

Landscape & Ecological Management Plan (LEMP)

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Contents

1	Introduction	9
2	Project Description.....	9
2.1	Site Location.....	9
3	Regulatory Framework.....	10
3.1	Greater Wellington Regional Council Resource Consents	11
3.2	Wellington City Council Designation.....	14
3.3	Wellington Town Belt Act Licence	19
4	Management Plan Framework	33
4.1	Management Plan Consolidation Content.....	33
4.2	Management Plan Submission & Approval Process	34
5	Roles & Responsibility.....	35
6	Implementation and Operation	37
6.1	Pre-Construction Notification Requirements	37
6.2	During Construction Notification Requirements	40
6.3	Post - Construction Notification Requirements.....	42
7	Key Ecological Issues	44
7.1	Nesting Bird Survey.....	44
7.1.1	Nest Boxes.....	46
7.2	Lizard Survey	46
7.2.1	Lizard Habitat Construction	47
7.3	Vegetation Removal & Retention	48
7.3.1	Vegetation Protection Measures & Edge Effects.....	49
7.3.1.1	Arborist:	50
7.3.2	Vegetation Clearance.....	51
7.3.3	Seral Forest	53
7.3.4	Edge Effects.....	53
7.3.5	Dorking Road Tree Protection.....	53
7.4	Stream Discharges.....	56
7.4.1	Rainfall Event Monitoring	57
7.4.2	Actions Resulting from a Discharge	57
7.5	Protection of Streams	59

7.5.1	Stream Reinstatement and Offset Works	60
7.5.2	Damage Documentation and Reporting	61
7.5.3	Consenting and Cost Responsibilities	62
7.5.4	Reinstatement and Offset Maintenance.....	62
7.6	Protection of land or Vegetation Outside of the licence Area.....	62
7.6.1	Offset Planting Works	63
7.6.2	Damage Documentation and Reporting	64
7.6.3	Approvals and Certification.....	64
7.6.4	Reinstatement and Offset Maintenance.....	65
7.6.5	Consenting and Cost Responsibilities	65
7.7	Weed Surveys.....	65
7.8	Pest Management.....	66
7.8.1	Pest Management Methodology and Programme	66
7.8.2	Plant Pest Contractors	66
7.8.3	Animal Pest Contractors	66
7.8.4	Pest Plant Removal and Disposal	67
7.8.5	Preparation for Animal Pest Control.....	67
7.8.6	Notification, Hoardings and Signs	67
7.8.7	Carcass Removal	67
8	Key Landscape Issues and Strategy.....	68
8.1	Buffer (No go) Zones	68
8.2	Riparian Planting	71
8.3	Site Preparation for Landscaping.....	73
8.3.1	Weed Control	73
8.3.2	Ground Preparation	74
8.3.3	Substrate – Mulching	75
8.3.4	Topsoil Management	76
8.3.5	Compaction	77
8.3.6	Reservoir Backfill Design	78
8.3.7	Ground and Land Drainage	82
8.3.8	Reinstatement Areas.....	83
8.4	Planting Programme	83
8.4.1	Planting Species and Planting Specifications	85
8.4.2	Eco-Sourcing.....	92
8.4.3	Landscaping of Reservoir Top	92
8.5	Tracks	93

8.5.1	Final Track Network	93
8.5.2	Reservoir Service Tunnel Access Way Track	95
8.5.3	Culvert for Waitangi Stream	97
8.6	Exposed Reservoir Infrastructure	97
8.6.1	Pipe Tunnel Access Door.....	98
8.6.2	Reserve Maintenance	99
8.6.3	Landscape Treatment Integration.....	99
8.7	Park Entrances and Edge Design.....	100
8.7.1	Rolleston Street.....	100
8.7.2	Upper Field Edges	101
8.7.3	Hargreaves Street	102
8.7.4	Lower Playing Field Access from Southern Car Park Area	103
8.7.5	Fencing Plan and Reinstatement	103
8.7.6	Construction Temporary Fencing.....	107
8.8	Lower Playing Field Design.....	108
8.8.1	Lower Playing Field Flood Management.....	108
8.8.2	Papawai Stream Ecological Enhancement	109
8.9	Maintenance and Reinstatement of Access Way	109
8.9.1	Preconstruction Condition Survey	110
8.9.2	Access Way and Car Parking Inspection.....	111
8.9.3	Remedial Works and Costs	111
8.10	Existing Park Infrastructure.....	112
8.10.1	Infrastructure Inventory and Inspection.....	112
8.10.2	Existing Bench Seat and Plaque	115
8.11	Monitoring, Inspection and Defects Period.....	117
8.11.1	Maintenance	117
8.11.2	Maintenance and Management Schedule and Costs	119
8.11.3	Planting Review.....	120
8.11.4	Monitoring and Inspection Plan.....	120
8.11.5	Final Site Inspections.....	123
8.11.6	Defects and Liability Period – New Tracks	124
8.11.7	Defects and Liability Period – Planting and Landscaping.....	125
9	Playing Fields Management Plan	126
9.1	Purpose and Scope.....	126
9.2	Ground Preparation - Upper and Lower Playing Fields Reinstatement.....	127
9.2.1	Raising of Upper and Lower Playing Fields	129

9.2.2	Surface Specifications	129
9.2.3	Retaining Works.....	130
9.2.4	Permanent Access for Maintenance.....	131
9.2.5	Fencing.....	131
9.2.6	Access Track between Upper and Lower Playing Fields	132
9.3	Defects and liability period	136
9.3.1	Defects and Liability Period – Playing Fields.....	136

Appendix 1 – Extent of Works including Vegetation Clearance

Appendix 2 - Map of Significant Vegetation

Appendix 3 – Landscape Concept

Appendix 4 – Landscape Detailed Design Drawings

Appendix 5 – Technical Specification Landscape

Appendix 6 - Construction Specification - Sport field drainage and turf establishment

Appendix 7 - Sports Playing Field Irrigation Drawings

Appendix 8 - Playing Field Irrigation Specifications

Appendix 9: Civil Construction Design Drawings including Playing Field Construction Drawings

Appendix 10 - (Short Walk Standard) WCC Open Space Access Plan

Appendix 11 – Construction Site Fencing Plan

Appendix 12 - Proposed Annual Sports Field Maintenance Programme

Appendix 13 - Lizard Management Plan

Appendix 14- Department of Conservation Wildlife Permit – Lizards

Appendix 15 - Correspondence between Boffa Miskell and WCC on a Decision on Bird Nest Boxes

Appendix 16 – Long Term Management and Maintenance Schedule and Costs

Appendix 17 – Omāroro Reservoir Technical Specification –Waitangi Stream Mitigation Planting

Appendix 18 – Stormwater Inlet Ecology Memo Part 2

Appendix 19 - Tree Protection Methodology” (dated February 2020) prepared by Arb Innovations Ltd

Acronyms and Abbreviations

AEE	Assessment of Environmental Effects
CMO	Compliance Monitoring Officer
CPTED	Crime Prevention through Environmental Design
CLG	Community Liaison Group
CLP	Community Liaison Person
CRG	Community Reference Group
DC	Designation conditions
DoC	Department of Conservation
EIA	Environmental Impact Assessment
GWRC	Greater Wellington Regional Council
GWRCRC	Greater Wellington Regional Council Resource Consents
LEMP	Landscape and Ecological Management Plan
LC	Licence Conditions
PFMP	Playing Field Management Plan
POWP	Prince of Wales Park
RC	Resource Consent
RCC	Resource Consent Conditions
TBA	Town Belt Act
TBAC	Town Belt Act Licence Conditions
WCC	Wellington City Council
WCCD	Wellington City Council Designation
WWL	Wellington Water

1 Introduction

The proposal is to construct a buried concrete reservoir, named Omāroro reservoir, with a capacity of 35,000m³ in the Town Belt, immediately southwest of the Upper Field of the Prince of Wales Park in Mount Cook, Wellington. This Landscape and Ecological Management Plan (LEMP) incorporates the Playing Fields Management Plan (PFMP). This LEMP is to be applied to the environmental management of the Omaroro project along with a series of other Environmental Management Plans. This LEMP addresses all aspects of the landscape, ecological and playing fields management initiatives during the construction of the Omāroro reservoir.

This LEMP has been prepared in consultation with the Wellington City Council Manager Open Space and Recreation Planning and is in general accordance with the Landscape Strategy and Ecological Impact Assessment provided as part of the Assessment of Environmental Effects (AEE).

The purpose of this LEMP is to outline the methods and measures whilst guiding HEB Construction in managing, remedying, and mitigating environmental effects regarding Landscape, Ecology and Playing Fields Management in order to meet resource consent and designation conditions, relevant legislation, and WCC and WWL's environmental objectives.

This LEMP shall document the permanent mitigation measures, as well as the necessary monitoring and management required to successfully implement those measures during construction and the transition to the operational phase of the Omāroro Project.

2 Project Description

The Project relates to the construction, operation, and maintenance of a 35,000 m³ reservoir within the Wellington Town Belt in the Prince of Wales Park, Mount Cook. The circular concrete reservoir will be completely buried except for two small access hatches on the roof of the reservoir and a 2.5m by 2.5m doorway and 10m wide service access area to the reservoir's buried service and pipe tunnel.

These accesses are necessary for the on-going operation and maintenance of the reservoir. 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 Project includes approximately 3.6ha of earthworks and requires clearance of approximately 4ha of land and including approximately 1.7ha of established vegetation.

2.1 Site Location

The proposed Omāroro Reservoir site is located on a spur within the Prince of Wales Park. The Prince of Wales Park is located within the Wellington Town Belt in the Brooklyn Hills, Wellington (Figure 1). 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.



Figure 1: Proposed reservoir location within Prince of Wales Park showing surrounding streets (Image source: WCC Local Maps)

3 Regulatory Framework

The Omāroro Reservoir Project has been issued numerous regulatory permissions in the form of Resource Consents (4), Designation (1), and a Licence (1). These are identified below:

- I. An easement under the Wellington Town Belt Act 2016 (**Licence**)
- II. A **Designation** under the Resource Management Act 1991 and the Wellington City District Plan
- III. **Resource Consents** under the Resource Management Act 1991, the operative Greater Wellington Regional Plans, and the proposed Natural Resources Plan **WGN180065 [35008]** – Water Permit, [35009] – Discharge Permit, [35010] – **Land Use Consent, WGN200317 [36864] Land Use Consent - stream works.**
- IV. District Consents under National Environmental Standard (**NES**) for Assessing and Managing Contaminants in Soil to Protect Human Health

The Greater Wellington Regional Council Resource Consents (GWRCRC), Wellington City Council Designation (WCCD) and Town Belt Act Licence Conditions (TBAC) specify the purpose and objectives of the five (5) management plans. Conditions from each of these regulatory permissions which specifically relate to this LEMP are identified below in Tables 1, 2 and 3. This LEMP along with the other management plans will demonstrate how HEB Construction will achieve compliance with these regulatory requirements and constraints. Column 3 of each table below named “LEMP Section Reference or Relevant Management Plan” will direct the reader to which section of the LEMP, or

other relevant management plan, relating specifically to conditions and requirements of the various regulatory permissions.

2.2 Wellington Town Belt

It is widely accepted that the Wellington Town Belt is essential to not only the character and function of the city but the physical, emotional and spiritual health and wellbeing of its people. The Town Belt protects a large, predominantly natural, open-space environment with a huge range of direct and indirect environmental, social, recreational and economic benefits to the city and its residents. This LEMP is development and will be implemented to ensure these Town Belt values are retained and returned as part of the Omaroro Reservoir Construction Project.

3.1 Greater Wellington Regional Council Resource Consents

Table 1 below lists the resource consent condition numbers and requirements concerning the Landscape and Ecological Management plan (LEMP), provided by The Greater Wellington Regional Council (GWRC). Table 1 also directs the reader to which section of the LEMP, or corresponding management plan, relates to these conditions.

- I. **WGN180065 [35008]** – Water Permit: To take and use groundwater for the purposes of dewatering excavations, dust suppression and other purposes related to the construction of the Omāroro Reservoir.
- II. **WGN180065 [35009]** – Discharge Permit: To discharge stormwater runoff from areas of bulk earthworks and de-watered groundwater both treated with chemical flocculants to land, the stormwater network or directly to water related to the construction of the Omāroro Reservoir.
- III. **WGN180065 [35010]** – Land Use Consent: To undertake earthworks of an area of more than 3,000m² including to excavate land that may intercept groundwater (bore) required to construct of the Omāroro Reservoir.
- IV. **WGN200317 [36864]** – Land Use Consent - stream works: To extend a stormwater pipe by 3m and install a new stormwater inlet and rock riprap, including the associated temporary diversion of water and permanent partial reclamation of the stream bed, within an unnamed tributary of the Waitangi Stream.

Table 1: Greater Wellington Regional Council Conditions

GWRC Resource Consent Conditions WGN180065 [35008-10]		
Pre-Construction Requirements		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
7b(ii)	Confirmation of playing fields use and/or raising of levels i.e. a 'Playing Fields Management Plan'	9.1 Purpose and Scope
7b(iii)	Details of enhancement of riparian vegetation along all waterways within the site area	8.2 Riparian Planting
7d(i)	Methodology and proposed trigger limits for water quality monitoring and discharges	7.4 Stream Discharges
7d(ii)	Procedures for environmental auditing, monitoring and reporting	8.11 Monitoring, Inspection and Defects Period 8.11.4 Monitoring and inspection plan
8e(v)	Any "no go" and/or buffer areas to be maintained undisturbed, including minimum buffer strips of riparian vegetation to be retained	8.1 Buffer Zones
8(f)	Timetable and nature of progressive site rehabilitation and re-vegetation proposed	<i>Erosion and Sediment Control Plan (ESCP)</i> 8.4 Planting Programme
8(h)	Rainfall response and contingency measures including procedures to minimise adverse effects in the event of extreme rainfall events and/or the failure of any key erosion and sediment control measures or devices	7.4.1 Rainfall Event Monitoring 7.4.2 Actions Resulting from a Discharge <i>Erosion and Sediment Control Plan – Section 11.7.3</i>
Discharge Activities		
21(e)	Notwithstanding the requirements of any other conditions of this consent, the consent holder shall ensure that, after a reasonable mixing zone, discharges from the site shall not give rise to any of the following effects in any receiving waterbody: Any significant adverse effects on aquatic life. Note: For the purposes of this condition, the end zone of reasonable mixing is defined as a point 50 metres downstream from any point of discharge to a waterbody.	7.4.1 Rainfall Event Monitoring 7.4.2 Actions Resulting from a Discharge
Site Auditing Activities		

<p>3(a-j)</p>	<p>The consent holder shall ensure that the site is audited by a suitably qualified and experienced person on a minimum of:</p> <ul style="list-style-type: none"> • A weekly basis, and • After a rainfall event of greater than 20mm in a 24-hour period, or 7mm in a one-hour period, as measured at the Greater Wellington Regional Council's 'Newtown at Mansfield Street' rainfall monitoring site, or • At a longer frequency to the satisfaction of the Manager <p>The audits are to ensure that the erosion and sediment control methods are being maintained in accordance with the approved final ESCP referred to in condition (8) and the relevant phase-specific ESCP referred to in condition (9).</p> <p>The audits shall include, but not be limited to, the following information:</p> <ol style="list-style-type: none"> a) Date; b) Name of auditor; c) Site condition; d) Weather conditions; e) Sediment management (including identification of problem areas that are not being treated by sediment control measures, and any measures put in place to treat these areas); f) Runoff control (check of diversion channels and check sediment retention pond); g) Condition and effectiveness of erosion and sediment control measures and devices, including silt fences, contour drains and sediment retention ponds; h) Maintenance required and the date this will be completed by; i) Contractor responsible for the maintenance; and j) General comments. <p>Note: Audits will be required while any area is being cleared of vegetation and soil, or earth worked. Once an area has been stabilised in accordance with condition (24) and there are no works occurring on site, the audits for this condition are no longer required.</p>	<p>Erosion and Sediment Control Plan – Section 11.7.3 7.4.1 Rainfall Event Monitoring</p>
<p>GWRC Resource Consent Conditions WGN200317 [36864] – Land Use Consent</p>		
<p>17</p>	<p>During the planting season following the completion of works, or other timeframe as agreed by the Manager, Environmental Regulation, Wellington Regional Council, the consent holder shall plant an area of approximately 30m length x 3m width alongside both sides of the Waitangi Stream in native vegetation. This native tree planting shall be in accordance with the documents provided to the Wellington Regional Council on 7 May 2020 with the consent application and approved by Wellington City Council, particularly: "Omāroro Reservoir Technical Specification – Waitangi Stream Mitigation Planting" and the Memorandum of 1 April 2020 entitled "Stormwater Inlet Ecology Memo Part 2"</p> <p>Any amendment proposed to the "Omāroro Reservoir Technical Specification – Waitangi Stream Mitigation Planting 16 April 2020" shall be submitted for certification, in writing, to the Manager, Environmental Regulation, Wellington Regional Council.</p>	<p>Section 7.6.1 Offset Planting Works</p> <p>Appendix 17 – Omāroro Reservoir Technical Specification – Waitangi Stream Mitigation Planting</p> <p>Appendix 18 – Stormwater Inlet Ecology Memo Part 2</p>

19	<p>All offset planting must be maintained for at least 5 years or until 80% canopy cover over the planted area is achieved.</p> <p>Note: Canopy cover is defined as the percentage of ground area covered by planted native vegetation as viewed from vertically above the planted area. It includes all plant tiers (that is, it may be a mix of low growing species plus tree and shrub species).</p>	Section 7.6.1 Offset Planting Works
Maintenance of Works		
20	<p>The works shall remain the responsibility of the consent holder and shall be maintained to the satisfaction of the Manager, Environmental Regulation, Wellington</p> <p>The works shall remain the responsibility of the consent holder and shall be maintained to the satisfaction of the Manager, Environmental Regulation, Wellington Regional Council so that:</p> <p>a) Any erosion, scour or instability of the stream bed or banks that is attributable to the works carried out as part of this consent is remedied by the consent holder; and</p> <p>b) Any adverse effects caused by the presence of the structure that limit or restrict fish passage shall be rectified by the consent holder; and</p> <p>c) The structural integrity of the stormwater inlet remains sound in the opinion of a Professional Chartered Engineer.</p> <p>Note: Maintenance does not include any works outside of the scope of the application. Any additional works (including structures, reshaping or disturbance to the bed of the watercourse) following completion of the construction works as proposed in the application, may require further resource consents.</p>	Section 7.5.4 Reinstatement and Offset Maintenance

3.2 Wellington City Council Designation

Table 2 below lists the designation condition numbers, and their requirements, provided by The Wellington City Council (WCC) which specifically relate to the Landscape and Ecological Management Plan (LEMP). The table also directs the reader to which section of the LEMP, or corresponding management plan, relates to these conditions.

Table 2: Wellington City Council Designation Conditions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape & Ecology Management Plan		
DC.32(a)	At least 15 Working Days prior to Commencement of Construction or vegetation removal, the Requiring Authority shall submit a LEMP to the CMO for certification	6.1 Pre-construction Notification Requirements
DC.32(b)	The LEMP shall be in general accordance with the Landscape Strategy and Ecological Impact Assessment provided in the AEE and address the matters in condition DC. 33	8.0 Key Landscape Issues and Strategy
DC.32(c)	Construction shall not commence until the Requiring Authority has received the CMO written certification of the LEMP	4.2 Management Plan Submission & Approval Process
Advice Note:	The LEMP may be part of a combined document including the Playing Fields Management Plan.	
DC.33	The purpose of the LEMP is to outline the methods and measures to be implemented prior to the Works, during the construction	

	phase, and for a defined period thereafter to avoid, remedy, and mitigate adverse effects of the construction and the Project on landscape amenity, use and function. The LEMP shall document the permanent mitigation measures, as well as the necessary monitoring and management required to successfully implement those measures during construction and the transition to the Operational phase of the Project. The LEMP shall, as a minimum, address the following:	
DC.33(a)	Final landscape strategy	8. Key Landscape Issues and Strategy
DC.33b	Confirmation of an appropriate buffer between the earthworks and waterways including confirmation of waterway location by longitudinal and cross-section survey. In the case of the Papawai Stream the buffer shall be no less than 10m on the stream's west bank (hillside). In the case of the Waitangi Stream Tributary, to the west of the project site, no buffer shall be less than 5m.	8.1 Buffer Zones 6.2 During construction notification requirements
DC.33c	How the final reservoir backfill design will support a smooth integration with adjacent topography and optimise effective revegetation conditions	8.3.6 Reservoir Backfill Design
DC.33d	Details of replaced pathways through the site, which shall be designed with reference to the WCC "Short Walk Standard"	8.5.1 Final Track Network
DC.33e	Consideration of CPTED principles in relation to the pipe tunnel access door	8.6.1 Pipe tunnel access door
DC.33f	Identification of vegetation to be retained, including retention of as many as practicable significant trees and areas of regenerating indigenous vegetation	7.3 Vegetation Removal & Retention
DC.33g	Protection measures for vegetation to be retained and vegetation clearance methodology as outlined in condition DC.34, including specifying a requirement that the removal of large trees shall be undertaken by an arborist to minimise damage to adjacent vegetation.	7.3 Vegetation Removal & Retention & 7.3.1 Vegetation Protection Measures & Edge Effects
DC.33h	Under conditions DC.33 f) and (g) above, particular attention shall be given to minimisation of the loss of trees in the Seral Forest B and to the protection of trees in the Seral Forest B that do not need to be removed. Where any vegetation is required to be removed from Seral Forest B, the Requiring Authority shall provide the CMO with a written explanation for why the removal is needed.	7.3.3 Seral Forest
DC.33i	A methodology for the monitoring of the nest boxes required by condition DC. 34 during construction, to be prepared by a suitably qualified and experienced ornithologist	7.1.1 Nest Boxes
DC.33j	A methodology for surveying lizard presence prior to vegetation clearance, and minimising effects on lizard populations as required by condition DC.35.	7.2 Lizard Survey
DC.33k	Details of proposed mass planting and specimen tree planting including plant species, plant/grass mixes, spacing/densities, sizes (at the time of planting) and layout and planting methods. The intention is to achieve a dense canopy of complementary plant communities which will achieve a variation in plant height.	8.4.1 Planting Species and Planting Specifications
DC.33l	Planting programme – the staging of planting in relation to the construction programme which shall, as far as practicable, include provision for planting within the first planting season following completion of the Project	8.4 Planting Programme
DC.33m(i)	Detailed specifications relating to (but not limited to) the following: Weed control and clearance	8.7 Weed Control
DC.33m(ii)	Ground preparation	8.3.2 Ground Preparation
DC.33m(iii)	Mulching	8.3.3 Substrate

DC.33m(iv)	Plant supply and planting, including hydro-seeding and grassing	8.4.1 Planting Species and Planting Specifications
DC.33m(v)	Proposed maintenance of plantings, including the replacement of unsuccessful plantings	8.11.1 Maintenance
DC.33m(vi)	Response maintenance for existing vegetation affected by opening of the canopy during construction (this is required to address potential windfall effects that may arise as a result of peripheral tree removal)	8.11.1 Maintenance
DC.33n	Subject to achieving the success standards in paragraphs i), ii) and iii) below, there shall be a five-year defects liability and maintenance period for all terrestrial planting, but the maintenance period may be shorter if the success measures have been achieved earlier. At the end of that period, the Requiring Authority shall provide information to the CMO to demonstrate that the planting has been successful, with success defined as follows:	8.11.7 Defects and liability period – Planting and Landscaping 6.3 Post Construction Notification Requirements
DC.33n(i)	In relation to mass planting, successful planting shall be defined as 80% canopy closure whereby a sustainable plant community has been established and where plants have grown to create a canopy that shades the ground and suppresses weed growth	8.11.7 Defects and liability period – Planting and Landscaping 6.3 Post Construction Notification Requirements
DC.33n(ii)	In relation to the planting of specimen trees, successful planting shall be defined as 100% plant survival, with 100% of trees in full leaf (if the relevant species is typically in leaf at that time of year) with the trees to have a habit of growth that is normal to the species and are to be sound, healthy and vigorous with normal and well-developed branch systems	8.11.7 Defects and liability period – Planting and Landscaping 6.3 Post Construction Notification Requirements
DC.33n(iii)	Success in relation to wetland and riparian planting shall be defined as nearly as practicable to the criteria in i), or ii) and in any event as agreed by expert ecologists.	8.11.7 Defects and liability period – Planting and Landscaping 6.3 Post Construction Notification Requirements
DC.34	Prior to any vegetation clearance occurring:	7.3 Vegetation Removal & Retention
DC.34(a)	The maximum extent of clearance is to be clearly identified and confirmed by the Project Ecologist in consultation with the Project Landscape Architect and Project Construction Manager	7.3 Vegetation Removal & Retention
DC.34(b)	Vegetation to be retained will be clearly marked on site, with special attention given to large trees and Seral Forest B	7.3 Vegetation Removal & Retention
DC.34(c)	As far as practicable, vegetation clearance will occur outside the breeding season of kaka, falcon, kakariki, and morepork (1 September to 30 March)	7.1 Nesting Bird Survey
DC.34(d)	If vegetation clearance must occur during the period identified in condition DC.34 c), a survey shall be undertaken prior to clearance by a suitably qualified and experienced ornithologist to determine if a nest or nests are present. If a nest of any of the species identified in DC. 34c) is located on a tree to be felled, that tree must not be felled until the chick(s) has left the nest	7.1 Nesting Bird Survey 6.2 During Construction Notification Requirements
DC.34(e)	The Requiring Authority shall engage a suitably qualified and experienced ornithologist to provide a recommendation on the type, location and number of nest boxes that must be installed in adjacent areas of vegetation specifically for resident kaka and morepork.	7.1 Nesting Bird Survey

DC.34(f)	Nesting boxes required under DC.34 e) shall be installed under the supervision of the ornithologist prior to the commencement of any tree removal.	7.2 Nest Boxes
Advice Note:	Evidence that the above process has been followed is to be provided to the CMO upon request. The CMO shall consult with an ecologist within the Council.	
DC.35(a)	Prior to any vegetation clearance occurring, a lizard survey is to be undertaken of the project site and surrounding area by a herpetologist.	7.2 Lizard Survey
DC.35(b)	If any lizards are found or their presence is suspected measures must be developed to minimise the effect of the project on the lizard population, this may include lizard relocation prior to vegetation clearance, and habitat re-creation associated with post construction site remediation and landscaping. These measures must be included in Landscape and Ecology Management Plan required under conditions DC.32 and DC.33.	7.2.1 Lizard Habitat Construction
DC.36	Prior to commencing construction the Requiring Authority shall remove and store the existing bench seat and plaque located on the reservoir site. Within six months of the completion of construction the bench seat and plaque shall be re-instated.	8.10.2 Existing bench seat and plaque 6.3 Post Construction Notification Requirements
DC.37	A planting review must be undertaken by a suitably qualified and experienced landscape architect within 3 years of completion of construction of the reservoir. The review will focus on the revegetation and assess the effectiveness of plant growth, particularly on mechanically stabilised slopes. Where required, remedial works shall be undertaken to ensure that planting treatments are successful and have the potential to improve the landscape values of the site. Evidence of this review must be provided to the CMO.	8.11.3 Planting review 6.3 Post Construction Notification Requirements
Playing Fields Management Plan		
DC.38		
a)	At least 15 Working Days prior to Commencement of Construction the Requiring Authority shall submit a Playing Field Management Plan (PFMP) to the CMO for certification	Construction Environmental Management Plan (CEMP) 7.1.1 Pre-construction Notification Requirements 6.1 Pre-construction Notification Requirements
b)	The PFMP shall address the matters in condition DC.39	
c)	Construction shall not commence until the Requiring Authority has received the CMO written certification of the PFMP	6.1 Pre-construction Notification Requirements
Advice Note:	The PFMP may be part of a combined document including the Landscape Ecology Management Plan	
DC.39	The purpose of the PFMP is to outline the methods and measures to be implemented prior to the Works, during the construction phase, and for a defined period thereafter to avoid, remedy, and mitigate adverse effects of the construction and the Project on the Upper and Lower Prince of Wales Park playing fields.	9.1 Purpose and Scope
	The PFMP shall, as a minimum, address the following:	
a)	Final design of the fields including levels and improved drainage (where practicable)	9.2 Ground Preparation - Upper and Lower Playing Fields Reinstatement
b)	Surface specifications	9.2.1 Surface Specifications
c)	Retaining works, including any retaining structure design, where necessary	9.2.3 Retaining Works
d)	Permanent access for maintenance vehicles to both fields	9.2.4 Permanent Access for Maintenance

e)	Fencing	9.2.5 Fencing
f)	Design of the access track between the upper and lower playing fields.	9.2.6 Access Track between Upper and Lower Playing Fields
DC.40		
a)	The PFMP shall be prepared in consultation with the Manager, Open Space and Recreation Planning and the Manager, Sports and Recreation Operations and Contracts.	4.2 Management Plan Submission & Approval Process
b)	The PFMP shall demonstrate how the outcomes of the consultation have been incorporated and, where they have not, the reasons why.	4.2 Management Plan Submission & Approval Process
DC.41	The Requiring Authority shall not permanently raise the upper and lower playing field as part of the Project for the expressed purpose of permanently storing surplus excavated material from the proposed reservoir site.	9.2.1 Raising of Upper and Lower Playing Fields
DC.41	This condition shall not affect or limit any reasonable works required as part of field reinstatement, involving field re-shaping or re-profiling, required to appropriately reinstate playing surfaces as agreed with the Manager Open Space and Recreation Planning and the Manager, Sports and Recreation Operations and Contracts.	9.2.1 Raising of Upper and Lower Playing Fields
DC.42		
a)	There shall be a 1-year defects liability period for works associated with the reinstatement of each of the upper and lower playing fields, including access tracks, retaining walls (where required), fencing and drainage. This 1 year period will commence from the date that the CMO (in consultation with the Manager, Open Space and Recreation Planning and the Manager, Sports and Recreation Operations and Contracts), confirms in writing that the reinstated field or fields, and related tracks, retaining walls, fencing and drainage are suitable for organised sports use and public activities to commence.	9.3.1 Defects and liability period – Playing Fields 6.3 Post Construction Notification Requirements
b)	Within the defects liability period the Requiring Authority is responsible for meeting all reasonable costs associated with ensuring the successful reinstatement of the fields.	9.3.1 Defects and liability period – Playing Fields
c)	At the end of the period in DC.42 a), the Requiring Authority shall provide confirmation to the CMO that the playing field reinstatement, including any required retaining works, permanent maintenance vehicle access works (including the access track between the upper and lower field), fencing and any required defect remedial work/s has been successful. This confirmation shall involve an appropriately qualified and experienced sports turf specialist.	9.3.1 Defects and liability period – Playing Fields
Note:	DC42a) includes flexibility to separately stage the reinstatement of the upper and lower playing fields. For the avoidance of doubt, where this occurs the 1-year defects liability period will vary (in terms of its start and end date) for each field.	
Dorking Road tree protection		
DC.44		
a)	Prior to any works commencing on the Dorking Road access point a Council-approved consulting arborist /Project Arborist must be engaged by the applicant.	7.3.5. Dorking Rd Tree Protection
b)	Construction shall be undertaken in accordance with the Tree Protection Methodology prepared by Arb innovations Ltd (dated February 2020) including the implementation of a Tree Protection Zone (TPZ) around the Podocarpus Totara tree located on Dorking Road.	7.3.5. Dorking Rd Tree Protection

d)	<p>On completion of work on the Dorking Road access point the Project Arborist shall at their discretion sign off the work and provide a brief account of the project to the Council Arborist and Compliance Officer that documents:</p> <ul style="list-style-type: none"> • Photographs showing stages of any work within the RPA • Effects of work on the trees • Remedial works required 	7.3.5. Dorking Rd Tree Protection
d)	<p>Tree Protection Zone (TPZ)</p> <ul style="list-style-type: none"> • The TPZ shall be fenced as indicated in the Tree Protection Methodology prepared by Arb Innovations Ltd. • Any work within the TPZ is at the discretion of Project Arborist and shall be done in accordance with the Tree Protection Methodology prepared by Arb Innovations Ltd. • All vehicles, structures, building materials and debris associated with construction must not be stored within the Tree Protection Zone unless prior approval from the Project Arborist or Council's Compliance Monitoring Officer (in liaison with the Council's Arboricultural Officer) has been obtained. 	7.3.6. Tree Protection Zones (TPZ)
a)	<p>Excavations within the TPZ</p> <ul style="list-style-type: none"> • All excavations which are to take place in the TPZ shall be done so in accordance with the Tree Protection Methodology prepared by Arb Innovations Ltd and to the satisfaction of the Project Arborist 	7.3.6. Tree Protection Zones (TPZ)

3.3 Wellington Town Belt Act Licence

Table 3 below lists the Town Belt Act licence condition numbers, and their requirements, under the Wellington Town Belt Act specifically relate to the Landscape and Ecological Management Plan. The table also directs the reader to which section of the LEMP, or corresponding management plan, relates to these conditions.

Table 3: Town Belt Act Licence Conditions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Protection of Streams		
LC.14	Stream damage to be reinstated and offset:	
	<p>Any damage to the Papawai Stream or Waitangi Stream tributary bed or margins within the Town Belt, not otherwise provided for within the application documents or any consents obtained from Greater Wellington, will be subject to a requirement for reinstatement and offsetting by Wellington Water, in accordance with LC15-LC24.</p> <p><i>Note: The intention of this condition is to set a high bar for avoidance of ANY stream disturbance or damage. While a high bar is set, if damage does occur, the remediation will be commensurate with the damage as determined by professionals (refer condition 16). For example, damage to vegetation at the bank will require replanting of that area and an offset area but will not mean that the offset area needs to be completely redeveloped as a comprehensive stream restoration project.</i></p>	7.5 Protection of Streams
LC.15	<p>Stream reinstatement and offset works: Any reinstatement and offset works required by LC.14 shall, unless otherwise agreed by the Manager Open Space and Recreation Planning, be three times the length of the stream bed or margin that is damaged.</p>	7.5.1 Stream Reinstatement and Offset Works
LC.16	Reinstatement and offset works plan to be produced by landscape architect and/ or ecologist:	7.5.1 Stream Reinstatement and Offset Works

	Wellington Water must employ a suitably qualified landscape architect and/or ecologist, to produce a reinstatement and offset works plan, and supervise implementation of any reinstatement works under LC.15.	
LC.17	Reinstatement and offset works plan consultation: If required by the Manager Open Space and Recreation Planning the planning and implementation of works required under LC. 15 shall occur in consultation with any landscape architect and/or ecologist appointed by the Manager Open Space and Recreation Planning.	7.5.1 Stream Reinstatement and Offset Works
LC.18	Damage documentation and reporting: Wellington Water must also formally document any damage incident under LC.14, and include details of this incident on a breach register and provide an update of this breach and its response to this in a report to the next available CRG, or CLG, meeting.	7.5.2 Damage Documentation and Reporting
LC.19	Deleted	
LC.20	Reinstatement and offset works plan approval: The reinstatement and offset plan shall be provided to the Manager Open Space and Recreation Planning for approval 20 working days prior to commencement. Works shall not commence prior to receipt of written approval.	6.1 During Notification Requirements 7.5.1 Stream Reinstatement and Offset Works
LC.21	Reinstatement and offset works completion: Any reinstatement and offset works required under LC. 15 must be completed within three months of the damage, or within an appropriately suitable reinstatement period set out in the reinstatement and offset plan.	7.5.1 Stream Reinstatement and Offset Works
LC.22	Reinstatement and offset works certification: Any agreed reinstatement and offset works under LC. 20 must be inspected by the Manager Open Space and Recreation Planning, or by any appointee of the Manager, and certified in writing as being completed.	7.5.1 Stream Reinstatement and Offset Works
LC.23	Reinstatement and offset maintenance : Any reinstatement and offset works must be maintained by Wellington Water or its contractor to establish as intended. Any reinstatement and offset works plan and reinstated or offset works stream area/s must be added to any draft or final Landscape and Ecology Management Plan (LEMP) required under the designation conditions to ensure the area is subject to ongoing management and maintenance under the LEMP.	7.5.3 Reinstatement and Offset Maintenance
LC.24	Reinstatement and offset works consenting responsibilities: Wellington Water or its contractor will have responsibility for obtaining any consents required from Greater Wellington Regional Council for any stream damage or stream reinstatement and offset works.	7.5.3 Consenting and Cost Responsibilities
LC.25	Reinstatement and offset costs: Any costs associated with LC. 14- LC. 24 will be met by Wellington Water or its contractor, unless otherwise agreed with the Manager Open Space and Recreation Planning.	7.5.3 Consenting and Cost Responsibilities
Notes:	The two streams in or immediately adjacent to the licence area (Papawai Stream, and Waitangi Stream tributary) have acknowledged and significant ecological values. The intention of all conditions is to avoid any disturbance to these streams, and protect the stream habitat, environment and function. Any damage to these streams must be reinstated and appropriately offset.	
	If damage occurs, notwithstanding any other RMA consenting or NOR implications that this may have for Wellington Water, it is anticipated that Wellington Water will provide for the reinstatement and offsetting of any disturbance that occurs. Wellington Water will advise the Manager Open Space and Recreation Planning and the CRG or eLG of any breach, and the actions that it proposes to take to	

	address any damage.	
	The Manager Open Space and Recreation Planning will, on behalf of WCC as Town Belt Trustee, reserve the right to require, where it is considered any licence breach is significant, a modification to the licence or even additional licencing for damage to Town Belt streams.	
Protection of land or Vegetation Outside of the licence Area		
LC.26	Land and vegetation damage to be reinstated and offset	
	Any damage to any land or vegetation outside of the licence area will be subject to a requirement for both the reinstatement of the damage and the provision of offset planting by Wellington Water, in accordance with LC. 27- LC. 37.	7.6 Protection of land or Vegetation Outside of the licence Area
LC.27	Offset planting area	7.6.1 Offset Planting Works
	Any offset planting area required by LC. 26 shall, unless otherwise agreed by the Manager Open Space and Recreation Planning, be:	7.6.1 Offset Planting Works
(a)	Three times the size of the area of land disturbed, or	7.6.1 Offset Planting Works
(b)	In the case of the disturbance of vegetation three times the area of land contained within the drip line of any damaged or removed vegetation, or	7.6.1 Offset Planting Works
(c)	Whichever is the greater of (a) or (b).	7.6.1 Offset Planting Works
LC.28	Damage documentation and reporting	7.6.2 Damage Documentation and Reporting
	Wellington Water must also formally document any damage incident under LC.26 and include details of this incident on a breach register and provide an update of this breach and its response to this in a report to the next available CRG, or CLG, meeting.	7.6.2 Damage Documentation and Reporting
LC.29	Reinstatement and offset planting plan to be produced by landscape architect and ecologist	7.6.1 Offset Planting Works
	Wellington Water must employ a suitably qualified landscape architect and ecologist, agreed to by the Manager Open Space and Recreation Planning to produce a draft reinstatement and offset planting plan, and to plan and implement any reinstatement and offset planting works required under LC.27.	7.6.1 Offset Planting Works
LC.30	Reinstatement and offset planting plan consultation	7.6.1 Offset Planting Works
	If required by the Manager Open Space and Recreation Planning the preparation of the plan and any planning and implementation of works required under LC.27 shall occur in consultation with any landscape architect and/or ecologist appointed by the Manager Open Space and Recreation Planning.	7.6.1 Offset Planting Works 6.2 During Construction Notification Requirements
LC. 31	Review of draft reinstatement and offset planting plan	
	Any draft reinstatement and offset planting plan required under LC. 29 must be provided to the Manager Open Space and Recreation Planning for review and feedback at least 20 working days prior to the commencement of any reinstatement works, unless otherwise agreed by the Manager.	6.1 During construction Notification Requirements
LC. 32	Reinstatement and offset plan approval	
	Reinstatement works required under LC. 27 shall not commence until a final reinstatement plan is approved by the Manager Open Space and Recreation Planning.	7.6.3 Approvals and Certification
LC. 33	Reinstatement and offset planting works completion	
	Any reinstatement and offset planting works required under LC. 27 must be completed within three months of the damage, or within an appropriately suitable period agreed with the Manager Open Space and Recreation Planning.	7.6.3 Approvals and Certification
LC. 34	Reinstatement and offset works certification	

