

Project Number: 5-P1472.00

Rātana Wastewater Treatment Plant – discharge to land

Revised Resource Consent Application to Horizons Regional

December 2023



Council



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Disclaimers and Limitations

This report (**Report**) has been prepared by WSP exclusively for Rangitikei District Council (**Client**) in relation to consenting the discharge to land from the Rātana Wastewater Treatment Plant (**Purpose**). The findings in this Report are based on and are subject to the assumptions specified in the project proposal dated June 2021. WSP accepts no liability whatsoever for any reliance on or use of this Report, in whole or in part, for any use or purpose other than the Purpose or any use or reliance on the Report by any third party.

PART A: RESOURCE CONSENT PURSUANT TO SECTION 88 OF THE RESOURCE MANAGEMENT ACT 1991

To: Horizons Regional Council
Regulatory Department
Private Bag 11025
Manawatu Mail Centre
Palmerston North 4442

Applicant: Rangitikei District Council
c/- Adina Foley (Senior Project Manager)

Proposal: To discharge treated wastewater from the Rātana Wastewater Treatment Plant to land, including to Schedule F dunelands and natural wetlands.

Undertake associated restoration of natural wetlands.

Disturbance to and offset of natural wetlands

To undertake land disturbance associated with construction of a storage pond.

Location: Treatment Plant: 69 Rangitahi Road, Rātana
Land Parcel: South of 517 Whangaehu Beach Road, Whangaehu

Legal Description: Treatment Plant: Part Waipu 4A3C Block
Land Parcel: Section 1 and 2 Survey Office Plan 574204.

Owners/Occupiers Treatment Plant: Rangitikei District Council
Land Parcel: Rangitikei District Council

Grid References (approx.) Treatment Plant: NZTM2000 1784943E, 5565522N
Land Parcel: NZTM2000 1784322E, 5565066N

Consents Required: Discharge permit to discharge treated wastewater to land via irrigation

Discharge permit to discharge partially treated wastewater to land via seepage from existing treatment ponds

Discharge permit to discharge to air (odour)

Land use consent to undertake earthworks associated with construction of storage pond

Land use consent to discharge treated wastewater to rare habitat.

Discharge permit to discharge water within 100 m of a natural wetland during construction of specified infrastructure

Land use consent to undertake earthworks within 10 m of a natural wetland associated with construction and use of specified infrastructure

Activity Status Non-complying

Term Sought 27-year term to expire 1 July 2049

Attachments: The Assessment of Environmental Effects is attached as Part B of this report.

Note Revised information in the application is denoted by underscored text or with reference to updated section in section titles.

On behalf of
Rangitikei District Council

Dated 1 December 2022

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PART B ASSESSMENT OF ENVIRONMENTAL EFFECTS

1 Introduction

This application has been prepared in accordance with those matters set out in Section 88 and the Fourth Schedule of the Resource Management Act 1991 (**RMA**). This Assessment of Environmental Effects (**AEE**) accompanies and forms part of the resource consent application.

Following the lodgement of consent application in December 2022 a further information request was received. This updated application incorporates responses to that further information as well as presenting an updated proposal, with the incorporation of an additional 4 ha of land for the project.

The Rātana WTP is a vital piece of infrastructure for the local community and visitors, and given the small resident population, there is limited funding for the township. An application to the Ministry for the Environment (**MfE**) was lodged in April 2017 seeking funding to enable the small community to cease the discharge of wastewater to Lake Waipu and move it to a land-based irrigation system. An application to the Freshwater Improvement Fund (**FIF**) was successful, under the objective that the discharge of treated wastewater to the unnamed tributary of the Waipu Stream be removed by June 2023. *Note: Due to interruptions from covid this was extended to December 2023.*

With central government funding secured, RDC is seeking to enable the upgrade of Rātana WTP to a full land-based treatment and disposal system. This application represents one outcome of a wider project to improve water quality of Lake Waipu by removing the direct discharge.

Rangitikei District Council (**RDC**) proposes to develop a system to discharge treated wastewater from the Rātana Wastewater Treatment Plant (WWTP) to land. The irrigation system is based around deficit irrigation, with some months where irrigation will occur that is not deficit. Storage is proposed to be constructed onsite.

A piece of land, approximately 4 km southwest of Rātana Pā, was identified and RDC sought to purchase this and subdivide this area of land. Following on from securing this land, investigations into a land-based irrigation commenced. Investigations at the proposed site of the discharge has included infiltration testing, installation of monitoring bores and initial groundwater quality testing, detailed ecological assessment, and initial irrigation design.

A review of the existing treatment system has been completed, results from this and potential future flows has been used to calculate potential nutrient loading rates. Based on the calculations the nutrient loading rates are considered to be low (less than minor) so no upgrades to the treatment plant are proposed at this stage (other than some maintenance such as considering desludging).

More detailed design will be occurring in parallel to the consenting process due to the desire to remove the discharge from the Waipu Stream as soon as possible and due to timing restrictions with funding. As such, the approach to this application is to allow for flexibility and the ability to alter elements of the irrigation design if further cost savings can be found (such as with the storage size to be provided). Based on the low nutrient loading rates it was assessed that most environmental effects are avoided or mitigated through the provision of storage of treated wastewater.

Biodiversity enhancement is proposed as well as an offset wetland area.

No specific vegetation type(s) for the irrigation zones is defined at this stage. The nutrient inputs proposed do not rely on additional vegetation removal (cut and carry) to mitigate risks to groundwater quality. RDC will continue to investigate, with the community, options for beneficial vegetation choices for the irrigation areas.

Consents being sought by this application are:

- Discharge permit to discharge treated wastewater to land via irrigation.
- Discharge permit to discharge partially treated wastewater to land via seepage from existing treatment ponds.
- Discharge permit to discharge to air (odour).
- Land use consent to undertake earthworks associated with construction of storage pond.
- Land use consent to discharge to rare habitat.
- Discharge permit to water discharge within 100 m of a natural wetland.
- Land use consent to undertake earthworks within 100 m of a natural wetland.

2 Project Background

RDC owns and operates the Rātana WWTP. The WWTP receives and treats wastewater from Rātana township before it discharges into an unnamed tributary of the Waipu Stream. The Waipu Stream flows into Lake Waipu, a small dune lake located between the Turakina and Whangaehu Rivers.

The WWTP has discharged into the unnamed tributary of Waipu Stream since 1977, which continues to this date. This discharge of wastewater into the Lake Waipu surface water catchment, has contributed to the degraded water quality of the lake.

With the goal to remove the direct discharge of treated wastewater to Waipu Stream, and in turn improve the water quality of Lake Waipu, RDC and Horizons Regional Council (HRC) lodged an application to MfE's Freshwater Improvement Fund.

Various locations were investigated for suitability for land discharge, this is outlined further in section 6. The chosen site was subdivided under the public works act and it is noted on the title that it is for the purpose of wastewater discharge. see attached copy of title.

Ongoing consultation has been undertaken and is described further in section 7.

2.1.7 Existing Consent and preferred consenting pathway

The Rātana WWTP currently operates under Discharge Permit 7400, which provides for the discharge of up to 136 cubic metres per day (m³/day) of treated wastewater into the unnamed tributary of the Waipu Stream. The application for this discharge permit was lodged in November 1997 and was granted by Horizons Regional Council on 5 August 1998 for a term of 20 years expiring on 31 July 2018.

RDC sought leave from Horizons on 15 December 2017 to continue to exercise the discharge permit for Rātana WWTP under the provision of section 124 of the Resource Management Act 1991 while applying for a new resource consent. The reasons for which this leave was sought included that RDC and Horizons were currently negotiating the final terms of a funding agreement with MfE which would contribute to significant upgrades to the WWTP and negotiations were not expected to be completed by 6 months before expiry of the existing consent (discharge permit 7400).

Horizons confirmed on 15 December 2017 that it would exercise its discretion to allow RDC to continue to operate under discharge permit 7400 provided a new application for resource consent was lodged with Horizons by 30 April 2018, being three months before the expiry of the existing consent. An application was lodged on 30th April 2018.

As such the existing discharge is authorised by way of existing use rights pursuant to s124 of the RMA. This application is currently on hold. Once the new system is in place there will be no discharge to the lake.

This application relates to the discharge to land only and does not relate or rely on the existing consent application. It is submitted that the existing discharge consent application is not required to better understand the effects of this proposal, which is a discharge to land application. The only relationship between the applications is that the existing lodged application for discharge to the tributary authorises the existing discharge and use at the WWTP. As such, the discharge to land application does not rely on the discharge to water application and as such it is considered that s91 is not triggered further.

RDC is working towards having the system operational by 2024. Progressing the two applications together would, in the opinion of RDC, unnecessarily complicate the consenting process on the understanding that the applications would then be publicly notified.

It is the preference of RDC that a limited notification process be used. RDC will continue to consult with iwi partners and neighbouring landowners. It is submitted that the effects of the irrigation to land proposal are between less than minor and no more than minor and as such would not trigger public notification.

3 Description of Proposal

Rangitikei District Council proposes to pipe treated wastewater to the land application site, where a combination of deficit and non-deficit irrigation will occur. Up to 31,000 m³ of storage) will be provided at the land discharge site. The parameters of the system are such that deficit irrigation will be achieved during a median rainfall year. Generally limited irrigation would occur during winter months (May to August) except when there are suitable ground conditions or if required wet weather or other contingency situations.

The creation of a biodiversity enhancement area is proposed, this includes an area of wetland restoration and creation of wetland offset area within the project site.

The following flows, from the wastewater treatment plant, have been used in the initial design of the irrigation system.

	Nitrogen (kg N/yr)	Area available (ha)	Nitrogen loading (kg N/ha/yr)
<i>Current flows</i>	839	22	38
<i>Future flows</i>	1549	22	70

It is recognised that effluent concentrations can vary, as such it is proposed that nitrogen application rates do not exceed 150 kg N/ha/year.

3.1 Irrigation Philosophy

The site has been divided into various irrigation zones, recognising each will have a different management philosophy. The irrigation management zones are shown within the overall management zones in Figure 3-1 below.

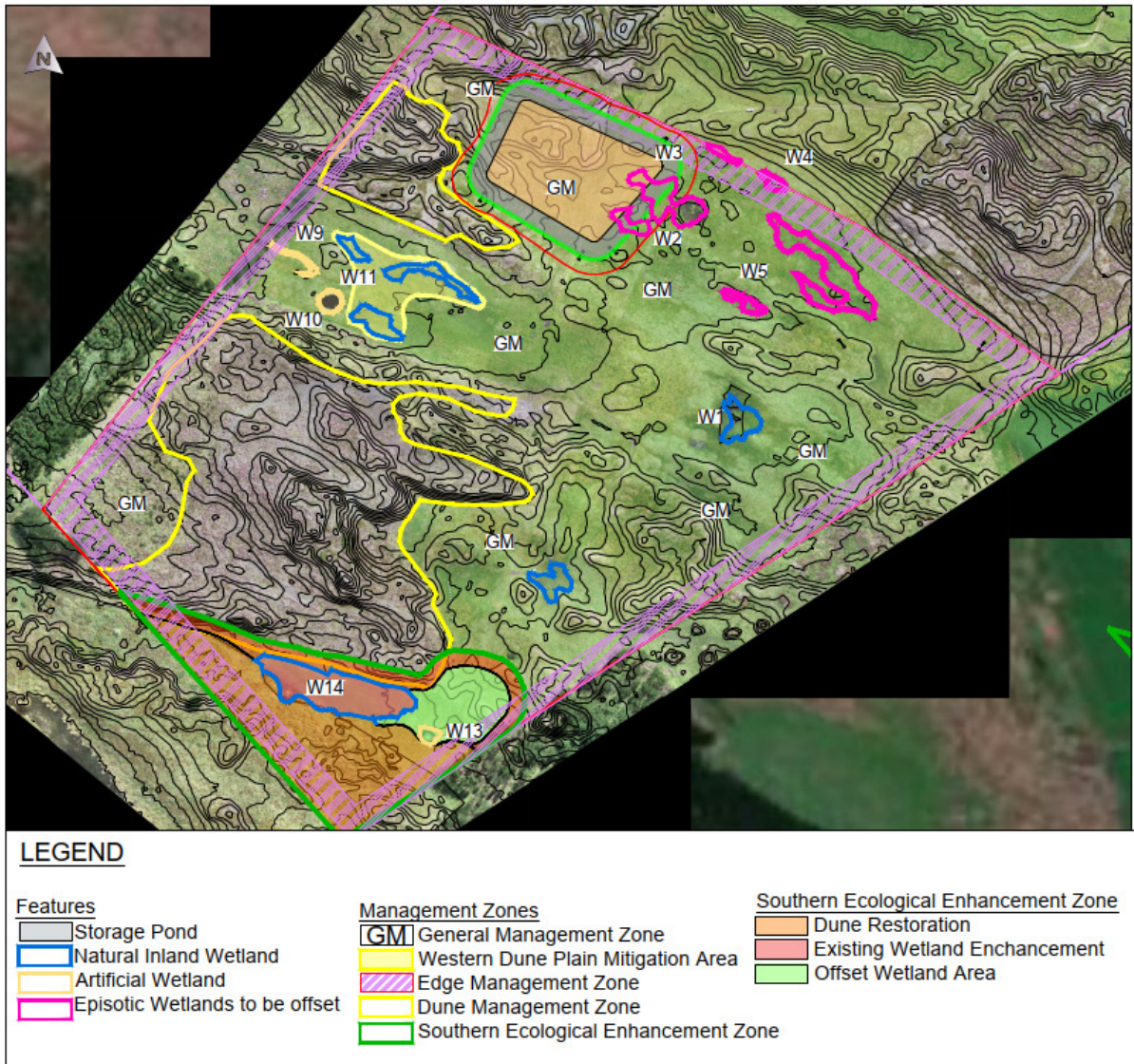


Figure 3-1: Irrigation management zones

The following key assumptions have been made when considering the initial irrigation design:

- The system design criteria allows for deficit irrigation during a median year. During a wet year, deficit irrigation will be restricted to a shorter period of time and shoulder months (September, October, November and April) would receive non-deficit irrigation.
- Irrigation will generally not occur during the winter and early spring months (May – August), unless ground conditions are suitable or required for wet weather contingency situations. Storage will be provided to hold treated wastewater volumes over these periods.
- The site will have different irrigation management zones, each zone would be managed differently.
- Irrigation to dunelands present on the land is to be sought
- It is proposed to irrigate to the western dune plain wetlands to generally maintain water at a prescribed level. For the Southern Ecological Enhancement Area only deficit irrigation is proposed.

The proposed average maximum daily volume:

- 1,603 m³/day – based on maximum monthly application of 34,827 m³/month, based on a peak average application of 5 mm/day, emergency contingency applications would be additional to this.
- The proposed daily maximum application rate of 7 mm/day (average 3.5mm).

Except as required for contingency situations which will be outlined in the irrigation management plan.

Nitrogen loading rate

Nitrogen would be managed so as not to exceed 150kgN/ha/year.

The table below shows the preferred irrigation philosophy, the irrigation report attached as **Appendix A** shows a number of scenarios with the impacts on deficit irrigation months and storage size. A draft specimen design is also attached as Appendix B.

Table 3-1: Future flows (updated table)

Future Flows with median rainfall and evapotranspiration extended irrigation period and dunelands		
Irrigation Philosophy	Mixed	
Rainfall-Evapotranspiration Data Period	Median year	
Irrigation area available	22.9 ha	
Irrigation area required	20 ha	
WW water flow scenario	Based on Future maximum average flows	
Months of deficit Irrigation	7	September - March
Months of no irrigation	5	April to August
Buffer Storage Required	28,500 m ³	

3.2 Irrigation Management

The site has been divided into irrigation management zones. Each irrigation zone will be managed differently, in accordance with the specific objectives for that zone. It is proposed to provide for input to development of the objectives during ongoing consultation and from the regulatory authority. These will be developed and confirmed in the irrigation management plan (which would be certified), once more detailed irrigation design is undertaken. Further information regarding potential irrigation controls is attached as part of the information response, a specimen design has also been completed and this is attached as Appendix B.

At a high level, the management zone draft management approaches and objectives (updated November 2023) are:

General Management Zone

- Soil moisture monitoring.
- Deficit irrigation is preferred.
- Non-deficit irrigation when required.
- Range of vegetation options, pastoral or woody vegetation can be considered, the preferred options will likely provide additional benefits aside from phytoremediation.
- Ongoing monitoring including groundwater monitoring.

Dune Management Zones

- Higher rate irrigation and controlled delivery to avoid slumping of the dunes.
- Soil moisture monitoring.
- Non-deficit irrigation when required.
- Woody vegetation to be maintained to assist with dune stability to be maintained on the central dune plain.
- Harvesting of pine trees on the central dune plain in longer term in accordance with a harvest management plan.

Western Dune Plain Mitigation Area

- Planting and ongoing maintenance undertaken in accordance with a management plan (proposed condition 15) using indigenous species that benefit from low-medium levels of nutrient enrichment.
- Specific groundwater monitoring.
- Water levels in wetlands to be maintained to prescribed level.
- Increased permanence of wetland area via sustained hydrological inputs.
- Increased indigenous biodiversity species and habitat value.
- Potentially allow for harvesting or use of the native species to be planted in this area

Edge Management Zone

- Irrigator choice to minimise potential for spray drift.
- Deficit irrigation.
- Range of vegetation options, pastoral or woody vegetation can be considered.

Southern Ecological Enhancement Area

- Deficit irrigation only.
- Enhancement of existing wetland
- Creation of a native dominant offset wetland (no direct irrigation).
- Dune enhancement through irrigation of Schedule F dunes.

3.3 Dune management and wetland enhancement and offset (section updated November 2023)

It is proposed to create an ecological enhancement area covering the southern dune area and wetland 14 (see attached Ecological Impact Assessment, EiA for more details). Figure 3-1 shows the location of wetland 14 and the Southern Ecological Enhancement Area. The EiA notes that irrigation in this area is likely to have positive effects on the natural succession, and enrichment planting that is proposed. As noted above, this area would have specific management requirements.

It is proposed to establish the offset wetlands immediately adjacent to wetland 14 in this area. This is to create a cohesive area for management.

3.4 Storage Pond (updated November 2023).

A memorandum is attached as **Appendix C** detailing various options that were considered for the storage pond location. The location determined took into account a number of factors, including earthworks implications, groundwater levels and proximity to other proposed equipment. It was considered desirable to allow for as much contiguous irrigable land as possible.

It is proposed that the pond be located towards the north west corner of the subject site, adjacent to a duneland area but not within or on the delineated dune.

