REGIONAL BIOSOLIDS STRATEGY
LOWER NORTH ISLAND

Report 7: Exploring the challenges facing councils and iwi when working around biosolids issues; Developing a regional GIS map

Prepared by

MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND
E/S/R
Science for Communities
LWE Environmental Impact

February 2019

Regional Biosolids Strategy – Lower North Island

Report 7: Exploring the challenges facing councils and iwi when working around biosolids issues; Developing a regional GIS map

This report has been prepared for the **Regional Biosolids Strategy Partner Councils** and the **Ministry for the Environment** by Lowe Environmental Impact (LEI). No liability is accepted by this company or any employee or sub-consultant of this company with respect to its use by any other parties. This project was undertaken with the support of the Ministry for the Environment waste minimisation fund, however, the Ministry does not necessarily endorse or support the content of this publication in any way.

Quality Assurance Statement		
Task	Responsibility	Signature
Project Manager:	Hamish Lowe	
Prepared by:	Angela Lane Jennifer Prosser	
Reviewed by:	Hamish Lowe Jacqui Horswell	
Approved for Issue by:	Hamish Lowe	
Status:	Final	

Prepared by:

Lowe Environmental Impact
P O Box 4467
Palmerston North 4442

| T | [+64] 6 359 3099
| E | office@lei.co.nz
| W| www.lei.co.nz

Ref: Regional_Biosolids_Strategy-Report_7-GIS_Mapping

Job No.: 10416

Date: February 2019

Please cite this report as: Lowe Environmental Impact Limited (2018). Report 7: Exploring the challenges facing councils and iwi when working around biosolids issues; Developing a regional GIS map. Regional Biosolids Strategy: Lower North Island, New Zealand.

REGIONAL BIOSOLIDS STRATEGY
LOWER NORTH ISLAND

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY

1.1 Background

Ten lower North Island councils are working in partnership to develop a biosolids strategy that includes a potential collective approach for sludge management and beneficial end-use. The strategy is led and coordinated by a collaborative management team of Lowe Environmental Impact (LEI), Massey University, and The Institute of Environmental Science and Research Ltd (ESR).

Initial stages of the project included a gaps analysis to highlight the scale of the sludge problem in the region as well as areas where councils could work together to manage their sludge. Initial 'straw-men' strategies were developed and progressed through discussion to the development of draft strategies for the collective management of biosolids for the lower North Island (Stage 5 Draft Strategy; Task 5b Development of a Draft Strategy).

Engaging with hapū and Iwi, and incorporating community views into waste management decisions is an essential part of the decision making process in New Zealand. Within the realm of the wider project, a project objective "Exploring the challenges facing Councils and Iwi when working around biosolids issues" was developed to reflect this.

This objective has been addressed through discussions (Milestone 1, Activity 2: Exploring the challenges facing Councils and Iwi when working around biosolids issues; Key insights and lessons learned), and reviews of currently available Cultural Impact Assessment Frameworks that could be used to evaluate impacts of biosolids re-use (Milestone 2, Activity 2: Assessment of Cultural Frameworks). This report forms the next phase of this objective and addresses Activity 2; 2A. GIS Mapping.

1.2 Scope

This report outlines progress in the development of a GIS map for potential use in applications for biosolids use. Addressing deliverable Year 2, Milestone 2 "Activity 2: Exploring the challenges facing Councils and Iwi when working around biosolids issues: 2A. GIS Mapping" by developing a regional GIS map with information on location of WWTP, type of treatment, current state (e.g. consent expiry), regional and district boundaries and iwi areas of interest.

1.3 Key Findings

- Locating the relevant information for WWTP location, type and consents was not straightforward, however this information was obtained through email and phone contact with councils and collated for use.
- The Office of Treaty Settlements (OTS) provided shape files for areas of interest in the Wellington and Manawatu-Whanganui regions for iwi settlement claims that had been completed (or were far enough advanced).
- Shape files for territorial and regional boundaries were obtained from the Stats NZ datafinder portal (https://datafinder.stats.govt.nz).
- The collated shape files were put together using QGIS with the WWTP information to produce a point and click GIS map showing relevant WWTP information, Council boundaries and Māori areas of interest.

- Whilst QGIS was found to be a useful program for the development of a tool such as this, it has limitations for the dissemination of the information as individuals need the relevant software to view/access it.
- The project team is investigating the possibility of uploading the map to a shared portal such as Koordinates, a data publishing platform that allows for clients or users to access a shared dataset.
- The project partners see further value in developing the map to a form that would be more widely/easily accessible and incorporating further information.

2 INTRODUCTION

2.1 Background

In the lower North Island, there is an estimated 80,000 tonnes of sludge (at 20% solids) produced from oxidation ponds (every 30-50 years) and additional sludge from 5 high rate treatment plants. Most of this sludge which is removed from the treatment plants ends up in landfills. Landfilling is not considered to be a long-term management option and is becoming more difficult due to increased levies, space required and transportation distances. Further, there is an increasing community expectation to develop sustainable use options where the material can be considered a resource.

Ten lower North Island councils are working in partnership to develop a biosolids strategy that includes a potential collective approach for sludge management and beneficial end-use. The strategy is led and coordinated by a collaborative management team of Lowe Environmental Impact (LEI), Massey University and The Institute of Environmental Science and Research Ltd (ESR). The strategy will consider economies of scale and alternatives for discharge and beneficial use of biosolids which are affordable, sustainable and provide targeted solutions that are consistent with national waste minimisation strategies.

Initial stages of the project carried out a stock-take and gaps analysis to highlight the scale of the sludge problem in the region as well as areas where councils could potentially work together to manage their sludge. Initial 'straw-men' strategies were developed and progressed through discussion to the development of draft strategies for the collective management of biosolids for the Lower North Island (Stage 5 Draft Strategy; Task 5b Development of a Draft Strategy). In conjunction with this, the project has incorporated field and laboratory trials investigating a range of re-use options for sludge (Activity 1: Biosolids processing trials; 1A Biosolids composting trial and 1B biosolids seedling trial).

Recognising the importance of stakeholder engagement in this issue, one of the first steps in this project was to investigate the potential to develop a framework to engage with tangata whenua, mana whenua and the wider community (Year 1, Stage 3; Community and Stakeholder Engagement Framework). It was anticipated that such a framework could aid in identifying positive processes to bring individuals and groups together to begin to identify key issues and criteria to be considered, and to explore common principles for managing biosolids and sludges in the lower North Island region. The milestones and stages for the development of an engagement framework was designed to run concurrently within the wider biosolids strategy, biophysical science experiments and field trials. Issues that arose in the early parts of this objective led the project team to develop the new overarching objective for this portion of work:

"Exploring the challenges facing Councils and Iwi when working around biosolids issues"

Engaging with hapū and Iwi, and incorporating community views into waste management decisions is a beneficial part of developing wastewater (and biosolid) solutions. The project objective "Exploring the challenges facing Councils and Iwi when working around biosolids issues" was developed to reflect this.

This objective has been addressed through discussions (Milestone 1, Activity 2: Exploring the challenges facing councils and Iwi when working around biosolids issues; Key insights and lessons learned), and reviews of currently available Cultural Impact Assessment frameworks that could be used to evaluate impacts of biosolids re-use (Milestone 2, Activity 2: Assessment of Cultural Frameworks). This report forms the next phase of this objective and addresses Activity 2; 2A.

GIS Mapping by developing a regional GIS map with information on location, type of WWTP, current state (e.g. consent expiry), regional and district boundaries and iwi areas of interest.

