

Publicly Owned Land in Auckland

Craig Fredrickson

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Research and Evaluation Unit (RIMU)

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Executive summary

Understanding the location and nature of publicly owned land forms an important information source for the management of land, and the decision-making process for both central and local government. Publicly owned land is land that is owned by the New Zealand Government, also known as the Crown (and its entities) as well as land owned by local and regional councils, their council-controlled organisations, and any subsidiaries of either. Land having no owner, such as areas that fall under the Marine and Coastal Area (Takutai Moana) Act 2011, or owned by other entities may also be categorised as being publicly owned.

While public entities, such as individual government ministries and departments or local councils, may have in-depth knowledge about their own land holdings, there are few sources of information to look at the location of publicly owned land as a whole. Previously no such dataset existed for Auckland.

To identify publicly owned land in Auckland a methodology was developed using data primarily from Land Information New Zealand. In order to create a dataset that could have utility, a classification system for public owned land was developed.

The modelling produced datasets that allow the mapping and quantification of Auckland's publicly owned land. Given the complex nature of property data there are a number of caveats and limitations on the resulting datasets. This research formalises and builds on some simple analysis first undertaken by Auckland Council's Research and Evaluation Unit (RIMU) for the Ministry of Business, Innovation and Employment (MBIE) in 2014.

This report's dataset is generated by identifying parcels, belonging to titles, on which a public entity was listed as being either owner or part owner, or has an indication in either its intent or statutory action. This does not mean that the land encompassed by identified parcels is owned by a public entity, but provides an indication. It is for this reason that this dataset should be thought of as a proxy dataset of publicly owned land in Auckland.

Auckland has 44,240 parcels that were identified as being publicly owned. This is 9.45 per cent of the region's total parcels. The parcels identified as being publicly owned cover 19.12 per cent of Auckland's land area, or 93,542 hectares. Local government was the largest category of land owner, accounting for 40 per cent of the publicly owned land total. A large area of land also fell into the 'other' category – for the most this is where land could be notified as being public, but its owner could not.

Parcel count and area of publicly owned land in Auckland, by Group 1 category

Group 1	Count of parcels	Proportion of parcels	Area (ha)	Proportion of area
Crown	26,187	59%	25,494	27%
Local government	12,399	28%	37,164	40%
Other	5,654	13%	30,884	33%
Total	44,240		93,542	

The dataset created in this report can be overlaid with other spatial datasets, for example, zoning groups within the Auckland Unitary Plan, as show in the table below.

Publicly owned land by area (hectares), by category, and Auckland Unitary Plan (operative in part) zoning group

Zoning group	Crown	Local government	Other	Total
Business	450	537	50	1,038
Coastal	280	1,570	1,097	2,946
General	2,634	793	21,756	25,184
New growth	75	56	61	191
Public Open Space	4,353	29,766	7,389	41,508
Residential	3,127	331	57	3,515
Rural	14,367	3,502	201	18,070
Special purpose zone	207	590	273	1,070
(blank)	0	20	0	20
Total	25,494	37,164	30,884	93,542

The Productivity Commission has recommended that councils and MBIE work together to develop a comprehensive inventory of publicly owned land¹. This report and research responds to the Commission's recommendations.

¹ New Zealand Productivity Commission (2015). *Using land for housing*

Publicly owned land in Auckland, by Group 3 category (urban area)

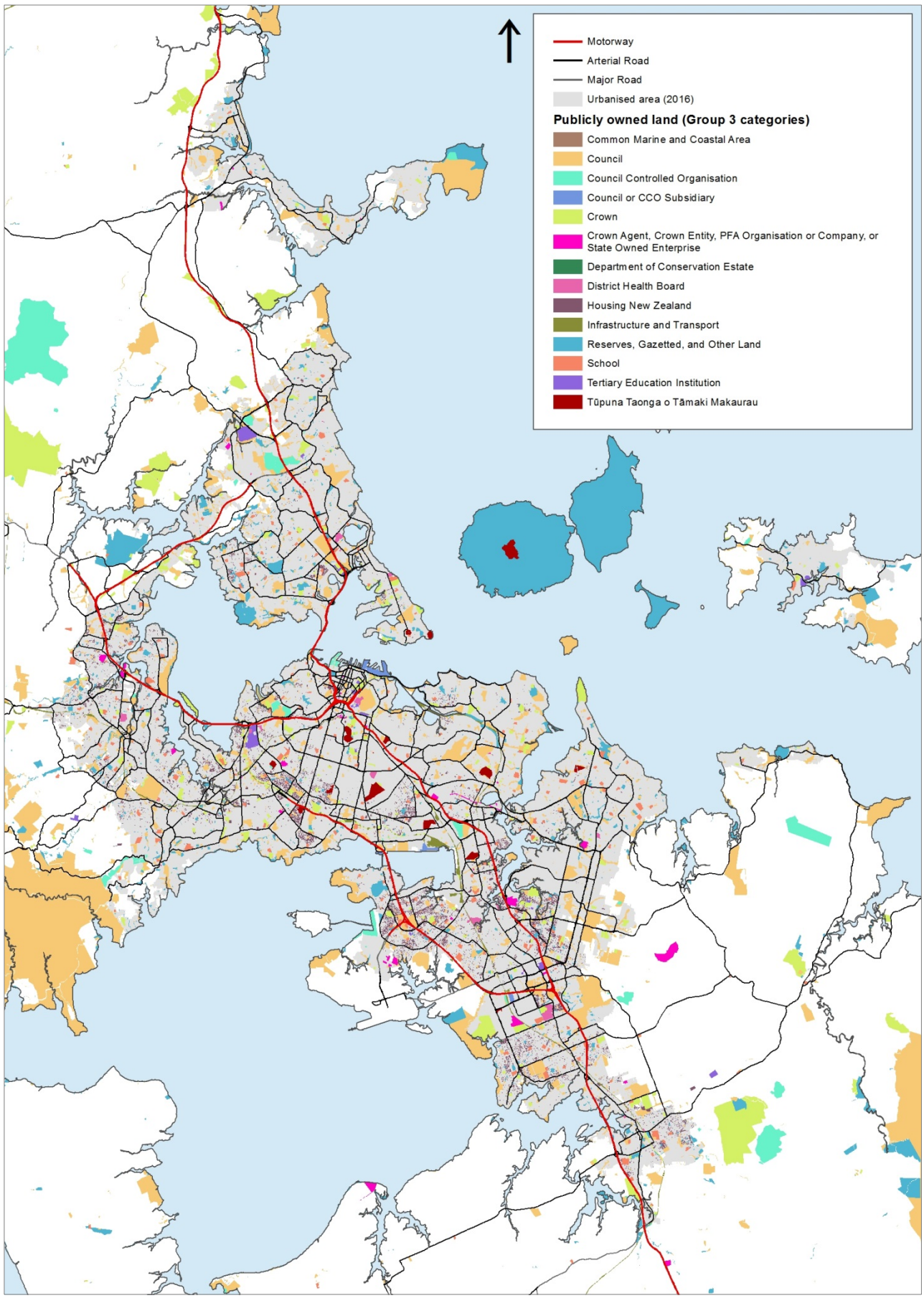


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1.0 Introduction

Publicly owned land can take many forms. This includes a large amount of open space, such as our national parks, conservation areas, recreation and local reserves, and sports grounds. It can also include land that has buildings on it, such as schools, government and council offices, courts, police and fire stations, community buildings such as halls and swimming pools, as well as houses or commercial buildings.

Publicly owned land falls into one of three categories. The first is land that is owned by the New Zealand Government and its entities, which is known as Crown land. The second is land that is owned by a local authority or its entities. A local authority is a city or district council, a unitary authority, or a regional council. Auckland Council is an example of a local authority, while Auckland Transport and other council-controlled organisations (CCOs) are examples of council owned entities. The third category is land that is not owned by the Crown or councils but could be considered 'publicly owned'. This includes marine and coastal areas bounded "by the line of mean high-water springs and ... the outer limits of the territorial sea" (s. 9) that fall under the Marine and Coastal Area (Takutai Moana) Act 2011. While land encompassed by the act has special status and is "incapable of ownership" (s. 3), provisions of the act allow for rights of access, navigation, and fishing and other recreational activities (Marine and Coastal Area (Takutai Moana) Act 2011). Given this land has no ownership, but has public access, and the management of these areas is often conferred upon the Minister of Conservation, or a local authority, it could be considered 'public'.

While individual public organisations may know about their land holdings, there are few sources of information to look at the location of publicly owned land as a whole. The New Zealand Productivity Commission in its report on using land for housing noted that this was a shortcoming, pointing out that information about public land holdings, especially in cities, is not readily available, and that the Government and local authorities should make an inventory of their land holdings (2015).

Housing supply and affordability has become an issue in Auckland and New Zealand (New Zealand Productivity Commission, 2012; Parker, 2015; Johnson, Howden-Chapman, & Eaqub, 2018). The Productivity Commission noted that there was a significant amount of public land that was currently vacant or substantially unimproved, that could be suitable for residential development (New Zealand Productivity Commission, 2015). The Commission noted that the Government intended to use 400 hectares of surplus Crown land in Auckland for housing and that there are other opportunities to use surplus land in other cities to help offset the shortfall of lower-priced housing (New Zealand Productivity Commission, 2015).

Having a dataset of publicly owned land that can be used for analysis could also enable the crown and local authorities to better understand each other's assets and their potential to better deliver projects such as these.

