wellington Low level Water supply zone servicing the Wellington CBD, regionally significant community care and emergency management facilities and a community of 70,000 residents.</p>
<p>Objectives 23-26 and Policies 48, 49 & 66 seek to take the principles of the Treaty of Waitangi into account and recognise and provide for matters of significance to tangata whenua</p>	<p>The area where the Prince of Wales Park is located was used by early Maori for cultivation until the 1860s/1870s. This is recognised through the adoption of the name Omāroro as suggested by representatives of the Port Nicholson Trust.</p> <p>An Accidental Discovery Protocol is secured by Designation Condition and this protocol will be implemented for the stormwater inlet works in the case of any archaeological finds.</p> <p>The proposed erosion and sediment control measures will manage potential effects on the mauri of coastal and fresh water</p>

7.5 Operative Regional Plans

There are five operative regional plans:

- The Regional Coastal Plan
- The Regional Air Quality Management Plan
- The Regional Soil Plan
- The Regional Freshwater Plan
- The Regional Plan for Discharges to Land

The proposed works do not include any activities regulated by the Regional Coastal Plan, Regional Air Quality Management Plan, Regional Soil Plan or Regional Plan for Discharges to Land.

Wellington Regional Freshwater Plan

The Wellington Regional Freshwater Plan (RFP) became operational in 1999. The RFP applies to all fresh water in the Wellington region, including water in rivers, lakes, streams, ponds, aquifers and artificial watercourses, but excluding freshwater in the coastal marine area. It also applies to all land in river and lakebeds.

Regional Freshwater Plan	Assessment
Chapter 4: General objectives and policies	
<p>Tangata whenua</p> <p>Objectives 4.1.1 – 4.1.3: The relationship of tangata whenua with freshwater, the principles of the Treaty of Waitangi, and the protection of the mauri of waterbodies.</p>	<p>The area where the Prince of Wales Park is located was used by early Maori for cultivation until the 1860s/1870s. This is recognised through the adoption of the name Omāroro as suggested by representatives of the Port Nicholson Trust.</p> <p>An Accidental Discovery Protocol is secured by Designation Condition and this protocol will be implemented in for the stormwater inlet works in the case of any archaeological finds.</p> <p>The proposed erosion and sediment control measures will manage potential effects on the mauri of coastal and fresh water</p>
<p>Natural values</p> <p>Objective 4.1.5: The life-supporting capacity of water and aquatic ecosystems is safeguarded from the adverse effects of any subdivision, use and development.</p>	<p>The proposal will result in the permanent loss of 3m of stream bed. In order to offset this loss, additional planting is proposed, comprising dense planting of fast-growing riparian tree species that will rapidly provide a closed canopy over the stream. The purpose of this canopy is to shade out existing weeds and enhance the stream habitat, which will have a positive effect on the aquatic ecosystem function and health.</p>
<p>Policy 4.2.9: To have regard to the characteristics of rivers and their margins when considering the protection of their natural character from the adverse effects of development.</p>	<p>In addition, best practice erosion and sediment control measures will be implemented in accordance with Omāroro Reservoir draft ESCP and final ESCP (to be secured by condition) which will minimise the discharge of sediment to freshwater and therefore minimise the potential effects on the aquatic ecosystem.</p>
<p>Policy 4.2.12: To promote the maintenance and enhancement of aquatic habitats and ecosystems when considering the adverse effects of the use of land outside river beds.</p>	
<p>Use and development</p> <p>Policies 4.2.34-36: To avoid, remedy or mitigate adverse effects which are associated with or are a consequence of an activity by placing conditions on resource consents.</p>	<p>The applicant is happy to accept any conditions deemed necessary by GWRC in order to avoid and remedy any perceived adverse effects.</p>
Chapter 5: Water quality and discharges to freshwater	
<p>Objective 5.1.1: The quality of freshwater meets the range of uses and values for which it is required while the life supporting capacity of water and aquatic ecosystems is safeguarded</p>	<p>Best practice erosion and sediment control measures will be implemented in accordance with Omāroro Reservoir draft ESCP and final ESCP (to be secured by condition) which will minimise the discharge of sediment to freshwater and therefore minimise the potential effects of sediment on the aquatic ecosystem. Planting is proposed that will shade out existing weeds and enhance the stream</p>