Māori take a holistic view of the world and it is therefore critically important that Councils have an awareness of what else is going on in their district, and indeed the neighboring districts. The GIS tool is designed to provide information on council and rohe boundaries as rohe may span two or three territorial authorities. The tool will allow council staff to be more aware of potential problems and roadblocks in neighboring rohe/territories that may impact their particular project. The development of such a map will also aid decision makers in determining the correct consultation pathways and interested parties when planning end-use options for biosolids.

3 GIS MAPPING

Information was sourced to establish a GIS map containing location and type of WWTP, current state (e.g. consent expiry), regional and district boundaries and iwi areas of interest. The collated information and GIS layers were compiled within a QGIS project format to produce a point and click GIS map.

3.1 Regional WWTP's

Locating the relevant information for WWTP location (coordinates), type (treatment) and consents was not straightforward. This information was obtained through previously reported data obtained in early stages of the project (Stage 1 Gap analysis; Task 1a Desk top study, and Task 1b Site visits and field investigations) and by email and phone contact with Council members to ensure that up to date data were used. The collated information was compiled into an excel spreadsheet for use (Appendix A) and used to create a layer within a QGIS project format. The location of each WWTP is shown in Figure 3.1.

The GIS layer is designed so that specific information relating to each WWTP can be accessed by selecting the WWTP layer (Figure 3.2) and subsequently clicking on the WWTP of interest. Once selected a table of relevant information can be viewed (Figure 3.2). In the example presented in Figure 3.3 the Foxton WWTP has been selected and the relevant information can be seen in the displayed table.

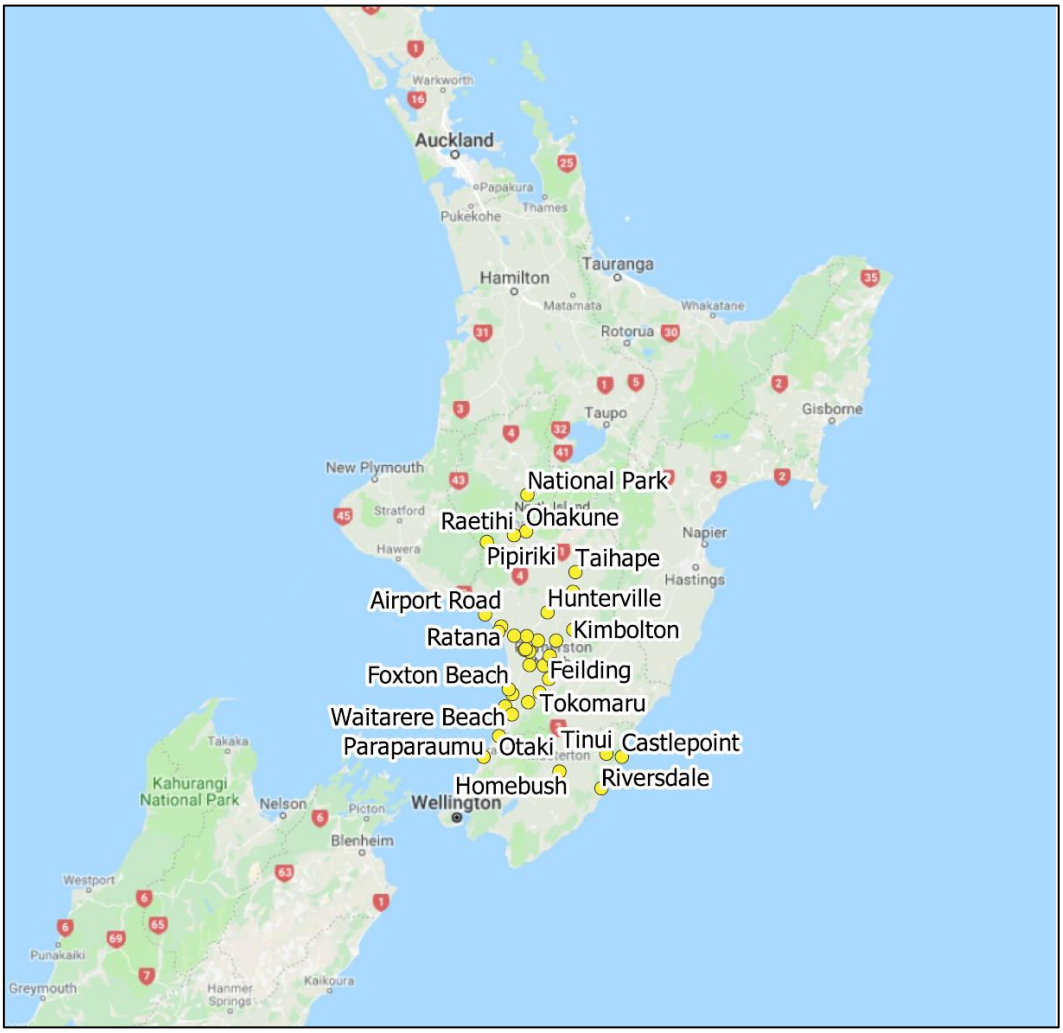


Figure 3.1: WWTP in the study region (Source: located using coordinates data obtained from Council Partners and input into QGIS).