	Any agreed reinstatement and/or offset works under LC. 32 must be inspected by the Manager Open Space and Recreation Planning, or by any appointee of the Manager, and certified in writing as being completed.	7.6.3 Approvals and Certification
LC. 35	Reinstatement and offset planting maintenance	
	Any reinstatement and offset planting works must be maintained by Wellington Water or its contractor to establish as intended. Any reinstated or offset planting area/s must be added to any draft or final Landscape and Ecology Management Plan (LEMP) to ensure the area is subject to ongoing management and maintenance under the LEMP.	7.6.4 Reinstatement and Offset Maintenance
LC. 36	Reinstatement and offset planting works consenting responsibilities	
	Wellington Water or its contractor will have responsibility for obtaining any consents required from Greater Wellington Regional Council and/or Wellington City Council for any land or vegetation damage or reinstatement or offset planting works required outside of either the licence or designation area.	7.6.5 Consenting and Cost Responsibilities
LC. 37	Reinstatement and offset planting costs	
	Any costs associated with LC. 26- LC. 36 will be met by Wellington Water or its contractor, unless otherwise agreed with the Manager Open Space and Recreation Planning.	7.6.5 Consenting and Cost Responsibilities
Notes:	The intention of this condition set is to recognise that any encroachment of reservoir site clearance or construction activities outside of the agreed licence area is not anticipated in the licence terms.	
	However, should this occur, notwithstanding any other RMA consenting or NOR implications that this may have for Wellington Water, it is anticipated that Wellington Water will provide for the reinstatement of any disturbance that occurs, and provide suitable 'compensatory' offset planting for this licence breach. Wellington Water will advise the Manager Open Space and Recreation Planning and the eRG or eLG of any breach, and the actions that it proposes to take to address any damage.	
	The Manager Open Space and Recreation Planning will, on behalf of wee as Town Belt Trustee, reserve the right to require, where it is considered any licence breach is significant, a modification to the licence or even additional licencing for any activity encroachment outside of the agreed licence area.	
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 52	Draft LEMP consultation	
	The draft Landscape and Ecological Management Plan (LEMP) required by Designation condition DC 32 or any proposed variation to any approved LEMP must be prepared in consultation with the Manager Open Space and Recreation Planning .	4.2 Management Plan Submission & Approval Process
LC. 53	Draft PFMP consultation	
	A draft Playing Fields Management Plan (PFMP) , required by Designation condition DC 38, or any proposed variation to any approved PFMP, must be prepared:	
(a)	Sports Turf Specialist: With input from a suitably qualified sports turf specialist agreed to, in writing, by the Manager Open Space and Recreation Planning	4.2 Management Plan Submission & Approval Process
(b)	Consultation: In consultation with the Manager Open Space and Recreation Planning .	4.2 Management Plan Submission & Approval Process
LC. 54	Draft LEMP and PFMP design detail	
	In addition to the matters listed in the designation conditions, the LEMP and PFMP management plans must include the details set out	

	in LC. 55- LC. 61 for approval by the Manager Open Space and Recreation Planning.	
LC. 55	Earthworks and ground preparation	9.2 Ground Preparation - Upper and Lower Playing Fields Reinstatement
	Earthworks and ground preparation design and management must include the following:	
(a)	Upper and Lower playing field reinstatement: The lower and upper fields will be reinstated to function for sports fields use	9.2 Ground Preparation - Upper and Lower Playing Fields Reinstatement
(b)	Proposed finished ground levels: Proposed ground levels across the site that will result in all areas of the park, including any playing or sports fields, being fit for purpose	9.2 Ground Preparation - Upper and Lower Playing Fields Reinstatement
(c)	Proposed finished ground and land drainage: Anticipated final overland flow paths for stormwater including details of how final ground levels and slope treatment will manage site run-off into the stream environments and not exacerbate sediment discharge to streams or result in erosion.	8.3.7 Ground and Land Drainage
(d)	Reinstatement Areas: Details illustrating how areas disturbed or impacted by the construction project will be reinstated to be fit for purpose, and will be designed to be able to be practically and cost effectively maintained and managed	8.3.8 Reinstatement Areas
(e)	Topsoil management: Methods for ensuring that topsoil used for reinstating areas will be weed free	8.3.4 Topsoil Management
(f)	Compaction areas: Methods to be employed to repair compacted ground and ensure new ground material build up is suitable for the intended end use and long-term sustainability and maintenance of that use. Methods must ensure that areas subject to compaction or backfilling do not create areas that will not drain and/or will not allow new planting to successfully establish and grow in the long term or ground conditions that result in sports fields or walking tracks that do not drain or function properly	8.3.5 Compaction
(g)	Backfill inspection and monitoring: An inspection and monitoring programme for backfilled areas to be undertaken by the project landscape architect to ensure that suitable material is being used for the intended end result.	8.3.6 Reservoir Backfill Design
Note:	This condition set is intended to ensure that methods and details of ground stabilisation, ground surface finishing, and reinstatement of engineered and/or compacted areas have taken account of and addressed landscaping and ecological enhancement requirements, long term park function and use, along with the appropriate management of permanent surface run off and long term reinstatement stability and planting reestablishment success. This applies to both reinstated 'natural' slope and backfill areas, and finished track and sport field surfaces.	
	Any areas of engineered fill or geotextile or any other products designed to enable planting into steep slopes or difficult ground conditions must be clearly identified on landscape plans to enable effective monitoring of planting associated with those areas.	
LC. 56	Landscape design and management	
	Landscape design and management must include the following:	
(a)	Landscape and planting strategies: A landscape and planting strategy for the site, including:	8.4.1 Planting Species and Planting Specifications
i.	Use of planting that is varied in height and scale to disguise any uniform slope areas	8.4.1 Planting Species and Planting Specifications
ii.	The identification and intention of area specific planting strategies and landscape design treatments, including species selection and maintenance requirements, for reference in monitoring the success of planting and landscape works	8.4.1 Planting Species and Planting Specifications
iii.	Any planting or planting areas to be planted outside the standard planting seasons that will require maintenance to address	8.4.1 Planting Species and Planting Specifications

	potential plant stress (for example irrigation)	
iv.	Any areas where planting may need to be delayed until a suitable planting period (to maximise planting success), and that may need to be suitably maintained and stabilised in the interim period	8.4.1 Planting Species and Planting Specifications
v.	Eco-sourced native plants and providing sufficient lead times to supply and where necessary harden plants, to achieve the quantities needed.	8.4.2 Eco-Sourcing
(b)	Landscaping of backfill areas: Plans and details that show earthworks backfilling methods and materials have been tested and approved by a suitably qualified landscape architect who can confirm that the landscaping and vegetation proposed will be able to grow in the materials proposed	8.3.6 Reservoir Backfill Design
(c)	Landscaping of reservoir 'top' and identified areas to be kept clear of trees: Final design of the top of the reservoir and any areas identified by Wellington Water that must be kept clear of trees must:	8.4.3 Landscaping of Reservoir Top
i.	Clearly define areas that must be kept clear of vegetation in perpetuity	8.4.3 Landscaping of Reservoir Top
ii.	Limit open grass area as far as possible to try and achieve a character similar to that which existed pre-construction	8.4.3 Landscaping of Reservoir Top
iii.	Within any open space area on the top of the reservoir, create an informal lookout space	8.4.3 Landscaping of Reservoir Top
(d)	Track network planning: Plans and details that show the location and design specification for the final track network, including reinstatement of closed tracks. This shall be integrated with temporary track planning and design requirements (LC 72 (b))	8.5.1 Final Track Network
(e)	Landscape treatment integration: Specific landscape treatments that will be applied at the edge of the reinstated licence area to integrate new ground levels and associated landscape treatments within the licence area into the undisturbed landform and vegetation patterns outside of the licence area in a way that provides for the intended use and management of that land and minimises visual effect	8.6.3 Landscape Treatment Integration
(f)	Landscape modification and review: If proposed landscaping fails or is compromised by either the methods and materials of backfilling, and must be changed, a landscape review and amendment process, involving a suitably qualified landscape architect and ecologist, for presenting changes to Manager Open Space and Recreation Planning that will achieve the same outcome anticipated for mitigating the effects of the reservoir project	8.11.1 Maintenance
LC. 57	Maintenance and management schedule and costs	
	The LEMP and PFMP must include a long-term maintenance and management plan and schedule for the licence area and surrounding landscape that has been disturbed or used by the project. The finished site must be maintained and managed for the primary purpose of Wellington Town Belt Reserve while allowing for the operation of the reservoir and associated infrastructure. The maintenance and management schedule must outline all changes in level of service from the preconstruction site state and clearly define costs associated with the change.	8.11.2 Maintenance and Management Schedule and Costs

Notes:	The Landscape Design and Management condition set is intended to ensure that strategies and methods are developed for appropriately landscaping and planting cleared and reengineered remediated licence areas and integrating modified and re-landscaped areas with adjacent undisturbed areas of the Town Belt.	
	These strategies need to be supported by examples or evidence, including appropriate expert advice, which show that the proposed solutions and methods for landscaping and planting areas that have been stabilised, re-topsoiled and have been tested and will be sustainable and successful in the long term.	
	Methods to replace or provide for alternative methods in these areas, where initially preferred methods or solutions have not worked, must be outlined in the planting specification.	
	The intention is that Wellington Water will return the licence area to Wellington City Council to manage with no outstanding work to complete and no increase in maintenance levels of service (unless the cost of this has been added to operational budgets). All areas disturbed by the project will be reinstated to function as intended as Wellington Town Belt reserves.	
LC. 58	Exposed Reservoir Infrastructure	
	The design and look of any exposed above ground infrastructure associated with the reservoir and associated pipe work must provide for the following:	8.6 Exposed Reservoir Infrastructure
(a)	Integration with landscape: Design, materials and colours must be selected to integrate the infrastructure into the park and the natural landscape as far as practical. Opportunities to create bespoke solutions that can also serve a recreation or amenity purpose must be considered in design.	8.6 Exposed Reservoir Infrastructure
(b)	Reservoir service tunnel access door area: In preparing a draft landscape design for the reservoir service tunnel access door area attention shall be given to preparing a reasonable selection of design alternatives for this area, prior to final design selection.	8.6.1 Pipe Tunnel Access Door
(c)	Reserve maintenance: Design and infrastructure installation must enable easy and practical access for ongoing maintenance of the area/s around any structure/s.	8.6.2 Reserve Maintenance
LC. 59	Reservoir Service Tunnel Access Way Track	
	Landscape design and management of the service access way to the reservoir service tunnel must provide for the following:	8.5.2 Reservoir Service Tunnel Access Way Track
(a)	Service tunnel access track design: The tunnel access way track must be as narrow as practicable and comprise a permeable surface that blends into the natural park landscape and functions primarily as a walking track	8.5.2 Reservoir Service Tunnel Access Way Track
(b)	Service tunnel access track use: Alignment, design and materials used on the service tunnel access way track will ensure the track can only be accessed by WCC, Wellington Water or approved contractor vehicles for normal reservoir	8.5.2 Reservoir Service Tunnel Access Way Track

	and park maintenance, servicing and management activities	
(c)	Culvert for Waitangi Stream: Provision for the safety of track users in the final design of the Waitangi Stream tributary stream culvert that goes underground into the stormwater network.	8.5.3 Culvert for Waitangi Stream
LC. 60	Access Track between Upper and Lower Playing Fields	
	Landscape design and management of the access track between the upper and lower playing fields must provide for the following:	9.2.6 Access Track between Upper and Lower Playing Fields
(a)	Access way use for walkway and maintenance vehicles: A final reinstatement design for the access way track between the upper and lower field that provides for the use of the access way as part of the park's walking track network and as a route for park maintenance vehicles.	9.2.6 Access Track between Upper and Lower Playing Fields
(b)	Stability and erosion control: An access way design and construction that avoids erosion of the access way surface and any erosion and sedimentation impact on the Papawai stream environment	9.2.6 Access Track between Upper and Lower Playing Fields
(c)	Access way stream edge planting: Planting along the access way stream side edge that protects and strengthens the top of the stream bank adjacent to the access way and the stream crossing at the bottom of the access way	9.2.6 Access Track between Upper and Lower Playing Fields
LC. 61	Licence Area Park Entrances and Edge Design	
	Landscape design and management of the licence area's park entrance areas and edges (both with adjacent Town Belt land and residential areas) must provide for the following:	8.7 Park Entrances and Edge Design
(a)	Rolleston Street park entrance design: Design of the Rolleston Street road entrance and western upper field edge that provides for access to the pipe tunnel entrance, walking access to the track network and improved sports field parking and vehicle manoeuvring space while not impacting sports field and side-line activity, function and maintenance.	8.7.1 Rolleston Street
(b)	Upper field northern and southern edges: The northern and southern edges of the upper field may require ground level changes and new planting to successfully integrate the uncompacted and resurfaced field into the undisturbed field edges and incorporate any new drainage and side-line areas for spectators.	8.7.2 Upper Field Edges
(c)	Reinstatement of the Hargreaves Street entrance	8.7.3 Hargreaves Street
(d)	Lower playing access from southern car park area: Reinstatement of the driveway and entrance to the lower playing field at the south eastern corner. Access for maintenance is required while stopping public vehicle access onto the field. Parking and manoeuvring space will be designed to maximise public parking for visitors to the park	8.7.4 Lower Playing Field Access from Southern Car Park
(e)	Fencing plan and reinstatement: A fencing plan and list of all fencing to be reinstated and/or newly installed across the site that is fit for purpose and meets WCC parks infrastructure specifications. The fencing will be located, specified and	8.7.5 Fencing Plan and Reinstatement

	installed in such a way that the maintenance of the fences and the land around them has been considered and is practical.	
LC. 62	Lower playing field flood management, final field design and Papawai Stream edge	8.8.1 Lower Playing Field Flood Management
	Prior to commencing construction Wellington Water shall investigate (in consultation with the Manager Open Space and Recreation Planning) whether:	
(a)	Flood management: Any feasible options may exist to improve the management of flood events in the Papawai Stream that could avoid or reduce the flow of stormwater over the stream's bund edge onto the field and general seepage through the bund into the field	8.8.1 Lower Playing Field Flood Management
(b)	Papawai Stream ecological enhancement: Any feasible options may exist to enhance the ecological function of the stream in conjunction with any flood management enhancements	8.8.2 Papawai Stream Ecological Enhancement
(c)	Stream enhancement incorporation in lower playing field reinstatement: Any design solutions arising from (a) and/or (b) could be practically incorporated into works associated with reinstating the lower playing field following the completion of reservoir backfilling.	8.8.2 Papawai Stream Ecological Enhancement
Note:	The intention of this condition is to ensure that Wellington Water investigate opportunities for improving the flood management of Papawai Stream and the lower playing field edge design and drainage prior to finalising the PFMP and LEMP. Where a feasible option is identified to address these matters, it is expected that this will feature in the final reinstatement design for the lower playing field.	
LC. 63	Draft LEMP and PFMP feedback	
	A draft LEMP and PFMP, including any proposed variation to an approved LEMP or PFMP, must be submitted to the WCC Manager Open Space and Recreation Planning for comment and feedback at least 20 working days prior to the final management plan/s being lodged with the CMO for certification.	4.2 Management Plan Submission & Approval Process
Note:	The intention of this condition set is to ensure that the Manager Open Space and Recreation Planning is consulted prior to preparing any draft LEMP and PFMP for the site, and prior to these draft documents being lodged with the Manager for formal review and feedback.	
	The Manager Open Space and Recreation Planning will have the opportunity to formally comment and provide feedback on any draft LEMP and PFMP prepared by Wellington Water or its contractor/s, prior to these draft documents being finalised and submitted to the CMO for final Manager assessment and approval through the designation condition management plan certification process {DC11}.	4.2 Management Plan Submission & Approval Process
	In providing feedback or comment on any draft management plans, the Manager will focus on the matters outlined in LC LC. 55- LC. 61, and can request that any draft management plan is amended or redrafted and/or can require further	4.2 Management Plan Submission & Approval Process

	detail or information to be included in the draft plan prior to it being either resubmitted as a draft plan or submitted for certification.	
	It is expected that the Manager will be informed of any CRG feedback received on any draft plan, and how this has been considered in the draft. This should include details of where feedback has or has not been addressed or incorporated in the draft document, and the reasons for this action.	4.2 Management Plan Submission & Approval Process
	The Manager in responding to any draft management plan must be satisfied that the final outcome of the proposal on the Town Belt is as intended when approval was granted to the licence and easement.	4.2 Management Plan Submission & Approval Process
Temporary Construction Site Area: Site Fencing		
LC. 66	Fencing plan: In conjunction with preparing a draft Construction Management Plan (CMP), as required under designation conditions DCII, 12, 16 and 17, Wellington Water must include in its draft CMP for CMO feedback a plan of all perimeter fencing that will mark or enclose the total extent of site used, or licenced for use, during the construction period. This plan shall include the following information:	8.7.6 Construction Temporary Fencing
(a)	Location and Type: Fence location, and fencing typology and form (i.e. security fencing, acoustic screening, silt fencing etc)	8.7.6 Construction Temporary Fencing
(b)	Staging: Fencing staging, where it is anticipated that fencing may be shifted or altered or amended over the course of the reservoir excavation ¹ construction, backfill, remediation and site landscape and sport field remediation phases,	8.7.6 Construction Temporary Fencing
(c)	installation and removal method: Installation and removal methodology for fencing, intended to minimise damage to vegetation, tree roots and land outside of the licence area licence area.	8.7.6 Construction Temporary Fencing
(d)	Inspection and maintenance: An inspection and maintenance regime to ensure that fencing is maintained in good order and functioning at all times as intended.	8.7.6 Construction Temporary Fencing
(e)	Final removal: A requirement for all fencing to be removed within 20 working days of the completion of construction.	8.7.6 Construction Temporary Fencing
(f)	Fencing retention approval: Any fencing proposed to be retained within the licence area beyond this period must be approved in writing by the Manager Open Space and Recreation Planning.	8.7.6 Construction Temporary Fencing
Maintenance and reinstatement of access way between Salisbury Terrace and Harriers Club Building		
LC.73	Maintenance of access way to lower playing field.	
	Wellington Water, or its contractor, will be entirely responsible over the duration of the project for the maintenance of the public vehicle access from Salisbury Terrace to the Harriers Club building located on the east side of the Prince of Wales Park lower playing field (the lower field public access way). This will include a responsibility for ensuring that any potholes and other damage resulting from construction of the works are identified and fixed.	8.9 Maintenance and Reinstatement of Access Way
LC.74	Preconstruction condition survey: access way and car parking area	
	At least 20 working days prior to construction commencing Wellington Water, or its contractor, shall carry out a	8.9.1 Preconstruction Condition Survey & 6.1 Pre-construction Notification Requirements

	preconstruction condition survey of the lower field public access way and the public car parking area to the south of the lower field, using an appropriately qualified engineer. A report of this survey will be supplied to the Manager Open Space and Recreation Planning.	
LC.75	Timeframes for repairing project damage to access way and/or car parking area	
	Wellington Water or its contractor shall repair pot holes or other damage resulting from the project to the lower field public access way and/or car parking area either within 10 working days of being notified to the CLP, the CMO or the Manager Open Space and Recreation Planning, or within any other timeframe otherwise agreed in writing with the Manager Open Space and Recreation Planning.	8.9.2 Access Way and Car Parking Inspection
LC.76	Access way and car parking area inspection following lower playing field remediation	
	Unless otherwise agreed in writing by the Manager Open Space and Recreation Planning, within 20 working days of the completion of the remediation of the lower playing field, Wellington Water or its contractor shall organise with the Manager a joint inspection of lower field public access way and public car parking area to determine and agree whether remedial/repaving work, if any, are required, as a result of the project, to reinstate the access way and/or car parking surface.	8.9.2 Access Way and Car Parking Inspection & 6.2 During Construction Notification Requirements
LC.77	Access way and car parking area remedial works	
	Any agreed remedial or reinstatement works, including repaving, shall be completed and certified by the CMO, prior to the Manager, Open Space and Recreation Planning and the Manager, Sports and Recreation Operations and Contracts, confirming in writing, under designation condition DC42 that the reinstated lower field, and related tracks, retaining walls, fencing and drainage are suitable for organised sports use and public activities to commence.	8.9.3 Remedial Works and Costs
LC.78	Access way and car parking area remedial works costs: Wellington Water shall meet all fair and reasonable costs of undertaking any agreed remedial and/or reinstatement work/s.	8.9.3 Remedial Works and Costs
Existing Park Infrastructure		
LC.83	Preconstruction inspection: parks infrastructure	
	At least 40 working days prior to commencing any work on site the site manager or CLP must, unless otherwise agreed in writing by the Manager Open Space and Recreation Planning, arrange a site walkover with the project landscape architect and the Manager Open Space and Recreation Planning to identify and inventory all existing park infrastructure (e.g. gates, barriers, seats, signs, fences, retaining walls, goal posts etc) that must be removed, stored, relocated or disposed of by Wellington Water or its contractor. Any items scheduled for relocation or disposal that will need to be replaced in conjunction with site remediation will be identified.	6.1 Pre-construction Notification Requirements
LC.84	Draft parks infrastructure inspection and inventory management report: A draft report of the parks infrastructure inspection, including an inventory management schedule and plan must be produced by Wellington Water or its contractor, unless otherwise agreed in writing by the Manager Open Space and Recreation Planning, and supplied to the Manager Open Space and Recreation Planning for review at least 20 working days prior to commencing any work on site. This draft report shall include:	8.10.1 Infrastructure Inventory and Inspection & 6.1 Pre-construction Notification Requirements

(a)	Site map: a map of the licence area,	8.10.1 Infrastructure Inventory and Inspection
(b)	Asset schedule: the location and schedule of all identified park assets,	8.10.1 Infrastructure Inventory and Inspection
(c)	images: photographic images of all identified inventoried items, to assist with identification, tracking and management	8.10.1 Infrastructure Inventory and Inspection
(d)	Management plan: a management plan or schedule for each inventoried item, clearly identifying for each asset/s whether it will be:	8.10.1 Infrastructure Inventory and Inspection
i.	Removed and relocated, and not replaced as part of future site reinstatement	8.10.1 Infrastructure Inventory and Inspection
ii.	Removed and relocated, and scheduled for replacement as part of future site reinstatement	8.10.1 Infrastructure Inventory and Inspection
iii.	Removed and stored by Wellington Water for future reinstatement	8.10.1 Infrastructure Inventory and Inspection
iv.	Removed and disposed of, and scheduled for replacement as part of future site reinstatement	8.10.1 Infrastructure Inventory and Inspection
v.	Removed and stored by Wellington Water, with a decision to be made by the Manager Open Space and Recreation Planning, prior to commencing site remediation, regarding asset relocation, disposal, reinstatement and/or replacement	8.10.1 Infrastructure Inventory and Inspection
vi.	Retained and managed in situation, including any management plan for the monitoring, protection and maintenance of the asset.	8.10.1 Infrastructure Inventory and Inspection
LC.85	Parks infrastructure inventory report to be confirmed prior to construction commencing	6.1 Pre-construction Notification Requirements
	A final report of the infrastructure inspection and inventory management schedule must, unless otherwise agreed in writing by the Manager Open Space and Recreation Planning, be confirmed in writing by the Manager Open Space and Recreation Planning prior to the commencement of any site clearance, enabling works or construction related activity.	6.1 Pre-construction Notification Requirements
LC.86	Park asset removal, relocation, storage, reinstatement and replacement costs:	
	Wellington Water shall meet all fair and reasonable costs for removing, relocating, storing, replacing and/or reinstating any park assets within the licence area.	8.10.1 Infrastructure Inventory and Inspection
Notes:	This condition set is required to ensure that parks assets within the licence area are jointly inspected by the Manager Open Space and Recreation Planning and Wellington Water, or its contractor, well in advance to the commencement of construction, and that an agreed management plan is developed for asset removal, relocation, storage, disposal, reinstatement and/or future replacement.	
	It is anticipated that some items will not be able to be removed in no way that would enable them to be appropriately and/or cost effectively reused or reinstated. In these cases, assets will need to be disposed of by Wellington Water.	
LC.87	Confirmation whether lower playing field Sports Pavilion will be used: Prior to commencing construction Wellington Water or its contractor shall confirm whether the sports pavilion building on the lower field will be needed in support of site operations.	8.10.1 Infrastructure Inventory and Inspection
LC.88	Sports Pavilion not required for use -subject to monitoring and management: Where the sports pavilion is not required for use, Wellington Water or its contractor shall suitably monitor and protect the building from any use or damage during the construction period. The monitoring	8.10.1 Infrastructure Inventory and Inspection

	and management of the sport pavilion shall be included in the parks infrastructure inspection and inventory management report detailed in LC 84.	
LC.89	<p>Sports Pavilion potentially required for use-subject to monitoring and management:</p> <p>Where the sports pavilion is identified is potentially being needed for use, but no timeline has been agreed for when this may occur, Wellington Water or its contractor shall suitably monitor and protect the building from any use or damage. The monitoring and management of the sport pavilion shall be included in the parks infrastructure inspection and inventory management report detailed in LC 84.</p>	8.10.1 Infrastructure Inventory and Inspection
LC.90	<p>Sports Pavilion identified for use-Licence variation required:</p> <p>Where the sports pavilion is identified for use, either prior to construction or at any stage throughout the project, Wellington Water or its contractor shall apply in writing to the Manager Open Space and Recreation Planning to vary the licence agreement area to include the pavilion.</p>	8.10.1 Infrastructure Inventory and Inspection
LC.91	<p>Sports Pavilion identified for use-consenting approvals and costs:</p> <p>Where the sports pavilion is identified for use, Wellington Water or its contractor shall meet all costs associated with varying this licence to include the use of this building, and shall be responsible for obtaining any other required statutory approvals to use the building and any associated costs.</p>	8.10.1 Infrastructure Inventory and Inspection
Note:	The TBA application did not include use of the sports pavilion within the temporary construction area covered by this licence.	8.10.1 Infrastructure Inventory and Inspection
	Acknowledging that the building could be used by the project team during the construction, this condition sets out the terms that would apply to the use of this building.	
	Terms and conditions of use /building inspection, maintenance, repair and/or reinstatement) would form part of any licence consideration and approval process.	
Vegetation Clearance		
LC.92	<p>Certification of vegetation clearance:</p> <p>Following the completion of programmed vegetation clearance from the licence area, described in the CMP, Wellington Water, or its contractor, shall provide certification to the Manager Open Space and Recreation Planning that vegetation clearance has been carried out in accordance with any approved LEMP, CMP and in accordance with any required designation and/or resource consent conditions.</p>	7.3 Vegetation Removal & Retention 6.2 During Construction Notification Requirements
Monitoring, inspection and defects period		
LC.93	Condition and site monitoring	
(a)	Record of site monitoring: The CLP must keep a record of site monitoring associated with the Designation and GWRC conditions and make this available to the CRG.	8.11.4 Monitoring and Inspection Plan
(b)	Monitoring and inspection plan: The LEMP and PFMP must include a monitoring and inspection plan prepared by the Wellington Water Project Landscape Architect with input from their specialists in maintenance of the various areas of the site (e.g. ecologists, sports turf specialist, landscapers, nursery managers, irrigation designers, engineers etc). The plan must outline:	8.11.4 Monitoring and Inspection Plan
i.	key stages of the project where monitoring and inspection is required	8.11.4 Monitoring and Inspection Plan

ii.	the intention of inspection and	8.11.4 Monitoring and Inspection Plan
iii.	success measures.	8.11.4 Monitoring and Inspection Plan
iv.	describe agreed processes for remedy of defects and failed planting including timeframes and re-inspections.	8.11.4 Monitoring and Inspection Plan
(c)	Monitoring and inspection parties: Monitoring and inspections required under LC.93(b) will include, the CMO, CLP, the Manager Open Space and Recreation Planning and any others required to properly consider the issues being monitored or inspected, unless otherwise agreed in writing by the Manager Open Space and Recreation Planning.	8.11.4 Monitoring and Inspection Plan
(d)	Monitoring and inspection frequency: Monitoring and inspections will occur at a minimum:	8.11.4 Monitoring and Inspection Plan
i.	On completion of any area of ground works including tracks, sports fields or other earthworks required to achieve an ecological, amenity or recreation function. This must also be prior to any planting into those completed areas to check ground conditions are suitable for the proposed planting	8.11.4 Monitoring and Inspection Plan
ii.	In accordance with any additional monitoring and inspection requirements identified in LC. 93(b){i}, including an annual inspection of completed planting areas.	8.11.4 Monitoring and Inspection Plan
LC.94	Final Site Inspections	
	Wellington Water must arrange a schedule of final site inspections following the completion of construction and site remediation, to be agreed in writing by the Manager Open Space and Recreation Planning, as the site is progressively vacated by the project work and associated contractors. The inspection schedule shall provide:	8.11.5 Final Site Inspections 6.3 Post – Construction Notification Requirements
(a)	Sufficient opportunity for identified issues to be resolved by Wellington Water or its contractor to the satisfaction of the Manager Open Space and Recreation Planning, prior to final site vacation.	6.3 Post – Construction Notification Requirements 8.11.5 Final Site Inspections
(b)	For final site inspection by the Manager Parks Sports and Recreation Operations and Manager Open Space and Recreation Planning and the Project Landscape Architect.	6.3 Post – Construction Notification Requirements 8.11.5 Final Site Inspections
LC.95	Defects and liability period - Playing Fields	
	There will be a two seasons defects period on the playing field reinstatement. This means that from the date that the CMO, in consultation with the Manager, Open Space and Recreation Planning, confirms in writing that the reinstated field or fields, and related tracks, retaining walls, fencing and drainage are suitable for organised sports use and public activities to commence, two seasons of sport (i.e. a winter and summer season) will be played on the field/fields to confirm that the fields are performing as anticipated. This may extend beyond the one-year timeframe of the Designation condition 42 however it is a more accurate test of the performance of the field/s.	9.3.1 Defects and Liability Period – Playing Fields

LC.96	Defects and liability period- New Tracks	
	There will be a defects period of nine months on new track builds and track reinstatement (including the track, surface materials, drainage and any steps, retaining, handrails, boardwalks or bridges) from the date of completion and final sign off by the Manager, Open Space and Recreation Planning. Any defects must be addressed and repaired to the satisfaction of the Manager, Open Space and Recreation Planning within one month of identification of any issue.	8.11.6 Defects and Liability Period – New Tracks
LC.97	Defects and liability period - Planting and Landscaping: The planting and landscaping defects liability period is five years. While there may be areas that have achieved the success measures outlined in Designation condition 33, Wellington Water will still be liable until the end of the five year period so as to ensure the ground conditions are performing as intended.	8.11.7 Defects and Liability Period – Planting and Landscaping
Note:	There is the potential that planting in stabilised slopes, in shallow soils or steep and/or exposed slopes will flourish for a short period before failing. The five year period allows for appropriate monitoring of uncertainty around ground treatment and planting solutions.	8.11.7 Defects and Liability Period – Planting and Landscaping

4 Management Plan Framework

4.1 Management Plan Consolidation Content

The Omāroro Reservoir Project requires an overarching Construction Environmental Management Plan (CEMP) with four (4) environmental sub - management plans pursuant to the conditions issued by GWRC, WCC and the TBA. These plans will be administered in accordance with the requirements and constraints imposed by these regulatory permissions. The Construction Environmental Management Plan (CEMP) provides the overarching framework for the management of the environmental aspects of the project and is supported by these sub management plans focusing on the specialist environmental areas of erosion, sediment and dust control, noise and vibration, ecology and contaminated soils. To demonstrate how HEB Construction will comply with the conditions the suite of management plans below have been produced:

1. **Construction Environmental Management Plan (CEMP)** – consolidates:
 - a. Construction Management Plan
2. **Erosion & Sediment Control Plan (ESCP)** – consolidates:
 - a. Flocculation Management Plan (FMP)
 - b. Earthworks Management Plan (EMP) – via GWRC
 - c. Earthworks Management Plan (EMP) – via WCC
 - d. Contaminated Soils Management Plan
3. **Construction Noise & Vibration Management Plan (CNVMP)**
4. **Landscape & Ecology Management Plan (LEMP)** – consolidates:
 - a. Play Fields Management Plan (PFMP)
 - b. Construction Site Area Fencing Plan
5. **Construction Traffic Management Plan (CTMP)** – consolidates:
 - a. Site Specific Traffic Management Plan (SSTMP)
 - b. Pedestrian Management Plan

4.2 Management Plan Submission & Approval Process

The LEMP is one of five (5) specialised Environmental Management Plans to be submitted to the Wellington City Council (WCC) Compliance Monitoring Officer (CMO) for certification. The LEMP includes more detailed information and specifications within the following Appendices:

- Appendix 4 – Landscape Detailed Design Drawings
- Appendix 5 – Technical Specification Landscape
- Appendix 6 - Construction Specification - Sport field drainage and turf establishment
- Appendix 9 —Civil Drawings including Sports Playing Field Drawings

Consultation with the WCC Manager Open Space and Recreation Planning was carried out during the preparation of the Draft LEMP.

Under TBAC a draft LEMP (in consolidation with the Playing Fields Management Plan PFMP), including any proposed variation to an approved LEMP, must be submitted to the WCC Manager Open Space and Recreation Planning for comment and feedback at least 20 working days prior to the final management plan being lodged with the CMO for certification.

Any Community Reference Group (CRG) feedback will also be considered, addressed and responded to within this LEMP.

Construction shall not commence until written certification of the LEMP (including the PFMP) from the CMO has been received.

The draft PFMP section of the LEMP was prepared with input from a suitably qualified sports turf specialist (*Turf Management Services Ltd & Sports Surface Design and Management*).

SSDM has been engaged by Beca Ltd to provide specialist turf input. Throughout the draft PFMP process SSDM liaised with representatives of the Manager Open Space and Recreation Planning in relation to specific sports field re instatement requirements.

The LEMP including the PFMP will demonstrate how the outcomes of the consultations with all parties have been incorporated.

The Manager in responding to any draft management plan must be satisfied that the outcome of the proposal on the Town Belt is as intended when approval was granted to the licence and easement.

5 Roles & Responsibility

The roles and responsibilities of key staff members within HEB Construction to implement the CEMP and its sub-management plans, including this LEMP, are set out in Table 5.

Table 5: Roles and Responsibility for Implementing the CEMP and the Sub – Management Plans

Position	Contact	Key CEMP Responsibilities
Consent Holder	Wellington Water (Contact details TBC)	Overall responsibility to ensure resource consent conditions and CTMP requirements met.
HEB Project Manager	Paul Reid HEB Construction Ltd E: paul.reid@heb.co.nz M: 027 476 4098	<p>Overall responsibility for reporting to WCC</p> <p>Submit the Construction Environmental Management Plan (CEMP) and associated sub management plans including this LEMP for review and certification prior to implementation</p> <p>The Manager shall be given a minimum of two working days (48 hours) notice prior to the works commencing. Note: to include the consent reference WGN180065 and the name and phone number of a contact person responsible for the proposed works.</p> <p>Arrange and conduct a pre-construction site meeting prior to any work authorised by the resource consent WGN180065 commencing on site and invite, with a minimum of 10 working days' notice, the Greater Wellington Regional Council and all contractor(s) undertaking the works.</p> <p>Ensure that the site is available to the Compliance Manager or other Council representatives for inspections if required subject to receiving the appropriate site induction and health and safety briefings.</p> <p>Responsible for all day to day construction operations on the project.</p> <p>Responsible for routine communication and notifications to Regulatory Agencies.</p> <p>Overall responsibility for ensuring environmental compliance is maintained onsite and all actions identified by onsite inspections are completed.</p> <p>Implementation of the CEMP and sub management and mitigation plans onsite.</p>
HEB Project Engineer	Mark O'Hare HEB Construction E: Mark.O'Hare@heb.co.nz M: +64 27 306 6341	<p>Responsible for all day to day construction works.</p> <p>To ensure the Site is operated in accordance with the LEMP, Design Drawings and Technical Specifications.</p>
Landscape Architect	Steve Dunn Boffa Miskell E: steve.dunn@boffamiskell.co.nz M: 027 658 1462	Confirmation of the maximum extent of vegetation clearance with the Project Ecologist and Project Manager and confirmation of the methods of protection of vegetation in buffer zones/'no-go' areas and other protection of other vegetation on site.

		<p>Responsible for input into Construction Environmental Management Plan (CEMP) and LEMP</p> <p>Undertake a planting review within 3 years of completion of construction of the reservoir</p> <p>Confirming landscaping works are being undertaken in accordance with the Contract, Technical Specifications & approved LEMP.</p>
Project Ecologist	<p>Stephen Fuller Boffa Miskell E:Stephen.Fuller@boffamiskell.co.nz M: 027 222 5741</p>	<p>Undertake a lizard survey (with a suitably qualified herpetologist) prior to vegetation clearance</p> <p>Confirmation of the maximum extent of vegetation clearance with the Project Landscape Architect and Project Manager and confirmation of the methods of protection of vegetation in buffer zones/'no-go' areas and other protection of other vegetation on site.</p> <p>Provide input and advice where required with the LEMP, ESCP and CEMP management plans</p> <p>Ornithologist: Pre-clearance check for breeding birds</p> <p>Provide recommendations if required</p>
Arborist	TBC	<p>Removal of large trees</p> <p>Limb identification for protection and or removal (refer tree protection and removal plan in Landscape drawings)</p>
HEB Environmental Manager	<p>Elisa Chillingworth HEB Construction Ltd E: elisa.chillingworth@heb.co.nz M: 027 488 8151</p>	<p>Completion of routine environmental site inspections, development of actions for remediation of any issues identified.</p> <p>Provision of Environmental Training (Erosion and Sediment Control, Management of Hazardous Substances, Archaeological site Management, Emergency Spill Response).</p> <p>Provide environmental guidance and advice to the site staff.</p> <p>Onsite environmental compliance manager.</p> <p>Completion of routine monthly environmental audits.</p>
Community Reference Group (CRG)	<p>Various – includes submitters to consent, parties who have requested ongoing involvement, community group representatives and others.</p>	<p>To provide feedback for the draft LEMP and to be kept informed of site developments.</p>
Health and Safety Adviser	<p>Nichola Henderson HEB Construction Ltd E: Nichola.Henderson@heb.co.nz M: 027 590 9841</p>	<p>Completion of routine monthly safety site inspections, development of actions for remediation of any issues identified.</p>

6 Implementation and Operation

Tables 1, 2 and 3 have previously identified the various regulatory permissions in the form of Resource Consents, Designation, and a Licence. The following sections of the LEMP outline how these conditions relating to the LEMP (including the PFMP) will be met and managed by the Omāroto reservoir Project delivery team.

6.1 Pre-Construction Notification Requirements

Prior to construction commencing on site the following notifications from the Resource Consents and designation conditions and are required:

Table 6: Pre – Construction Notification Requirements identified within GWRC Conditions

Pre-construction requirements		LEMP Section Reference or Relevant Management Plan
3	The Manager shall be given a minimum of two working days (48 hours) notice prior to the works commencing. Note: Notifications can be emailed to notifications@gw.govt.nz. Please include the consent reference WGN180065 and the name and phone number of a contact person responsible for the proposed works.	Construction Environmental Management Plan (CEMP) 7.1.1 Pre-construction Notification Requirements LEMP 6.1 Pre-construction Notification Requirements
4	The consent holder shall provide a copy of this consent and any documents and plans referred to in this consent to each operator or contractor undertaking the works authorised by this consent, prior to the works commencing. Note: It is recommended that the contractor(s) be verbally briefed on the requirements of the conditions of this consent prior to works commencing.	Construction Environmental Management Plan (CEMP) 7.1.1 Pre-construction Notification Requirements LEMP 6.1 Pre-construction Notification Requirements

Table 7: Pre – Construction Notification Requirements WCC Designation Conditions

Pre-construction requirements		LEMP Section Reference or Relevant Management Plan
DC.5		
	Prior to commencing any construction works, the Requiring Authority shall arrange and conduct a pre-construction site meeting with the contractor (at a minimum the Project Manager and Site Manager) undertaking the works and invite, with a minimum of 10 working days' notice, WCC's CMO and any other key WCC representatives determined by the CMO.	Construction Environmental Management Plan (CEMP) 7.1.1 Pre-construction Notification Requirements LEMP 6.1 Pre-construction Notification Requirements
Note:	In the case that any of the invited parties, other than the representative of the Requiring Authority and the contractor, do not attend this meeting, the Requiring Authority will have complied with this condition, provided the invitation requirement is met.	
DC.32(a)	At least 15 Working Days prior to Commencement of Construction or vegetation removal, the Requiring Authority shall submit a LEMP to the CMO for certification	Construction Environmental Management Plan (CEMP) 7.1.1 Pre-construction Notification Requirements LEMP 6.1 Pre-construction Notification Requirements
DC.32(b)	The LEMP shall be in general accordance with the Landscape Strategy and Ecological Impact Assessment provided in the AEE and address the matters in condition DC. 33	Construction Environmental Management Plan (CEMP) 7.1.1 Pre-construction Notification Requirements

		LEMP 6.1 Pre-construction Notification Requirements
DC.36	Prior to commencing construction, the Requiring Authority shall remove and store the existing bench seat and plaque located on the reservoir site. Within six months of the completion of construction the bench seat and plaque shall be re-instated.	Construction Environmental Management Plan (CEMP) 7.1.1 Pre-construction Notification Requirements LEMP 6.1 Pre-Construction Notification Requirements 6.2 Post Construction Notification Requirements
DC.38 a)	At least 15 Working Days prior to Commencement of Construction the Requiring Authority shall submit a Playing Field Management Plan (PFMP) to the CMO for certification.	Construction Environmental Management Plan (CEMP) 7.1.1 Pre-construction Notification Requirements LEMP 4.2 Management Plan Submission & Approval Process

Table 8: Pre – Construction Notification Requirements TBA Licence Conditions

Pre-construction requirements		LEMP Section Reference or Relevant Management Plan
LC. 63	Draft LEMP and PFMP feedback: A draft LEMP and PFMP, including any proposed variation to an approved LEMP or PFMP, must be submitted to the WCC Manager Open Space and Recreation Planning for comment and feedback at least 20 working days prior to the final management plan/s being lodged with the CMO for certification.	Construction Environmental Management Plan (CEMP) 7.1.1 Pre-construction Notification Requirements LEMP 6.1 Pre-construction Notification Requirements
LC.74	Preconstruction condition survey: access way and car parking area: At least 20 working days prior to construction commencing Wellington Water, or its contractor, shall carry out a preconstruction condition survey of the lower field public access way and the public car parking area to the south of the lower field, using an appropriately qualified engineer. A report of this survey will be supplied to the Manager Open Space and Recreation Planning.	Construction Environmental Management Plan (CEMP) 7.1.1 Pre-construction Notification Requirements LEMP 6.1 Pre-construction Notification Requirements
LC.83	Preconstruction inspection: parks infrastructure: At least 40 working days prior to commencing any work on site the site manager or CLP must, unless otherwise agreed in writing by the Manager Open Space and Recreation Planning, arrange a site walkover with the project landscape architect and the Manager Open Space and Recreation Planning to identify and inventory all existing park infrastructure (e.g. gates, barriers, seats, signs, fences, retaining walls, goal posts etc) that must be removed, stored, relocated or disposed of by Wellington Water or its contractor. Any items scheduled for relocation or disposal that will need to be replaced in conjunction with site remediation will be identified.	Construction Environmental Management Plan (CEMP) 7.1.1 Pre-construction Notification Requirements LEMP 6.1 Pre-construction Notification Requirements
LC.84	Draft parks infrastructure inspection and inventory management report: A draft report of the parks infrastructure inspection, including an inventory management schedule and plan must be produced by Wellington Water or its contractor, unless otherwise agreed in writing by the Manager Open Space and Recreation Planning, and supplied to the Manager Open Space and Recreation Planning for review at least 20 working days prior to commencing any work on site. This draft report shall include:	8.10.1 Infrastructure Inventory and Inspection & 6.1 Pre-construction Notification Requirements

(a)	Site map: a map of the licence area,	8.10.1 Infrastructure Inventory and Inspection
(b)	Asset schedule: the location and schedule of all identified park assets,	8.10.1 Infrastructure Inventory and Inspection
(c)	images: photographic images of all identified inventoried items, to assist with identification, tracking and management	8.10.1 Infrastructure Inventory and Inspection
(d)	Management plan: a management plan or schedule for each inventoried item, clearly identifying for each asset/s whether it will be:	8.10.1 Infrastructure Inventory and Inspection
i.	Removed and relocated, and not replaced as part of future site reinstatement	8.10.1 Infrastructure Inventory and Inspection
ii.	Removed and relocated, and scheduled for replacement as part of future site reinstatement	8.10.1 Infrastructure Inventory and Inspection
iii.	Removed and stored by Wellington Water for future reinstatement	8.10.1 Infrastructure Inventory and Inspection
iv.	Removed and disposed of, and scheduled for replacement as part of future site reinstatement	8.10.1 Infrastructure Inventory and Inspection
v.	Removed and stored by Wellington Water, with a decision to be made by the Manager Open Space and Recreation Planning, prior to commencing site remediation, regarding asset relocation, disposal, reinstatement and/or replacement	8.10.1 Infrastructure Inventory and Inspection
vi.	Retained and managed in situation, including any management plan for the monitoring, protection and maintenance of the asset.	8.10.1 Infrastructure Inventory and Inspection

Greater Wellington Regional Council:

- I. The Manager at GWRC will be given a minimum of two working days (48 hours) notice prior to the works commencing via email to notifications@gw.govt.nz.
- II. The Consent Holder (WWL) will provide a copy of this consent and any documents and plans referred to in this consent to HEB Construction and other contractors employed undertaking the works authorised by this consent, prior to the works commencing.