3.5 Vegetation on irrigation areas

No specific vegetation type for the irrigation areas is identified at this stage. RDC wish to have a site with flexibility and the ability to trial different vegetation types if necessary. The irrigation design options allow for either pastoral or woody vegetation. Where woody vegetation is considered, it is desirable to allow for types that would be of benefit to the community, for example, trees that could be used for firewood or planted for carbon credits. As discussed further in the assessment of environmental effects, the system does not need to rely on a cut and carry to allow for additional nitrogen removal but cut and carry system may be undertaken if this is most practical.

3.6 Proposed Environmental Management and Monitoring (Updated November 2023)

Proposed draft conditions are attached in **Appendix D**, below is a summary of the key measures proposed

- Management plans outline the operation of the WWTP and irrigation site
- Ongoing monitoring of groundwater quality at irrigation site, pick up any changes in quality which can be addressed before it becomes an issue
- Ongoing monitoring of bores adjacent to existing WWTP ponds
- Ongoing monitoring of effluent quality
- Storage pond on the irrigation site, constructed to meet permeability standard of 1×10^{-9} m/s
- Erosion and sediment control plan prepared and earthworks during construction of the storage pond will be undertaken in accordance with certified plan
- Management of the storage pond to prevent algae growth
- Soil moisture monitoring to help with irrigation scheduling
- Planting of the southern dunelands and wetland areas over time (see EIA **Appendix E**)

4 Statutory Framework and Approvals

This section outlines the statutory framework under the Resource Management Act 1991 (**RMA**) relevant to the proposed works and sets out the consents sought.

4.1 Statutory Framework

Section 104 (1) of the RMA states that in considering applications the consent authority must, subject to Part 2 and section 77M, have regard to:

- *any actual and potential effects on the environment of allowing the activity; and*
- *any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity; and*
- *any relevant provisions of –*
 - (i) a national environmental standard;*
 - (ii) other regulations;*
 - (iii) a national policy statement;*
 - (iv) a New Zealand coastal policy statement;*
 - (v) a regional policy statement or proposed regional policy statement;*
 - (vi) a plan or proposed plan; and*

- any other matter the consent authority considers relevant and reasonably necessary to determine the application.

The relevant RMA statutory plans and policy statements are:

- Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (**NES F**)
- National Policy Statement for Freshwater Management 2020 (**NPS FM**)
- National Environmental Standards for Production Forestry (**NES-PF**)
- Manawatū-Whanganui Regional Council (Horizons) One Plan (**One Plan**), which comprises the:
 - Horizons Regional Policy Statement 2014
 - Horizons Regional Plan 2014

Section 105 of the RMA also states if an application is for a discharge permit or coastal permit to do something that would contravene section 15 or section 15B the consent authority must, in addition to the matters in section 104(1), have regard to—

- The nature of the discharge and the sensitivity of the receiving environment to adverse effects; and
- The applicant's reasons for the proposed choice; and
- Any possible alternative methods of discharge, including discharge into any other receiving environment.

Section 107(1) of the RMA states (except for as provided in subsection 2) a consent authority shall not grant a discharge permit to do something that would otherwise contravene section 15 or section 15A if, after reasonable mixing, the contaminant or water discharged (either by itself or in combination with the same, similar, or other contaminants or water), is likely to give rise to all or any of the following effects in the receiving waters:

- The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
- Any conspicuous change in the colour or visual clarity;
- Any emission of objectionable odour;
- The rendering of fresh water unsuitable for consumption by farm animals; and
- Any significant adverse effects on aquatic life.

A full assessment of the proposal against the statutory and policy framework is included in Section 9 of this report.

4.2 Approvals Required (Updated December 2023)

A suite of resource consents is required pursuant to the Horizons Regional Council One Plan. These are outlined in Table 4-1 below. An assessment against the NES-F 2020 is also provided.

Table 4-1: Resource consents required from the Regional Council

Consent Type	Activity	Rule	Activity Status	Scope
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<p>Land Use Consent (s9)</p>	<p>Discharge of treated wastewater to duneland and natural wetlands</p>	<p>Rule 13-9 of the One Plan</p> <p>Activities within rare habitats and threatened habitats</p>	<p>Non-complying</p>	<p>Permitted</p> <p>Vegetation clearance of pines would occur on the Schedule F dunelands in accordance with NES-PF, and is for the purpose of restoration once commenced. It is submitted that this portion of the works does not trigger consent as is for the purpose of enhancing the habitat.</p> <p>Non-complying</p> <p>Discharge of treated wastewater to dunelands and natural wetlands</p>
<p>Land Use Consent (s9)</p>	<p>Earthworks</p>	<p>Rule 13-2 of the One Plan</p> <p>Large-scale land disturbance, including earthworks</p>	<p>Controlled</p>	<p>Construction of storage pond at the irrigation site, ancillary earthworks, associated with pipeline construction.</p> <p>ESCP to be provided for certification prior to any earthworks being undertaken.</p> <p>No earthworks will be undertaken within 10 m of wetlands or Schedule F duneland.</p>
<p>Discharge Permit (s15)</p>	<p>Discharge to Land</p>	<p>Rule 14-30 of the One Plan</p> <p>Discharges of water or contaminants to land or water not covered by other rules in this Plan or chapter</p>	<p>Discretionary</p>	<p>Discharge of treated wastewater to land</p>

Discharge Permit (s15)	Discharge to Air (Odour)	<p>Rule 15-17 of the One Plan</p> <p>The discharge of contaminants into air pursuant to ss15(1) or 15(2A) RMA and any subsequent discharge of contaminants onto land</p>	Discretionary	Discharge of odour to air from the WWTP and at irrigation site.
Discharge Permit (s15)	Discharge of partially treated wastewater to land	<p>Rule 14-30 of the One Plan</p>	Discretionary Activity	Potential seepage of partially treated wastewater from the existing WWTP ponds, not able to demonstrate permitted activity standard
Discharge Permit (s15)	Storage of human effluent	<p>Rule 14-16 of the One Plan</p> <p>Human effluent storage and treatment facilities</p>	Permitted	Storage pond for the treated effluent at the irrigation site, will be constructed to meet permitted activity standards
Discharge Permit (s15)	Discharge of water within 100 m of a natural wetland	<p>Regulation 45 of the NES-FM</p> <p>The discharge of water within 100 m setback from a natural wetland for the purpose of constructing specified infrastructure.</p>	Discretionary activity	Works undertaken during construction of the irrigation system, likely to include discharge of water as part of commissioning of the system.
Land Use Consent and water permit	Earthworks within 10 m of a natural wetland	<p>Regulation 45 of the NES-FM</p> <p>Earthworks with 10 m and resultant diversion of</p>	Discretionary activity	In order to construct the specified infrastructure - works to construct the storage pond and recontouring of land for the purpose of increasing irrigable land

		water within 100 m of natural wetlands		to result in diversion of water from episodic wetlands resulting in loss of wetlands W2, W3, W4, W5 and W6.
Land Use Consent	Vegetation clearance with 10m of a natural wetland	Regulation 46 of the NES-FM Maintenance and operation of specified infrastructure and other infrastructure	Permitted activity	Any vegetation clearance would be for the purpose of weed control and all planting will be indigenous species that are appropriate to the wetlands.

With respect to Part 3 Subpart 1 - Natural wetlands, there are classifying Regulations 46 and 47 relating to the construction of and the maintenance and operation, of specified infrastructure. The activities regulated under Regulations 46 and 47 include vegetation clearance and earthworks, the taking, use damming, diversion or discharge of water.

Firstly, wastewater is not 'water' under the RMA definition ie. 'freshwater' and subsequently it is not a 'water body' with the RMA definition specifically referring to freshwater in a river, lake, pond, stream wetland or aquifer.

For more clarity the entire Part 3 Subpart 1 - Natural wetlands section of the NES-F has been deliberately drafted to not control 'a discharge of contaminants', unlike other NES-F Parts that do specifically refer to 'contaminants'. For example, NES-F Part 2 refers to activities that may result in the discharge of 'contaminants', .g. associated with rainfall derived sediment laden runoff from *Intensive winter grazing, or increased nutrient losses in land drainage associated with the Application of synthetic nitrogen fertiliser to pastoral land.*

Wastewater is a contaminant in a liquid and solid form, as such the NES-F does not apply to specified wastewater discharges under the natural wetland provisions.

Overall, the proposed works are to be assessed as a **non-complying** activity.

Note: Consent requirements under the Rangitikei District Council have been sought.

5 Description of the Environment

5.1 General Setting

5.1.1 Rātana Pā

Rātana Pā is in the Rangitikei District and is located approximately 20 km southeast of Whanganui, 5 km west of Turakina and 19 km west of Marton. The township is situated between State Highway 3 and the coast.

It has a population of approximately 370 people. While the community has a small resident population, it experiences high visitor numbers during January when special events associated with the Rātana Church are held.

Wastewater from the township is reticulated to the Rātana Wastewater Treatment Plant (WWTP).

5.7.2 Rātana Wastewater Treatment Plant Site

The Rātana WWTP is located at 69 Rangatahi Road, approximately 500 m west of Rātana Pā (Figure 5-1).



Figure 5-1: Location of the WWTP in regard to the Rātana township

The WWTP site is legally described as Part Waipu 4A3C Block, owned by Rangitikei District Council and is subject to a designation for sewage treatment and disposal purposes. The site has an area of approximately 1.44 ha and comprises of a plant, and two oxidation ponds, which are located approximately 90 m from the road.

Reticulated wastewater is screened before it enters the first oxidation pond, then flows to the second pond. The two ponds have a combined area of approximately 0.85 ha. Treated effluent discharges on the north side of the pond system, directly to an unnamed tributary that feeds into Lake Waipu.

For more information on the WWTP, refer to section 5.5.

5.7.3 WWTP Surrounding Environment

The surrounding environment is rural land (agricultural land use) and the urban environment of Rātana Pā.

The unnamed tributary located 15 m north of the WTP (which the treated effluent discharges into) is a small spring-fed stream that arises approximately 300 m north of the Rātana township (Figure

5-2). The tributary has a predominately soft-bottomed bed and is characterised by grassed riparian zone.

The WWTP site is within the Surface Water Management Zone 'Tura_1' under the Schedule A of the Horizons One Plan. The unnamed tributary has no identified site-specific Surface Water Management Values as per Schedule B of the Horizons One Plan.

The unnamed tributary flows from the WWTP site for approximately 550 m southwest before it enters the Waipu Stream and then flows a further approximately 600 m to Lake Waipu (Figure 5-2).



Figure 5-2: Surrounding waterways

5.7.4 Land Discharge site

The proposed land application site is located off Whangaehu Beach Road, approximately 4 km (as the crow flies) southwest of Rātana Pā (Figure 5-3 and Figure 5-4).



Figure 5-3: Location map



Figure 5-4: land application site (in red)

The existing site is legally described as Section 1 Survey Office Plan 574204 and is approximately 22-hectares in size. Note: Rangitikei District Council have recently purchased and are subdividing this site.

The site is in the Whangaehu Catchment, approximately 750 m southeast of the Whangaehu River (Figure 5-4). It is within the Surface Water Management Zone 'Whau_4' under the Schedule A of the Horizons One Plan.

This land is predominantly farmland, being currently grazed by cattle (Figure 5-5). There are many exotic and non-threatened species within the farmland area, and as well as areas comprising of duneland. Most of the duneland areas have been recently cleared and planted in young pine trees.

For more information on the discharge site, refer to the below sections.



Figure 5-5: Site photos (taken August 2021)

5.2 Topography and Hydrogeology

The surface geology of the land application site is predominantly active dune deposits. The deposits are a mixture of stable dune deposits, river deposits, and beach deposits.

The topography is variable across the site, with both active and relict dunes resulting in rolling hills across much of the site. The central portion of the site has much flatter topography, with a number of small natural depressions.

WSP undertook a topographical survey of the discharge site in October 2021. The survey was carried out by photogrammetry using a DJI Phantom 4 RTK drone and ground control by GNSS (Global navigation satellite system) measurements. An automatic classification of ground points was performed to allow the creation of the topographical contour plan (Figure 5-6).

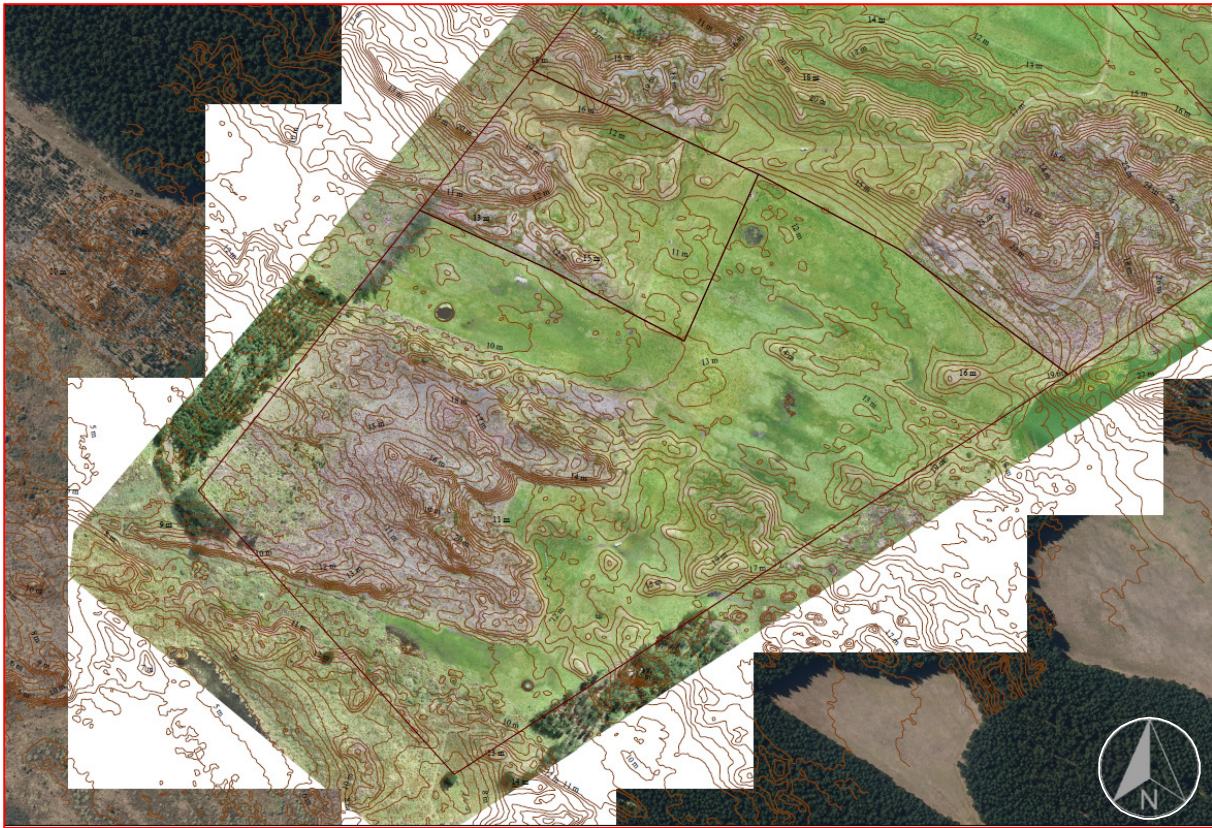


Figure 5-6: Topographical survey of the discharge site

5.2.7 Soils

The soils in the Rātana area are predominantly comprised of gley and recent soil orders along the coast, with brown and palic soils further inland toward the township of Rātana. The soil textures are typically a mixture of clay, silt, loam, and sand.

From investigations undertaken at the site, the most prevalent soil texture identified was sandy soils, specifically sandy topsoil with traces of silt present at a 0-0.3 m depth, then grading into sandy soils. Bore investigations determined layers of sand interspersed with traces of silt identified in each bore onsite, typically occurring at depths between 1-4 m depth towards the eastern side of the site.

The infiltration rate of the soils varied across the site, with some areas fully saturated at the time of testing and others having a mean infiltration rate of 64 mm/hr.

Additional soil survey work, focusing on determining drainage categories, is attached as **Appendix F**. The entire block is assessed as comprising black sand belonging to the Waitarere phase of sand accumulation. **Appendix F** discusses the chemical and drainage properties of the soils. Figure 5-7 below shows the drainage classes within the subject site.

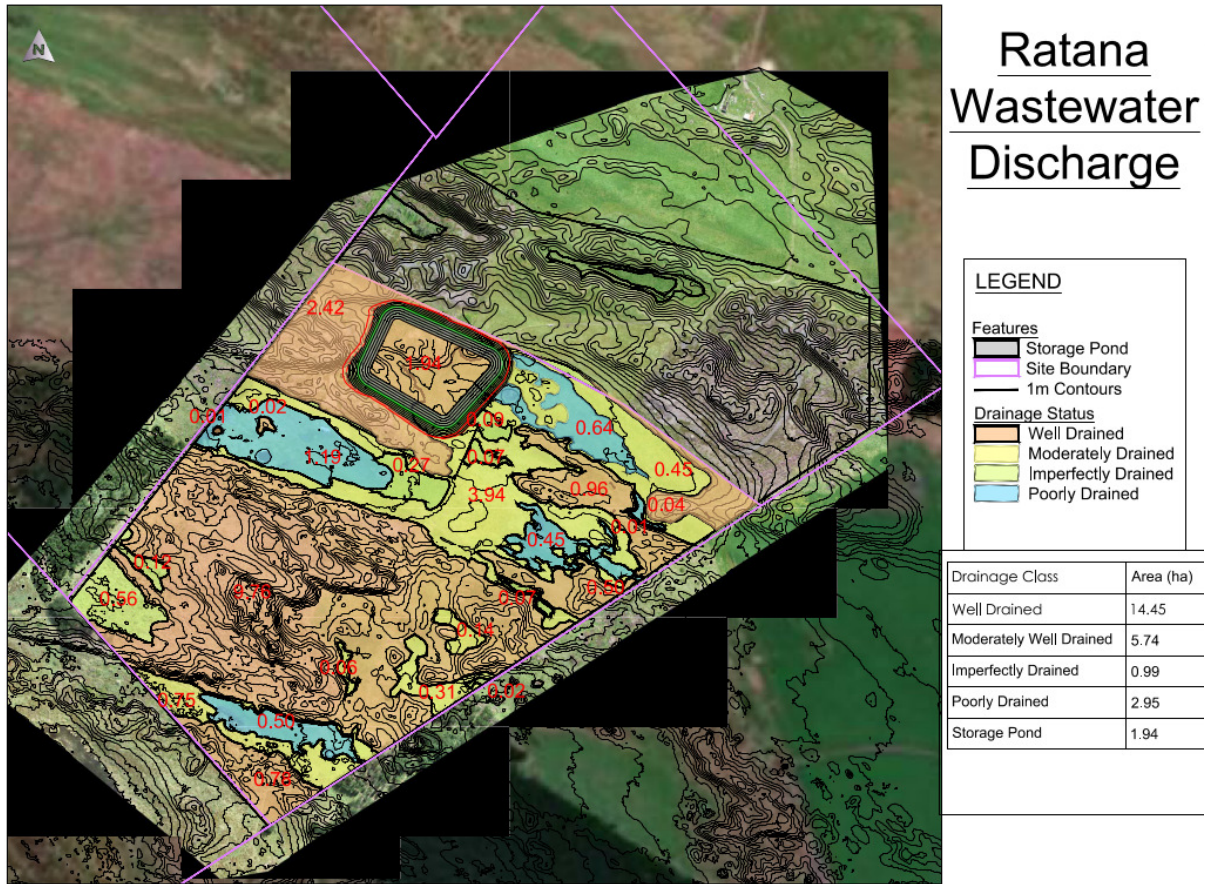


Figure 5-7: Soil drainage classes

5.2.2 Groundwater

The proposed discharge site is located in the Whangaehu Groundwater Management Zone (Horizons One Plan). The groundwater volume in this zone has been found to increase towards the coast, with aquifers from the deep sand and gravel layers commonly used as a water source for agricultural needs.