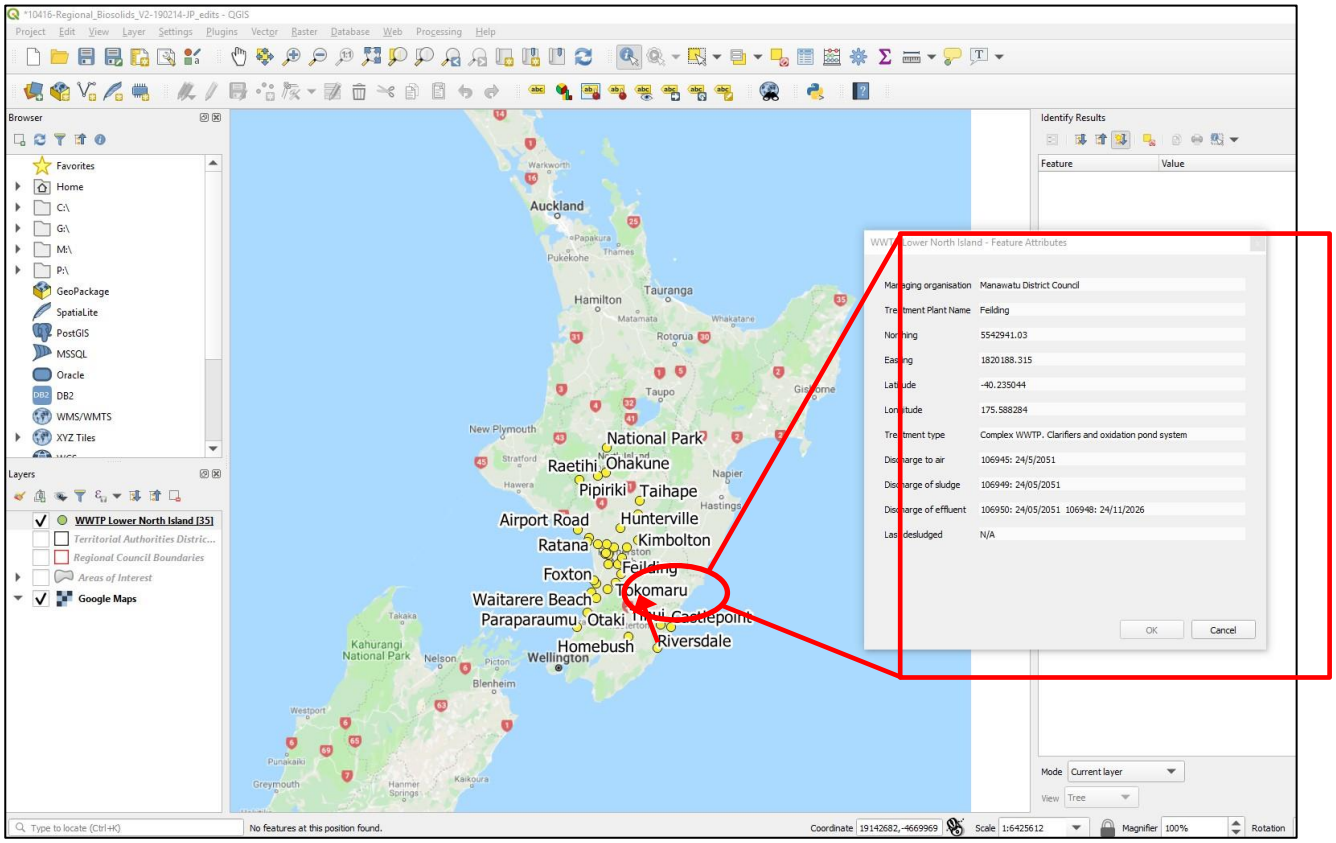


Figure 3.2: The WWTP layer in QGIS showing the location of WWTP.

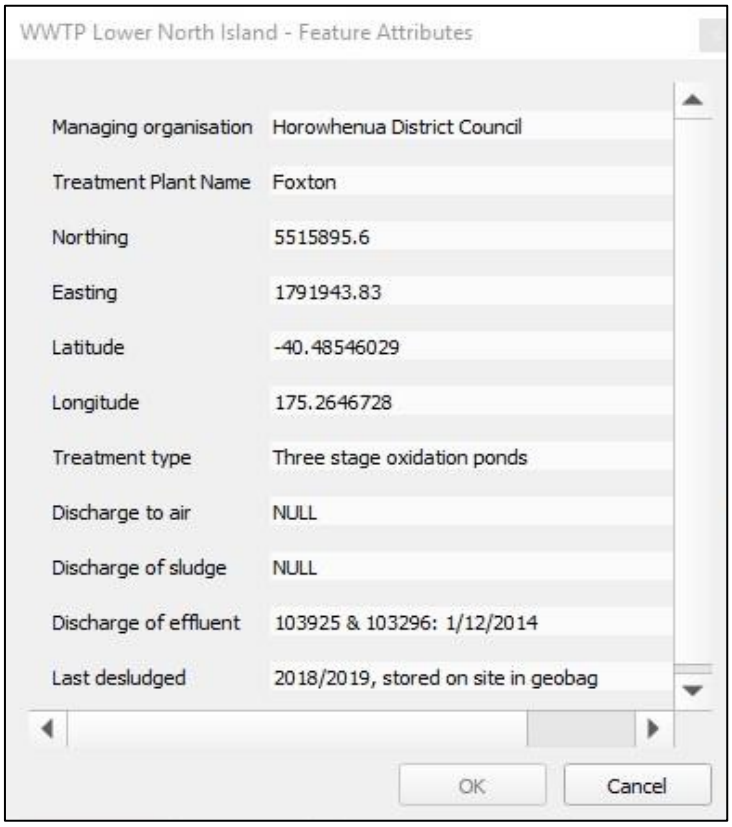


Figure 3.3: An information table as presented in QGIS. Information contained includes the WWTP location, treatment type, relevant consents and information on the history of desludging.

Figure 3.3 shows a close-up image of the information table for Foxton WWTP. The information presented includes WWTP location, treatment type, relevant consents and information on the history of desludging. The data for this is stored in an excel file that can be added to as more information becomes available.

3.2 Regional and Territorial Authorities

Shape files for territorial and regional authorities already existed and were obtained from the Stats NZ datafinder portal from the following locations:

Regional Council Boundaries:
https://datafinder.stats.govt.nz/search/?q=regional+council+2018

District Council Boundaries:
https://datafinder.stats.govt.nz/search/?q=territorial+authority+2018

These datasets are the definitive sets of annually released boundaries at 1 January 2018 as defined by the Regional Council, territorial authorities and/or Local Government Commission. These data sets are maintained by Stats NZ. Each boundary layer is exhibited separately in the overall GIS map and can be selected or deselected as required (Figure 3.6).

Regional council is the top tier of local government in New Zealand. The map used for this project shows boundaries for four Regional Councils in the Lower North Island: Taranaki, Whanganui-Manawatu, Hawke's Bay and the Greater Wellington Region (Figure 3.4).

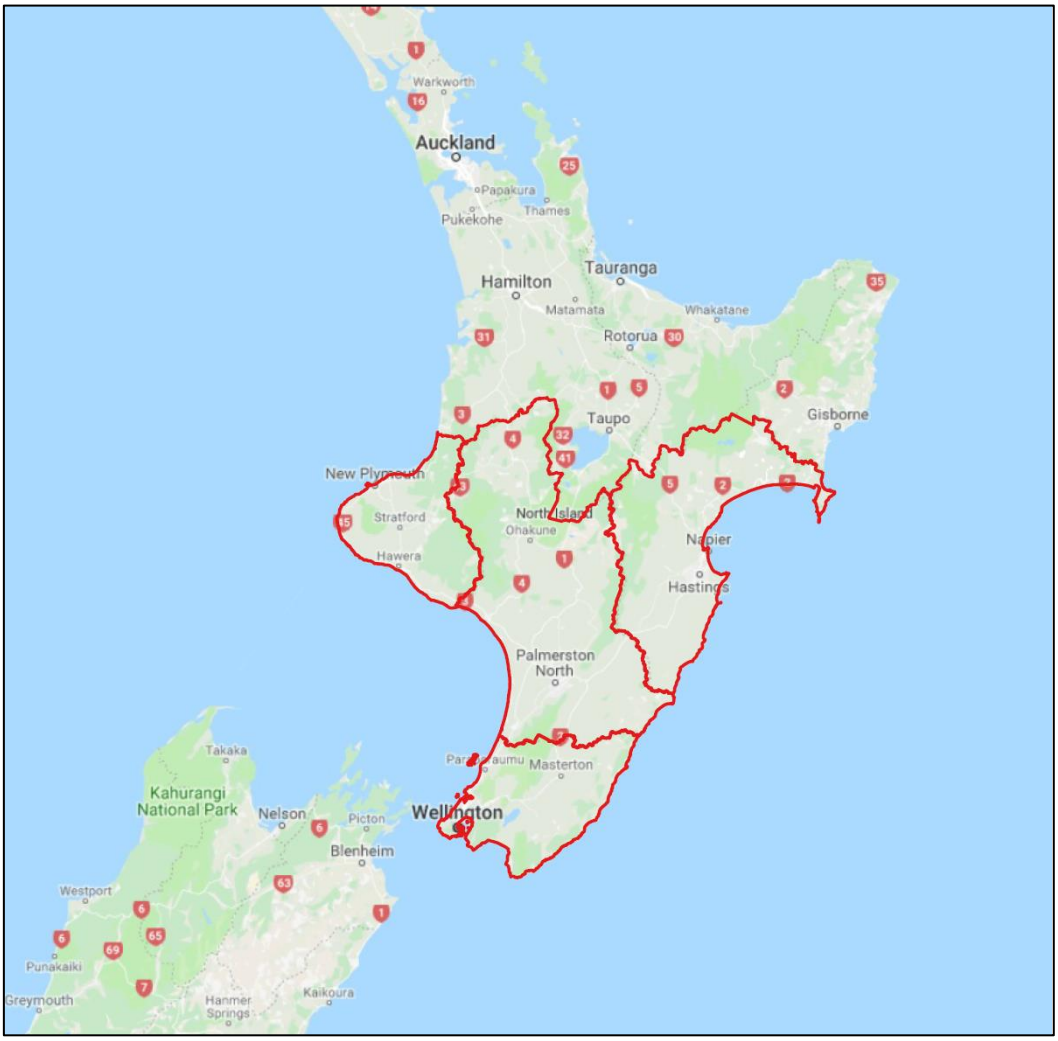


Figure 3.4: Regional Boundaries. The regional boundaries are represented in red and include Taranaki, Whanganui-Manawatu, Hawkes Bay and the Wellington Region (Source: Stats NZ datafinder).

