

# 1. Auckland Unitary Plan - Assessment of objectives and policies

**Table 1: Chapter B Regional Policy Statement**

Objective/policy	Comment
<b>Auckland Regional Policy Statement (Chapter B, AUP-OIP)</b>	
<b>Chapter B2 – Tāhuhu whakaruruhau ā-taone - Urban growth and form</b>	
<p>Objective B2.2.1 (1) A quality compact urban form that enables... (c) better use of existing infrastructure and efficient provision of new infrastructure.</p>	<p>The proposal to locate the replacement Huia WTP within the RUB, adjacent to the existing WTP and on land designated for this purpose will result in the compact and efficient use of land and existing infrastructure. One of the key benefits of locating the replacement WTP at this site is the connection to the existing water supply network including raw and treated water supply. The location/elevation also supports gravity supply / minimising pumping.</p>
<b>Chapter B3 – Ngā pūnaha hanganga, kawekawe me ngā pūngao - Infrastructure, transport and energy</b>	
<p>Objective B3.2.1 (1) Infrastructure is resilient, efficient and effective</p>	<p>The Huia WTP is a crucial component of Auckland’s water supply network, and the resilience, efficiency and effectiveness of the proposed replacement WTP is therefore of utmost importance.</p> <p>The replacement of the ageing WTP with a new WTP of increased capacity will assist in meeting peak demand periods and improve the current system resilience. Its independence from other water sources and supply infrastructure provides resilience to Auckland’s wider water supply in the event of disruption of the southern water sources. Resilience and efficiency within the WTP itself is provided through the use of gravity based systems that minimise the need for electricity-reliant pumping, being designed to meet modern seismic design requirements, and pipework and concrete structures designed for a life of 100 years.</p> <p>The proposal to locate the replacement WTP and reservoirs adjacent to the existing WTP is an efficient and effective use of existing infrastructure. The WTP will use new water treatment technology to meet current and future drinking water standards, continuing to provide for the well-being of people and communities.</p>
<p><b>Objective B3.2.1 (2)</b> The benefits of infrastructure are recognised, including: (a) providing essential services for the functioning of communities, businesses and industries within and beyond Auckland; (b) enabling economic growth; (c) contributing to the economy of Auckland and New Zealand; (d) providing for public health, safety and the well-being of people and communities;</p>	<p>The Huia WTP is the third most significant water treatment plant in Auckland and is a crucial component of Auckland’s water supply network, treating approximately 20% of Auckland’s water. Replacement of the existing Huia WTP is essential to ensuring the continued supply of water to the Auckland region, providing for the health and well-being of Auckland’s people and communities. The WTP is a critical part of the region’s water supply to a third of the country’s population so it has national significance as well.</p>

Objective/policy	Comment
(e) protecting the quality of the natural environment; and (f) Enabling interaction and communication, including national and international links for trade and tourism.	
<p><b>Objective B3.2.1 (3)</b> Development, operation, maintenance, and upgrading of infrastructure is enabled, while managing adverse effects on:</p> <p>(a) the quality of the environment and, in particular, natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, Mana Whenua, natural resources, coastal environment, historic heritage and special character; (b) The health and safety of communities and amenity values.</p>	<p>The proposed Huia WTP and reservoirs are crucial infrastructure to replace the existing ageing WTP and this enabling objective recognises this. The management of adverse environmental effects has been central to the layout optimisation iterative process that has been undertaken, with a particular focus on avoiding the disturbance of areas with the highest ecological integrity. The assessment in Section 7 of the AEE finds that the adverse effects of the proposal will be adequately avoided, remedied or mitigated by the measures proposed, with residual effects on the SEA to be addressed through a comprehensive ecological compensation package which is designed to achieve a net gain in ecological values.</p> <p>Taking the above into account, enabling the development of the replacement Huia WTP and reservoirs is considered to be supported by RPS Objective B3.2.1 (3).</p>
<p><b>Objective B3.2.1 (4)</b> The functional and operational needs of infrastructure are recognised</p>	<p>The replacement WTP and reservoirs have a functional and operational need to be located at a particular elevation band and in proximity to existing (and proposed) infrastructure including the raw and treated water network and the NH2 watermain, as well as the western water supply dams. This is demonstrated through the <i>Huia WTP Site Selection Site Principles report prepared by CH2M Becca Ltd, Dec. 2015</i> as well as the subsequent alternatives assessments and site layout reports.</p>
<p><b>Objective B3.2.1 (8)</b> The adverse effects of infrastructure are avoided, remedied or mitigated.</p>	<p>The avoidance, remediation and mitigation of adverse effects as much as is practicable has been a key driver of the design of the project and footprint layout. The assessment in Section 7 of this AEE finds that the adverse effects of the proposal will be adequately avoided, remedied or mitigated by the measures proposed. Residual effects on the SEA are proposed to be addressed through a comprehensive ecological compensation package which is designed to achieve a net gain in ecological values.</p>
<p><b>Policy B3.2.2 (1)</b> Enable the efficient development, operation, maintenance and upgrading of infrastructure.</p>	<p>The purpose of the works is to replace and upgrade the Huia WTP, which is nearing the end of its operational life and was identified as one of the top eight highest risk assets in Auckland's water supply system.</p> <p>The replacement of existing infrastructure, continuing to rely on gravity based systems that minimise the need for electricity-reliant pumping, is considered efficient development and operation of infrastructure. The proposal to locate the replacement WTP and reservoirs adjacent to the existing WTP is an efficient and effective use of existing infrastructure.</p>

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<p><b>Policy B3.2.2 (2)</b> Recognise the value of investment in existing infrastructure.</p>	<p>The existing Huia WTP is an essential component of the existing infrastructure that supplies Auckland's water. The value of investment in the existing infrastructure, including connecting raw and treated water infrastructure and the western water supply dams, is significant.</p>
<p><b>Policy B3.2.2 (3)</b> Provide for the locational requirements of infrastructure by recognising that it can have a functional or operational need to be located in areas with natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, Mana Whenua, natural resources, coastal environment, historic heritage and special character.</p>	<p>The replacement WTP and reservoirs are located in an area subject to an SEA overlay. This infrastructure has a locational and operational need to be located at a particular elevation and in proximity to existing infrastructure including raw and treated water networks and the Waitakere water supply dams.</p>
<p><b>Policy B3.2.2 (6)</b> Enable the development, operation, maintenance and upgrading of infrastructure in areas with natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, Mana Whenua, natural resources, coastal environment, historic heritage and special character while ensuring that the adverse effects on the values of such areas are avoided where practicable or otherwise remedied or mitigated.</p>	<p>As set out above, the replacement WTP and reservoirs are located in an area that is subject to an SEA overlay. The proposed development footprint has been designed to avoid areas assessed as of highest ecological integrity, including mature kauri forest, kauri-podocarp forest and swamp forest ecosystem units. However, development will result in the clearance of 2.5 ha of ecologically significant native forest and scrub from the WTP site, 0.6 ha from the Reservoir 1 site, and 0.4 ha from the existing WTP site (for Reservoir 2). In total, this is approximately 0.01 % of this 24,000 ha SEA). The following measures have and will be undertaken to avoid, remedy or mitigate adverse effects on the SEA overlay as far as practicable:</p> <ul style="list-style-type: none"> <li>• Development footprint avoids permanent watercourses and areas with highest ecological integrity on the sites;</li> <li>• Development footprint including laydown area has been limited in size to avoid and otherwise minimise the area of vegetation clearance as far as practicable;</li> <li>• Protection of adjacent vegetation from construction effects;</li> <li>• Implementation of a robust kauri dieback protocol as a means to help prevent the spread of the disease;</li> <li>• Lizard, bat and bird management measures including pre-clearance monitoring and/ or translocation; and</li> <li>• Weed and animal pest management and native planting across the remaining 9.5 ha of native vegetation within the Project Site.</li> </ul> <p>These measures within the Project Site avoid where practicable, and otherwise remedy or mitigate adverse effects. However there will be residual adverse ecological effects. The comprehensive ecological compensation package (WBMP) described in the AEE Report has been designed to fully compensate the residual adverse ecological effects of the project that cannot practicably be avoided, remedied or mitigated. Overall, the proposed mitigation and compensation package is assessed as providing a net benefit to ecological values. Overall, the</p>

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	proposed works are considered to be consistent with RPS Policy B3.2.2 (6).
<p>Policy B3.2.2 (8) Avoid, remedy or mitigate the adverse effects from the construction, operation, maintenance or repair of infrastructure</p>	<p>As set out in Section 7 of the AEE, adverse effects from construction and operation will be avoided, remedied or mitigated as far as practicable, with the residual adverse ecological effects of construction assessed as being fully compensated for with the goal to achieve an overall net benefit in biodiversity. Overall, the proposed works are considered to be consistent with RPS Policy B3.2.2 (8).</p>
<p><b>Chapter B4 Te tiaki taonga tuku iho – Natural Heritage</b> <b>B4.4. Waitakere Ranges Heritage Area</b></p>	
<p><b>Objective B4.4.1 (1)</b> The natural and historic resources, including the significant environmental values and heritage features of the Waitākere Ranges, are protected, restored and enhanced for the benefit, use and enjoyment of the community.</p>	<p>The purpose and objectives of the Waitakere Ranges Heritage Area Act 2008 (WRHAA) is given effect to in the AUP through the Waitakere Ranges Heritage Area Overlay and Section B4.4 of the RPS.</p> <p>The public water supply system is recognised by the WRHAA as a heritage feature that contributes to the national significance of the heritage area. However the proposed development will adversely affect other identified heritage features, including terrestrial and aquatic ecosystems of prominent indigenous vegetation, and, temporarily during construction, the quiet of this small localised part of the Waitakere Ranges. As described throughout this application, the adverse ecological effects of the project have been avoided, remedied and mitigated as far as practicable, and any residual effects will be compensated for by the WBMP.</p> <p>It is noted that the WRHA overlay is a district plan provision, and is therefore not considered in this regional application but will be addressed in the subsequent OPW. We consider that Objectives B4.4.1 (3) and (6) are focused on district plan matters and are not directly relevant to a site that has an existing, long standing designation for water supply purposes. This is supported by reference to the relevant District Plan provisions in Chapter D12 of the AUP which focus on subdivision and development within the WRHA and give effect to the RPS objectives and policies at a district plan level. In any case, ecological constraints have been the primary determinant of the WTP and reservoir footprint locations within the Project Site. As a priority, the footprint was developed to avoid areas with the highest ecological integrity, and the footprint was progressively reduced or moved away from more sensitive areas through a series of iterative design layouts. This involved assessing alternative layout options to minimise the area of vegetation clearance as much as practicable with a particular focus on the highest value vegetation.</p>
<p><b>Objective B4.4.1 (8)</b> The water supply catchments and their related supply functions are protected.</p>	
<p><b>Policy B4.4.2 (3)</b> Where clearing vegetation for infrastructure is necessary, it should be undertaken only where the vegetation is of lower value and there is no practicable alternative option.</p>	
<p><b>Policy B4.4.2 (4)</b> Manage activities to minimise their adverse effects on water quality, soil, native vegetation and fauna habitats, mauri of the waterway, taiāpure and mahinga mātaītai.</p>	
<p><b>Policy B4.4.2 (6)</b> Avoid non-residential activities: (a) that are unrelated to the productive use of rural land; (b) that require substantial earthworks or vegetation removal; or (c) That are industrial and unrelated to rural activities.</p>	
<p><b>Chapter B6 – Mana Whenua</b> <b>B6.2. Recognition of Treaty of Waitangi/Te Tiriti o Waitangi partnerships and participation</b></p>	
<p><b>Objective B6.2.1 (1)</b></p>	