Regional Freshwater Plan	Assessment
	habitat which will remedy potential adverse effects associated with the 3m loss of the stream.
Chapter 7: Use of the bed of lakes and rivers	
Objective 7.1.1: Appropriate uses of the beds of rivers and lakes are allowed while avoiding, remedying, or mitigating any adverse effects	As set out above, best practice erosion and sediment control measures will be implemented to minimise the discharge of sediment to freshwater and planting is proposed that will shade out existing weeds and enhance the stream habitat which will remedy potential adverse effects associated with the 3m loss of the stream.
Objective 7.1.4: The uses of river and lake beds are, as far as practicable, consistent with the values of the tangata whenua.	
Objective 7.2.1: To allow the following uses within river and lake beds... structures for transportation and network utility purposes provided that any adverse effects are avoided, remedied or mitigated and that the significant adverse effects identified in Policy 7.2.2 are avoided	
<p>Policy 7.2.19: To ensure that all structures in or on the beds of rivers and lakes which are visible are adequately maintained so that:</p> <ul style="list-style-type: none"> • the structure is safe; and • any adverse effects on the visual amenity of the area are minimised. 	The stormwater inlet will be maintained to remove any debris collecting against the debris arrestor. This will maintain fish passage along the Waitangi Stream tributary.
Policy 7.2.14: To ensure that the deliberate introduction of plants to a river or lake bed for flood mitigation, erosion protection, habitat restoration, or for mitigating non-point source discharges of contaminants, will not result in the displacement of desirable species which are already present.	The proposed plant species for riparian planting along the Waitangi Stream tributary have been carefully selected and agreed with both GWRC and WCC biodiversity officers as being suitable for this location. The proposed planting will have a beneficial impact, providing a closed canopy which will reduce encroachment by <i>Tradescantia</i> .

7.6 Proposed Natural Resources Plan

The Proposed Natural Resources Plan for the Wellington Region (PNRP) is currently at the appeals stage. The plan will replace the existing operative plans and combines the five operative plans into a single plan.

Proposed Natural Resources Plan	Assessment
Ki uta ki tai: mountains to the sea	
<p>Objective O4: The intrinsic values of fresh water and marine ecosystems are recognised and the life supporting capacity of water are recognised and safeguarded.</p>	<p>Best practice erosion and sediment control measures will be implemented in accordance with Omāroro Reservoir draft ESCP and final ESCP (to be secured by condition) which will minimise the discharge of sediment to freshwater and therefore minimise the potential effects of sediment on the aquatic ecosystem. Planting is proposed that will shade out existing weeds and enhance the stream habitat which will remedy potential adverse effects associated with the 3m loss of the stream.</p>
Maori Relationships	
<p>Objective O15: Kaitiakitanga is recognised and mana whenua actively participate in planning and decision-making.</p>	<p>The area where the Prince of Wales Park is located was used by early Maori for cultivation until the 1860s/1870s. This is recognised through the adoption of the name Omāroro as suggested by representatives of the Port Nicholson Trust.</p> <p>An Accidental Discovery Protocol is secured by Designation Condition and this protocol will be implemented in for the stormwater inlet works in the case of any archaeological finds.</p>
<p>Policy P17: The mauri of fresh and coastal waters shall be recognised as being important to Māori and is sustained and enhanced.</p>	<p>The proposed erosion and sediment control measures will manage potential effects on the mauri of coastal and fresh water</p>
<p>Policy P19: The cultural relationship of Māori with air, land and water shall be recognised and the adverse effects on this relationship and their values shall be minimised.</p>	
Water Quality	
<p>Objective O23: The quality of groundwater, water surface water bodies and the coastal marine area is maintained or improved</p>	<p>Best practice erosion and sediment control measures will be implemented in accordance with Omāroro Reservoir draft ESCP and final ESCP (to be secured by condition) which will minimise the discharge of sediment to freshwater and therefore minimise the potential effects on the aquatic ecosystem</p>
<p>Objective O47: The amount of sediment-laden runoff entering water is reduced</p>	
Biodiversity, aquatic ecosystems health and mahinga kai	
<p>Objective O25: Biodiversity, aquatic ecosystem health and mahinga kai in fresh water bodies and the coastal marine area are safeguarded such that... water quality, flows, water levels</p>	<p>Best practice erosion and sediment control measures will be implemented in accordance with Omāroro Reservoir draft ESCP and final</p>