A territorial authority is defined under the Local Government Act 2002 as a city or a district council. Boundaries were included for 16 territorial authorities (Figure 3.5), 9 of which are project partners in the wider regional biosolids strategy project; highlighted in red.

- Carterton District
- Horowhenua District
- Kapiti Coast District
- Lower Hut City
- Manawatu District
- Masterton District
- Palmerston North City
- Porirua City
- Rangitikei District
- Ruapehu District
- South Wairarapa District
- Tararua District
- Taupo District
- Upper Hutt City

- Wellington City
- Whanganui District.

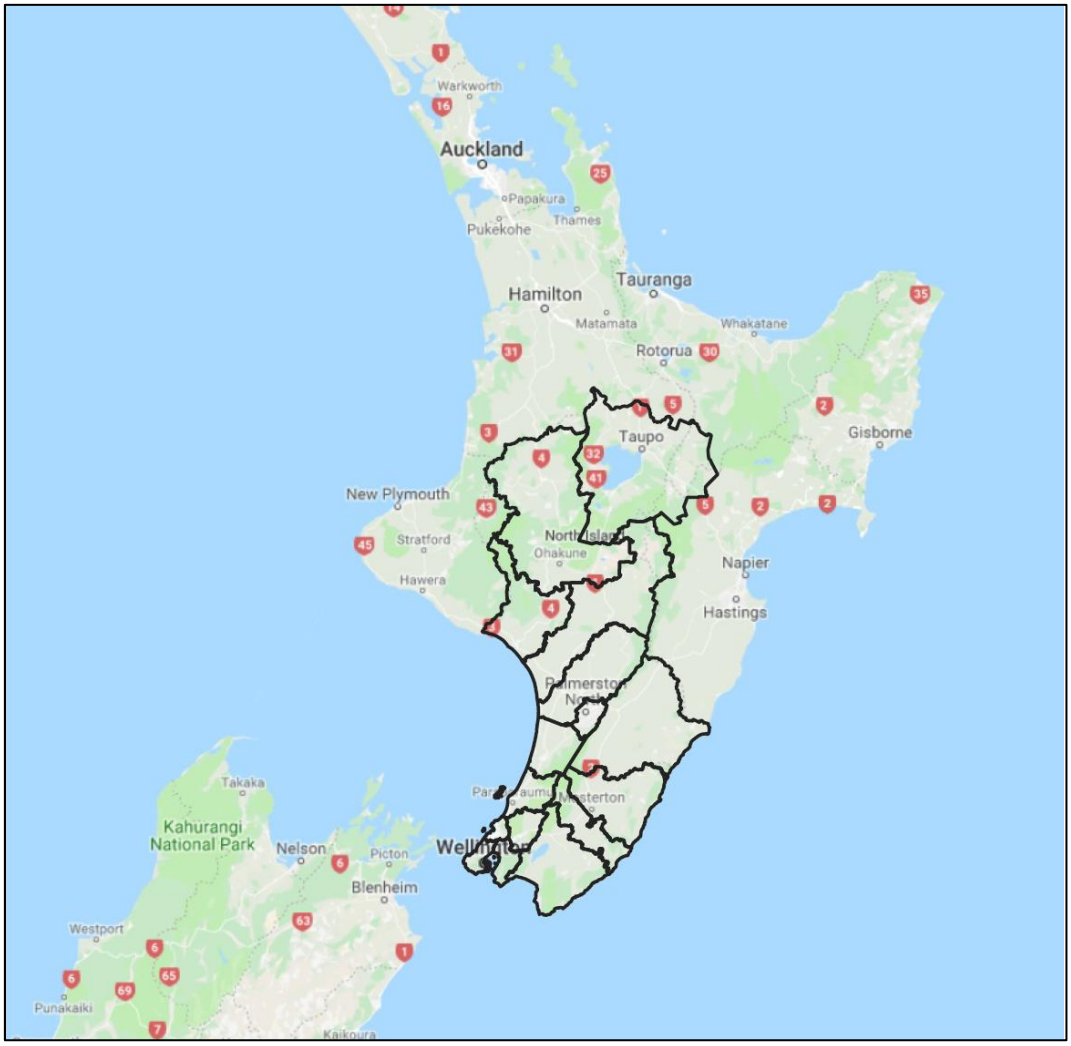


Figure 3.5: Territorial Boundaries. The Territorial boundaries are representative of the District and City Council boundaries and are observed in black (Source: Stats NZ datafinder).

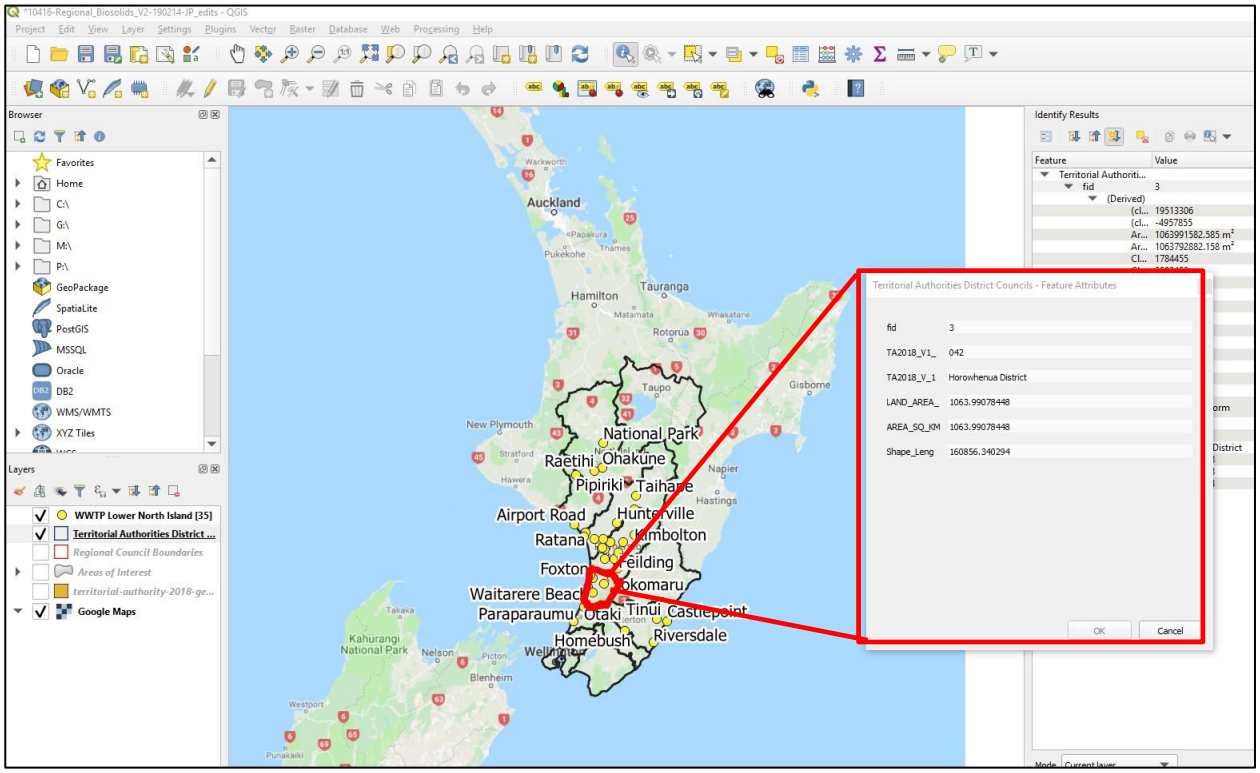


Figure 3.6: Separate regional or territorial boundaries can be selected within the map which will bring up a table with information on the name and size of the region.