Objective/policy	Comment
<p>The principles of the Treaty of Waitangi/Te Tiriti o Waitangi are recognised and provided for in the sustainable management of natural and physical resources including ancestral lands, water, air, coastal sites, wāhi tapu and other taonga.</p>	<p>Watercare recognises the importance of the values held by kaitiaki (guardians or protectors). Watercare and Mana Whenua groups with interests in the Auckland region have established a Mana Whenua Kaitiaki Forum to enhance and develop the relationships between the parties. The Forum has agreed a process for engagement in projects initiated by Watercare which includes early notice of works to be undertaken by Watercare that may require a resource consent. The Forum ensures there is an opportunity for iwi input throughout the process of developing infrastructure.</p>
<p><b>Objective B6.2.1 (2)</b> The principles of the Treaty of Waitangi/Te Tiriti o Waitangi are recognised through Mana Whenua participation in resource management processes.</p>	<p>Te Kawerau a Maki is currently preparing a CVA for the project. Through this engagement, any potential adverse cultural effects and measures to address these effects can be identified. Initial examples that have been discussed include the opportunity for cultural harvest of trees. There may also be opportunities for Mana Whenua to exercise their kaitiakitanga in assisting in the proposed ecological mitigation and compensation works.</p>
<p><b>Policy B6.2.2 (1)</b> (1) Provide opportunities for Mana Whenua to actively participate in the sustainable management of natural and physical resources including ancestral lands, water, sites, wāhi tapu and other taonga in a way that does all of the following:</p> <ul style="list-style-type: none"> <li>(a) recognises the role of Mana Whenua as kaitiaki and provides for the practical expression of kaitiakitanga;</li> <li>(b) builds and maintains partnerships and relationships with iwi authorities;</li> <li>(c) provides for timely, effective and meaningful engagement with Mana Whenua at appropriate stages in the resource management process, including development of resource management policies and plans;</li> <li>(d) recognises the role of kaumātua and pūkenga;</li> <li>(e) recognises Mana Whenua as specialists in the tikanga of their hapū or iwi and as being best placed to convey their relationship with their ancestral lands, water, sites, wāhi tapu and other taonga;</li> <li>(f) acknowledges historical circumstances and impacts on resource needs;</li> <li>(g) recognises and provides for mātauranga and tikanga; and</li> <li>(h) recognises the role and rights of whānau and hapū to speak and act on matters that affect them.</li> </ul>	<p>Engagement with Mana Whenua will continue throughout the project lifecycle through the Mana Whenua Kaitiaki Forum, and particularly with Te Kawerau following completion of the CVA.</p> <p>The proposal is assessed as being consistent with Objectives B6.2.1 (1) and (2) and Policy B6.2.2 (1).</p>
<p><b>B6.3. Recognising Mana Whenua values</b></p>	
<p><b>Objective B6.3.1 (1)</b> Mana Whenua values, mātauranga and tikanga are properly reflected and accorded sufficient weight in resource management decision-making.</p>	<p>Engagement with mana whenua is occurring including early engagement through the Kaitiaki Forum. Te Kawerau is currently preparing a CVA for the project to assess the cultural implications of the proposal.</p>
<p><b>Objective B6.3.1 (2)</b></p>	<p>A broad range of environmental management and mitigation measures are proposed to ensure that the</p>

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<p>The mauri of, and the relationship of Mana Whenua with, natural and physical resources including freshwater, geothermal resources, land, air and coastal resources are enhanced overall.</p>	<p>adverse effects of the proposed works are appropriately avoided, remedied and mitigated. This includes stringent protocols and a best practise approach to managing and minimising the risk of kauri dieback. The proposed mitigation and compensation package also incorporates tree assessments and treatment, including on private property, to treat kauri dieback.</p> <p>In terms of earthworks and vegetation clearance, every effort has been made to refine the size/footprint of the proposed WTP and reservoirs and locate the footprint, wherever possible, away from permanent and intermittent streams and areas identified as having particularly high values. A broad range of management, mitigation and compensation measures is proposed to address the effects of the proposed works. These include specific tree protection measures for trees outside of the construction footprint, kauri die-back protocols, and the comprehensive mitigation and biodiversity compensation package outlined above. Watercare is also investigating options with Mana Whenua for cultural use of the largest trunks. There may also be opportunities for Mana Whenua to exercise their kaitiakitanga in assisting in the proposed ecological mitigation and compensation works.</p>
<p><b>Objective B6.3.1 (3)</b></p> <p>The relationship of Mana Whenua and their customs and traditions with natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, natural resources or historic heritage values is recognised and provided for.</p>	<p>The Project Site is within a SEA overlay, which has been scheduled for its natural heritage value. As part of ongoing engagement with mana whenua, and in particular the CVA being prepared by Te Kawerau ā Maki, Watercare will seek opportunities to recognise and provide for their relationship with these natural and physical resources.</p> <p>Te Kawerau ā Maki consider the Waitakere Ranges a nationally significant taonga (treasure) for the people of New Zealand, with the death of the forest due to kauri dieback identified as an existential threat. Te Kawerau ā Maki subsequently have decided to place a rāhui (customary prohibition) over the Waitākere forest to prevent and control human access until effective and appropriate research, planning and remedial work is completed to ensure the risks of kauri dieback are neutralised or controlled. A broad range of environmental management and mitigation measures are proposed including stringent protocols and a best practise approach to managing and minimising the risk of kauri dieback. The proposed mitigation and compensation package also incorporates tree assessments and treatment, including on private property, to contain and minimise harm from kauri dieback.</p>
<p><b>Policy B6.3.2 (2)</b></p> <p>Integrate Mana Whenua values, mātauranga and tikanga:</p> <p>(a) in the management of natural and physical resources within the ancestral rohe of Mana Whenua, including:</p>	<p>Engagement with Mana Whenua is occurring including early engagement through the Kaitiaki Forum, and Te Kawerau a Maki is currently preparing a CVA for the project. Through this engagement, any potential adverse cultural effects and measures to address these effects can be identified. Initial examples that have been discussed</p>

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<p>(i) ancestral lands, water, sites, wāhi tapu and other taonga;</p> <p>(ii) biodiversity; and</p> <p>(iii) historic heritage places and areas.</p> <p>(b) in the management of freshwater and coastal resources, such as the use of rāhui to enhance ecosystem health;</p> <p>(c) in the development of innovative solutions to remedy the long-term adverse effects on historical, cultural and spiritual values from discharges to freshwater and coastal water; and</p> <p>(d) in resource management processes and decisions relating to freshwater, geothermal, land, air and coastal resources.</p>	<p>include the opportunity for cultural harvest of trees. There may also be opportunities for mana whenua to exercise their kaitiakitanga in assisting in the proposed ecological mitigation and compensation works.</p> <p>Engagement with Mana Whenua will continue throughout the project lifecycle through the Mana Whenua Kaitiaki Forum, and particularly with Te Kawerau following completion of the CVA.</p>
<p><b>Policy B6.3.2 (3)</b></p> <p>Ensure that any assessment of environmental effects for an activity that may affect Mana Whenua values includes an appropriate assessment of adverse effects on those values.</p>	
<p><b>Policy B6.3.2 (4)</b></p> <p>Provide opportunities for Mana Whenua to be involved in the integrated management of natural and physical resources in ways that do all of the following:</p> <p>(a) recognise the holistic nature of the Mana Whenua world view;</p> <p>(b) recognise any protected customary right in accordance with the Marine and Coastal Area (Takutai Moana) Act 2011; and</p> <p>(c) restore or enhance the mauri of freshwater and coastal ecosystems.</p>	
<p><b>Policy B6.3.2 (6)</b></p> <p>Require resource management decisions to have particular regard to potential impacts on all of the following:</p> <p>(a) the holistic nature of the Mana Whenua world view;</p> <p>(b) the exercise of kaitiakitanga;</p> <p>(c) mauri, particularly in relation to freshwater and coastal resources;</p> <p>(d) customary activities, including mahinga kai;</p> <p>(e) sites and areas with significant spiritual or cultural heritage value to Mana Whenua; and</p> <p>(f) any protected customary right in accordance with the Marine and Coastal Area (Takutai Moana) Act 2011.</p>	
<p><b>Chapter B7 Toitū te whenua, toitū te taiao – Natural resources</b></p> <p><b>B7.2 Indigenous biodiversity</b></p>	

Objective/policy	Comment
<p><b>Objective B7.2.1 (1)</b> Areas of significant indigenous biodiversity value in terrestrial, freshwater, and coastal marine areas are protected from the adverse effects of subdivision use and development.</p>	<p>The proposed development footprint has been designed to avoid areas assessed as of highest ecological integrity, including mature kauri forest, kauri-podocarp forest and swamp forest ecosystem units. The area of significant vegetation to be cleared has been minimised as much as practicable through a series of iterative design layouts.</p> <p>The comprehensive ecological compensation package (WBMP) described in the AEE Report has been designed to fully compensate the residual adverse ecological effects of the project and provide an overall net benefit to ecological values.</p> <p>Significant indigenous biodiversity areas to be retained will be protected from the adverse effects of development through the implementation of robust construction management measures including a kauri dieback protocol.</p>
<p><b>Objective B7.2.1 (2)</b> Indigenous biodiversity is maintained through protection, restoration and enhancement in areas where ecological values are degraded, or where development is occurring.</p>	<p>As set out above, the proposed development footprint has been designed to avoid areas assessed as of highest indigenous biodiversity value as far as practicable. Indigenous biodiversity areas to be retained will be protected from the adverse effects of construction through the implementation of robust construction management measures including a kauri dieback protocol, and enhanced through planting and pest management initiatives. As above, the compensation approach is focused on achieving a net overall benefit.</p>
<p><b>Policy B7.2.2 (1)</b> Identify and evaluate areas of indigenous vegetation and the habitats of indigenous fauna in terrestrial and freshwater environments considering the following factors in terms of the descriptors contained in Schedule 3 Significant Ecological Areas – Terrestrial Schedule:</p> <ul style="list-style-type: none"> <li>(a) representativeness;</li> <li>(b) stepping stones, migration pathways and buffers;</li> <li>(c) threat status and rarity;</li> <li>(d) uniqueness or distinctiveness; and</li> <li>(e) diversity.</li> </ul>	<p>The Ecological Assessment evaluates the Project Site against the factors listed in RPS Policy B7.2.2 (1) in order to validate the SEA overlay and identify the specific features of the site that contribute to its ecological significance. In summary, it finds the following in respect of each factor:</p> <p>(a) representativeness: with the exception of areas of mahoe scrub that has a large component of exotic species and patches of grassland and weedfield, the vegetation on the Project Site is generally representative of the original ecosystem types in the Waitakere Ecological District. The Project Site is assessed as meeting this significance factor.</p> <p>(b) stepping stones, migration pathways and buffers: the vegetation on the Project Site is assessed as acting as a buffer to adjacent higher-quality ecosystem units, and forms part of a network of forested areas that together make an important contribution to landscape-scale ecology. The Project Site is assessed as meeting this significance factor.</p> <p>(c) threat status and rarity: approximately 50 % of the Project Site is vegetated in a later-successional or mature phase forest type and is therefore regarded as endangered under the International Union for Conservation of Nature (IUCN) threat classification system, as is the wetland feature. Threatened plant species are also present on the Project Site. The Project Site is assessed as meeting this significance factor.</p>