Councils in London, when faced with reduced funding for housing from central government and increased demand for housing have sought to use public land for redevelopment projects to both increase housing supply and to generate returns (Beswick & Penny, 2018). These redevelopment projects are not dissimilar to those currently being undertaken by Housing New Zealand in parts of Auckland. In both these examples, having an understanding of public land holdings can help agencies make better decisions by allowing them to understand not only where their land is located, but where opportunities for collaboration with other agencies could occur.

Understanding the location, type, and the shape and size of publicly owned land can form an important information source for the management of land, including understanding past, current, and future patterns, and planning for future provisions.

1.1 Study background

In late 2014 the New Zealand Government initiated several policies in order to increase housing supply. This included the then Minister for Housing, Nick Smith, asking officials from the Ministry of Business, Innovation and Employment (MBIE) to undertake analysis to assess the possibility of developing or redeveloping publicly owned land (A. Anderson, personal communication, 27 November 2014).

In order to undertake such an estimate, geospatial data indicating the location of publicly owned land was required; at the time, no such dataset existed.

In November 2014 MBIE approached the Research and Evaluation Unit (RIMU) of Auckland Council to assist them in developing and executing a method to identify publicly owned land. The method used property parcel and title information from Land Information New Zealand (LINZ), based on set of search parameters developed by LINZ and MBIE. This data was then supplied to RIMU who undertook analysis to create a spatial or GIS dataset that could be used for further analysis.

Since 2014 LINZ had been developing a spatial dataset to indicate the location of publicly owned land across the whole of New Zealand which has been forming part of further investigations by the Crown land department (Land Information New Zealand, 2015b). At the time LINZ's model did not include assessment of local government (or their associated entities) land holdings.

Starting in October 2015 RIMU decided to expand on the method that was developed with MBIE in 2014. It was hoped that a repeatable process could be established

using more automation, that was more accurate. The improved method developed, and analysis of the results, is documented in this report.

1.2 Study overview

The purpose of this study is to:

- Create datasets of publicly owned land, which take into account the complex nature of property and ownership.
- Undertake analysis of these new datasets, and report on the results, along with relevant commentary.
- Publish documentation of the method and analysis of the publicly owned land datasets.

1.3 Report overview

This report sets out the methodology used in order to generate Auckland Council's publicly owned land dataset. This methodology was developed between October 2015 to January 2016 by Craig Fredrickson, Researcher in the Land Use and Infrastructure Research and Evaluation team of RIMU.

The method used to generate the publicly owned land dataset is loosely based on the simpler method developed in 2014, the results of which were incomplete and not widely distributed due to the large number of limitations associated with it. Using title owner information sourced from LINZ, as well as other parcel related information, also sourced from LINZ, a series of queries was formulated to identify and tag land that had at least one owner that could be identified as being the Crown, or a related entity, or belonging to local government. This analysis excludes parcels that have been vested in council for roading.

The resulting output of the model is a spatial dataset. Each parcel is tagged with ownership information derived from the title, as well as additional tags developed as part of this process, to indicate the nature of ownership. Parcels were also tagged using a classification system that was developed in order to group the results, based on categorisation of ownership, for effective analysis. The configuration of central government agencies is complicated, and any modelling work to identify public land needs to account for these complexities.

It is hoped that this dataset can be used as a basis for further analysis to help inform planning and policy decisions of Auckland Council and its subsidiaries.

2.0 Notes and limitations

The publicly owned land dataset has a number of limitations that should be noted before using the dataset, or undertaking any analysis based on the dataset.

1. This dataset is generated by identifying parcels, belonging to titles, on which a public entity was listed as being either owner or part owner, or has an indication in either its intent or statutory action. This does not mean that the land encompassed by identified parcels is owned by a public entity, but provides an indication. It is for this reason that this dataset should be thought of as a proxy dataset of publicly owned land in Auckland.
2. The relationship between parcels and titles is not always a one-to-one relationship and can take many forms (one-to-one, one-to-many, many-to-one, or many-to-many) including unit and strata titles. This means that a parcel may have many owners, only one of which is a public entity.
3. Some of the land displayed on the map may not be publicly owned in its entirety – remember title ownership may refer to more than just land, but space above land, below ground, or a part share of the land, and in some cases includes leasehold land, unit titles, and cross lease titles.
4. Interest in the land can also come through mechanisms such as by leasehold, life estates, and easements. These interests have been included in the dataset, but can be filtered out for analysis.
5. While checks have been done on the results of the modelling outputs, there is no way to effectively manually check all parcels in Auckland to see if they have been categorised correctly.
6. Public organisations, and their associated entities that are ‘public’ for the purposes of this study include:
 - The Crown
 - Crown Agents, Crown Entities, Public Finance Act Organisations or Companies, or State Owned Enterprises
 - Auckland Council
 - Auckland Council, council-controlled organisations (CCOs), and
 - Auckland Council or CCO subsidiaries.
7. Land identified as having no ownership, but being encompassed by the provisions of the Marine and Coastal Area (Takutai Moana) Act 2011 has been included, but has been identified and categorised to reflect this special status.

8. Auckland's maunga are managed by Tūpuna Taonga o Tāmaki Makaurau Trust, which was established by Ngā Mana Whenua o Tāmaki Makaurau Collective Redress Act 2014. The Act vests the ownership and management of Auckland's maunga in trust for the common benefit of the iwi/hapū of Ngā Mana Whenua o Tāmaki Makaurau and the other people of by the Tūpuna Maunga o Tāmaki Makaurau Authority (Tūpuna Taonga o Tāmaki Makaurau Trust). The maunga must also remain as reserves. Given this, for the purposes of this study, the maunga have been included as 'publicly owned land', but have been identified and categorised to reflect their special status.
9. This assessment does not include land that is 'owned' by government mixed ownership model companies, which as at February 2018 included:
 - Genesis Energy Limited,
 - Mercury NZ Limited, and
 - Meridian Energy Limited.
10. Also excluded from this assessment is land that has been identified in the LINZ parcel dataset as being 'road', 'hydro', or 'streambed'. Roads, including state highways, are vested in local councils, with powers, functions and duties for state highways being with New Zealand Transport Agency (NZTA), and all motorways that are state highways are vested in the Crown (New Zealand Transport Agency, 2013).
11. Text based queries have been used to select parcels based on owner names from the master dataset. These queries were based on the list of names of public entities at the time of analysis. If the names of these entities change in the future, or entities are created or dissolved, the queries will need to be changed. Note that these queries cannot take into account errors in title ownership records.
12. The dataset is static – it is a 'snapshot in time' view of ownership at the time the data was extracted from their relevant sources.
13. As such, legislative implications for changes in land use and/or ownership are acknowledged, but commentary has not been included.
14. The LINZ data used in this model has limitations; currently not every title is included in their dataset, and these do not always match to parcels. The match between live and part cancelled titles², through the method outlined in

² Live titles are current titles, and don't include historic titles that have been extinguished or superseded. 'Part cancelled titles' are where only part of the titles has been extinguished or superseded.

this report, and current parcels is more than 97 per cent, but is not 100 per cent complete.

15. Not every title in the LINZ data used has an owner registered against it; in these cases, other means of testing for ownership have been used, but these may not be as accurate.
16. Both the Public Trust and the Māori Trustee are listed as being Crown entities. Both are listed as owners of land in the LINZ datasets. Because they hold this land in trust for others, they have been excluded from this analysis.
17. Auckland Council has a number of joint ventures, or companies that are part owned by council. These have not been included in this analysis. Examples of these include:
 - Auckland International Airport Limited
 - New Lynn Central Limited
 - New Zealand Food Innovation Auckland Limited.
18. Parcels that are only partly in the Auckland region have been clipped to ensure that only land which lies within the Auckland region has been included in the modelling and analysis (refer to Section 3.2.2).
19. Ownership structures may not always be reflected within the data. Because parcel ownership has been identified by determining if a public entity is listed as being either owner or part owner, or if the parcel has an indication in either its intent or statutory action, there is potential for exclusion where parcels fall under mixed- or other complex ownership models and such attributions do not specify the public nature of ownership, intent or action. For example, while the CCO Auckland Council Investments Limited (ACIL) owns 22.4 per cent of Auckland International Airport Ltd, Auckland International Airport Ltd remains a publicly traded corporation (Auckland Council, 2018a). As such, the title, intent and action of airport parcels reflect Auckland International Airport Ltd's private ownership and does not elaborate on ownership structure. As outlined in Note 5, there is no way to undertake an effective manual check for such complexities.
20. The parcel dataset used for the current analysis, 'NZ Primary Land Parcels', does not include road parcels. This dataset was used because it was determined to be the best fit and least complex for this analysis. To include roads in the current analysis, the model would have to be rerun using a different dataset, such as 'NZ Parcels,' or an amalgam of 'NZ Primary Land Parcels' and 'NZ Primary Road Parcels.' However, while all roading parcels

are vested either in local council or the Crown, these datasets do not offer this discrepancy; assumptions would have to be made. Motorways, where the 'parcel statutory action' has been identified as 'motorway,' have been included in the analysis to ensure the data output is as complete as possible. Motorway parcels that have not been identified in this way have been excluded by the model. Further work is required if all motorway and roading parcels are to be included in this analysis.

3.0 Methodology for creating a proxy dataset of publicly owned land

3.1 Key technical definitions

There are a number of technical terms used in this report, particular relating to property information – in order to assist the reader, some of the key terms have been defined (Table 1).