Wellington City Council:

- I. HEB Construction will arrange and conduct a pre-construction site meeting with the Project Manager and Site Manager, undertaking the works and invite, with a minimum of 10 working days' notice, WCC's CMO and any other key WCC representatives determined by the CMO.
- II. Prior to commencement of construction or vegetation removal, the Omāroro project will submit a LEMP to the CMO for certification and construction must not commence until WCC has received a written certification of the LEMP by the CMO.
- III. Prior to commencing construction, the Requiring Authority shall remove and store the existing bench seat and plaque located on the reservoir site.
- IV. At least 15 days prior to commencement of construction a PFMP will be submitted to the CMO for certification.

Town Belt Act Licence:

- I. A draft LEMP, including any proposed variation to an approved LEMP, will be submitted to the WCC Manager Open Space and Recreation Planning for comment and feedback at least 20 working days prior to the final management plan/s being lodged with the CMO for certification.
- II. At least 20 working days prior to construction commencing HEB Construction will carry out a preconstruction condition survey of the lower field public access way and the public car parking area to the south of the lower field, using an appropriately qualified engineer. A report of this survey will be supplied to the Manager Open Space and Recreation Planning.

- III. At least 40 working days prior to commencing any work on site the site manager will arrange a site walkover with the project landscape architect and the Manager Open Space and Recreation Planning to identify and inventory all existing park infrastructure (e.g. gates, barriers, seats, signs, fences, retaining walls, goal posts etc) that must be removed, stored, relocated or disposed of by HEB Construction.
- IV. A draft report of the parks infrastructure inventory must be produced to the Manager Open Space and Recreation Planning at least 20 days prior to construction commencing.

6.2 During Construction Notification Requirements

Table 9: During Construction Notification Requirements WCC Conditions

Post-construction requirements		LEMP Section Reference or Relevant Management Plan
DC.33b	Confirmation of an appropriate buffer between the earthworks and waterways including confirmation of waterway location by longitudinal and cross-section survey. In the case of the Papawai Stream the buffer shall be no less than 10m on the stream's west bank (hillside). In the case of the Waitangi Stream Tributary, to the west of the project site, no buffer shall be less than 5m.	8.1 Buffer Zones 6.2 During Construction Notification Requirements
DC.34(d)	If vegetation clearance must occur during the period identified in condition DC.34 c), a survey shall be undertaken prior to clearance by a suitably qualified and experienced ornithologist to determine if a nest or nests are present. If a nest of any of the species identified in DC. 34c) is located on a tree to be felled, that tree must not be felled until the chick(s) has left the nest	7.1 Nesting Bird Survey 6.2 During Construction Notification Requirements

Table 10: During Construction Notification Requirements TBA Licence Conditions

Post-construction requirements		LEMP Section Reference or Relevant Management Plan
LC.17	Reinstatement and offset works plan consultation: If required by the Manager Open Space and Recreation Planning the planning and implementation of works required under LC. 15 shall occur in consultation with any landscape architect and/or ecologist appointed by the Manager Open Space and Recreation Planning.	Construction Environmental Management Plan (CEMP) 7.1.1 during construction Notification Requirements LEMP 6.2 During construction Notification Requirements
LC.20	Reinstatement and offset works plan approval: The reinstatement and offset plan shall be provided to the Manager Open Space and Recreation Planning for approval 20 working days prior to commencement. Works shall not commence prior to receipt of written approval.	Construction Environmental Management Plan (CEMP) 7.1.1 during construction Notification Requirements LEMP 6.2 During construction Notification Requirements
LC.30	Reinstatement and offset planting plan consultation: If required by the Manager Open Space and Recreation Planning the preparation of the plan and any planning and implementation of works required under LC.27 shall occur in consultation with any landscape architect and/or ecologist appointed by the Manager Open Space and Recreation Planning.	Construction Environmental Management Plan (CEMP) 7.1.1 during construction Notification Requirements LEMP 6.2 During construction Notification Requirements

LC. 31	<p>Review of draft reinstatement and offset planting plan: Any draft reinstatement and offset planting plan required under LC. 29 must be provided to the Manager Open Space and Recreation Planning for review and feedback at least 20 working days prior to the commencement of any reinstatement works, unless otherwise agreed by the Manager.</p>	<p>Construction Environmental Management Plan (CEMP) 7.1.1 during construction Notification Requirements</p> <p>LEMP 6.2 During construction Notification Requirements</p>
LC.76	<p>Access way and car parking area inspection following lower playing field remediation Unless otherwise agreed in writing by the Manager Open Space and Recreation Planning, within 20 working days of the completion of the remediation of the lower playing field, Wellington Water or its contractor shall organise with the Manager a joint inspection of lower field public access way and public car parking area to determine and agree whether remedial/repaving work, if any, are required, as a result of the project, to reinstate the access way and/or car parking surface.</p>	<p>Construction Environmental Management Plan (CEMP) 7.1.2 During Construction Notification Requirements</p> <p>LEMP 6.2 During construction Notification Requirements</p>
LC. 92	<p>Certification of vegetation clearance: Following the completion of programmed vegetation clearance from the licence area, described in the CMP, Wellington Water, or its contractor, shall provide certification to the Manager Open Space and Recreation Planning that vegetation clearance has been carried out in accordance with any approved LEMP, CMP and in accordance with any required designation and/or resource consent conditions.</p>	<p>Construction Environmental Management Plan (CEMP) 7.1.2 During Construction Notification Requirements</p> <p>LEMP 6.2 During construction Notification Requirements</p>

Wellington City Council:

- I. An appropriate buffer between the earthworks and waterways including confirmation of waterway location by longitudinal and cross-section survey is to be confirmed.
- II. If vegetation clearance must occur during the breeding period of kaka, falcon, kakariki, and morepork (1 September to 30 March), then a survey shall be undertaken by a suitably qualified and experienced ornithologist to determine if a nest/nests are present prior to clearance.
- III. If no nests are present, a statement will be sent to The Manager - Open Space and Recreation Planning, confirming the site is safe to commence vegetation clearance.
- IV. If a nest/nests are present, once the chick has fledged, a statement will be sent to The Manager - Open Space and Recreation Planning, confirming the site is free of nests and vegetation clearance can commence.

Town Belt Act Licence:

- I. If any damage to the Papawai Stream or Waitangi Stream tributary bed or margins within the Town Belt, not otherwise provided for within the application documents, a draft reinstatement and offset works plan will be provided to the Manager Open Space and Recreation Planning for review and feedback at least 20 working days prior to the commencement of any reinstatement works.
- II. Any damage to any land or vegetation outside of the project footprint will be subject to reinstatement and the provision of offset planting by the project and a draft reinstatement and offset works plan will be provided to the Manager Open Space and Recreation Planning for review and feedback at least 20 working days prior to the commencement of any reinstatement works.
- III. Any reinstatement works, offset stream works, or offset planting works required on the project will involve the planning and implementation in consultation with the landscape architect and Project Ecologist appointed by the Manager Open Space and Recreation Planning.

- IV. Within 20 working days of the completion of the remediation of the lower playing field, HEB Construction will organise with the Manager a joint inspection of lower field public access way and public car parking area to determine and agree whether remedial works, if any, are required, as a result of the project, to reinstate the access way and/or car parking surface.
- V. Following the completion of required vegetation clearance, HEB Construction shall provide certification to the Manager Open Space and Recreation Planning that vegetation clearance has been carried out in accordance with the approved LEMP and regulatory permissions.

6.3 Post - Construction Notification Requirements

Table 11: Post – Construction Notification Requirements WCC Conditions

Post-construction requirements		LEMP Section Reference or Relevant Management Plan
DC.33n	Subject to achieving the success standards in paragraphs i), ii) and iii) below, there shall be a five-year defects liability and maintenance period for all terrestrial planting, but the maintenance period may be shorter if the success measures have been achieved earlier. At the end of that period, the Requiring Authority shall provide information to the CMO to demonstrate that the planting has been successful, with success defined as follows:	Construction Environmental Management Plan (CEMP) 7.1.3 Post-construction Notification Requirements LEMP 6.3 Post-construction Notification Requirements
DC.33n(i)	In relation to mass planting, successful planting shall be defined as 80% canopy closure whereby a sustainable plant community has been established and where plants have grown to create a canopy that shades the ground and suppresses weed growth	Construction Environmental Management Plan (CEMP) 7.1.3 Post-construction Notification Requirements LEMP 6.3 Post-construction Notification Requirements
DC.33n(ii)	In relation to the planting of specimen trees, successful planting shall be defined as 100% plant survival, with 100% of trees in full leaf (if the relevant species is typically in leaf at that time of year) with the trees to have a habit of growth that is normal to the species and are to be sound, healthy and vigorous with normal and well-developed branch systems	Construction Environmental Management Plan (CEMP) 7.1.3 Post-construction Notification Requirements LEMP 6.3 Post-construction Notification Requirements
DC.33n(iii)	Success in relation to wetland and riparian planting shall be defined as nearly as practicable to the criteria in i), or ii) and in any event as agreed by expert ecologists.	Construction Environmental Management Plan (CEMP) 7.1.3 Post-construction Notification Requirements LEMP 6.3 Post-construction Notification Requirements
DC.36	Prior to commencing construction, the Requiring Authority shall remove and store the existing bench seat and plaque located on the reservoir site. Within six months of the completion of construction the bench seat and plaque shall be re-instated.	Construction Environmental Management Plan (CEMP) 7.1.3 Post-construction Notification Requirements LEMP 6.3 Post-construction Notification Requirements
DC.37	A planting review must be undertaken by a suitably qualified and experienced landscape architect within 3 years of completion of construction of the reservoir. The review will focus on the revegetation and assess the effectiveness of plant growth, particularly on mechanically stabilised slopes. Where required, remedial works shall be undertaken to ensure that planting treatments are successful and have the potential to improve the landscape values of the site. Evidence of this review must be provided to the CMO.	Construction Environmental Management Plan (CEMP) 7.1.3 Post-construction Notification Requirements LEMP 6.3 Post-Construction Notification Requirements

DC.42(a)	There shall be a 1-year defects liability period for works associated with the reinstatement of each of the upper and lower playing fields, including access tracks, retaining walls (where required), fencing and drainage. This 1 year period will commence from the date that the CMO (in consultation with the Manager, Open Space and Recreation Planning and the Manager, Sports and Recreation Operations and Contracts), confirms in writing that the reinstated field or fields, and related tracks, retaining walls, fencing and drainage are suitable for organised sports use and public activities to commence.	Construction Environmental Management Plan (CEMP) 7.1.3 Post-construction Notification Requirements LEMP 6.3 Post-construction Notification Requirements
DC.44 (c)	On completion of work on the Dorking Road access point the Project Arborist shall at their discretion sign off the work and provide a brief account of the project to the Council Arborist and Compliance Officer that documents: <ul style="list-style-type: none"> • Photographs showing stages of any work within the RPA • Effects of work on the trees • Remedial works required 	LEMP 6.3 Post-construction Notification Requirements

Table 12: Post – Construction Notification Requirements TBA Licence Conditions

Post-construction requirements		LEMP Section Reference or Relevant Management Plan
LC.76	Access way and car parking area inspection following lower playing field remediation: Unless otherwise agreed in writing by the Manager Open Space and Recreation Planning, within 20 working days of the completion of the remediation of the lower playing field, Wellington Water or its contractor shall organise with the Manager a joint inspection of lower field public access way and public car parking area to determine and agree whether remedial/repaving work, if any, are required, as a result of the project, to reinstate the access way and/or car parking surface.	Construction Environmental Management Plan (CEMP) 7.1.3 Post-construction Notification Requirements LEMP 6.3 Post-construction Notification Requirements
LC.94	Final Site Inspections: Wellington Water must arrange a schedule of final site inspections following the completion of construction and site remediation, to be agreed in writing by the Manager Open Space and Recreation Planning, as the site is progressively vacated by the project work and associated contractors. The inspection schedule shall provide:	8.11.5 Final Site Inspections 6.3 Post – Construction Notification Requirements
(a)	Sufficient opportunity for identified issues to be resolved by Wellington Water or its contractor to the satisfaction of the Manager Open Space and Recreation Planning, prior to final site vacation.	6.3 Post – Construction Notification Requirements 8.11.5 Final Site Inspections
(b)	For final site inspection by the Manager Parks Sports and Recreation Operations and Manager Open Space and Recreation Planning and the Project Landscape Architect.	6.3 Post – Construction Notification Requirements 8.11.5 Final Site Inspections
LC.96	Defects and liability period- New Tracks: There will be a defects period of nine months on new track builds and track reinstatement (including the track, surface materials, drainage and any steps, retaining, handrails, boardwalks or bridges) from the date of completion and final sign off by the Manager, Open Space and Recreation Planning. Any defects must be addressed and repaired to the satisfaction of the Manager, Open Space and Recreation Planning within one month of identification of any issue.	Construction Environmental Management Plan (CEMP) 7.1.3 Post-construction Notification Requirements LEMP 6.3 Post-construction Notification Requirements

Wellington City Council:

- I. Information will be provided to the CMO to demonstrate that planting has been successful as measured by conditions DC.33n(i) to DC.33n(iii) after the five-year defects liability and maintenance period.

- II. Within six months of the completion of construction the bench seat and plaque located on the reservoir site shall be reinstated.
- III. A planting review will be undertaken by a suitably qualified and experienced Landscape Architect within 3 years of completion of construction of the reservoir and provided to the CMO.
- IV. It is understood that there is an agreed defects liability period for works associated with the reinstatement of each of the upper and lower playing fields. This defects liability period will commence from the date that the CMO confirms in writing that the fields are suitable for organised sports use and public activities to commence.
- V. On completion of work on the Dorking Road access point the Project Arborist shall provide a report to the Wellington City Council Arborist and Compliance Officer that identifies the effects on trees in the area and what remedial action is required. The report will include photographs.

Town Belt Act Licence:

- I. Within 20 working days of the completion of the remediation of the lower playing field, HEB Construction will organise with the Manager a joint inspection of lower field public access way and public car parking area to determine and agree whether remedial work is required as a result of the project, to reinstate the access way and/or car parking surface.
- II. HEB Construction will arrange final inspections following the completion of construction and remediation works. This is to ensure enough time is allowed for issues to be resolved. The final site inspection is between the Manager Parks Sports and Recreation Operations and Manager Open Space and Recreation Planning and the Project Landscape Architect.
- III. There will be a defects period of nine months on new track builds and track reinstatement from the date of completion. Any defects will be addressed and repaired within one month of identification.

7 Key Ecological Issues

One of the purposes of the LEMP is to outline the methods and measures to be implemented prior to the Works, during the construction phase, and for a defined period thereafter to avoid, minimise, and mitigate adverse effects of the construction on ecological values and function. Requirements have been identified in GRWC WCC and TBA conditions below.

7.1 Nesting Bird Survey

There is a risk that nesting birds, mainly kaka, falcon, kakariki, and morepork, may be adversely affected by the vegetation clearance activity on the project. As such requirements have been identified within the WCC designation conditions below.

Table 13: Nesting Bird Survey and Nest Box Requirements Identified Within WCC Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		

DC.33i	A methodology for the monitoring of the nest boxes required by condition DC. 34 during construction, to be prepared by a suitably qualified and experienced ornithologist	7.1.1 Nesting Boxes
DC.34(c)	As far as practicable, vegetation clearance will occur outside the breeding season of kaka, falcon, kakariki, and morepork (1 September to 30 March)	7.1 Nesting Birds Survey
DC.34(d)	If vegetation clearance must occur during the period identified in condition DC.34 c), a survey shall be undertaken prior to clearance by a suitably qualified and experienced ornithologist to determine if a nest or nests are present. If a nest of any of the species identified in DC. 34c) is located on a tree to be felled, that tree must not be felled until the chick(s) has left the nest	7.1 Nesting Birds Survey
DC.34(e)	The Requiring Authority shall engage a suitably qualified and experienced ornithologist to provide a recommendation on the type, location and number of nest boxes that must be installed in adjacent areas of vegetation specifically for resident kaka and morepork.	7.1.1 Nesting boxes
DC.34(f)	Nesting boxes required under DC.34 e) shall be installed under the supervision of the ornithologist prior to the commencement of any tree removal.	7.1.1 Nesting Boxes

Nesting Bird limitations:

- I. Wherever possible vegetation clearance will occur **outside the breeding season** for kaka, falcon, kakariki and/or morepork (i.e. late autumn and winter - 1 April to 30 August). Where this occurs, no nest surveys are required.
- II. If for any reason vegetation clearance needs to occur **during the breeding season** for kaka, falcon, kakariki and/or morepork (i.e. spring and summer - 1 September to 30 March), a nest survey shall be undertaken within any vegetation to be cleared to determine if a nest or nests are present.
- III. This survey will occur a week prior to clearance and be carried out by a suitably qualified and experienced ornithologist.
- IV. If no nests are present, a statement will be sent to The Manager - Open Space and Recreation Planning, confirming the site is safe to commence vegetation clearance.
- V. If a nest is located on a tree to be felled, the following process will be followed as advised by a suitably qualified Ecologist:
 1. The ornithologist will confirm nest location and then determine the extent of a buffer zone to be established around the nest site. The buffer zone will vary according to location of nest, terrain and time of breeding season (i.e. egg, chick, fledgling).
 2. Vegetation clearance within the buffer zone will cease until after the chick has fledged, upon which operations can continue.
 3. A statement will be sent to The Manager - Open Space and Recreation Planning, confirming the nest find, confirming clearance has ceased and describing the measures being taken to protect the next site.
 4. The effectiveness of this buffer will be monitored by ornithologist.

5. If monitoring determines the buffer is insufficient to prevent disruption to nesting the Project shall extend the buffer zone as necessary on the specialist Project Ecologist advice and advise The Manager - Open Space and Recreation Planning, accordingly.
6. Once the chick has fledged a statement will be sent to The Manager - Open Space and Recreation Planning, confirming the site is free of nests and vegetation clearance can commence.

7.1.1 Nest Boxes

A methodology and recommendation by a qualified ornithologist of the installation of nest boxes for kaka and morepork was required. The original ecological assessment was carried out early 2017 and since this there has been documented increase in kaka activity. WCC, the Department of Conservation (DOC) and Zealandia discussed increasing interaction between kaka and residential properties and the impact of increased breeding on Council reserve management.

Kaka are expanding in more of the Town Belt and Outer Green Belt and appear to be having no trouble finding nest sites, therefore it has been decided that the effect of tree felling on the project is likely to have a negligible effect on kaka nesting and breeding. Feedback from the Department of Conservation (DoC) and Zealandia had also been sought suggesting that morepork nest boxes are likely to be of very little benefit, that morepork tend to be very flexible and use a variety of sites for nesting and that there is little value adding nest boxes.

Based on this it has been recommended that no nest boxes are installed for kaka or for morepork for the Omāroro reservoir project (*Reference Boffa Miskell Draft LEMP Document and email correspondence with Stephen Fuller*).

An appendix will be inserted containing detailed documentation confirming this decision between the relevant parties and WCC (Appendix 15).

7.2 Lizard Survey

There is a risk that lizards may be adversely affected by the vegetation clearance activity on the project. There are two primary habitat types within the construction footprint that may contain lizards – regenerating native forest and rank grass. As such requirements have been identified within the WCC designation conditions below.

Table 14: Lizard Survey and Salvage Identified Within WCC Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		
DC.33j	A methodology for surveying lizard presence prior to vegetation clearance, and minimising effects on lizard populations as required by condition DC.35.	7.2 Lizard Survey
DC.35(a)	Prior to any vegetation clearance occurring, a lizard survey is to be undertaken of the project site and surrounding area by a herpetologist.	7.2 Lizard Survey

Lizard limitations:

- I. Within a suitable timeframe prior to vegetation clearance, lizard survey and salvage will be conducted in suitable habitat and 50m or more neighbouring the required footprint clearance.
- II. Surveys and salvage will be carried out by a suitably experienced herpetologist.
- III. A DoC wildlife permit is required to conduct these surveys and has been granted.
- IV. If any lizards are found or there is a sign of presence, lizard relocation surveys and rescue will be conducted immediately following the steps (or a similar methodology) below:
 - a) **Pitfall trapping:** Baited pitfall traps will be set throughout the rank grass and regenerating forest for terrestrial lizard species i.e. the northern grass skink. Pitfall trapping will continue until no lizards are caught for three consecutive fine weather days, or otherwise to the satisfaction of the Project Herpetologist.
 - b) **Spotlighting:** Prior to clearance of the native forest, two nights of spotlighting will be undertaken within the clearance site to survey / salvage for arboreal lizards.
 - c) **Hand searching:** At the time of clearance, two suitably qualified ecologists will hand search felled vegetation for lizards.
- V. If lizards are found during salvage, they will be immediately relocated into suitable habitat in the surrounding area, but no closer than 50 metres from the Project footprint.
- VI. Upon completion of this survey and/or salvage a report will be sent to The Manager - Open Space and Recreation Planning, confirming the works carried out, any lizards found, their species and location, and the general location of any transfers.

Lizard Habitat Construction

7.2.1

Table 15: Lizard Habitat Re-Creation Identified Within WCC Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		
DC.35(b)	If any lizards are found or their presence is suspected measures must be developed to minimise the effect of the project on the lizard population, this may include lizard relocation prior to vegetation clearance, and habitat re-creation associated with post construction site remediation and landscaping. These measures must be included in Landscape and Ecology Management Plan required under conditions DC.32 and DC.33.	7.2.1 Lizard Habitat Construction

Lizard habitat recreation requirements:

- I. If any lizards should be found, lizard habitat construction will occur in areas of retained vegetation immediately adjacent to the site.
- II. The habitat recreation will be designed by the project herpetologist based on the species and using materials from tree felling. Habitat enhancement may include:
 - a. Debris piles: Trees felled will be used to create woody debris piles throughout the site for terrestrial lizard species (example photos below).
 - b. Pest control: The site and surrounding areas will have mammalian predator control for the five years following the completion of works. A pest control plan will be provided by a suitably qualified contractor.
- III. Habitat recreation will be confirmed upon the completion of salvage and a report outlining the design will be provided to The Manager - Open Space and Recreation Planning.



Figures 2 and 3: Debris piles for terrestrial lizard species (Reference: Boffa Miskell).

7.3 Vegetation Removal & Retention

Vegetation clearance is required on the Omāroro project to enable the construction of the reservoir, placement of fill, construction of the pipe work tunnel and tunnel access road. The general approach is to avoid, minimise and contain effects to low value areas such as lawns, exotic vegetation and planted native vegetation as much as possible. Requirements have been identified in WCC and TBA conditions below.

Table 16: Vegetation Removal and Retention Identified Within Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		
DC.33f	Identification of vegetation to be retained, including retention of as many as practicable significant trees and areas of regenerating indigenous vegetation	7.3 Vegetation Removal & Retention
DC.33g	Protection measures for vegetation to be retained and vegetation clearance methodology as outlined in condition DC.34, including specifying a requirement that the removal of large trees shall be undertaken by an arborist to minimise damage to adjacent vegetation.	7.3 Vegetation Removal & Retention 7.3.1 Vegetation Protection Measures & Edge Effects

DC.33h	Under conditions DC.33 f) and (g) above, particular attention shall be given to minimisation of the loss of trees in the Seral Forest B and to the protection of trees in the Seral Forest B that do not need to be removed. Where any vegetation is required to be removed from Seral Forest B, the Requiring Authority shall provide the CMO with a written explanation for why the removal is needed.	7.3.3 Seral Forest
DC.33i	A methodology for the monitoring of the nest boxes required by condition DC. 34 during construction, to be prepared by a suitably qualified and experienced ornithologist	7.1.1 Nesting Boxes
DC.34	Prior to any vegetation clearance occurring:	7.3 Vegetation Removal & Retention
DC.34(a)	The maximum extent of clearance is to be clearly identified and confirmed by the Project Ecologist in consultation with the Project Landscape Architect and Project Construction Manager	7.3 Vegetation Removal & Retention 7.3.1 Vegetation Protection Measures & Edge Effects
DC.34(b)	Vegetation to be retained will be clearly marked on site, with special attention given to large trees and Seral Forest B	7.3.1 Vegetation Protection Measures & Edge Effects
DC.34(c)	As far as practicable, vegetation clearance will occur outside the breeding season of kaka, falcon, kakariki, and morepork (1 September to 30 March)	7.1 Nesting Birds Survey
DC.34(d)	If vegetation clearance must occur during the period identified in condition DC.34 c), a survey shall be undertaken prior to clearance by a suitably qualified and experienced ornithologist to determine if a nest or nests are present. If a nest of any of the species identified in DC. 34c) is located on a tree to be felled, that tree must not be felled until the chick(s) has left the nest	7.1 Nesting Birds Survey
DC.34(e)	The Requiring Authority shall engage a suitably qualified and experienced ornithologist to provide a recommendation on the type, location and number of nest boxes that must be installed in adjacent areas of vegetation specifically for resident kaka and morepork.	7.1.1 Nesting boxes
DC.34(f)	Nesting boxes required under DC.34 e) shall be installed under the supervision of the ornithologist prior to the commencement of any tree removal.	7.1.1 Nesting Boxes
Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference
Vegetation Clearance		
LC.92	Certification of vegetation clearance: Following the completion of programmed vegetation clearance from the licence area, described in the CMP, Wellington Water, or its contractor, shall provide certification to the Manager Open Space and Recreation Planning that vegetation clearance has been carried out in accordance with any approved LEMP, CMP and in accordance with any required designation and/or resource consent conditions.	7.3 Vegetation Removal & Retention

7.3.1 Vegetation Protection Measures & Edge Effects

- I. Both native and exotic vegetation were identified as part of the AEE. This vegetation includes 10 vegetation types and identified in Appendix 2 along with a mark-up of the areas of removal Appendix 1 (*map prepared by Boffa Miskell*).
- I. Identification of vegetation to be retained, including significant trees and areas of regenerating indigenous vegetation, will be fenced off to at least the dripline and marked by

flagging tape after inspection by the Project Ecologist. This will occur in consultation with the Project Landscape Architect and Project Manager.

- II. Once retained vegetation has been confirmed a report will be sent to The Manager - Open Space and Recreation Planning, providing a map of the extent of retained vegetation.

Vegetation protection measures are to be carried out in accordance with the following:

- I. Any removal of large trees will be carried out by an arborist to minimise damage to adjacent vegetation;
- II. Vegetation clearance maximum boundaries and established trees will be clearly defined with marker tape and fenced to avoid and prevent unnecessary disturbance or damage. Large trees and Seral Forest B will require particular attention and the trees which do not need to be removed require robust protection;
- III. Careful selection of appropriate machinery is to be considered to minimise disturbance;
- IV. No land disturbance within the dripline of retained trees or vegetation during construction works;
- V. Machinery will be kept well clear of the vegetation canopy and any excavations will not undermine the vegetation stability or endanger its health;
- VI. Where there is a deviation from any approved route or outside the construction zone, any vegetation in the new construction area will be checked first by the Project Landscape Architect and Project Ecologist. Approval for removal will be required and areas to be retained are to be marked out on site by the Project Landscape Architect and Project Ecologist before proceeding further.

7.3.1.1 *Arborist:*

- I. Prior to commencing on the site, a Council-approved arborist (Project-Arborist) will be engaged by HEB Construction. The Project Arborist shall prepare an arboricultural impact assessment in accordance with AS 4970 – 2009 Protection of Trees on Development Sites. This assessment is to be provided to Councils Arboricultural Officer for review and acceptance.
- II. Large trees will be felled by the qualified arborist to ensure minimal effects on adjacent vegetation that is to be retained.
- III. Any branches to be pruned where the Work Zone Boundary meets the existing tree line, will be carried out by the qualified arborist with the advice from the Project Ecologist.

- IV. Any vegetation to be retained requiring remedial work such as pruning or crown lifting will also be carried out by the qualified arborist to ensure the work is in accordance to best practice.
- V. The Tree protection zone (TPZ) shall be fenced as indicated in the arboricultural impact assessment to ensure both the vegetation and the natural ground around it are not damaged. A permanent fence shall be erected at edge of the TPZ. The protective fence shall be installed before construction and remain there until the work is finished. The fence should be clearly visible and strong enough to protect the tree trunk, branches and tree roots from any accidental damage and machinery impact.
- VI. All vehicles, structures, building materials and debris associated with construction will not be stored within the Tree Protection Zone (TPZ) of any tree, unless prior approval from the Project Arborist.
- VII. On completion of work the Project Arborist will, at their discretion, sign off the work and provide an account of the project to the Council arborist and compliance monitoring officer (CMO) that documents:
 - a. Photographs showing stages of any work within the root protection area;
 - b. Effects of work on the trees;
 - c. Remedial works required.

7.3.2 Vegetation Clearance

HEB Construction will identify areas of required vegetation clearance shown on the relevant construction drawings; this includes exotic trees, shrubs or grass, and the methods of removal dependant on height as tabled below. Where identified all native trees will remain undisturbed.

Table 17: Clearing Schedule

Material	Location	Height	Clearing Details
Grass and weeds	All areas to be planted or grassed	AL	Blanket spray with herbicide, up to two applications, dependant upon the situation and weed type.
Blackberry	All areas to be planted or grassed	All	Blanket spray with herbicide, up to two applications dependant on the situation. Cut, mulch and respray growth.
Gorse	All areas to be planted or grassed	All	Cut and mulch and spray regrowth with 2 applications and spray regrowth with approved herbicide specific for gorse
Exotic trees and shrubs	Massed planting not on fill site	All	Fell, remove and mulch (See Notes 1 & 2)
Convolvulus	All areas to be planted or grassed	All	Spray active growth with approved herbicide with marker dye added; monitor closely and re-spray any regrowth.

All plant and equipment will only be operated by licensed, experienced operators. Only certified applicators will be responsible for the application of herbicides and chemical sprays will be Wellington City Council approved spray/chemical list, with an approved Wellington City Council contractor. All chemical used will be recorded in a spreadsheet, with operators name, product name, quantity used, and date sprayed.

Where vegetation clearance cannot be avoided, HEB Construction will ensure the clearance process will involve the following:

- I. Notification provided to the Project Ecologist, within a sufficient timeframe to ensure all wildlife salvage regulation requirements including nesting birds and lizards, have been adhered to.
- II. Identification of the extent of vegetation clearance by the Project Landscape Architect and Project Ecologist in collaboration with the Construction Manager.
- III. Space will be provided for construction machinery to operate without causing unnecessary damage. To avoid damage to surrounding vegetation, clearance will involve the following;
 - a. Machinery will be selected to minimise ground and root disturbance;
 - b. Where an area of vegetation is being partially cleared (such as Seral Forest B), trees will be felled away from areas to be retained and back into the construction footprint;
 - c. Felled vegetation will not enter any waterway and will not be stockpiled within 10m of any waterway.
- IV. The Project Ecologist and Landscape Architect will confirm the process for clearance or modification prior to works commencing.
- V. The felling of trees will be carried out by a suitably qualified Wellington City Council approved arborist. Trees will not be cleared by excavator, scraper or other, non-specialist equipment.
- VI. Plant matter considered to be ecologically valuable shall be stockpiled for uses such as lizard habitat reconstruction and mulching.
- VII. The potential for spreading of pest plant species will be minimised by:
 - a. Ensuring machinery entering site has been thoroughly cleaned;
 - b. Use of appropriate machinery to clear vegetation, minimising soil disturbance;
 - c. Separating weeds from vegetation to be mulched and ensuring pest plant matter is removed from site and disposed appropriately.
- VIII. Following the completion of programmed vegetation clearance, certification will be provided to the Manager Open Space and Recreation Planning that the vegetation clearance has been carried out in accordance with this LEMP, the WCC and TBA condition requirements.

Manuka Trees

During vegetation clearance activities, HEB will keep manuka trees separate from other vegetation for delivery by others to Taranaki Whānui ki te Upoko o te Ika. Pekaira Rei will be contacted to confirm delivery requirements.

7.3.3 Seral Forest

There is a requirement to bury the reservoir and therefore a large fill is proposed to the south of the reservoir which will fill the valley containing Seral Forest B (Appendix 2).

HEB Construction will ensure all practicable efforts to minimise the extent of the loss of trees in Seral Forest B and to ensure the protection of those trees that do not need to be removed.

A very small area of Seral forest A will be disturbed by construction works and is to be replanted. Seral forest C sits within the riparian planting zone for the Papawai Stream, which is to be strengthened through further planting.

7.3.4 Edge Effects

For areas of valued vegetation that are being partially cleared (such as Seral Forest A, B and C) there is a risk that the cut edge will expose the retained vegetation to windthrow, desiccation and weed invasion. Immediately following vegetation clearance, HEB Construction will ensure following steps will be performed:

- I. The cut edge of retained vegetation will be checked by a suitably experienced ecologist.
- II. Where an area of clearance is considered to open the forest to risk from edge effects, recommendations for remedials will be considered. These may include:
 - a. Installation of shade cloth;
 - b. 'Buffer' planting;
 - c. Weed management.
- III. Where remedial works are carried out a statement will be sent to The Manager - Open Space and Recreation Planning, confirming the types of works, their location and duration.

7.3.5 Dorking Road Tree Protection

Version A of this LEMP has been amended to reflect additional construction scope that has been added to the Project after the LEMP (Version A) was approved by WCC/GWRC and construction had commenced. The supplementary scope of works includes widening the existing access from Dorking Road to the reservoir once constructed. The existing pedestrian entrance into the Town Belt from Dorking Road needs widening to allow vehicular access to the reservoir roof for essential maintenance (estimated to be once every 10 years) and emergency works e.g. chemical treatment. The works include the installation of a vehicular gate (lockable), timber pole retaining wall approximately 1m high by 15m long, with compacted hard fill material, topsoil and grass suitable for vehicle access. (Refer Figures 4A and 4B).

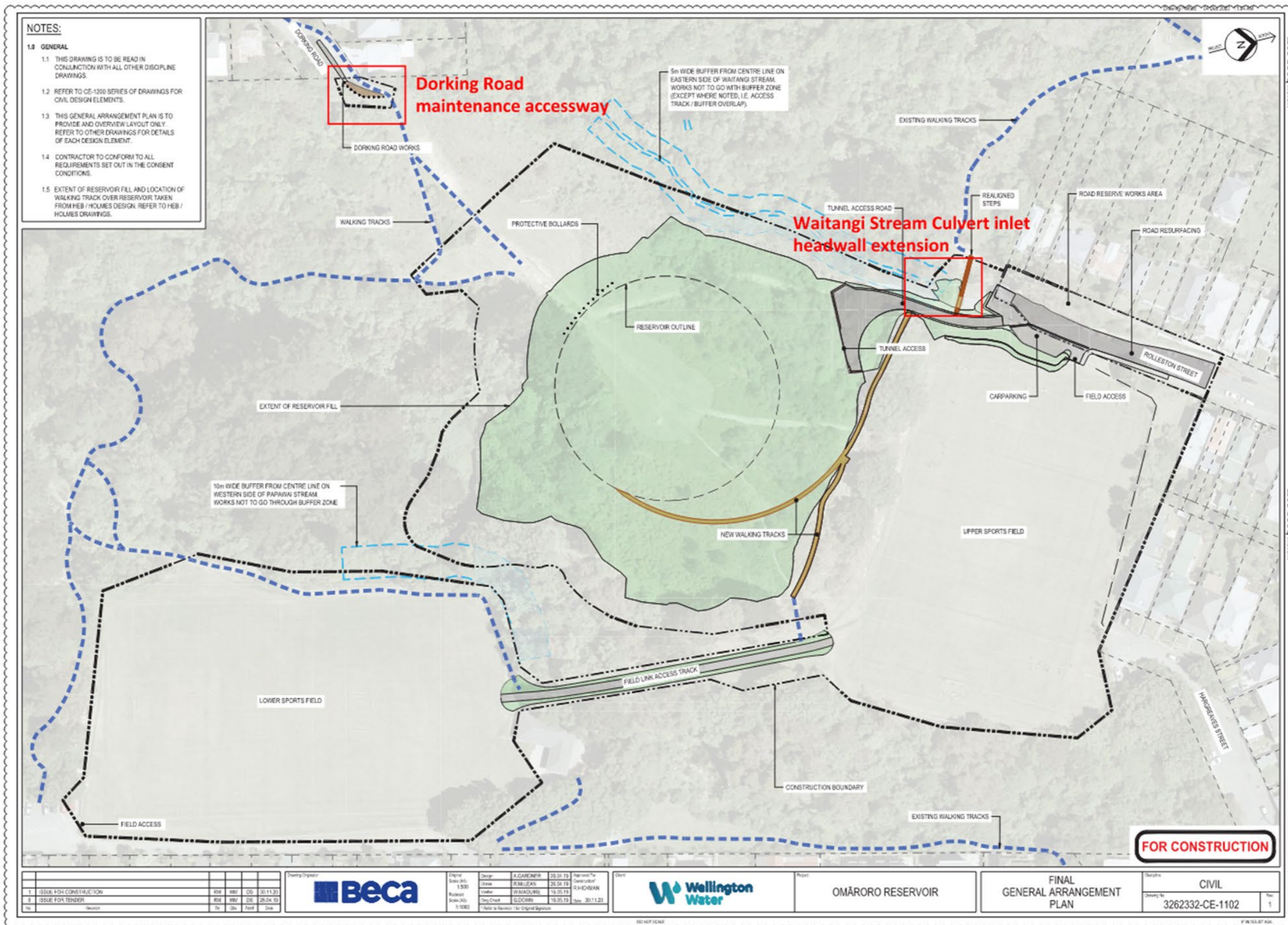


Figure 4A: Location of two separate areas of construction scope including an extension to the Waitangi Stream culvert headwall area and the Dorking Road maintenance accessway/entrance

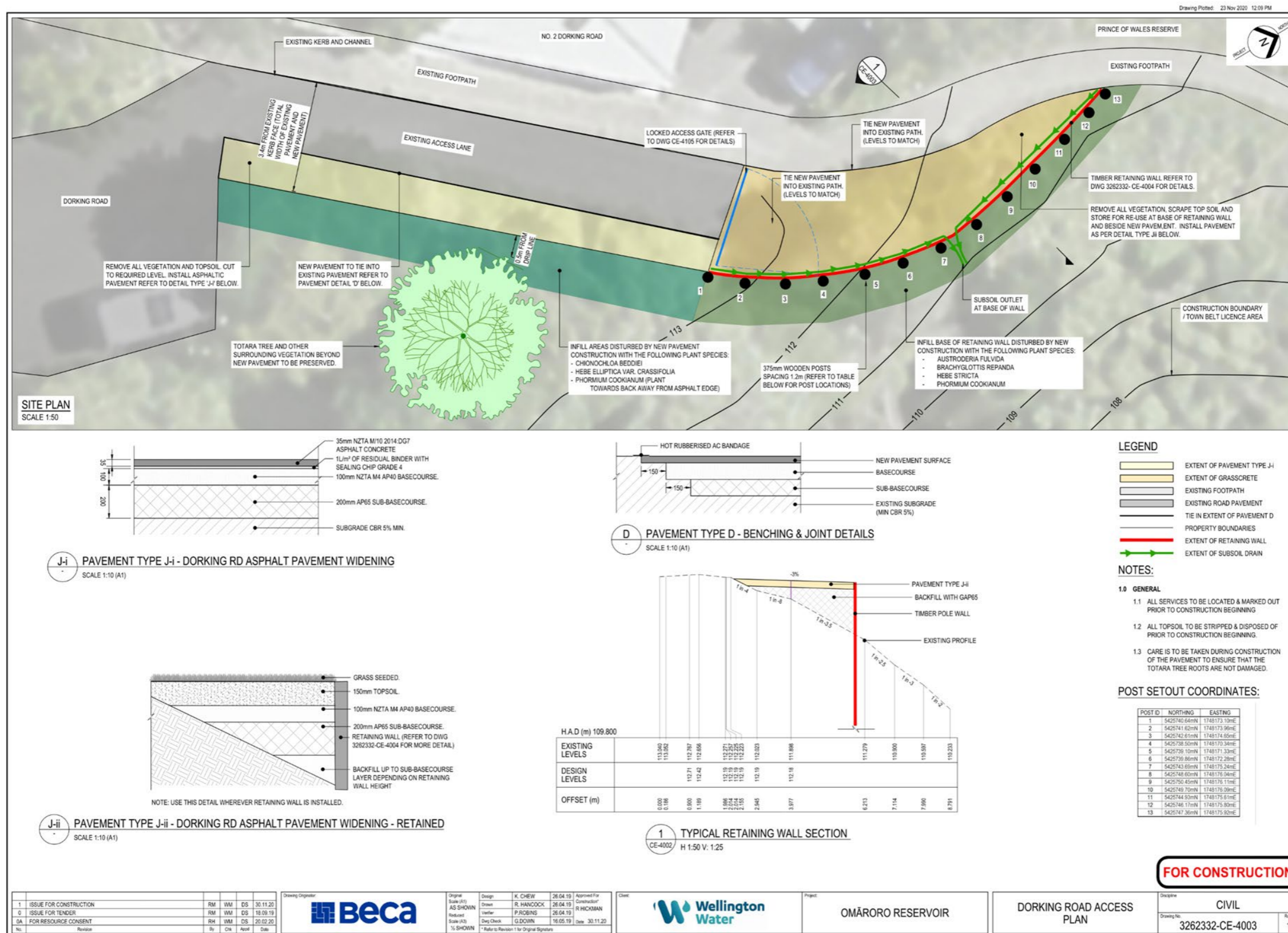


Figure 4B: Dorking Road Access and Retaining Wall

Prior to construction starting in relation to the Dorking Rd accessway the Project must appoint an arborist who needs to be approved by Wellington City Council. The arborist will ensure that work is undertaken in accordance with the “Tree Protection Methodology” (dated February 2020) prepared by Arb Innovations Ltd (Refer Appendix 19). The application of this methodology will be followed at the Dorking Rd work area with special attention to a large Totara present in the middle of the area (Refer Figure 4B). A Tree Protection Zone (TPZ) will be established around the Totara tree.