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	<p>(d) uniqueness or distinctiveness: the Project Site is not known to meet any of the factors for uniqueness or distinctiveness.</p> <p>(e) diversity: indigenous vegetation within the Project Site contains a variety of ecosystem types that reflect the underlying environmental gradients, with vegetation assemblages and species richness associated with this diversity. The Project Site is assessed as meeting this significance factor.</p> <p>Overall, the indigenous vegetation and habitats on the Project Site is assessed as meeting 3 of the 4 factors for the SEA overlay.</p>
<p><b>Policy B7.2.2 (5)</b> (5) Avoid adverse effects on areas listed in the Schedule 3 of Significant Ecological Areas – Terrestrial Schedule and Schedule 4 Significant Ecological Areas – Marine Schedule.</p>	<p>While it has been possible to avoid areas assessed as of highest ecological integrity, due to the construction and operational requirements of establishing a WTP and reservoirs on the site it is not practicable to completely avoid adverse effects. Adverse effects on the SEA will be avoided, remedied, mitigated or compensated for so that there is an assessed net gain in ecological value as a result of the project. The broad suite of objectives and policies that apply to infrastructure within an SEA are assessed further in the AEE Report.</p>
<p><b>B7.3 Freshwater systems</b></p>	
<p><b>Objective B7.3.1 (1)</b> (1) Degraded freshwater systems are enhanced. (2) Loss of freshwater systems is minimised. (3) The adverse effects of changes in land use on freshwater are avoided, remedied or mitigated.</p>	<p>Freshwater habitats within the project site are typically intermittent or ephemeral in nature, with the exception of the headwaters of the Armstrong Gully Stream in the Reservoir 1 and existing WTP sites. Through the iterative design process the footprint of the project was amended to avoid effects on this permanent stream and otherwise minimise impacts on other watercourses. The development footprint will also avoid the maire tawake-pukatea-kahikatea wetland forest present on the reservoir site.</p> <p>An intermittent section of the Yorke Gully stream towards the centre of the WTP site, that is assessed as being of moderate to low ecological value, will need to be reclaimed. However this will be replaced with at least 70 m of intermittent stream that will be designed to provide a diversity and abundance of instream habitat features, and result in an overall aquatic ecological benefit. More broadly, freshwater systems within the site will be enhanced through restoration planting of the riparian buffer zones. Downstream water quality in these streams will be maintained through the implementation of erosion and sediment control measures during construction, and stormwater management measures on an ongoing basis. Overall, the proposal is assessed as meeting RPS Objective B7.3.1 (1).</p>
<p><b>Management of freshwater systems</b> <b>Policy B7.3.2 (4)</b> Avoid the permanent loss and significant modification or diversion of lakes, rivers, streams (excluding ephemeral streams), and</p>	<p>As described above, the project results in the reclamation and diversion of an approximately 53 m long intermittent reach of the Yorke Gully Stream. Watercare has assessed alternatives through the layout design process, and has determined the reclamation and diversion of flows is the</p>

Objective/policy	Comment
<p>wetlands and their margins, unless all of the following apply:</p> <p>(a) it is necessary to provide for:</p> <ul style="list-style-type: none"> <li>(i) the health and safety of communities; or</li> <li>(ii) the enhancement and restoration of freshwater systems and values; or</li> <li>(iii) the sustainable use of land and resources to provide for growth and development; or</li> </ul> <p>(iv) infrastructure;</p> <p>(b) no practicable alternative exists;</p> <p>(c) mitigation measures are implemented to address the adverse effects arising from the loss in freshwater system functions and values; and</p> <p>(d) where adverse effects cannot be adequately mitigated, environmental benefits including on-site or off-site works are provided.</p>	<p>best practicable option to deliver this essential infrastructure. The reclaimed stream will be replaced with a 70 m reach of intermittent stream that will be designed to provide a diversity and abundance of instream habitat features, and result in an overall aquatic ecological benefit. The proposal is assessed as being consistent with RPS Policy B7.3.2 (4).</p>
<p><b>Policy B7.3.2 (5)</b></p> <p>Manage subdivision, use, development, including discharges and activities in the beds of lakes, rivers streams, and in wetlands, to do all of the following:</p> <p>(a) protect identified Natural Lake Management Areas, Natural Stream Management Areas, and Wetland Management Areas;</p> <p>(b) minimise erosion and modification of beds and banks of lakes, rivers, streams and wetlands;</p> <p>(c) limit the establishment of structures within the beds of lakes, rivers and streams and in wetlands to those that have a functional need or operational requirement to be located there; and</p> <p>(d) maintain or where appropriate enhance:</p> <ul style="list-style-type: none"> <li>(i) freshwater systems not protected under Policy B7.3.2(5)(a);</li> <li>(ii) navigation along rivers and public access to and along lakes, rivers and streams;</li> <li>(iii) existing riparian vegetation located on the margins of lakes, rivers, streams and wetlands; and</li> <li>(iv) areas of significant indigenous biodiversity.</li> </ul>	<p>No Natural Lake Management Areas, Natural Stream Management Areas or Wetland Management Areas will be affected by the project.</p> <p>Erosion and modification of streams will be minimised through the implementation of management measures during construction and operation. The majority of stormwater discharges will be to the Armstrong Gully via an existing attenuation basin, consistent with the existing situation (currently authorised by Watercare’s Permit No. 26979). The balance of the discharge will be to Yorke Gully Stream. Appropriate stormwater detention, retention, and instream erosion protection measures will be in place to minimise erosion and modification of the stream bed and banks. The only structures proposed within streams are erosion protection structures (if required) in Yorke Gully Stream, which have a functional and operational need to be located there.</p> <p>Freshwater systems will be maintained through the measures described above, and enhanced through the ecological features to be developed during design of the 70 m diversion channel and restoration planting of the riparian buffer zones. The proposal is assessed as being consistent with RPS Policy B7.3.2 (5).</p>
<p><b>B7.4 Coastal water, freshwater and geothermal water</b></p>	
<p><b>Objective B7.4.1 (4)</b></p>	<p>The proposal involves the discharge of stormwater to the Armstrong Gully and Yorke Gully Streams. The stormwater</p>

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<p>The adverse effects of point and non-point discharges, in particular stormwater runoff and wastewater discharges, on coastal waters, freshwater and geothermal water are minimised and existing adverse effects are progressively reduced.</p>	<p>management system has been designed to provide the appropriate level of stormwater retention (volume reduction) and detention (temporary storage) to maintain predevelopment flows, and best practicable measures will manage stormwater quality and erosion potential. During construction, appropriate erosion and sediment control measures will be in place to ensure the quality of runoff into freshwater. The proposal is assessed as being consistent with RPS Policy B7.4.1 (4).</p>
<p><b>Objective B7.4.1 (5)</b> The adverse effects of changes in or intensification of land use on coastal water and freshwater quality are avoided, remedied or mitigated.</p>	<p>The adverse effects of the proposed development on freshwater quality relate to construction runoff and ongoing discharge of stormwater. As described above, these effects will be appropriately avoided, remedied or mitigated.</p>
<p><b>Policy B7.4.2 (1) Integrated management</b> Integrate the management of subdivision, use and development and freshwater systems by undertaking all of the following: (a) ensuring water supply, stormwater and wastewater infrastructure is adequately provided for in areas of new growth or intensification; (b) ensuring catchment management plans form part of the structure planning process; (c) controlling the use of land and discharges to minimise the adverse effects of runoff on freshwater systems and progressively reduce existing adverse effects where those systems or water are degraded; and (d) Avoiding development where it will significantly increase adverse effects on freshwater systems, unless these adverse effects can be adequately mitigated.</p>	<p>Significant growth is projected for Auckland’s population over the next 30 years. The replacement WTP and reservoirs are a critical component of Watercare’s overall water supply network which needs to provide for this growth. The adverse effects of the proposed development on freshwater systems relate to construction runoff and ongoing discharge of stormwater, and the reclamation and diversion of 53 m of intermittent stream. As described above, these effects will be appropriately avoided, remedied or mitigated, and the proposed diversion channel will mitigate the section of intermittent stream in the middle of the site which will be lost. The proposal is assessed as being consistent with and being enabled by RPS Policy B7.4.2 (1).</p>
<p><b>Policy B7.4.2 (2) NPS-FM</b> Give effect to the National Policy Statement for Freshwater Management 2014 by establishing all of the following: (a) freshwater objectives; (b) freshwater management units and, for each unit:     (i) values;     (ii) water quality limits;     (iii) environmental flows and/or levels; and (c) Targets and implementation methods where freshwater units do not meet freshwater objectives.</p>	<p>The National Policy Statement for Freshwater Management is relevant to the proposal in relation to the water quality of freshwater systems. The adverse effects of the proposed development on freshwater quality relate to construction runoff and ongoing discharge of stormwater. As described above, these effects will be appropriately avoided, remedied or mitigated.</p>
<p><b>Policy B7.4.2 (8) Sediment runoff</b> Minimise the loss of sediment from subdivision, use and development, and manage the discharge of sediment into freshwater and coastal water, by:</p>	<p>As set out in the Stormwater and ESC Report in Appendix G, the loss of sediment will be managed through staging and progressive stabilisation of earthworks, and land disturbing activities will be managed in accordance with</p>

Objective/policy	Comment
<p>(a) promoting the use of soil conservation and management measures to retain soil and sediment on land; and</p> <p>(b) requiring land disturbing activities to use industry best practice and standards appropriate to the nature and scale of the land disturbing activity and the sensitivity of the receiving environment.</p>	<p>GD05 and industry best practice to minimise the effects of erosion and sediment discharges.</p> <p>The proposal is assessed as being consistent with RPS Policy B7.4.2 (8).</p>
<p><b>Policy B7.4.2 (9) Stormwater management</b> Manage stormwater by all of the following:</p> <p>(a) requiring subdivision, use and development to:</p> <ul style="list-style-type: none"> <li>(i) minimise the generation and discharge of contaminants; and</li> <li>(ii) minimise adverse effects on freshwater and coastal water and the capacity of the stormwater network;</li> </ul> <p>(b) adopting the best practicable option for every stormwater diversion and discharge; and</p> <p>(c) controlling the diversion and discharge of stormwater outside of areas serviced by a public stormwater network.</p>	<p>The Project Site is outside of an area serviced by a public stormwater network, and so stormwater will be managed onsite and discharged to receiving streams, as set out in the Stormwater and ESC Report in Appendix G. The proposal has been designed in accordance with GD01 and the best practicable option to minimise both the generation and discharge of contaminants in stormwater, in turn minimising the adverse effects of the discharge on freshwater.</p> <p>The proposal is assessed as being consistent with RPS Policy B7.4.2 (9).</p>
<b>Chapter B10 - Ngā tūpono ki te taiao - Environmental risk</b>	
<b>B10.4. Land – contaminated</b>	
<p><b>Objective B10.4.1. (1)</b> Human health and the quality of air, land and water resources are protected by the identification, management and remediation of land that is contaminated</p>	<p>A very conservative approach has been taken to the management of contaminated land, as there is very limited information regarding the likelihood of contamination.</p> <p>A SMP is included in Appendix K, which sets out appropriate controls to minimise potential discharges of contaminants to the environment that could result from the disturbance of potentially contaminated land.</p> <p>Pre-works contamination testing will be undertaken to establish actual contamination concentrations, and the management procedures in the SMP will then be confirmed. With these measures in place, the proposed development will meet the requirements of these provisions.</p>
<p><b>Policy B10.4.2 (2)</b> Land which may be contaminated due to having supported contaminating land use activities in the past but has not been investigated will be identified as being potentially contaminated.</p>	
<p><b>Policy B10.4.2 (3)</b> Manage or remediate land that is contaminated where:</p> <ul style="list-style-type: none"> <li>(a) the level of contamination renders the land unsuitable for its existing or proposed use; or</li> <li>(b) the discharge of contaminants from the land is generating or is likely to generate significant adverse effects on the environment; or</li> <li>(c) development or subdivision of land is proposed.</li> </ul>	