Table 1: Key technical definitions

Term	Definition
Parcel	A cadastral polygon with a legal description (can also be known as a property, section or lot). Usually created through a subdivision process, but can also be created through legislation or a gazette notice.
Title	For the purposes of this study, the term title refers to the land or area contained on a registered Certificate of Title. Note that the land on a title may contain one or more parcels.
Parcel intent	Parcel intent can indicate usage; the list of intents is extensive. In the majority of instances parcel intent indicates whether a parcel is on a fee simple title or was captured as part of the Digital Cadastral Database (DCBD). Parcel intent can also include where a parcel has been vested in the Crown or in a local authority or has been gazetted for another use, such as for a reserve.
Parcel statutory action	A parcel statutory action is a note saved against a parcel. It indicates that the action is authorised by a specific Part or Section of an Act.

3.2 Methodology overview

The method employed to identify publicly owned land is a multi-stage process, with each stage selecting, with progressively less accuracy, parcels that meet the criteria being tested. The process undertaken is illustrated in Figure 1.

Figure 1 is made up of one or more tests (detailed later in this section) that act as a sieve or a filter, meaning that if a parcel’s ownership is determined, it is then funnelled to the final dataset, and only those parcels that have not met the criteria pass to the next test or stage for further analysis.

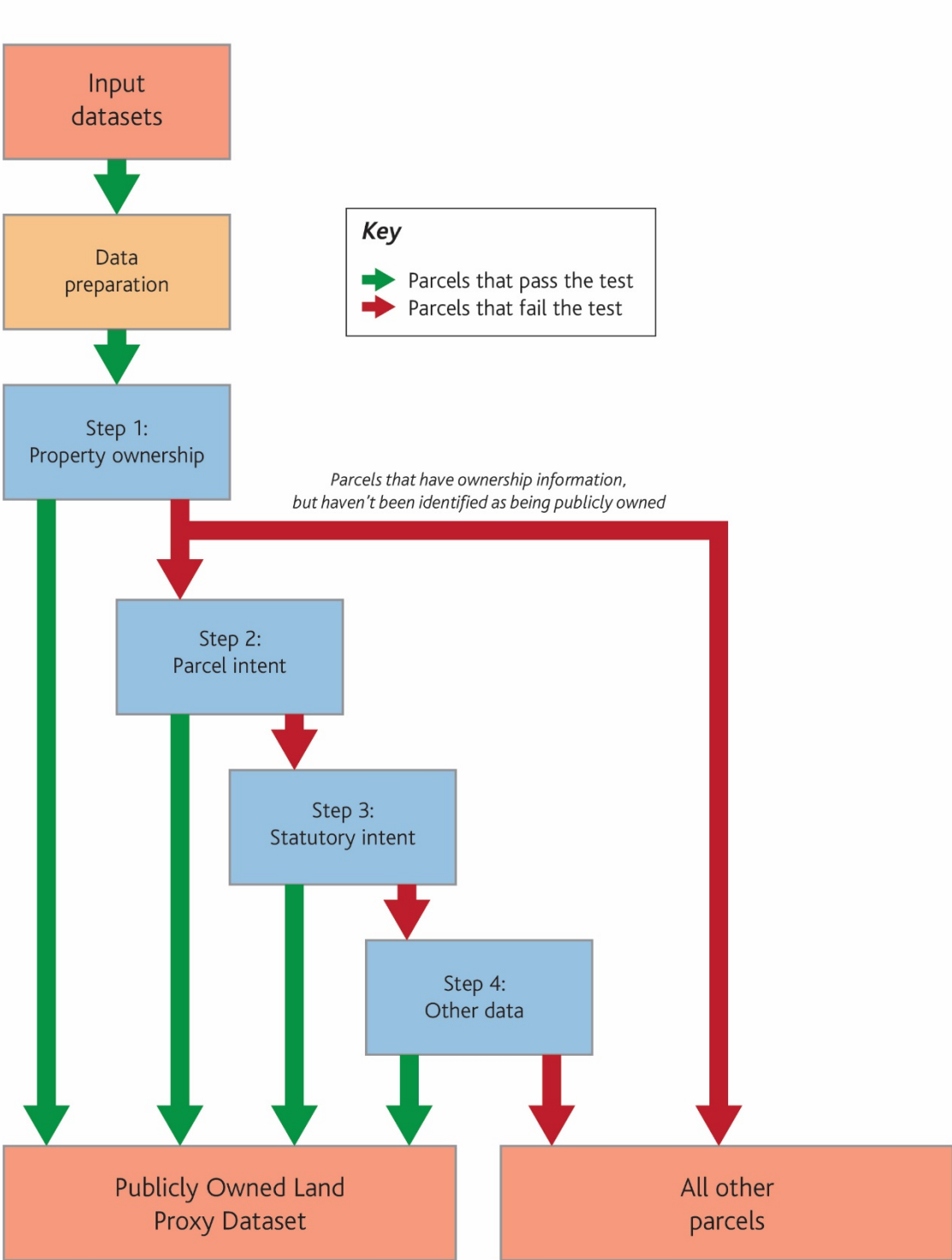
In order to effectively analyse the publicly owned land proxy dataset after creation, a classification system was needed in order to group the results. When each property is classified as being in public ownership it was also tagged. Information on the classification system developed and used is included in Section 3.2.5.

The data preparation and identification processes are undertaken in geospatial software called FME³. FME workbenches have been used to create a model, in which selection queries and other parameters can be adjusted and re-run as necessary.

This section documents how each step in the process was undertaken and the parameters used, in order to generate the publicly owned land proxy dataset.

³ FME is a software product that incorporates an integrated collection of tools for spatial data transformation and data translation, and is published by Safe Software Inc. of Surrey, British Columbia, Canada. FME is considered to be a GIS (Geographic Information Systems) utility that enables conversion between data formats and processes and is able to manipulate and generate data geometry and attributes.

Figure 1: Processing steps to create publicly owned land proxy dataset



3.2.1 Data sources and descriptions

Data used in the modelling is detailed in Table 2. In order to run the model these datasets need to be downloaded from the data providers.

Table 2: List of data sources and descriptions used in modelling

Data	Description	Data date; organisation; source
NZ Primary Land Parcels	Current land parcel polygons with associated descriptive data (Land Information New Zealand, 2010). This dataset does not include parcels that have been vested in council for roading (see section 2.0 note 20).	6 April 2018; Land Information New Zealand; LINZ Data Service
NZ Property Title Owners	Owner/title dataset (where there is a data link to a primary parcel). A title is a record of all estates, encumbrances and easements that affect a piece of land (Land Information New Zealand, 2012).	6 April 2018; Land Information New Zealand; LINZ Data Service
NZ Title Parcel Association List	A table used to associate live and part cancelled titles to current spatial parcels (Land Information New Zealand, 2013).	6 April 2018; Land Information New Zealand; LINZ Data Service
Department of Conservation (DOC) Public Conservation Areas	Spatial representation of DOC's management units defined by various acts of parliament and legislation. The attributes in this dataset are derived from the National Property and Land Information System (NaPALIS) (Department of Conservation, 2015a).	1 March 2017; Department of Conservation; Koordinates

3.2.2 Parcel data preparation

The data extraction process from the LINZ data portal includes some parcels on the border with Auckland and these need to be excluded. A number of parcels fall across the border of Auckland and the Waikato region. As such, before being used for modelling, this data has been clipped to ensure that only the land associated with these parcels that falls within the Auckland region has been retained for analysis. There were no such issues with parcels falling across the boundary between Auckland and Northland.

3.2.3 Associating title and parcel information

The first step in the modelling process is to associate the ownership details and other information that is stored against property titles to land parcels. This is done in FME using the 'title parcel association list'. The title parcel association list contains a list of all titles, and the parcels listed on those titles. This list is a many-to-many relationship; a single title may have one or more parcels on it, and a parcel may have one or more title on it. The parcel title association list is joined to the parcel dataset using the unique parcel identification (par_id), which is then joined to the title information using the unique title identification (title_no). The resulting output is a parcel based spatial dataset, which is used as the basis for further modelling.

A copy of the FME workbench (a model schematic) used to perform this preparatory work can be found in Appendix B.

A full list of the tests used to identify land and that are discussed throughout this section can be found in Appendix C. The table in this appendix also notes how the results of each test are tagged with owner information.

3.2.4 Classification and tagging of publicly owned land

Each parcel identified as being publicly owned is classified and tagged according to its owner in order to allow better, easier analysis. This includes being tagged at three levels of ownership groupings, by the owner name, the certainty of ownership, and lastly with a note if additional information about the parcel ownership is warranted, such as the status of a holding company or subsidiary if it is not 100 per cent owned by a public entity.

3.2.5 Classification of owner types and owner groups

Three levels of classification have been used to categorise identified publicly owned land, with each level or 'group', being more specific. The groups are listed in Table 3.

It should be noted that when Crown or local government ownership is referenced in this report, it includes all land included in any sub-categories. For example, local government land includes all land that is owned by council, council-controlled organisations, or any of their subsidiaries.

For parts of the analysis where more than one public entity owner has been identified for a parcel, the category of 'mixed public ownership' has been applied. From the April 2018 dataset used in this study, 111 parcels (0.25 per cent of the total number identified as being publicly owned) covering approximately 70 hectares (also 0.25 per cent) fell into this category.