3.3 Areas of Interest for Māori

Shape files for iwi areas of interest were obtained from The Office of Treaty Settlements (OTS) for the Wellington and Manawatu-Whanganui regions. Specific areas of interest are listed below and shown on Figure 3.7 . It should be noted that while the nominated area is spatial, it typically relates to a specific hapu or runuga.

- Rangitane o Wairarapa;
- Ngati Kahungunu;
- Heretaunga Tamatea;
- Taranaki Whanui ki Te Ika;
- Ngati Toa Rangitira;
- Rangitane o Manawatu;
- Ngati Apa;
- Ngati Tuwharetoa;
- Ngati Rangi;
- Whanganui Land Settlement;
- Whanganui River Catchment;
- Te Korowai o Wainuiarua;
- Ngati Haua;
- Ngati Maru;
- Ngati Tama;
- Raukawa Area of Association;
- Maniapoto; and
- Maraeroa A and B.

The following are areas of interest that fall in the Wellington and Manawatu-Whanganui regions were not included because in most cases the settlements are not far enough advanced to have land area of interest created:

- Muaupoko;
- Ngati Tama (Wellington);
- Ngati Kauwhata; and
- Ngati Raukawa ki Te Tonga.

As with the regional boundaries each area of interest can be selected to identify information relating to that area, or the group with an interest in that area. . The borders of these areas are considered to be a guide and some overlap exists; highlighting the fact that **in certain areas more than one group is likely to have an interest in any activities likely to be taking place**.

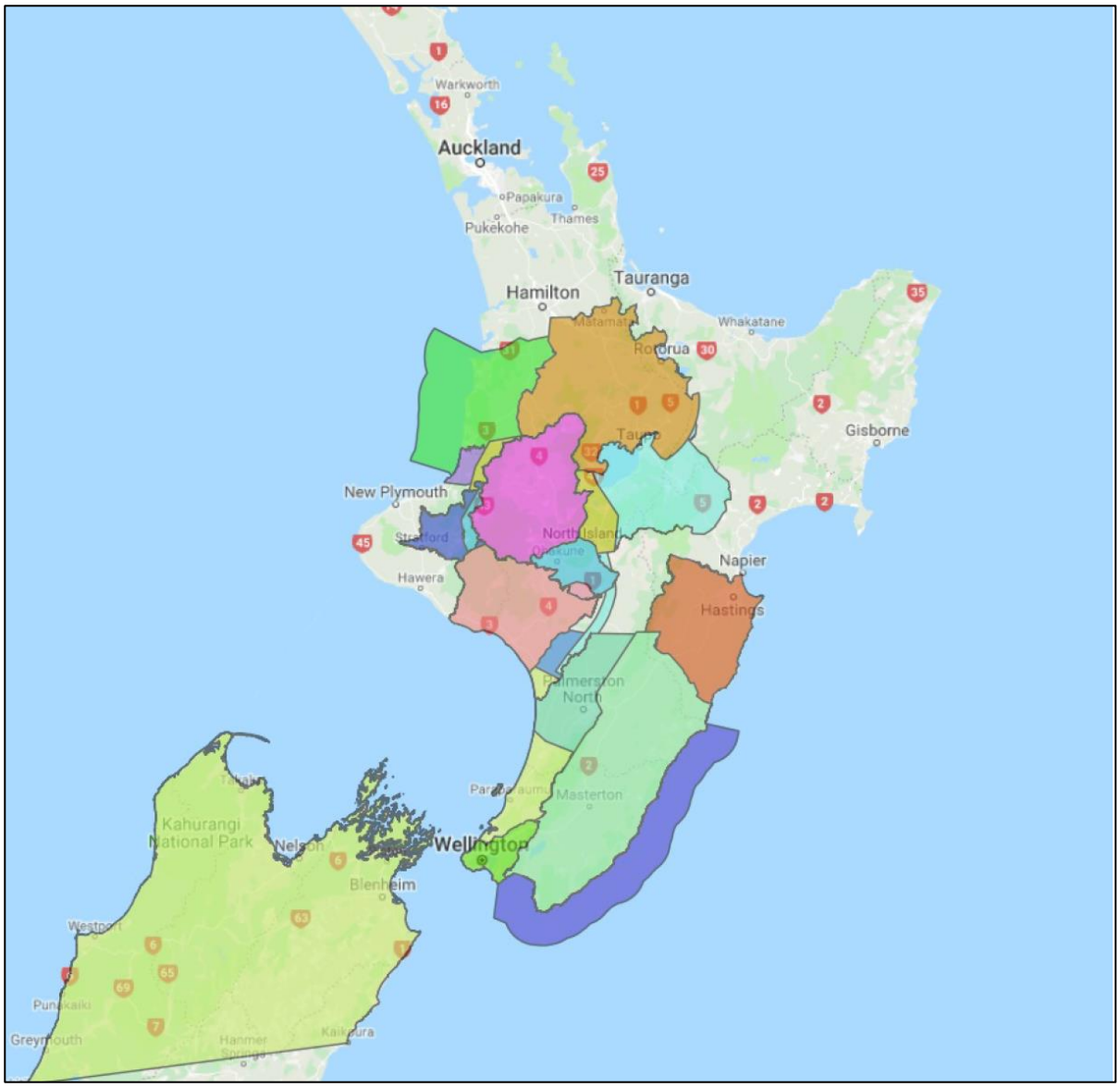


Figure 3.7: 18 Land areas of interest for Māori in the Wellington and Manawatu-Whanganui regions (source: The Office of Treaty Settlements).