Table 2: Regional Plan

<b>Chapter D9 – Significant Ecological Areas Overlay</b>	
<p><b>Objective D9.2 (1)</b> Areas of significant indigenous biodiversity value in terrestrial, freshwater, and coastal marine areas are protected from the adverse effects of subdivision, use and development.</p>	<p>The proposed development footprint has been designed to avoid areas assessed as of highest ecological integrity, including mature kauri forest, kauri-podocarp forest and swamp forest ecosystem units. The area of significant vegetation to be cleared has been minimised as much as practicable through a series of iterative design layouts. The comprehensive ecological compensation package (WBMP) described in the AEE Report has been designed to fully compensate the residual adverse ecological effects of the project and provide an overall net benefit to ecological values.</p> <p>Significant indigenous biodiversity areas to be retained will be protected from the adverse effects of development through the implementation of robust construction management measures including a kauri dieback protocol. Overall, the proposed works are considered to be consistent with RPS Objective D9.2 (1).</p>
<p><b>Objective D9.2 (2)</b> Indigenous biodiversity values of significant ecological areas are enhanced.</p>	<p>The proposal includes the protection and enhancement of the remaining 11 ha of native vegetation within the Project Site, most of which is SEA. Residual adverse ecological effects will be compensated for by the comprehensive WBMP described in the AEE Report, which will enhance the biodiversity values of 990 ha of public and private land, approximately 720 ha of which is classified as SEA. The compensation package is anticipated to appropriately compensate for the loss of forest extent, and result in significant biodiversity gains for the Little Muddy Creek catchment, with expected benefits including the return and/ or range expansion of suppressed biota, and improved forest condition, regeneration processes and habitat values within the managed forest areas.</p>
<p><b>Objective D9.2 (3)</b> The relationship of Mana Whenua and their customs and traditions with indigenous vegetation and fauna is recognised and provided for.</p>	<p>Mana Whenua have been engaged through Watercare’s Mana Whenua Kaitiaki Forum. Te Kawerau is the only mana whenua who have indicated that they would prepare a CVA for the project, which is underway. Watercare will continue to liaise with the representatives of the other iwi through the Forum. Through these processes, opportunities for the recognition and provision of the relationship of Mana Whenua with indigenous vegetation and fauna will be identified.</p>
<p><b>Managing effects on significant ecological areas – terrestrial and marine</b> <b>Policy D9.3 (1)</b> Manage the effects of activities on the indigenous biodiversity values of areas identified as significant ecological areas by: (a) avoiding adverse effects on indigenous biodiversity in the coastal environment to the extent stated in Policies D9.3(9) and (10); (b) avoiding other adverse effects as far as practicable, and where avoidance is not</p>	<p>As set out previously, the replacement WTP and reservoirs are located in an area that is subject to an SEA overlay. The proposed development footprint has been designed to avoid areas assessed as of highest ecological integrity, including mature kauri forest, kauri-podocarp forest and swamp forest ecosystem units. However, development will result in the clearance of 2.5 ha of ecologically significant native forest and scrub from the WTP site, 0.6 ha from the Reservoir 1 site, and 0.4 ha from the existing WTP site (for Reservoir 2). In total, this is approximately 0.01 % of the 24,000 ha SEA). The following measures</p>

<p>practicable, minimising adverse effects on the identified values;</p> <p>(c) remedying adverse effects on the identified values where they cannot be avoided;</p> <p>(d) mitigating adverse effects on the identified values where they cannot be avoided or remediated; and</p> <p>(e) Considering the appropriateness of offsetting any residual adverse effects that are significant and where they have not been able to be mitigated, through protection, restoration and enhancement measures, having regard to Appendix 8 Biodiversity offsetting.</p>	<p>have and will be undertaken to avoid, remedy or mitigate adverse effects on the SEA overlay as far as practicable:</p> <ul style="list-style-type: none"> <li>• Development footprint avoids permanent watercourses and areas with highest ecological integrity on the sites;</li> <li>• Development footprint including laydown area has been limited in size to minimise the area of vegetation clearance as far as practicable;</li> <li>• Protection of adjacent vegetation from construction effects;</li> <li>• Implementation of a robust kauri dieback protocol as a means to help prevent the spread of the disease;</li> <li>• Lizard, bat and bird management measures including pre-clearance monitoring and/ or translocation; and</li> <li>• Weed and animal pest management and native planting across the remaining 11 ha of native vegetation within the Project Site.</li> </ul> <p>These measures within the Project Site avoid where practicable, and otherwise remedy or mitigate. However significant residual adverse ecological effects are anticipated. The comprehensive ecological compensation package (WBMP) described in the AEE Report has been designed to fully compensate the residual adverse ecological effects of the project that cannot practicably be avoided, remedied or mitigated. Overall, the proposed mitigation and compensation package is assessed as providing a net benefit to ecological values and is appropriate for offsetting the residual effects in terms of (e). Overall, the proposed works are not considered to be contrary to Policy D9.3 (1).</p>
<p><b>Policy D9.3 (2)</b></p> <p>Adverse effects on indigenous biodiversity values in significant ecological areas that are required to be avoided, remedied, mitigated or offset may include, but are not limited to, any of the following:</p> <p>(a) fragmentation of, or a reduction in the size and extent of, indigenous ecosystems and the habitats of indigenous species;</p> <p>(b) fragmentation or disruption of connections between ecosystems or habitats;</p> <p>(c) changes which result in increased threats from pests on indigenous biodiversity and ecosystems;</p> <p>(d) loss of buffering of indigenous ecosystems;</p> <p>(e) loss of a rare or threatened individual, species population or habitat;</p> <p>(f) loss or degradation of originally rare ecosystems including wetlands, dune systems, lava forests, coastal forests;</p> <p>(g) a reduction in the abundance of individuals within a population, or natural diversity of</p>	<p>The Ecological Assessment included in Appendix L identifies the following potential ecological effects of the proposal that are required to be avoided, remedied, mitigated or offset: (a) – (e), (g), (i), (k) - (m).</p> <p>Each of these effects is assessed in the Ecological Assessment. In summary it finds that the measures proposed will avoid, remedy or mitigate adverse ecological effects to the greatest extent that is practicable. Residual effects will be compensated for by a comprehensive ecological mitigation and compensation package, which is focussed on achieving an overall net benefit in biodiversity.</p>

<p>indigenous vegetation and habitats of indigenous fauna;</p> <p>(h) loss of ecosystem services;</p> <p>(i) effects which contribute to a cumulative loss or degradation of habitats, species populations and ecosystems;</p> <p>(j) impacts on species or ecosystems that interact with other activities, or impacts that exacerbate or cause adverse effects in synergistic ways;</p> <p>(k) loss of, or damage to, ecological mosaics, sequences, processes, or integrity;</p> <p>(l) downstream effects on wetlands, rivers, streams, and lakes from hydrological changes further up the catchment;</p> <p>(m) a modification of the viability or value of indigenous vegetation and habitats of indigenous fauna as a result of the use or development of other land, freshwater, or coastal resources;</p> <p>(n) a reduction in the historical, cultural, and spiritual association held by Mana Whenua or the wider community;</p> <p>(o) the destruction of, or significant reduction in, educational, scientific, amenity, historical, cultural, landscape, or natural character values;</p> <p>(p) disturbance to indigenous fauna that is likely or known to increase threats, disturbance or pressures on indigenous fauna; or</p> <p>(q) Increases in the extinction probability of a species.</p>	
<p><b>Policy D9.3 (3)</b></p> <p>Enhance indigenous biodiversity values in significant ecological areas through any of the following:</p> <p>(a) restoration, protection and enhancement of threatened ecosystems and habitats for rare or threatened indigenous species;</p> <p>(b) control, and where possible, eradication of plant and animal pests;</p> <p>(c) fencing of significant ecological areas to protect them from stock impacts;</p> <p>(d) legal protection of significant ecological areas through covenants or similar mechanisms;</p> <p>(e) development and implementation of management plans to address adverse effects;</p> <p>(f) re-vegetating areas using, where possible, indigenous species sourced from naturally growing plants in the vicinity with the same climactic and environmental conditions; or</p>	<p>As part mitigation for the required clearance of SEA, the proposal includes the enhancement of the remaining 11 ha of native vegetation within the Project Site. Most of this area is SEA. Residual adverse ecological effects will be addressed by the comprehensive WBMP described in the AEE Report, which will enhance the biodiversity values of 990 ha of public and private land, approximately 720 ha of which is classified as SEA. The WBMP includes restoration, protection and enhancement of ecosystems including those providing habitats for rare or threatened indigenous species, intensive plant and animal pest control including of Argentine ants, “kauri rescue” for private landowners and biodiversity monitoring. Significant opportunities will exist to provide for the role of Mana Whenua as kaitiaki. The WBMP package is considered to appropriately compensate for the loss of forest extent. It is anticipated to result in significant biodiversity gains for the Muddy Creek catchment, with expected benefits including the return and/ or range expansion of suppressed biota, and improved forest condition, regeneration processes and habitat values within the managed forest areas. The</p>

<p>(g) Providing for the role of Mana Whenua as kaitiaki and for the practical exercise of kaitiakitanga in restoring, protecting and enhancing areas.</p>	<p>proposal is considered to be broadly consistent with Policy D9.3 (3).</p>
<p><b>Vegetation management</b> <b>Policy D9.3 (5)</b></p> <p>(5) Enable the following vegetation management activities in significant ecological areas to provide for the reasonable use and management of land:</p> <p>(a) trimming of vegetation;</p> <p>(b) vegetation removal to maintain existing open areas, including tracks;</p> <p>(c) vegetation removal to establish and maintain a reasonable cleared area around a building;</p> <p>(d) vegetation removal required to maintain lawfully established activities, structures and buildings;</p> <p>(e) vegetation removal necessary to provide for a dwelling on a site;</p> <p>(f) vegetation removal necessary to provide for marae and papakainga on Māori land;</p> <p>(g) vegetation removal in areas of high wildfire risk to manage this risk; and</p> <p>(h) vegetation removal necessary to provide access and exit for emergency service vehicles.</p>	<p>Policy D9.5 provides for generally small to medium scale vegetation clearance e.g. to maintain access tracks, to provide for a dwelling, etc. It is therefore of limited relevance to this project other than to note that this application also seeks to provide for reasonable use and management of land within the context of a replacement WTP and reservoirs on land designated for that purpose.</p>
<p><b>Policy D9.3 (6)</b></p> <p>While also applying Policies D9.3(9) and (10) in the coastal environment, avoid as far as practicable the removal of vegetation and loss of biodiversity in significant ecological areas from the construction of building platforms, access ways or infrastructure, through:</p> <p>(a) using any existing cleared areas on a site to accommodate new development in the first instance;</p> <p>(b) assessing any practicable alternative locations and/or methods that would reduce the need for vegetation removal or land disturbance;</p> <p>(c) retaining indigenous vegetation and natural features which contribute to the ecological significance of a site, taking into account any loss that may be unavoidable to create a single building platform for a dwelling and associated services, access and car parking on a site;</p> <p>(d) designing and locating dwellings and other structures to reduce future demands to clear or damage areas of significant indigenous biodiversity, for example to provide sunlight or protect property;</p>	<p>As described above, the project has been designed to avoid as far as practicable the removal of vegetation and loss of biodiversity in significant ecological areas with a particular emphasis on permanent watercourses and the highest integrity/value vegetation. In particular, the following is noted:</p> <ul style="list-style-type: none"> <li>• Watercare has undertaken a comprehensive assessment of alternatives in relation to the replacement WTP and reservoirs. On balance, taking into account a broad number of technical and environmental constraints, the Manuka Road site was considered to be the preferred site (refer Section 5 of the AEE Report). The proposed development is considered the best practicable option;</li> <li>• The development footprint avoids the areas assessed as being of highest ecological integrity, however it is not possible to undertake the development at the Project Site without removing ecologically significant indigenous vegetation. This policy recognises that there may be some unavoidable loss within the context of a single building platform for a dwelling and associated services;</li> <li>• No further removal or damage to areas of significant indigenous biodiversity is expected to be needed for the operation or maintenance of the replacement WTP and reservoirs;</li> </ul>