Table 3: Publicly owned land owner classification groupings

Group 1	Group 2	Group 3
Crown	Crown	Crown
		Infrastructure and Transport
		Reserves, Gazetted, and Other Land
		Schools*
		Department of Conservation Estate
	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
		District Health Board
		Tertiary Education Institution
		Housing New Zealand
		Schools*
Local Government	Council	Council
	Council-Controlled Organisation	Council-Controlled Organisation
	Council or CCO Subsidiary	Council or CCO Subsidiary
Other	Crown, Territorial Authority, or other body	Reserves, Gazetted, and Other Land
	Common Marine and Coastal Area	Common Marine and Coastal Area
	Tūpuna Taonga o Tāmaki Makaurau	Tūpuna Taonga o Tāmaki Makaurau
	Multiple public owners	Multiple public owners

* Identification of parcels as being part of a school can be made through multiple means depending on the nature of their ownership information.

A full list of the all the central government agencies and local government entities can be found in Appendix A.

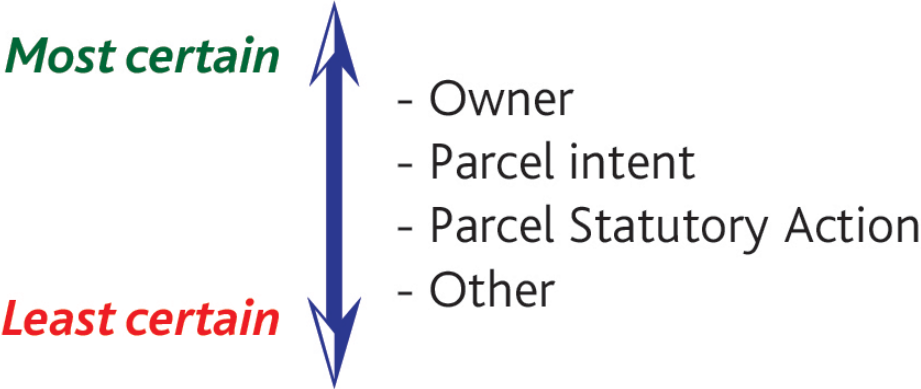
3.2.6 Parcel owner

Parcels are also tagged with the name (or names) of the owner(s) if known. In a few cases the ownership details have needed to be standardised. This is done where a number of owner's names were found for a single organisation. This usually occurs where an entity has had a name change or has transitioned to become a different organisation, such as the merger of councils in Auckland in 2010, and the property ownership records have not been changed to match.

3.2.7 Parcel ownership certainty

Each parcel is tagged with the ownership certainty. Ownership derived or determined using the owner from title information is deemed to be the most certain, with parcel intent, and statutory action being less certain (Figure 2).

Figure 2: Parcel ownership certainty



3.3 Outputs of modelling process

The outputs of the modelling process are delivered in the form of a GIS spatial database (ESRI filegeodatabase v10.4). The geodatabase includes the parcel shapes, as well as the related parcel information. This means that the data can be both mapped and viewed in tabular form, enabling both spatial and aspatial analysis. The file also includes the associated title information from each parcel’s title, including the owner details, where known. In addition to this a number of other fields have been included from the modelling process; these are listed along with a description in Table 4. There is one parcel shape for each instance of public ownership. For analysis of the number of parcels and land area covered by those parcels the data must first be ‘flattened’ to create a dataset with no overlaps. The methodology for that analysis is outlined in Section 4.0.

Table 4: List of fields added to parcel data in modelling process

Field name	Field description
POL_Group1	Publicly owned land owner categorisation Group 1.
POL_Group2	Publicly owned land owner categorisation Group 2.
POL_Group3	Publicly owned land owner categorisation Group 3.
POL_Owner	Owner details, either from title information or proxy based on modelling.
POL_Certainty	Level of certainty of owner details.
POL_Note	Note relating to the parcel. This field has been used to denote additional information about owner details.

3.4 Step 1: Using ownership information to test for public ownership of a parcel

The first test for public ownership uses ownership information from property title records. Property title records show a property's proprietors, legal description and the rights and restrictions registered against the property title (Land Information New Zealand, 2015a).

The FME workbench uses a series of string query tests (essentially a text search) to determine if an owner matches an entity that has been identified as being 'public'. These queries are formulated manually to match each entity. Because these text searches look for an exact match, they may potentially miss parcels where the owners name has been misspelled; text searches in FME are not case sensitive.

The following two sub-sections detail the queries for identifying crown owned land, and land owned by local government (and associated entities).

3.4.1 Using title owners name to identify Crown owned land

The configuration of central government agencies is complicated, and the list is extensive. It includes departments, entities such as crown agents, autonomous crown entities, independent crown entities, crown research institutes, school boards of trustees, tertiary education institutions, Public Finance Act Schedule 4 organisations and companies, state owned enterprises, and other agencies such as the Reserve Bank and the Offices of Parliament (State Services Commission, 2015).

In Step 1 of analysis, six sets of string query tests were developed to identify and tag parcels that had an owner related to the Crown; these are listed in Table 5. Also included in this table are the categorisation that identified parcels were tagged with and notes on why the queries were included.

Table 5: List of query sets used to identify Crown owned land, including notes

Test	Entities	Note
Test 1	Crown agents, Crown entities, Public Finance Act Schedule 4 organisations and companies, and state owned enterprises	Includes search for all Crown entities included in the State Service Commission's list (February 2018), excluding the Public Trust and the Māori Trustee.
Test 2	Tertiary education institutions	Includes search for all universities, polytechnics/institutes of technology, and wananga.
Test 3	Housing New Zealand	Housing New Zealand is a Crown agent, but for the purposes of this exercise has been included in its own query to allow easy identification for analysis. This test also includes searching for HNZ predecessors.
Test 4	District health boards	District health boards are Crown agents, but for the purposes of this exercise have been included in their own query to allow easy identification for analysis. Some property owned by DHBs still have their predecessors listed as owners (Crown Health Enterprises established as part of the 1993 health reform programme).
Test 5	Her Majesty the Queen	Most Crown owned property that is used by public service departments has an owner of 'Her Majesty the Queen', so only a single query is needed to identify these parcels.
Test 6	School Boards of Trustees	Many parcels that make up public schools have the owner listed as 'Her Majesty the Queen' but there are several instances where the Board of Trustees of some schools are listed as the owner. This query captures these.

3.4.2 Using title owner name to identify local government (and associated entities) owned land

Three additional string queries in the model identify and tag parcels that have Auckland Council and associated entities as an owner; these queries are outlined in Table 6: List of query sets used to identify local government (and associated entities) owned land.

A full list of the Auckland Council CCOs and Auckland Council and CCO subsidiaries included in the queries can also be found in Appendix A.

Table 6: List of query sets used to identify local government (and associated entities) owned land

Query set	Entities	Note
Test 7	Auckland Council (and predecessors)	Most council property has 'Auckland Council' listed as the owner, but there are a few examples that have its predecessors, both immediate and distant (for example councils that were disestablished under the 1989 local government reforms), as owners.
Test 8	Auckland Council CCOs (and predecessors)	Council currently has six 'substantive' CCOs and a number of legacy CCOs (Auckland Council, 2018b)
Test 9	Auckland Council subsidiaries or CCO subsidiaries	Auckland Council and its CCOs also have subsidiaries; where these are known they have been included in this test. Part shareholdings or joint venture companies where Auckland Council or a CCO is not the sole shareholder have not been included.
Test 10	Tūpuna Maunga o Tāmaki Makaurau Trust	Auckland's maunga are to held in trust for the common benefit of the iwi/hapū of Ngā Mana Whenua o Tāmaki Makaurau and the other people of Auckland, by the Tūpuna Maunga o Tāmaki Makaurau Authority (Tūpuna Maunga o Tāmaki Makaurau Trust).

3.5 Steps 2 and 3: Using additional parcel information to test for public ownership

Ownership of a property provides the most certain test of whether a parcel is publicly owned. Of the more than 500,000 land parcels in Auckland (as at 18 January 2018), there were over 18,000, or just over three per cent, with no owner associated with them. In some cases it is possible to use other information associated with parcels that give an indication of their potential ownership. Two fields of information stored against each parcel, 'parcel intent' and 'statutory action', can be analysed in order to provide an indication of owner which can be used to assign a classification.

3.5.1 Step 2: Using 'parcel intent' to identify Crown and local government owned land

Each parcel's intent status can indicate its usage; the list of intents is extensive⁴ and not all intents are seen in the parcel data for Auckland. In the vast majority of instances parcel intent indicates whether a parcel is on a fee simple title or was captured as part of the Digital Cadastral Database (DCBD). Parcel intent can also

⁴ A full list of the parcel intent usage types can be found on the LINZ website (<http://www.linz.govt.nz/kb/488>)

include where a parcel has been vested in the Crown or in a local authority or has been gazetted for another use, such as for a reserve.

Table 7 lists the intents observed for Auckland in the April 2018 parcel dataset. Where a parcel's intent clearly indicates ownership by either the Crown or by a territorial authority, a classification has been assigned.