Groundwater investigations were undertaken at the discharge site in September 2022 to gain an understanding of the hydraulic properties of the underlying groundwater zone, and to provide groundwater monitoring data.

Variation in groundwater levels was observed across the site, which is likely a result of seasonal changes in rainfall. Onsite investigations from bore monitoring (Figure 5-8) concluded that the water table sits less than 3 m below ground level (

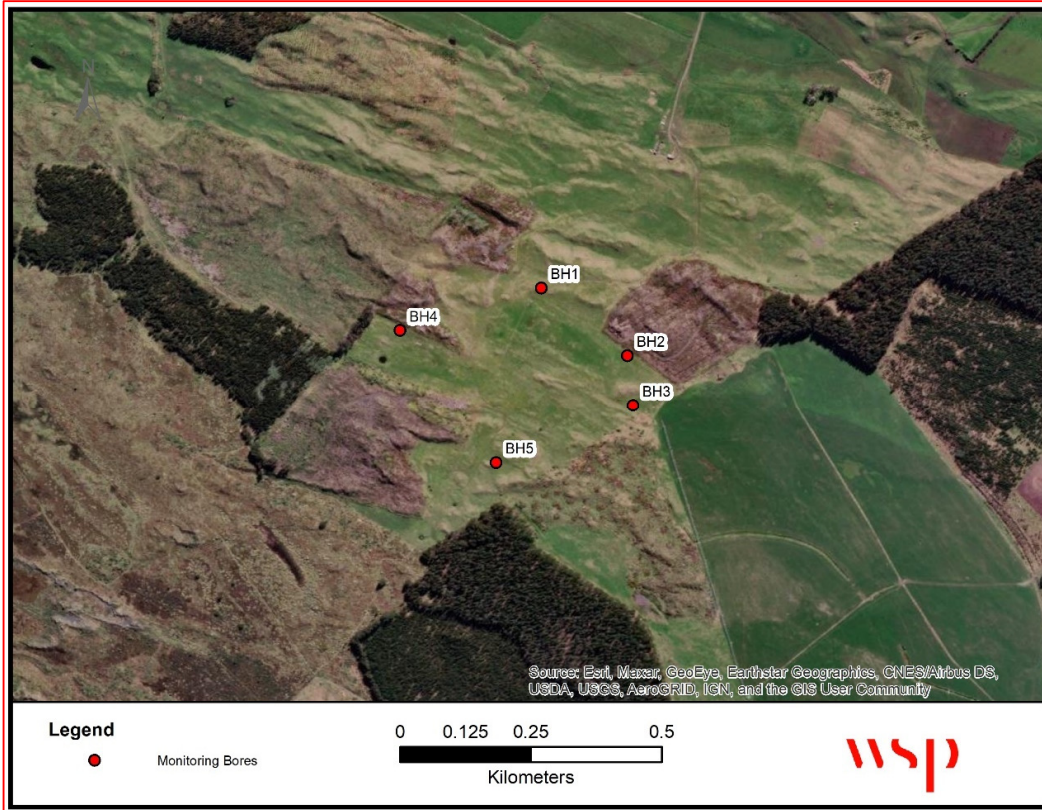


Figure 5-8: Location of monitoring bores installed on the proposed irrigation site (Table 5-1).

Table 5-1: Ground level reduced levels and corrected groundwater reduced level for each site in Rātana.

	Ground RL (m)	Reduced water level (m RL) and distance below ground level (in brackets (m))			
		1/9/22	8/9/22	15/9/22	Average
Bore 1	14	11.648 (2.352)	11.615 (2.385)	11.635 (2.365)	11.633 (2.367)
Bore 2	13	11.918 (1.082)	11.895 (1.105)	11.950 (1.050)	11.921 (1.079)
Bore 3	14	13.900 (0.100)	13.876 (0.124)	13.930 (0.070)	13.902 (0.098)
Bore 4	10	9.409 (0.591)	9.405 (0.595)	9.430 (0.570)	9.415 (0.585)
Bore 5	14	12.280 (1.720)	12.255 (1.745)	12.270 (1.730)	12.268 (1.732)

The quality of groundwater varies across the site, which is likely a result of the influence of both the surrounding land uses, and the dominant groundwater flow paths. Results from the investigations are provided in Table 5-2.

Table 5-2: Average groundwater quality from five bores at the proposed irrigation site between 1 and 15 September 2022

	Bore 1	Bore 2	Bore 3	Bore 4	Bore 5
Total Suspended Solids (g/m ³)	423	703	32	453	727
Chloride (g/m ³)	13	36	66	38	64
Total Kjeldahl Nitrogen (TKN) (g/m ³)	1.33	1.18	0.41	1.05	0.92
Total Phosphorous (g/m ³)	0.39	0.45	0.0423	0.40	0.25
Carbonaceous Biochemical Oxygen Demand (g O ₂ /m ³)	< 2	< 2	< 2	< 2	< 2
E.Coli (CFU/100mL)	2	3	2	2	< 1
Total Ammoniacal Nitrogen (g/m ³)	< 0.010	0.022	< 0.010	0.036	0.042
Nitrite-Nitrogen (g/m ³)	0.004	0.045	0.007	0.037	0.013
Nitrate-Nitrogen (g/m ³)	0.82	1.76	0.190	0.150	0.27
Nitrate-Nitrogen + Nitrate-Nitrogen (g/m ³)	0.82	1.79	0.20	0.19	0.29
Dissolved Reactive Phosphorous (g/m ³)	0.041	0.014	< 0.004	0.006	0.006

For more information on groundwater at the discharge site, refer to the Groundwater Report attached as **Appendix G**.

5.3 Ecology (updated November 2023)

WSP ecologists visited the site on 11 August 2021, and again on 12 November 2021. Following the request for further information further survey work was undertaken on 17 February 2023. This site visit occurred four days after heavy rainfall (Cyclone Gabrielle), within low lying dune depressions surface flooding was still present.

The EiA describes in more detail the ecological features including vegetation, dunelands, wetlands (water meadows and a Schedule F wetland) and on-site value for native bats, birds, lizards and frogs (Figure 5-9). A brief summary of the wetland and duneland features is described below.

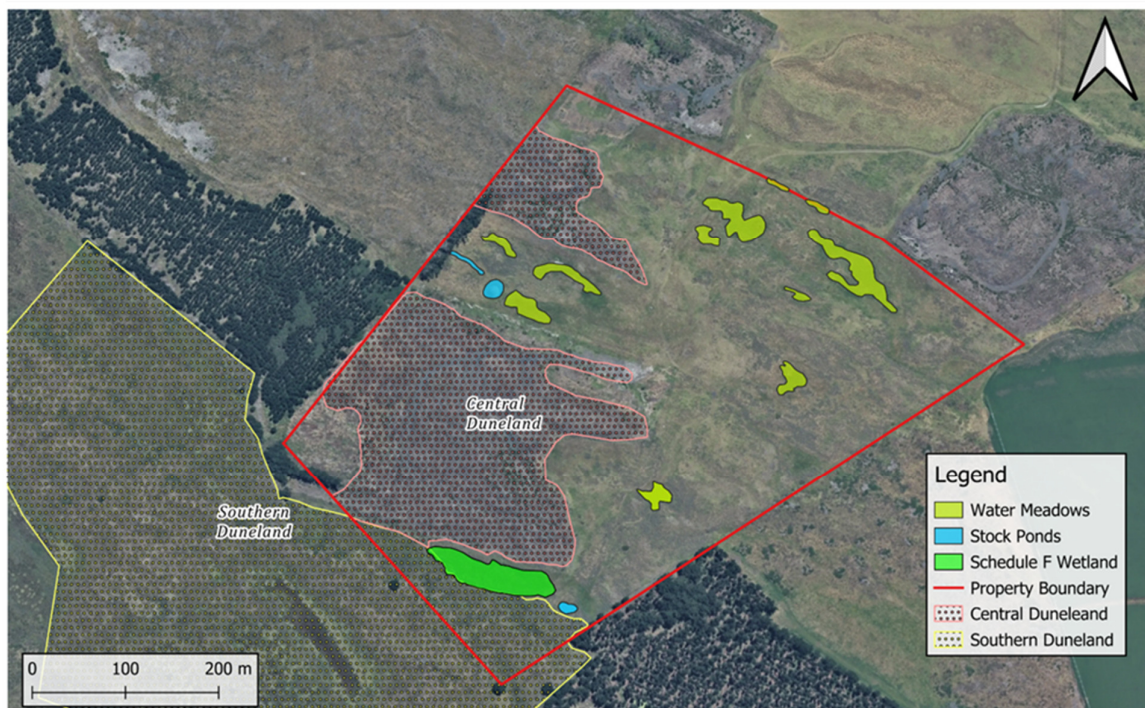


Figure 5-9: Areas of ecological value on proposed Ratana WWTP irrigation site

5.3.1 Wetlands

A total of 14 wetlands have been delineated on the subject site, three of these have been categorised as artificial stock ponds and drains. One of the wetlands crosses into a neighbouring site. In total approximately 0.957 hectares of wetlands have been delineated, with 0.902 ha being natural wetlands and some 0.055 ha being artificial wetlands.

The EIA follows the EIANZ Guidelines to assign an overall value to each of the wetlands, the tables from the EIA report are copied below.

Wetlands 1-13 have been classified as 'water meadows' recognised under the Horizons One Plan as "Damp gully heads, or paddocks subject to regular ponding, dominated by pasture or exotic species in association with wetland sedge and rush species". These wetlands are almost exclusively dominated by exotic species. It has been assessed that wetlands W1 to W13 are not representative of dune slack or Rare/Threatened ephemeral wetland vegetation within the Foxton Ecological District and therefore are not classified as rare habitat under Schedule F.

Table 5-3: Summary of the value assigned to wetlands 1-13

Matter	Value	Justification	Overall Value
Representativeness	Very Low	Wetlands 1 – 13 are dominated by exotic species and are highly un-representative of wetlands we would typically expect to observe in the area prior to European colonisation.	Low
Rarity/distinctiveness	Very Low	Wetlands 1 – 13 were not observed providing any biodiversity value. They were dominated by exotic plant species and are highly unlikely to support Threatened or At-Risk species of native fauna.	
Diversity & Pattern	Low	Wetlands provide a diverse array of habitats as they are the boundary between aquatic and terrestrial. They are high producing and as such are key	

		ecosystem within many indigenous food webs. However, wetlands 1-13 are exotic dominant with low levels of diversity and are likely to only contribute low levels of ecosystem function. After the higher-than-average rainfall summer experienced between 2022-2023 it can be assumed that low value water meadows were common across the surrounding landscape.	
Ecological Context	Low	Some value is awarded to wetlands 1-13 for their hydrological function. Regardless of indigenous vs exotic species composition, wetlands do provide a range of functions and areas capable of being restored into high value wetlands have become rarer since the industrial/green revolution.	



Figure 5-10: Wetlands 8,9,10 and 11 showing exotic dominant species assemblages. Taken facing east

Wetland 14 is currently split by a stock fence, on the side where stock has been excluded the wetland is dominated by native dominant three-square sedgeland. The vegetation composition varies across the wetland. Within wetland 14 0.266 ha is assessed as being exotic dominant, and 0.036 ha native dominant. Wetland 14 in part meets the Schedule F Dune Slack wetland definition.

Table 5-4: Summary of values assigned to wetland 14

Matter	Value	Justification	Overall Value
Representativeness	High	The southern extent of wetland 14 is highly representative of an indigenous wetland that would typically have been found in this area – prior to European settlement. The remaining extent contains an increased prevalence of exotic vegetation but has high capacity for restoration.	High
Rarity/distinctiveness	High	This wetland meets the definition of a Dune slack Wetland which is recognised under the Horizons Regional Council as a rare habitat.	
Diversity & Pattern	Moderate	Wetland 14 contains a moderate level of indigenous vegetation. In the wider scope of the area indigenous	

		wetlands occurring within dunes are not highly common.	
Ecological Context	Moderate	The wetland is small in size but as mentioned above wetlands of this nature are not highly common across the wider landscape. Therefore, it has potential to prove moderately valuable habitat to native fauna and is likely to provide a moderate level of ecosystem services.	



Figure 5-11: Wetland 14 viewed from the western end facing east. Indigenous dominant three-square sedgeland occurs on the right side of the fence

5.3.2 Duneland

There are areas of duneland within the proposed discharge site, the EIA has referred to central and southern duneland.

The duneland areas have recently been cleared of large pines (as indicated from recent aerials) and replanted in young pine trees. These dune areas are characterised by their stable sand soil type.

The dunelands meet the criteria of a rare habitat under Schedule F 'Indigenous Biological Diversity' of the Horizons One Plan, being classified as 'Stable duneland' based on its physical dune structure.



Figure 5-12: Central Dunelands]

Table 5-5: Summary of value assigned to the central duneland

Matter	Value	Justification	Overall Value
Representativeness	Low	Exotic vegetation dominated this dune. It is not representative of a typical historical assemblage of species, but some native plants are present in low abundances and representative of common native dune species.	Low
Rarity/distinctiveness	Moderate	This habitat has been classified as Schedule F Stable Duneland based on its physical dune structure. Stable Duneland is considered a Rare habitat type under the Horizons One Plan.	
Diversity & Pattern	Very Low	There is a low level of native diversity and low abundances of indigenous vegetation. The biodiversity that this area contributes to the wider ecological context is very low - low.	
Ecological Context	Very Low	Historically mobile dunes were present between the Whangaehu River and Turakina River. In the wider scope of the region, dunes represent a smaller area than other ecotones and it is reasonable to assume that historically this dune may have supported rare/uncommon species of native fauna. The central dune is small when compared to the wider area and its ecological context can be considered very low.	

The 'southern dune area' is more natural and is early successional regeneration likely established in the 1970's on formerly mobile dunes. There is a mix of exotic and native species within this area and is contiguous towards the Tasman Sea with a much larger area of similar habitat. This duneland area merges downslope to wetland 14. This area meets the definition of Schedule F stable duneland.

Table 5-6: Summary of the value assigned to the southern duneland

Matter	Value	Justification	Overall Value
Representativeness	Moderate	The southern dune is dominated by native species. They are in early stages of succession/colonisation and moderately representative species assemblage in the current context.	High
Rarity/distinctiveness	High	This habitat has been classified as Schedule F Stable Duneland which is considered a rare habitat type under the Horizons One Plan.	
Diversity & Pattern	Moderate	The southern dune contains a far higher abundance of indigenous plant species than the central dune. Exotic scrub species are still predominant in areas, but the dune crests are dominated by native species. Overall, the southern duneland has a moderate level of diversity & pattern.	
Ecological Context	High	The southern duneland on-site connects to a far larger dune system that extends from the site to the Tasman Sea. Native dunes are known to support a range of At-Risk flora and fauna. No site-specific species surveys were conducted, it is therefore conservatively assumes the southern duneland is high value with regard to ecological context.	

For more information on the duneland area including area sizes and locations, refer to the Ecological Impact Assessment (attached as **Appendix E**).

5.4 Tangata Whenua and Cultural Values

The site is within the rohe of Ngā Wairiki Ngāti Apa who have a statutory acknowledgement for the Turakina River under Schedule 1 of the Ngāti Apa (North Island) Claims Settlement Act 2010.

The Turakina River is of historical, cultural, spiritual and traditional significance to Ngāti Apa (North Island). The river was an important freshwater fishing resource, and the abundance of freshwater fisheries can be demonstrated by the numerous pa tuna that were in the Turakina River, and some of its tributaries. Linked to the Turakina River, Lake Waipu and Waipu Stream and were accessed traditionally by Ngāti Apa (North Island).

The local hapū for the area around Rātana is Ngāti Ariki (hapū of Tiniwaitara Marae) and Ngāti Rangiwahakaturia (hapū of Whangahue marae).

According to the Rangitikei District Council planning maps there are no sites of significance near the proposed discharge site.

5.5 Description of the Existing Treatment System

5.5.1 Overview

The Rātana WWTP was built in 1979 to service the township of Rātana and originally designed to serve a population of 500 people¹. The treatment system comprises of two oxidation ponds, an inlet screen, biotower, overflow chambers.

¹ Page 358 of Rangitikei District Council 2015 - 2025 Long Term Plan

A process review has been prepared and is attached as **Appendix H**. The below is a brief summary of the key components and assumptions.

In addition to receiving the domestic wastewater, byproduct water from the Ratana Water Treatment process is received by the WWTP. The residual water from the softening process (part of the byproduct water) can have elevated sodium content.

5.5.2 Loading and Flows

Flow data is discussed in section 3.1 of the process review report (see **Appendix H**), inlet and outlet flow data has been collected but some limitations with the data set are noted. Dry weather flow measurements are assessed, and a dry weather flow of 405 L/ person has been calculated. This is higher than the theoretical average flow, and it is uncertain if this is likely due to infiltration or high domestic use. Based on this information the process report anticipates that incoming sewage parameters are expected to be diluted, other than during the Ratana Festival period. No influent data is available for further analysis.

The annual Ratana Festival is discussed in the context of impact on flow, in the period following the festival flows from the WWTP have been shown to reach 250 m³/day, some three times higher than dry weather flow preceding the festival. Load estimates for the Festival period are described in Table 3-2 of the process report.

5.5.3 Existing Effluent Quality

The following table (as table 3-3 in the process report) presents the statistical summary of all collected effluent quality.