<p>(e) avoiding as far as practicable any changes in hydrology which could adversely affect indigenous biodiversity values;</p> <p>(f) implementing measures to maintain existing water quality and not increase the amount of sediment entering natural waterways, wetlands and groundwater; and</p> <p>(g) using techniques that minimise the effects of construction and development on vegetation and biodiversity and the introduction and spread of animal and plant pests.</p>	<ul style="list-style-type: none"> <li>• The proposed development will not change the hydrology in a way that would affect indigenous biodiversity values;</li> <li>• Comprehensive erosion and sediment control and stormwater treatment measures are proposed to ensure the project does not adversely affect the existing water quality of waterways;</li> </ul>
<p><b>Policy D9.3 (8)</b> Manage the adverse effects from the use, maintenance, upgrade and development of infrastructure in accordance with the policies above, recognising that it is not always practicable to locate and design infrastructure to avoid significant ecological areas.</p>	<p>As described above, the potential adverse effects of the proposed infrastructure development will be managed through a wide range of measures. It is not practicable to avoid the SEA due to construction and operational requirements of the replacement WTP and reservoirs.</p>
<p><b>Chapter E1 – Water quality and integrated management</b></p>	
<p><b>Objective E1.2 (3)</b> Stormwater and wastewater networks are managed to protect public health and safety and to prevent or minimise adverse effects of contaminants on freshwater and coastal water quality.</p>	<p>Adverse effects of the discharge of stormwater are managed and minimised through appropriate retention, detention and treatment measures which are in accordance with best practise as set out in GD05.</p>
<p><b>Policy E1.3 (1)</b> Manage discharges, until such time as objectives and limits are established in accordance with Policy E1.3(7), having regard to:</p> <p>(a) the National Policy Statement for Freshwater Management National Bottom Lines;</p> <p>(b) the Macroinvertebrate Community Index as a guideline for freshwater ecosystem health associated with different land uses within catchments in accordance with Policy E1.3(2); or</p> <p>(c) Other indicators of water quality and ecosystem health.</p>	<p>The Stormwater and ESC Report in Appendix G sets out the proposed means of managing these discharges. During construction, appropriate measures will be in place to minimise the effects of erosion and discharge of sediment laden runoff. Stormwater requiring treatment will be treated by proprietary devices prior to being discharged to the receiving waterways, which is assessed as being the best practicable option. In these ways, the water quality and ecosystem health of the waterways will be maintained.</p>
<p><b>Policy E1.3 (2)</b> Manage discharges, subdivision, use, and development that affect freshwater systems to:</p> <p>(a) maintain or enhance water quality, flows, stream channels and their margins and other freshwater values, where the current condition is above National Policy Statement for Freshwater Management National Bottom Lines and the relevant Macroinvertebrate Community Index guideline in Table E1.3.1; or</p>	<p>The Ecological Assessment in Appendix L finds that the current condition of the Yorke and Armstrong Gully Streams is generally below NPS-FM National Bottom Lines and the AUP MCI guideline for native forest specified in Table E1.3.1. The policy therefore directs freshwater values to be enhanced.</p> <p>Appropriate erosion and sediment control measures will be implemented to ensure that the water quality of the receiving waterways will not be compromised during construction.</p>

<p>(b) Enhance water quality, flows, stream channels and their margins and other freshwater values where the current condition is below national bottom lines or the relevant Macroinvertebrate Community Index guideline in Table E1.3.1.</p>	<p>Operational stormwater discharges into the Armstrong Gully will be the same as the existing situation, as authorised by Watercare’s Permit No. 26979.</p> <p>For Yorke Gully Stream, the contributing catchment area will be reduced once the construction of the WTP has been completed, due to the diversion of roof runoff to the WTP process. In addition to catchment inputs, the Yorke Gully stream diversion will also receive collected and treated stormwater from the replacement WTP site via a dry pond that will provide attenuation and detention of flows. The controlled delivery of clean and treated stormwater to the diversion channel will aim to mimic the intermittent nature of the existing stream and continue to support flows in the Yorke Gully stream downstream.</p> <p>Enhancement of instream values including stream channels and their margins will be achieved through the stream mitigation and compensation package, which includes the ecological design of a stream diversion, erosion protection works in the upper Yorke Gully, and riparian restoration and enhancement of streams across the Project Site.</p> <p>The proposal is considered to be consistent with Policy E1.3 (2).</p>
<p><b>Policy E1.3 (3)</b> Require freshwater systems to be enhanced unless existing intensive land use and development has irreversibly modified them such that it practicably precludes enhancement.</p>	<p>Freshwater systems will be maintained through the measures described, and enhanced through the ecological features to be developed during design of the 70 m diversion channel, restoration planting of the riparian buffer zones and erosion protection works in the upper Yorke Gully.</p>
<p><b>Policy E1.3 (4)</b> When considering any application for a discharge, the Council must have regard to the following matters: (a) the extent to which the discharge would avoid contamination that will have an adverse effect on the life-supporting capacity of freshwater including on any ecosystem associated with freshwater; and (b) the extent to which it is feasible and dependable that any more than a minor adverse effect on freshwater, and on any ecosystem associated with freshwater, resulting from the discharge would be avoided.</p>	<p>As described above, appropriate erosion and sediment control and stormwater treatment measures will be in place to ensure the quality of runoff from the site to the receiving freshwater systems. With these measures in place, the adverse effects of the discharges on water quality and freshwater ecosystems are assessed as being no more than minor.</p>
<p><b>Policy E1.3 (5)</b> When considering any application for a discharge the Council must have regard to the following matters: (a) the extent to which the discharge would avoid contamination that will have an adverse effect on the health of people and communities as affected by their secondary contact with fresh water; and</p>	<p>As described above, appropriate erosion and sediment control and stormwater treatment measures will be in place to ensure the quality of runoff from the site to the receiving freshwater systems. The discharges are not anticipated to affect the health of people and communities.</p>

<p>(b) the extent to which it is feasible and dependable that any more than minor adverse effect on the health of people and communities as affected by their secondary contact with fresh water resulting from the discharge would be avoided.</p>	
<p><b>Policy E1.3 (8)</b>          Avoid as far as practicable, or otherwise minimise or mitigate, adverse effects of stormwater runoff from greenfield development on freshwater systems, freshwater and coastal water by:</p> <p>(a) taking an integrated stormwater management approach (refer to Policy E1.3.10);</p> <p>(b) minimising the generation and discharge of contaminants, particularly from high contaminant generating car parks and high use roads and into sensitive receiving environments;</p> <p>(c) minimising or mitigating changes in hydrology, including loss of infiltration, to:</p> <ul style="list-style-type: none"> <li>(i) minimise erosion and associated effects on stream health and values;</li> <li>(ii) maintain stream baseflows; and</li> <li>(iii) support groundwater recharge;</li> </ul> <p>(d) where practicable, minimising or mitigating the effects on freshwater systems arising from changes in water temperature caused by stormwater discharges; and</p> <p>(e) providing for the management of gross stormwater pollutants, such as litter, in areas where the generation of these may be an issue.</p>	<p>The proposal involves the discharge of stormwater to the Armstrong Gully and Yorke Gully Streams.</p> <p>Operational stormwater discharges into the Armstrong Gully will be the same as the existing situation that is authorised by Watercare’s Permit No. 26979.</p> <p>Stormwater runoff from the WTP site will largely be discharged to Yorke Gully via a dry pond. Water from paved areas will be treated by proprietary devices prior to being discharged and roofs will use non-zinc materials, which is assessed as being the best practicable option and will maintain the water quality of the stream.</p> <p>The stormwater management system has been designed to provide the appropriate level of stormwater retention (volume reduction) and detention (temporary storage) to maintain predevelopment flows, and best practicable measures will manage stormwater quality and erosion potential. The approach to stormwater adopts a best practise approach as set out in GD01.</p> <p>Freshwater systems will be maintained through the measures described above, and enhanced through the ecological features to be developed during design of the 70 m diversion channel, restoration planting of the riparian buffer zones, and erosion protection works in the upper Yorke Gully.</p>
<p><b>Policy E1.3 (10)</b>          In taking an integrated stormwater management approach have regard to all of the following:</p> <p>(a) the nature and scale of the development and practical and cost considerations, recognising:</p> <ul style="list-style-type: none"> <li>(i) greenfield and comprehensive brownfield development generally offer greater opportunity than intensification and small-scale redevelopment of existing areas;</li> <li>(ii) intensive land uses such as high-intensity residential, business, industrial and roads generally have greater constraints; and</li> <li>(iii) Site operational and use requirements may preclude the use of an integrated stormwater management approach.</li> </ul>	<p>An integrated stormwater management approach has been taken for the project. In particular, the stormwater management system has been designed to provide the appropriate level of stormwater retention (volume reduction) and detention (temporary storage) to maintain predevelopment flows, and best practicable measures will manage stormwater quality and erosion potential. This includes:</p> <ul style="list-style-type: none"> <li>• Stormwater runoff from the WTP site will largely be discharged to Yorke Gully via a dry pond. This will provide attenuation and detention of flows.</li> <li>• Water from paved areas will be treated by proprietary devices prior to being discharged.</li> <li>• Roofs will use non-zinc materials.</li> <li>• Roof run off from the WTP will be directed where practicable to the WTP process.</li> <li>• Controlled delivery of treated stormwater to the diversion channel will aim to mimic the intermittent</li> </ul>

<p>(b) the location, design, capacity, intensity and integration of sites/development and infrastructure, including roads and reserves, to protect significant site features and hydrology and minimise adverse effects on receiving environments;</p> <p>(c) the nature and sensitivity of receiving environments to the adverse effects of development, including fragmentation and loss of connectivity of rivers and streams, hydrological effects and contaminant discharges and how these can be minimised and mitigated, including opportunities to enhance degraded environments;</p> <p>(d) reducing stormwater flows and contaminants at source prior to the consideration of mitigation measures and the optimisation of on-site and larger communal devices where these are required; and</p> <p>(e) The use and enhancement of natural hydrological features and green infrastructure for stormwater management where practicable.</p>	<p>nature of the existing stream and continue to support flows in the Yorke Gully stream downstream.</p> <ul style="list-style-type: none"> <li>• Extensive restoration and enhancement planting of riparian buffer zones.</li> <li>• Erosion protection works in the upper Yorke Gully.</li> </ul>
<p><b>Policy E1.3 (11)</b>          Avoid as far as practicable, or otherwise minimise or mitigate adverse effects of stormwater diversions and discharges, having particular regard to:</p> <p>(a) the nature, quality, volume and peak flow of the stormwater runoff;</p> <p>(b) the sensitivity of freshwater systems and coastal waters, including the Hauraki Gulf Marine Park;</p> <p>(c) the potential for the diversion and discharge to create or exacerbate flood risks;</p> <p>(d) options to manage stormwater on-site or the use of communal stormwater management measures;</p> <p>(e) practical limitations in respect of the measures that can be applied; and</p> <p>(f) The current state of receiving environments.</p>	<p>The potential adverse effects of the proposed stormwater diversion and discharge will be avoided as far as practicable, remedied and mitigated to ensure the effects are no more than minor.</p> <p>The runoff originates from hardstanding areas and roofs on the Project Site. The volume and peak flows will be controlled through retention and detention, including recycling some roof runoff into the WTP system. Flows will be limited to those under predevelopment conditions in events up to a 1 in 100 year storm, with overland flow paths accommodating rain events that exceed this. These measures will ensure that the risk of increased flooding of downstream environments is adequately managed. The delivery of this treated stormwater to the Yorke Gully diversion channel will aim to mimic the intermittent nature of the existing stream, and to continue to support flows in the Yorke Gully stream downstream.</p> <p>An adequate quality of the discharge will be achieved through the use of non-zinc material on roofs and treatment of runoff from paved areas by proprietary devices. Alternative methods such as a wetland, biofiltration and swales were considered, but these were not considered suitable for the proposal due to steep site contours and the strong drive to minimise the development footprint and vegetation clearance. The Ecology Assessment (Appendix L) finds that the quality of stormwater to be discharged to the streams is appropriate for the current state of these receiving environments.</p> <p>The proposal is considered to be consistent with Policy E1.3 (11).</p>