Table 7: List of parcel intents observed in Auckland (April 2018) and ownership classification (proxy for ownership)

Parcel intent	Classification (proxy for ownership)
Accretion	
Common Marine and Coastal Area (Sec 237A(1)(b) RM Act)	Other
DCDB	
Fee Simple Title	
Hydro	Crown
Lease	
Legalisation	
Māori	
Railway	Crown
Reclamation Area	
Residue Parcel	
Road	Crown or Territorial Authority
Statutory	
Strata	
Streambed	Crown
Vesting on Deposit for Accessway	
Vesting on Deposit for Historic Reserve (Territorial Authority)	Territorial Authority
Vesting on Deposit for Local Purpose Reserve	Crown, Territorial Authority, or other body
Vesting on Deposit for Nature Reserve (Crown)	Crown
Vesting on Deposit for Recreation Reserve (Crown)	Crown
Vesting on Deposit for Recreation Reserve (Territorial Authority)	Territorial Authority
Vesting on Deposit for Scenic Reserve (Crown)	Crown
Vesting on Deposit for Scenic Reserve (Territorial Authority)	Territorial Authority
Vesting on Deposit in Lieu of a Reserve (Crown)	Crown

Parcel intent	Classification (proxy for ownership)
Vesting on Deposit in the Crown (Sec 237A(1)(b) RM Act)	Crown
Vesting on Deposit in the Territorial Authority (Sec 237A(1)(a) RM Act)	Territorial Authority

The Department of Conservation (2015b) notes that local purpose reserves are “administered by the department or by other ministers, boards, trustees, local authorities, societies and other organisations”. The Reserves Act 1977 doesn’t stipulate the ownership of the individual local purpose reserves, but notes that they may be vested in a local authority, an administering body, or otherwise (Reserves Act 1977). For this reason, where a parcel’s intent is ‘Vesting on Deposit for Local Purpose Reserve’ it has been given the classification of ‘Crown, Territorial Authority, or other body’.

Parcels with an intent of ‘Common Marine and Coastal Area (Sec 237A(1)(b) RM Act)’ are not owned by any entity or person; the Marine and Coastal Area (Takutai Moana) Act states “neither the Crown nor any other person owns, or is capable of owning, the common marine and coastal area” (Marine and Coastal Area (Takutai Moana) Act 2011, s. 11.2). Parcels that fall within the Common Marine and Coastal Area maintain public right of access and may be used for any lawful activity (Marine and Coastal Area (Takutai Moana) Act 2011); as such, parcels with this intent have been given a classification of ‘other’. This means that they will be included in the publicly owned land dataset generated, but will not be tagged with an owner of ‘other’.

Another set of string queries is used based on the parcel intent classification to identify parcels with this intent, and tag them with a proxy owner, where no ownership is known.

The string queries used in the model to identify and tag parcels that likely are in public ownership are outlined in Table 8.

Table 8: List of query sets using parcel intent to identify publicly owned land

Test	Test name	Note
Test 11	Territorial Authority	Where parcel intent specifically states that a parcel has been vested to a territorial authority.
Test 12	Railway	Where parcel intent specifically states that it is used for rail purposes.
Test 13	Crown	Where parcel intent specifically states that a parcel has been vested to the Crown.
Test 14	Reserves and other gazetted land	Where parcel intent states that a parcel has been vested as a reserve or through a gazette notice, but the owner may be the Crown, a territorial authority, or another body.
Test 15	Common Marine and Coastal Area	Where parcels have no owner, but are for public use, under the Marine and Coastal Area (Takutai Moana) Act.

3.5.2 Step 3: Using parcel ‘statutory action’ to identify Crown and local government owned land

A ‘statutory action’ is the action that is authorised by a specific Part or Section of an Act (Land Information New Zealand, 2016), and, like parcel intent, in some cases it can be used as a proxy for ownership.

An example of where parcels that have neither owner, nor a parcel intent that indicates that it is publicly owned, and yet could be considered publicly owned is where it has a statutory action of ‘Conservation Area Sec 62 Conservation Act 1987’. Section 62 of the Conservation Act states that land that was State forest or Crown land prior to the Act, and meets other criteria, shall be held for conservation purposes (Conservation Act 1987); this strongly indicates that such land should be classified as publicly owned.

Parcels with a statutory action that indicate that the parcel be used as a road have been excluded (since land vested as roads have not been included in other part of this analysis). Parcels that have a statutory action that have indicates that they are used as a motorway, have been categorised and tagged.

As per the process outlined earlier, a set of string queries is used based on statutory actions to identify parcels, and tag them with a proxy owner, where no ownership is known, and no parcel intent indicated they were publicly owned.

The string queries to identify and tag parcels that likely are in public ownership are outlined in Table 9.

Table 9: List of query sets using parcel statutory action to identify publicly owned land

Test	Test name	Note
Test 16	Schools	Where an action includes the term school, education, or college, and does not include the term 'disposed of'.
Test 17	Motorways	Where an action includes the term motorway, and does not include the term 'disposed of'.
Test 18	Railways	Where an action includes the term railway, and does not include the term 'disposed of'.
Test 19	Crown	Where an action includes the term 'crown'.
Test 20	Local government	Where action includes the term 'Town Hall'.
Test 21	Other land	Where an action includes the terms related to reserves, stream and river beds, defence land, and conservation areas, but hasn't been identified through a previous query, or by gazette.

3.6 Step 4: Using other tests to determine public ownership

3.6.1 Department of Conservation estate

A spatial layer showing the extents of the DOC estate can be used to identify any remaining DOC land that hasn't been identified through other means.

The final test in the model identifies if any of the remaining parcels fall within the DOC estate, and tags any that do; this is outlined in Table 10.

Table 10: Test used to identify parcels that fall within the DOC estate

Test	Test name	Note
Test 22	Within the DOC estate	This is a spatial query; where a parcel is within the DOC estate, it is selected and tagged.

When all tests have been completed, copies of parcels that have been identified as being publicly owned and tagged with their classification, are saved in a file-geodatabase (GIS file).

4.0 Methodology for analysing the publicly owned land proxy dataset

4.1 Tagging with extra attributes

To allow further analysis of the publicly owned land dataset, each parcel was tagged with additional attributes as part of this analysis; this included the local board that it was in, and the base zone from the Auckland Unitary Plan (operative in part), detailed below (Table 11).

A model schematic of the FME workbench used to tag the polygon features of the flattened dataset with additional attributes can be found in Appendix E.

Table 11: List of additional data sources and descriptions used in analysis

Data	Description	Organisation; source
Auckland Council local board boundaries	Polygons indicating the extents of the local board areas for Auckland.	Statistics New Zealand; 2013 census-based geographic boundary files.
Zoning (Auckland Unitary Plan, operative in part)	Extents of zoning defined by polygons for the Auckland Unitary Plan, operative in part (as at November 2016).	Auckland Council; SDE ⁵

4.2 Creating a ‘flat’ parcel dataset

While the core dataset created for this research identifies parcels that have been identified as having a public owner, where there are multiple public owners of titles on a single parcel, analysis becomes more difficult. This occurs when there are unit or cross lease titles, and also leasehold titles on parcels.

In order to calculate the area of coverage of publicly owned land in Auckland as well as sub-regional areas, such as by local board, a ‘flattened’ dataset must be created from the publicly owned dataset. The same schema is used for the output dataset as for the core publicly owned land dataset, but in the case where a parcel has more than one public entity owner the categorisation is changed to ‘multiple public owners’.

This dataset is also tagged with local board and zoning information as noted above.

A model schematic of the FME workbench used to create the flattened dataset can be found in Appendix F.

⁵ SDE refers to Auckland Council’s ArcGIS geospatial repository

5.0 Results and analysis

The analysis shows that of the 468,157 parcels in the Auckland region, 44,240 were identified as being publicly owned. This equates to 9.45 per cent of the region’s total parcels. The parcels identified as being publicly owned cover 19.12 per cent of Auckland’s land area, or 93,542 hectares.

This section of the report breaks down the analysis of the identified publicly owned land by a number of categories, including by owner type (Crown or local government), as well as by owner, and by local board area.

As noted in earlier, the process to identify and classify publicly owned land uses a number of methods, including assessing the name of a title’s owner and other information stored as part of the parcel dataset. Analysis on how parcels have been identified as being publicly owned show that a large majority (85 per cent) were identified using ownership information, which is the most reliable (Table 12).

Table 12: Proportion of parcels identified as being publicly owned by method used to identify them

Ownership certainty type	Proportion of total
Owner	85%
Parcel intent	1%
Parcel statutory action	15%
Other	>1%

5.1 Publicly owned land by category

Across Auckland nine per cent of parcels were identified as being publicly owned, with six per cent being Crown owned and three per cent being owned by local government. Assessing ownership by land area shows that together Crown land covered five per cent of Auckland, while local government owned land covers eight per cent. Land that was categorised as being publicly owned, but falling in the ‘other’⁶ category covers a further six per cent of the land of the region.

Analysis of the number and land area of parcels that are publicly owned by Group 1 categories (refer Table 3) shows that while the parcels owned by the Crown account for over half of the number (59 per cent), the land area covered by them only accounts for less than a third of the total (27 per cent) (Table 13).