At the conclusion of the work the Project Arborist prepare a report for the Wellington City Council Arborist and Compliance Officer. The report will include:

- Staging photographs
- Effects of work on the trees
- Remedial works required

7.3.6 Tree Protection Zone (TPZ)

The Project Arborist, following the Tree Protection Methodology (Appendix 19), will ensure that:

- The TPZ is fenced off.
- Any work within the TPZ shall only proceed with their direction.
- No vehicles, structures, building materials or debris associated with construction be stored within the TPZ.
- Any excavations are completed in accordance with the Tree Protection Methodology.

7.4 Stream Discharges

During the construction phase of the programme there is a potential for discharges to either Papawai Stream or the Waitangi Stream tributary, especially under high rainfall/flow conditions. Requirements have been identified in the GWRC conditions below.

Table 18: Water Quality Monitoring & Discharges Identified Within GWRC Regulatory Permissions

GWRC Resource Consent Conditions		
Pre-Construction Requirements		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
7d(i)	Methodology and proposed trigger limits for water quality monitoring and discharges	7.4 Stream Discharges
8(h)	Rainfall response and contingency measures including procedures to minimise adverse effects in the event of extreme rainfall events and/or the failure of any key erosion and sediment control measures or devices	7.4.1 Rainfall Event Monitoring 7.4.2 Actions Resulting from a Discharge
21(e)	Notwithstanding the requirements of any other conditions of this consent, the consent holder shall ensure that, after a reasonable mixing zone, discharges from the site shall not give rise to any of the following effects in any receiving waterbody: Any significant adverse effects on aquatic life. <i>Note: For the purposes of this condition, the end zone of</i>	7.4.1 Rainfall Event Monitoring 7.4.2 Actions Resulting from a Discharge

	<i>reasonable mixing is defined as a point 50 metres downstream from any point of discharge to a waterbody.</i>	
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7.4.1 Rainfall Event Monitoring

HEB Construction will follow the site auditing requirements below in the event of a heavy rainfall event and where there has been a discharge which directly or indirectly causes, or is likely to cause, adverse ecological effects in the receiving environment.

- I. During any heavy rainfall event, defined as 20 mm/24 hrs or 7 mm/hr, a suitably experienced person will visit the site, walking each stream from 50 m below open earthworks to a minimum of 50 m upstream of works.
- II. During this visit, turbidity monitoring will be carried out at fixed sampling sites (to be confirmed in the ESCP and reviewed by the project ecologist) and at any other location where there is a visible increase in turbidity or visible surface flow of discoloured water into the stream.
 - a. Turbidity monitoring (NTU) will be undertaken with an approved and calibrated handheld turbidity meter.
- III. At any location where there is a visible or measured increase in turbidity/surface flows within the stream, the qualified person shall investigate and determine the source of the sediment.
- IV. If an excessive sediment discharge is being generated from the Project, immediate action will be taken to remedy that discharge. The trigger for a determination of “excessive” will be:
 - a. An NTU measure 25 % greater than is recorded at the control site (site immediately above works) if NTU exceeds 100, or
 - b. An NTU measure that is 20 NTU greater than is recorded at the control site (immediately above works) if NTU is less than 100.
- V. If an excessive discharge has been generated a review will be carried out the following day, any necessary improvements of Erosion and Sediment Control devices will be completed, and those measures will be carried out within 3 working days (TBC).

The CMO will be informed within 3 working days (TBC) of both the event and the response.

7.4.2 Actions Resulting from a Discharge

If the rainfall event monitoring confirms there has been an excessive sediment discharge generated from the Project, or a non-rainfall related discharge occurs, the following sampling will be carried out by a suitably qualified ecologist to determine whether that discharge has had an adverse ecological effect.

Deposited sediment sampling:

A modified SAM-1 (bankside visual estimate of percentage sediment cover) assessment will be carried out as follows:

- I. Fixed sampling sites will be located (These sites to be confirmed in the ESCP and reviewed by the project ecologist).
- II. As soon as the stream is running clear, a visual assessment of the percent of streambed covered in newly deposited fine sediment (<2 mm) will be carried out by a suitably experienced person as early as practicable.
- III. At each sample site a visual inspection of the streambed, banks, shoulders, and adjacent floodplain (where present) will occur. As a minimum, the following is to be recorded inspection:
 - a. Flattened vegetation,
 - b. New / increased bed or bank erosion, and
 - c. Obvious fresh depositions of gravels, silts and muds (yellow-brown mineral deposits as opposed to brown-black organic deposits).
- IV. Where possible the depth of new sediments will be recorded.
- V. If there are notable differences between deposition upstream, within the site, and downstream, which can be confidently attributed to a discharge from the Project, it will be determined that the discharge has had a physical effect, and further macro-invertebrate sampling will be carried out.

Macroinvertebrate sampling:

A modified macroinvertebrate assessment will be carried out as follows:

- I. Fixed sampling sites will be located (These sites to be confirmed in the ESCP and reviewed by the project ecologist).
- II. Macroinvertebrate sampling will, as far as practicable, be avoided within two weeks of a high- rainfall event. Where multiple high-rainfall events occur within a shorter duration sampling will wait until two weeks after the final event.
- III. Sampling will be carried out by a suitably experienced ecologist. A surber sampler will be used to collect the macro-invertebrate samples and will be taken at each of the sampling sites. Macroinvertebrate sampling will not be carried out at a frequency of greater than once every 12 weeks.
- IV. If macroinvertebrate sampling occurs in response to a known point-source discharge event then sampling should also occur at the point of discharge and 50 m downstream, beyond the zone of reasonable mixing.
- V. Five biological indices will be calculated from the macroinvertebrate data obtained from each survey, including:
 - a. taxonomic richness,
 - b. EPT taxa richness,
 - c. proportion of EPT taxa,
 - d. macroinvertebrate community index (MCI), and
 - e. quantitative MCI (QMCI).

- VI. These results will provide an indication of the general health of the macroinvertebrate community at each site at the time of sampling.
- VII. A comparison of the results with previous surveys and between sites can assist with determining whether there has been a marked change in a community.
- VIII. Data recorded at each site during the survey can also assist with identifying any changes in environmental conditions that could contribute to changes in the state of the macroinvertebrate community.
- IX. Recommendations will be made by the project ecologist which may include additional sampling and/or mitigation.
- X. If additional sampling is recommended, consideration should be made to the frequency of the monitoring to not adversely deplete macroinvertebrate abundances through over-extraction. Further monitoring will be determined by the qualified ecologist.

Baseline macroinvertebrate monitoring:

For a significant adverse effect on aquatic life to be measurable, baseline macroinvertebrate samples will be collected from each monitoring location and processed as per the above method to determine:

- I. The pre-existing community assemblage at each site and the variation between sites, and
- II. The pre-existing index measures.

A baseline summary will be produced in writing prior to the commencement of any earthworks. The summary will confirm the above process is suitable or recommend any alterations. Any recommended changes will be confirmed in writing with The Manager, Environmental Regulation, GWRC, prior to enacting and this plan will be revised and updated accordingly.

HEB Construction will ensure the Community Reference Group (CRG) will be notified of any contamination of watercourses and issued baseline macroinvertebrate sample results.

7.5 Protection of Streams

Any damage to the Papawai Stream or Waitangi Stream tributary bed or margins within the Town Belt, not otherwise provided for within the application documents or any consents obtained from Greater Wellington, will be reinstated and offset by the project. Requirements have been identified in the TBA conditions below.

Table 19: Protection of Streams, Reinstatement & Offset Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference
Protection of Streams		
LC.14	Stream damage to be reinstated and offset:	
	Any damage to the Papawai Stream or Waitangi Stream tributary	7.5 Protection of Streams

	<p>bed or margins within the Town Belt, not otherwise provided for within the application documents or any consents obtained from Greater Wellington, will be subject to a requirement for reinstatement and offsetting by Wellington Water, in accordance with LC15-LC24.</p> <p><i>Note: The intention of this condition is to set a high bar for avoidance of ANY stream disturbance or damage. While a high bar is set, if damage does occur, the remediation will be commensurate with the damage as determined by professionals (refer condition 16). For example, damage to vegetation at the bank will require replanting of that area and an offset area but will not mean that the offset area needs to be completely redeveloped as a comprehensive stream restoration project.</i></p>	
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7.5.1 Stream Reinstatement and Offset Works

Table 20: Protection of Streams, Reinstatement & Offset Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference
Protection of Streams		
LC.15	Stream reinstatement and offset works: Any reinstatement and offset works required by LC.14 shall, unless otherwise agreed by the Manager Open Space and Recreation Planning, be three times the length of the stream bed or margin that is damaged.	7.5.1 Stream Reinstatement and Offset Works
LC.16	Reinstatement and offset works plan to be produced by landscape architect and/ or ecologist: Wellington Water must employ a suitably qualified landscape architect and/or ecologist, to produce a reinstatement and offset works plan, and supervise implementation of any reinstatement works under LC.15.	7.5.1 Stream Reinstatement and Offset Works
LC.17	Reinstatement and offset works plan consultation: If required by the Manager Open Space and Recreation Planning the planning and implementation of works required under LC. 15 shall occur in consultation with any landscape architect and/or ecologist appointed by the Manager Open Space and Recreation Planning.	7.5.1 Stream Reinstatement and Offset Works – during construction add in requirements
LC.20	Reinstatement and offset works plan approval: The reinstatement and offset plan shall be provided to the Manager Open Space and Recreation Planning for approval 20 working days prior to commencement. Works shall not commence prior to receipt of written approval.	7.5.1 Stream Reinstatement and Offset Works
LC.21	Reinstatement and offset works completion: Any reinstatement and offset works required under LC. 15 must be completed within three months of the damage, or within an appropriately suitable reinstatement period set out in the reinstatement and offset plan.	7.5.1 Stream Reinstatement and Offset Works
LC.22	Reinstatement and offset works certification: Any agreed reinstatement and offset works under LC. 20 must be inspected by the Manager Open Space and Recreation Planning, or by any appointee of the Manager, and certified in writing as being completed.	7.5.1 Stream Reinstatement and Offset Works

Any reinstatement and offset works shall be three times the length of the stream bed/margin in question.

A reinstatement and offset plan will be produced by a landscape architect and or ecologist in consultation with the Manager Open Space and Recreation Planning, if any damage to the Papawai Stream or Waitangi Stream tributary occurs that is not provided for as authorised by the consents, designation and/or licence agreement granted for this project.

A suitably qualified landscape architect and ecologist, to produce a reinstatement and offset works plan and must supervise implementation of any reinstatement works in this plan.

Any reinstatement and offset works will be completed within three months of the damage and will be inspected by the Manager Open Space and Recreation Planning to be certified in writing as complete.

7.5.2 Damage Documentation and Reporting

Table 21: Damage Documentation and Reporting Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference
Protection of Streams		
LC.18	Damage documentation and reporting: Wellington Water must also formally document any damage incident under LC.14 and include details of this incident on a breach register and provide an update of this breach and its response to this in a report to the next available CRG, or CLG, meeting.	7.5.2 Damage Documentation and Reporting

The project will also formally document any damage to either the Papawai Stream or Waitangi Stream tributary including details onto a breach register. This breach and the response will be provided to the CRG.

7.5.3 Consenting and Cost Responsibilities

Table 22: Consenting and Cost Responsibilities Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference
Protection of Streams		
LC.24	Reinstatement and offset works consenting responsibilities: Wellington Water or its contractor will have responsibility for obtaining any consents required from Greater Wellington Regional Council for any stream damage or stream reinstatement and offset works.	7.5.3 Consenting and Cost Responsibilities
LC.25	Reinstatement and offset costs: Any costs associated with LC. 14- LC. 24 will be met by Wellington Water or its contractor, unless otherwise agreed with the Manager Open Space and Recreation Planning.	7.5.3 Consenting and Cost Responsibilities

The project will obtain any consents required from GWRC for any stream damage or stream reinstatement / offset works and any costs associated will be met unless otherwise agreed with the Manager Open Space and Recreation Planning.

7.5.4 Reinstatement and Offset Maintenance

Table 23: Reinstatement and Offset Maintenance Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference
Protection of Streams		
LC.23	Reinstatement and offset maintenance : Any reinstatement and offset works must be maintained by Wellington Water or its contractor to establish as intended. Any reinstatement and offset works plan and reinstated or offset works stream area/s must be added to any draft or final Landscape and Ecology Management Plan (LEMP) required under the designation conditions to ensure the area is subject to ongoing management and maintenance under the LEMP.	7.5.4 Reinstatement and Offset Maintenance

Any reinstatement and offset works must be maintained by the project to establish as intended. Any reinstatement and offset works plan and stream area/s will be added to the LEMP to ensure the area is subject to ongoing management and maintenance under the LEMP.

7.6 Protection of land or Vegetation Outside of the licence Area

Any damage to any land or vegetation outside of the project footprint will be subject to reinstatement of the damage and the provision of offset planting by the project. Requirements have been identified in the TBA conditions below.

Table 24: Offset Planting Works Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference
Protection of land or Vegetation Outside of the licence Area		
LC.26	Land and vegetation damage to be reinstated and offset	
	Any damage to any land or vegetation outside of the licence area will be subject to a requirement for both the reinstatement of the damage and the provision of offset planting by Wellington Water, in accordance with LC. 27- LC. 37.	7.6 Protection of land or Vegetation Outside of the licence Area
LC.27	Offset planting area	7.6.1 Offset Planting Works
	Any offset planting area required by LC. 26 shall, unless otherwise agreed by the Manager Open Space and Recreation Planning, be:	7.6.1 Offset Planting Works
(a)	Three times the size of the area of land disturbed, or	7.6.1 Offset Planting Works
(b)	In the case of the disturbance of vegetation three times the area of land contained within the drip line of any damaged or removed vegetation, or	7.6.1 Offset Planting Works
(c)	Whichever is the greater of (a) or (b).	7.6.1 Offset Planting Works
LC.29	Reinstatement and offset planting plan to be produced by landscape architect and ecologist: Wellington Water must employ a suitably qualified landscape architect and ecologist, agreed to by the Manager Open Space and Recreation Planning to produce a draft reinstatement and offset planting plan, and to plan and implement any reinstatement and offset planting works required under LC.27.	7.6.1 Offset Planting Works
LC.30	Reinstatement and offset planting plan consultation: If required by the Manager Open Space and Recreation Planning the preparation of the plan and any planning and implementation of works required under LC.27 shall occur in consultation with any landscape architect and/or ecologist appointed by the Manager Open Space and Recreation Planning.	7.6.1 Offset Planting Works – 6.2 During Construction Notification Requirements

7.6.1 Offset Planting Works

Any offset planting area required by the project will be:

- I. Three times the size of the area of land disturbed;
- II. Three times the area of land contained within the drip line of any damaged/removed vegetation or;
- III. Whichever is greater.

The landscape architect and ecologist will produce a draft reinstatement and offset planting plan as agreed to by the Manager Open Space and Recreation Planning.

The preparation of the plan and implementation of the works required will occur in consultation with any landscape architect and/or ecologist appointed by the Manager Open Space and Recreation Planning.

The nature and extent of the off-set planting work specifically associated with the extension of the culvert inlet on the Waitangi Stream consented by GWRC consent WGN200317 [36864] Land Use Consent - stream works is detailed in Appendix 17 – Omāroro Reservoir Technical Specification – Waitangi Stream Mitigation Planting and Appendix 18 – Stormwater Inlet Ecology Memo Part 2.

7.6.2 Damage Documentation and Reporting

Table 25: Damage Documentation and Reporting Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference
Protection of land or Vegetation Outside of the licence Area		
LC.28	Damage documentation and reporting	7.6.2 Damage Documentation and Reporting
	Wellington Water must also formally document any damage incident under LC.26 and include details of this incident on a breach register and provide an update of this breach and its response to this in a report to the next available CRG, or CLG, meeting.	7.6.2 Damage Documentation and Reporting

The project will also formally document any damage and incident details onto a breach register. This breach and the response will be provided to the CRG.

7.6.3 Approvals and Certification

Table 26: Approvals and Certification Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference
Protection of land or Vegetation Outside of the licence Area		
LC. 32	Reinstatement and offset plan approval	
	Reinstatement works required under LC. 27 shall not commence until a final reinstatement plan is approved by the Manager Open Space and Recreation Planning.	7.6.3 Approvals and Certification
LC. 33	Reinstatement and offset planting works completion	
	Any reinstatement and offset planting works required under LC. 27 must be completed within three months of the damage, or within an appropriately suitable period agreed with the Manager Open Space and Recreation Planning.	7.6.3 Approvals and Certification
LC. 34	Reinstatement and offset works certification	
	Any agreed reinstatement and/or offset works under LC. 32 must be inspected by the Manager Open Space and Recreation Planning, or by any appointee of the Manager, and certified in writing as being completed.	7.6.3 Approvals and Certification

Reinstatement works will not commence until a final reinstatement plan is approved by the Manager Open Space and Recreation Planning.

Any reinstatement and offset planting works required will be completed within three months of the damage, or within a suitable period agreed with the Manager Open Space and Recreation Planning. The works will then be inspected by the Manager Open Space and Recreation Planning to be certified in writing as complete.

7.6.4 Reinstatement and Offset Maintenance

Table 27: Reinstatement and Offset Maintenance Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference
Protection of land or Vegetation Outside of the licence Area		
LC. 35	Reinstatement and offset planting maintenance	
	Any reinstatement and offset planting works must be maintained by Wellington Water or its contractor to establish as intended. Any reinstated or offset planting area/s must be added to any draft or final Landscape and Ecology Management Plan (LEMP) to ensure the area is subject to ongoing management and maintenance under the LEMP.	7.6.4 Reinstatement and Offset Maintenance

Any reinstatement and offset planting must be maintained by the project to establish as intended. Any reinstatement and offset works plan and stream area/s will be added to this LEMP to ensure the area is subject to ongoing management and maintenance under the LEMP.

7.6.5 Consenting and Cost Responsibilities

Table 28: Consenting and Cost Responsibilities Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference
Protection of land or Vegetation Outside of the licence Area		
LC. 36	Reinstatement and offset planting works consenting responsibilities	
	Wellington Water or its contractor will have responsibility for obtaining any consents required from Greater Wellington Regional Council and/or Wellington City Council for any land or vegetation damage or reinstatement or offset planting works required outside of either the licence or designation area.	7.6.5 Consenting and Cost Responsibilities
LC. 37	Reinstatement and offset planting costs	
	Any costs associated with LC. 26- LC. 36 will be met by Wellington Water or its contractor, unless otherwise agreed with the Manager Open Space and Recreation Planning.	7.6.5 Consenting and Cost Responsibilities

The project will obtain any consents required from GWRC for land or vegetation damage or reinstatement or offset planting works. Any costs associated will be met unless otherwise agreed with the Manager Open Space and Recreation Planning.

7.7 Weed Surveys

A baseline survey of pest plant species on site will be carried out by a suitably qualified ecologist prior to the commencement of construction. This will assist in tracking the potential spread of weeds throughout site.

- I. Biannual weed surveys will occur every spring and autumn, and are required so that:
 - a. There is a measure of existing weeds and newly introduced ecological weeds to the site.

- b. Any existing weeds requiring immediate control under the Regional Pest Management Survey (RPMS) are managed.
 - c. Opportunities to control existing ecological weeds that can be readily removed.
- II. Biannual surveys will include riparian zones, road verges, shelterbelts, open areas of recently disturbed soils, cut faces, and recently / partially cleared areas of vegetation. Plants not outlined in the Regional Pest Management Strategy (RPMS) which are considered an ecological threat may still be recommended for control.
- III. Species-specific recommendations for control will be formed.

7.8 Pest Management.

7.8.1 Pest Management Methodology and Programme

An assessment of plant and animal pests will be undertaken prior to any works commencing. This assessment shall outline the baseline pest populations to be controlled throughout the contract works and include a list of pest species (including animal pests (if required) and plant pests including priority pests from the GWRC Regional Pest Management Strategy (RPMS). A detailed plant and animal pest control methodology and programme will be prepared prior to site preparation and planting associated with landscaping scheduled for 2023. The methodology and programme shall address pests identified in the pest assessment. Including the following:

- (a) A plan or map detailing the extent of the site preparation/clearance areas to be managed, and the location of any sensitive areas;
- (b) Types of chemicals (herbicide, fungicide, baits) that are likely to be used and the times of year that any control operations are likely to occur;
- (c) Strategies used to avoid contamination of sensitive areas. This could include specific application techniques, no-spray buffer zones, a list of people who need to be informed of spraying operations.
- (d) The identity of the person likely to be undertaking the work and confirmation of their current qualifications/certifications.
- (e) Particular weather conditions which may increase potential drift hazard; and
- (f) Indication of agrichemicals to be used that may present a specific hazard
- (g) A critical path timeline capable of showing progress through the contract period up to the end of the defects liability and maintenance period.

7.8.2 Plant Pest Contractors

All plant pest control works shall be in accordance with the accepted horticultural practices, and shall be carried out by suitably qualified and experience contractors in relation to use of herbicides Growsafe certified or an equivalent shall be required.

7.8.3 Animal Pest Contractors

All animal pest control works shall be undertaken by staff suitably qualified and experienced in the handling (including holding a controlled substance licence CSL) and application of pesticides and traps, and familiarity with the Hazardous Substances and New Organisms Act 1996, the Biosecurity Act 1993 and Wild Animal Control Act 1977.

HEB Construction will ensure that the contractor shall take all prescribed steps contained in the Health and Safety in Employment Act 1992 (HSEA) and the Resource Management Act 1991 (RMA) to ensure that no act or omission is in breach of any duty or obligation of the Contractor under the said legislation.

7.8.4 *Pest Plant Removal and Disposal*

Plant Pest control shall be undertaken during site preparation and prior to planting associated with landscaping scheduled for 2023, with all landscape areas being cleared of pest plants prior to planting. HEB Construction will ensure that the Contractor disposals of the pest plants off site in a safe and legal manner in accordance with local authorities' guidance.

7.8.5 *Preparation for Animal Pest Control*

Any of the following animal control measures may be implemented depending on the outcome of the initial pest assessment and subsequent site evaluations, some of the measures may require consents or permits:

- (a) Capture and relocation of birds (may require a Wildlife Permit for DoC);
- (b) Rabbit/Possum trapping

7.8.6 *Notification, Hoardings and Signs.*

HEB Construction will supply, install, manage and maintain all Health and Safety Warning signs as required, for the duration of the Project and in accordance with the Application for Medical Officer of Health Permission to lay Controlled Pesticides. All necessary warning notices and other signage shall be erected for the duration of the pest control and the pesticide caution period, in accordance with the consent(s). HEB Construction will inform neighbouring landowners of the proposed pest control programme at least 7 days prior to pesticide applications and again on completion of the programme. Notification shall be in the form of a letter delivered to the property occupier, providing the following details:

- (a) Pests to be controlled
- (b) Poisons to be used Drop
- (c) locations Application dates
- (d) Name of Contractor's representative with 24-hour contact phone number.

Notification, Hoardings and Signs:

- (a) Pests to be controlled
- (b) Name of Contractor's representative with 24-hour contact phone number
- (c) Poisons to be used Drop locations
- (d) Application dates

All pest control activities will be discussed prior to starting with the WCC.

7.8.7 *Carcass Removal*

HEB Construction will ensure that the Contractor shall collect carcasses, especially during all professional hunting operations, and throughout the Project, and dispose of carcasses at licensed landfills.

8 Key Landscape Issues and Strategy

This landscaping section of the LEMP shall outline the permanent mitigation measures, as well as the necessary monitoring and management required for landscape amenity, use and function during the operational phase of the Project. Requirements have been identified in GRWC WCC and TBA conditions below.

Table 29: Final Landscape Strategy Identified Within WCC Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		
DC.33(a)	Final landscape strategy	8. Key Landscape Issues and Strategy

A landscape strategy has been developed to assist integrating the completed reservoir within the existing vegetated open space context characteristic of Prince of Wales Park. The resultant landscape treatment will be addressed as an integral part of the project in accordance with the following objectives:

- I. Create a final landform that supports a smooth integration with adjacent areas of topography and optimises effective revegetation conditions;
- II. Establish native vegetation, amenity trees and areas of open grass which assist the final landform becoming assimilated within its surrounding open space setting and maintains a wider green backdrop; and
- III. Maintain and enhance recreation opportunities, including recreation tracks, lookout opportunities and playing fields.

The landscaping works require the rehabilitation of the landform to incorporate the reservoir within the Prince of Wales, to re-establish / reinstate modified playing fields and the rehabilitation of the vegetation.

A landscape concept (Appendix 3) and landscape detailed drawings (Appendix 4) are attached in this LEMP document. The Landscape and Visual Assessment also provides further detail on the landscape strategy used for this project.

All Materials and workmanship shall comply with the relevant requirements and following standards listed in the Landscape Technical Specification (Appendix 5), as appropriate.

8.1 Buffer (No go) Zones

Table 30: Buffer Zones Identified Within GRWC & WCC Regulatory Permissions

GWRC Resource Consent Conditions		
Pre-Construction Requirements		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan

8e(v)	Any “no go” and/or buffer areas to be maintained undisturbed, including minimum buffer strips of riparian vegetation to be retained	8.1 Buffer Zones
Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		
DC.33b	Confirmation of an appropriate buffer between the earthworks and waterways including confirmation of waterway location by longitudinal and cross-section survey. In the case of the Papawai Stream the buffer shall be no less than 10m on the stream’s west bank (hillside). In the case of the Waitangi Stream Tributary, to the west of the project site, no buffer shall be less than 5m.	8.1 Buffer Zones

HEB Construction will ensure that the two buffer areas identified are to be maintained and undisturbed, including the ‘no go’ areas marked in Appendix 4 Landscape Drawings. As previously mentioned, the project will minimise the vegetation clearance to what is required, and vegetation will be retained as much as practicable.

The vegetation buffer required for Papawai Stream will be no less than 10m on the stream’s west bank.

The vegetation buffer required for Waitangi Stream Tributary will be no less than 5m (Figure 5).

Confirmation of the required buffers between the earthworks site and the Waitangi Stream Tributary and the Papawai Stream will be provided, including a location by longitudinal and cross-section survey as soon as practicable.

Construction works are not to encroach on or go through into the buffer zone (no go) areas show in Appendix 4 Landscape Drawings. The buffer (no go) zones will be isolated from construction activity with 1.8m high wire mesh fencing

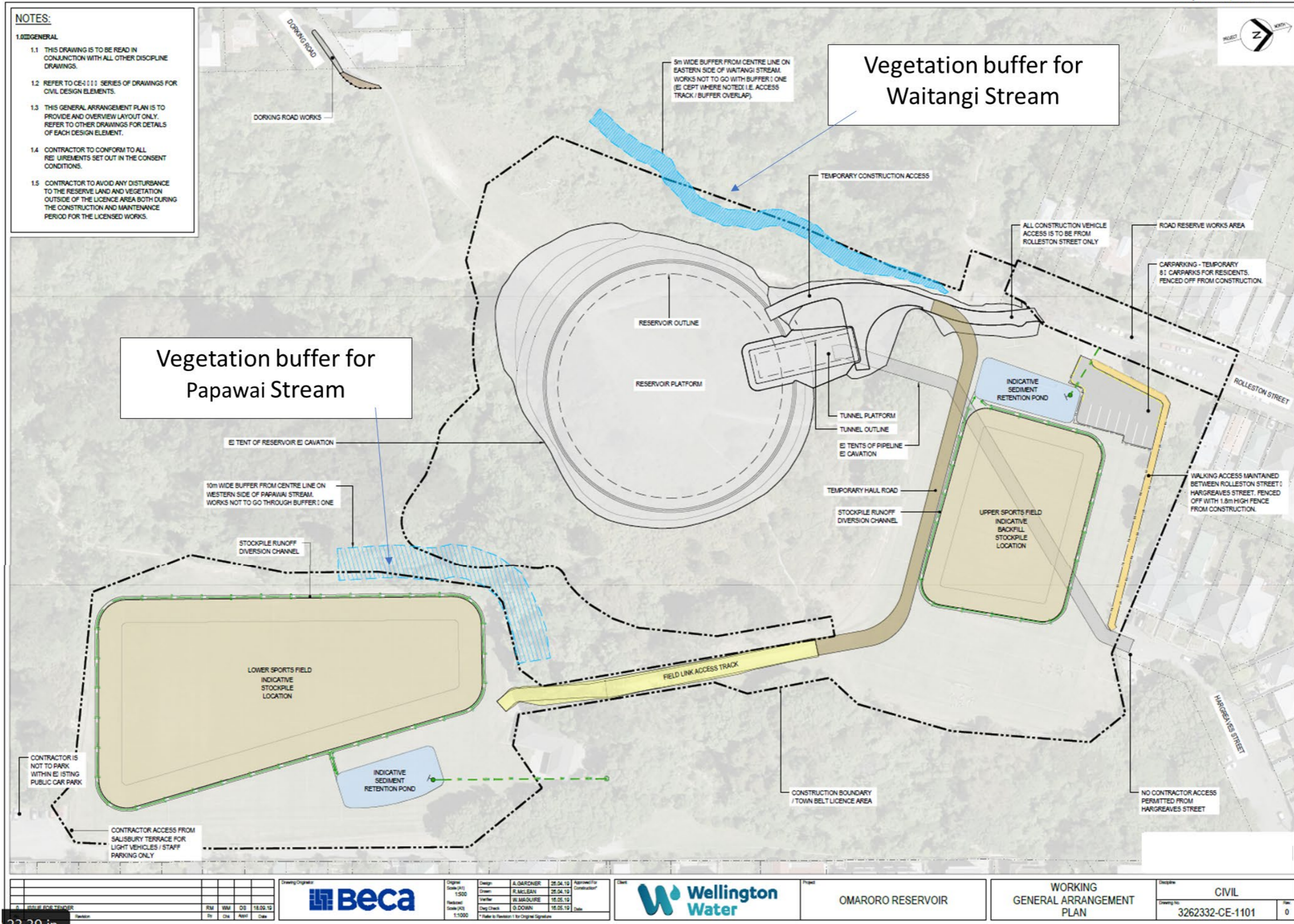


Figure 5: Buffer Zones for Papawai Stream and Waitangi Stream

8.2 Riparian Planting

Table 31: Riparian Planting Identified Within GRWC Regulatory Permissions

GWRC Resource Consent Conditions		
Pre-Construction Requirements		
Condition number	Condition requirement	LEMP Section Reference
7b(iii)	Details of enhancement of riparian vegetation along all waterways within the site area	8.2 Riparian Planting

HEB Construction will carry out revegetation, riparian planting along areas specified of the Waitangi (Figure 6) and Papawai (Figure 7) Streams. As previously mentioned, Seral forest C sits within the riparian planting zone for the Papawai Stream, which is to be strengthened through further planting.

HEB Construction will complete Riparian planting see Landscape Design Drawings (Appendix 4), in Spring (May through to Late October) when the water temperature is starting to rise.

It is expected that there will be some weeds present in the riparian areas. HEB Construction will use a manual release technique in these areas as the use of herbicides in water zones is restricted. Weeds species may be present post weeding providing these do not inhibit or compromise the growth of riparian species. No fertiliser will be used for riparian planting and only biodegradable weed mat will be used.

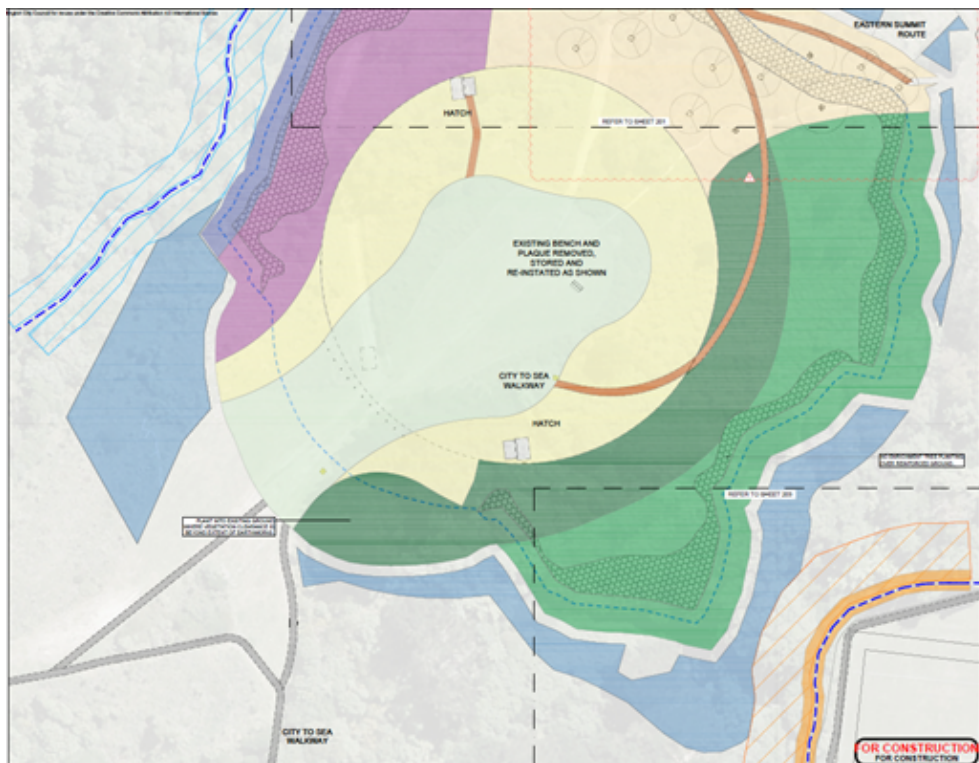


Figure 6: Design drawing showing indicative area for riparian planting along Waitangi Stream. Finalised details can be found in Appendix 4

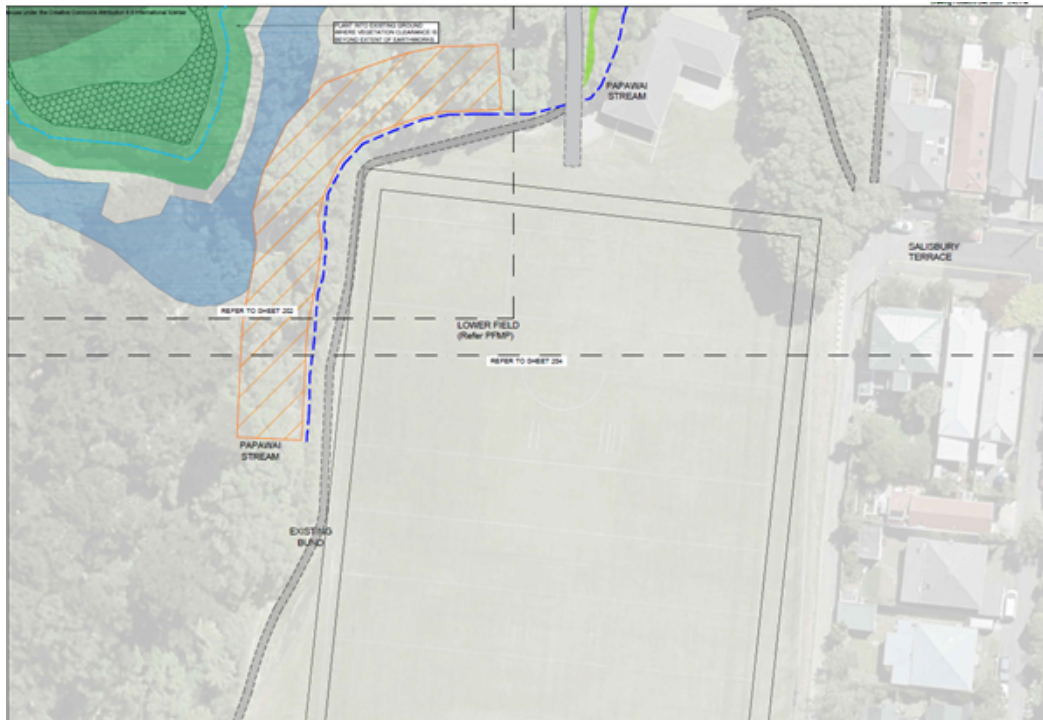


Figure 7: Design drawing showing area for riparian planting along Papawai Stream

For further details and the extent of riparian planting on the Omāroro project refer Landscape Detailed Design Drawings in Attachment 4 and Technical Specification Landscape in Appendix 5.

8.3 Site Preparation for Landscaping

8.3.1 Weed Control

Table 32: Weed Control and Clearance Identified in WCC Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		
DC.33m(i)	Detailed specifications relating to (but not limited to) the following: Weed control and clearance	8.3.1 Weed Control

There is a requirement for vegetation management and for plant pests to be controlled. Before any work commences an assessment of pests shall be undertaken and control methods established. Plant pests shall be controlled across the project during the contract works and during the Defects Liability and Maintenance Period.

Plant Pest Control Methodology and Programme:

Plant Pest control will be undertaken during site preparation with all landscape areas being cleared of pest plants prior to planting.

A detailed methodology and programme report shall be written by HEB Construction prior to site preparation and planting. The methodology and programme shall address pests identified in the pest assessment and includes the following:

- I. A plan or map detailing the extent of the site preparation/clearance areas to be managed, and the location of any sensitive areas;
- II. Types of chemicals (herbicide, fungicide, baits) that are likely to be used and the times of year that any control operations are likely to occur;
- III. Strategies used to avoid contamination of sensitive areas. This could include specific application techniques, no spray buffer zones, a list of people who need to be informed of spraying operations.
- IV. The identity of the person likely to be undertaking the work and confirmation of their current qualifications/certifications.
- V. Particular weather conditions which may increase potential drift hazard; and
- VI. Indication of agrichemicals to be used that may present a specific hazard
- VII. A critical path timeline capable of showing progress through the contract period up to the end of the defects liability and maintenance period.

HEB Construction will then undertake the pest control works in general accordance with the approved methodology and programme.

Hydro-seeding Grassed (and Specialist) Surfaces:

Prior to placement of cut material on fill sites, HEB Construction will ensure existing pest species or vegetation will be removed or sprayed as specified in the Appendix 5 Technical Specification Landscape; at least 14 days prior earthworks.

During the grassed surface establishment period, HEB Construction will control weeds which effect the establishment of the grassed surface or native species mix.

Weeds shall be sprayed with a selective herbicide for the weed to be controlled, approved for use by the local authority and applied at the manufacturer's rates.

8.3.2 Ground Preparation

Table 33: Ground Preparation Identified Within WCC Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		
DC.33m(ii)	Ground preparation	8.3.2 Ground Preparation

HEB Construction will provide detailed specification in ground preparation. This includes the clearing and disposal of required vegetation, removal and disposal of existing hardstand surfaces, inorganic debris, site preparation spraying, pruning and minor landscape earthworks, topsoil spreading and the removal and storage of the existing bench seat and plaque.

All measures to protect existing vegetation (e.g. mature trees, native bush) shall be in place prior to any site preparation commencing.

For all areas of earthworks, the project will ensure that erosion and sediment control measures are installed in accordance with GWRC requirements and following the approved ESCP.

The Working Area shown on the Drawings (Appendix 4) shall be cleared of all vegetation and structures except those specifically required to remain as noted and marked out by the Project Ecologist and Landscape Architect.

HEB Construction will ensure vegetation clearance is carried out as stated in the methodology in Section 7.3 ensuring all the conditions stated are met.