<p><b>Policy E1.3 (13)</b> Require stormwater quality or flow management to be achieved on-site unless there is a downstream communal device or facility designed to cater for the site's stormwater runoff.</p>	<p>Stormwater quality and flow management will be achieved on-site through retention (by water recycling into the WTP system and a living roof on Reservoir 1), detention (storage ponds), use of non-zinc material on roofs, and treatment of runoff from pavement areas (by proprietary devices).</p>
<p><b>Policy E1.3 (26)</b> Prevent or minimise the adverse effects from construction, maintenance, investigation and other activities on the quality of freshwater and coastal water by:</p> <p>(a) adopting best management practices and establishing minimum standards for the discharges; or</p> <p>(b) where Policy E1.3(26)(a) is not practicable, have regard to the following:</p> <ul style="list-style-type: none"> <li>(i) the nature, volume and concentration of the contaminants in the discharge;</li> <li>(ii) the sensitivity of the receiving environment to the contaminants in the discharge;</li> <li>(iii) other practicable options for the discharge, including reuse or discharge to the trade sewer; and</li> <li>(iv) Practicable measures to reduce contaminant concentrations prior to discharge or otherwise mitigate adverse effects.</li> </ul>	<p>Appropriate erosion and sediment control and stormwater treatment measures will be in place to ensure the quality of runoff from the site to the receiving freshwater systems. With the suite of measures proposed in the ESCP in place, the adverse effects of the discharges on water quality and freshwater ecosystems are assessed as being no more than minor.</p> <p>The Stormwater and ESC Report assesses a number of alternatives for the management of stormwater on the Project Site, and has determined the proposed design as the best practicable option. This has taken into account the nature of the discharge, the sensitivity of the receiving streams, effects on the environment (e.g. from earthworks and vegetation clearance for options requiring larger footprints), and the likelihood of the option being successfully applied given current technologies.</p>
<p><b>Chapter E2 – Water quantity, allocation and use</b></p>	
<p><b>Policy E2.3 (22)</b> Require proposals to divert surface water to demonstrate the diversion will to the extent practicable avoid significant adverse effects and remedy or mitigate other adverse effects including where relevant, effects on:</p> <p>(a) existing lawfully established surface water takes including those allowed by section 14(3)(b) of the Resource Management Act 1991;</p> <p>(b) existing buildings, structures and services;</p> <p>(c) existing flood hazard risks;</p> <p>(d) river bank stability;</p> <p>(e) scheduled historic heritage places or scheduled sites and places of significance to Mana Whenua;</p> <p>(f) people and communities; and</p> <p>(g) The life supporting capacity of freshwater, ecosystem processes, and indigenous species and their ecosystems.</p>	<p>The project includes the diversion of stormwater from buildings and paved areas to ponds, which enables the detention, retention and treatment of the stormwater prior to it being discharged to the receiving streams. The diversion and collection will enable the mitigation of adverse effects, including flooding, ecology, and river bank stability. Instream erosion protection structures will be installed if deemed necessary. The proposal is assessed as being consistent with Policy E2.3 (22).</p>
<p><b>Chapter E3 – Lakes, rivers, streams and wetlands</b></p>	

<p><b>Objective E3.2 (2)</b> Auckland's lakes, rivers, streams and wetlands are restored, maintained or enhanced.</p>	<p>All stream reaches within the Armstrong Gully catchment have been avoided and a 10 m riparian buffer for these waterways will be retained wherever possible.</p> <p>At the WTP site, the proposed WTP development footprint has been designed to avoid permanent stream reaches, however the reclamation and diversion of approximately 53 m of moderate-low value intermittent stream in the headwaters of the Yorke Gully stream is required. The proposal is to mitigate this loss through the creation of a 70 m reach of intermittently flowing diversion stream, which will be designed to maintain and improve the existing SEV attributes to provide an overall aquatic ecological benefit, with additional compensation proposed through erosion protection works downstream of the site.</p>
<p><b>Objective E3.2 (3)</b> Significant residual adverse effects on lakes, rivers, streams or wetlands that cannot be avoided, remedied or mitigated are offset where this will promote the purpose of the Resource Management Act 1991.</p>	<p>The onsite alternatives assessment (refer Section 5.5 of the AEE) demonstrates that it is not practicable to avoid the reclamation and diversion of the 53 m length of intermittent stream. The Ecological Assessment (Appendix L) finds that the reclaimed portion of stream has poor habitat (mainly due to unsuitability for fish habitat) but high instream and riparian function (as assessed using SEV attributes), and overall the ecological values of the intermittent stream were ranked as moderate-low.</p> <p>Adverse effects associated with the reclamation and diversion of an intermittent section of the Yorke Gully Stream will be mitigated through the creation of a new stream channel designed to mimic the hydrology of the existing channel, with riparian planting also proposed, and further compensation proposed through erosion protection works downstream of the site. Overall, it is considered that the proposal is consistent with Objective E3.2 (3).</p>
<p><b>Objective E3.2 (4)</b> Structures in, on, under or over the bed of a lake, river, stream or wetland are provided for where there are functional or operational needs for the structure to be in that location, or traverse that area.</p>	<p>Erosion protection structures (if required) are proposed within the Yorke Gully Stream, and have a functional and operational need to be located there.</p>
<p><b>Objective E3.2 (6)</b> Reclamation and drainage of the bed of a lake, river, stream and wetland is avoided, unless there is no practicable alternative.</p>	<p>Watercare has undertaken an on-site alternatives assessment (refer Section 5.5 of the AEE) to determine the most appropriate footprint for the replacement WTP and reservoirs. This assessment has focused on avoiding, as far as practicable, effects on the values of the SEA and streams. Due to the location of Yorke Gully stream traversing through the WTP site, it is not practicable to entirely avoid stream works within an ephemeral and then intermittent section of the Yorke Gully stream.</p>
<p><b>Policy E3.3 (1)</b> Avoid significant adverse effects, and avoid where practicable or otherwise remedy or mitigate other adverse effects of activities in, on, under or over the beds of lakes, rivers,</p>	<p>The section of the Yorke Gully stream proposed to be reclaimed and diverted is within a SEA overlay. As described above, the on-site alternatives assessment demonstrates that it is not practicable to avoid effects on this section of intermittent stream. However the adverse effects on the stream will be mitigated by minimising the</p>

<p>streams or wetlands within the following overlays:</p> <p>(a) Natural Stream Management Areas Overlay;</p> <p>(b) Natural Lake Management Areas Overlay;</p> <p>(c) Urban Lake Management Areas Overlay;</p> <p>(d) Significant Ecological Areas Overlay; and</p> <p>(e) Wetland Management Areas Overlay.</p>	<p>length to be removed, managing works in proximity, and restoring and enhancing the riparian buffer zone, and further compensation proposed through erosion protection works downstream of the site. Residual adverse effects will be mitigated and offset by the creation of a replacement stream channel that will be designed to improve the existing SEV attributes and provide an overall ecological enhancement.</p>
<p><b>Policy E3.3 (5)</b></p> <p>Avoid significant adverse effects, and avoid, remedy or mitigate other adverse effects of activities in, on, under or over the beds of lakes, rivers, streams or wetlands on:</p> <p>(a) the mauri of the freshwater environment; and</p> <p>(b) Mana Whenua values in relation to the freshwater environment.</p>	<p>As described above, it is not practicable to avoid the reclamation and diversion of 70 m of intermittent stream, however a range of measures are proposed to remedy, mitigate or compensate for the effects of in-stream activities, including effects on mauri and Mana Whenua values.</p>
<p><b>Policy E3.3 (7)</b></p> <p>Provide for the operation, use, maintenance, repair, erection, reconstruction, placement, alteration or extension, of any structure or part of any structure in, on, under, or over the bed of a lake, river, stream or wetland, and any associated diversion of water, where the structure complies with all of the following:</p> <p>(a) there is no practicable alternative method or location for undertaking the activity outside the bed of the lake, river, stream or wetland;</p> <p>(b) the structure is designed to be the minimum size necessary for its purpose to minimise modification to the bed of a lake, river, stream or wetland;</p> <p>(c) the structure is designed to avoid creating or increasing a hazard;</p> <p>(d) the structure is for any of the following:</p> <ul style="list-style-type: none"> <li>(i) required as part of an activity designed to restore or enhance the natural values of any lakes, rivers, streams or wetlands and their margins, or any adjacent area of indigenous vegetation or habitat of indigenous fauna;</li> <li>(ii) designed to maintain and/or enhance public access to, over and along any lake, river, stream or wetland and their margins;</li> <li>(iii) necessary to provide access across a lake, river, stream or wetland;</li> <li>(iv) associated with infrastructure;</li> <li>(v) necessary for flood protection and the safeguarding of public health and safety; or</li> <li>(vi) Required for the reasonable use of production land.</li> </ul>	<p>Erosion protection structures may be required within the stream beds. The structures comply with all of the requirements of this policy as follows:</p> <p>(a) There is no practicable alternative method for disposing of clean and treated stormwater from the site and the proposed approach reflects the best practicable option and is consistent with GD01. The need for erosion protection downstream of the outfall will be determined during detailed design;</p> <p>(b) The need for erosion protection structures will be confirmed at detailed design stage. Watercare commits to ensuring these structures are the minimum size necessary for their purpose;</p> <p>(c) The erosion protection structure (if required) will be designed to avoid creating or increasing a hazard, such as flooding and erosion;</p> <p>(d) The structures are associated with infrastructure; i.e. are required to discharge stormwater runoff from the replacement Huia WTP.</p> <p>Overall, it is considered that Policy E3.3 (7) provides for the proposed structures in streams.</p>

<p>(e) the structure avoids significant adverse effects and avoids, remedies or mitigates other adverse effects on Mana Whenua values associated with freshwater resources, including wāhi tapu, wāhi taonga and mahinga kai.</p>	
<p><b>Policy E3.3 (13) Reclamation and drainage</b> Avoid the reclamation and drainage of the bed of lakes, rivers, streams and wetlands, including any extension to existing reclamations or drained areas unless all of the following apply:</p> <p>(a) there is no practicable alternative method for undertaking the activity outside the lake, river, stream or wetland;</p> <p>(b) for lakes, permanent rivers and streams, and wetlands the activity is required for any of the following:</p> <ul style="list-style-type: none"> <li>(i) as part of an activity designed to restore or enhance the natural values of any lake, river, stream or wetland, any adjacent area of indigenous vegetation or habitats of indigenous fauna;</li> <li>(ii) for the operation, use, maintenance, repair, development or upgrade of infrastructure; or</li> <li>(iii) to undertake mineral extraction activities; and</li> </ul> <p>(c) the activity avoids significant adverse effects and avoids, remedies or mitigates other adverse effects on Mana Whenua values associated with freshwater resources, including wāhi tapu, wāhi taonga and mahinga kai.</p>	<p>(a) Watercare has undertaken an on-site alternatives assessment (refer Section 5.5 of the AEE) to determine the most appropriate footprint for the replacement WTP and reservoirs. This assessment has focused on avoiding, as far as practicable, effects on the values of the SEA and streams. Due to the location of Yorke Gully stream traversing through the WTP site, it is not practicable to entirely avoid stream works within an ephemeral and then intermittent section of the Yorke Gully stream.</p> <p>(b) N/A – the proposal does not involve the reclamation of permanent waterbodies.</p> <p>(c) the adverse effects on the stream will be mitigated by minimising the length to be removed, managing works in proximity, and retaining and enhancing the riparian buffer zone. Residual adverse effects will be mitigated and offset by the creation of a replacement stream channel that will be designed to improve the existing SEV attributes and provide an overall ecological enhancement. These measures are also anticipated to adequately address any adverse effects on Mana Whenua values associated with the freshwater resource.</p> <p>The proposal is assessed as meeting all of the criteria of Policy E3.3 (13) and is therefore not considered to be contrary to it.</p>
<p><b>Chapter E10 – Stormwater management area – Flow 1</b></p>	
<p><b>Policy E10.3 (1)</b> Manage stormwater runoff from impervious areas in Stormwater management area – Flow 1 and Flow 2 areas to minimise the adverse effects of stormwater runoff on rivers and streams to retain, and where possible enhance, stream naturalness, biodiversity, bank stability and other values.</p>	<p>As described above, stormwater runoff will be managed to minimise adverse effects on the receiving streams. In particular, the delivery of treated stormwater to the Yorke Gully stream will aim to mimic the existing intermittent nature of the stream and continue to support natural downstream flows, and stormwater discharges to Armstrong Gully will continue to meet the requirements of Watercare’s existing consent. Erosion protection structures will be installed near the stormwater outlet if required, and the proposed retention of stormwater will reduce peak flood flows, further reducing the risk of downstream erosion.</p>
<p><b>Policy E10.3 (2)</b> Require stormwater hydrology mitigation in Stormwater management area control – Flow 1 and Flow 2 areas where there are:</p> <p>(a) new impervious areas;</p> <p>(b) redeveloped impervious areas; or</p>	<p>The proposal results in approximately 2.26 ha of new impervious area at the replacement WTP site, approximately 0.88 ha on the Reservoir 1 site, and approximately 0.62 ha on the existing WTP site for Reservoir 2. The proposed stormwater design meets the mitigation requirements of the AUP and GD01 for retention and detention.</p>