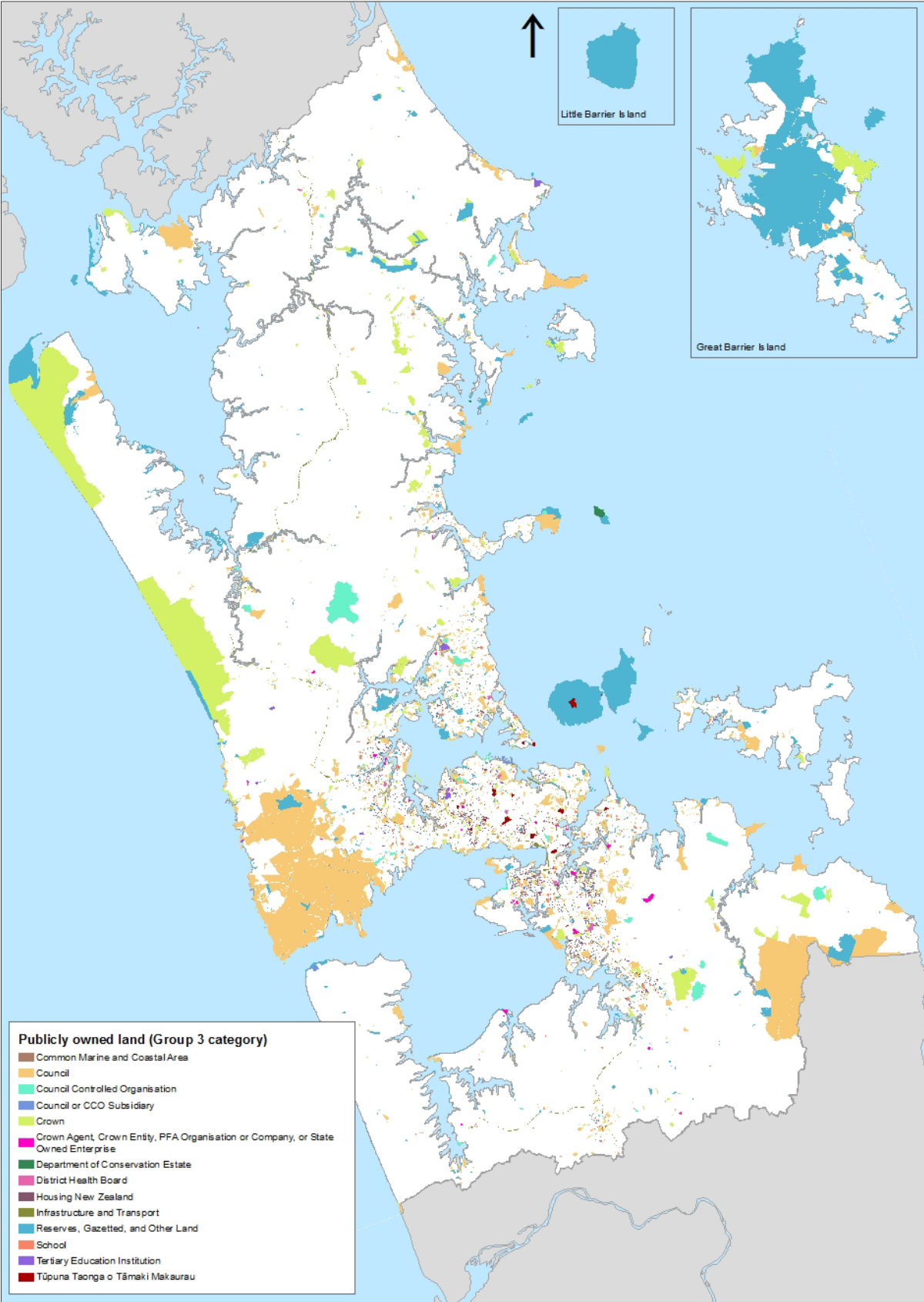
⁶ For land that falls into the ‘other’ category, refer to Table 3.

The location of publicly owned land in the Auckland region is illustrated below (Figure 3).

Table 13: Parcel count and area of publicly owned land in Auckland, by Group 1 category

Group 1	Count of parcels	Proportion of parcels	Area (ha)	Proportion of area
Crown	26,187	59%	25,494	27%
Local Government	12,399	28%	37,164	40%
Other	5,654	13%	30,884	33%
Total	44,240		93,542	

Figure 3: Publicly owned land in Auckland, by Group 3 category



Further breaking down the ownership information by Group 2 categories (Table 14) shows that the category 'Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise', has the largest number of parcels (20,377) but only covers a small land area. The vast majority of parcels within this category (19,799, or 97 per cent) are owned by Housing New Zealand; Transpower which owns the second highest number of parcels has only 139. Other owners in this category included universities and other tertiary institutions, Fire and Emergency New Zealand (formerly the New Zealand Fire Service), and the region's district health boards.

Table 14: Parcel count and area of publicly owned land in Auckland, by Group 2 category

Group 1	Group 2	Count of parcels	Proportion of total POL parcels	Area (ha)	Proportion of total POL area
Crown	Crown	5,810	13%	23,334	25%
	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	20,377	46%	2,160	2%
Local Government	Council	11,702	26%	34,014	36%
	Council-Controlled Organisation	593	1%	3,014	3%
	Council or CCO Subsidiary	104	0%	136	0%
Other	Crown, Territorial Authority, or other body	5,466	12%	30,525	33%
	Tūpuna Taonga o Tāmaki Makaurau	26	0%	268	0%
	Multiple public owners	162	0%	91	0%
Total		44,240		93,542	

Crown owned land accounts for 13 per cent of parcels identified as being publicly owned, and covers a quarter of the land area. The majority of parcels and land area in the Crown category has a registered owner of 'Her Majesty the Queen'; other land in this category has been identified as having the Crown as an owner through other means. Examples of land with the owner of Her Majesty the Queen include schools, government buildings, land acquired for state highways and motorways, and reserves. For example, Figure 4 shows different types of land owned by Her Majesty

the Queen in central Auckland: Old Government House (top left-hand corner), the Auckland High Court, part of the University of Auckland campus, part of the railway corridor, and commercial properties (acquired for state highway improvements).

Figure 4: Example of parcels owned by Her Majesty the Queen in central Auckland



Further breaking down Crown owned land, using the Group 3 category we can see that Housing New Zealand is the largest Crown owner, by number of parcels (Table 15). Land that was identified as being a school covers an area of 841 hectares.

Table 15: Parcel count and area of Crown owned land in Auckland, by Group 3 category

Group 3 (Crown only)	Count of parcels	Area (ha)
Crown	3,664	20,860
Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	310	309
Department of Conservation Estate	9	109
District Health Board	79	142
Housing New Zealand	19,799	1,435
Infrastructure and Transport	603	732
Reserves, Gazetted, and Other Land	339	803
School	1,209	841
Tertiary Education Institution	175	265
Total	26,187	25,494

It should be noted that most land that is used for schools falls within the ‘Crown’ category, as the land’s registered owner is ‘Her Majesty the Queen’; the land that falls in the ‘school’ category includes land that is directly owned by a board of trustees, or has a parcel intent or parcel statutory action indicating the land is used for schools. An example of this can be seen in Figure 5, showing Avondale College, Avondale Intermediate School, and Rosebank School; here the land for the schools falls across three categories.

Figure 5: Example of school land falling in more than one category



Exploring the local government category by owner names (where the owner can be determined) we can see that Auckland Council directly owns the largest amount of land (34,014 hectares), followed by Watercare with nearly 3000 hectares, 782 hectares of which is associated with their Māngere wastewater treatment facility.

Auckland Transport owns just nine hectares of land, which includes land that has been purchased for the Auckland Manukau Eastern Transport Initiative (AMETI). All of the land that Auckland Transport manages as part of the road corridor is excluded from this assessment.

Table 16: Ownership in local government category (Group 1)

Owners in local government category	Count of parcels	Area (ha)
Auckland Council	11,702	34,014
Auckland Transport	33	9
Panuku Development Auckland Limited	173	34
Ports of Auckland Limited	104	136
Regional Facilities Auckland Limited	20	64
Watercare Services Limited	367	2,906
Total	12,399	37,164

5.2 Publicly owned land (area) by local board

Auckland Council's local board areas break the region up into 21 smaller areas. The different nature of the local boards, with many being urban, some being rural, and some being a mix, sees an uneven distribution of publicly owned land across them. The Rodney Local Board area has the largest amount of publicly owned land (by area) with just over 25,600 hectares (Table 17: Publicly owned land in hectares, by Group 1 category, and local board area). The local board with the least publicly owned land is the Whau Local Board area, with just 440 hectares. The Waitākere Ranges Local Board area has the most local government owned land (15,118 hectares), with much of this land forming the Waitākere Ranges Regional Park.