Table 5-7: Effluent quality data

	cBOD	TSS	NH ₃	TKN	NO ₃	DRP	TP	Enterococci	SIN	pH
	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	cfu/100ml	mg/l	
Mean	19.5	86	9.0	16.7	0.6	1.57	2.64	24,332	9.6	8.4
Median	21.0	83.5	7.0	14.6	0.6	1.52	2.62	1,000.0	7.2	8.6
90%ile	24.0	134	18.4	21.4	1.1	2.54	4.0	31,190	18.6	8.9
Max	45.0	161	23.6	32.0	1.1	3.51	4.4	230,000	24.1	9.1
Mean Load kg/d	2.8	11.7	1.2	2.3	0.1	0.21	0.36		1.4	

5.5.4 Future Population and Flow and Load

Section 4 of the process review outlines the assumptions regarding impacts of future growth for Ratana. These assumptions have been used in the high-level irrigation design assessment.

The Total Future Population has been calculated as reaching 530 people.

From section 4.1.1 of the process review, attached as **Appendix H**.

The following is the estimate of future average and peak flow rates into Ratana WWTP.

$$\begin{aligned}\text{Future Average Flow} &= \text{Current Average Flow (2016-18)} + \text{Future Population @ 200l/hd/d} \\ &= 136.5 \text{ m}^3/\text{d} + 32 \text{ m}^3/\text{d} \\ &= 169 \text{ m}^3/\text{d}\end{aligned}$$

Assuming that all new development is on a separate network and does not make significant wet weather contribution peak flow can be estimated as:

$$\begin{aligned}\text{Future Peak Flow} &= \text{Current Peak Flow (2018)} + \text{Future Population @ } 3 \times 200\text{l/hd/d} \\ &= 712 \text{ m}^3/\text{d.} + 96 \text{ m}^3/\text{d} \\ &= 808 \text{ m}^3/\text{d} \\ &= 9.4 \text{ l/s.}\end{aligned}$$

Due to limited matching inflow and outflow data, there is some uncertainty on whether the peak flow estimate is representative of flows delivered to the site, and this will be further influenced by previous weather conditions in the discharge and the intensity of rainfall on the treatment ponds. It is therefore considered that the minimum capacity of the rising main system to irrigation storage be 1,036m³/d (12 l/s). Flows above this value can be buffered in the pond capacity as high flow conditions are of short duration.

The pond area is 0.7 ha, so allowing 300 mm of storage across the ponds provides 2100 m³ of storage for storm events and emergency storage. Based on future average flow of 169 m³/d, this is 12 days storage.

No discharge to the local stream and Lake Waipu should occur even in storm events or failure of the transfer pump station.

6 Consideration of Alternatives

Schedule 4 of the RMA requires an assessment of alternatives in specific instances, namely:

- Where it is likely that an activity will result in any significant adverse effect on the environment, alternative locations or methods for undertaking the activity must be described (Clause 6(1)(a)).
- Where the activity includes the discharge of any contaminant, any possible alternative methods of discharge, including discharge into any other receiving environment must be described (Clause 6(1)(d)(ii)).
- Where if the activity will, or is likely to, have adverse effects that are more than minor on the exercise of a protected customary right, a description of possible alternative locations or methods for the exercise of the activity (unless written approval for the activity is given by the protected customary rights group) (Clause 6(1)(h)).

Consideration of clause 6(1)(d)(ii) aligns with the requirement under section 105, under which the consent authority in considering an application for a discharge or coastal permit must, in addition to the matters in section 104(1), have regard to any possible alternative methods of discharge, including discharge into any other receiving environment.

Land discharge sites

Over the last few years, RDC have considered a number of land parcels near the Rātana WWTP for suitability for treated wastewater discharge.

Adjacent to WWTP

The adjacent farm was considered, with the advantage being it was near to existing infrastructure, lower pumping costs and contour suitable for irrigation. Soil type was not ideal, had more sensitive receptors for spray drift/odour and still near Lake Waipu. This option was not progressed further than brief commentary on options.

Coastal property

A site closer to the coast was considered, sandy soil types were considered more suitable for potentially year-round irrigation, potential for gravity feed to the site and range of irrigation systems possible. Disadvantages included the cost of a pipeline, distance from WWTP and landowner approvals required. A Horizons Regional Council land parcel assessment identified significant areas of Schedule F habitats with mature vegetation on some of the site as well as wetlands. The site contained an area of ONFL. This option was discounted.

Area adjacent to Turakina River

A site to the south-east of the WWTP was considered, refer to the Water Balance attached as **Appendix I**. Terrain on this site went across a terraced area and has a stream flowing through the property. Preliminary water balance calculations indicated upwards of 18 ha (effective area) would be required with storage of upwards of 53,000m³ to account for future flows. This option was discounted.

Continuation of discharging to the tributary

The application lodged in 2018 was to allow for ongoing discharge to the tributary. As discussed in previous sections this option was not progressed further other than the allowance of the existing discharge pursuant to s124 of the RMA by virtue of the application lodged.

Lining of treatment pond

Lining was considered as part of the funding package with a recent estimated cost of upwards of \$500,000. There would have been disruption to existing treatment provided during the period when lining would be undertaken.

The option was discounted due to limited funding and likely limited effect. Monitoring is proposed and this can be considered in the future if required.

Upgrades at treatment plant

A number of upgrades options were looked at including 'package plant' upgrades. They were discounted at this stage due to predicted modest nitrogen loading rates at the irrigation site meaning a treatment upgrade was not warranted.

Upgrading the treatment and continuing to discharge to the stream was also discounted.

Storage pond location

A number of options were looked at for the storage pond location on the subject site. A memorandum outlining the options is attached as **Appendix C**.

Alternative water softening processes

A number of options for reducing and controlling sodium content in the residual water from the water treatment plant are currently being considered. These include: reducing salt usage through optimisation and adjustment of processes utilising existing equipment, usage of an alternative salt for ion transfer, or use of a reverse osmosis process for part of the flow. As there is currently no additional funding for additional capital projects, changing the treatment process radically is not considered an option at this stage.

7 Consultation and Engagement

Rangitikei District Council has undertaken consultation and engagement activities with respect to the Rātana Wastewater Treatment Plant project, with specific stakeholders and the wider community.

RDC engaged with parties throughout the process of acquiring land for the proposal and in preparing to this application. The consultation with the parties is detailed below.

Date	Time	Location	Details
16/12/2022	10am - 3pm	Rātana Pa conference room and end of Whangaehu Beach Road	Lake Waipu/ Ratana Freshwater Improvement Fund Project - workshop and site visit
14/05/2022	1:30pm - 3pm	RDC Chambers	Lake Waipu/Ratana WWTP Freshwater Improvement Fund Governance Group ² meeting
18/06/2021	1:30pm - 3pm	RDC Chambers	Lake Waipu/Ratana WWTP Freshwater Improvement Fund Governance Group meeting
9/07/2021	1:30pm - 3pm	RDC Chambers	Lake Waipu/Ratana WWTP Freshwater Improvement Fund Governance Group meeting
30/07/2021	1:30pm - 3pm	Via zoom	Lake Waipu/Ratana WWTP Freshwater Improvement Fund Governance Group meeting
27/09/2021	10am - 11am	RDC Chambers	Lake Waipu/Ratana WWTP Freshwater Improvement Fund Governance Group meeting
22/10/2021	11am - 12pm	RDC Chambers	Lake Waipu/Ratana WWTP Freshwater Improvement Fund Governance Group meeting
12/11/2021	10am - 12:30pm	Via zoom	Online hui to discuss the project and receive feedback on the proposed land and discharge. Present with representatives from RDC (including mayor and councillors), WSP, MDC, HRC, neighbouring landowners, Te Rūnanga o Ngā Wairiki Ngāti Apa, Ngāti Rangiwahakaturia, Te Tai Hauāuru, Rātana Community and Ministry of the Environment. <i>Note: invitations were also sent to Ngā Ariki (hapū of Tiniwaitara Marae) and Horizons Governance Group who did not attend.</i>
28/01/2022	1pm - 2pm	RDC Chambers	Lake Waipu/Ratana WWTP Freshwater Improvement Fund Governance Group meeting.

² This group is made up of representatives from HRC, MFE, RDC and iwi.

22/04/2022	2pm - 3:30pm	End of Whangaehu Beach Road	Site visit to the proposed discharge site (refer to Figure 7-1 below).
22/04/2022	3:30pm - 5pm	Rātana Pa conference room	Hui to discuss the project, the technical inputs, receive feedback from draft restoration plan circulated and answer queries. Present at the hui were representatives from RDC (including councillors), WSP, HRC, Ngā Wairiki Ngāti Apa, Ngāti Rangiwahakaturia, Horizons Governance Group, and Rātana Community.
29/04/2022	2:30pm - 4pm	Via zoom	Lake Waipu/Ratana WWTP Freshwater Improvement Fund Governance Group meeting.
28/10/2022	10am - 12pm	Whangaehu Marae	Hui to discuss the final technical findings, the consent application and answer queries. Present at the hui were representatives from RDC (including the mayor), WSP, Horizons Governance Group, Ngā Wairiki Ngāti Apa, and adjacent landowners.
25/09/2023	10am - 12pm	Whangaehu Marae	<u>Hui to discuss paper going to Council requesting additional funding required for the project.</u>



Figure 7-1: Site visit to the discharge site on 22 April 2022

Present at the last hui (end of October 2022 at Whangaehu Marae) iwi representatives Pahia Turia and Chris Shenton stated they would prepare a letter in support of this discharge consent application. This will be forwarded through to Horizons Regional Council once received.

8 Assessment of Effects on the Environment

In accordance with section 104 of the RMA when considering an application for a resource consent, the consent authority must, subject to Part 2, have regard to any actual and potential effects on the environment of allowing the activity.

This assessment of environmental effects has been provided in such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.

The following actual and proposed effects on the environment of allowing the activity have been identified and assessed below.

- Positive Effects
- Groundwater Effects
- Ecological Effects
- Odour Effects
- Cultural Effects

A number of technical reports have been prepared to support this consent application as follows:

- **Irrigation report** - describes high level irrigation design, calculates storage requirement for a number of irrigation scenarios, impacts of soil on potential for leaching
- **Groundwater report** - builds conceptual model to assess groundwater movement direction, potential quality
- **Ecological impact assessment** - builds on the delineation report, describes ecological values of the current site and assesses effects, makes recommendations.

8.1 Positive Effects (updated November 23)

This application will replace the existing discharge to surface water currently authorised for the Ratana WWTP. The application is required in order to achieve the goal of removing the discharge of treated wastewater to Waipu Stream and in turn Lake Waipu.

The application of treated wastewater to land can have beneficial results for plant growth.

The intention is to utilise vegetation that has the potential to be beneficial to the community in some way (eg. firewood), provided this is compatible with the main intention of the irrigation.

A positive effect will be the creation of the southern biodiversity area, with restoration of a duneland area and a natural wetland. Overall it is considered there will be a net biodiversity gain.

The response of the duneland areas to irrigation will be monitored, resulting in information that will be useful for the management of the site and potentially other sites as well.

8.2 Groundwater Effects

Potential groundwater effects predominantly stem from the response of the plant and soil system to irrigation. For this reason, two reports (groundwater water and irrigation memorandum, **Appendix A and G**) are used to assess potential effects on groundwater.

8.2.1 Irrigation design and risk of nitrate leaching

As described in the irrigation design memorandum, various factors will influence the final irrigation design and these in turn can influence potential effects, primarily risk of contaminant movement beyond the root zone into groundwater but also the risk of surface runoff.

Potential nutrient loading rates were calculated using both existing loads and predicted future loads. It is noted that loads of up to 150kg N/ha/year in agricultural settings is considered reasonable

from an agricultural perspective (noting that this doesn't account for inputs from grazing stock which can also add nitrogen inputs to the system).

Nitrate leaching is discussed in section 5.2 of the irrigation memorandum, it is noted that a key reason why nitrate is leached is because it sits in the soil solution as inorganic nitrogen and does not bind to soil particles due to its negative charge. When there is excess water in the soil profile leaching can occur, moving nitrate beyond the root zone so uptake by plants can no longer occur.

The irrigation report notes that the highest risk for leaching occurs during late autumn, winter and early spring. In addition to there being higher likelihood of excess water during these periods, plant growth rates are lower allowing for the build-up of nitrate in the profile during these periods.

Soil type can influence the rate at which nitrate may be leached, for the proposed irrigation site. The site has been determined as having predominantly sandy soils, with small discrete areas of gley soils. Sandy soils on the site have characteristics that increase the nitrate leaching risk. Gley soils have a lower nitrate leaching risk.

A key way of mitigating the risk of nitrate leaching from the application of wastewater is to practice deferred irrigation. When deficit irrigation is undertaken the nitrate is predominantly held in the root zone making it available for plant uptake and preventing it from being lost to groundwater.

A mix of deficit and mixed irrigation is proposed. The annual loading of nitrogen does not change, but the months in which it is applied does. In the months where non-deficit irrigation would occur, mainly September to November, plant growth rates are noted as being high, as such some nitrate uptake would be achieved (as noted in the irrigation report plant growth is likely to be year-round given the mild climate). The effects of non-deferred irrigation during the September to November period are considered to be minor, as it is a minor increase. If wastewater quality was to change, a significant change would be required before the risk level would increase to the point where it would cause concern.

Overseer modelling results, requested as further information, are attached as **Appendix J**.

No specific construction information is available for the existing WWTPs. In order to determine potential effects two bores were installed at sites adjacent to the WWTP ponds, at the sites shown in **Appendix B**. The intention is for ongoing monitoring at the site. The bore logs from adjacent to the WWTP ponds. The bore BH-1, installed in an embankment to the ponds, showed silty sandy clay to a depth of approximately 1m, then becoming sandier. For BH2 silty clay over coarse sandy silty clay transitioning into a dense grey-blue clay. No water quality samples were able to be collected as there was no water in the bores at the time of sampling. Based on the bore log information and lack of water for sampling indicates that the risk of significant permeability at the ponds is low, however ongoing monitoring at the bores is proposed.

8.2.2 Vegetation selection for the irrigation areas

Various plant options have been considered for the site, while trees can have some beneficial characteristics in terms of nutrient uptake, layout will to be taken into account to allow for efficient irrigation system layout.

Trees could provide a source of firewood or stock fodder. Food crop species would need to be assessed in terms of food safety standards.

A pasture system and cut and carry operation could also provide stock feed, but it is likely more maintenance would be required and the ability to move the irrigation system for harvesting.

Planting taller vegetation in the edge management zone may assist with reducing potential aerosol drift.

8.2.3 Groundwater Quality

As noted above, monitoring bores were installed on the proposed irrigation site and water quality samples and groundwater levels collected. Test pits and infiltration testing has also been undertaken on the site.

A conceptual groundwater model was set-up to estimate groundwater flow direction and flow volumes beneath and downgradient of the wastewater discharge area. This is described further in section 3.2 of the groundwater report.

Water level contours as well as the two rivers were used in the model to interpret likely groundwater flow direction. The model indicates that groundwater flows towards the northwest before changing to a westerly flow direction. The flow paths are presented as red lines on the figure below (figure 3-3 from the groundwater report). Each tick mark represents one year of travel time, indicating that discharge from the irrigated land takes approximately 6 to 9 years to travel to the coast.

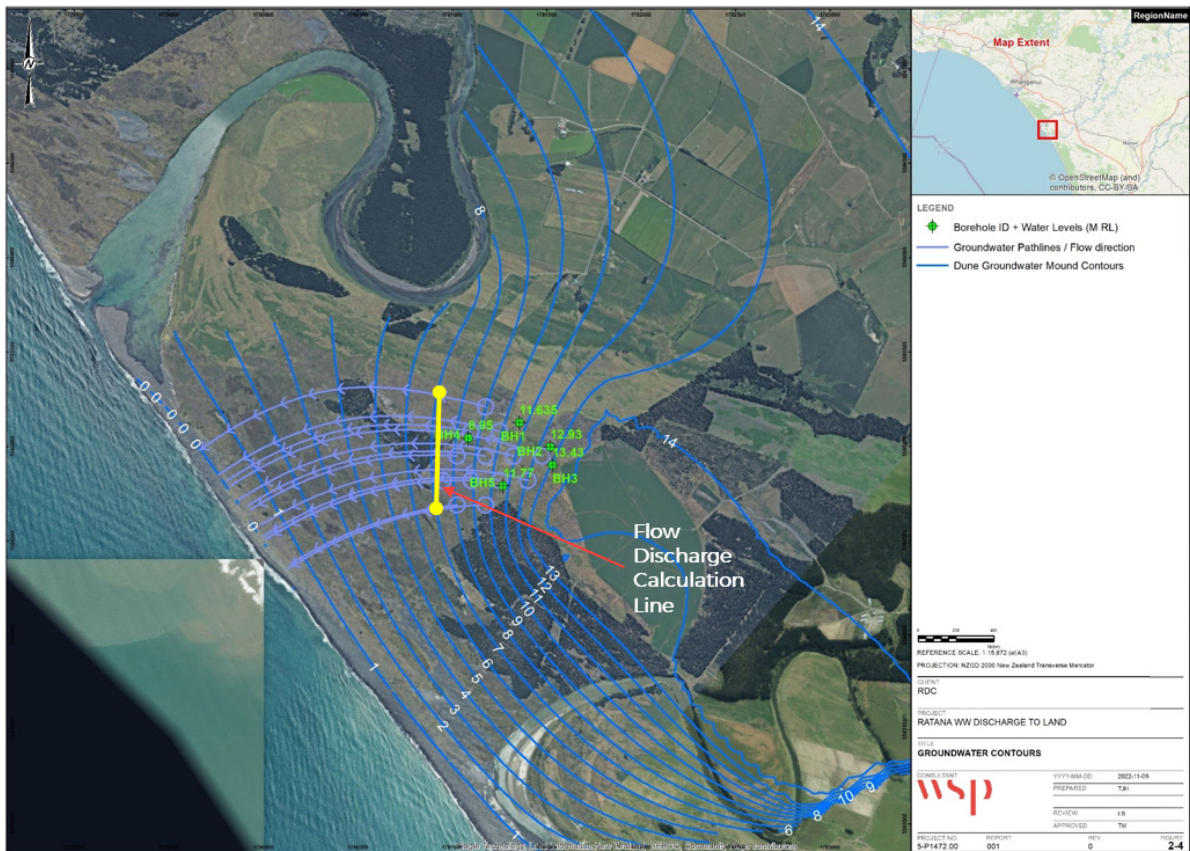


Figure 8-1: Ratana Groundwater contours and flow direction due to nearby dune sand mounding effects

The volume of groundwater flow was calculated in the model to be approximately 4,300 m³/day, based on an aquifer thickness of approximately 10 m (the other assumptions are listed in the groundwater report).

It is assumed that there is some potential for nitrate to leach into the groundwater system when non-deficit irrigation occurs. The groundwater report calculated that the maximum increase in nitrate-nitrogen concentration predicted in groundwater would result in a concentration of 2.07 mg/L. The increases predicted are considered to be small.