(c) Entire sites where the area of development or redevelopment comprises more than 50 per cent of the site area.	
<p><b>Policy E10.3 (3)</b> Recognise that there may be limitations to the hydrology mitigation that can practicably be achieved in some circumstances, particularly in association with redevelopment, including:</p> <p>(a) space limitations;</p> <p>(b) requirements to provide for other utility services; and</p> <p>(c) The function of roads as overland flow paths conveying stormwater runoff from surrounding land uses which the road controlling authority has limited ability to control.</p>	The proposed stormwater design meets the mitigation requirements of the AUP and GD01 for retention and detention.
<b>Chapter E11 – Land disturbance – Regional</b>	
<p><b>Objective E11.2 (1)</b> Land disturbance is undertaken in a manner that protects the safety of people and avoids, remedies or mitigates adverse effects on the environment.</p>	The Preliminary Land Stability Assessment concludes the proposed earthworks will not result in land instability or increase the hazard risk.
<p><b>Objective E11.2 (2)</b> Sediment generation from land disturbance is minimised.</p>	Earthworks will be staged in order to reduce the sediment yield and ensure adequate controls are in place downslope of the earthworks site. Upon completion of earthworks operations in a particular catchment, surface areas shall be stabilised. These measures will ensure sediment generation is minimised as much as is practicable.
<p><b>Policy E11.3 (1)</b> Avoid where practicable, and otherwise mitigate, or where appropriate, remedy adverse effects on areas where there are natural and physical resources that have been scheduled in the Plan in relation to natural heritage, Mana Whenua, natural resources, coastal environment, historic heritage and special character.</p>	As described above, Watercare has undertaken an assessment of alternative sites and has found that it is not practicable to completely avoid adverse effects on the SEA. These effects will be mitigated to the greatest extent practicable, however significant residual ecological effects are anticipated. A comprehensive compensation package is proposed. The positive benefits on the environment from the proposed mitigation and compensation package are considered to appropriately compensate for the loss of forest extent.
<p><b>Policy E11.3 (2)</b> Manage land disturbance to:</p> <p>(a) retain soil and sediment on the land by the use of best practicable options for sediment and erosion control appropriate to the nature and scale of the activity;</p> <p>(b) manage the amount of land being disturbed at any one time, particularly where the soil type, topography and location is likely to result in increased sediment runoff or discharge;</p> <p>(c) avoid, remedy or mitigate adverse effects on accidentally discovered sensitive material; and</p>	<p>The following measures will be implemented to manage land disturbance:</p> <p>(a) The ESCP sets out the best practicable options for sediment and erosion control appropriate to the project.</p> <p>(b) Earthworks will be staged in order to reduce the sediment yield and ensure adequate controls are in place downslope of the earthworks site.</p> <p>(c) It is considered unlikely that any archaeological sites will be uncovered by the works, however an Accidental Discovery Protocol will be followed in this event.</p> <p>(d) Watercare has and will continue to engage with Mana Whenua and to identify and implement measures to maintain cultural and spiritual values.</p>

<p>(d) maintain the cultural and spiritual values of Mana Whenua in terms of land and water quality, preservation of wāhi tapu, and kaimoana gathering.</p>	
<p><b>Policy E11.3 (4)</b> Enable land disturbance necessary for a range of activities undertaken to provide for people and communities social, economic and cultural well-being, and their health and safety.</p>	<p>Ensuring a quality potable water supply and resilient water supply infrastructure supports the existing and future well-being of Auckland. There are significant social, cultural and economic benefits at a local, regional and national level associated with the construction and operation of the replacement WTP and reservoirs. The proposal finds support from this enabling policy.</p>
<p><b>Policy E11.3 (5)</b> Design and implement earthworks with recognition of existing environmental site constraints and opportunities, specific engineering requirements, and implementation of integrated water principles</p>	<p>The earthworks and erosion and sediment control measures have been designed to respond to environmental site constraints; in particular, to avoid areas assessed as being of highest ecological integrity and to avoid permanent streams. The functional and operational requirements of the infrastructure have also been factored into design.</p>
<p><b>Policy E11.3 (6)</b> Require that earthworks are designed and undertaken in a manner that ensures the stability and safety of surrounding land, buildings and structures.</p>	<p>The Preliminary Land Stability Assessment concludes the proposed earthworks will not result in land instability or increase the hazard risk. Detailed design will ensure the stability and safety of surrounding land, buildings and structures.</p>
<p><b>Policy E11.3 (6A) – Proposed Plan Change 14</b> Recognise and provide for the management and control of kauri dieback as a means of maintaining indigenous biodiversity.</p>	<p>Kauri dieback is recognised as a serious threat to indigenous biodiversity, and a robust protocol has been developed for the project to ensure the disease is not spread as a result of construction.</p> <p>The understanding of Kauri dieback and protocols for managing and preventing the spread of it are continually evolving to reflect the latest research and scientific information available. It is expected that current protocols will be amended and updated in consultation with Council biosecurity specialists to ensure that when works commence, the most appropriate controls are in place in regards to Kauri dieback.</p> <p>The WBMP proposed as compensation for the project includes Kauri Dieback measures which extends to tree health assessments and site specific management including on private property.</p>
<p><b>Policy E11.3 (7)</b> Require any land disturbance that will likely result in the discharge of sediment laden water to a surface water body or to coastal water to demonstrate that sediment discharge has been minimised to the extent practicable, having regard to the quality of the environment; with:</p> <p>(a) any significant adverse effects avoided, and other effects avoided, remedied or mitigated, particularly in areas where there is:</p> <ul style="list-style-type: none"> <li>(i) high recreational use;</li> <li>(ii) relevant initiatives by Mana Whenua, established under regulations relating</li> </ul>	<p>The ESCP sets out the measures that will minimise the discharge of sediment laden water to the receiving streams, including staging the works, stabilisation, clean water diversions, and dirty water collection and treatment. Having regard to the quality of the environment, the effects of the discharge is assessed as being no more than minor with the implementation of the ESCP.</p>

<p>to the conservation or management of fisheries, including taiāpure, rāhui or whakatapu areas;</p> <p>(iii) the collection of fish and shellfish for consumption;</p> <p>(iv) maintenance dredging; or</p> <p>(v) a downstream receiving environment that is sensitive to sediment accumulation;</p> <p>(b) adverse effects avoided as far as practicable within areas identified as sensitive because of their ecological values, including terrestrial, freshwater and coastal ecological values; and</p> <p>(c) the receiving environments ability to assimilate the discharged sediment being taken into account.</p>	
<b>Chapter E26 – Infrastructure</b>	
<p><b>Objective E26.2.1 (1)</b> The benefits of infrastructure are recognised</p>	<p>The Huia WTP is the third most significant water treatment plant in Auckland and is a crucial component of Auckland’s water supply network, treating approximately 20% of Auckland’s water. Replacement of the existing Huia WTP is essential to ensuring the continued supply of water to the Auckland region, providing for the health and well-being of Auckland’s people and communities. The proposal is supported by Objective E26.2.1 (1).</p>
<p><b>Objective E26.2.1 (2)</b> The value of investment in infrastructure is recognised</p>	<p>The existing Huia WTP is an essential component of the existing infrastructure that supplies Auckland’s water. The value of investment in the existing infrastructure, including connecting raw and treated water infrastructure and the western water supply dams, is significant. The proposal is supported by Objective E26.2.1 (2).</p>
<p><b>Objective E26.2.1 (3)</b> Safe, efficient and secure infrastructure is enabled, to service the needs of existing and authorised proposed subdivision, use and development.</p>	<p>The purpose of the works is to replace and upgrade the Huia WTP, which was identified as one of the top eight highest risk assets in Auckland’s water supply system. The proposed replacement WTP and reservoirs will increase system efficiency and resilience.</p> <p>Significant growth is projected for Auckland’s population over the next 30 years, Ensuring high quality potable water supply into the future is a fundamental requirement of providing for this growth. It is considered that the proposal is enabled by Objective E26.2.1 (3).</p>
<p><b>Objective E26.2.1 (4)</b> Development, operation, maintenance, repair, replacement, renewal, upgrading and removal of infrastructure is enabled.</p>	<p>The proposal is to develop and operate a replacement WTP and new reservoirs, which is enabled by Objective E26.2.1 (4).</p>
<p><b>Objective E26.2.1 (5)</b> The resilience of infrastructure is improved and continuity of service is enabled.</p>	<p>The replacement of the ageing WTP with a new WTP of increased capacity will assist in meeting peak demand periods and improve the current system resilience. Its independence from other water sources and supply infrastructure provides resilience to Auckland’s wider water supply in the event of disruption of the southern water sources (i.e. continuity of service). Resilience and</p>

	<p>efficiency within the WTP itself is provided through the use of gravity based systems that minimise the need for electricity-reliant pumping, being designed to meet modern seismic design requirements, and pipework and concrete structures designed for a life of 100 years.</p> <p>It is considered that the proposal is enabled by Objective E26.2.1 (5).</p>
<p><b>Objective E26.2.1 (9)</b> The adverse effects of infrastructure are avoided, remedied or mitigated.</p>	<p>The avoidance, remediation and mitigation of adverse effects as much as is practicable has been a key driver of the design of the project. The assessment in Section 7 of this AEE finds that the adverse effects of the proposal will be adequately avoided, remedied or mitigated by the measures proposed, with the exception of residual ecological effects. A comprehensive ecological compensation package is proposed to address these residual effects with the goal of achieving an overall net benefit in terms of ecological values.</p> <p>As set out in Section 7 of the AEE, adverse effects from construction and operation will be avoided, remedied or mitigated as far as practicable, with the residual adverse ecological effects of construction assessed as being compensated for via the WMBI which has been formulated to result in a net gain in biodiversity in the medium term.</p>
<p><b>Policy E26.2.2 (1)</b> Recognise the social, economic, cultural and environmental benefits that infrastructure provides, including:</p> <ul style="list-style-type: none"> <li>(a) enabling enhancement of the quality of life and standard of living for people and communities;</li> <li>(b) providing for public health and safety;</li> <li>(c) enabling the functioning of businesses;</li> <li>(d) enabling economic growth;</li> <li>(e) enabling growth and development;</li> <li>(f) protecting and enhancing the environment;</li> <li>(g) enabling the transportation of freight, goods, people; and</li> <li>(h) Enabling interaction and communication.</li> </ul>	<p>Watercare services about 1.5 million people living in Auckland providing 'Aa'-grade safe and reliable drinking water. Over the next 30 years the population will grow significantly. Replacement of the Huia WTP is vital to continue to provide a reliable long term water supply to service the north-west of Auckland.</p> <p>The availability of safe drinking-water for all New Zealanders, irrespective of where they live, is a fundamental requirement for public health. Untreated or inadequately treated drinking-water contaminated with pathogens presents a significant risk to human health. Ensuring a quality potable water supply and resilient water supply infrastructure supports the existing and future well-being of Auckland. It is also fundamental to achieving the purpose of the RMA and in particular enabling 'people and communities to provide for their social, economic and cultural well-being and for their health and safety'.</p> <p>The proposal finds support from Policy E26.2.2 (1) including sub-sections (a), (b), (c), (d), and (e).</p>
<p><b>Policy E26.2.2 (2)</b> Provide for the development, operation, maintenance, repair, upgrade and removal of infrastructure throughout Auckland by recognising:</p> <ul style="list-style-type: none"> <li>(a) functional and operational needs;</li> <li>(b) location, route and design needs and constraints;</li> <li>(c) the complexity and interconnectedness of infrastructure services;</li> </ul>	<p>The replacement WTP and reservoirs have a functional and operational need to be located at a particular elevation band and in proximity to existing (and proposed) infrastructure including the raw and treated water network and the NH2 watermain, as well as the western water supply dams. This is demonstrated through the <i>Huia WTP Site Selection Site Principles report prepared by CH2M Beca Ltd, Dec. 2015</i> and subsequent alternatives assessments and site layout development reports.</p>