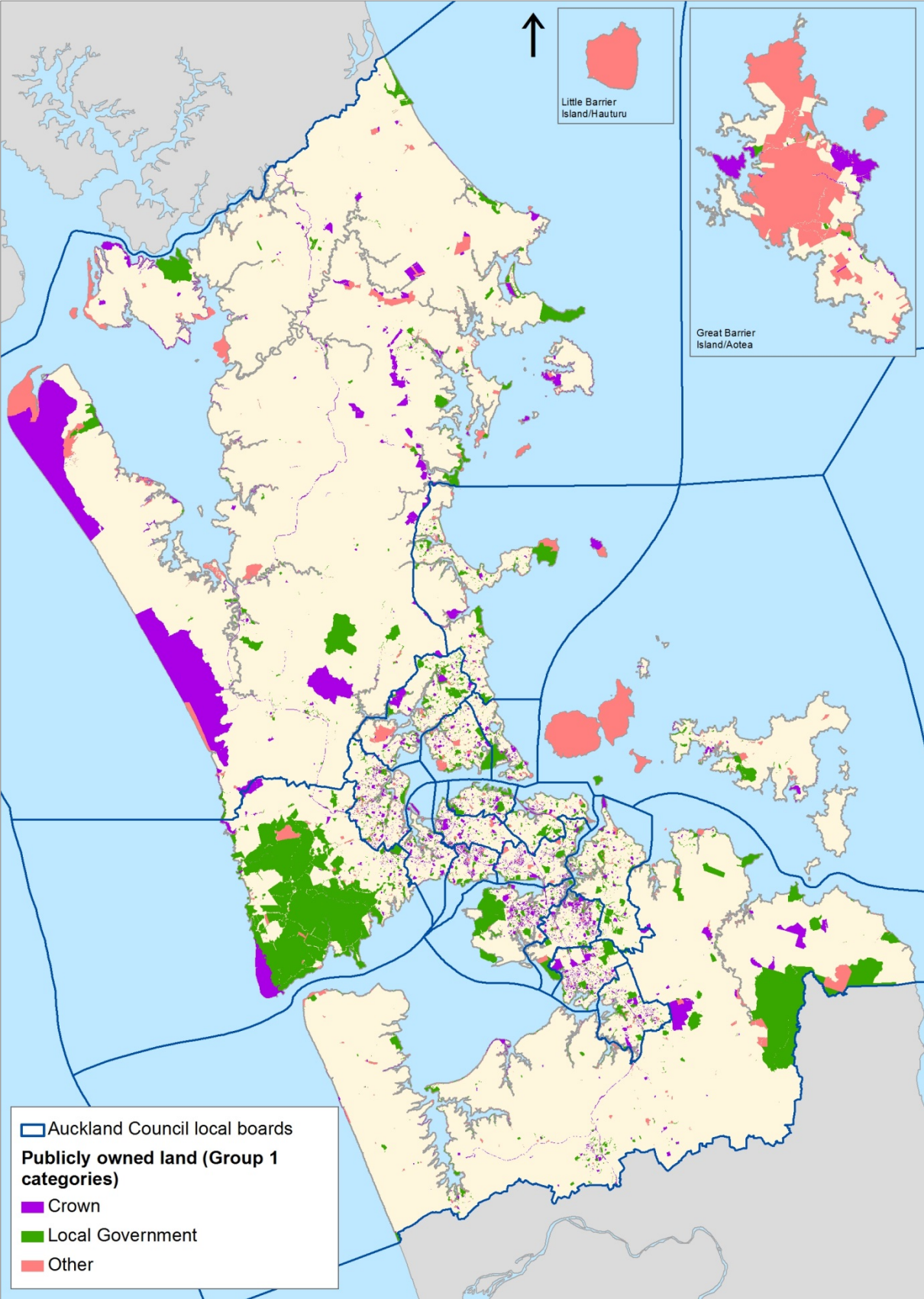
The Great Barrier Local Board area has a large amount of land falling in the 'other' category (just over 17,500 hectares). This includes all of Little Barrier Island, which has been vested as a nature reserve, and large tracts of Great Barrier Island that are held for conservation purposes⁷.

⁷ This land has been classified as 'other' because there was no owner information and from the parcel statutory intent it's not always clear who the land has been vested in, or is owned by.

Table 17: Publicly owned land in hectares, by Group 1 category, and local board area

Local board	Crown	Local government	Other	Total
Albert - Eden	320	121	79	520
Devonport - Takapuna	147	531	88	765
Franklin	1,640	8,043	1,443	11,126
Great Barrier	1,735	225	17,547	19,508
Henderson - Massey	361	419	191	972
Hibiscus and Bays	357	1,025	465	1,848
Howick	291	686	157	1,133
Kaipātiki	148	359	293	800
Māngere - Ōtāhuhu	442	1,436	80	1,958
Manurewa	486	532	73	1,091
Maungakiekie - Tāmaki	314	373	146	834
Ōrākei	144	368	100	612
Ōtara - Papatoetoe	415	491	114	1,020
Papakura	275	329	92	695
Puketāpapa	238	182	62	483
Rodney	15,940	5,127	4,605	25,672
Upper Harbour	446	748	448	1,643
Waiheke	116	514	4,231	4,860
Waitākere Ranges	1,288	15,118	569	16,975
Waitematā	138	387	56	581
Whau	253	143	44	440
Outside	0	9	0	9
Grand Total	25,494	37,164	30,884	93,542

Figure 6: Publicly owned land (Group 1 categories) and Auckland local board boundaries



5.3 Publicly owned land (area) by Auckland Unitary Plan zoning

This section looks at where publicly owned land is in relation to the zoning of the Auckland Unitary Plan (operative in part).

Assessment by zoning group shows that public open space zones contain the largest amount of publicly owned land, with over 40,000 hectares (Table 18). The rural zones contain a significant amount of Crown owned land.

Table 18: Publicly owned land by area (hectares), by category, and Auckland Unitary Plan (operative in part) zoning group

Zoning group	Crown	Local government	Other	Total
Business	450	537	50	1,038
Coastal	280	1,570	1,097	2,946
General	2,634	793	21,756	25,184
New growth	75	56	61	191
Public Open Space	4,353	29,766	7,389	41,508
Residential	3,127	331	57	3,515
Rural	14,367	3,502	201	18,070
Special purpose zone	207	590	273	1,070
(blank)	0	20	0	20
Total	25,494	37,164	30,884	93,542

Evaluation by individual zones shows that the Public Open Space – Conservation zone has the largest amount of publicly owned land it in, with just over 31,000 hectares (Table 19), followed by the Hauraki Gulf Islands zone (24,000 hectares) and the Rural Coastal zone (12 hectares).

Table 19: Publicly owned land by area (hectares), by category, and Auckland Unitary Plan (operative in part) zoning

Zone	Crown	Local government	Other	Total
Airport	1	0	224	226
Business Park	9	1	0	10
Cemetery	0	224	23	246
City Centre	28	98	3	130
Coastal Transition	4	8	2	14
Countryside Living	200	234	1	435

Zone	Crown	Local government	Other	Total
Defence	6	0	0	6
Ferry Terminal	0	1	1	2
Future Urban	75	55	61	190
General Business	17	3	0	21
General Coastal Marine	256	1,502	1,090	2,847
Green Infrastructure Corridor	0	0	0	0
Hauraki Gulf Islands	1,837	737	21,619	24,194
Healthcare Facility	151	0	0	151
Heavy Industry	119	55	0	174
Large Lot	16	61	0	77
Light Industry	118	230	15	363
Local Centre	4	5	0	9
Major Recreation Facility	3	185	22	211
Māori Purpose	4	6	3	12
Marina [rcp/dp]	15	42	1	58
Metropolitan Centre	17	44	1	62
Minor Port [rcp/dp]	0	4	0	4
Mixed Housing Suburban	1,366	91	19	1,476
Mixed Housing Urban	1,087	46	5	1,138
Mixed Rural	689	363	38	1,089
Mixed Use	120	34	29	183
Mooring [rcp]	0	13	2	15
Neighbourhood Centre	1	1	0	2
Public Open Space - Civic Spaces	0	3	0	3
Public Open Space - Community	1	52	27	80
Public Open Space - Conservation	3,941	21,893	5,574	31,409
Public Open Space - Informal Recreation	269	5,714	1,362	7,346
Public Open Space - Sport and Active Recreation	142	2,104	425	2,671
Quarry	0	174	0	174
Road [i]	11	11	5	28
Rural and Coastal settlement	24	9	0	33
Rural Coastal	11,770	461	109	12,340

Zone	Crown	Local government	Other	Total
Rural Conservation	0	0	19	19
Rural Production	1,660	2,345	31	4,036
School	3	1	1	5
Single House	302	81	26	409
Strategic Transport Corridor	785	16	1	801
Terrace Housing and Apartment Buildings	332	43	6	381
Tertiary Education	46	0	0	46
Town Centre	16	65	1	83
Waitakere Ranges	31	90	4	124
Waitakere Ranges Foothills	17	11	0	28
Water	2	29	130	161
Other	0	20	0	20
Total	25,494	37,164	30,884	93,542

6.0 Discussion

The creation of a method to identify, and create a proxy dataset of, publicly owned land in Auckland has been a difficult and complex process. In order to create the modelling process a lot of understanding has been required on areas such as: property information, including title-parcel relationships, title ownership details, parcel intent and parcel statutory actions, the nature of vested land, and parcels created through legislation or gazette notices. This includes familiarity with the Reserves Act 1977, Conservation Act 1987, Marine and Coastal Area (Takutai Moana) Act 2011, and the Ngā Mana Whenua o Tāmaki Makaurau Collective Redress Act 2014. An understanding of the hierarchy and classification of Crown entities, and Auckland Council CCOs was also needed.

The complicated nature of both the property datasets used and the development of an efficient and useable categorisation system means that the outputs of this research should be used cautiously and the caveats and notes provided should be read and understood.

This research provides for the first time the quantification of publicly owned land in Auckland across a number of categories. While the dataset has caveats it can be used for both council and government agencies to assess and make decisions related to their land holdings. While data pertaining to the property assets of separate organisations can often be viewed in isolation, using a dataset such as this can enable council or government entities to understand how their land holdings relate to each other, potentially providing better decision making, especially in the space of urban redevelopment projects.

Given that there is no single dataset recording property holdings of both local and central government in New Zealand that can be used for decision making, does one need to be created?