Earth worked areas ready for landscape work must include:

- I. Have sufficient drainage and fall to shed water in a controlled manner and prevent ponding and erosion;
- II. Are free of contaminants, stumps, branches and construction debris;
- III. Have been placed in layers no greater than 150mm thick and compacted by track rolling as appropriate to prevent undue settlement.

8.3.3 Substrate – Mulching

Table 33: Mulching Identified Within WCC Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		
DC.33m(iii)	Detailed specifications relating to (but not limited to) the following: Mulching	8.3.3 Substrate

HEB Construction will provide detailed specification on mulching. The tree species identified to be mulched will be re-used on site prior to the vegetation clearance works. The clearing schedule table below shows potential species for mulching.

Material	Location	Height	Clearing Details
Grass and weeds	All areas to be planted or grassed	AL	Blanket spray with herbicide, up to two applications, dependant upon the situation and weed type.
Blackberry	All areas to be planted or grassed	All	Blanket spray with herbicide, up to two applications dependant on the situation. Cut, mulch and respray growth.
Gorse	All areas to be planted or grassed	All	Cut and mulch and spray regrowth with 2 applications and spray regrowth with approved herbicide specific for gorse
Exotic trees and shrubs	Massed planting not on fill site	All	Fell, remove and mulch (See Notes 1 & 2)
Convolvulus	All areas to be planted or grassed	All	Spray active growth with approved herbicide with marker dye added; monitor closely and re-spray any regrowth.

Note 1, Mulch all areas where accessible by mulching machine (excluding areas of invasive weeds which would be spread by mulching or that may re-sprout when mulched), HEB Construction will confirm which tree species can be mulched for re-use on site prior to the clearance works)

All material to be retained on site shall be stockpiled near to the clearance areas, unless otherwise specified. No pest plant material that could re-sprout and take root will be mulched or incorporated within mulching of onsite material (e.g. crack willow).

Mulch will be applied to prior to planting for all planting areas, apart from riparian areas.

HEB Construction will ensure all mulch areas have a depth that meets the landscape specification

Individual specimen trees located outside of the fill zone shall include a 1.0m (diameter) mulched area surrounding the base of each tree.

In all instances mulch will be kept clear of stems to avoid stem rot.

Mulch shall be sufficiently aged and treated in accordance with the specifications

Mulch to be applied to areas as detailed in the landscape drawings and specification

8.3.4 Topsoil Management

Table 34: Topsoil Management Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC55 (e)	<i>Topsoil management: Methods for ensuring that topsoil used for reinstating areas will be weed free</i>	8.3.4 Topsoil Management

Topsoil is defined as the top layer of soil characterised by the presence of organic matter and order to be retained for use on site, topsoil must meet certain specific characteristics.

Imported topsoil:

HEB Construction will ensure the volumes of topsoil required for planting and the specifications for the imported topsoil meet the Technical Specification Landscape and design drawings (Appendices 4 and 5).

Imported topsoil is to be used as per the Appendix 5 Technical Specification Landscape. Imported topsoil shall be carefully managed to avoid any contamination, seeds or undesirable material being brought to site. Examples of species which are a risk are Brush wattle, gorse, Darwin’s barberry and old mans beard.

The primary method of mitigating against weed-infested topsoil material being brought on to the site will be to ensure that any material being delivered to site is sourced from a reputable supplier. If this is from an existing stockpile, then HEB Construction will arrange for stockpiles to be sprayed out for weeds at least 1 week prior to delivery to the reservoir site.

Unsuitable Materials

HEB Construction will ensure that all planting is undertaken on suitable material which will sustain the proposed plant species. Unsuitable materials include:

1. Soil that is too weak to provide support for new planting
2. Soil containing rubbish or
3. Contaminated soil containing pest plant material.

Should dormant seed or plant pest seed be present or identified onsite HEB Construction will supply a methodology and a timeline for removal of any pest plant species and or to control any infestation, i.e. removed within 2 months before reseeding.

HEB Construction will supply a methodology to remediate unsuitable materials. Should sub-surfaces include unsuitable materials and are not to the required standard, topsoiling shall not proceed until rectified.

8.3.5 Compaction

Table 35: Compaction Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC55 (f)	Detailed specifications relating to (but not limited to) the following: Compaction areas: Methods to be employed to repair compacted ground and ensure new ground material build up is suitable for the intended end use and long-term sustainability and maintenance of that use. Methods must ensure that areas subject to compaction or backfilling do not create areas that will not drain and/or will not allow new planting to successfully establish and grow in the long term or ground conditions that result in sports fields or walking tracks that do not drain or function properly	8.3.5 Compaction

HEB Construction will ensure methods to be employed to repair compacted ground and ensure new ground material build up are suitable for the intended end use and long-term sustainability and maintenance of that use. These methods will include a combination of:

- Pre-construction and post-construction soil testing (scala testing or similar) to assess mechanical strength of the soil;
- Avoid working wet soil;
- Using appropriately sized plant and machinery, avoiding using unnecessarily large machinery;
- Ensuring machinery is restricted to designated transportation “lanes” within the site and not permitted to move randomly;
- Where post construction testing indicates undesirable compaction, this will be alleviated with deep tillage.

Methods will ensure that areas subject to compaction or backfilling do not create areas that will not drain and/or will not allow new planting to successfully establish and grow in the long term or ground conditions that result in sports fields or walking tracks that do not drain or function properly.

Refer to section 8.3.7 Ground and Land Drainage in this LEMP for further detail.

8.3.6 Reservoir Backfill Design

Table 36: Backfill Design and Landscaping of Backfill Areas Identified Within WCC and TBA Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		
DC.33c	How the final reservoir backfill design will support a smooth integration with adjacent topography and optimise effective revegetation conditions	8.3.6 Reservoir Backfill Design
Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC55 (g)	<i>Backfill inspection and monitoring:</i> An inspection and monitoring programme for backfilled areas to be undertaken by the project landscape architect to ensure that suitable material is being used for the intended end result.	8.3.6 Reservoir Backfill Design
LC56 (b)	<i>Landscaping of backfill areas:</i> Plans and details that show earthworks backfilling methods and materials have been tested and approved by a suitably qualified landscape architect who can confirm that the landscaping and vegetation proposed will be able to grow in the materials proposed	8.6.6 Reservoir Backfill Design

To ensure a smooth integration of backfilled areas with adjacent topography. A 2-metre-wide ‘Work Zone Boundary’ sits outside the fill boundary. This exists to complete construction works on the edge of the fill site and has been included in all planting plans to ensure a smooth integration between existing vegetation. Refer Figures 9B and 9C below.

Landscaping of backfill areas:

HEB Construction will ensure an inspection and monitoring programme for backfilled areas is undertaken by the landscape architect.

The Landscape Architect and the Construction team will meet and agree on the backfilling methods. At this meeting a ‘hold point’ will be identified and agreed to, in order for timely site visits by the Project Landscape Architect to inspect the backfill before the next phase of activity commences.

A draft backfill inspection and monitoring programme is demonstrated below:

	KEY STAGES	Intention of inspection
Tracks		
City to sea walkway	<i>Completion of the subgrade</i>	Inspect subgrade for correct material, thickness and falls
	<i>Completion of the topcourse</i>	Inspect topcourse for correct material, thickness and falls
Eastern walkway	<i>Completion of the subgrade</i>	Inspect subgrade for correct material, thickness and falls
	<i>Completion of the topcourse</i>	Inspect topcourse for correct material, thickness and falls
Fill slopes		
	<i>Completion of reinforced geogrid and commencement of laying geocell</i>	Inspect geocell product, discuss laying methodology with contractor onsite
	<i>Part way through laying geocell (TBC dates and timeframe during construction)</i>	Meet contractor to check laying correctly and discuss any changes, issues arising
	<i>Completion of geocell</i>	Inspect to check completeness prior to laying topsoil
Natural slopes		
	<i>Completion of base layer prior to laying topsoil</i>	Inspect to check completeness and location of walking tracks
	<i>Several visits way through laying topsoil (TBC dates and timeframe during construction)</i>	Inspect to check method for laying and that laid topsoil is not becoming compacted
	<i>Completion of laying topsoil</i>	Inspect to check thickness, compaction and completion to specification

Figure 9B: Reservoir Slope Stabilisation

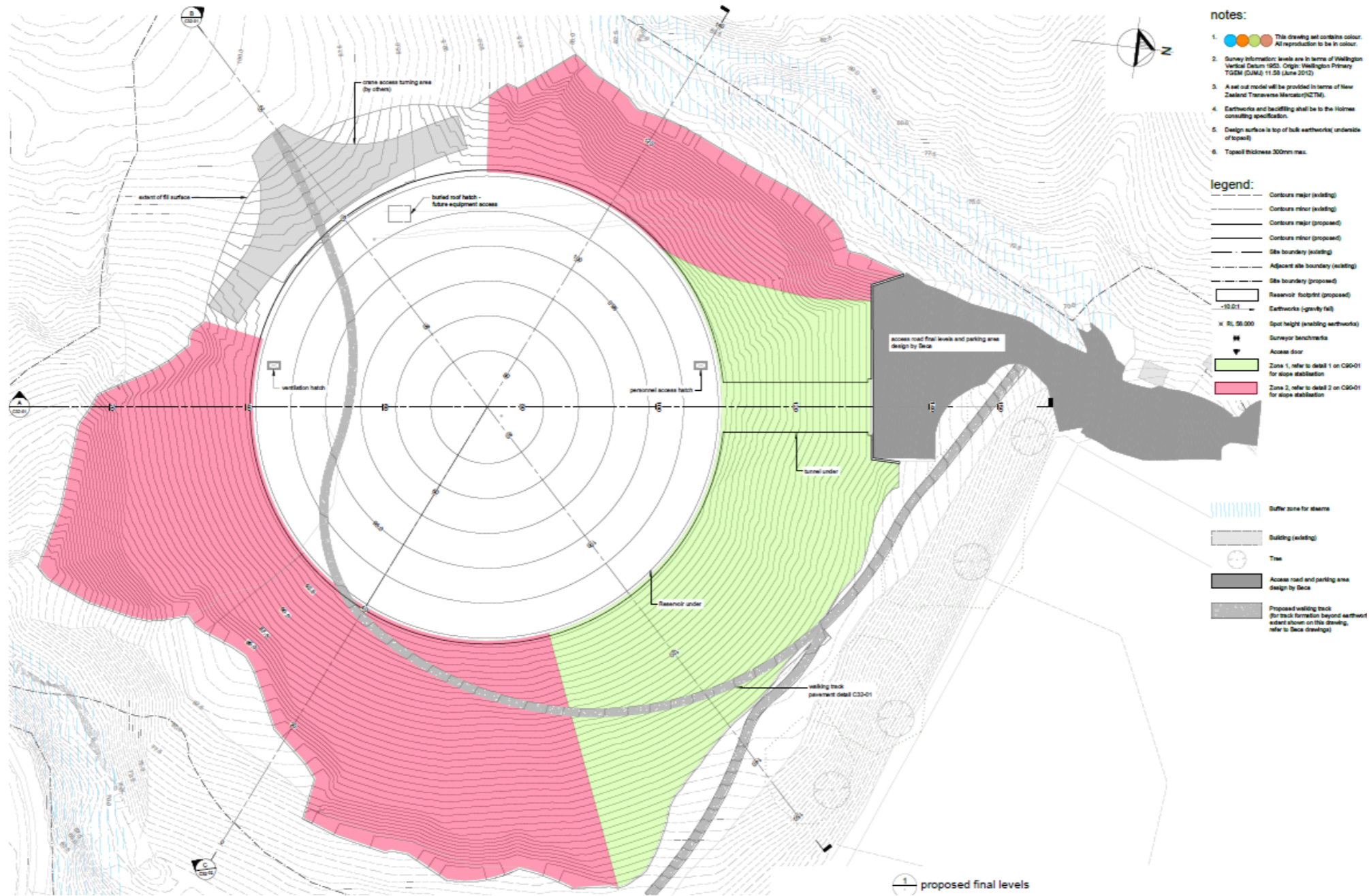
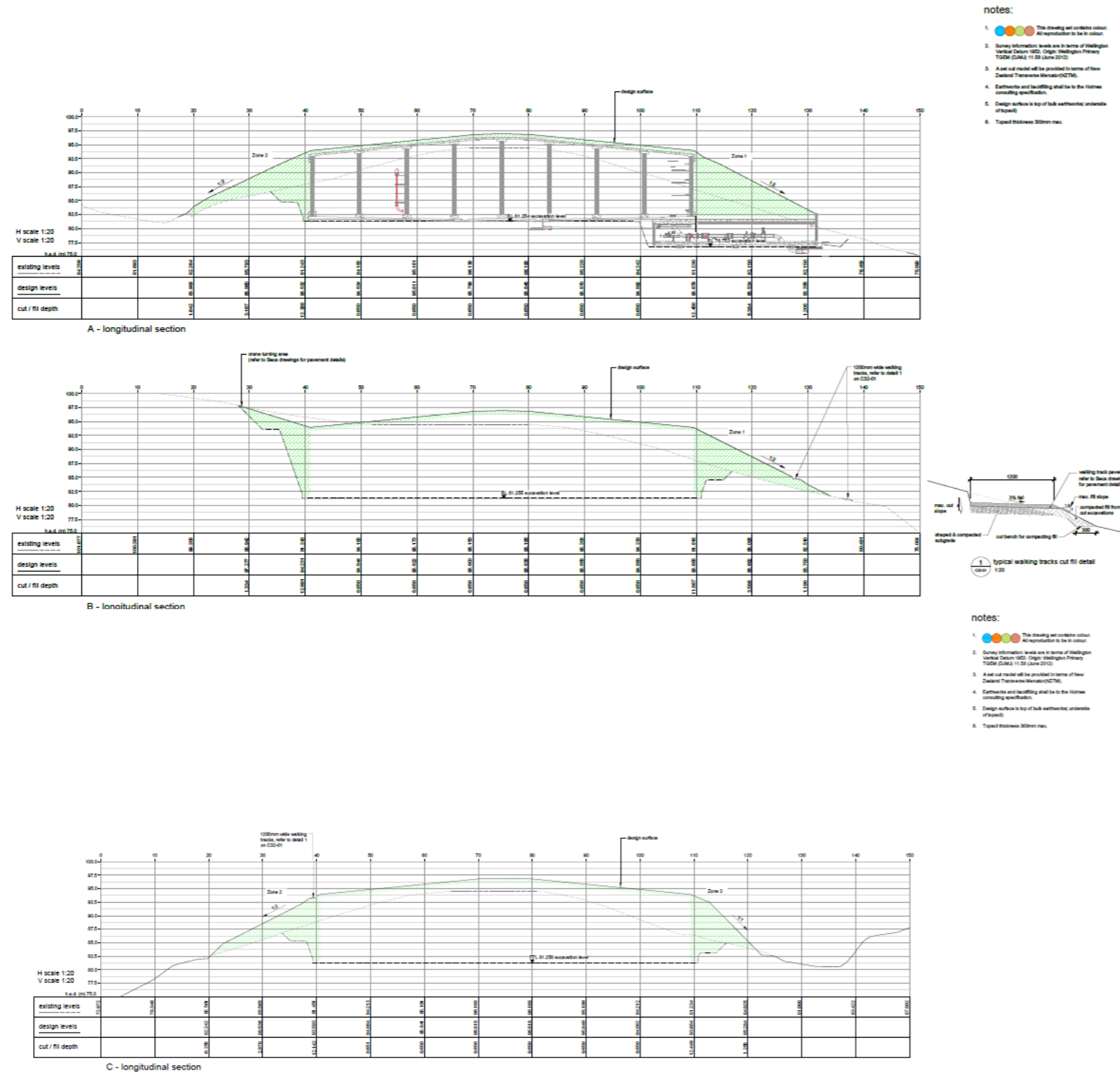


Figure 9C: Reservoir Slope Stabilisation



8.3.7 Ground and Land Drainage

Table 37: Ground and Land Drainage Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC55 (c)	<i>Proposed finished ground and land drainage:</i> Anticipated final overland flow paths for stormwater including details of how final ground levels and slope treatment will manage site run-off into the stream environments and not exacerbate sediment discharge to streams or result in erosion.	8.3.7 Ground and Land Drainage

Proposed finished ground and land drainage details, reservoir subsoil drainage and slope stabilisation details are set out in construction drawings included in Appendix 9: Civil Construction Design Drawings.

All overland flow paths for stormwater, including final ground levels and stormwater, will manage site run off into the stream environments and not exacerbate sediment discharges.

Earthworks:

- I. Surfaces must have sufficient drainage and fall to shed water in a controlled manner and prevent ponding and erosion;
- II. Are free of contaminants, stumps, branches and construction debris;
- III. Have been placed in layers no greater than 150mm thick and compacted by track rolling as appropriate to prevent undue settlement.

Topsoil care:

Topsoil compaction should be avoided, measures include:

- I. The use of the lightest possible vehicles and machinery when spreading topsoil and/or trafficking planting areas which have been topsoiled;
- II. Ensure all machinery used is fit for purpose;
- III. Avoid trafficking completed topsoil areas, and limit passes.

Final Grading:

HEB Construction will ensure that:

- I. All earthworks shall have been shaped to integrate the works with the surrounding landform;
- II. All areas to be planted / grassed shall have been contoured when the topsoil is reasonably dry and workable to;
- III. Smooth flowing contours with falls for adequate drainage and, removing all minor hollows and ridges;
- IV. Final ground levels and slope treatment will manage site run-off into the stream environments and not exacerbate sediment discharge to streams or result in erosion.

Playing field surfaces and perimeter drainage:

- I. HEB Construction will ensure both playing field surfaces are laser graded to ensure consistent cross falls in accordance with general existing levels.

- II. Playing fields include the installation of primary sub soil drainage systems designed in accordance with recognised industry standards.
- III. Perimeter swale drains designed in order to manage overland flow.

Planting protects and strengthens the finished ground and provides slope treatment, ensuring stabilisation to avoid erosion and sedimentation impact on the stream environments.

8.3.8 Reinstatement Areas

Table 38: Reinstatement Areas Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC55 (d)	<i>Reinstatement Areas: Details illustrating how areas disturbed or impacted by the construction project will be reinstated to be fit for purpose, and will be designed to be able to be practically and cost effectively maintained and managed</i>	8.3.8 Reinstatement Areas

All areas disturbed or impacted by the construction project will be reinstated to be fit for purpose and are designed to be able to be practically and cost effectively managed.

On completion of the work, HEB Construction will ensure all surfaces affected by the works are reinstated to pre-construction condition unless specified otherwise.

It is envisaged that all areas identified for re-use i.e. the two playing fields, walking tracks, Rolleston street and Dorking street etc shall be returned to practical reuse quickly following completion of the works.

Following completion of the reservoir installation, the upper and lower playing fields are to be reinstated to at least the same standard as prior to the works. The aim of is to enhance the performance of the existing sports fields upon handing back to the Council. This will be achieved through the improvement of the existing (poor) surface levels and the installation of a primary sports field drainage system on both fields.

The proposed reinstatement methodology will address these surface levels and result in an enhanced playing surface for community users of the Park. The improved surface levels as a result of the proposed methodology will also facilitate easier maintenance of the sports field platforms.

8.4 Planting Programme

Table 39: Planting Programme and Rehabilitation Identified Within GWRC Regulatory Permissions

GWRC Resource Consent Conditions		
Pre-Construction Requirements		
Condition number	Condition requirement	LEMP Section Reference

8(f)	Timetable and nature of progressive site rehabilitation and re-vegetation proposed.	Erosion and Sediment Control Plan 8.4 Planting Programme
Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		
DC.33I	Planting programme – the staging of planting in relation to the construction programme which shall, as far as practicable, include provision for planting within the first planting season following completion of the Project	8.4 Planting Programme

HEB Construction will ensure all planting will be carried out during a four-month period from the beginning of May until the end of August. Planting is not to occur outside of these months. This means that while construction maybe completed, planting may not immediately occur and instead will not happen until the following planting season. All works upon completion will be hydroseeded or protected by some other means to stabilise the surface and reduce runoff, erosion and dust. Areas to be planted will be spot sprayed with herbicide to kill grass and any weeds well in advance of planting.

At the earliest opportunity a comprehensive planting programme will be produced and updated within this LEMP for implementation of the landscape works.

The construction programme will, as much as practicable, include provision for planting within the first planting season following completion of the project. This programme shall be prepared using critical path techniques and shall be capable of showing actual progress through the project.

Task Name	Start	Finish	Duration
Planting to Reservoir Site	Thu 24/11/22	Mon 20/02/23	51 days
Pipe tunnel entrance planting	Fri 20/01/23	Tue 24/01/23	2 days
Leptospermum Scorparium	Wed 25/01/23	Thu 26/01/23	2 days
Massed planting	Fri 27/01/23	Mon 30/01/23	2 days
Native low planting	Tue 31/01/23	Wed 1/02/23	2 days
Native regeneration planting	Thu 2/02/23	Fri 3/02/23	2 days
Native reserve roof planting	Tue 7/02/23	Wed 8/02/23	2 days
Upper field northern edge planting	Thu 9/02/23	Tue 14/02/23	4 days
New grass	Wed 15/02/23	Mon 20/02/23	4 days
New path	Thu 24/11/22	Wed 14/12/22	15 days
Specimen trees	Wed 15/02/23	Mon 20/02/23	4 days
Playing Fields	Mon 12/09/22	Tue 20/12/22	71 days
Profiling (leveling) of lower fields	Mon 12/09/22	Fri 7/10/22	20 days
Profiling (leveling) of upper fields	Fri 28/10/22	Thu 24/11/22	20 days
Re-surface upper & lower playing fields - refer to separate schedule of prices to be supplied to subcontractor	Wed 23/11/22	Tue 20/12/22	20 days
Allowance for irrigation water supply, assume 40mm HDPE from Rolleston St main including 2 no. hose taps and backflow preventer	Mon 10/10/22	Thu 13/10/22	4 days
Irrigation on lower field	Fri 14/10/22	Wed 26/10/22	8 days
Irrigation on upper field	Fri 25/11/22	Tue 6/12/22	8 days
Other Small Items - Gates, Fences etc.	Fri 25/11/22	Tue 20/12/22	18 days
375mm dia. SED H5 treated timber pole retaining wall, 950mm max. retained height (Dorking Rd)	Mon 28/11/22	Wed 30/11/22	3 days
Standard vehicle gate	Fri 25/11/22	Fri 25/11/22	1 day
Reinstate existing two rail parks fences	Mon 28/11/22	Tue 29/11/22	2 days
New two rail parks fences	Wed 30/11/22	Tue 13/12/22	10 days
Vanguard removable bollards at top of Asquith - quantity assumed	Wed 14/12/22	Fri 16/12/22	3 days
Allowance for signs	Mon 19/12/22	Tue 20/12/22	2 days

Construction Programme information Regarding the Planting of Reservoir Site and Two Playing Fields . The programme will be continually updated to reflect progress on site

8.4.1 Planting Species and Planting Specifications

Table 40: Planting Specifications and Planting Strategies Identified Within WCC and TBA Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		
DC.33k	Details of proposed mass planting and specimen tree planting including plant species, plant/grass mixes, spacing/densities, sizes (at the time of planting) and layout and planting methods. The intention is to achieve a dense canopy of complementary plant communities which will achieve a variation in plant height.	8.4.1 Planting Species and Planting Specifications
DC.33m(iv)	Plant supply and planting, including hydro-seeding and grassing.	8.4.1 Planting Species and Planting Specifications
Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan

Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 56	Landscape design and management	
(a)	Landscape and planting strategies: A landscape and planting strategy for the site, including:	8.4.1 Planting Species and Planting Specifications
i.	Use of planting that is varied in height and scale to disguise any uniform slope areas	8.4.1 Planting Species and Planting Specifications
ii.	The identification and intention of area specific planting strategies and landscape design treatments, including species selection and maintenance requirements, for reference in monitoring the success of planting and landscape works	8.4.1 Planting Species and Planting Specifications
iii.	Any planting or planting areas to be planted outside the standard planting seasons that will require maintenance to address potential plant stress (for example irrigation)	8.4.1 Planting Species and Planting Specifications
iv.	Any areas where planting may need to be delayed until a suitable planting period (to maximise planting success), and that may need to be suitably maintained and stabilised in the interim period.	8.4.1 Planting Species and Planting Specifications

Planting specifications and strategies have been identified in the regulatory permissions. The identification and intention of area specific planting strategies and landscape design treatments, including species selection and maintenance requirements has been considered during the design phase of the project.

Plant species have been chosen that vary in height and appearance to disguise the uniform shape of earthworks areas. This includes groundcovers, shrubs and trees in random placement to reduce the risk of appearance of uniformity or in row formation. The intention is to achieve a dense canopy of complementary plant communities, achieving a variation in plant height. Refer to planting details in Appendix 4 – Landscape Detailed Design Drawings.

Open space areas on the reservoir ‘top’ have been limited as far as practical to achieve a character similar to that which existed pre-construction and reduce the extent of mowing areas. The irregular shape to planting on the reservoir ‘top’ helps to create an informal lookout space which existed pre-construction.

A master species list was prepared and is shown on the Landscape Concept drawing (refer Attachment 3) which has now been used to create a more refined plant schedule. The finalised plant list includes areas such as riparian planting to streams and edge treatment planting to tie the reinstated licence area into new ground levels to minimise visual effects (Figures 9 - 12).

Planting is also included in places to reduce weed infestations and help stabilise existing banks. Plant/grass mixes, spacing/densities, sizes and layout and planting methods are demonstrated in the Landscape design drawings (excerpts below) and the Landscape Technical Specification (Appendix 5).

Plants shall be watered to the level required for the programme planting season. Any planting or planting areas to be planted outside the standard planting seasons will undergo maintenance to address potential plant stress.

Irrigation is included as part of this maintenance and HEB Construction is responsible for providing a suitable water supply for plants in the event of unseasonal dry conditions that could comprise plant survival and establishment.

Any areas where planting needs to be delayed until a suitable planting period (to maximise planting success), the surfaces will be hydroseeded and or stabilised using a form of erosion control to stabilise the surface and reduce runoff, erosion and dust.

A meeting is to be held between the Project Landscape Architect and HEB Construction to discuss planting details and implementation of the 'hold points' identified in the Appendix 5 Technical Specification Landscape (Appendix 5), site visits and monitoring and reporting. Reporting will comprise of documentation detailing progress against anticipated outcomes and will include photographs to illustrate these outcomes. More information on the inspection test plans and monitoring can be found in section 8.11.4 Monitoring and Inspection Plan of this LEMP.

Monitoring reports to include:

- I. Dates of visits;
- II. Condition of vegetation;
- III. Condition of protective fencing;
- IV. Works undertaken in the vicinity since the previous visit; and
- V. Any actions required.

In addition to this monitoring process, HEB Construction will ensure that the health of the retained and newly planted vegetation is not compromised and that the retained vegetation does not pose a safety risk.

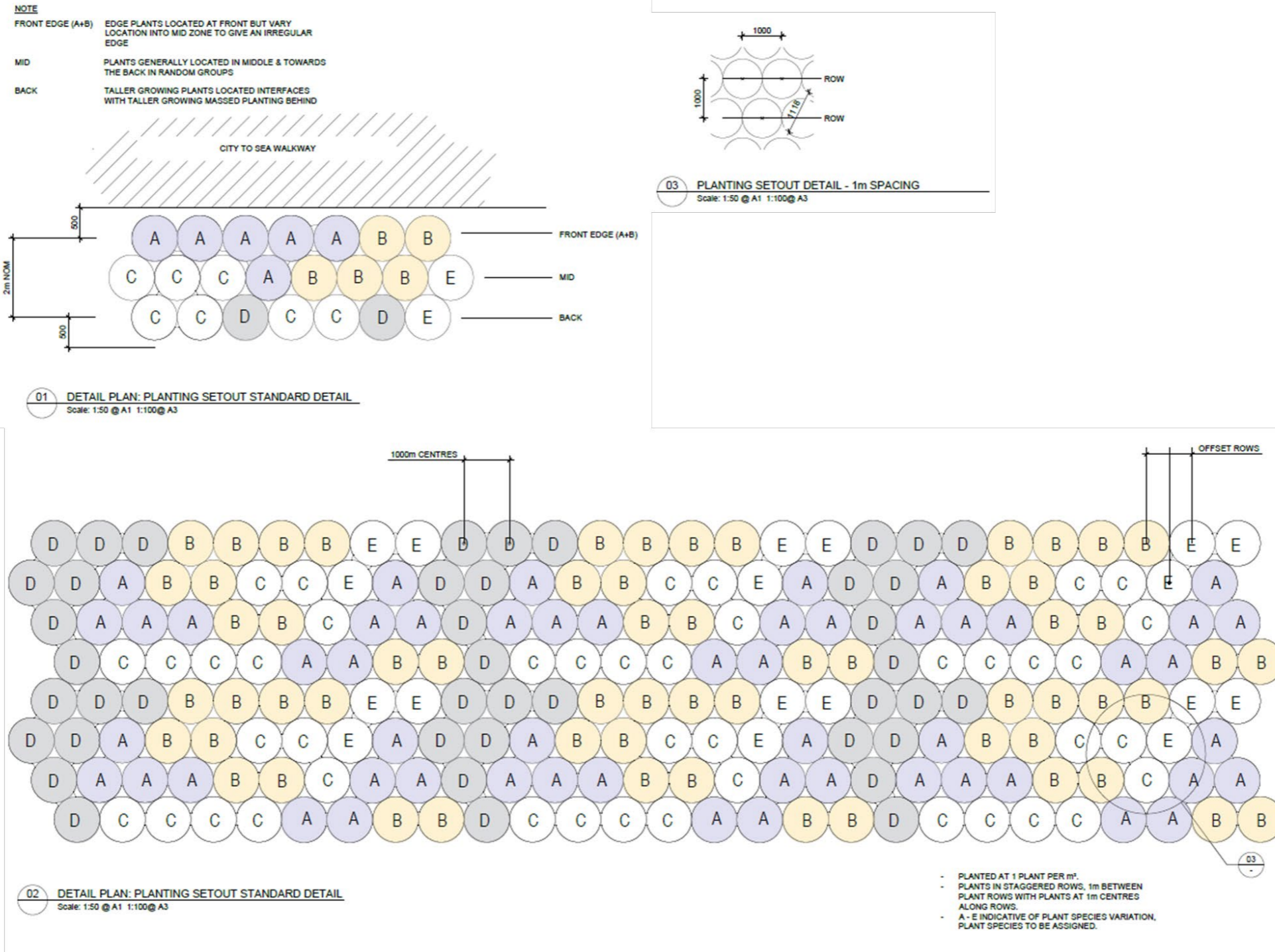


Botanical Name	Common Name	Grade	Spacing	% MIX
Specimen trees				
<i>Eucalyptus leucocylon</i> 'Rosea'	Red flowering gum	PB8	As shown	
<i>Metrosideros excelsa</i>	Pohutukawa	PB18	As shown	
Access road between fields road bank stabilisation				
<i>Phormium cookianum</i>	Mountain flax	1L	1m	100%
Grass - Low				
<i>TBC species</i>				100%
Stilling well				
<i>Austroderia fulvida</i>	Toetoe	1L	1m	40%
<i>Coprosma propinqua</i>	Mingimingi	1L	1m	30%
<i>Phormium cookianum</i>	Mountain flax	1L	1m	30%
Pipe tunnel entrance planting				
<i>Coprosma propinqua</i>	Mingimingi	1L	1m	30%
<i>Muehlenbeckia axillaris</i>	Pohuehue	1L	1m	30%
<i>Phormium cookianum</i>	Mountain flax	1L	1m	20%
<i>Poa cita</i>	Silver tussock	1L/RT	0.6m	20%
Upper field northern edge planting				
<i>Cordyline australis</i>	Ti kouka	1L	1m	5%
<i>Hebe stricta</i>	Koromiko	1L	1m	30%
<i>Phormium cookianum</i>	Mountain flax	1L	1m	40%
<i>Poa anceps</i>	Meadow grass	1L	1m	25%
Pipe tunnel wall planting				
<i>Metrosideros perforata</i>	White rata vine	1L	0.5	
<i>Muehlenbeckia astonii</i>	Shrubby tororaro	1L	2m	30%
<i>Muehlenbeckia complexa</i>	Pohuehue	1L	1m	
<i>Muehlenbeckia axillaris</i>	Creeping wire vine	1L	0.6m	30%
<i>Poa cita</i>	Silver tussock	1L/RT	0.6m	40%
Native reservoir roof planting				
<i>Coprosma acerosa</i>	Sand coprosma	1.5L	1m	30%
<i>Melicytus alpinus</i>	Porcupine shrub	1.5L	1m	30%
<i>Muehlenbeckia complexa</i>	Pohuehue	1L	1m	15%
<i>Phormium cookianum</i>	Mountain flax	1L	1m	15%
<i>Poa anceps</i>	Meadow grass	1L	1m	10%
Native Low Planting				
<i>Coprosma propinqua</i>	Mingimingi	1L	1m	15%
<i>Muehlenbeckia complexa</i>	Pohuehue	1L	1m	15%
<i>Olearia solandri</i>	Coastal shrub daisy	1L	1m	15%
<i>Phormium cookianum</i>	Mountain flax	1L	1m	40%
<i>Poa anceps</i>	Meadow grass	1L	0.6m	15%
Manuka planting				
<i>Leptospermum scoparium</i>	Manuka	1L/RTT	1m	100%
Native Revegetation - East and South of Reservoir - Dry Upper Slopes - predominantly constructed batte				
Key seral trees (ngaio, weeping kowhai, akiraho) key bulking plants (karamu, manuka)				
Year 1 Establish				
<i>Austroderia fulvida</i>	Toetoe	1L	1m	10%
<i>Brachyglottis repanda</i>	Rangiora	1L	1m	10%
<i>Coprosma robusta</i>	Karamu	1L	1m	20%
<i>Hebe stricta</i>	Koromiko	1L	1m	10%
<i>Leptospermum scoparium</i>	Manuka	1.0L	1m	20%
<i>Olearia paniculata</i>	Akiraho	1.5L	1m	5%
<i>Myoporum laetum</i>	Ngaio	1.5L	1m	10%
<i>Pennantia corymbosa</i>	Kaikomako	1.5L	1m	5%
<i>Sophora microphylla</i>	Weeping Kowhai	1.5L	1m	10%
Year 2 Enrichment (5m centres)				
<i>Dysoxylum spectabile</i>	Kohekohe	5L	5m	20%
<i>Elaeocarpus dentatus</i>	Hinau	5L	5m	20%
<i>Knightia excelsa</i>	Rewarewa	5L	5m	40%
<i>Metrosideros robusta</i>	Northern rata	5L	5m	20%

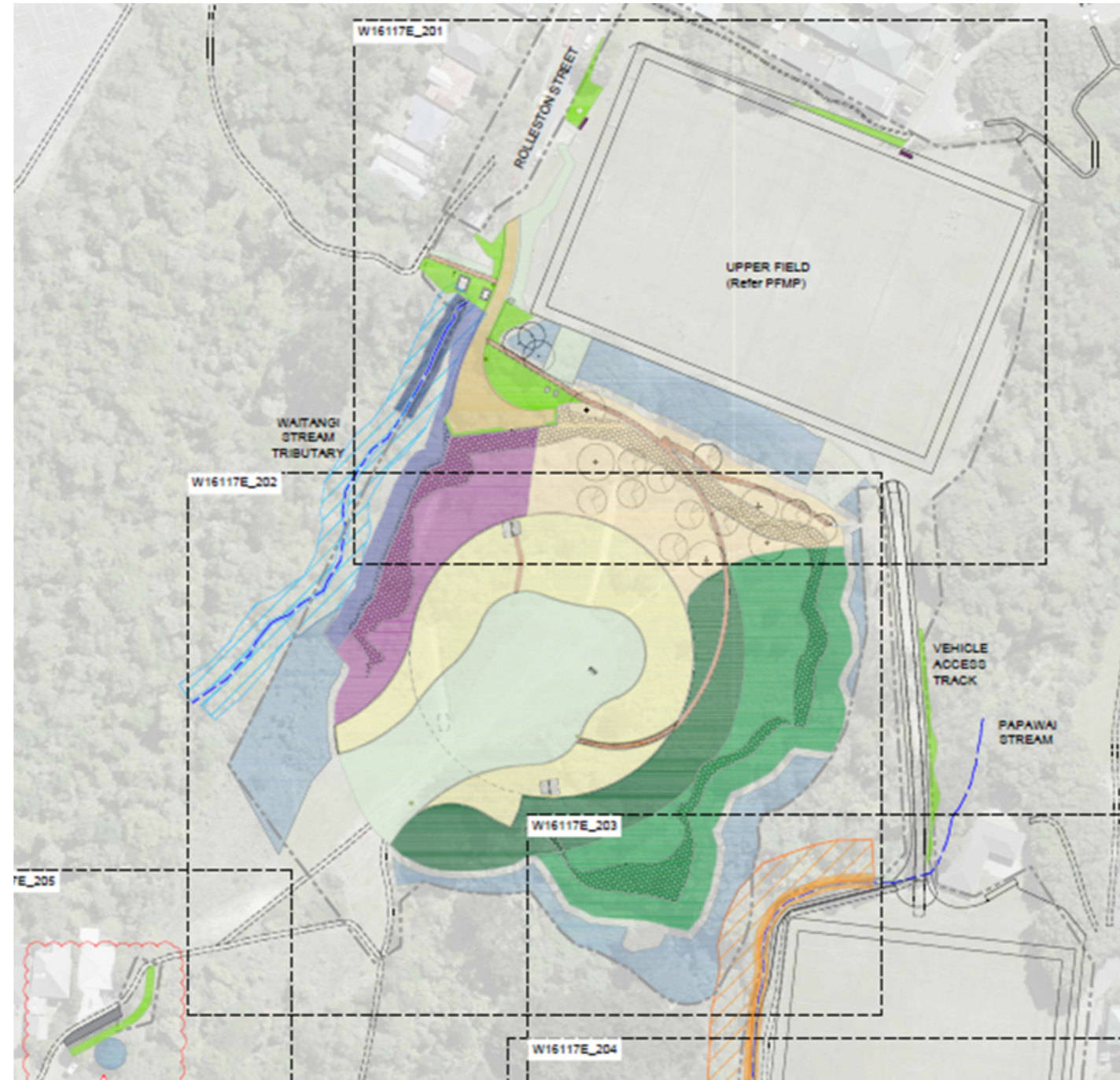
Indicative Planting Schedule – Sheet 1 - refer Appendix 4 for final detail

Botanical Name	Common Name	Grade	Spacing	% MIX
Native Revegetation - East and South of Reservoir - Lower Slopes, both constructed batters slopes & native				
Key seral trees (pigeonwood, lemonwood, fivefinger) Key bulking plants (karamu, kanuka)				
Year 1 Establish				
<i>Carpodetus serratus</i>	Putaputaweta	1.5L	1m	5%
<i>Coprosma robusta</i>	Karamu	1L	1m	20%
<i>Griselinia littoralis</i>	Broadleaf	1.5L	1m	5%
<i>Hebe stricta</i>	Koromiko	1L	1m	5%
<i>Hedycarya arborea</i>	Pigeonwood	1.5L	1m	10%
<i>Kunzea ericoides</i>	Kanuka	1.0L	1m	20%
<i>Myoporum laetum</i>	Ngairo	1.5L	1m	10%
<i>Pennantia corymbosa</i>	Kaikomako	1.5L	1m	5%
<i>Pitiosporum eugenoides</i>	Lemonwood	1.5L	1m	10%
<i>Pseudopanax arboreus</i>	Five Finger	1.5L	1m	10%
Year 2 Enrichment (5m centres)				
<i>Beilschmiedia tawa</i>	Tawa	5L	5m	20%
<i>Dysoxylum spectabile</i>	Kohekohe	5L	5m	25%
<i>Elaeocarpus dentatus</i>	Hinau	5L	5m	20%
<i>Knightsia excelsa</i>	Rewarewa	5L	5m	20%
<i>Metrosideros robusta</i>	Northern rata	5L	5m	5%
<i>Podocarpus totara</i>	Totara	5L	5m	5%
<i>Prumnopitys taxifolia</i>	Matai	5L	5m	5%
Native Revegetation - West Slopes above Waitangi Stream				
Key seral trees (wineberry, tree fuchsia, five finger, kowhai) Key bulking plants (karamu, koromiko)				
Year 1 Establish				
<i>Aristotelia serrata</i>	Wineberry	1.5L	1m	10%
<i>Carpodetus serratus</i>	Putaputaweta	1.5L	1m	10%
<i>Coprosma robusta</i>	Karamu	1L	1m	20%
<i>Fuchsia excorticata</i>	Kotukutuku	1.5L	1m	10%
<i>Hebe stricta</i>	Koromiko	1.5L	1m	20%
<i>Pennantia corymbosa</i>	Kaikomako	1.5L	1m	5%
<i>Pitiosporum eugenoides</i>	Lemonwood	1.5L	1m	5%
<i>Pseudopanax arboreus</i>	Five Finger	1.5L	1m	10%
<i>Sophora tetraltera</i>	Kowhai	1.5L	1m	10%
Year 2 Enrichment (5m centres)				
<i>Beilschmiedia tawa</i>	Tawa	5L	5m	40%
<i>Dacrycarpus dactyloides</i>	Kahikatea	5L	5m	10%
<i>Laurelia novae-zelandiae</i>	Pukatea	5L	5m	10%
<i>Rhopalostylis sapida</i>	Nikau	5L	5m	40%
Papawai Stream - Riparian planting				
Planting Field Berm (Infill gaps in current planting)				
<i>Carex secta</i>	Purei	1.5L	2m	50%
<i>Carex virgata</i>	Pukio	1.5L	2m	50%
Slopes above stream (infill gaps in current scrub with seral tree species)				
<i>Aristotelia serrata</i>	Wineberry	1.5L	2m	20%
<i>Carpodetus serratus</i>	Putaputaweta	1.5L	2m	10%
<i>Coprosma robusta</i>	Karamu	1L	2m	10%
<i>Fuchsia excorticata</i>	Kotukutuku	1.5L	2m	10%
<i>Pennantia corymbosa</i>	Kaikomako	1.5L	2m	10%
<i>Pitiosporum eugenoides</i>	Lemonwood	1.5L	2m	10%
<i>Pseudopanax arboreus</i>	Five Finger	1.5L	2m	20%
<i>Sophora tetraltera</i>	Kowhai	1.5L	2m	10%
Waitangi Stream - Riparian planting				
Enrichment planting of current seral vegetation with potential canopy species.				
<i>Beilschmiedia tawa</i>	Tawa	5L	5m	25%
<i>Dacrycarpus dactyloides</i>	Kahikatea	5L	5m	25%
<i>Laurelia novae-zelandiae</i>	Pukatea	5L	5m	25%
<i>Rhopalostylis sapida</i>	Nikau	5L	5m	25%
Pipe to upper field planting				
Within Flex MSE system				
<i>Agrostis capillaris</i>	Refer TU-1-501 for area			
<i>Lolium perenne</i>	Browntop			10%
<i>Festuca rubra</i>	Perennial Ryegrass			60%
	Chewings' Fescue			30%
Hydro-seeded lawn				
TBC by hydro-seed specialist				
<i>Agrostis capillaris</i>	Refer GR-1 and 3-501 for areas			
<i>Lolium perenne</i>	Browntop			10%
<i>Festuca rubra</i>	Perennial Ryegrass			60%
	Chewings' Fescue			30%
Seeded lawn				
Low growing grass mix				
<i>Agrostis capillaris</i>	Refer GR-2-501 for area			
<i>Lolium perenne</i>	Browntop			15%
<i>Trifolium repens</i>	Perennial Ryegrass			60%
	Huia white clover			25%
Valve chambers (low growing)				
<i>Coprosma acerosa</i>	Sand coprosma	1L	1m	25%
<i>Hebe stricta</i>	Koromiko	1.5L	1m	20%
<i>Muehlenbeckia complexa</i>	Pohuehue	1L	1m	25%
<i>Phormium cookianum</i>	Mountain flax	1L	1m	30%

Indicative Planting Schedule – Sheet 2 - refer Appendix 4 for final detail



Indicative Planting Details - Refer Appendix 4 for final details



Overview of the Different Planting Types and Areas on the project

8.4.2 Eco-Sourcing

Table 41: Eco Sourced Native Plants Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 56a (v)	Eco-sourced native plants and providing sufficient lead times to supply and where necessary harden plants, to achieve the quantities needed.	8.4.2 Eco-Sourcing

HEB Construction will ensure indigenous plant species shall be sourced as far as practicable from the Wellington Ecological District. In cases where this is not possible due to lack of available seed, seed can be sourced from adjacent ecological districts within the wider Sounds-Wellington Ecological Region.