The potential for E.coli movement has been considered, in particular if there was any risk to recreational use on the beach. The risk was assessed as being low, taking into account various factors including the time taken for groundwater from under the irrigation site to reach the coastal margin

(6 years is predicted), this is considered to be sufficient time for viral and bacterial contamination to attenuate and die off before reaching the beach.

8.3 Effects on Surface Water

Potential effects on surface water are discussed in Section 3.3 of the groundwater report. Based on the modelled groundwater direction flow, the low predicted changes in groundwater quality and distance to the Whangaehu River (750m to the north) and Turakina River (1km to the south) the risk of any contaminant reaching either river is considered very low.

8.4 Ecological Effects

The discharging of wastewater can have adverse effects on the receiving environment as can lead to increases in toxicity, general nutrient enrichment and sediments. This has the potential to alter the response of ecological habitats.

An Ecological Impact Assessment (EIA) has been prepared, revised October 2023 and includes the additional 4 ha, to assess the ecological values of the irrigation site and the potential adverse effects of the proposal. This report is attached as **AppendixE**.

8.4.1 Dunelands (revised November 2023)

The two areas of 'central duneland', these are described further in section 3.1.1 of the revised EIA but are described as dune ridges roughly orientated north-west to south-east.

As discussed above, there is a large area (approx. 5.15 ha) of existing duneland at the irrigation site. This duneland area is highly modified due to being planted in young pine trees, and contains no threatened or dune specialist species. The is discussed above, the current overall value assigned to the central duneland is low.

The EIA notes that the discharge would create conditions that would facilitate the establishment of understory species, likely in the longer term to assist with the establishment of native species. It is however noted there is little literature regarding the effect of irrigation on stable dunes, but provided the physical shape is maintained the magnitude of effect has been assessed as negligible and the level of effect is likely to be low if not positive.

It is proposed to monitor the shape of the dunes and information gathered can be used to adjust management of the site as well as providing information for other sites.

The southern duneland area, which it is noted extends beyond the subject site, is currently has areas dominated by indigenous species. In the longer term it is noted that the irrigation proposed should assist with natural succession and the proposed enrichment planting. Monitoring is proposed to feed into ongoing management of this area. It is considered that the residual level of effect is very low to a net gain.

The magnitude of effects on these duneland areas has been assessed as low. Monitoring is recommended and this is reflected in the proposed conditions.

8.4.2 Natural Wetlands (updated November 23)

The EIA notes that in relation to wetlands two effects will occur, being loss of wetland habitat and changes in wetland hydrology.

Wetlands W2, W3, W4, W5 and W6 will be directly impacted (ie. lost) by the proposed storage pond and recontouring, in total these wetlands amount to approximately 0.373 hectares (3730 m²) of exotic dominant habitat. As above, these wetlands have been assessed as having negligible indigenous biodiversity value and the main value is for their hydrological functioning. The loss of

these wetland habitats will be offset by creating and restoring additional wetland habitat of equal or greater area, this will occur adjacent to wetland W14.

It is noted in the EiA that the wetlands are considered to be predominantly rainwater and groundwater fed. Some overland flow may occur during wetter periods of the year, although this is limited due to the very high soil permeability of these wetlands and surrounding dryland.

By applying water through wastewater irrigation, it has been assessed that the hydrology of wetlands W1, W7-W9 and W12, total area of some 0.227 hectares, will be affected. It has been assessed that these wetlands are wet intermittently or episodically and as such hold water after significant rainfall, during wet seasons, or in wetter than normal seasons. The effect of irrigation will likely result in an expanded area of these wetlands and to favour obligate wetland plants (compared to plants more suited to intermittent wet conditions). The magnitude of effect to the current hydrology of these wetlands is expected to be Moderate.

The proposal includes the creation of the 'western dune plain management area', using irrigation control water can be maintained at a prescribed height within this area. This area would likely have increased denitrification as a result of wetland plant processes which can result in reduced nitrates reaching groundwater, albeit on a very small scale due to the size of the area.

Planting of the remaining wetlands is proposed, so for the remaining natural wetlands biodiversity value is predicted to significantly increase. As ongoing removal of nutrients through uptake into plant material will be beneficial, there is an opportunity for the wetlands to be utilised as 'open ground' nursery habitats for eco-sourced indigenous wetland plant species. The post-mitigated magnitude of effects on the remaining natural wetlands is likely to be negligible with a high potential to produce positive effects including a net gain in the value of the wetlands.

As noted above Wetland 14 meets the definition of a Schedule F rate habitat. Specific controls for irrigation and restoration of this wetland are proposed. As only deficit irrigation is proposed for this wetland area and due to the direction of groundwater flow the hydrology of this wetland is not expected to be affected.

In terms of the habitat of wetland 14, removal of stock from the site is expected to improve the native species composition and abundance of W14. Weed control and planting on the northern side of W14 and the proposed offset wetland is proposed. The enrichment planting is to include wetland edge and appropriate forest species to help create a buffer edge. The buffer edge would help to protect from exotic species from growing in the area as well as uptaking nutrients from the area. The post mitigated magnitude of effect on W14 is expected to be positive resulting in a net gain in overall value in the short-long term.

8.4.3 Fauna

The likelihood of bats using the habitat at the project site is low as the site is coastal and there are very few trees at the project site that bats could use as roosting habitat. Currently the proposal does not include the clearing of any suitably sized trees therefore the overall effects on bats as a result of the proposed works has been assessed as negligible.

It is not expected that the proposed development will have any discernible adverse impact on the current bird population of the area. The effects on native bird populations have been assessed as negligible.

Undertaking earthworks can potentially affect lizards. However due to the site being dominated by grazed pastureland, most of the site does not provide much suitable habitat for lizards. The effects on lizards have been assessed as negligible.

8.5 Soil Effects (Updated Section)

Supernatant water from the water treatment plant is currently discharged into the Ratana WWTP. Sodium Chloride is used as part of the water treatment process (to aid in softening the hard water). Discharges containing elevated sodium content have the potential to result in soil structural changes, result in reduced pH in soil or be detrimental to plant growth. In this situation the risk of soil structural changes is considered to be low, due to the texture of the soil – being predominantly sand in texture – meaning the risk of deflocculating clay particles is low.

Plant growth can be impacted by discharges with sodium content, from a review of some recent research papers (A.Meister et al 2023, M.J Gutierrez-Gines et al 2023) it is noted that plant response is variable between species. Given the proximity to the coast salt spray is likely to influence potential sodium accumulation in the area. Sandy soils generally have lower cation exchange capacity, and therefore little opportunity for anion adsorption. Soil amendments (such as lime) are commonly used to adjust pH in soils.

Monitoring of sodium content in the treated wastewater is proposed, this in conjunction with the proposed monitoring on site (which includes monitoring of the biodiversity areas) will allow for an adaptive management approach to avoiding adverse effects.

8.6 Odour Effects

The primary source of odour from the proposal is expected to be from the irrigation activity and the proposed storage ponds.

As the land use surrounding the site is rural, and entails farming activities it is expected that adjacent land would not be inherently sensitive given its location and that people present working on the farms would be present only for short periods of time. The nearest identified sensitive receptor is the dwelling at 517 Whangaehu Beach Road, approx. 700 m northwest of the irrigation site.

The proposed operation will follow general odour management practices to mitigate any potential odour impacts from the site. This can include managing the storage pond so it doesn't become anoxic, managing irrigation within the edge management zone to reduce potential for aerosol drift from irrigation and reducing irrigation if required during high wind situations if spray drift could occur towards sensitive receptors.

A management plan will be in place to mitigate any potential adverse effects from odour that may arise from the wastewater treatment pond, storage pond and irrigation to land.

Given that the operation will be undertaken through best practice measures, the distance of the site to the nearest sensitive location, and that odour emitted from the site will be of a sufficiently low intensity, it is considered that any effects from odour will be less than minor.

8.7 Cultural Effects

RDC recognised that engagement and collaboration with local iwi and hapū best achieves a sustainable outcome for the environment. RDC has been collaborating with Ngā Wairiki Ngāti Apa and local hapū Ngāti Ariki (hapū of Tiniwaitara Marae) and Ngāti Rangiwahakaturia (hapū of Whangaehu marae), since the beginning of the project.

In a letter received in support of the wider project for the Freshwater Improvement Fund application, Chris Shenton stated that *“the system is currently unsatisfactory to Ngā Wairiki Ngāti Apa in that treated effluent does discharge into the Waipu Lake which in turn goes down the Waipu Stream....If we were able to remove the impact of the Ratana Sewage discharge upon the Turakina River and the former mahinga kai of Waipu Lake, that would be of hugh significance to Ngāti Ariki and to Ngā Wairiki Ngāti Apa as a whole”*. This letter is attached as **Appendix K**.

The adverse cultural effects associated with the existing point source discharge has been a key driver in this consent application to discharge the treated wastewater via a land irrigation scheme. It is understood that the direct discharge of human wastewater to waterways even when treated, is culturally abhorrent. It is understood a land-based irrigation of wastewater is preferable from a cultural perspective.

There is no Iwi Environmental Management Plan for either Ngāti Apa or Ngāti Ariki, and as such direct consultation by RDC is better in understanding the effects from the proposal on cultural values. Engagement to date is set out in section 7 and includes a number of hui and site visit to the proposed irrigation site. Chris Shenton and Pahia Turia on behalf of Ngā Wairiki Ngāti Apa have both expressed their support for the project in moving to a land-based irrigation in previous hui.

RDC aspire to continue a collaborative approach after the consent has been sought through input into management plans, and the restoration of the natural wetlands and duneland on site.

It is noted that there are no identified wāhi tupuna or archaeological sites of significance on the proposed irrigation site.

8.8 Proposed Mitigation (Updated)

The following procedures and plans are proposed as part of this consent application to mitigate any adverse effects that may arise from the proposed discharge of treated wastewater from the WWTP to land through irrigation.

Storage Pond

The key mitigation provided by the proposed storage pond is to allow for the treated wastewater to be stored over the wetter months.

Erosion and Sediment Control Plan (Appendix L)

Earthworks associated with the proposed construction of the storage pond and installation of the pipeline within the irrigation site, will be managed through implementation of a site-specific Erosion and Sediment Control Plan (ESCP). This plan will outline best practice methodologies, management procedures and appropriate site-specific control devices (such as use of silt fencing) to manage potential sediment discharge from the site during the works. This plan will outline the contractor's responsibilities to ensure that all ESC measures are monitored and maintained during the works and will be prepared and submitted to the Horizons Regional Council prior to earthworks commencing.

WWTP Operations and Management Plan

RDC propose to submit an Operations and Management Plan (OMP) to Horizons Regional Council within 6 months of commencement of consent to provide details of the ongoing treatment operation. This report will detail proposed routine inspections, on-site monitoring, compliance reporting procedures and record keeping and an emergency response plan. This plan will be able to be updated as required, if additional treatment (such as further nitrogen removal) was deemed necessary though the term of the consent the management plan would be updated to reflect that.

Irrigation Management Plan

Prior to the proposed works to irrigate treated wastewater to land, RDC propose to submit an Irrigation Management Plan (IMP) to Horizons Regional Council for certification. This Plan include details such as how each irrigation management zone will be managed, key operational matters including details of maintenance, as well as irrigation scheduling procedures. The IMP will be regularly updated, taking into account findings of ongoing monitoring and annual reporting, to ensure potential effects associated with the irrigation of treated wastewater are minimised.

Southern Biodiversity Enhancement Area

As identified on Figure 3-1 above, it is proposed that a southern biodiversity enhancement area be established. This area contains the southern duneland habitat and wetland 14. Within this area the proposed offset wetland will be established. Weed control and enhancement planting will be undertaken in this area. A management plan will be refined and submitted as condition of consent.

The above plans are proposed to manage and mitigate effects from the proposed discharge which are proposed to be conditioned as a part of the consent. RDC propose to consent conditions to this effect as conditions (as per **Appendix D**) and section 8.7.1 below.

8.8.1 Consent Conditions

As per **Appendix D** of this Assessment of Environmental Effects, consent conditions have been proposed by Rangitikei District Council.

It is proposed to have an active and adaptive management approach, to be able to continuously monitor and control key parameters, and make any operational changes where required to. These reports are outlined above, and each focus on an aspect of the project (i.e. an ecological area, or proposed operation). The proposed plans will be prepared once final consent conditions and detailed design of the irrigation system are known.

The ESCP, OMP and IMG IMP will be developed and refined once detailed design has been finalised, as have been offered up as conditions to the consent. The IMG will be prepared for irrigation volumes under normal circumstances, and through on-going monitoring of key parameters, this plan will be able to be amended if required in response to operational results.

RDC propose to condition a Duneland Management Plan, and to amend it based on the findings and what is observed during the proposed irrigation management trail. It is conditioned that on-going monitoring of the duneland area be carried out so that should the discharge to duneland be proven to have an adverse undesirable effect, the discharge can be modified. Maintaining vegetation cover is considered to be a key tool in avoiding adverse effect.

RDC also propose to condition on-going monitoring of the wetland areas through implementation of the Wetland Monitoring Report (as discussed above).

Ongoing monitoring of groundwater at the irrigation site and WWTP site are proposed. Triggers for additional monitoring and investigation are proposed in the event that nitrogen in groundwater is found to be becoming elevated. There is then opportunity to upgrade treatment processes, if required, at the treatment plant as a result of findings of investigations.

Through this active management approach, RDC will have the ability to amend the operational management plans, in response to the results of on-going monitoring to ensure effects from the works are less than minor.

8.9 Overall effects summary

The proposed works will achieve the goal of removing the discharge of treated wastewater to Waipu Stream and in turn Lake Waipu.

Potential effects on groundwater from the proposed irrigation was investigated and is detailed in the Irrigation Report and Groundwater Report (attached as **Appendices A** and **D**). As a mix of deficit and mixed irrigation is proposed, the effects of deficit and mixed irrigation were assessed. The storage proposed means that irrigation during winter months will generally not occur, unless ground conditions are suitable or required for contingency purposes, and this is a key part of the mitigation management.

There is potential for nitrate to leach into groundwater when non-deficit irrigation occurs, however any increase in nitrate-nitrogen concentration predicted in groundwater would be small, and therefore any effects are considered to be less than minor. Monitoring is proposed and if changes

greater than what was predicted occur additional investigation would be undertaken. There is the option of doing further upgrades at the treatment plant, but at this stage based on the modest nitrogen application rates predicted that wasn't deemed necessary at this stage. As the risk of E.coli movement is considered to be low when taking into account various groundwater factors, any effects that this may have on groundwater is considered to be less than minor.

Surface water effects are considered to be less than minor, groundwater flow is not predicted towards either the Whangaehu or Turakina Rivers.

The proposed treated wastewater discharge is unlikely to adversely affect the duneslack wetlands when done in accordance with the proposed irrigation management, and restoration planting. This is due to the modest nutrient levels predicted and low levels of irrigation proposed which are unlikely to alter the natural hydrology of the area. However, ongoing monitoring is proposed and if required management can be adapted and additional mitigation occur if required.

The magnitude of effects on the duneland areas at the proposed irrigation site has been assessed as low, when undertaken in accordance with the Irrigation Management Plan. The physical shape of the dunes will be monitored, with information being captured to allow management practices to be optimised for the site. Additionally, the information gathered can potentially be used to assist other sites.

The proposed works are considered not to have an impact on bats, birds or lizards.

Given that the operation will be undertaken through best practice measures, the distance of the site to the nearest sensitive location, and that odour emitted from the site will be of a sufficiently low intensity, and it is considered that any effects from odour will be less than minor. Management of aerosols is proposed for the edge management zone and the storage pond will be managed to avoid potential odour being generated.

The adverse cultural effects associated with the existing point source discharge has been a key driver in this proposal to discharge the treated wastewater via a land irrigation scheme. It is understood that the direct discharge of human wastewater to waterways even when treated, is culturally abhorrent, and that land-based irrigation of wastewater is preferable from a cultural perspective. This application is supported by Ngā Wairiki Ngāti Apa and local hapū Ngāti Ariki and Ngāti Rangiwahakaturia.

Through the active management approach, RDC will have the ability to amend the operational management plans, in response to the results of on-going monitoring to ensure effects from the works are less than minor.

9 Statutory Considerations

9.1 Overview

This section outlines the statutory and planning provisions that are relevant to the proposal. The assessment against the relevant documents generally follows the hierarchy of those documents as shown below.

As set out above in section 4 of this AEE, Section 104 of the RMA applies to the consideration of resource consent application.

Section 104(1) outlines the following matters, which are relevant to Council's consideration of the application:

"When considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to-

(a) any actual and potential effects on the environment of allowing the activity; and
(b) any relevant provisions of-

(i) a national environmental standard;

(ii) other regulations;

(iii) a national policy statement;

(iv) a New Zealand coastal policy statement;

(v) a regional policy statement or proposed regional policy statement;

(vi) a plan or proposed plan; and

(c) any other matter the consent authority considers relevant and reasonably necessary to determine the application”.

Section 104(2) states that:

“When forming an opinion for the purposes of subsection (1)(a), a consent authority may disregard an adverse effect of the activity on the environment if a national environmental standard or the plan permits an activity with that effect.”

9.2 National Environmental Standards

The following National Environmental Standards have been considered in the preparation of this application.

9.2.1 National Environmental Standard for Sources of Drinking Water 2007 (NES-DW).

The purpose of this regulation is to protect drinking water sources, and assessment is required for activities with the potential to affect drinking-water supplies. There are no known drinking water sources in the vicinity of the proposed discharge site. The proposed discharge site is not within an identified drinking water protection zone. It is considered that no further consideration of the NES-DW is required.

9.2.2 National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES-SC)

The NES-SC defines various activities as HAIL activities, including the discharge of treated wastewater. While not directly relevant to this application, it is noted that once discharge occurs, the site would be considered a HAIL site.

9.2.3 National Environmental Standard for Production Forestry 2018 (NES-PF)

This NES is relevant insofar as it relates to the existing pine plantation that is present on some of the discharge site. It is understood the pines were replanted in accordance with Regulation 77.

Any harvesting of pines would be undertaken in accordance with Regulations 63 and 64, with a harvest management plan prepared in accordance with Regulation 66.

9.2.4 National Environmental Standards for Freshwater Regulations 2020 (NES-F)

The NES Freshwater regulates activities that pose risks to the health of freshwater and freshwater ecosystems. The Project requires resource consents under the NES Freshwater as set out in section 4.2.