Proposed Natural Resources Plan	Assessment
and aquatic and coastal habitats are managed to maintain biodiversity, aquatic ecosystem health and mahinga kai	ESCP (to be secured by condition) which will minimise the discharge of sediment to freshwater and therefore minimise the potential effects of sediment on the aquatic ecosystem. Planting is proposed that will shade out existing weeds and enhance the stream habitat which will remedy potential adverse effects associated with the 3m loss of the stream.
Objective O27: Vegetated riparian margins are established, maintained. or restored to enhance water quality, aquatic ecosystem health, mahinga kai and indigenous biodiversity of rivers, lakes, natural wetlands and the coastal marine area.	The proposal includes additional planting along 30m of the Waitangi Stream tributary which will enhance the health of the aquatic ecosystem and indigenous biodiversity of rivers.
Objective O29: The passage of fish and koura is maintained, and the passage of indigenous fish and koura is restored.	Fish passage will be maintained through careful design, including placement of rip rap and a debris arrestor with appropriately sized grill spaces.
Policy P31: Biodiversity, Aaquatic ecosystem health and mahinga kai shall be maintained or restored by managing the effects of use and development on physical, chemical and biological processes to:... c) maintain or restore aquatic habitat diversity and quality, including the form, frequency and pattern of pools, runs, and riffles in rivers, and the natural form of rivers, lakes, natural wetlands and the coastal marine area, and	The proposal includes additional planting which will enhance the health of the aquatic ecosystem and indigenous biodiversity of rivers.
Policy P32: Significant adverse effects on biodiversity, aquatic ecosystem health and mahinga kai shall be managed by: (a) avoiding significant adverse effects, and (b) where significant adverse effects cannot be avoided, minimising them and (c) where significant adverse effects cannot be avoided and/or minimised they are remedied (d) where significant residual adverse effects remain, it is appropriate to consider the use of biodiversity offsets.	It is not considered that the proposal results in significant adverse effects, and measures to manage and remedy potential effects are proposed (including erosion and sediment control measures and additional planting).
Policy P106: The introduction to and removal of a plants, or part of a plant, from the beds of lakes and rivers shall be managed so that: (a) pest plants are not introduced and their removal is enabled, and (b) indigenous plant species are encouraged to be planted where they are appropriate for the purpose and are typical of the area and their removal (in whole or in part) is only enabled for	The proposed plant species for additional planting have been carefully selected and are suitable for this location. The proposed planting will have a beneficial impact, providing a closed canopy which will reduce encroachment by <i>Tradescantia</i> .

Proposed Natural Resources Plan	Assessment
<p>the purpose of Māori customary use or for the reasonable use of an individual, or where it is necessary to manage flooding and erosion, and</p> <p>(c) the introduction or removal of a plants, or part of a plant, does not increase flooding and erosion either at the site of introduction or removal, or across the wider river catchment, and</p> <p>(d) the introduction or removal of a plants, or a part of a plant, does not adversely affect significant biodiversity values of the site.</p>	

8 Conclusion

This resource consent application is made by WWL on behalf of the WCC in accordance with section 88 of the Resource Management Act 1991 (RMA) for the relocation of a stormwater inlet on a tributary of the Waitangi Stream.

The proposed works are required as part of the construction of the Omāroro Reservoir, which comprises the construction of a 35,000m³ water supply reservoir within the Prince of Wales Park, Mount Cook, Wellington.

This application seeks consent for the works associated with the relocation of an existing stormwater inlet approximately 3m upstream from its current location. The proposed works are permitted under the Proposed Natural Resources Plan; however they require consent under Rule 49 of the Regional Freshwater Plan (all remaining uses of river and lake beds) as a **Discretionary Activity**.

The assessment of effects on the environment has concluded that the potential effects associated with the proposal will be **no more than minor**, and that appropriate off-setting (in the form of additional planting) is proposed to remedy the loss of 3m of daylighted stream.

The proposal is consistent with the statutory legislation and accords with the objectives and policies of the Regional Freshwater Plan and Proposed Natural Resources Plan.

Appendix A: Drawings

Appendix B: Ecology Memorandum

Appendix C: Draft Erosion and Sediment Control Plan