Seed collection should ensure that source trees come from a similar environment or habitat to that in which they will be planted at the reservoir, to ensure propagated individuals are adapted to the environmental conditions found there. Seed collection must be from natural vegetation and avoid collection from propagated plants with unknown origins.

Where necessary plants will be hardened to achieve the quantities required for the project. These plants are to be grown in a nursery environment for a sustained period under a range of conditions like those in the area they are to be planted. Once installed, hardened plants should generally be able to withstand the prevailing environment.

8.4.3 Landscaping of Reservoir Top

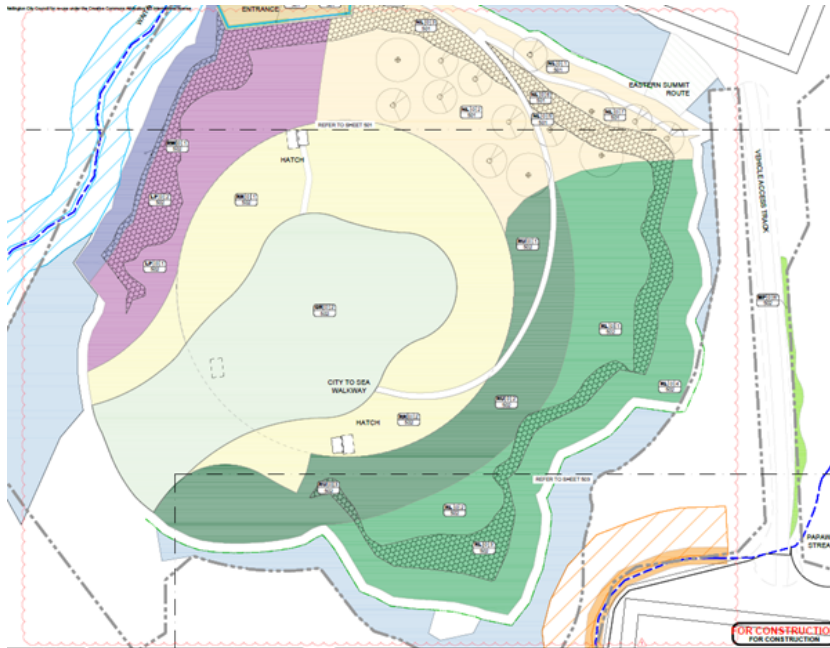
Table 42: Landscaping of Reservoir Top Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC.56 (c)	<i>Landscaping of reservoir 'top' and identified areas to be kept clear of trees: Final design of the top of the reservoir and any areas identified by Wellington Water that must be kept clear of trees must:</i>	8.4.3 Landscaping of Reservoir Top
i.	Clearly define areas that must be kept clear of vegetation in perpetuity	8.4.3 Landscaping of Reservoir Top
ii.	Limit open grass area as far as possible to try and achieve a character similar to that which existed pre-construction	8.4.3 Landscaping of Reservoir Top
iii.	Within any open space area on the top of the reservoir, create an informal lookout space	8.4.3 Landscaping of Reservoir Top

The final design of the landscaping for top of the reservoir is demonstrated in Figure 13. The landscaping specifications and landscaping design drawings provide further detail. The drawing

below shows open grassed areas on the top of the reservoir and an outline of the area to be kept free from trees.

Open space areas on the reservoir ‘top’ have been limited as far as practical to achieve a character similar to pre-construction and reduce the extent of mowing areas. The irregular shape to planting on the reservoir ‘top’ helps to create an informal lookout space which existed pre-construction.



Excerpt from landscape design drawings of plants for reservoir top

8.5 Tracks

8.5.1 Final Track Network

Table 43: Track Network Planning and Short Walk Standard Identified Within WCC and TBA Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		
DC.33d	Details of replaced pathways through the site, which shall be designed with reference to the WCC “Short Walk Standard”	8.5.1 Final Track Network
Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 56 (d)	Track network planning: Plans and details that show the location and design specification for the final track network, including reinstatement of closed tracks. This shall be integrated with temporary track planning and design requirements (LC 72 (b))	8.5.1 Final Track Network

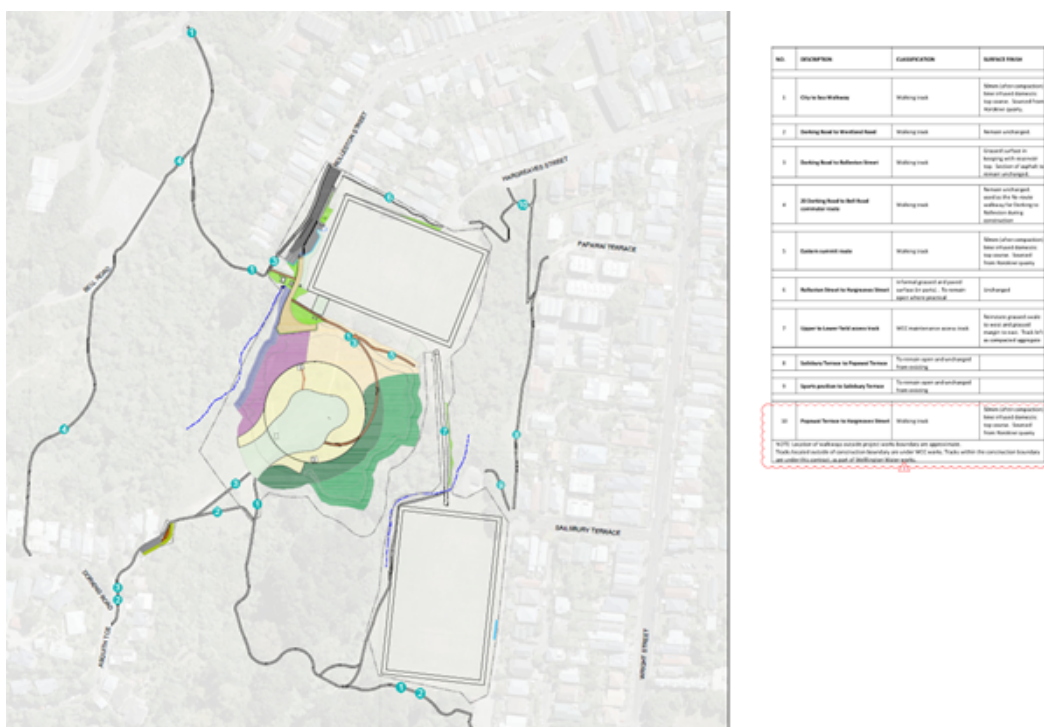
Details in the design drawings show the location and design specification for the final track network. These include reinstatement of closed tracks such as a portion of the City to Sea Walkway.

New or replaced pathways are designed to the ‘Short Walk Standard’ as defined in the Wellington City Council Open Space Access Plan (September 2016) - refer to Appendix 10.

The Walkway Network Plan (WNP) (Figure 14) in the Landscape Design Drawings identifies the final track network. It shows the location of tracks which can be used as re-route tracks during the construction phase when a portion of the City to Sea Walkway, the access track between fields, the eastern and western summit routes and the informal track along the Papawai Stream bund will be closed.

The access track between Upper and Lower fields will be closed during construction. Post construction, this track will be reinstated. Refer to Section 9.2.6 Access Track between Upper and Lower Playing Fields of this LEMP.

Refer to the Construction Traffic Management Plan (CTMP) for temporary track closures and pedestrian management.



Walkway Network Plan

8.5.2 Reservoir Service Tunnel Access Way Track

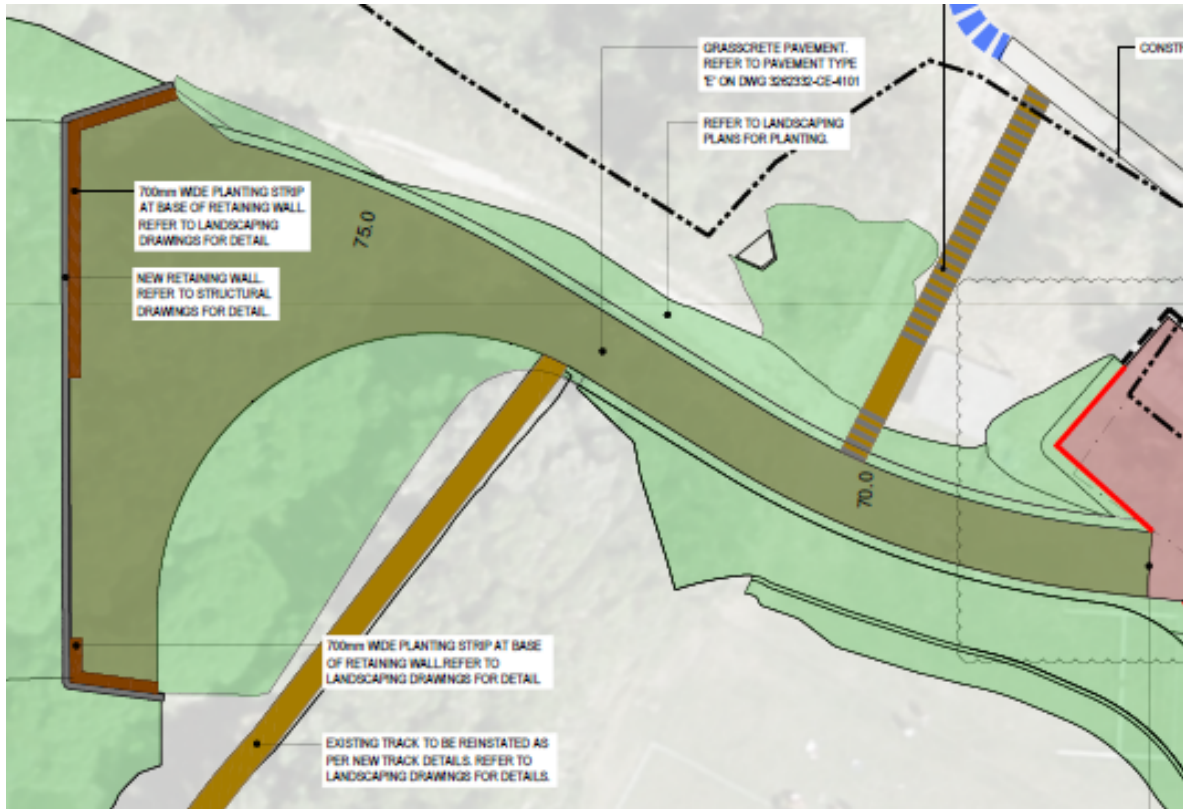
Table 44: Reservoir Service Tunnel Access Way Track Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 59	Reservoir Service Tunnel Access Way Track Landscape design and management of the service access way to the reservoir service tunnel must provide for the following:	
(a)	Service tunnel access track design: The tunnel access way track must be as narrow as practicable and comprise a permeable surface that blends into the natural park landscape and functions primarily as a walking track	8.5.2 Reservoir Service Tunnel Access Way Track
(b)	Service tunnel access track use: Alignment, design and materials used on the service tunnel access way track will ensure the track can only be accessed by WCC, Wellington Water or approved contractor vehicles for normal reservoir and park maintenance, servicing and management activities	8.5.2 Reservoir Service Tunnel Access Way Track

The service tunnel access track is to be finished with a 155mm deep grasscrete surface. This to ensure the grassed finish blends into the natural park landscape (see Landscape Design Drawings Appendix 4). The track has been designed to be as narrow as practicable.

The grasscrete surface provides a hardwearing surface to be used as a walking track as part of the City to Sea Walkway and service access for the pipe tunnel. Refer Appendix 9: Civil Construction Design Drawings for further details regarding the construction.

At the termination of Rolleston Street, the vehicle entrance to the pipe tunnel includes a park gate ensuring maintenance vehicle, WCC or WWL use only. Vehicle manoeuvring space is provided at the tunnel entrance to ensure vehicles can exit safely facing forward.



Design and key demonstrating grasscrete surface use at tunnel entrance

Table 46: Exposed Reservoir Infrastructure Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 58	Exposed Reservoir Infrastructure	
	The design and look of any exposed above ground infrastructure associated with the reservoir and associated pipe work must provide for the following:	8.6 Exposed Reservoir Infrastructure
(a)	Integration with landscape: Design, materials and colours must be selected to integrate the infrastructure into the park and the natural landscape as far as practical. Opportunities to create bespoke solutions that can also serve a recreation or amenity purpose must be considered in design.	8.6 Exposed Reservoir Infrastructure

All exposed reservoir infrastructure has been designed to ensure colours and materials integrate with the natural landscape as much as practicable. Opportunities to create bespoke solutions that can also serve a recreation or amenity purpose were considered in design. See attached landscape design drawings for detail.

8.6.1 *Pipe Tunnel Access Door*

Table 47: Pipe Tunnel Access Door Requirements Identified Within WCC TBA Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		
DC.33e	Consideration of CPTED principles in relation to the pipe tunnel access door	8.6.1 Pipe tunnel access door
Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 58	Exposed Reservoir Infrastructure:	
(b)	Reservoir service tunnel access door area: In preparing a draft landscape design for the reservoir service tunnel access door area attention shall be given to preparing a reasonable selection of design alternatives for this area, prior to final design selection.	8.6.1 Pipe Tunnel Access Door

Over the design phase of the project the pipe tunnel access door was discussed with WCC. Two sketches were tabled with the tunnel door facing either west or north. Due to the Crime Prevention Through Environmental Design (CPTED) safety issues (passive surveillance) with the west facing door option, the north facing door was selected by WCC to be progressed further.

The north facing door option was refined to include a handrail and a sloping wall which addressed CPTED concerns raised.

One of the seven qualities that characterise well designed, safer places from the Ministry of Justice National Guidelines for Crime Prevention through Environmental Design in New Zealand, is;

- I. "A Sense of Ownership, respect, territorial responsibility and community".

For the reservoir service tunnel access door area, 7 options to treat the wall were produced with different examples given for seating and signage.

Options included:

- I. A climbing wall;
- II. A mural;
- III. Reservoir data graphics;
- IV. Surrounding area maps supporting way-finding;
- V. Pipe network and instrumentation graphics;
- VI. Climbing or trailing plants;
- VII. Concrete surface finish effects.

This was discussed with WCC in January and February 2019 and shown at a residents meeting on 14/03/19. A design is to be decided by WCC, in consultation with CRG and HEB Project Manager.

8.6.2 Reserve Maintenance

Table 48: Reserve Maintenance Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 58	Landscape design and management	
(c)	Reserve maintenance: Design and infrastructure installation must enable easy and practical access for ongoing maintenance of the area/s around any structure/s.	8.6.2 Reserve Maintenance

HEB Construction will ensure the design and infrastructure installation must enable easy and practical access for ongoing maintenance of the reservoir and the two playing fields. This includes maintenance access ways, reinstated or new walking tracks, Rolleston Street, Hargreaves Street and Dorking Road as examples of this (Civil Construction Drawings).

The landscape design drawings illustrate areas of access for the ongoing maintenance of the structures.

Refer to Section 9.2.6 Access Track between Upper and Lower Playing Fields of this LEMP for details regarding the access track between the two playing fields.

The Walkway Network Plan (WNP) (figure 32) in the Landscape Design Drawings identifies the final walking track network.

8.6.3 Landscape Treatment Integration

Table 49: Landscape Treatment Integration Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 56	Landscape design and management	
(e)	Landscape treatment integration: Specific landscape treatments that will be applied at the edge of the reinstated licence area to integrate new ground levels and associated landscape treatments within the licence area into the undisturbed landform and vegetation patterns outside of the licence area in a way that provides for the intended use and management of that land and minimises visual effect	8.6.3 Landscape Treatment Integration

The Planting Schedule and Landscape Design Drawings indicate where edge treatment planting will tie reinstated licence area into new ground levels to minimise visual effects.

Plant species have been chosen that vary in height and appearance to disguise the uniform shape of earthworks areas. This includes groundcovers, shrubs and trees in random placement so as not to appear in rows or have the appearance of uniformity (see Landscape Design Drawings – planting detail sheet 1).

Open space areas on the reservoir ‘top’ have been limited as far as practical to achieve a character similar to that which existed pre- construction.

As previously mentioned, to ensure a smooth integration of backfilled areas with adjacent topography, a 2-metre-wide ‘Work Zone Boundary’ sits outside the fill boundary. This exists to complete construction works on the edge of the fill site and has been included in all planting plans to ensure a smooth integration between existing vegetation.

The Landscape Design Drawings (Appendix 4) illustrate how these effects will be implemented.

8.7 Park Entrances and Edge Design

8.7.1 Rolleston Street

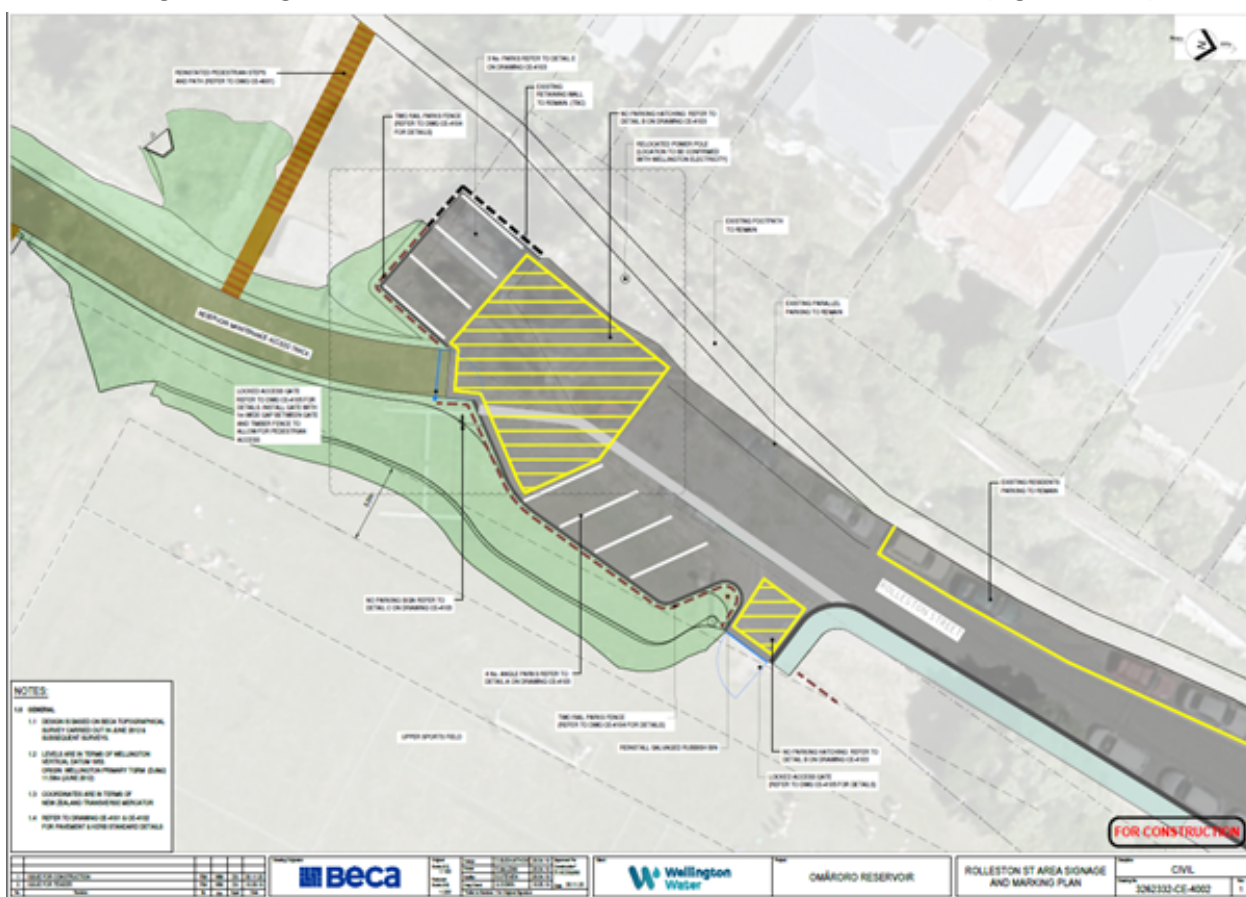
Table 50: Rolleston Street Park Entrance Design Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 61	Licence Area Park Entrances and Edge Design	
	Landscape design and management of the licence area's park entrance areas and edges (both with adjacent Town Belt land and residential areas) must provide for the following:	
(a)	<i>Rolleston Street park entrance design:</i> Design of the Rolleston Street road entrance and western upper field edge that provides for access to the pipe tunnel entrance, walking access to the track network and	8.7.1 Rolleston Street

	improved sports field parking and vehicle manoeuvring space while not impacting sports field and side-line activity, function and maintenance.	
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The design of Rolleston Street park entrance improves the area from its current layout. Space for carparking will be formalised with space for turn around if the carpark is full via the field entry point. The existing City to Sea walkway connects with the vehicle entrance to the pipe tunnel via the existing western steps. Walkway users can use a section of the vehicle entrance track before way-finding signage points the direction of the City to Sea Walkway east away from the vehicle track. Carpark users can use the tunnel entrance vehicle track to access the City to Sea Walkway in either direction.

Civil Design Drawings illustrate the Rolleston Street Road entrance and access (Figure below)



Rolleston Street area

8.7.2 Upper Field Edges

Table 51: Upper Field Northern and Southern Edges Design Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		

LC. 61	Licence Area Park Entrances and Edge Design	
	Landscape design and management of the licence area's park entrance areas and edges (both with adjacent Town Belt land and residential areas) must provide for the following:	
(b)	<i>Upper field northern and southern edges:</i> The northern and southern edges of the upper field may require ground level changes and new planting to successfully integrate the uncompacted and resurfaced field into the undisturbed field edges and incorporate any new drainage and side-line areas for spectators.	8.7.2 Upper Field Edges

Planting to the northern edge of the upper field allows for the area to be restored after the field is reinstated. Small growing species have been selected on the northern side of the playing field fence ensuring maximum space for spectators and maintains views into and from the park.

The finish to the southern edge to the upper field includes a grass swale in keeping with the existing condition. At the pipe interface with the upper field, drought resistant grasses are proposed within FLEX MSE for this steep north facing slope. This is in keeping with the current vegetated face to provide continuity with vegetation that is to be retained.

Further detail can be found in the Landscape Design Drawings (Appendix 4) as to how these edge finishes integrate.

8.7.3 Hargreaves Street

Table 52: Hargreaves Street Reinstatement Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 61	Licence Area Park Entrances and Edge Design	
	Landscape design and management of the licence area's park entrance areas and edges (both with adjacent Town Belt land and residential areas) must provide for the following:	
(c)	Reinstatement of the Hargreaves Street entrance	8.7.3 Hargreaves Street

HEB Construction will ensure the Hargreaves Street entrance will be reinstated to pre-construction conditions. This includes the removal, storage and reinstatement of the General Park Sign and any park signs in their original location or as instructed under the advice from WCC (Figure below).



Existing General Parks signs x3. WCC to remove, store and reinstate at end of contract works. Allow one weeks notice to WCC prior to removal.

: General Park Sign

8.7.4 Lower Playing Field Access from Southern Car Park Area

Table 53: Lower Playing Access from Southern Car Park Area Reinstatement Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 61	Licence Area Park Entrances and Edge Design	
	Landscape design and management of the licence area's park entrance areas and edges (both with adjacent Town Belt land and residential areas) must provide for the following:	
(d)	Lower playing access from southern car park area: Reinstatement of the driveway and entrance to the lower playing field at the south eastern corner. Access for maintenance is required while stopping public vehicle access onto the field. Parking and manoeuvring space will be designed to maximise public parking for visitors to the park	8.7.4 Lower Playing Field Access from Southern Car Park Area

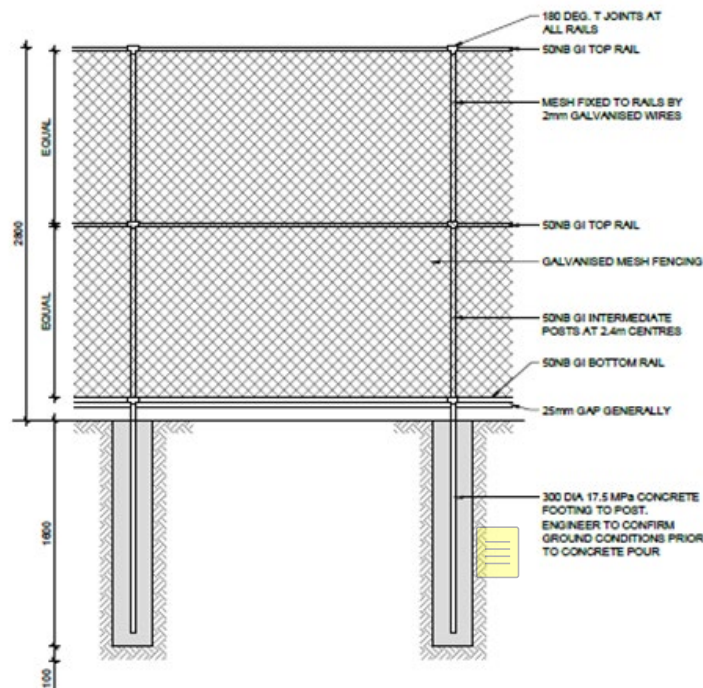
No change is proposed for the access to the lower field from the driveway in the south east corner. If during construction the two rail parks fence, gate and park signage are required to be removed, they will be stored by WWL and reinstated post construction in the condition as photographed. Any items will be included and recorded correctly in the infrastructure inspection and inventory management.

8.7.5 Fencing Plan and Reinstatement

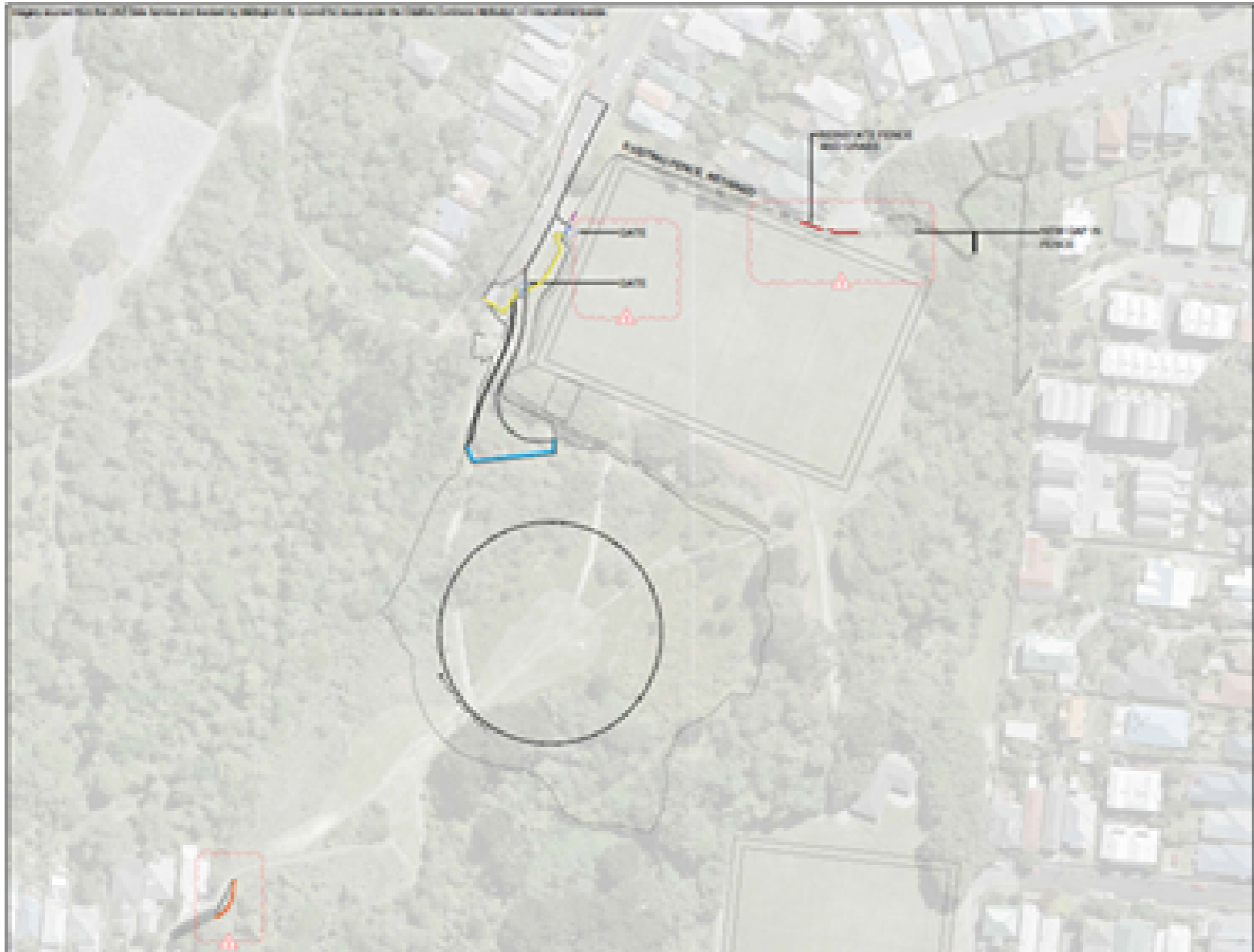
Table 54: Fencing Plan and Reinstatement Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 61	Licence Area Park Entrances and Edge Design	
	Landscape design and management of the licence area's park entrance areas and edges (both with adjacent Town Belt land and residential areas) must provide for the following:	
(e)	Fencing plan and reinstatement: A fencing plan and list of all fencing to be reinstated and/or newly installed across the site that is fit for purpose and meets WCC parks infrastructure specifications. The fencing will be located, specified and installed in such a way that the maintenance of the fences and the land around them has been considered and is practical.	8.7.5 Fencing Plan and Reinstatement

A fencing Plan is included in the Landscape detailed design drawings . This includes a list of fencing to be reinstated and newly installed that are fit for purpose and meet WCC parks infrastructure specifications. Fencing is to be located and installed in such a way that the maintenance of the fences and the land around them has been considered and is practical. This shows the location of all existing fencing, which is to be retained and removed. Refer to Landscape Drawings for Fencing Plan and civil engineering drawings for location and details



: The Sports field Replacement Fence



LINE	DESCRIPTION	STATUS/NOTES	ACTION
	New half-hedge fence	Proposed	Refer to local engineering drawing for details
	New half-hedge fence	Proposed	Refer to local engineering drawing for details
	Regular fence along driveway	Proposed	Refer to local engineering drawing for details
	Chain-link fence	Proposed	Refer to local engineering drawing for details
	Proposed retaining wall in existing driveway	Proposed	Refer to local engineering drawing for details

Fencing Plan



8.7.6 Construction Temporary Fencing

Table 55: Construction Site Temporary Fencing Plan Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Temporary Construction Site Area: Site Fencing		
LC. 66	Fencing plan: In conjunction with preparing a draft Construction Management Plan (CMP), as required under designation conditions DCII, 12, 16 and 17, Wellington Water must include in its draft CMP for CMO feedback a plan of all perimeter fencing that will mark or enclose the total extent of site used, or licenced for use, during the construction period. This plan shall include the following information:	8.7.6 Construction Temporary Fencing
(a)	Location and Type: Fence location, and fencing typology and form (i.e. security fencing, acoustic screening, silt fencing etc)	8.7.6 Construction Temporary Fencing
(b)	Staging: Fencing staging, where it is anticipated that fencing may be shifted or altered or amended over the course of the reservoir excavation ¹ construction, backfill, remediation and site landscape and sport field remediation phases,	8.7.6 Construction Temporary Fencing 
(c)	installation and removal method: Installation and removal methodology for fencing, intended to minimise damage to vegetation, tree roots and land outside of the licence area licence area.	8.7.6 Construction Temporary Fencing
(d)	Inspection and maintenance: An inspection and maintenance regime to ensure that fencing is maintained in good order and functioning at all times as intended.	8.7.6 Construction Temporary Fencing
(e)	Final removal: A requirement for all fencing to be removed within 20 working days of the completion of construction.	8.7.6 Construction Temporary Fencing
(f)	Fencing retention approval: Any fencing proposed to be retained within the licence area beyond this period must be approved in writing by the Manager Open Space and Recreation Planning.	8.7.6 Construction Temporary Fencing

Temporary Construction fencing is required on the project. The Construction Fencing Plan (Appendix 11) gives an approximate indication of the location of the construction fencing to be erected as a perimeter fence and to remain throughout the construction programme.

A 1.8m high, mesh fence will be installed in accordance with manufacturers guidelines taking upmost care to minimise damage to vegetation, tree roots and land outside of the licence area licence area.

Refer to the construction traffic management plan for the temporary pedestrian fencing requirements proposed at junctions to temporarily closed tracks and any temporary walkway diversions (CTMP – Section 6.3).

Regular Inspection and Maintenance checks (at the minimum monthly- TBC) will be carried out along all temporary fences to ensure all fencing remains compliant and functional. Inspection checks will include if there is any evidence of people climbing up and over and if they are clear to path users.

HEB Construction will take all necessary measures to protect existing vegetation from damage. Trees to be retained within the project area, as identified on the drawings and required by the conditions of the regulatory permissions, shall be fenced as per the Tree Protection Zone. The TPZ shall be fenced as indicated in the arboricultural impact assessment.

The fence shall be installed before construction and remain there until the work is finished. The fence should be clearly visible and strong enough to protect the tree trunk, branches and tree roots from any accidental damage and machinery impact.

All vehicles, structures, building materials and debris associated with construction must not be stored within the Tree Protection Zone of any tree, unless prior approval from the Project Arborist.

Silt fencing will also be installed (to specification) as per guidance under Section 8.4.7 of the Erosion and Sediment Control Plan (ESCP).

Protective Fencing: HEB Construction will install “Pigs Tail” fence standards and rope/warning tape fencing (or similar stakes, to be approved) around the perimeter of any sown areas to prevent damage to the newly prepared surface from unauthorised access.

Any other temporary fences to be installed will be updated within this LEMP.

All temporary fencing will be removed within 20 working days of the completion of construction. Any fencing proposed to be retained within the licence area beyond this period must be approved in writing by the Manager Open Space and Recreation Planning.

8.8 Lower Playing Field Design

8.8.1 Lower Playing Field Flood Management

Table 56: Lower Playing Field Flood Management Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 62	Lower playing field flood management, final field design and Papawai Stream edge	
(a)	<i>Flood management:</i> Any feasible options may exist to improve the management of flood events in the Papawai Stream that could avoid or reduce the flow of stormwater over the stream's bund edge onto the field and general seepage through the bund into the field	8.8.1 Lower Playing Field Flood Management

Opportunities for improving the flood management of Papawai Stream and the lower playing field edge are being taken into consideration for design in conjunction with the Open Space and Recreation Planning Manager.

Wellington Water (WWL) were completing a study specifically referring to the requirements in LC.62 (a, b & c). Depending on the outcomes of this study this LEMP will be updated to accommodate any alterations.

8.8.2 Papawai Stream Ecological Enhancement

Table 57: Papawai Stream Ecological Enhancement Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 62	Lower playing field flood management, final field design and Papawai Stream edge	
(b)	<i>Papawai Stream ecological enhancement:</i> Any feasible options may exist to enhance the ecological function of the stream in conjunction with any flood management enhancements.	8.8.2 Papawai Stream Ecological Enhancement
(c)	<i>Stream enhancement incorporation in lower playing field reinstatement:</i> Any design solutions arising from (a) and/or (b) could be practically incorporated into works associated with reinstating the lower playing field following the completion of reservoir backfilling.	8.8.2 Papawai Stream Ecological Enhancement

Opportunities for Papawai Stream in enhancing the ecological function of the stream in conjunction with any flood management enhancements are considerations for a design specific to this area. Any decisions will be made with the Open Space and Recreation Planning Manager.

Wellington Water (WWL) were executing a study specifically referring to the requirements in LC.62 (a, b & c). Depending on the outcomes of this study this LEMP and PFMP will be updated to accommodate.

Any design solutions arising from (a) and/or (b) could be practically incorporated into works associated with reinstating the lower playing field following the completion of reservoir backfilling.

8.9 Maintenance and Reinstatement of Access Way

Table 58: Maintenance of Access Way to Lower Playing Field Reinstatement Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Maintenance and reinstatement of access way between Salisbury Terrace and Harriers Club Building		
LC.73	Maintenance of access way to lower playing field.	

	Wellington Water, or its contractor, will be entirely responsible over the duration of the project for the maintenance of the public vehicle access from Salisbury Terrace to the Harriers Club building located on the east side of the Prince of Wales Park lower playing field (the lower field public access way). This will include a responsibility for ensuring that any potholes and other damage resulting from construction of the works are identified and fixed.	8.9 Maintenance and Reinstatement of Access Way
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HEB Construction will be entirely responsible over the duration of the project for the maintenance of the public vehicle access and car parking area from Salisbury Terrace to the Harriers Club building located on the east side of the Prince of Wales Park lower playing field (the lower field public access way).

This includes a responsibility for ensuring that any potholes and other damage resulting from construction of the works are identified and fixed.

8.9.1 Preconstruction Condition Survey

Table 59: Preconstruction Condition Survey Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Maintenance and reinstatement of access way between Salisbury Terrace and Harriers Club Building		
LC.74	Preconstruction condition survey: access way and car parking area	
	At least 20 working days prior to construction commencing Wellington Water, or its contractor, shall carry out a preconstruction condition survey of the lower field public access way and the public car parking area to the south of the lower field, using an appropriately qualified engineer. A report of this survey will be supplied to the Manager Open Space and Recreation Planning.	8.9.1 Preconstruction Condition Survey

There is a requirement to conduct preconstruction condition surveys of the lower field public access way, between Salisbury Terrace and Harrier Club building, and the public car parking area to the south of the lower field.

Preconstruction condition surveys will be undertaken by an appropriately qualified engineer at least 20 working days prior to construction.

HEB Construction will repair any damage including potholes, to the road to the documented standard within the road condition survey report following completion of the respective construction phases of the project.

A report of this survey will be sent to the Manager Open Space and Recreation Planning.

8.9.2 Access Way and Car Parking Inspection

Table 60: Access way and Car Parking Area Inspection Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Maintenance and reinstatement of access way between Salisbury Terrace and Harriers Club Building		
LC.75	Timeframes for repairing project damage to access way and/or car parking area	
	Wellington Water or its contractor shall repair pot holes or other damage resulting from the project to the lower field public access way and/or car parking area either within 10 working days of being notified to the CLP, the CMO or the Manager Open Space and Recreation Planning, or within any other timeframe otherwise agreed in writing with the Manager Open Space and Recreation Planning.	8.9.2 Access Way and Car Parking Inspection
LC.76	Access way and car parking area inspection following lower playing field remediation	
	Unless otherwise agreed in writing by the Manager Open Space and Recreation Planning, within 20 working days of the completion of the remediation of the lower playing field, Wellington Water or its contractor shall organise with the Manager a joint inspection of lower field public access way and public car parking area to determine and agree whether remedial/repaving work, if any, are required, as a result of the project, to reinstate the access way and/or car parking surface.	8.9.2 Access Way and Car Parking Inspection & 6.2 During Construction Notification Requirements

HEB Construction will ensure the repair of pot holes or any other damage resulting from the project to the lower field public access way and the car parking area either within 10 working days of being notified to the CLP, the CMO or the Manager Open Space and Recreation Planning, or within any other timeframe otherwise agreed in writing with the Manager Open Space and Recreation Planning.