<p>(d) the benefits of infrastructure to communities with in Auckland and beyond;</p> <p>(e) the need to quickly restore disrupted services; and</p> <p>(f) Its role in servicing existing, consented and planned development.</p>	<p>The benefits of infrastructure to Auckland communities and beyond, and the role of the replacement WTP in servicing development are addressed above.</p>
<p><b>Policy E26.2.2 (4)</b></p> <p>Require the development, operation, maintenance, repair, upgrading and removal of infrastructure to avoid, remedy or mitigate adverse effects, including, on the:</p> <p>(a) health, well-being and safety of people and communities, including nuisance from noise, vibration, dust and odour emissions and light spill;</p> <p>(b) safe and efficient operation of other infrastructure;</p> <p>(c) amenity values of the streetscape and adjoining properties;</p> <p>(d) environment from temporary and ongoing discharges; and</p> <p>(e) Values for which a site has been scheduled or incorporated in an overlay.</p>	<p>The management of adverse environmental effects has been central to the layout optimisation iterative process that has been undertaken, with a particular focus on avoiding the disturbance of areas with the highest ecological integrity. The assessment in Section 7 of the AEE finds that the adverse effects of the proposal will be adequately avoided, remedied or mitigated by the measures proposed, with residual effects on the SEA to be addressed through a comprehensive ecological compensation package which is designed to achieve an overall net benefit in biodiversity.</p> <p>The effects of discharges to the environment of sediment laden water and stormwater will be avoided, remedied and mitigated through the application of best practise measures as set out in GD05 and GD01.</p> <p>Note: The district plan related matters identified in this policy will be addressed through the OPW process.</p>
<p><b>Policy E26.2.2 (5)</b></p> <p>Consider the following matters when assessing the effects of infrastructure:</p> <p>(a) the degree to which the environment has already been modified;</p> <p>(b) the nature, duration, timing and frequency of the adverse effects;</p> <p>(c) the impact on the network and levels of service if the work is not undertaken;</p> <p>(d) the need for the infrastructure in the context of the wider network; and</p> <p>(e) The benefits provided by the infrastructure to the communities within Auckland and beyond.</p>	<p>In relation to the matters set out in Policy E26.2.2 (5):</p> <p>(a) The environment of the Project Site has been subject to past modification through historical logging and partial clearance. Notwithstanding this, mature forest remnants are present on the Project Site, with well-advanced secondary forest on much of the remaining area. The project has been designed to avoid all areas assessed as being of highest ecological integrity, and minimise the development footprint as much as is practicable.</p> <p>(b) The adverse effects of the project are generally caused during the construction period. Some aspects of works will be timed to mitigate particular effects, for example vegetation assessed as potential lizard habitat will only be cleared during the season that provides the greatest likelihood of salvage.</p> <p>(c) Watercare services about 1.5 million people living in Auckland and over the next 30 years the population will grow significantly with a projected medium population growth of an additional 800,000 people and high population growth of over 2.3 million people for Auckland. The combined capacity of the western WTP's (Huia and Waitakere) alone cannot meet the demands of the north-western water supply area without support from the southern sources (Waikato and Ardmore). Growth that is occurring to the north and west of Auckland will primarily be serviced by the replacement WTP. Replacement of the Huia WTP is critical to continue to provide a reliable long term water supply to service the north-west of Auckland. The replacement WTP, additional reservoir storage capacity and NH2 watermain projects are all planned and sequenced for the next 10 years to ensure the water</p>

	<p>network continues to have sufficient capacity to meet demand and provide resilience during outages.</p> <p>One of Watercare’s strategic priorities is to supply the highest quality ‘Aa’-graded drinking water. The existing Huia WTP was not designed to meet the current and short-term future source water quality challenges. To be able to continue to supply ‘Aa’-graded drinking water to Aucklanders, the existing Huia WTP needs to be replaced. On the basis of the above, there are significant impact on the network and levels of service if the work is not undertaken.</p> <p>(d) The replacement of the ageing WTP with a new WTP of increased capacity will assist in meeting peak demand periods and improve the current system resilience. Its independence from other water sources and supply infrastructure provides resilience to Auckland’s wider water supply in the event of disruption of the southern water sources. The assessment in relation to (c) above is also relevant to (d).</p> <p>(e) The Huia WTP is the third most significant water treatment plant in Auckland and is a crucial component of Auckland’s water supply network, treating approximately 20% of Auckland’s water. Replacement of the existing Huia WTP is essential to ensuring the continued supply of water to the Auckland region, providing for the health and well-being of Auckland’s people and communities.</p>
<p><b>Policy E26.2.2 (6)</b></p> <p>Consider the following matters where new infrastructure or major upgrades to infrastructure are proposed within areas that have been scheduled in the Plan in relation to natural heritage, Mana Whenua, natural resources, coastal environment, historic heritage and special character:</p> <p>(a) the economic, cultural and social benefits derived from infrastructure and the adverse effects of not providing the infrastructure;</p> <p>(b) whether the infrastructure has a functional or operational need to be located in or traverse the proposed location;</p> <p>(c) the need for utility connections across or through such areas to enable an effective and efficient network;</p> <p>(d) whether there are any practicable alternative locations, routes or designs, which would avoid, or reduce adverse effects on the values of those places, while having regard to E26.2.2(6)(a) - (c);</p> <p>(e) the extent of existing adverse effects and potential cumulative adverse effects;</p> <p>(f) how the proposed infrastructure contributes to the strategic form or function, or enables the planned growth and intensification, of Auckland;</p>	<p>The proposed replacement WTP and reservoirs are located in an area scheduled for its significant natural resources (SEA overlay). In relation to the matters set out in Policy E26.2.2 (6):</p> <p>(a) The Huia WTP is a crucial component of Auckland’s water supply network, and replacement of the existing Huia WTP is essential to ensuring the continued supply of high quality drinking water to the Auckland region, providing for the health and well-being of Auckland’s people and communities. The adverse effects of not providing the infrastructure are outlined above.</p> <p>(b) The replacement WTP and reservoirs have an operational need to be located at a particular elevation and in proximity to the existing WTP and NH2 watermain. The consideration of alternatives in Section 5 of this AEE demonstrates that the subject site meets this operational need.</p> <p>(c) The replacement WTP and reservoirs have a functional and operational need to be located at a particular elevation band and in proximity to existing (and proposed) infrastructure including the raw and treated water network and the NH2 watermain, as well as the western water supply dams. This is demonstrated through the <i>Huia WTP Site Selection Site Principles report prepared by CH2M Beca Ltd, Dec. 2015</i>.</p> <p>(d) Watercare has assessed alternative locations and designs (Section 5 of the AEE Report), and found the proposal is the best practicable option.</p>

<p>(g) the type, scale and extent of adverse effects on the identified values of the area or feature, taking into account:</p> <ul style="list-style-type: none"> <li>(i) scheduled sites and places of significance and value to Mana Whenua;</li> <li>(ii) significant public open space areas, including harbours;</li> <li>(iii) hilltops and high points that are publicly accessible scenic lookouts;</li> <li>(iv) high-use recreation areas;</li> <li>(v) natural ecosystems and habitats; and</li> <li>(vi) the extent to which the proposed infrastructure or upgrade can avoid adverse effects on the values of the area, and where these adverse effects cannot practicably be avoided, then the extent to which adverse effects on the values of the area can be appropriately remedied or mitigated.</li> </ul> <p>(h) Whether adverse effects on the identified values of the area or feature must be avoided pursuant to any national policy statement, national environmental standard, or regional policy statement.</p>	<p>(e) The vegetation and habitats affected by the proposal have a history of past modification, and areas assessed as being of highest ecological integrity have been avoided. Limited cumulative effects from vegetation clearance are unavoidable, however the clearance represents 0.01 % of the 24,000 ha SEA and will be appropriately addressed by the comprehensive compensation package (WBMP).</p> <p>(f) Significant growth is projected for Auckland's population over the next 30 years, and the replacement WTP and reservoirs will be the primary source of water for growth in the north west of the region.</p> <p>(g) The development footprint has been designed to avoid the areas of highest ecological integrity, and to minimise the area of SEA clearance to the extent that is practicable. There will not be any effects on Exhibition Drive and associated recreation values.</p> <p>(h) Of most relevance, the RPS focuses on avoiding effects on SEA as far as practicable. Key RPS objectives and policies seek to enable infrastructure while managing adverse effects on an SEA, and avoiding, remedying or mitigating such effects (Obj. B3.2.1 (3), Obj. B3.2.1 (8), Pol. B3.2.2 (8)). RPS Policy B3.2.2 (6) requires that the adverse effects on the values of such areas are avoided where practicable or otherwise remedied or mitigated. No national policy statement or national environmental standard directs the avoidance of adverse effects relating to the project.</p>
<b>E30. Contaminated land</b>	
<p><b>Objective E30.2 (1)</b></p> <p>The discharge of contaminants from contaminated land into air, or into water, or onto or into land are managed to protect the environment and human health and to enable land to be used for suitable activities now and in the future.</p>	<p>Watercare has taken a conservative approach to the management of contaminated land, as there is very limited information regarding the likelihood of contamination from a small number of residential buildings that were removed in the 1990s.</p> <p>A SMP is included in Appendix K, which sets out appropriate controls to minimise potential discharges of contaminants to the environment that could result from the disturbance of potentially contaminated land.</p>
<p><b>Policy E30.3 (2)</b></p> <p>Require any use or development of land containing elevated levels of contaminants resulting in discharges to air, land or water to manage or remediate the contamination to a level that:</p> <ul style="list-style-type: none"> <li>(a) allows contaminants to remain in the ground/groundwater, where it can be demonstrated that the level of residual contamination is not reasonably likely to pose a significant adverse effect on human health or the environment; and</li> <li>(b) avoids adverse effects on potable water supplies; and</li> <li>(c) avoids, remedies or mitigates significant adverse effects on ecological values, water quality, human health and amenity values; while taking into account all of the following:</li> </ul>	<p>Pre-works contamination testing will be undertaken to establish actual contamination concentrations, and the management procedures in the SMP will then be confirmed.</p> <p>With these measures in place, the proposed development will meet the requirements of this objective and policy.</p>

<p>(d) the physical constraints of the site and operational practicalities;</p> <p>(e) the financial implications of the investigation, remediation, management and monitoring options;</p> <p>(f) the use of best practice contaminated land management, including the preparation and consideration of preliminary and detailed site investigations, remedial action plans, site validation reports and site management plans for the identification, monitoring and remediation of contaminated land; and</p> <p>(g) whether adequate measures are in place for the transport, disposal and tracking of contaminated soil and other contaminated material removed from a site to prevent adverse effects on the environment.</p>	
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