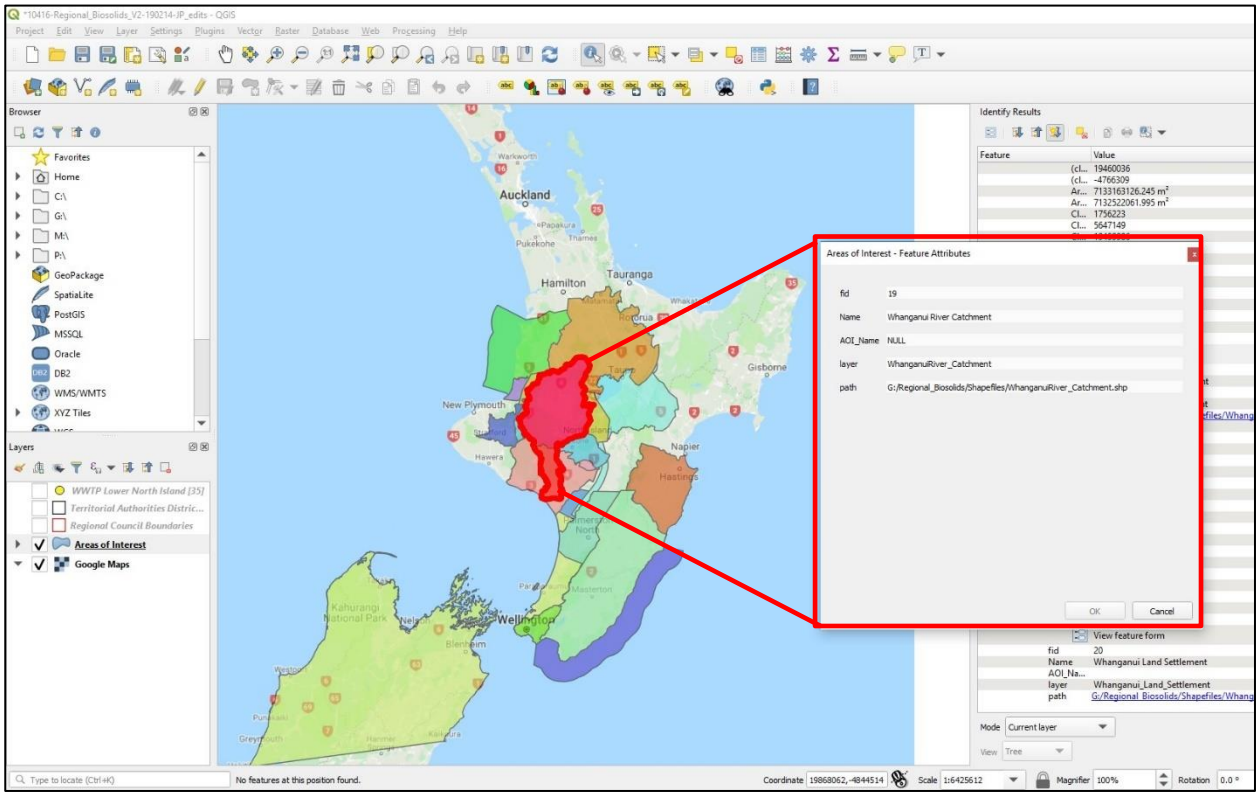


Figure 3.8: Each area of interest can be selected to bring information relating to the name of the interest group, some areas overlap meaning that in certain areas more than one group is likely to have an interest in activities taking place.

3.4 Combined GIS Layers

The four GIS layers were brought together in one QGIS project format to produce a point and click GIS map (Figure 3.9). Combined together, the information provides a complicated overview, however, the user is able to choose the layers they wish to observe by selecting/de-selecting them separately (Figure 3.10) and an ability to zoom in on a specific location.

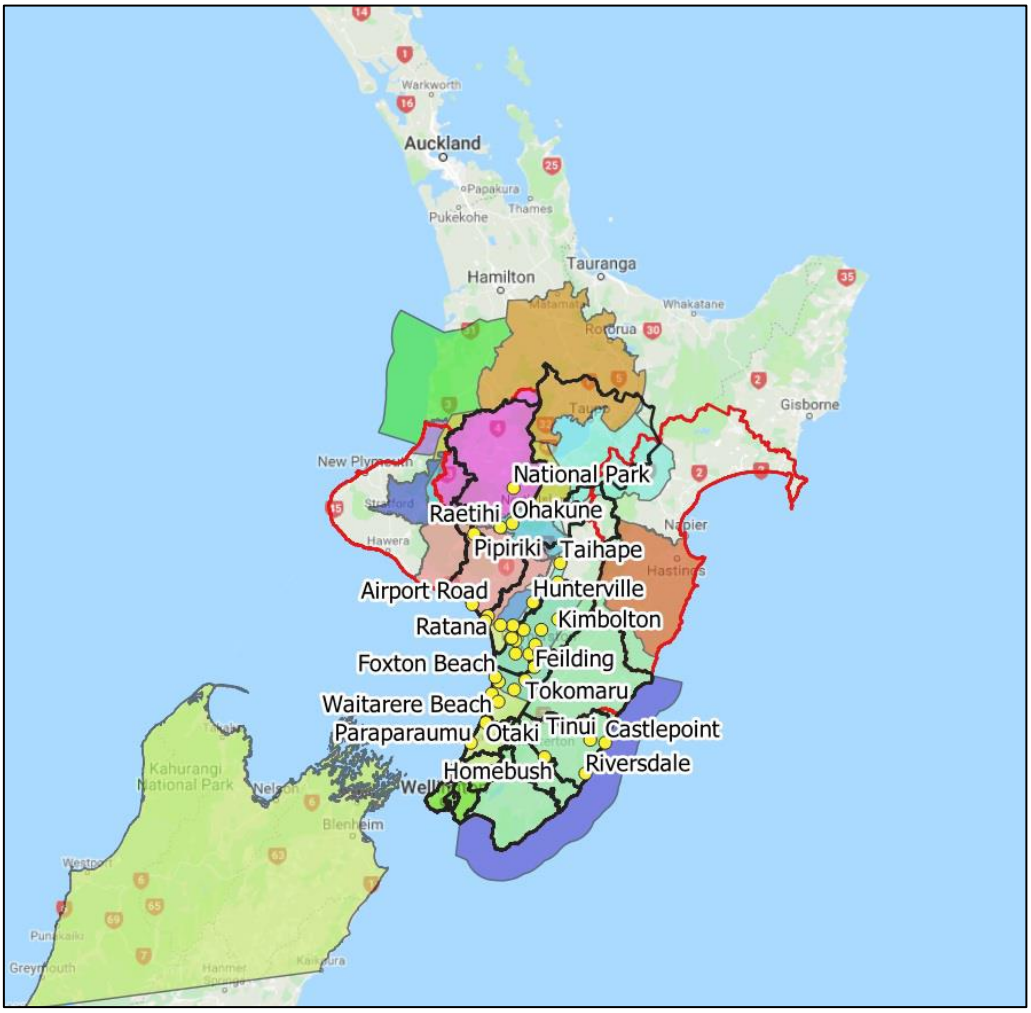


Figure 3.9: A GIS map containing all four GIS layers as produced by QGIS.