As outlined in section 2 above, the restoration of the ~~two~~ remaining natural wetlands on the site would be undertaken in accordance with the general conditions as set out in Regulation 55. As works are to be part of the Ratana community wastewater treatment plant, the activity meets the definition of specified infrastructure. The proposal to construct (establish) the infrastructure is a discretionary activity pursuant to Regulation 45. Ongoing maintenance and operation of the system (specified infrastructure) will be undertaken in accordance with Regulation 46 as a permitted

activity. The proposed irrigation controls and modest nutrient loading rates are such that it is not predicted that any of the effects listed in Regulation 55(3)(a) will arise as a result of the discharge.

9.3 National Policy Statements

9.3.1 National Policy Statement for Freshwater Management 2020 (NPS-FM).

The National Policy Statement for Freshwater Management 2020 came into force 3 September 2020. Its purpose is to assist in provide national consistency in local resource management planning and decision-making while allowing for an appropriate level of regional flexibility.

Objective 1 *“The objective of this National Policy Statement is to ensure that natural and physical resources are managed in a way that prioritises:*

- (a) First, the health and well-being of water bodies and freshwater ecosystems*
- (b) second, the health needs of people (such as drinking water)*
- (c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.*

The NPS-FM sets a “*minimum acceptable state*” or a “*national bottom line*” for a range of attributes that describe ecosystem health and human health for recreation in rivers and lakes.

The NPS-FM primarily directs regional councils to give effect to the NPS-FM by developing long-term visions, actively involving tangata whenua, adopting an integrated approach to management, and transparent decision-making. Tangata whenua have been part of the working party established as part of the project to remove the Rātana WWTP discharge from ultimately discharging to Lake Waipu.

The below policies from the NPS-FM have been assessed in context with the proposal. It is noted that the NPS-FM applies to all freshwater (including groundwater).

Relevant Policy	Comment
<p>Policy 1: Freshwater is managed in a way that gives effect to Te Mana o te Wai.</p>	<p>Te Mana o te Wai refers to the vital importance of water. When managing freshwater, it ensures the health and well-being of the water is protected.</p> <p>The proposal gives effect to Te Mana o Te Wai by removing the discharge of wastewater that is ultimately discharging into Lake Waipu and having significant adverse effects culturally. The proposal to remove the point source discharge, and the move to land-based irrigation will address the on-going issues and will start the journey to restore the Mauri of the lake. It should be noted however that this is secondary to the consents being sought which are in relation to the discharge to land. This enhancement relates to the wider project undertaken rather than the discharge to be consented.</p> <p>The potential effects on freshwater are considered to be low, taking into account the proposed mitigation and management for the site.</p>
<p>Policy 2: Tangata whenua are actively involved in freshwater management (including decision making</p>	<p>In 2017, Chris Shenton on behalf of Ngā Wairiki Ngāti Apa (and hapu Ngā Ariki), prepared a letter of support to the initiative to</p>

<p>processes), and Māori freshwater values are identified and provided for.</p>	<p>restore Waipu Lake, and expressed how necessary it is to find a sustainable solution to the Rātana WWTP discharge.</p> <p>Ngā Wairiki Ngāti Apa and hapu Ngā Ariki have remained active in the proposal, and representatives have attended the project hui run by RDC and WSP. This process demonstrates Tangata Whenua involvement and therefore is consistent with this policy.</p>
<p>Policy 6: There is no further loss of extent of natural inland wetlands, their values are protected, and their restoration is promoted.</p>	<p>Initial investigations identified two duneslack wetlands on the site. <u>Further investigation work undertaken at a different time of the year identified further wetlands, one permanent and the balance episodic (or seasonal).</u></p> <p><u>Other than wetland 14, the condition of the wetlands currently is such that they have hydrological value only.</u></p> <p><u>The wetlands that will be directly impacted (lost) through physical changes are proposed to be offset on the site. The area to be created for offset is equal to if not greater than the area of wetlands to be lost.</u></p> <p><u>Other natural wetlands remaining are predicted to increase in size due to changes to hydrology as a result of irrigation. Restoration planting is proposed within these wetland areas, and plants that are tolerant of nutrient enrichment are proposed to be used. A net gain is predicted for these wetlands.</u></p> <p><u>For wetland 14, specific irrigation management and restoration is proposed, it is expected that a net gain will be achieved.</u></p> <p>The proposal is considered consistent with this policy, no loss in the extent of the wetlands is predicted <u>and a mix of enhancement, restoration and offset is proposed.</u></p>
<p>Policy 12: The national target for water quality improvement is achieved.</p>	<p>The groundwater report describes the risk of contaminants as a result of the proposed discharge reaching either the Whangaehu or Turakina Rivers as being low. It is considered that this proposal for the discharge to land will not be an impediment to this policy.</p>
<p>Policy 13: The condition of water bodies and freshwater ecosystems is systematically monitored over time, and action is taken where freshwater is degraded, and to reverse deteriorating trends.</p>	<p>While this is a policy directed at regional councils it will likely apply to consent applications as well.</p> <p>A monitoring programme is proposed as part of conditions for the proposal. This includes initial monitoring to help determine baseline conditions prior to irrigation commencing and monitoring for trends. In the event the nitrogen levels are found to be increasing beyond what is considered acceptable there is the option to upgrade wastewater treatment if this is required, it is however noted that this would be costly.</p>
<p>Policy 15: Communities are enabled to provide for their social, economic, and cultural wellbeing in a way</p>	<p>The proposal will enable the Rātana community to provide for their well-being as the existing discharge is of great concern for the community and any improvements/ alternatives are a high priority for Ngā Wairiki Ngāti Apa, and the community.</p>

that is consistent with this National Policy Statement.

Comment:

The removal of the discharge from the Lake Waipu will have ultimately positive effects on Te Mana o te Wai, especially in terms of the overall catchment management.

In considering the effects hierarchy as required under the NPS-FM, the proposal is for the discharge of treated wastewater to land where some contaminants may reach groundwater at times, effects cannot be avoided in entirety. Effects on groundwater quality are assessed as being no less than minor, ongoing monitoring is proposed if changes in groundwater quality are detected over time there is the ability to determine if additional treatment may be necessary. Given the approach is to focus on deficit irrigation and when deficit irrigation cannot be achieved only irrigate during active growing periods this will help minimise potential effects.

Effects on the natural wetlands cannot be avoided entirely, but effects will be minimised through the proposed management zone and planting restoration that will occur. Ongoing monitoring is proposed and there is the ability through the management plans to adapt management if required.

9.3.2 NPS-Highly Productive Land

The NPS came in to force 17th October 2022 and requires consideration of activities on highly productive land.

The subject site contains Class 7 land, therefore does not meet the definition of highly productive land and therefore the NPS-HPL does not apply.

9.4 Other regulations

There are no other national regulations that are considered to be relevant to this application.

9.5 Horizons One Plan – Regional Policy Statement

The Regional Policy Statement (Part 1 of the One Plan) sets out the regionally significant resource management issues, and outlines the objectives, policies and methods that will be used to address these issues.

An assessment of the proposed activity against the relevant objectives and policies of the Horizons Regional Policy Statement is provided in the following section.

9.5.7 Chapter 2 - Te Ao Māori

Chapter 2 describes the resource management issues and environmental outcomes sought by tangata whenua and provides links to provisions in other chapters of the Plan that seek to deliver on these outcomes.

The following matters are considered of relevance to this application.

Relevant matters

Objective 2-1: Resource Management

(a) To have regard to the mauri of natural and physical resources^ to enable hapū* and iwi* to provide for their social, economic and cultural wellbeing.*

(b) Kaitiakitanga^ must be given particular regard and the relationship of hapū and iwi* with their ancestral lands^, water^, sites*, wāhi tapu* and other taonga* (including wāhi tūpuna*) must be recognised and provided for through resource management processes”.*

Policy 2-1: Hapū* and iwi* involvement in resource management

The Regional Council must enable and foster kaitiakitanga[^] and the relationship between hapū and iwi* and their ancestral lands[^], water[^], sites*, wāhi tapu* and other taonga* (including wāhi tūpuna*) through increased involvement of hapū* and iwi* in resource management processes including: [...]*

(h) involvement of hapū or iwi* in resource consent[^] decision-making and planning processes in the ways agreed in the memoranda of partnership and joint management agreements[^] developed under (a) and (f) above, [...]*

Policy 2-4 Other resource management issues

The specific issues listed in 2.2 which were raised by hapū and iwi* must be addressed in the manner set out in Table 2.1 below.*

Table 2.1 highlights issues of significance to the Region's hapū and iwi*, provides explanations in the context of Māori belief and demonstrates how the Regional Council must address these matters. The issues and explanations do not in any way represent a complete picture of hapū* and iwi* concerns, but they offer possible explanations as to the depth of feeling and connection hapū* and iwi* have with the Region's natural resources.*

From Table 2.1 Identification of resource issue of significance to hapu and iwi

(a) Management of water quality and quantity throughout the Region does not provide for the special qualities significant to Maori

(h) Sewage disposed to water in treated form or otherwise, is culturally abhorrent. Land-treatment is preferred.

(m) The transfer of indigenous plants from rohe to rohe is considered culturally unnatural

Comment:

One of the key thrusts of objectives and policies of Chapter 2 is the involvement of hapū and iwi in resource management decisions. As outlined in section 7 RDC has been involved in an engagement process. RDC have been working in collaboration with Ngā Wairiki Ngāti Apa and local hapū, in the Freshwater Improvement Fund funding application (see **Appendix K**) as well as the preparation of this application. There will be ongoing opportunities for involvement with the project, such as iwi representatives being invited for onsite observation when earthworks are undertaken, and ideally a partnership type approach to the various restoration projects particularly in relation to plant propagation and planting.

In a hui on the 12 November 2021, Chris Shenton spoke on behalf of Ngā Wairiki Ngāti Apa and stated that they are happy to see these works are progressing.

At a hui on 28th October 2022 general support for the proposal was expressed and there may be letters of support. These would be forwarded when received.

As noted in the various objectives and policies it is recognised that the direct disposal of sewage to water, in treated form or otherwise is culturally abhorrent. This application is to authorise the discharge of treated wastewater to land, with no discharge to surface water.

Potential effects on groundwater quality have been considered, the irrigation system proposed will primarily be based on deficit irrigation with some irrigation of shoulder months. Effects on

groundwater quality have been assessed as being low. Monitoring has been proposed and there is ability to refine the treatment or irrigation system should effects as a result of the irrigation start to elevate beyond what would be considered acceptable.

A restoration plan is proposed for the duneland and wetlands onsite, as well as ongoing monitoring so that management practices can be adjusted if required. As noted above, it is the preference of RDC to continue with a partnership approach to the proposed restoration planting, creating opportunities in respect of skill development around the restoration and enhancement planting and monitoring.

The overall proposal and approach taken by RDC is considered consistent with the objectives and policies of Chapter 2.

9.5.2 Chapter 3 - Infrastructure, Energy, Waste*, Hazardous Substances* and Contaminated Land

Chapter 3 outlines regionally significant issues for infrastructure, energy, waste hazardous substances and contaminated land, and sets out the objectives, policies and methods that derive from these issues.

The following matters are considered of relevance to this application:

Relevant matters

Issues 3-1: Infrastructure and other physical resources of regional or national importance

There is potential for concerns about local adverse effects to prevail over recognition of the regional and national benefits of establishing infrastructure and other physical resources of regional or national importance. There is also potential for other activities to constrain the operation, maintenance* or upgrading* of infrastructure and other physical resources of regional or national importance.*

Objective 3-1: Infrastructure and other physical resources of regional or national importance

Have regard to the benefits of infrastructure[^] and other physical resources of regional or national importance by recognising and providing for their establishment, operation, maintenance* and upgrading*.*

Policy 3-1: Benefits of infrastructure[^] and other physical resources of regional or national importance

- (a) The Regional Council and Territorial Authorities[^] must recognise the following infrastructure[^] as being physical resources of regional or national importance: [...]*
- (ix) public water supply* intakes, treatment plants and distribution systems*
- [...]*
- (c) The Regional Council and Territorial Authorities[^] must, in relation to the establishment, operation*, maintenance*, or upgrading* of infrastructure[^] and other physical resources of regional or national importance, listed in (a) and (b), have regard to the benefits derived from those activities.*
- (d) The Regional Council and Territorial Authorities[^] must achieve as much consistency across local authority[^] boundaries as is reasonably possible with respect to policy and plan provisions and decision-making for existing and future infrastructure[^].*

Policy 3-3: Adverse effects[^] of infrastructure[^] and other physical resources of regional or national importance on the environment

In managing any adverse environmental effects[^] arising from the establishment, operation, maintenance* and upgrading* of infrastructure[^] or other physical resources of regional or national importance, the Regional Council and Territorial Authorities[^] must:*

- (a) recognise and provide for the operation*, maintenance* and upgrading* of all such activities once they have been established,*
- (b) allow minor adverse effects[^] arising from the establishment of new infrastructure[^] and physical resources of regional or national importance, and*
- (c) avoid, remedy or mitigate more than minor adverse effects[^] arising from the establishment of new infrastructure[^] and other physical resources of regional or national importance, taking into account:*
 - (i) the need for the infrastructure[^] or other physical resources of regional or national importance,*
 - (ii) any functional, operational or technical constraints that require infrastructure[^] or other physical resources of regional or national importance to be located or designed in the manner proposed,*
 - (iii) whether there are any reasonably practicable alternative locations or designs, and*
 - (iv) whether any more than minor adverse effects[^] that cannot be adequately avoided, remedied or mitigated by services or works can be appropriately offset, including through the use of financial contributions.*

Comment:

The Rātana WWTP is regionally important infrastructure, as it provides for the community in disposing of its wastewater, in accordance with Policy 3-1(a). Objective 3-1 and Policy 3-1 directs that the benefits of the establishment and operation of the physical resource must be regarded.

Policy 3-3(b) specifically directs that minor adverse effects be allowed for during the establishment of regionally significant infrastructure. Minor effects can arise during earthworks, but it is considered that these can be managed through the imposition of appropriate conditions and having a certified ESCP in place for these works. Earthworks and effectively diversion of water from some of the seasonally present natural wetlands is proposed. In order for the storage pond to be built and to maximise irrigable ground, it is proposed to offset the same area of wetlands within the subject site.

The following is an assessment against Policy 3-3(c). RDC has obligations to provide ongoing wastewater treatment for Ratana, there is a clear need for the infrastructure associated with the project. The land was purchased by RDC for the sole purpose of wastewater treatment (land disposal) so there is a clear functional need. Operational constraints are in the form of wanting to maximise irrigable area and optimal location of the storage pond. Other considerations included location of transfer pipeline, levels for pumping and location for maintenance. Options were considered for other irrigation sites, but realistically no feasible alternative locations were present at this time. A key effect is on the wetlands that meet the definition of a natural wetland (but not a Schedule F wetland under the One Plan). The current value of these wetlands is considered to be low and for the majority of the wetlands the value associated with them is hydrology. The proposal includes the creation of an offset wetland area, equating in size to the wetlands that will be lost, this is considered to be consistent with Policy 3-3(c)(iii). It is considered that the effects on Wetland 14, which does hold high ecological values will be suitably mitigated, with the irrigation controls and restoration planting it is predicted that a net gain of biodiversity will be achieved.

The central dunelands are assigned Schedule F value due to their physical shape. Controls are proposed to avoid effects on the physical shape of these dunes. Irrigation is likely to create beneficial conditions for understory growth which in the longer term has the opportunity to create positive effects. The southern duneland is expected to see positive effects from removal of stock from the site and irrigation. Weed control and irrigation management are proposed and the residual effect is considered to be less than minor to a net gain.

It is considered that the proposal is consistent with Objective 3-1 and relevant supporting policies.

9.5.3 Chapter 5 – Water

Chapter 5 outlines the objectives and policies for freshwater management in the region, including water quality.

The following objectives and policies are considered of relevance to this application.

Relevant objectives and policies

Issue 5-1: Water Quality

The quality of many rivers and lakes in the Region has declined to the point that ecological values are compromised and contact recreation such as swimming is considered unsafe. The principal causes of this degradation are:

- (a) *nutrient enrichment caused by run-off and leaching from agricultural land, discharges of treated wastewater, and septic tanks*
- (b) *high turbidity and sediment loads caused by land erosion, river channel erosion, run-off from agricultural land and discharges of stormwater*
- (c) *pathogens from agricultural run-off, urban run-off, discharges of sewage, direct stock access to water bodies and their beds and discharges of agricultural and industrial waste*.*

Shallow groundwater in areas of intensive land use in the Horowhenua and Tararua Districts has elevated nitrate levels in excess of the New Zealand drinking water standard. However, the quality of groundwater in the Region is generally suitable for stock needs and irrigation, and there has been no evidence of deteriorating groundwater quality during the past 15 years.

Objective 5-2: Water quality

- (a) *Groundwater quality is managed to ensure that existing groundwater quality is maintained or where it is degraded/over allocated as a result of human activity, groundwater quality is enhanced.*

Policy 5-6: Maintenance of groundwater quality

- (a) *Discharges and land use activities must be managed in a manner which maintains the existing groundwater quality, or where groundwater quality is degraded/over allocated as a result of human activity, it is enhanced.*
- (b) *An exception may be made under (a) where a discharge onto or into land better meets the purpose of the RMA than a discharge to water, provided that the best practicable option is adopted for the treatment and discharge system.*
- (c) *Groundwater takes in the vicinity of the coast must be managed in a manner which avoids saltwater intrusion.*

Policy 5-10: Point source discharges to land

Discharges of contaminants onto or into land must be managed in a manner which:

- (a) does not result in pathogens or other toxic substances accumulating in soil or pasture to levels that would render the soil unsafe for agricultural, domestic or recreational use*
- (b) has regard to the strategies for surface water quality management set out in Policies 5-3, 5-4 and 5-5, and the strategy for groundwater management set out in Policy 5-6*
- (c) maximises the reuse of nutrients and water contained in the discharge to the extent reasonably practicable*
- (d) results in any discharge of liquid to land generally not exceeding the available water storage capacity of the soil (deferred irrigation)*
- (e) ensures that adverse effects on rare habitats*, threatened habitats* and at-risk habitats* are avoided, remedied or mitigated.*

Comment:

In relation to managing water quality, the irrigation system proposed includes storage which means that the system will be able to be managed to avoid drainage events – drainage events of nutrient enriched wastewater have the potential to impact water quality. By minimising potential drainage events, the risk of nutrient movement is reduced. The potential effect on water quality has been assessed as being low.