Unless otherwise agreed in writing by the Manager Open Space and Recreation Planning, within 20 working days of the completion of the remediation of the lower playing field, HEB Construction will organise with the Manager a joint inspection of lower field public access way and public car parking area to determine and agree whether remedial works, if any, are required, as a result of the project, to reinstate the access way and/or car parking surface.

8.9.3 Remedial Works and Costs

Table 61: Access way and Car Parking Area Remedial Works and Costs Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan

Maintenance and reinstatement of access way between Salisbury Terrace and Harriers Club Building		
LC.77	Access way and car parking area remedial works	
	Any agreed remedial or reinstatement works, including repaving, shall be completed and certified by the CMO, prior to the Manager, Open Space and Recreation Planning and the Manager, Sports and Recreation Operations and Contracts, confirming in writing, under designation condition DC42 that the reinstated lower field, and related tracks, retaining walls, fencing and drainage are suitable for organised sports use and public activities to commence.	8.9.3 Remedial Works and Costs
LC.78	Access way and car parking area remedial works costs: Wellington Water shall meet all fair and reasonable costs of undertaking any agreed remedial and/or reinstatement work/s.	8.9.3 Remedial Works and Costs

HEB Construction will ensure any agreed remedial works and costs, including repaving, shall be completed as defined in Appendix 5 Technical Specification Landscape.

These remedial works will be certified by the CMO, the Open Space and Recreation Planning Manager and the Sports and Recreation Operations and Contracts Manager.

This certification shall confirm in writing, that the reinstated lower field, and related tracks, retaining walls, fencing and drainage are suitable for organised sports use and public activities to commence.

8.10 Existing Park Infrastructure

8.10.1 Infrastructure Inventory and Inspection

Table 62: Infrastructure Inventory and Inspection Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Existing Park Infrastructure		
LC.84	Draft parks infrastructure inspection and inventory management report: A draft report of the parks infrastructure inspection, including an inventory management schedule and plan must be produced by Wellington Water or its contractor, unless otherwise agreed in writing by the Manager Open Space and Recreation Planning, and supplied to the Manager Open Space and Recreation Planning for review at least 20 working days prior to commencing any work on site. This draft report shall include:	8.10.1 Infrastructure Inventory and Inspection
(a)	Site map: a map of the licence area,	8.10.1 Infrastructure Inventory and Inspection
(b)	Asset schedule: the location and schedule of all identified park assets,	8.10.1 Infrastructure Inventory and Inspection
(c)	images: photographic images of all identified inventoried items, to assist with identification, tracking and management	8.10.1 Infrastructure Inventory and Inspection
(d)	Management plan: a management plan or schedule for each inventoried item, clearly identifying for each asset/s whether it will be:	8.10.1 Infrastructure Inventory and Inspection
i.	Removed and relocated, and not replaced as part of future site reinstatement	8.10.1 Infrastructure Inventory and Inspection

ii.	Removed and relocated, and scheduled for replacement as part of future site reinstatement	8.10.1 Infrastructure Inventory and Inspection
iii.	Removed and stored by Wellington Water for future reinstatement	8.10.1 Infrastructure Inventory and Inspection
iv.	Removed and disposed of, and scheduled for replacement as part of future site reinstatement	8.10.1 Infrastructure Inventory and Inspection
v.	Removed and stored by Wellington Water, with a decision to be made by the Manager Open Space and Recreation Planning, prior to commencing site remediation, regarding asset relocation, disposal, reinstatement and/or replacement	8.10.1 Infrastructure Inventory and Inspection
vi.	Retained and managed in situation, including any management plan for the monitoring, protection and maintenance of the asset.	8.10.1 Infrastructure Inventory and Inspection
LC.86	Park asset removal, relocation, storage, reinstatement and replacement costs:	8.10.1 Infrastructure Inventory and Inspection
	Wellington Water shall meet all fair and reasonable costs for removing, relocating, storing, replacing and/or reinstating any park assets within the licence area.	8.10.1 Infrastructure Inventory and Inspection
Notes:	This condition set is required to ensure that parks assets within the licence area are jointly inspected by the Manager Open Space and Recreation Planning and Wellington Water, or its contractor, well in advance to the commencement of construction, and that an agreed management plan is developed for asset removal, relocation, storage, disposal, reinstatement and/or future replacement.	
	It is anticipated that some items will not be able to be removed in no way that would enable them to be appropriately and/or cost effectively reused or reinstated. In these cases, assets will need to be disposed of by Wellington Water.	
LC.87	Confirmation whether lower playing field Sports Pavilion will be used: Prior to commencing construction Wellington Water or its contractor shall confirm whether the sports pavilion building on the lower field will be needed in support of site operations.	8.10.1 Infrastructure Inventory and Inspection
LC.88	Sports Pavilion not required for use -subject to monitoring and management: Where the sports pavilion is not required for use, Wellington Water or its contractor shall suitably monitor and protect the building from any use or damage during the construction period. The monitoring and management of the sport pavilion shall be included in the parks infrastructure inspection and inventory management report detailed in LC 84.	8.10.1 Infrastructure Inventory and Inspection
LC.89	Sports Pavilion potentially required for use-subject to monitoring and management: Where the sports pavilion is identified is potentially being needed for use, but no timeline has been agreed for when this may occur, Wellington Water or its contractor shall suitably monitor and protect the building from any use or damage. The monitoring and management of the sport pavilion shall be included in the parks infrastructure inspection and inventory management report detailed in LC 84.	8.10.1 Infrastructure Inventory and Inspection
LC.90	Sports Pavilion identified for use-Licence variation required: Where the sports pavilion is identified for use, either prior to construction or at any stage throughout the project, Wellington Water or its contractor shall apply in writing to the Manager Open Space and Recreation Planning to vary the licence agreement area to include the pavilion.	8.10.1 Infrastructure Inventory and Inspection
LC.91	Sports Pavilion identified for use-consenting approvals and costs: Where the sports pavilion is identified for use, Wellington Water or its contractor shall meet all costs associated with varying this licence to include the use of this building, and shall be responsible for obtaining any other required statutory approvals to use the building and any associated costs.	8.10.1 Infrastructure Inventory and Inspection

Note:	The TBA application did not include use of the sports pavilion within the temporary construction area covered by this licence.	8.10.1 Infrastructure Inventory and Inspection
	Acknowledging that the building could be used by the project team during the construction, this condition sets out the terms that would apply to the use of this building.	
	Terms and conditions of use /building inspection, maintenance, repair and/or reinstatement) would form part of any licence consideration and approval process.	

HEB Construction will produce a draft report of the parks infrastructure inspection, including an inventory management schedule and supplied to the Manager Open Space and Recreation Planning for review at least 20 working days prior to commencing any work on site.

This report must include:

- I. Site map: a map of the licence area;
- II. Asset schedule: the location and schedule of all identified park assets;
- III. Images: photographic images of all identified inventoried items, to assist with identification, tracking and management;
- IV. Management plan: a management plan or schedule for each inventoried item, clearly identifying for each asset/s whether it will be:
 - a. Removed and relocated, and not replaced as part of future site reinstatement
 - b. Removed and relocated, and scheduled for replacement as part of future site reinstatement
 - c. Removed and stored by Wellington Water for future reinstatement
 - d. Removed and disposed of, and scheduled for replacement as part of future site reinstatement
 - e. Removed and stored by Wellington Water, with a decision to be made by the Manager Open Space and Recreation Planning, prior to commencing site remediation, regarding asset relocation, disposal, reinstatement and/or replacement
 - f. Retained and managed in situation, including any management plan for the monitoring, protection and maintenance of the asset.

Park asset removal, relocation, storage, reinstatement and replacement costs:

HEB Construction will meet all fair and reasonable costs for removing, relocating, storing, replacing and/or reinstating any park assets within the licence area.

Parks assets within the licence area will be jointly inspected by the Manager Open Space and Recreation Planning and HEB Construction, well in advance to the commencement of construction, and that an agreed management plan is developed for asset removal, relocation, storage, disposal, reinstatement and/or future replacement.

Sports Pavilion Use:

Where the sports pavilion is or is not required for use, HEB Construction will suitably monitor and protect the building from any use or damage during the construction period. The monitoring and management of the sport pavilion shall be included in the parks infrastructure inspection and inventory management report.

Where the sports pavilion is identified for use, either prior to construction or at any stage throughout the project, HEB Construction will apply in writing to the Manager Open Space and Recreation Planning to vary the licence agreement area to include the sports pavilion.

If the sports pavilion is required for use HEB Construction will meet all costs associated with varying this licence to include the use of this building and shall be responsible for obtaining any other required statutory approvals to use the building and any associated costs.

A confirmation on the use of the sports pavilion, if required, will be included as an amendment to this LEMP.

8.10.2 Existing Bench Seat and Plaque

Table 63: Existing Bench Seat and Plaque Reinstatement Requirements Identified Within WCC Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		
DC.36	Prior to commencing construction, the Requiring Authority shall remove and store the existing bench seat and plaque located on the reservoir site. Within six months of the completion of construction the bench seat and plaque shall be re-instated.	8.10.2 Existing bench seat and plaque

HEB Construction will ensure the existing bench and plaque is removed and stored safely prior to commencing construction (Figure below). Within 6 months of the completion of construction the bench is to be re-instated by HEB Construction. The exact position of the relocated bench will be agreed upon with the WCC. HEB Construction will inform the CRG of the location of the stored bench during construction. HEB recommends installing the seat safely outside the construction site fence and just uphill from its current position for public use during the construction period then installing in final position at completion of construction.

8.11 Monitoring, Inspection and Defects Period

8.11.1 Maintenance

Table 64: Response Maintenance and Landscape Modification & Review Requirements Identified Within WCC and TBA Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		
DC.33m(v)	Proposed maintenance of plantings, including the replacement of unsuccessful plantings.	8.11.1 Maintenance
DC.33m(vi)	Response maintenance for existing vegetation affected by opening of the canopy during construction (this is required to address potential windfall effects that may arise as a result of peripheral tree removal).	8.11.1 Maintenance
Town Belt Act Licence Conditions		
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC.56 (f)	Landscape modification and review: If proposed landscaping fails or is compromised by either the methods and materials of backfilling, and must be changed, a landscape review and amendment process, involving a suitably qualified landscape architect and ecologist, for presenting changes to Manager Open Space and Recreation Planning that will achieve the same outcome anticipated for mitigating the effects of the reservoir project	8.11.1 Maintenance

Proposed maintenance, modifications and reviews have been identified within regulatory permissions. Maintenance relates to maintaining the planting during both the construction and the Defects Liability & Maintenance period of the project.

While maintenance will be the responsibility of the landscape contractor, regular monitoring and reporting will be carried out by both the Project Management Team or Project Landscape Architect or Project Ecologist.

HEB Construction will ensure maintenance involves key inspection points including:

- I. Weekly checks for problem weeds, especially those that are aggressive and invasive, and to deal with these in the early stages of infestation when control should be relatively easy;
- II. Observation to detect damage from pests and diseases, waterlogging, and vandalism;
- III. Checks following heavy rainfall or severe weather events, or prolonged dry periods so remedial action can be taken (in particular with blocking of swales and drains);
- IV. Modification of planting around streams to align with water levels;
- V. Modification of planting around pedestrian walkways to ensure planting does not obscure visibility or access;
- VI. Checking grass swales to ensure that areas are not 'scalped' during mowing and if so carrying out remedial work to avoid this occurring;
- VII. Replacement of dead plants;
- VIII. Reinstate mulch that has eroded or lost;
- IX. Checking areas of scour to ensure plant success.

In addition to the routine maintenance of landscape treatments programmed above, responsive monitoring and repairs are required as necessary. These should be carried out:

- I. Following a storm event,
- II. Following prolonged dry or wet periods,
- III. If damage from animal pests occurs.

In addition to the remedy of defects, HEB Construction will undertake maintenance of the area and of the landscape works regularly throughout the Defects Liability and Maintenance Period. The degree required and frequency is detailed in the Appendix 5 Technical Specification Landscape.

The objective of maintenance is to maintain plant pest free areas and to encourage the healthy establishment of landscape treatments to a point where it can be assured that there are no inherent defects in the planting stock.

Watering, pest and disease control associated with defects liability of landscape treatments shall be at a frequency proposed by HEB Construction and agreed with the Engineer to Contract. HEB Construction shall submit a proposed maintenance regime, based on the schedule below to the Engineer for approval.

LANDSCAPE TREATMENTS MAINTENANCE SCHEDULE	
Specifier to complete	
GROWING SEASON	
SPRING	SUMMER
AUTUMN	WINTER
TREES, SHRUBS AND GROUNDCOVERS	
Staking	Monthly – As Required
Trimming/foliage reduction	Monthly – As Required
Fertiliser	
Weed Control	Three monthly
Watering/ Irrigation	As required During Dry Periods
Replacement	Annually
Weed Control	Three monthly
Replacement	Annually
GRASS	
Mowing (specifier to input mowing requirements to WCC setting)	
Fertiliser	
Weed Control	
Over Sowing	
LITTER REMOVAL	
Removal	Monthly
MULCH	
Top Up	

Landscape treatments maintenance schedule example from Appendix 5 Technical Specification Landscape

Response maintenance is required for existing vegetation affected by opening of the canopy during construction, to address potential windfall effects that may arise as a result of peripheral tree removal. A response maintenance for existing vegetation affected by opening of the canopy during construction may include:

- I. Installation of shade cloth
- II. 'Buffer' planting.
- III. Weed management

Should the proposed landscaping fail or is compromised by either the methods or materials of backfilling, and must be changed, a landscape review must be carried out by the Project Landscape Architect and Project Ecologist. Suggested changes are to be presented to the Manager Open Space and Recreation Planning that will achieve the same outcome anticipated for mitigating the effects of the reservoir project. Refer to the Technical Specification for inspections.

8.11.2 Maintenance and Management Schedule and Costs

Table 65: Maintenance and Management Schedule and Cost Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 57	Maintenance and management schedule and costs:	
	The LEMP and PFMP must include a long-term maintenance and management plan and schedule for the licence area and surrounding landscape that has been disturbed or used by the project. The finished site must be maintained and managed for the primary purpose of Wellington Town Belt Reserve while allowing for the operation of the reservoir and associated infrastructure. The maintenance and management schedule must outline all changes in level of service from the preconstruction site state and clearly define costs associated with the change.	8.11.2 Maintenance and Management Schedule and Costs

An annual Playing Fields Maintenance and Management Schedule has been developed by SSDM which is appended to this document (Appendix 12). This plan details and schedules the maintenance and management requirements typical for a soil-based sports field with primary drainage and irrigation and covers the following items: (Maintenance to be undertaken by others)

- I. Mowing
- II. Fertilising
- III. Line marking;
- IV. Physical treatment work
- V. Renovation;
- VI. Goal Posts
- VII. Herbicide/Fungicide
- VIII. Irrigation
- IX. Reporting.

A maintenance and management schedule for the licence area and surrounding disturbed landscape is also included as an appendage to this LEMP document (Appendix 16). This schedule outlines all changes in the level of service from the preconstruction state.

8.11.3 Planting Review

Table 66: Planting Review Requirements Identified Within WCC Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		
DC.37	A planting review must be undertaken by a suitably qualified and experienced landscape architect within 3 years of completion of construction of the reservoir. The review will focus on the revegetation and assess the effectiveness of plant growth, particularly on mechanically stabilised slopes. Where required, remedial works shall be undertaken to ensure that planting treatments are successful and have the potential to improve the landscape values of the site. Evidence of this review must be provided to the CMO.	8.11.3 Planting review

A planting review will be undertaken by a suitably qualified and experienced Landscape Architect within 3 year of completion of construction of the reservoir. The review will focus on the revegetation and assessment of the effectiveness of plant growth, particularly on the mechanically stabilised slopes.

Where required, remedial works shall be undertaken to ensure that planting treatments are successful and have the potential to improve the landscape values of the site. Evidence of this review will be provided to the CMO.

Refer to the Landscape Technical Specification (Appendix 5) for further details.

8.11.4 Monitoring and Inspection Plan

Table 67: Monitoring and Inspection Plan Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Monitoring, inspection and defects period		
LC.93	Condition and site monitoring	
(b)	Monitoring and inspection plan: The LEMP and PFMP must include a monitoring and inspection plan prepared by the Wellington Water Project Landscape Architect with input from their specialists in maintenance of the various areas of the site (e.g. ecologists, sports turf specialist, landscapers, nursery managers, irrigation designers, engineers etc). The plan must outline:	8.11.4 Monitoring and Inspection Plan

i.	key stages of the project where monitoring and inspection is required	8.11.4 Monitoring and Inspection Plan
ii.	the intention of inspection and	8.11.4 Monitoring and Inspection Plan
iii.	success measures.	8.11.4 Monitoring and Inspection Plan
iv.	describe agreed processes for remedy of defects and failed planting including timeframes and re-inspections.	8.11.4 Monitoring and Inspection Plan
(c)	Monitoring and inspection parties: Monitoring and inspections required under LC.93(b) will include, the CMO, CLP, the Manager Open Space and Recreation Planning and any others required to properly consider the issues being monitored or inspected, unless otherwise agreed in writing by the Manager Open Space and Recreation Planning.	8.11.4 Monitoring and Inspection Plan
(d)	Monitoring and inspection frequency: Monitoring and inspections will occur at a minimum:	8.11.4 Monitoring and Inspection Plan
i.	On completion of any area of ground works including tracks, sports fields or other earthworks required to achieve an ecological, amenity or recreation function. This must also be prior to any planting into those completed areas to check ground conditions are suitable for the proposed planting	8.11.4 Monitoring and Inspection Plan
ii.	In accordance with any additional monitoring and inspection requirements identified in LC. 93(b)(i), including an annual inspection of completed planting areas.	8.11.4 Monitoring and Inspection Plan

A monitoring and inspection plan will be prepared by the Project Landscape Architect with input from their specialists in maintenance of the various areas of the project.

The plan must outline:

- I. Key stages of the project where monitoring and inspection is required;
- II. The intention of inspection;
- III. Success measures;
- IV. Describe agreed processes for remedy of defects and failed planting including timeframes and re-inspections.

Key Stages of the project are outlined in the draft Maintenance and Inspection Plan shown below:

Table 67a: Examples of Key Project Stages

OMARORO MAINTENANCE AND INSPECTION PLAN				
KEY STAGES	Intention of inspection	Success measures	Description of success measures	Process for remedy of defects
Completion of tracks				
Prior to planting fill areas				
Prior to planting areas on the upper field boundary				
Completion of riparian planting				
Annual inspection of completed areas				

Table 67b: Inspection Requirements

Site Preparation	<ul style="list-style-type: none"> • Set out for clearing • Installation of measures to protect existing vegetation (e.g. mature trees, seral forest a, b, c, native bush)
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	<ul style="list-style-type: none"> • On completion of the clearance (including pest plant control) • Following earthworks and during site preparation, including depth of topsoil / soil mix • Completion of cultivation
Plant Pest and Animal Pest Control inspections	<ul style="list-style-type: none"> • Assessment to determine any Plant and Animal Pests problems • Methodology and programme • Review of pest plant areas to be cleared and managed • Following pest plant control, when signs of dieback are visible • Following any additional pest plant control operations • Following animal pest control operations • Inspections for pest control shall occur twice a year (generally spring then autumn)
Topsoil Quality	<ul style="list-style-type: none"> • On site review of existing topsoil areas to be planted into for any remediation • Inspection of topsoil proposed for importing • Receipt of topsoil testing results from laboratory testing with accompanying recommendations from a soil scientist for soil remediation measures (if any are required). • Completion of any topsoil remediation required
Plant Quality	<ul style="list-style-type: none"> • During production and prior to delivery of plants to site • Upon delivery of plants to site
Planting	<ul style="list-style-type: none"> • At setting out • During planting (Inspections may be staged as planting progresses with the availability of areas during the project). • Check all organic and stone mulch, biodegradable weed matting, plant ancillaries (e.g. tree stakes and ties) • Upon completion
Grassing	<ul style="list-style-type: none"> • Cultivation and preparatory work prior to seeding • Completion of topsoil/soil mix prior to final levelling and seeding • Completion of grass establishment prior to first mowing
Hydroseeding	<ul style="list-style-type: none"> • Preparatory work prior to seeding • At time of seeding for coverage review • Upon establishment • Note: The Contractor shall confirm that the specified seed is being used in the hydraulic spreading machine
Defects liability and Maintenance	<ul style="list-style-type: none"> • As agreed with the Engineer during the Defects Liability and Maintenance Period • Following the remedy of any defects, this is within 20 days of being notified of a defect, or for replacement of defective planting during the growing season. • End of Defects Liability and Maintenance Period (5 years for terrestrial and riparian planting) prior to the issue of Defects Liability Certificate

All materials and workmanship shall comply with the standards listed within the Landscape Technical Specification. Refer to each section within the Landscape Technical Specification for detail on the information to be supplied, the material testing, onsite testing, hold points and all inspections required for the project.

Monitoring and inspections required will include, the CMO, CLP, the Manager Open Space and Recreation Planning and any others required to properly consider the issues being monitored or inspected, unless otherwise agreed in writing by the Manager Open Space and Recreation Planning.

Frequency:

Monitoring and inspections will occur at a minimum:

On completion of any area of ground works including tracks, sports fields or other earthworks required to achieve an ecological, amenity or recreation function. This will also include prior to any planting into those completed areas to check ground conditions are suitable for the proposed planting.

Monitoring and inspections will occur in accordance with the monitoring and inspection requirements stated above, including an annual inspection of completed planting areas.

Throughout the duration of construction and the defects liability and maintenance period HEB Construction will monitor the progress and condition of the works and provide a 3 monthly (4 X per annum) report.

Upper and Lower Playing Fields:

The nominated playing fields contractor will have direct involvement in the monitoring of the sports field construction works by way of site inspections at key phases of the construction for both the upper and lower field areas.

These key hold points cover the following stages:

- I. General set-out and materials approval
- II. Subgrade shaping and levelling
- III. Topsoil placement and levelling
- IV. Primary drainage installation
- V. Irrigation installation
- VI. Basal fertiliser/compost application/decompaction and final level
- VII. Seeding/turf establishment
- VIII. Grow-in completion

Each of the above hold points have associated completion standards that need to be met and signed off prior to moving to the next phase which are detailed within the Sports Field Construction Works Specification.

In addition, HEB Construction will provide the WWL appointed Engineer to contract (or its representative) with a regular (i.e. minimum weekly) update of all grow-in activities that have occurred following sowing. The report may be verbal or written and is to be communicated to the Engineer (or its representative). The report shall cover the previous 7-day period.

8.11.5 Final Site Inspections

Table 68: Final Site Inspection Requirements Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Monitoring, inspection and defects period		
LC.94	Final site inspections	
	Wellington Water must arrange a schedule of final site inspections following the completion of construction and site remediation, to be agreed in writing by the Manager Open Space and Recreation Planning, as the site is progressively vacated by the project work and associated contractors. The inspection schedule shall provide:	8.11.5 Final Site Inspections
(a)	Sufficient opportunity for identified issues to be resolved by Wellington Water or its contractor to the satisfaction of the Manager Open Space and Recreation Planning, prior to final site vacation.	8.11.5 Final Site Inspections

(b)	For final site inspection by the Manager Parks Sports and Recreation Operations and Manager Open Space and Recreation Planning and the Project Landscape Architect.	8.11.5 Final Site Inspections
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HEB Construction will arrange a schedule of final site inspections following the completion of construction and site remediation, to be agreed in writing by the Manager Open Space and Recreation Planning, as the site is progressively vacated by the project work and associated contractors.

The inspection schedule shall ensure:

- I. Sufficient opportunity for identified issues to be resolved by HEB Construction to the satisfaction of the Manager Open Space and Recreation Planning, prior to final site vacation.
- II. A final site inspection by the Manager Parks Sports and Recreation Operations, Manager Open Space and Recreation Planning and the Project Landscape Architect.

Upon completion of the relevant playing field remediation construction phases and sign off/approval of the key hold points both the upper and the lower playing fields will be assessed for turf cover quality and surface levels by the playing fields contractor.

The following grow-in completion standards are expected to have been achieved, checked and signed off prior to practical completion:

Handover requirement	Standard	Measurement procedure
Turfgrass height	No greater than 40 mm	Glass prism
Presence of clippings	Uniformly dispersed No individual clumps	Visual Visual
Ground cover	90% ground cover with sown species 75 mm diameter patches of bare ground	Visual 0.5 m ² frame
Micro-levels	15 mm over 3 m	3 m straight edge
Broadleaf weeds	5% ground cover	Visual

8.11.6 Defects and Liability Period – New Tracks

Table 69: Defects and Liability Period – New Tracks Identified Within TBA Regulatory Permissions

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Monitoring, inspection and defects period		
LC.96	Defects and liability period- New Tracks	
	There will be a defects period of nine months on new track builds and track reinstatement (including the track, surface materials, drainage and any steps, retaining, handrails, boardwalks or bridges) from the date of completion and final sign off by the Manager, Open Space and Recreation Planning. Any defects must be addressed and repaired to the satisfaction of the Manager, Open Space and Recreation Planning within one month of identification of any issue.	8.11.6 Defects and Liability Period – New Tracks

There will be a defects period of nine months on new track builds and track reinstatement (including the track, surface materials, drainage and any steps, retaining, handrails, boardwalks or bridges) from the date of completion and final sign off by the Manager, Open Space and Recreation Planning.

Any defects identified must be addressed and repaired to the satisfaction of the Manager, Open Space and Recreation Planning within one month of identification of any issue.

8.11.7 Defects and Liability Period – Planting and Landscaping

Table 70: Defects and Liability Period – Planting and Landscaping Identified Within WCC and TBA Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Landscape & Ecology Management Plan		
DC.33n	Subject to achieving the success standards in paragraphs i), ii) and iii) below, there shall be a five-year defects liability and maintenance period for all terrestrial planting, but the maintenance period may be shorter if the success measures have been achieved earlier. At the end of that period, the Requiring Authority shall provide information to the CMO to demonstrate that the planting has been successful, with success defined as follows:	8.11.7 Defects and liability period – Planting and Landscaping
DC.33n(i)	In relation to mass planting, successful planting shall be defined as 80% canopy closure whereby a sustainable plant community has been established and where plants have grown to create a canopy that shades the ground and suppresses weed growth	8.11.7 Defects and liability period – Planting and Landscaping
DC.33n(ii)	In relation to the planting of specimen trees, successful planting shall be defined as 100% plant survival, with 100% of trees in full leaf (if the relevant species is typically in leaf at that time of year) with the trees to have a habit of growth that is normal to the species and are to be sound, healthy and vigorous with normal and well-developed branch systems	8.11.7 Defects and liability period – Planting and Landscaping
DC.33n(iii)	Success in relation to wetland and riparian planting shall be defined as nearly as practicable to the criteria in i), or ii) and in any event as agreed by expert ecologists.	8.11.7 Defects and liability period – Planting and Landscaping
Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Monitoring, inspection and defects period		
LC.97	Defects and liability period - Planting and Landscaping	
Note:	The planting and landscaping defects liability period is five years. While there may be areas that have achieved the success measures outlined in Designation condition 33, Wellington Water will still be liable until the end of the five year period so as to ensure the ground conditions are performing as intended.	8.11.7 Defects and liability period – Planting and Landscaping

A defects and liability period has been identified in the regulatory permissions. The Planting and landscaping defects liability period is five years. Depending on the achievement of the success measures, this period may be decreased.

At the end of that period, HEB Construction will provide information to the CMO to demonstrate that the planting has been successful, with success defined as follows:

Success is defined as follows:

- I. In relation to mass planting, successful planting shall be defined as 80% canopy closure whereby a sustainable plant community has been established and where plants have grown to create a canopy that shades the ground and suppresses weed growth;
- II. In relation to the planting of specimen trees, successful planting shall be defined as 100% plant survival, with 100% of trees in full leaf (if the relevant species is typically in leaf at that time of year) with the trees to have a habit of growth that is normal to the species and are to be sound, healthy and vigorous with normal and well-developed branch systems;
- III. Success in relation to wetland and riparian planting shall be defined as nearly as practicable to the criteria in the above two (2) points and in any event as agreed by expert ecologists.

HEB Construction will remedy all defects relating to the landscape treatment works, each year during the defects and maintenance period, at the first available opportunity. All planting defects shall be addressed within the planting season (begins 1st May and ends 1st September). The aim of the defects liability is to achieve quality establishment of the projects landscape components.

To confirm this above statement, performance criteria for landscape establishment have been included in the Landscape Technical Specification.

9 Playing Fields Management Plan

This Playing Fields Management section (PFMP) of the LEMP is for the construction and turf reinstatement of the two: 'Upper and Lower' sports playing fields as part of the Omāroro Reservoir works. Requirements have been identified in GRWC, WCC and TBA conditions below.

9.1 Purpose and Scope

Table 71: Confirmation and Purpose of the PFMP Requirements Identified Within GWRC and WCC Regulatory Permissions

GWRC Resource Consent Conditions		
Pre-Construction Requirements		
Condition number	Condition requirement	LEMP Section Reference
7b(ii)	Confirmation of playing fields use and/or raising of levels i.e. a 'Playing Fields Management Plan'	9.1 Purpose and Scope
Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Playing Fields Management Plan		
DC.39	The purpose of the PFMP is to outline the methods and measures to be implemented prior to the Works, during the construction phase, and for a defined period thereafter to avoid, remedy, and mitigate adverse effects of the construction and the Project on the Upper and Lower Prince of Wales Park playing fields.	9.1 Purpose and Scope

The PFMP provides the necessary methods and measures to be implemented prior to the works, during the construction phase, and for a defined period thereafter to avoid, remedy, and mitigate adverse effects of the Project on the Upper and Lower playing fields.

The Works involved for the reinstatement of the upper and lower playing fields includes:

- I. Initial trimming of sub grade to form general level (including swales)
- II. (Imported) topsoil placement
- III. Installation of primary subsoil drainage system
- IV. Final trim of top-soiled surface to correspond to design grades
- V. Seeding
- VI. Grow-in and turfgrass establishment.

Spoil and excavated material will be stockpiled on the both the upper and lower sports fields. Temporary erosion and sediment controls such as sediment retention ponds - SRPs will be installed and construction equipment will be operated and stored on the stockpiles.

Methods to avoid compaction will include a combination of:

- Pre-construction and post-construction soil testing (scala testing or similar) to assess mechanical strength of the soil;
- Avoid working wet soil;
- Using appropriately sized plant and machinery, avoiding using unnecessarily large machinery;
- Ensuring machinery is restricted to designated transportation “lanes” within the site and not permitted to move randomly;
- Where post construction testing indicates undesirable compaction, this will be alleviated with deep tillage.

Following completion of the reservoir installation, the two (2) sports fields are to be reinstated to at least the same standard as pre-construction. The aim is to enhance the performance of the existing sports fields upon handing back to the Council. This will be achieved through the improvement of the existing (poor) surface levels, the installation of a primary sports field drainage system and automated irrigation on both fields.

SSDM provided specialist turf input relating to the following:

- Feasibility;
- Design (concept & detailed):
- Specification & Price Schedules,
- Construction overview (provision of a limited number of site visits)
- Production of a post construction Playing Fields Maintenance Plan. (undertaken by others)

Throughout the design process SSDM have liaised with representatives of the Manager Open Space and Recreation Planning in relation to specific sports field reinstatement requirements.

9.2 Ground Preparation - Upper and Lower Playing Fields Reinstatement

Table 72: Final Designs – Earthworks and Drainage Requirements Identified Within WCC and TBA Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Playing Fields Management Plan		
DC.39	The PFMP shall, as a minimum, address the following:	
a)	Final design of the fields including levels and improved drainage (where practicable)	9.2 Ground Preparation - Upper and Lower Playing Fields Reinstatement

Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 55	Earthworks and ground preparation	9.2 Ground Preparation - Upper and Lower Playing Fields Reinstatement
	Earthworks and ground preparation design and management must include the following:	
(a)	Upper and Lower playing field reinstatement: The lower and upper fields will be reinstated to function for sports fields use	9.2 Ground Preparation - Upper and Lower Playing Fields Reinstatement
(b)	Proposed finished ground levels: Proposed ground levels across the site that will result in all areas of the park, including any playing or sports fields, being fit for purpose.	9.2 Ground Preparation - Upper and Lower Playing Fields Reinstatement

Upper and lower sports field platform design and construction scope and requirements have been detailed in both the Playing Field Remediation Design Report and the Sports Field Construction Works Specification (Appendices 6 and 8).

The design provided by SSDM has focused upon reinstating the existing sports field platforms to the same dimensions and for the same purpose(s). The playability of the platforms shall be enhanced through the addition of a primary drainage system, surface laser levelling to create consistent falls and the installation of automated irrigation.

The design and construction scope are detailed in the following documents appended to this report:

- Appendix 6 - Construction Specification - Playing Fields
- Appendix 7 - Sports Playing Field Irrigation Drawings
- Appendix 12- Proposed Annual Sports Field Maintenance Programme (undertaken by others)
- Appendix 09- Sports Field Construction Design Drawings included in Civil Drawings

These documents cover off the following components:

1. Sports field sub grade formation.
2. (Imported) topsoil and compost quality, supply and placement.
3. Primary subsoil drainage system installation.
4. Irrigation system installation

5. Final trim of top-soiled surface to correspond to design grades. (including decompaction).
6. Seeding/sow down.
7. Turfgrass establishment and grow in.

In addition, post construction maintenance requirements and schedule are detailed in Proposed Annual Sports Field Maintenance Programme (Appendix 12). undertaken by others

9.2.1 Raising of Upper and Lower Playing Fields

Table 73: Raising of Upper and Lower Playing Fields Requirements Identified Within WCC Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Playing Fields Management Plan		
DC.41	The Requiring Authority shall not permanently raise the upper and lower playing field as part of the Project for the expressed purpose of permanently storing surplus excavated material from the proposed reservoir site.	9.2.1 Raising of Upper and Lower Playing Fields
DC.41	This condition shall not affect or limit any reasonable works required as part of field reinstatement, involving field re-shaping or re-profiling, required to appropriately reinstate playing surfaces as agreed with the Manager Open Space and Recreation Planning and the Manager, Sports and Recreation Operations and Contracts.	9.2.1 Raising of Upper and Lower Playing Fields

HEB Construction will not permanently raise the upper and lower playing fields as part of the Project. Playing field platform design has focused on reinstatement to existing levels. Works will involve a releveling and surface smoothing exercise in line with current levels to ensure the enhancement of the surfaces from what their current state by improving surface macro and micro levels.

Details on proposed finished surface grades compared to existing grades are detailed in the following drawings appended to this report (Sports Playing Field Drawings):

- I. 3262232-CE-1402 Upper Sports Field Cross Sections
- II. 3262332-CE-1502 Lower Sports Field Cross Sections

9.2.2 Surface Specifications

Table 74: Surface Specification Requirements Identified Within WCC Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Playing Fields Management Plan		
DC.39	The PFMP shall, as a minimum, address the following:	
b)	Surface specifications	9.2.1 Surface Specifications

The Sports Field Construction Works Specification, Construction Design Drawings and the Remediation Design Report appended to this document detail the requirements necessary to produce sports surfaces in line with the community use requirement and to an appropriate standard. Refer Appendix 6 - Sports Playing Field Specifications

9.2.3 Retaining Works

Table 75: Retaining Work Requirements Identified Within WCC Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Playing Fields Management Plan		
DC.39	The PFMP shall, as a minimum, address the following:	
c)	Retaining works, including any retaining structure design, where necessary	9.2.3 Retaining Works

At the time of writing this management plan, there are no new retaining works proposed in relation to either the upper or the lower playing fields.

9.2.4 Permanent Access for Maintenance

Table 76: Permanent Access for Maintenance Vehicle Requirements Identified Within WCC Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Playing Fields Management Plan		
DC.39	The PFMP shall, as a minimum, address the following:	
d)	Permanent access for maintenance vehicles to both fields	9.2.4 Permanent Access for Maintenance

The access track between Upper and Lower fields will be closed during construction. Post construction, this track will be reinstated to a 2.5m wide permeable gravel surface flanked by 1.25m wide grassed berms (refer Civil Design Drawings). The track will be made up of subbase and AP20 creating a robust route for maintenance vehicles. The final reinstatement design for the access way track ensures a link with the walking track network. Refer to Landscape Design Drawings (Appendix 4) for further detail and section 9.2.6 of this LEMP Document.

Section 8.6.2 Reserve Maintenance also describes information on the reinstatement of the disturbed areas in order to open access post construction for maintenance.

9.2.5 Fencing

Table 77: Fencing Requirements Identified Within WCC Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Playing Fields Management Plan		
DC.39	The PFMP shall, as a minimum, address the following:	
e)	Fencing	9.2.5 Fencing

For details regarding temporary or permanent fencing to be installed / reinstated, refer to these three sections below in this LEMP document under section 8.7.5 Fencing Plan and Reinstatement and 8.7.6 Construction Fencing and Appendix 11 Construction Site Fencing Plan:

- I. Fencing Plan and Reinstatement;
- II. Construction Temporary Fencing;
- III. Other temporary fencing types.

9.2.6 Access Track between Upper and Lower Playing Fields

Table 78: Access Track Between Upper and Lower Playing Fields Requirements Identified Within WCC and TBA Regulatory Permissions

Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Playing Fields Management Plan		
DC.39	The PFMP shall, as a minimum, address the following:	
f)	Design of the access track between the upper and lower playing fields.	9.2.6 Access Track between Upper and Lower Playing Fields
Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Landscape and Ecological Management Plan (LEMP) and Playing Fields Management Plan (PFMP)		
LC. 60	Access Track between Upper and Lower Playing Fields	
	Landscape design and management of the access track between the upper and lower playing fields must provide for the following:	9.2.6 Access Track between Upper and Lower Playing Fields
(a)	Access way use for walkway and maintenance vehicles: A final reinstatement design for the access way track between the upper and lower field that provides for the use of the access way as part of the park's walking track network and as a route for park maintenance vehicles.	9.2.6 Access Track between Upper and Lower Playing Fields
(b)	Stability and erosion control: An access way design and construction that avoids erosion of the access way surface and any erosion and sedimentation impact on the Papawai stream environment	9.2.6 Access Track between Upper and Lower Playing Fields
(c)	Access way stream edge planting: Planting along the access way stream side edge that protects and strengthens the top of the stream bank adjacent to the access way and the stream crossing at the bottom of the access way	9.2.6 Access Track between Upper and Lower Playing Fields

The access track between Upper and Lower fields will be closed during construction. Post construction, this track will be reinstated to a 2.5m wide permeable gravel surface flanked by 1.25m wide grassed berms (refer Civil Design Drawings). The track will be made up of subbase and AP20 creating a robust route for maintenance vehicles.

The final reinstatement design for the access way track ensures a link with the walking track network and as a route for park maintenance vehicles. Refer to Landscape Design Drawings (Appendix 4) for further detail.

The access track between the upper and lower playing fields may need to be widened, and some trees along its margins removed or pruned to allow for movement of large vehicles. The extent of tree works needs to be confirmed in conjunction with the Project Ecologist, Landscape Architect with the correct protocol in Section 7.3.2 Vegetation Clearance in this LEMP in place prior to any clearance of vegetation.

The swale on the western edge is to remain operational. Planting has been included along the access way stream side edge that protects and strengthens the top of the stream bank adjacent to the access way and stream edge crossing at the bottom of the access way. This is to help stabilise the

bank to avoid erosion and sedimentation impact on the Papawai Stream environment. See planting Schedule and planting plan sheet 3 in the Landscaping Design Drawings for further detail (Appendix 4).

A grassed swale on the tracks western edge takes direct runoff before meeting with the Papawai stream at the end of the track between fields.