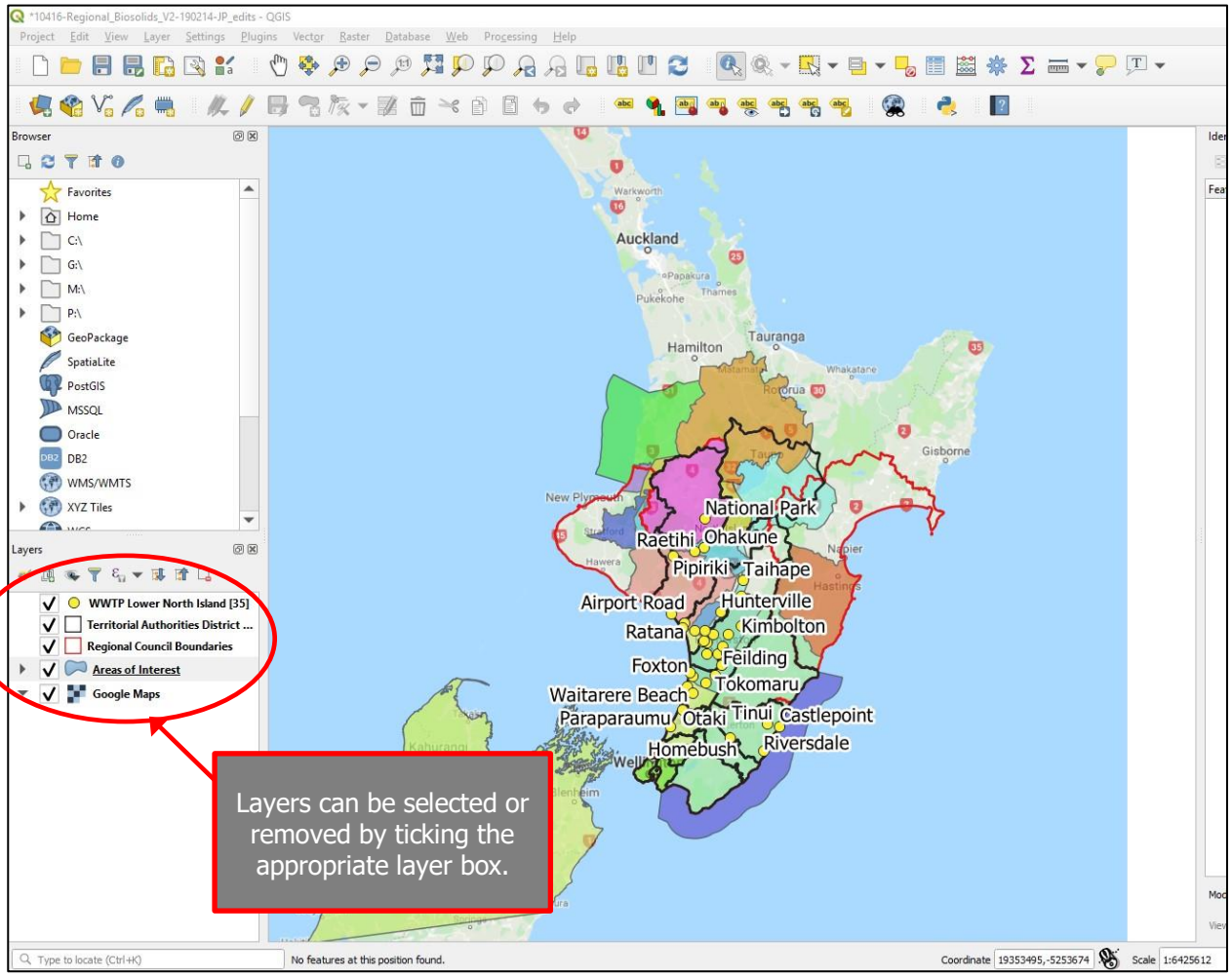


Figure 3.10: The screen as observed in QGIS when all four GIS layers are overlaid. Each layer can be individually selected to be visible or not by ticking the boxes on the left-hand side.

4 CONCLUSIONS AND RECOMMENDATIONS

The development of a GIS map highlighting Māori areas of interest and WWTP activities provides a useful tool for engagement and consultation to assist biosolids solutions. The ability to use one map to inform planning groups of who can be consulted and any potential activities already within a specified region that may impact the planning process is a valuable asset. This allows for informed planning and for early consultation, and may contribute to avoiding complex situations that can hold up processes further down the line. Having a clear understanding of the current situation, and other influencing factors, is always best when approaching community consultation on environmental matters. **In particular, early consultation with all potentially affected parties.**

The project team aimed to develop a GIS tool containing location and type of WWTP, current state (e.g. consent expiry), regional and district boundaries and iwi areas of interest. It was found that in some areas collating the relevant data was not straight forward, in particular information specific to WWTP activities, whilst in others the data was already widely available on public platforms (district and regional boundaries). The relevant information was collated and combined into appropriate formats for use.

The program QGIS was used for the development of a multilayer GIS tool based on the data obtained. QGIS was found to be sufficient for the task, however, the challenges faced by this were that only users who have the programme can view the information. It was the intention of the project team that a GIS map developed be easily accessible to those that would be wanting to use it. The platform used to complete the task (QGIS) does not readily allow for this, and further work would be required to bring it to this stage. For this reason, the developed GIS map is considered to be of a prototype nature, demonstrating a 'potential' tool for use by Councils and project planners. The Project Team has investigated the possibility of uploading the map to a sharing portal such as Koordinates, a data publishing platform that allows for clients or users to access a shared dataset (or GIS). The system requires monthly subscription fees but would be considered a favourable means to share the information to a wider audience in the future.

This work has been a beneficial learning experience and the project partners see value in developing the map further to a form that would be more widely accessible, using a platform such as Koordinates.

It is also acknowledged that what has been produced has limitations. It would be useful to include further information such as WWTP input and output parameters, as well as data on sludge quantities and current end uses. It would be useful to have the ability to update the platform with current projects that are in progress (i.e applications to apply biosolids to land) and that may have an impact on other relevant projects, to better equip the consultation process.

Engaging with hapū and Iwi and incorporating community views into waste management decisions is an essential part of developing robust solutions in New Zealand The Project Team views a mapping exercise, such as developed here, as a useful tool to aid the project planning and consultation process when it comes to the re-use of biosolids.

5 REFERENCES

Local Government Commission. (2018). Regional Council 2018 (generalised). Retrieved from Stats New Zealand datafinder portal, https://datafinder.stats.govt.nz/search/?q=regional+council+2018

Local Government Commission. (2018). Territorial Authority 2018 (generalised). Retrieved from Stats New Zealand datafinder portal, https://datafinder.stats.govt.nz/search/?q=territorial+authority+2018

6 APPENDICES

Appendix A WWTP Data Spreadsheet

APPENDIX A

WWTP Data Spreadsheet

Managing organisation	Treatment Plant	Northing	Easting	Latitude	Longitude	Treatment type	Discharge to air	Discharge of sludge	Discharge of effluent	Last desludged
Horowhenua District Council	Waitarere Beach	5506974.38	1786456.27	-40.56702221	175.202602	Oxidation ponds and an aerobic pond			102220: 27/06/2007	
Horowhenua District Council	Foxton	5515895.6	1791943.83	-40.48546029	175.2646728	Three stage oxidation ponds			103925 & 103296: 1/12/2014	2018/2019, stored on site in geobag
Horowhenua District Council	Tokomaru	5516439.3	1811942.72	-40.47570407	175.5002473	Oxidation pond			101227 & 101228: 24/01/2017	2016, sludge stored onsite in geobags
Horowhenua District Council	Foxton Beach	5519464.83	1789435.47	-40.45390535	175.2340336	Oxidation pond	105844: 1/07/2016		102449: 11/03/2048	Desludged 2013
Horowhenua District Council	Shannon	5509620.28	1803330.61	-40.53923522	175.4009273	Oxidation pond and geobags	105897:11/07/2034 106894: 1/07/2048		106892: 20/03/2017 105896: 11/07/2034 106893: 01/07/2048 106895: 01/07/2048	Desludged 2015, sludge stored onsite in geobags
Horowhenua District Council	Levin	5501036.35	1791263.36	-40.61937913	175.2611474	Complex WWTP. Trickling Filter; primary sedimentation tank, sludge thickener, anaerobic digestion, dewatering (press)	107153 & 107154: 1/07/2034 103285: 23/05/2020		6610: 31/12/2018 107153 & 107154: 1/07/2034	N/A
Kapiti District Council	Paraparaumu	5470732.48	1769872.8	-40.89687977	175.0166537	High rate, complex WWTP. Solid sludge pumped through Dissolved Air Flotation thickener, centrifuge, thermal drying.	WGN 970255(27633): 31/03/2022 WGN 990242(1583): 30/9/2019 (surrendered)		WGN 970255(05): 31/3/2022 WGN 030149(22566) : 31/3/2022 WGN970255(04): 31/3/2022	Historical storage of sludge in six decommissioned oxidation ponds