Policy 5-6(a) requires that discharges must be managed in a manner that maintains existing groundwater quality. Based on the baseline monitoring, the groundwater report has assessed that there may be changes in groundwater quality over time as a result of the proposed discharge. Policy 5-6(b) is considered relevant to this proposal, it is submitted that it better meets the purpose of the RMA to have the discharge to land where minor changes to groundwater may occur. The proposed system incorporates storage and is primarily based around deficit irrigation, with some times of the year where deficit irrigation would not be achieved all the time. As discussed in the consideration of alternatives, this was to achieve a balance against environmental effects and cost to the community. The potential effects of non-deficit irrigation during actively growing periods is assessed as being low. Nitrogen inputs, even at future flows with potential population growth, are considered modest and removal of stock from the irrigation area reduces potential inputs as well. Monitoring is proposed with the intention that early detection of changes to water quality beyond what was anticipated can be identified early and if necessary additional treatment at the WWTP could be considered. It is considered that the proposal is consistent with Policy 5-6.

In relation to Policy 5-10, while wastewater can contain pathogens it is unlikely to render the soil unsafe; the township of Ratana does not contain any industrial areas and toxic heavy metals, or similar, are not anticipated in the wastewater. Further information regarding modelled pathogen die off (Appendix M), the groundwater was expected to have reached swimming water standard (for bacteria) within 15m of the boundary of the site and drinking water standard within 70m. These were considered to be conservative calculations for the reasons outlined in the assessment. The proposal being based around deficit irrigation will maximise the potential uptake of nutrients by plants and this in turn contributes to minimising potential water quality effects of both groundwater and surface water. The ecological assessment identified dunelands that are rare habitats, the EIA notes that irrigation and the proposed management and mitigation are likely to result in net gains for these areas. For Wetland 14, which meets the definition of a rare habitat, it is considered that adverse effects will be avoided through the proposed irrigation management, removal of stock from the area and weed control. The creation of buffer planting around the wetland will mitigate potential adverse effects. It is considered that the proposal is consistent with Policy 5-10.

9.5.4 Chapter 6 - Indigenous biological diversity, landscape and historic heritage

Chapter 6 covers biodiversity, landscape and historic heritage matters. The following objectives and policies are considered of relevance to this application.

Relevant objectives and policies

Issue 6-1: Indigenous biological diversity

Indigenous biological diversity is not being maintained in the Region. As a result of historical land development practices, only a small proportion of the original extent of indigenous habitats remains. The diversity within remaining areas is declining owing to their isolation or as a consequence of a range of activities, most notably:

- (a) pest plants and pest animals*
- (b) stock access*
- (c) land drainage, which impacts upon wetlands*
- (d) perched culverts and other barriers to fish migration*
- (e) run-off and discharges causing poor water quality*
- (f) vegetation clearance*.*

Objective 6-1 Indigenous biological diversity

Protect areas of significant indigenous vegetation and significant habitats of indigenous fauna and maintain indigenous biological diversity[^], including enhancement where appropriate.

Policy 6-2 Regulation of activities affecting indigenous biological diversity

For the purpose of managing indigenous biological diversity[^] in the Region:

- (a) Habitats determined to be rare habitats* and threatened habitats* under Schedule F must be recognised as areas of significant indigenous vegetation or significant habitats of indigenous fauna.*
- (c) The Regional Council must protect rare habitats*, threatened habitats* and at-risk habitats* identified in (a) and (b), and maintain and enhance other at-risk habitats* by regulating activities through its regional plan and through decisions on resource consents[^].*
- (e) When regulating the activities described in (c) and (d), the Regional Council must, and when exercising functions and powers described in Policy 6-1, Territorial Authorities[^] must:*
 - (i) allow activities undertaken for the purpose of pest plant and pest animal control or habitat maintenance or enhancement,*
 - (ii) consider indigenous biological diversity[^] offsets in appropriate circumstances as defined in Policy 13-4,*

(iii) allow the maintenance, operation* and upgrade* of existing structures^, including infrastructure^ and other physical resources of regional or national importance as identified in Policy 3-1, and*

(iv) not unreasonably restrict the existing use of production land^ where the effects of such land^ use on rare habitat, threatened habitat* or at-risk habitat* remain the same or similar in character, intensity and scale.*

Comment:

In accordance with Policy 6-2 the dunelands on the irrigation site have been identified as a rare habitat. This assessment does not relate to the existing vegetation present on the dune but is more a characteristic of the shape of the dunes. In accordance with Policy 6-1 Rules in Chapter 13 give specific effect to this policy and as such the proposal to discharge to the dune area requires consent as a non-complying activity.

The EiA attached as **Appendix E** identifies various risks associated with the potential irrigation to the dune area. This risk is primarily around retaining the shape of the dunes and avoiding slumping. The EiA notes that irrigation will be beneficial due to increased nutrients and permanence of water availability throughout the year. Maintaining vegetation on these areas is recommended to ensure the integrity of the dunes.

Wetland 14 on the site meets the definition of a rare habitat under Schedule F. Specific irrigation management (deficit only) and enrichment planting within Wetland 14 and surrounding it is proposed.

In addition to the policies in the table above, it is noted that Policies 6-8 and 6-9 relate to natural character and management of natural character of wetlands and other natural features. Restoration and monitoring of this wetland is proposed, and this is consistent with Policy 6-8(b). Due consideration has been given to Policy 6-9 and in particular 6-9(f) and (g) in that the proposed discharge has been designed so that the natural processes of the wetlands will not be significantly disrupted (as deficit irrigation only in the southern biodiversity enhancement area) and restoration of this wetland forms a part of the proposal. A condition is proposed whereby the response to irrigation will be monitored.

The presence of other natural wetlands on the site is acknowledged, however in accordance with the EiA these have been assessed as not meeting the definition of rare, threatened or at-risk habitats under the One Plan. Regardless, the effect of the proposal on these natural wetlands has been assessed above and with the proposed offset and mitigation it is considered that there will be an overall net gain in biodiversity achieved within the site.

The proposal is considered to be consistent with the relevant objectives and supporting policies within Chapter 6.

9.6 Horizons One Plan 2014 – Regional Plan

9.6.1 Chapter 12 – General Objectives and Policies

This chapter describes the Regional Council's overarching objectives and policies for regulating activities. An assessment against consent duration is provided below.

Relevant objectives and policies

Objective 12-1 Resource Management in the Region

(a) The regulation of activities in a manner which maximises certainty and avoids unnecessary costs on resource users and other parties.

(b) The regulation of activities in a manner which gives effect to the provisions of Part I of this Plan, the Regional Policy Statement.

Objective 12-2 Consent duration, review and enforcement

- (a) The provisions of the RMA dealing with the duration of resource consents, review of consent conditions, and enforcement procedures must be implemented in a manner that provides the maximum reasonable certainty to resource users, affected parties and submitters.*
- (b) The Regional Council will provide user-friendly consents of appropriate duration and will carefully monitor and manage compliance.*

Policy 12-5 Consent durations

- (a) Other than as provided for under (b), the Regional Council will generally grant resource consents for the term sought by the applicant unless reasons are identified during the consent process that make this inappropriate.*
- (b) Resource consent durations for applications required under ss13, 14 and 15 of the RMA will generally be set to the next common catchment expiry date listed in Table 12.1. The dates listed in Table 12.1 show the initial expiry or review dates for consents within the catchment. Future dates for expiry or review of consents within that catchment must occur again every 10 years thereafter. Consents granted within three years prior to the relevant common catchment expiry date may be granted with a duration to align with the second common expiry date (that is the number of years up to the next expiry date plus 10 years). Dates may also be extended in 10-year increments where a term longer than 10 years can be granted after considering the following criteria:*
- (i) the extent to which an activity is carried out in accordance with a recognised code of practice, environmental standard or good practice guideline;*
 - (ii) the most appropriate balance between environmental protection and investment by the applicant;*
 - (iii) the provision of s128 review opportunities to enable matters of contention to be periodically reviewed in light of monitoring and compliance information; and*
 - (iv) whether the activity is infrastructure; water, sewage or stormwater treatment plants and facilities; or publicly accessible solid waste* facilities including landfills*, transfer stations and resource recovery facilities.*

For a consent which is granted for a duration longer than 10 years, review of the consent must occur, as a minimum, on the review date in Table 12.1 and every 10 years thereafter until consent expiry. Extra review dates may be set in accordance with Policy 12-6.

- (c) Matters to be considered in determining a shorter consent duration than that requested under (a):*
- (i) whether it is necessary for an activity to cease at a specified time;*
 - (ii) whether the activity has effects that are unpredictable and potentially serious for the locality where it is undertaken and a precautionary approach is needed;*
 - (iii) the risks of long-term allocation of a resource whose availability changes over time in an unpredictable manner, requiring a precautionary approach; and*
 - (iv) in the case of existing activities, whether the consent holder has a good or poor compliance history in relation to environmental effects for the same activity.*

Comment:

The irrigation site is in the Whangaehu Catchment. According to Table 12.1 the common catchment expiry date for the Lower Whangaehu is 2009. A term of some 27 years is sought by RDC, with an expiry date of 1 July 2049.

Policy 12-5(a) states that generally the term sought by the applicant will be granted, unless it is deemed inappropriate.

In consideration of Policy 12-5(b) a term longer than 10 years is considered appropriate for the following reasons –

- The proposal has been developed taking into account policy guidance and relevant good practice, such as the use of the proposed management plans and monitoring
- The proposal represents a significant investment, relative to the size of the community, and has been designed to balance the available funding against environmental outcomes. The environmental effects are predicted to be less than minor.
- Reviews are proposed at years 5, 10 and 20.
- The activity is associated with sewage treatment plan and facilities

The above supports a duration longer than 10 years.

In consideration of Policy 12-5(c) –

- The activity is for wastewater treatment plant irrigation, it would not be required to cease after a specified time
- The effects are relatively well known, where the response of the dunelands and wetlands to ongoing irrigation is less defined, monitoring is proposed which can contribute to making recommendations to altering irrigation management (proposed condition) which is considered precautionary and appropriate
- Policy 12-5(c)(iii) and (iv) are not considered relevant as allocation issues are not relevant and the activity of irrigation to land is a new activity.

In consideration of the above policies the proposed term of some 27 years is considered appropriate.

9.6.2 Chapter 13 – Land Use Activities and Indigenous Biological Diversity

This chapter ensure vegetation clearance, land disturbance, forestry and cultivation is regulated to ensure accelerated, and increased sedimentation in waterbodies is avoided as far as reasonably practicable or otherwise mitigated.

Land Disturbance Activities

Relevant objectives and policies

Objective 13-1 Accelerated erosion* - regulation of vegetation clearance*, land disturbance*, forestry* and cultivation*

The regulation of vegetation clearance, land disturbance*, forestry* and cultivation* in a manner that ensures:*

- (a) *accelerated erosion* and any associated damage to people, buildings and infrastructure^ and other physical resources of regional or national importance are avoided as far as reasonably practicable or otherwise remedied or mitigated, and*
- (b) *increased sedimentation in water bodies^ as a result of human activity is avoided as far as reasonably practicable, or otherwise mitigated.*

The regulation of resource use activities to protect areas of significant indigenous vegetation and significant habitats of indigenous fauna or to maintain indigenous biological diversity, including enhancement where appropriate.

Policy 13-1: Regional rules[^] for vegetation clearance*, land disturbance*, forestry* and cultivation*

The Regional Council must:

- (a) regulate vegetation clearance*, land disturbance*, forestry* and cultivation* through regional rules[^] in accordance with Objectives 12-1, 12-2 and 13-1 and Policies 12-1 to 12-8, and*
- (b) manage the effects[^] of vegetation clearance*, land disturbance* and cultivation* by requiring resource consents[^] for those activities:*
 - (i) adjacent to some water bodies[^],*
 - (ii) involving the removal of some woody vegetation* in Hill Country Erosion Management Areas*,*
 - (iii) involving land disturbance* or cultivation* in Hill Country Erosion Management Areas*,*
 - (iv) involving large-scale land disturbance*, or*
 - (v) within the coastal foredune**

Policy 13-2: Consent decision-making for vegetation clearance*, land disturbance*, forestry* and cultivation*

For vegetation clearance, land disturbance*, forestry* or cultivation* and ancillary discharges to and diversions of surface water[^] that requires resource consent[^] under Rule 13-2, Rule 13-6 or Rule 13-7, the Regional Council must make decisions on consent applications and set consent conditions[^] on a case-by-case basis, having regard to:*

- (a) the Regional Policy Statement, particularly Objective 4-2 and Policies 4-2 and 4-3,*
- (b) managing the effects[^] of land disturbance*, including large-scale earthworks, by requiring Erosion and Sediment Control Plans* or other appropriate plans to be prepared,*
- (c) managing the effects[^] of forestry* by requiring sustainable forestry* management practices to be adopted and Erosion and Sediment Control Plans* or other appropriate plans to be prepared,*
- (d) managing the effects[^] of cultivation* on water bodies[^] through the use of sediment run-off control methods and setbacks from water bodies[^],*
- (e) the appropriateness of establishing infrastructure[^] and other physical resources of regional or national importance as identified in Policy 3-1,*
- (f) generally allowing the clearance of woody vegetation* on established pasture if that clearance will not lead to accelerated erosion* or the increased sedimentation of water bodies[^],*
- (g) generally allowing activities that are for the purpose of managing natural hazards[^], including the reduction of flood risk*
- (h) generally allowing forestry* for soil conservation purposes,*
- (i) generally allowing activities that result in improved land[^] stability or enhanced surface water[^] quality,*
- (j) any relevant codes of practice, standards, guidelines, or environmental management plans and accepting compliance with them to the extent that they can be used as conditions[^] on resource consents[^],*
- (k) sediment and erosion control measures required to reasonably minimise adverse effects[^], including those caused by rainfall and storm events,*

- (l) *achieving integrated management through consents that are Region-wide or cover large areas for activities that are widespread and undertaken by or on behalf of a single consent holder including, but not limited to, infrastructure[^] and other physical resources of regional or national importance, or forestry*, provided any such consents are subject to conditions[^], including review provisions, enabling site*- specific matters to be addressed as necessary, and*
- (m) *for activities involving an ancillary discharge[^] to surface water[^], the matters in Policy 14-9.*

Comment:

The proposal comprises of the construction of a storage pond at the irrigation site, which will hold treated wastewater during winter and early spring months.

The proposal also involves the installation of a pipeline to convey treated wastewater from the Ratana WWTP to the irrigation site. The pipeline route and installation methodology is yet to be confirmed, however will involve associated land disturbance. The final construction methodology would determine whether or not land disturbance consent would be required on the relevant properties where the pipeline is proposed. RDC is currently actively working with the relevant landowners. If required land use consent would be sought for the relevant properties.

A site-specific Erosion and Sediment Control Plan (ESCP) will be submitted to the Regional Council for their approval prior to the construction of the storage pond, and installation of the pipeline within the irrigation site. This plan will set out appropriate site-specific control devices (such as silt fencing) and operational management procedures to mitigate any adverse effects that may arise from the works in terms of the discharge of sediments and contaminants off site.

The ESCP will set out earthworks volumes, works timing, site plans and the construction methodology. It will be the responsibility of the contractor to ensure that all ESC measures and monitored and maintained during the works.

With the implementation an approved ESCP, any adverse that may arise from erosion and sedimentation during the works will be less than minor. The proposed works are considered to be consistent with the above objective and policies of Chapter 13.

Indigenous Biological Diversity

Relevant objectives and policies

Objective 13-2 Regulation of activities affecting indigenous biological diversity

The regulation of resource use activities to protect areas of significant indigenous vegetation and significant habitats of indigenous fauna or to maintain indigenous biological diversity, including enhancement where appropriate.

Policy 13-3: Regional rules[^] for activities affecting indigenous biological diversity

The Regional Council must require resource consents[^] to be obtained for vegetation clearance, land disturbance*, cultivation*, bores*, discharges[^] of contaminants[^] into or onto land[^] or water[^], taking, use, damming or diversion of water[^] and activities in the beds[^] of rivers[^] or lakes[^] within rare habitats*, threatened habitats* and at-risk habitats*, and for forestry* that does not minimise potential adverse effects[^] on those habitats, through regional rules[^] in accordance with Objectives 12-1, 12-2 and 13-2 and Policies 12-1 to 12-8.*

Policy 13-4: Consent decision-making for activities in rare habitats*, threatened habitats* and at-risk habitats*

- (a) For activities regulated under Rule 13-8 and 13-9, the Regional Council must make decisions on consent applications and set consent conditions[^] on a case-by-case basis:
- (i) For all activities, having regard to:
 - (A) the Regional Policy Statement, particularly Objective 6-1 and Policy 6-2
 - (B) a rare habitat* or threatened habitat* is an area of significant indigenous vegetation or a significant habitat of indigenous fauna
 - (C) the significance of the area of habitat, in terms of its representativeness, rarity and distinctiveness, and ecological context, as assessed under Policy 13-5
 - (D) the potential adverse effects[^] of the proposed activity on significance
 - (E) for activities regulated under ss13, 14 and 15 RMA, the matters set out in Policy 13-2(k) and relevant objectives and policies in Chapters 5, 14, 16 and 17, and
 - (F) for activities involving a discharge[^], the matters in Policy 14-9
 - (ii) For electricity transmission and renewable energy generation activities, providing for any national, regional or local benefits arising from the proposed activity.
- (b) Consent must generally not be granted for resource use activities in a rare habitat*, threatened habitat* or at-risk habitat* assessed to be an area of significant indigenous vegetation or a significant habitat of indigenous fauna under Policy 13-5, unless:
- (i) any more than minor adverse effects[^] on that habitat's representativeness, rarity and distinctiveness, or ecological context assessed under Policy 13-5 are avoided.
 - (ii) where any more than minor adverse effects[^] cannot reasonably be avoided, they are remedied or mitigated at the point where the adverse effect[^] occurs.
 - (iii) where any more than minor adverse effects[^] cannot reasonably be avoided, remedied or mitigated in accordance with (b)(i) and (ii), they are offset to result in a net indigenous biological diversity[^] gain.
- (c) Consent may be granted for resource use activities in an at-risk habitat* assessed not to be an area of significant indigenous vegetation or a significant habitat of indigenous fauna under Policy 13-5 when:
- (i) there will be no significant adverse effects[^] on that habitat's representativeness, rarity and distinctiveness, or ecological context as assessed in accordance with Policy 13-5, or
 - (ii) any significant adverse effects[^] are avoided.
 - (iii) where any significant adverse effects[^] cannot reasonably be avoided, they are remedied or mitigated at the point where the adverse effect occurs.
 - (iv) where significant adverse effects[^] cannot reasonably be avoided, remedied or mitigated in accordance with (c)(ii) and (iii), they are offset to result in a net indigenous biological diversity[^] gain.
- (d) An offset assessed in accordance with b(iii) or (c)(iv), must:
- (i) provide for a net indigenous biological diversity[^] gain within the same habitat type, or where that habitat is not an area of significant indigenous vegetation or a significant habitat of indigenous fauna, provide for that gain in a rare habitat* or threatened habitat* type, and
 - (ii) reasonably demonstrate that a net indigenous biological diversity[^] gain has been achieved using methodology that is appropriate and commensurate to the scale and intensity of the residual adverse effect[^], and
 - (iii) generally be in the same ecologically relevant locality as the affected habitat, and
 - (iv) not be allowed where inappropriate for the ecosystem or habitat type by reason of its rarity, vulnerability or irreplaceability, and