Figure 24: Cross sections showing the upper and lower link track – temporary works

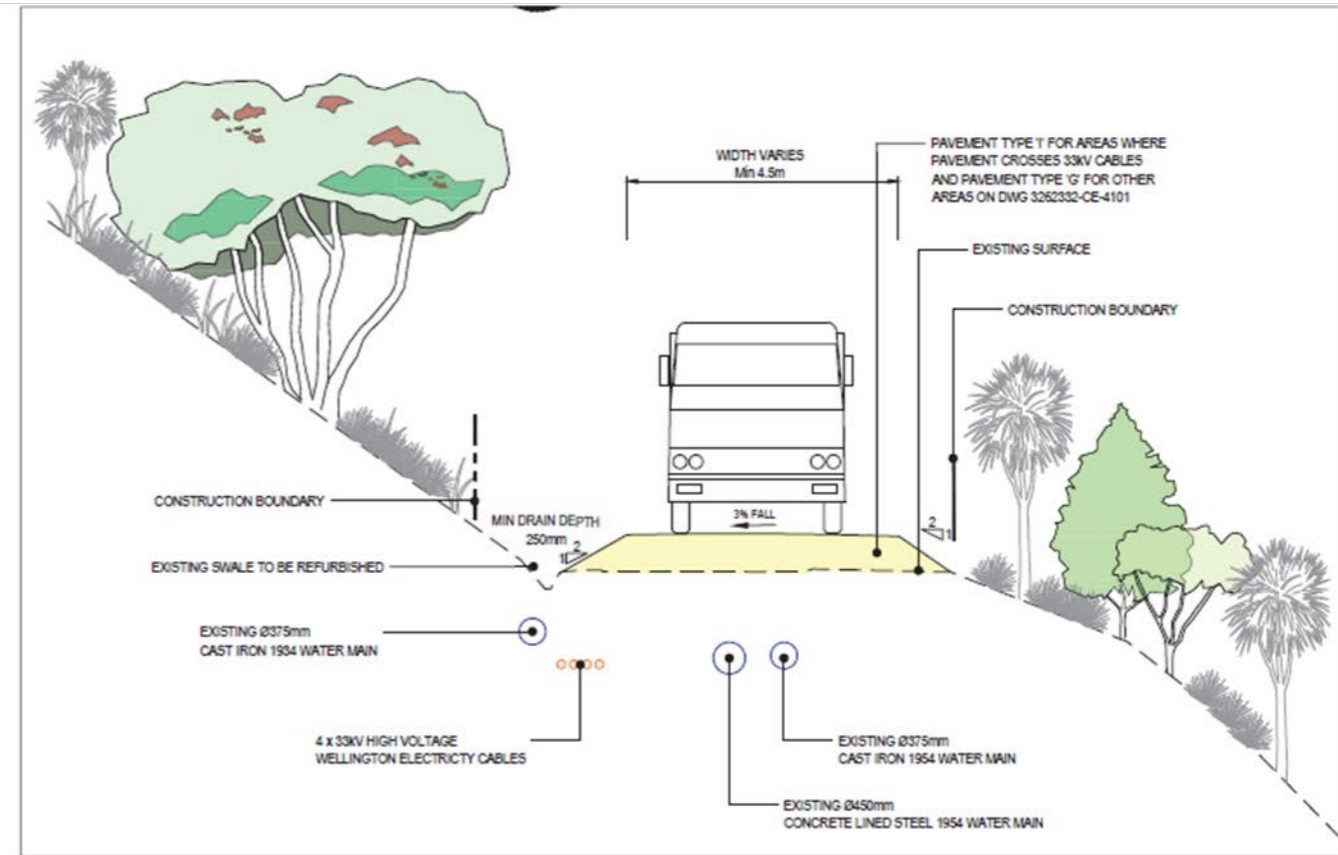
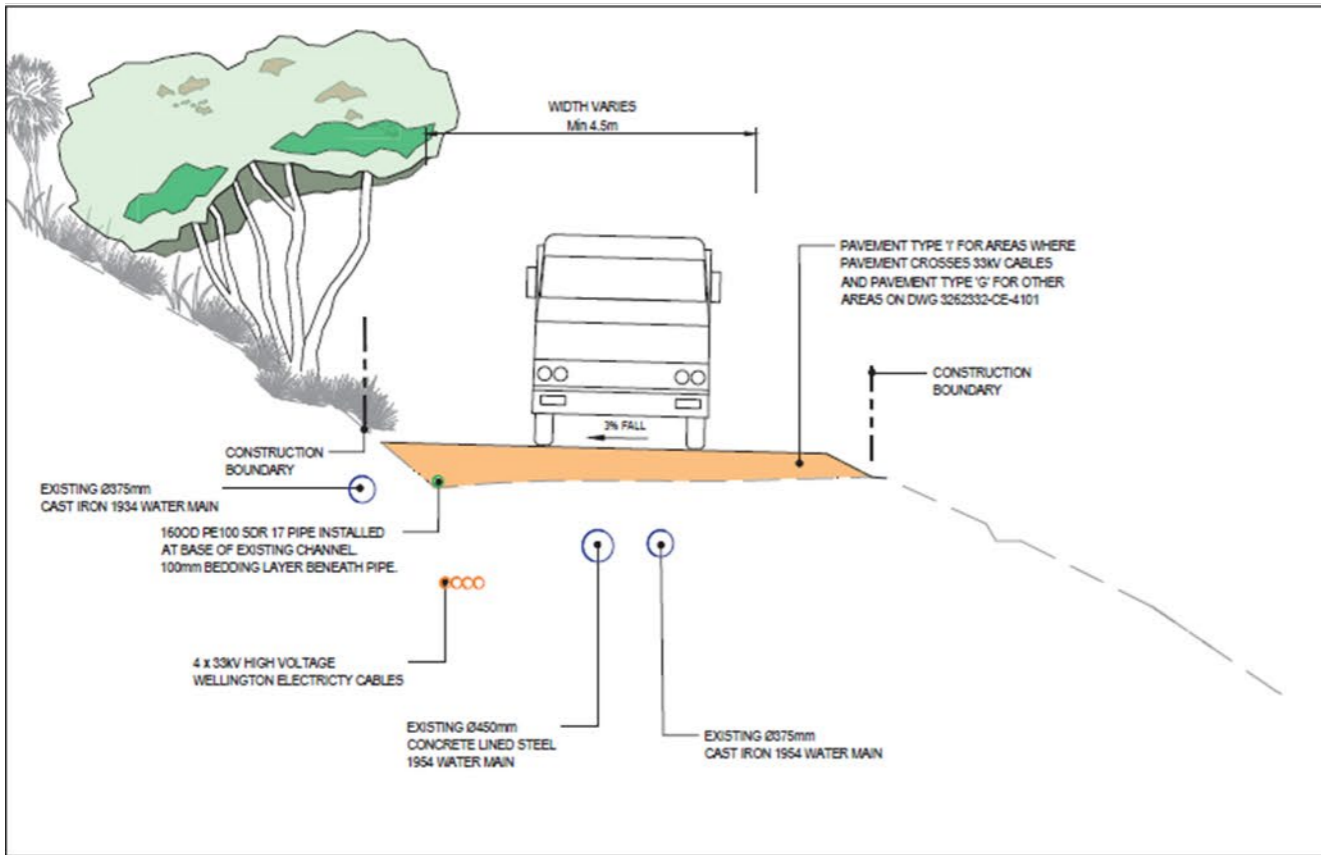
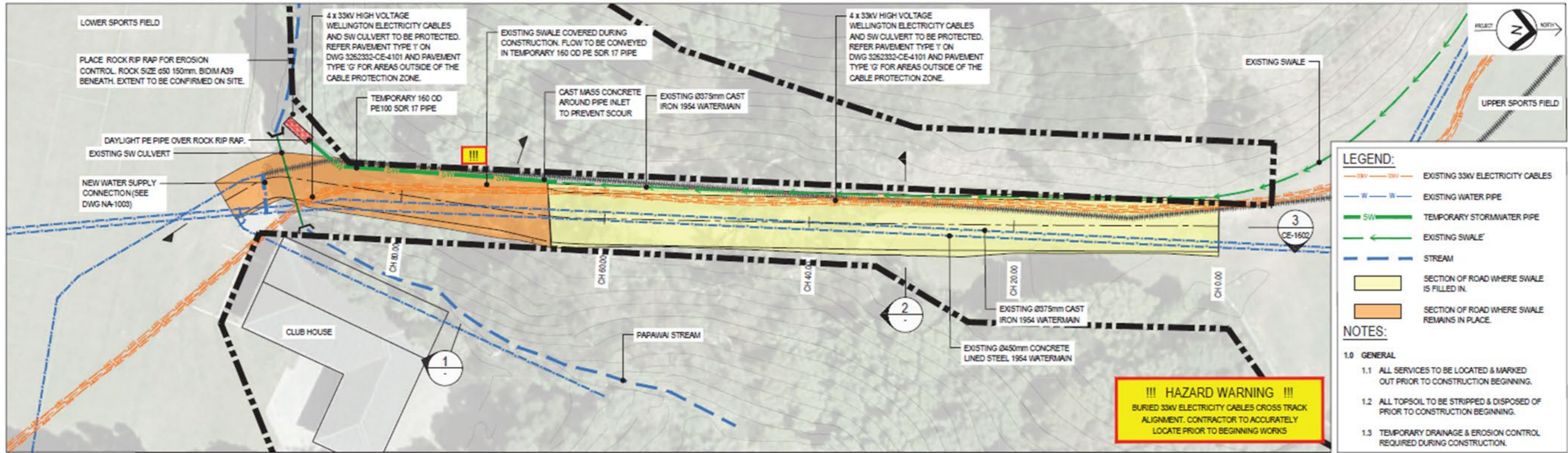
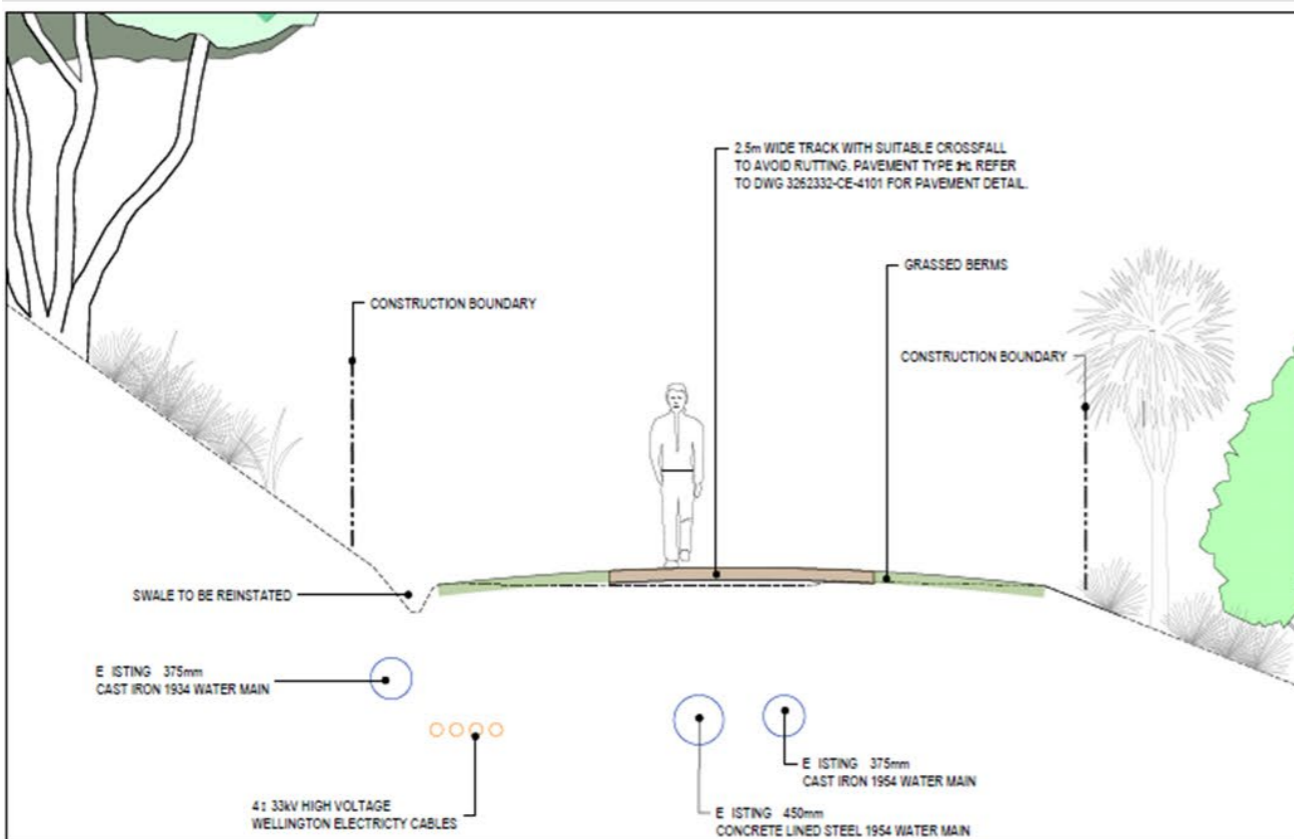
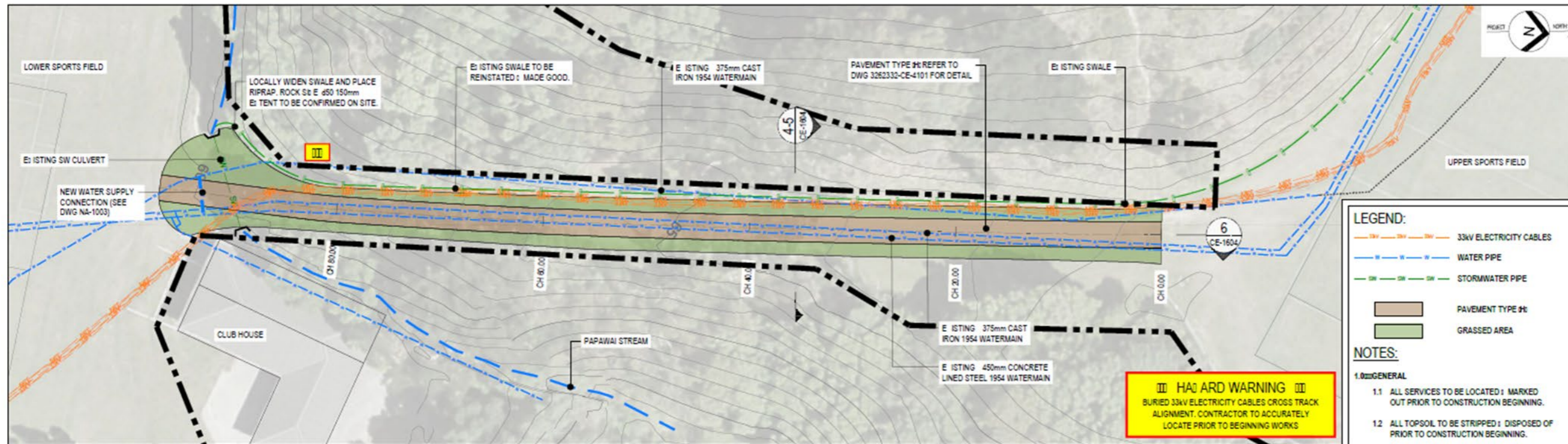
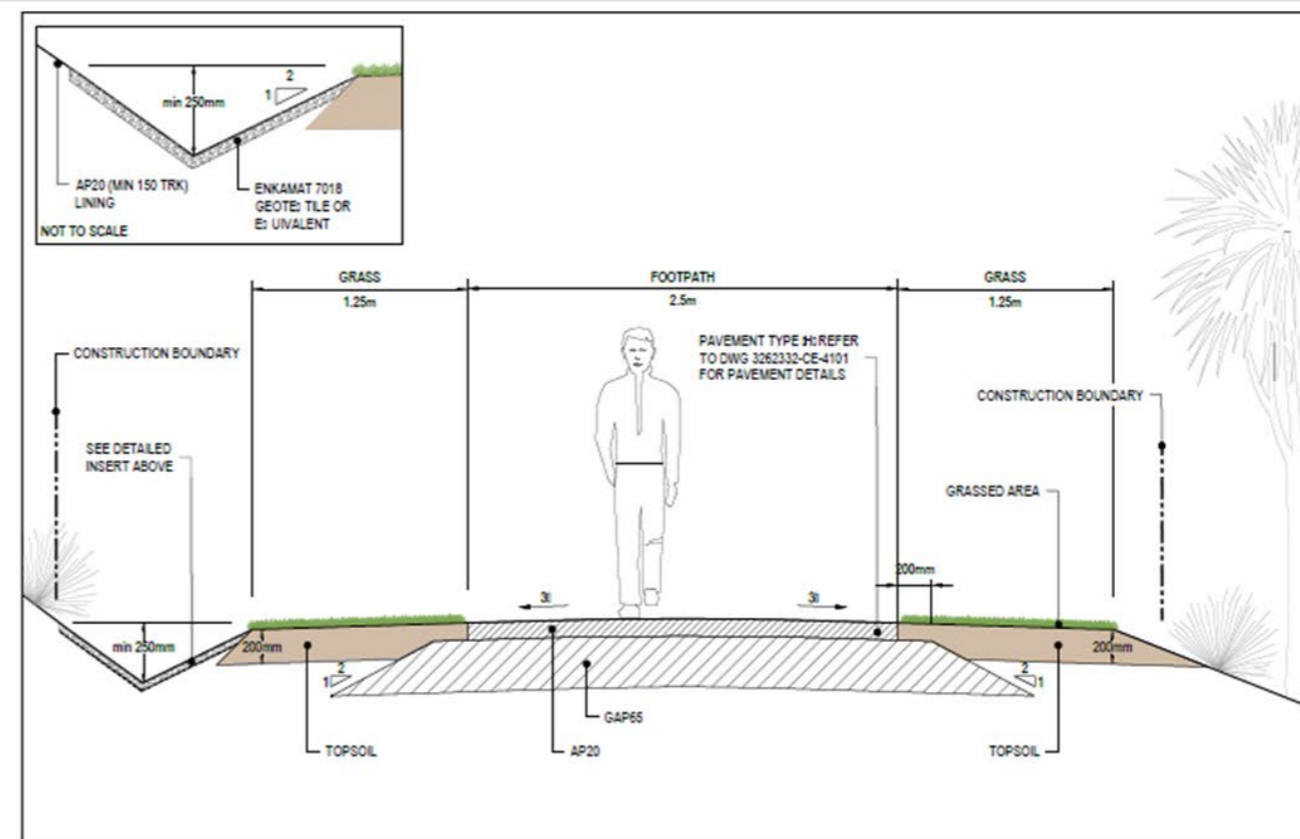


Figure 25: Cross sections showing the upper and lower link track – Final works



4 TYPICAL CROSS SECTION - LOWER LINK TRACK - FINAL TREATMENT GENERAL SECTION



5 TYPICAL CROSS SECTION - LOWER LINK TRACK - FINAL TREATMENT DETAILED SECTION

9.3 Defects and liability period

9.3.1 Defects and Liability Period – Playing Fields

Table 79: Defects and Liability Period – Playing Fields Requirements Identified Within WCC and TBA Regulatory Permissions

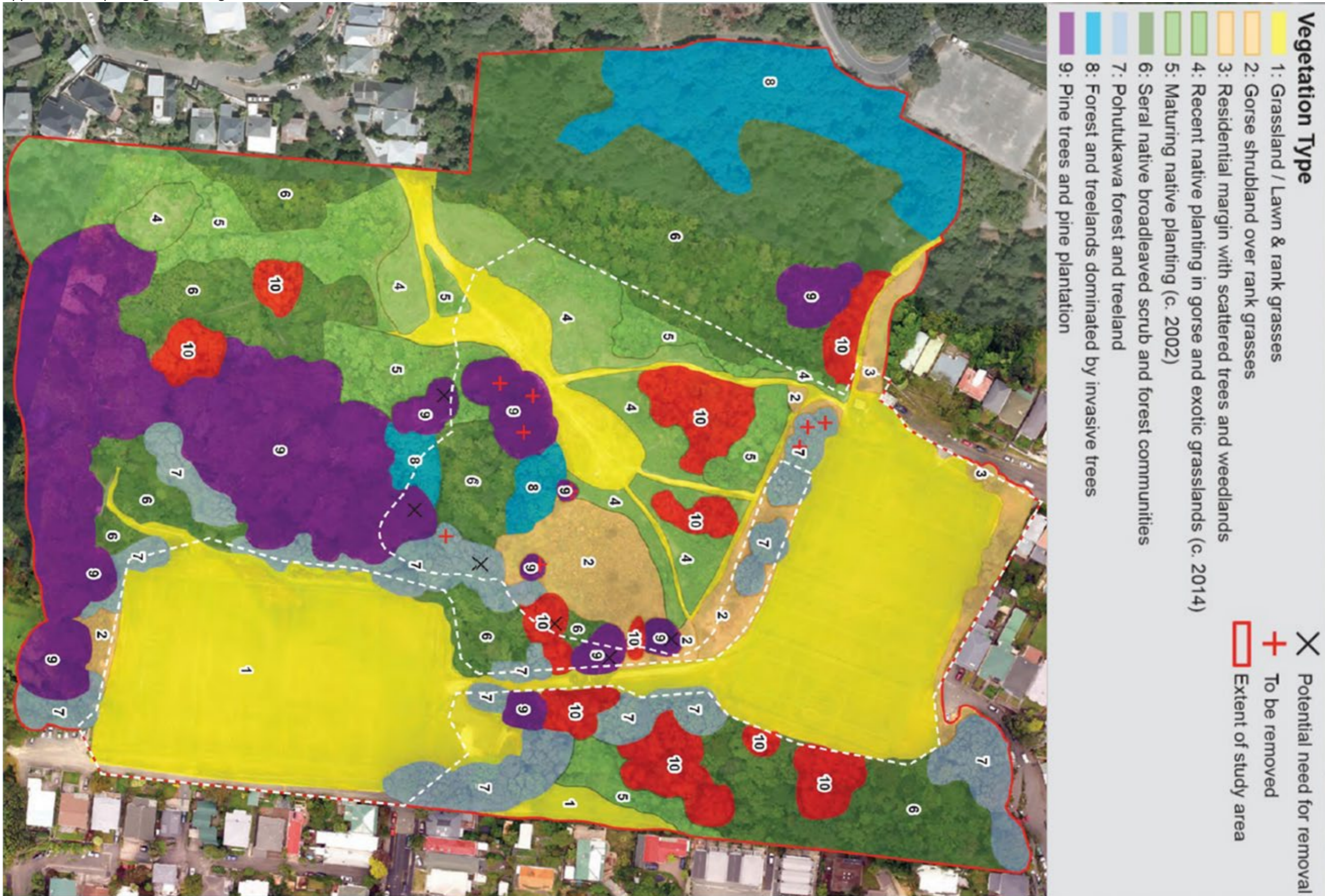
Wellington City Council Designation Conditions		
Condition number	Condition requirement	LEMP Section Reference
Playing Fields Management Plan		
DC.42		
a)	There shall be a 1-year defects liability period for works associated with the reinstatement of each of the upper and lower playing fields, including access tracks, retaining walls (where required), fencing and drainage. This 1 year period will commence from the date that the CMO (in consultation with the Manager, Open Space and Recreation Planning and the Manager, Sports and Recreation Operations and Contracts), confirms in writing that the reinstated field or fields, and related tracks, retaining walls, fencing and drainage are suitable for organised sports use and public activities to commence.	9.3.1 Defects and liability period – Playing Fields
b)	Within the defects liability period the Requiring Authority is responsible for meeting all reasonable costs associated with ensuring the successful reinstatement of the fields.	9.3.1 Defects and liability period – Playing Fields
c)	At the end of the period in DC.42 a), the Requiring Authority shall provide confirmation to the CMO that the playing field reinstatement, including any required retaining works, permanent maintenance vehicle access works (including the access track between the upper and lower field), fencing and any required defect remedial work/s has been successful. This confirmation shall involve an appropriately qualified and experienced sports turf specialist.	9.3.1 Defects and liability period – Playing Fields
Town Belt Act Licence Conditions		
Condition number	Condition requirement	LEMP Section Reference or Relevant Management Plan
Monitoring, inspection and defects period		
LC.95	Defects and liability period - Playing Fields	
	There will be a two seasons defects period on the playing field reinstatement. This means that from the date that the CMO, in consultation with the Manager, Open Space and Recreation Planning, confirms in writing that the reinstated field or fields, and related tracks, retaining walls, fencing and drainage are suitable for organised sports use and public activities to commence, two seasons of sport (i.e. a winter and summer season) will be played on the field/fields to confirm that the fields are performing as anticipated. This may extend beyond the one-year timeframe of the Designation condition 42 however it is a more accurate test of the performance of the field/s.	9.3.1 Defects and liability period – Playing Fields

During the defects period the playing fields will be available for normal use by WCC as would be appropriate for this level of playing field ie the consent holder cannot attribute failure of the new drainage system on adverse weather conditions or overuse during this period (excepting perhaps rare storm events as may be acknowledged by WCC). The field must perform and be remediated by the consent holder if it does not.

Appendix 1: Extent of Works and Vegetation Clearance



Appendix 2: Map of Significant Vegetation



Appendix 3: Landscape Concept



Appendix 4 – Landscape Detailed Design Drawings

Appendix 5 – Technical Specification Landscape

Appendix 6 - Construction Specification - Sport field drainage and turf establishment

Appendix 7 – Sports Playing Field Irrigation Drawings

Appendix 8 - Playing Field Irrigation Specifications



Landscape & Ecological Management Plan

Project: 61104

Contract: 771.00040



Landscape & Ecological Management Plan

Project: 61104

Contract: 771.00040



Landscape & Ecological Management Plan

Project: 61104

Contract: 771.00040



Landscape & Ecological Management Plan

Project: 61104

Contract: 771.00040



Landscape & Ecological Management Plan

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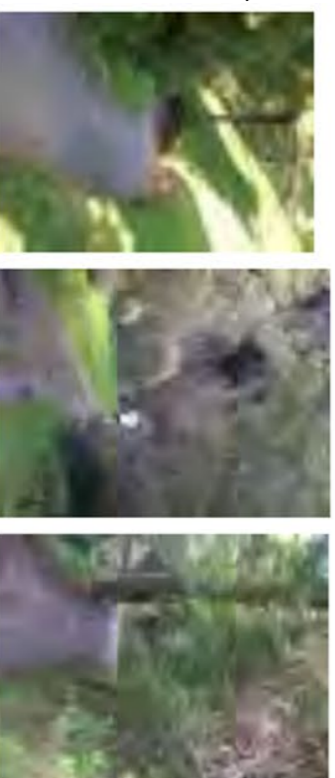
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Appendix 9: Civil Construction Design Drawings including Playing Field Design Drawings

Physical Characteristics

- Short Walk Tracks require no special equipment but still provide an off-road, outdoor experience. They are usually suitable for walking shoes and trainers.
- Min width = 0.75m. Max width = 2.0m. The minimum width shall cover no more than 5% of the total length of each track.
- Maximum gradient = 10° (1:5.7) not including steps, with no more than 12 steps per flight. The gradient can increase to 15° over small sections of the track. Steps must be even and consistent, max. riser 0.2m, min. tread 0.3m.
- Dual use track: Where there is a long section of track at the minimum width of 0.75 metres, passing bays will be developed in practical and appropriate places. These will have a minimum width of 1 metre and a minimum length of 3 metres. The track surface is to be well compacted so that tyres do not unduly degrade the surface.
- A Short Walk will be well defined, and may be benched. The track will be clearly marked to allow inexperienced users to find their way in all weather conditions.
- Short Walks provide pedestrian access on a well-formed, drained, all-weather surface. Up to 10% of the total track length may have short wet or muddy sections.
- Vegetation must be clear from the total width of the path and to a height of 2.5m, giving visitors a clear passage, an unimpeded view of the surface and good visibility on corners. Windfalls are to be cleared within 48 hours of notification.
- Short Walks will be clearly signposted with directional signs at all entrances and junctions. Signs will include walking times. Dual use tracks will be clearly signed as such.

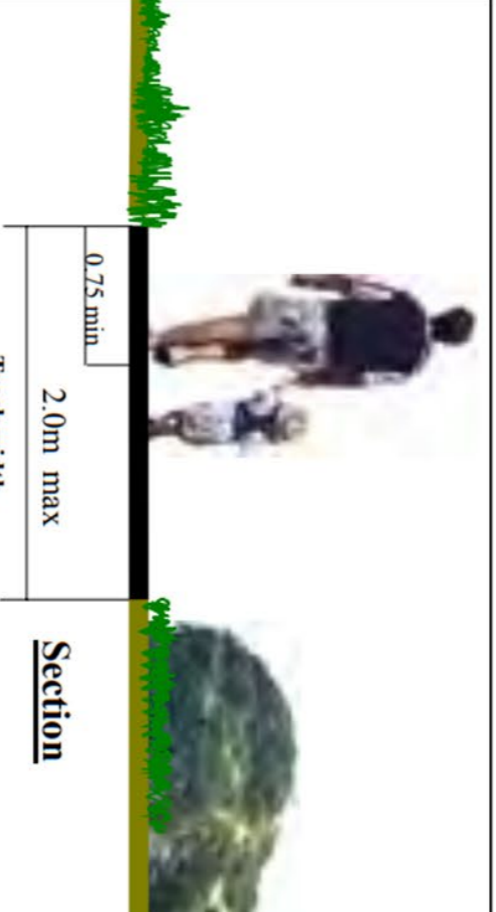


Drakeford Williams



User Groups

- Short Walks are well-formed tracks that provide for easy, low risk recreation suitable for most ages and fitness levels.
- **Walkers:** Caters for all ages and most walking abilities. Some tracks may be accessible to people with mobility difficulties or limitations. Tracks are usually suitable for walking shoes and trainers. They require no special equipment but still provide an off-road, outdoor experience. Can be used by conventional pushchairs.
 - **Runners:** Allows for runners with a wide range of experience and fitness levels.
 - **Mountain Buggies:** Relatively easy with no or few obstacles. Once there are more than two steps in a flight, the track can be considered 'average'. Once there are more than 6 steps per flight, the track can be considered difficult.
 - **Bikers:** Where cycle access is allowed, caters for easy to average cyclists. The track width makes it a little less easy and safe for family cyclists. Considered to be more difficult than 'average' when the slope becomes steeper than 12° or with flights of more than 6 steps.



Track Strategy

Short Walk

Appendix 11 – Construction Site Fencing Plan

Appendix 12 - Proposed Annual Sports Field Maintenance Programme (undertaken by others)

Proposed annual maintenance schedule for sports fields at Prince of Wales Park-Upper and Lower Playing Fields

Sports field maintenance programme (post remediation)

The following Sportsfield Maintenance Programme (SMP) has been developed for the upper and lower playing fields at the Prince of Wales Park, Wellington.

The fields have been reinstated as soil fields with subsoil primary drainage and automated irrigation only.

This programme has been developed with a normal usage requirement of the fields in mind and with a focus upon achieving a reasonable level of year-round surface performance notwithstanding the known limiting factors of the site such as the absence of secondary drainage.

In no way does this programme guarantee the year-round playability of the remediated sports fields as this will come down to a number of factors that include (but is not limited to): Implementation of maintenance practices, usage (regulated or unregulated), and weather conditions.

All activities are to be undertaken in accordance with WCC policies and procedures and in accordance with the regulations of the Health and Safety at Work Act 2015

Further assumptions: The maintenance programme is based on an estimated weekly use in winter of approximately 6 8-hours/week.

Item	Description	Unit	Quantity	Rate	Total
1.0	Upper Platform (7,135m ²)				
1.1	Mowing				
1.1.1	Mowing shall be carried out using a sharp, well-adjusted ride on rotary mower with low pressure turf tyres (or approved equivalent) to maintain turf height at no greater than 40mm. Mowing timing and frequency shall ensure that clippings are dispersed uniformly over the field with no scalping, clumps or windrows. Mower type to be approved by the Engineer.	Month	12	\$ -	\$ -
1.2	Fertilising				
1.2.1	Supply and apply 12.5:14 NPK turf fertiliser @ 250kg/ha (in two directions) using specialist turf spreader (to be approved by the Engineer)	No.	4	\$ -	\$ -
1.3	Linemarking				
1.3.1	Initial field linemark set out (winter)	No.	1	\$ -	\$ -
1.3.2	Weekly line marking for winter sports (1 April to 31 August) utilising specialist turf type linemarking and linemarking paint to WCC specifications and standards	No.	22	\$ -	\$ -
1.3.3	Initial field linemark set out (summer)	No.	1	\$ -	\$ -
1.3.4	Weekly line marking and goal set up for summer sports (1 November to 31 March) utilising specialist turf type linemarking and linemarking paint to WCC specifications and standards	No.	20	\$ -	\$ -
1.4	Physical treatment winter				
1.4.1	Verti drain 18mm solid tyre single pass monthly during winter. Tire spacing of not greater than 120 mm by 120 mm and a minimum tire penetration of 150 mm at 15° kick. This may be substituted with vibra mole or Ground Breaker operation ground condition dependant	No.	3	\$ -	\$ -
1.5	Maintenance herbicide fungicide				
1.5.1	Supply /apply Clopyralid (eg. Versatil) or similar approved) at 1 L/ha for broad leaf weed control in accordance with WCC sports field spray policies and procedures. (PROVISIONAL)	No.	1	\$ -	\$ -
1.5.2	Supply/apply pre emergent herbicide Ethofumesate (eg. Nortron 500SC, Turfweed or similar approved) @ 4 L/ha. Application should be timed prior to rainfall in accordance with WCC sports field spray policies and procedures. (PROVISIONAL)	No.	2	\$ -	\$ -
1.6	Goal posts				
1.6.1	Install/remove goal posts	LS	1	\$ -	\$ -
1.7	Renovation (spring)				
1.7.1	Double pass Cambridge roll surface post winter to adress micro levels.	No.	1	\$ -	\$ -
1.7.2	Carry out decompaction of field platform utilising a "soil recycler", ground breaker, vibra mole or approved equivalent including dragmatting of recycled soil. Engineer to approve equipment.	No.	1	\$ -	\$ -
1.7.3	Supply /apply ryegrass seed (approved turf type, certified) via turf type dimple seeder @ 150 Kg/Ha	No.	1	\$ -	\$ -
1.7.4	Supply/apply starter fertiliser DAP (or an approved equivalent) @ 250Kg/ha	No.	1	\$ -	\$ -
1.8	Renovation (autumn)				
1.8.1	Carry out decompaction of field platform utilising a "soil recycler", ground breaker, vibra mole or approved equivalent including dragmatting of recycled soil. Engineer to approve equipment.	No.	1	\$ -	\$ -
1.8.2	Supply /apply ryegrass seed (approved turf type, certified) via turf type dimple seeder @ 150 Kg/Ha	No.	1	\$ -	\$ -
1.8.3	Supply/apply DAP (or an approved equivalent) @ 250Kg/ha	No.	1	\$ -	\$ -
1.9	Irrigation				

2.9.1	Pre season maintenance check and adjustment	No.	1	\$	\$
2.9.2	Seasonal operation and management	No.	1	\$	\$
1.10	Reporting				
1.10.1	Compile and produce a monthly maintenance operation report summarising works carried out. The report will include but will not be limited to details around Mowing, irrigation, linemarking, fertilising, physical treatment and renovation operations and frequencies. Chemical applications (including volumes, rates and application dates). The report is to include a monthly summary of any other operations carried out and any issues observed.	No.	12	\$	\$
	Sub total				\$
2.0	Lower Platform (8,115m ²)				
2.1	Mowing				
2.1.1	Mowing shall be carried out using a sharp, well adjusted ride on rotary mower with low pressure turf tyres (or approved equivalent) to maintain turf height at no greater than 40mm. Mowing timing and frequency shall ensure that clippings are dispersed uniformly over the field with no scalping, clumps or windrows. Mower type to be approved by the Engineer.	Month	12	\$	\$
2.2	Fertilising				
2.2.1	Supply and apply 12.5 14 NPK turf fertiliser @ 250kg/ha (in two directions) using specialist turf spreader (to be approved by the Engineer)	No.	4	\$	\$
2.3	Linemarking				
2.3.1	Initial field linemark set out (winter)	No.	1	\$	\$
2.3.2	Weekly line marking for winter sports (1 April to 31 August) utilising specialist turf type linemarker and linemarking paint to WCC specifications and standards	No.	22	\$	\$
2.3.3	Initial field linemark set out (summer)	No.	1	\$	\$
2.3.4	Weekly line marking and goal set up for summer sports (1 November to 31 March) utilising specialist turf type linemarker and linemarking paint to WCC specifications and standards.	No.	20	\$	\$
2.4	Physical treatment winter				
2.4.1	Verti drain 18mm solid tyre single pass monthly during winter. Tyne spacing of not greater than 120 mm by 120 mm and a minimum tyre penetration of 150 mm at 15° kick. This may be substituted with vibra mole or Ground Breaker operation ground condition dependant	No.	3	\$	\$
2.5	Maintenance herbicide/fungicide				
2.5.1	Supply /apply Clopyralid (eg. Versatil or similar approved) at 1 l/ha for broad leaf weed control in accordance with WCC sports field spray policies and procedures. (PROVISIONAL)	No.	1	\$	\$
2.5.2	Supply/apply pre emergent herbicide Ethofumesate (eg. Norton 500SC, Turfweed or similar approved) @ 4 l/ha. Application should be timed prior to rainfall in accordance with WCC sports field spray policies and procedures. (PROVISIONAL)	No.	2	\$	\$
2.5.3	Supply/apply a broad spectrum contact fungicide i.e. Mancozeb to protect against turf loss through melting out over Christmas period in accordance with WCC sports field spray policies and procedures. (PROVISIONAL)	No.	1	\$	\$
2.6	Goal posts				
2.6.1	Install/remove goal posts	LS	1	\$	\$
2.7	Renovation (spring)				
2.7.1	Double pass Cambridge roll surface post winter to address micro levels.	No.	1	\$	\$
2.7.2	Carry out decompaction of field platform utilising a "soil recycler", ground breaker, vibra mole or approved equivalent including dragmatting of recycled soil. Engineer to approve equipment.	No.	1	\$	\$
2.7.3	Supply /apply ryegrass seed (approved turf type certified) via turf type dimple seeder @ 150 Kg/Ha	No.	1	\$	\$
2.7.4	Supply/apply starter fertiliser DAP (or an approved equivalent) @ 250Kg/ha	No.	1	\$	\$
2.8	Renovation (autumn)				
2.8.1	Carry out decompaction of field platform utilising a "soil recycler", ground breaker, vibra mole or approved equivalent including dragmatting of recycled soil. Engineer to approve equipment.	No.	1	\$	\$
2.8.2	Supply /apply ryegrass seed (approved turf type certified) via turf type dimple seeder @ 150 Kg/Ha	No.	1	\$	\$
2.8.3	Supply/apply DAP (or an approved equivalent) @ 250Kg/ha	No.	1	\$	\$
2.9	Irrigation				
2.9.1	Annual backflow preventer testing and certification	No.	1	\$	\$
2.9.2	Annual booster pump inspection and maintenance	No.	1	\$	\$
2.9.3	Pre season maintenance check and adjustment	No.	1	\$	\$
2.9.4	Seasonal operation and management	No.	1	\$	\$
2.10	Reporting				
2.10.1	Compile and produce a monthly maintenance operation report summarising works carried out. The report will include but will not be limited to details around Mowing, irrigation, linemarking, fertilising, physical treatment and renovation operations and frequencies. Chemical applications (including volumes, rates and application dates). The report is to include a monthly summary of any other operations carried out and any issues observed.	No.	12	\$	\$
	Sub total				\$
	TOTAL (Upper + Lower) excl GST				\$

	Description	Quantity	Unit	Rate	Amount
Completion of grow in/hand over (autumn)					
April	Application of 12 5 14 at 150Kg/Ha	280	Kg	\$	\$
	Mow fields with sharp rotary (weekly)	4	LS	\$	\$
May	Verti drain both fields	2	No.	\$	\$
	Mow fields with sharp rotary (weekly)	4	No.	\$	\$
June	Mow fields with sharp rotary (weekly)	4	No.	\$	\$
	Application of 12 5 14 at 150Kg/Ha	280	Kg	\$	\$
July	Mow fields with sharp rotary (weekly)	4	No.	\$	\$
	Verti drain both fields	2	No.	\$	\$
Plan spring renovation of fields					
August	Carry out soil nutrient analysis of both fields to confirm requirements	2	No.	\$	\$
	Mow fields with sharp rotary (weekly)	4	No.	\$	\$
	Cambridge roll surface post winter to address micro levels (both fields)	2	No.	\$	\$

September	Supply and apply ryegrass seed (approved turf type) via dimple seeder @ rate of 150 Kg/Ha to each field. Direct drill also considered (2 passes at 45 deg angle required)	300	Kg	\$	\$
	Supply and apply Bio boost (or an approved equivalent) at application rate of 250 Kg/ha (both fields)	500	Kg	\$	\$
	Apply: 17 2 17 (or an approved equivalent) application rate: 250Kg/ha	500	Kg	\$	\$
	Supply and apply a granular slow release wetting agent. This should be applied at a rate of 340 Kg/Ha. Apply just prior to forecast rainfall.	680	Kg	\$	\$
	Mow fields with sharp rotary (as required)	4	No.	\$	\$

Appendix 13 - Lizard management Plan



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Appendix 14 – Department of Conservation Wildlife Permit – Lizards

Appendix 15 – Correspondence between Boffa Miskell and WCC on a Decision on Bird Nest Boxes

Appendix 16 – Long Term Management and Maintenance Schedule

This Schedule is considered a “living document” that is to be worked on with WCC over the course of the Project.

OMARORO LONG TERM MANAGEMENT AND MAINTENANCE SCHEDULE				
Type	Area	Description	Unit	Rate
PLANTING				
<i>Native Revegetation planting (west of reservoir (above Waitangi Stream refer plant schedule))</i>	Reservoir fill slopes	Planting to include weeding, mulch top up	399m ²	
<i>Riparian planting to Waitangi and Papawai Streams (refer plant schedule)</i>	Streamsides	Planting to include releasing where relevant	911m ²	
TURF MOWING				
	Reservoir roof	No change		21.2 x 10 cuts
<i>Grass species</i>	Edge of tunnel access driveway	Mowing as per WCC standards for edge of fields	123m ²	21.2 x 10 cuts
	Edges of access track between fields	Mowing as per WCC standards for edge of fields	1.3m wide each side 94m long	21.2 x 10 cuts
<i>Low growing grass mix for dry slopes to pipe area to upper field</i>	Pipe tunnel to upper field	No change	37m ²	21.2 x 10 cuts
Total				
TRACKS				
	City to Sea walkways	Maintain as per WCC Open Space Access Plan	149 Lm x 1.2m wide	\$50 x 8hr
	Eastern walkway	Maintain as per WCC Open Space Access Plan	39.5 Lm x 1.2m wide	\$50 x 2hr
FENCING				
	High sportfield fencing (existing)	No change in maintenance required (vandalism repair as		
	Riddiford carpark two rail parks fence	New fence (vandalism repair only, replacement at end of life)		
	Bespoke fence above service tunnel entry	New fence (vandalism repair only, replacement at end of life)		
ASSETS				
	Seat with plaque	No change		
	General park signage	No change		
	Walkway signs	No change		

Appendix 17 Waitangi Stream - Mitigation Planting Specification

Appendix 18 Stormwater Inlet Ecology Memo

Appendix 19 Tree Protection method