Managing organisation	Treatment Plant	Northing	Easting	Latitude	Longitude	Treatment type	Discharge to air	Discharge of sludge	Discharge of effluent	Last desludged
Kapiti District Council	Otaki	5485482	1781452	-40.76161756	175.1497329	Complex WWTP. Aerated lagoon, clarifier, oxidation ponds, anaerobic digester.	WGN160002: 20/10/2036		WGN160002: 20/10/2036	Sludge collected from Otaki WWTP and delivered to Paraparaumu WWTP
Masterton District Council	Homebush	5458566.13	1824683.03	-40.99315272	175.6711557	Oxidation ponds	WAR090066 [34496]: 8/12/34	[34495], [34493]: 8/12/34	34491: 8/12/34	older ponds require desludging
Masterton District Council	Riversdale	5445488.52	1854784.01	-41.10195007	176.0339664	Oxidation pond and land irrigation	WAR090346 [27604]: 30/9/39	[31180], [31182]: 30/9/44	27606: 30/9/44	Minimal sludge in pond
Masterton District Council	Castlepoint	5467782.66	1870452.26	-40.89637448	176.2105166	Oxidation pond and wetland cells	WAR080010 [32520]: 10/04/29	[32519]: 10/04/29	26192: 10/04/29	Minimal sludge in pond
Masterton District Council	Tinui	5470381.36	1859284.86	-40.87661093	176.0770517	Oxidation pond and constructed wetlands	WAR050019 [24677]: 30/9/2030	[31349]: 30/9/2030	NA – discharges to infiltration wetland	Minimal sludge in pond
Manawatu District Council	Rongotea	5536701.188	1805132.217	-40.295033	175.413452	Two stage oxidation ponds and wetland	NA	102245: 11/11/2017	102242: 11/11/2017	Desludged 2015
Manawatu District Council	Kimbolton	5561630	1838040	-40.06	175.79	Oxidation pond	NA	103419: 1/09/2019	103418: 1/09/2019	Minimal sludge in ponds
Manawatu District Council	Cheltenham	5554082.85	1825131.988	-40.133455	175.642442	Oxidation pond	NA	NA	103260: 17/07/2016	Minimal sludge in ponds
Manawatu District Council	Awahuri	5536056	1815535	-40.298223	175.535951	Oxidation pond	NA	NA	103710: 27/07/2026	Minimal sludge in ponds
Manawatu District Council	Sanson	5546537.801	1805249.079	-40.206461	175.411679	Two stage oxidation ponds	NA	101838: 18/06/2017	101839: 18/06/2017	Requires desludging
Manawatu District Council	Feilding	5542941.03	1820188.315	-40.235044	175.588284	Complex WWTP. Clarifiers and oxidation pond system	106945: 24/5/2051	106949: 24/05/2051	106950: 24/05/2051 106948: 24/11/2026	N/A

Managing organisation	Treatment Plant	Northing	Easting	Latitude	Longitude	Treatment type	Discharge to air	Discharge of sludge	Discharge of effluent	Last desludged
Manawatu District Council	Ohakea	5547974	1801778	-40.194374	175.370479	Oxidation ponds, clarifier and drying beds	NA	NZDF consent, Wastewater	NZDF consent	Removed on regular basis
Manawatu District Council	Halcombe	5554418	1811754	-40.133914	175.485455	Oxidation ponds	NA		101252: 28/06/2016 101255: 28/06/2016	Desludged 2015
Palmerston North	Totara Road WWTP	5526178.54	1819043.45	-40.38620953	175.5805789	Complex WWTP. Screening, primary sedimentation, digestion, aeration lagoons, clarifier, UV, wetlands, and composting of sludge			16/05/2028	N/A
Palmerston North	Bunnythorpe Oxidation Pond	5536788.22	1822978.48	-40.28968103	175.6231891	Oxidation pond				Plans for desludging 2019
Rangitikei District Council	Bulls	5548437.966	1802601.754	-40.19	175.38	Two stage oxidation ponds			6406: 7/10/2006	Desludged 2016
Rangitikei District Council	Ratana	5565485	1784969	-40.04059556	175.1681302	Oxidation ponds			7400: 31/07/2018	Requires desludging
Rangitikei District Council	Marton	5557937	1803681	-40.10423118	175.3896677	Three stage oxidation ponds	7313: 31/03/2019		7312: 31/03/2019	Required desludging
Rangitikei District Council	Koitiata	5561632	1782767	-40.07576564	175.1434236	Oxidation pond			105079: 1/07/2024	Minimal sludge in pond
Rangitikei District Council	Mangaweka	5589466	1838732	-39.81128755	175.7889131	Small treatment pland, modular treatment system			101726: 19/03/2024	Minimal sludge on site
Rangitikei District Council	Taihape	5603944	1840990	-39.68035861	175.8099599	Oxidation pond			105518: 1/07/2027	Requires desludging

Managing organisation	Treatment Plant	Northing	Easting	Latitude	Longitude	Treatment type	Discharge to air	Discharge of sludge	Discharge of effluent	Last desludged
Rangitikei District Council	Hunterville	5574973	1819451	-39.94693215	175.5687567	Front end treatment (WWTP) and two oxidation ponds			105833: 1/07/2037 105834: 1/07/2037	
Rangitikei District Council	Duddings Lake	5558479	1794351	-40.101558	175.280125	Oxidation pond and septic tank			102545: 27/02/2023	Minimal sludge in pond
Ruapehu District Council	National Park	5662291	1806913	-39.16400881	175.3949196	Two stage oxidation ponds	1/11/2015		1/11/2015	Mininal sludge in pond, sludge removed at clarifier and sent to landfil
Ruapehu District Council	Ohakune	5635162	1805270	-39.40864365	175.3841898	Two stage oxidation ponds	1/11/2015		1/11/2015	Unknown quantity of sludge accumulated in pond.
Ruapehu District Council	Raetihi	5632525	1796128	-39.43451323	175.2788603	Three stage oxidation ponds	1/112015		1/112015	minimal sludge in pond
Ruapehu District Council	Pipiriki	5627982	1775841	-39.47980122	175.0444861	Septic tank and small treatment plant	1/07/2035		1/07/2035	minimal sludge in pond
Whanganui District Council	Airport Road	5574664.793	1773313.431	-39.960415	175.029143	Complex WWTP. Produces tertiary treated thermally dried sludge			105288 & 101706/2: 1/7/2026 APP-2015200171.00 : 30/6/2026 104939: 30/6/2026	N/A


Ministry for the
Environment
Manatū Mō Te Taiao


L W E
Environmental
I m p a c t

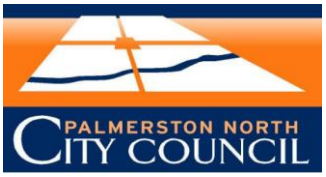

E/S/R
Science for Communities


Kāpiti Coast
DISTRICT COUNCIL
Me Huri Whakamuri, Ka Titiro Whakamua


MANAWATU
DISTRICT COUNCIL


WHANGANUI
DISTRICT COUNCIL
Te Kaunihera a Rohe o Whanganui


horizons
regional council


PALMERSTON NORTH
CITY COUNCIL


TARARUA
DISTRICT COUNCIL


RUAPEHU
DISTRICT COUNCIL


MASTERTON
DISTRICT COUNCIL
TE KAUNIHERA Ā-ROHE O WHAKAORIORI


RANGITĪKEI
DISTRICT COUNCIL
Making this place home.


Centre for Integrated Biowaste Research


MASSEY
UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND


Horowhenua
DISTRICT COUNCIL