- (v) *have a significant likelihood of being achieved and maintained in the long term and preferably in perpetuity, and*
- (vi) *achieve conservation outcomes above and beyond that which would have been achieved if the offset had not taken place.*

Policy 13-5: Criteria for assessing the significance of, and the effects[^] of activities on, an area of habitat

(a) *Rare habitats* are areas of significant indigenous vegetation or significant habitats of indigenous fauna under criterion (ii)(E) below. Threatened habitats* are areas of significant indigenous vegetation or significant habitats of indigenous fauna under criterion (i)(A) below. An area of rare habitat* or threatened habitat* may also be an area of significant indigenous vegetation or significant habitat of indigenous fauna under one or more of the other criteria below. An at-risk habitat* may be recognised as being an area of significant indigenous vegetation or a significant habitat of indigenous fauna if one or more of the following criteria are met:*

(i) *in terms of representativeness, that habitat:*

- (A) *comprises indigenous habitat type that is under-represented (20% or less of known or likely former cover), or*
- (B) *is an area of indigenous vegetation that is typical of the habitat type in terms of species composition, structure and diversity, or that is large relative to other areas of the same habitat type in the Ecological District or Ecological Region, or has functioning ecosystem processes.*

or

(ii) *in terms of rarity and distinctiveness, that habitat supports an indigenous species or community that:*

- (A) *is classified as threatened (as determined by the New Zealand Threat Classification System and Lists*), or*
- (B) *is distinctive to the Region, or*
- (C) *is at a natural distributional limit, or*
- (D) *has a naturally disjunct distribution that defines a floristic gap, or*
- (E) *was originally (ie., prehuman) uncommon within New Zealand, and supports an indigenous species or community of indigenous species.*

or

(iii) *in terms of ecological context, that habitat provides:*

- (A) *connectivity (physical or process connections) between two or more areas of indigenous habitat, or*
- (B) *an ecological buffer (provides protection) to an adjacent area of indigenous habitat (terrestrial or aquatic) that is ecologically significant, or*
- (C) *part of an indigenous ecological sequence or connectivity between different habitat types across a gradient (eg., altitudinal or hydrological), or*
- (D) *important breeding areas, seasonal food sources, or an important component of a migration path for indigenous species, or*
- (E) *habitat for indigenous species that are dependent on large and contiguous habitats.*

(b) *The potential adverse effects[^] of an activity on a rare habitat*, threatened habitat* or at-risk habitat* must be determined by the degree to which the proposed activity will diminish any of the above characteristics of the habitat that make it significant, while also having regard to any additional ecological values and to the ecological sustainability of that habitat.*

Comment:

Objective 13-2 relates to the regulation of resource use activities to protect areas of significant indigenous vegetation and habitat. Pursuant to Policy 13-3 this proposal includes application under Rule 13-9 for activities on a rare habitat – specifically the discharge of contaminants to the dune areas and duneslack wetlands identified on the subject site.

Policy 13-4(a) requires that the Regional Council make decisions on a case-by-case basis. In respect of the matters to have regard to –

- The RPS objectives have been assessed in section 10.5.4
- Both the dunelands and Wetland 14 is defined as rare habitats and are therefore considered to be an area of significant habitat
- The significance of the areas is discussed in the attached EiA, this concluded that ~~while~~ the central dunes are highly modified in nature, but as it is currently planted in pines, the overall value is low. The southern duneland and Wetland 14 have high value
- In terms of effects on significance, the EiA concludes the magnitude of effects is assessed as being low to net gain. This takes into account the proposed irrigation management and restoration of the various areas to be achieved through weed control and enhancement planting
- The relevant objectives and policies of Chapters 5 have been assessed in section 9.5.3 above and Chapter 14 below. The matters in policy 14-9 are addressed in section 10.6.3 below.

It is submitted that the proposal does not generate more than minor adverse effects taking into account the proposed mitigation and offset. The potential effects of slumping of the dunes will be avoided through careful management and monitoring of the irrigation system with changes to management made if required. This is captured in the proposed conditions.

In respect of Policy 13-5(b), the EiA prepared and submitted with this application confirms that the dunes are considered a rare habitat. It is considered that the proposal, including mitigation, will not diminish any of the characteristics on the habitat (including those listed in 13-5(a)).

The proposed irrigation management, with the focus on deficit irrigation in the area around Wetland 14, is unlikely to have a more than minor effect on the current value of the wetland. Restoration planting is proposed, which will result in increased biodiversity values being restored. To take into account the proposed irrigation plants that are more tolerant of some nutrient enrichment have been selected as part of the proposed restoration plan. Ongoing monitoring of the overall system is proposed and adjustments can be made to irrigation management if required.

9.6.3 Chapter 14 – Discharges to land and water

This chapter describes the Regional Council’s overarching objectives and policies for managing discharges to land and water, and land uses affecting groundwater and surface water quality. An assessment against the relevant objectives and policies has been provided for below.

Relevant objectives and policies

Objective 14-1: Management of discharges[^] to land[^] and water[^] and land[^] uses affecting groundwater and surface water quality

The management of discharges[^] onto or into land[^] (including those that enter water[^]) or directly into water[^] and land[^] use activities affecting groundwater and surface water[^] quality in a manner that:

- (a) safeguards the life supporting capacity of water and recognises and provides for the Values and management objectives in Schedule B,
- (b) provides for the objectives and policies of Chapter 5 as they relate to surface water[^] and groundwater quality, and
- (c) where a discharge[^] is onto or into land[^], avoids, remedies or mitigates adverse effects[^] on surface water[^] or groundwater.

Policy 14-2: Consent decision-making for discharges[^] to land[^]

When making decisions on resource consent[^] applications, and setting consent conditions[^], for discharges[^] of contaminants[^] onto or into land[^] the Regional Council must have regard to:

- (a) the objectives and policies of Chapter 5 regarding the management of groundwater quality and discharges[^]
- (b) where the discharge[^] may enter surface water[^] or have an adverse effect[^] on surface water[^] quality, the degree of compliance with the approach for managing surface water[^] quality set out in Chapter 5,
- (c) avoiding as far as reasonably practicable any adverse effects[^] on any sensitive receiving environment[^] or potentially incompatible land[^] uses, in particular any residential buildings, educational facilities, churches, marae, public areas, infrastructure[^] and other physical resources of regional or national importance identified in Policy 3-1, wetlands[^], surface water bodies[^] and the coastal marine area[^],
- (d) the appropriateness of adopting the best practicable option[^] to prevent or minimise adverse effects[^] in circumstances where:
 - (i) it is difficult to establish discharge[^] parameters for a particular discharge[^] that give effect to the management approaches for water[^] quality and discharges[^] set out in Chapter 5,
 - (ii) the potential adverse effects[^] are likely to be minor, and the costs associated with adopting the best practicable option[^] are small in comparison to the costs of investigating the likely effects[^] on land[^] and water[^],
- (e) avoiding discharges[^] which contain any persistent contaminants[^] that are likely to accumulate in the soil or groundwater, and
- (f) the objectives and policies of Chapters 2, 3, 6, 9 and 12 to the extent that they are relevant to the discharge[^].

Policy 14-4: Options for discharges[^] to surface water[^] and land[^]

When applying for consents and making decisions on consent applications for discharges[^] of contaminants[^] into water[^] or onto or into land[^], the opportunity to utilise alternative discharge[^] options, or a mix of discharge[^] regimes, for the purpose of mitigating adverse effects[^], applying the best practicable option, must be considered, including but not limited to:

- (a) discharging contaminants[^] onto or into land[^] as an alternative to discharging contaminants[^] into water[^],
- (b) withholding from discharging contaminants[^] into surface water[^] at times of low flow, and

- (c) *adopting different treatment and discharge options for different receiving environments or at different times (including different flow regimes or levels in surface water bodies).*

Policy 14-9: Consent decision making requirements from the National Policy Statement for Freshwater Management

- (a) *This policy applies to any application for the following discharges (including a diffuse discharge by any person or animal):*

- (i) *a new discharge; or*
- (ii) *a change or increase in any discharge –*

of any contaminant into fresh water, or onto or into land in circumstances that may result in that contaminant (or, as a result of any natural process from the discharge of that contaminant, any other contaminant) entering fresh water.

- (b) *When considering any application for a discharge the Regional Council must have regard to the following matters:*

- (i) *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 fresh water; and*
- (ii) *the extent to which it is feasible and dependable that any more than minor adverse effect on fresh water, and on any ecosystem associated with fresh water, resulting from the discharge would be avoided.*

This clause of the policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2011 took effect on 1 July 2011.

- (c) *When considering any application for a discharge the Regional Council must have regard to the following matters:*

- (i) *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*
- (ii) *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.*

This clause of the policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2014 took effect on 4 July 2014.

Comment:

Objective 14-1 specifies that manner in which discharges to land should be managed. Policy 14-2 relates to discharges to land. An assessment against the relevant objectives and policies of Chapter 5 has been undertaken. The groundwater assessment concludes that the likelihood of the discharge reaching surface waters (the two rivers) is low and therefore the potential for the discharge to have an adverse effect on surface water is low. The location of the discharge site is relatively removed

from sensitive receiving environments, the sensitive receiving environments on or adjacent to the site (wetlands and rivers) have been assessed and it is submitted that adverse effects are avoided.

At the time of preparing this application, it is considered that the proposal represents the best practicable option. Upgrades at the WWTP for further nutrient removal were considered, but from a potential effects on groundwater point of view considered unnecessary given the low effects predicted. In respect of the WWTP itself and uncertainty around the permeability of the ponds, monitoring bores were installed to gather more information, the cost of lining the ponds was estimated as being around \$500,000. Ongoing monitoring is proposed, and relining could be considered in the future if funding became available.

As the township of Ratana does not have any industrial activity and consists of domestic effluent and residual water from the water treatment plant only, it is unlikely to contain any persistent contaminants likely to accumulate in the soil or groundwater.

The objectives and policies of the specified chapters have been assessed in the application. It is considered that the proposal is consistent with Policy 14-2.

The proposal supports Policy 14-4(a) as it is for a discharge to land and not water. The different irrigation management zones is in keeping with Policy 14-4(c) as it recognises the different sensitivities for each of the zones.

In addressing Policy 14-9, this applies as the discharge is a new discharge. The potential effects on groundwater, surface water and wetlands on the site have been considered. In all cases effects are considered to be less than minor, as such it is considered that there would be minimal impact on the life-supporting capacity of fresh water. The conceptual groundwater model indicates that over time groundwater moves towards the coast, as the wastewater is treated and that any pathogens would further die off during movement through groundwater it is unlikely there would be an adverse effect on human health once groundwater had reached the coast.

The proposal is considered to be consistent with the relevant objectives and policies in Chapter 14.

9.7 Matters relevant to certain applications

9.7.1 Section 105

Section 105(1) RMA sets out the matters that a consent authority must have regard to when considering a resource consent application for a discharge permit. In particular, consideration needs to be given to:

- (1) *If an application is for a discharge permit or coastal permit to do something that would contravene section 15 or section 15B, the consent authority must, in addition to the matters in section 104(1), have regard to—*
 - (a) *the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and*
 - (b) *the applicant's reasons for the proposed choice; and*
 - (c) *any possible alternative methods of discharge, including discharge into any other receiving environment.*

For this application the receiving environment is primarily groundwater and the Schedule F dunelands and duneslack wetlands. As noted in the groundwater assessment, there is potential for some changes in nutrient levels in the groundwater system, however these are considered to be low. There are no drinking water supplies in the vicinity of the proposed discharge. The sensitivity of the dunelands has been taken into account with the irrigation design, and monitoring of the shape

of the dune is proposed with the ability to incorporate recommendations for irrigation management through the proposed conditions. A key recommendation for the dunes is to maintain vegetation cover and it is considered that the irrigation will assist with this.

The key reason for the choice was to remove the discharge from surface water and securing land with a willing seller which was able to be subdivided.

Various alternatives have been considered and discussed in section 6.

9.7.2 Section 107

Under Section 107 of the RMA, the consent authority must not grant a discharge permit allowing the discharge of a contaminant into water, or a discharge of a contaminant into land in circumstances that may result in that contaminant entering water, if, after reasonable mixing, the contaminant discharged is likely to give rise to all or any of the following effects in the receiving waters:

The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;

- Any conspicuous change in the colour or visual clarity
- Any emission of objectionable odour
- The rendering of fresh water unsuitable for consumption by farm animals
- Any significant adverse effects on aquatic life.

None of the above effects will occur in the groundwater or a downgradient surface water body. Ongoing monitoring is proposed as well as management plans.

9.8 Relevant Other Matters

9.8.1 Ngāti Apa (North Island) Claims Act 2021

The site is within the rohe of Ngāti Apa who also have a statutory acknowledgment over the Whangaehu River in accordance with section 27 of the Ngāti Apa (North Island) Claims Settlement Act 2010.

RDC have been working in collaboration with Ngā Wairiki Ngāti Apa with the Freshwater Improvement Fund application as well as the preparation of this application. Chris Shenton and Pahia Turia have spoken on behalf of Ngā Wairiki Ngāti Apa giving their support for the works.

9.8.2 Te Waiū-o-Te-Ika

Persons exercising or performing statutory functions, powers, or duties that relate to the Whangaehu River, or to activities in the Te Waiū-o-Te-Ika catchment that affect the Whangaehu River, may consider Te Mana Tupua and Ngā Toka Tupua as a relevant consideration.

While the works are within the Whangaehu River catchment, the works are not considered to have a direct effect on the Whangaehu River. Groundwater monitoring has concluded that groundwater flows towards the coast, and therefore will not have an impact on the Whangaehu River.

9.9 Determination of Applications

9.9.1 Section 104/B/D

Section 104B of the RMA relates to the determination of applications for discretionary or non-complying activities and directs that Council may grant or refuse the application and may impose conditions under Section 108 of the RMA.

Section 104D of the RMA sets out particular restrictions for non-complying activities and provides that a consent authority may only grant a resource consent for a non-complying activity if it is satisfied that either of the tests provided for in sections 104D(1)(a) or (b) is met.

Section 104D(1)(a) and (b) have been described by the Environment Court as “gateways”. If neither gateway is satisfied, the application fails. If the application satisfies either gateway, then the application is considered under Section 104 of the RMA. The gateways of Section 104D(1)(a) and (b) are disjunctive, meaning that in order to satisfy section 104D it is necessary to satisfy only one of these gateways, not both.

With respect to Section 104D(1)(a), the adverse effects of the activity on the environment are considered to be minor. With respect to Section 104D(1)(b), the relevant objectives and policies have been assessed.

It should be noted that the case law regarding whether a proposal is “not contrary to” objectives and policies means that a proposal is not “repugnant to” or opposed to the relevant objectives and policies. It is also important to note that those objectives and policies in plans need to be read collectively rather than individually. In other words, the objectives and policies are not a series of hurdles each of which must be cleared.

The regional plan statutory assessment shows that overall the proposal is generally consistent with the objectives and policies. Given that the proposal is for the discharge of treated wastewater to land, rather than surface water, there is considerable support found within the objectives and policies.

The proposal is considered to meet both tests provided for in Sections 104D(1).

9.9.2 Section 104G

Under Section 104G of the RMA when considering an application for a resource consent, the consent authority must have regard to

- the actual or potential effect of the proposed activity on the source of a drinking water supply that is registered under section 55 of the Water Services Act 2021; and
- any risks that the proposed activity may pose to the source of a drinking water supply that are identified in a source water risk management plan prepared in accordance with the requirements of the Water Services Act 2021.

As noted in section 9.2.1 of this report, there are no drinking water supplies in the vicinity of the proposed irrigation site.

9.10 RMA Part 2

The overriding purpose of the RMA is “to promote the sustainable management of natural and physical resources” (Section 5). The broader principles (Sections 6 to 8) are to inform the achieving of that purpose.

When considering an application for a resource consent and any submissions received, the consent authority, must subject to Part 2, have regard to those matters listed under Section 104 of the RMA.

With regards to the application of the subject to Part 2¹ under Section 104, case law findings have directed that decision makers / Commissioners may now only have recourse to Part 2 of the RMA if it is determined that one of three exceptions apply:

- 1 If any part or the whole of the relevant plan(s) are invalid
- 2 If the relevant plan(s) did not provide complete coverage of the Part 2 matters

3 If there is uncertainty of the meaning of provisions as they affect Part 2

In essence what this means is that decisions makers only need to 'go back to' Part 2 of the Act if the relevant planning documents have not fully addressed the Part 2 matters. If a Regional or District Plan has not fully addressed the Part 2 matters, then decision makers can 'go up the tree' to the RPS and then any relevant NPS in relation to any Part 2 matters.

Plans, which have to "give effect" to the higher order statutory planning documents (RPS and NPSs), should have appropriately addressed Part 2 of the RMA. As such, it is considered that as none of the 3 points above, no Part 2 assessment is considered necessary.

The One Plan was made operative prior to the NPSFM 2020, however in accordance with requirements Policy 14-9 requires consideration of the principles of the NPSFM 2020. The NPSFM has been addressed in section 9.3.1.

10 Conclusion

This application is to allow for the irrigation to land of treated wastewater from the Rātana Community. The proposal has been subject to ongoing consultation with local iwi and the community.

The irrigation principles used in preliminary design for the site priorities deficit irrigation, with storage to be provided balancing capital costs of construction of storage against potential environmental effect. The sizing of the irrigation area is more dependent on irrigation volumes rather than nitrogen loading.

Various ecological features have been identified on the subject site. Specific management, mitigation and in some of the wetland offset is proposed that is considered to be commensurate to the value and scale of potential effect on these features. Monitoring and the ability to amend management practices is proposed.

The proposal is considered consistent with the relevant objectives and policies, with considerable support found in the One Plan objectives and policies.

Appendix A: Irrigation Report

Appendix B: Irrigation Specimen Design

Appendix C: Storage Pond Options Memo

Appendix D: Proposed Conditions

Appendix E: Revised Ecological Impact Assessment

Appendix F: Soil Survey Memorandum

Appendix G: Groundwater Report

Appendix H: Process Review

Appendix I: Preliminary Water Balance (Site 1 and 2)

Appendix J: Overseer and Irrigation Memorandum

Appendix K: Freshwater
Improvement Fund Application
Letter of Support

Appendix L: Erosion and Sediment Control Plan

Appendix M: Groundwater Pathogen Die Off Letter

Appendix N: Section 92 Further Information Request Response

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