In its report *Using land for housing*, the Productivity Commission noted that only two cities that had undertaken a stocktake of publicly owned land that could be used for housing was Auckland and Christchurch (New Zealand Productivity Commission, 2015). Housing accords for both cities between the Government and the councils prompted these stocktakes, and the Auckland assessment used an early version of the method outlined in this research.

A recommendation of the Commission was that MBIE in conjunction with councils make an inventory of publicly owned land, which could form a basis for assessment for the identification of surplus land that could be used for housing development (New Zealand Productivity Commission, 2015).

To date it appears that no inventory has been created. The proxy dataset created as part of this study can be used to indicate the location of publicly owned land, something that did not exist before. While this proxy dataset of publicly owned land in the city is not a complete inventory, it could form the basis of one if cross referenced with property and asset management datasets from both Auckland Council and central government.

A key user in Auckland of such an inventory would be the council CCO Panuku Development Auckland. Panuku is charged with leading development and place shaping in urban areas, as well as the acquisition and sale of land of council and CCO projects, including the sale of property that has been deemed to be surplus to requirements (Panuku Development Auckland, 2018). Panuku notes that they “will support housing demands by enabling development of council-owned land” (Panuku Development Auckland, 2018), but the disposal of land for development, including new housing has not been without issues (Mealing, 2017; Russell, 2018).

The Auckland Housing Accord’s land assessment identified Crown owned land. As a result, in 2015, the New Zealand Government provided a budget for the development of Crown land for housing (New Zealand Government, 2015). Known as the Crown Land Development Programme (CLDP) it has been designed to identify vacant or under-utilised Crown owned land in Auckland that is suitable and available for housing development, and to facilitate the construction of dwellings to increase housing supply (Ministry of Business Innovation and Employment, 2017a). Further funding for the programme was included in the 2017 Government budget (New Zealand Government, 2017). Currently there are six projects underway in Auckland in: Massey, Mount Albert, Waterview, Te Atatū, Manukau, and Point England (Ministry of Business Innovation and Employment, 2017b).

The first development in Massey, West Auckland, was announced in 2015 (Nichols, 2015; Smith, 2015). MBIE identified a property in Crown ownership as being surplus to requirements by using the early version of the publicly owned land dataset. Unfortunately because the dataset only identified this land, and others, as being publicly owned, and was not part of a more comprehensive inventory, the fact that the land was required to be offered to local iwi who have first right of refusal under their Treaty of Waitangi settlement was not considered (Radio New Zealand, 2015).

Another user of such an inventory could be Crown entities, Housing New Zealand and HLC (formerly known as the Hobsonville Land Company). While HLC’s developments to date have been concentrated on Hobsonville, in 2016 it was tasked with helping Housing New Zealand provide more homes to growth areas, particularly

Auckland, by managing housing development projects on under-utilised Government-owned land (HLC, 2017).

Given some of the shortcomings of the proxy dataset there is room for further work on the topic of publicly owned land; further work could be done to improve any future analysis. While the modelling has tried to take into account a large number of owner names, and other parcel related data, to assess whether land is publicly owned or not, there will be properties that the queries have missed. As time permits, small improvements to the model could be made ensure its accuracy and ensure the robustness of the outputs created.

The modelling and analysis created for this project can be repeated at future points and the results can be compared to see if there are changes in the amount, location, and types of publicly owned land.

Extra effort could also be used to understand how this dataset can be used in decision-making processes, and to explore the possibility of a more robust land inventory of publicly owned land (including both simplified and more fine grained sub-classification of land use and ownership).

7.0 Conclusion

This report has responded to a call by the Productivity Commission to create an inventory of publicly owned land in Auckland. This report has outlined the process undertaken in constructing this dataset. Auckland Council was identified as the public entity with the largest land holdings in the region, with over 34,000 hectares of land. Another 30,000 hectares of land was identified as being owned by the Crown, Auckland Council, or another body, but its owner was not able to be identified using the information available. Twenty per cent of Auckland's land area is publicly owned, making it an important class of land in the region. The results of the methodology outlined in the report allow for the quantification and analysis of this land, something which hasn't been easy to do in the past.

This report details the method used to identify publicly owned land, in order for future users of the datasets created to clearly understand what is included and what is not.

A number of programmes to undertake development on land suitable for housing or dispose of land surplus to requirements have been initiated or continued by both the Crown and Auckland Council. The publicly owned land dataset created by this research forms a strong piece of evidence to support the decision-making processes of both, and could form the basis of a detailed inventory of publicly owned land. Further analysis using the publicly owned land dataset could also prove to be useful.

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9.0 Appendices

Appendix A – List of central government agencies and local government entities included in model, with classification group and type

Name	Group 1	Group 2	Group 3
Accident Compensation Corporation	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Accreditation Council	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
AgResearch Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Agricultural and Marketing Research and Development Trust	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Airways Corporation of New Zealand Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Animal Control Products Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Arts Council of New Zealand Toi Aotearoa	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Asia New Zealand Foundation	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
AsureQuality Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Auckland City Water	Local Government	Council or CCO Subsidiary	Council or CCO Subsidiary
Auckland Council	Local Government	Council	Council
Auckland Council Investments	Local Government	Council-Controlled Organisation	Council-Controlled Organisation
Auckland Council Property	Local Government	Council-Controlled Organisation	Council-Controlled Organisation
Auckland District Health Board	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	District Health Board
Auckland Film Studios	Local Government	Council or CCO Subsidiary	Council or CCO Subsidiary

Name	Group 1	Group 2	Group 3
Auckland International Airport	Local Government	Council or CCO Subsidiary	Council or CCO Subsidiary
Auckland Regional Amenities Funding Board	Local Government	Council or CCO Subsidiary	Council or CCO Subsidiary
Auckland Regional Transport Authority	Local Government	Council or CCO Subsidiary	Council or CCO Subsidiary
Auckland Tourism Events and Economic Development	Local Government	Council-Controlled Organisation	Council-Controlled Organisation
Auckland Transport	Local Government	Council-Controlled Organisation	Council-Controlled Organisation
Auckland University of Technology	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Tertiary Education Institution
Auckland Waterfront Development Agency	Local Government	Council-Controlled Organisation	Council-Controlled Organisation
Broadcasting Commission	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Broadcasting Standards Authority	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Bunker Shipz	Local Government	Council or CCO Subsidiary	Council or CCO Subsidiary
Callaghan Innovation	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Careers New Zealand	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Children's Commissioner	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
City Rail Link Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Civil Aviation Authority of New Zealand	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
COMET Auckland	Local Government	Council-Controlled Organisation	Council-Controlled Organisation
Commerce Commission	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Conlinxx	Local Government	Council or CCO Subsidiary	

Name	Group 1	Group 2	Group 3
Controller and Auditor-General	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Counties Manukau District Health Board	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	District Health Board
Crown Asset Management Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Crown Fibre Holdings Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Crown Irrigation Investments Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Department of Conservation Estate	Crown	Crown	Crown
Drug Free Sport New Zealand	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Earthquake Commission	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Education New Zealand	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Education Payroll Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Electoral Commission	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Electricity Authority	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Electricity Corporation of New Zealand Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Energy Efficiency and Conservation Authority	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise

Name	Group 1	Group 2	Group 3
Environmental Protection Authority	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
External Reporting Board	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Fairway Resolution Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Families Commission	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Financial Markets Authority	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Game Animal Council	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Genesis Energy Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Government Superannuation Fund Authority	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Guardians of New Zealand Superannuation	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Health and Disability Commissioner	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Health Benefits Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Health Promotion Agency	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Health Quality and Safety Commission	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Health Research Council of New Zealand	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise

Name	Group 1	Group 2	Group 3
Her Majesty the Queen	Crown	Crown	Crown
Heritage New Zealand Pouhere Taonga	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Housing New Zealand Corporation	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Housing New Zealand
Human Rights Commission	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Independent Police Conduct Authority	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Institute of Environmental Science and Research Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Institute of Geological and Nuclear Sciences Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
KiwiRail Holdings Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Kordia Group Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Landcare Research New Zealand Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Landcorp Farming Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Law Commission	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Leadership Development Centre Trust	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Learning Media Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise

Name	Group 1	Group 2	Group 3
Manukau Institute of Technology	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Tertiary Education Institution
Māori Trustee, the	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Maritime New Zealand	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Massey University	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Tertiary Education Institution
Meridian Energy Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Meteorological Service of New Zealand Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Mighty River Power Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Motorway	Crown	Crown	Infrastructure and Transport
Museum of New Zealand Te Papa Tongarewa Board	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
National Institute of Water and Atmospheric Research Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
National Pacific Radio Trust	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Network for Learning Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Lynn Central	Local Government	Council or CCO Subsidiary	Council or CCO Subsidiary
New Zealand Antarctic Institute	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Artificial Limb Service	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise

Name	Group 1	Group 2	Group 3
New Zealand Blood Service	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Film Commission	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Fire and Emergency New Zealand (formerly New Zealand Fire Service Commission)	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Fish and Game Council	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Food Innovation Auckland	Local Government	Council or CCO Subsidiary	Council or CCO Subsidiary
New Zealand Forest Research Institute Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Game Bird Habitat Trust Board	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Government Property Corporation	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Institute for Plant and Food Research Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Lotteries Commission	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Post Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Productivity Commission	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Qualifications Authority	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Railways Corporation	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise

Name	Group 1	Group 2	Group 3
New Zealand Sentencing Council	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Symphony Orchestra	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Tourism Board	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Trade and Enterprise	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Transport Agency	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Venture Investment Fund Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
New Zealand Walking Access Commission	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Ngāi Tahu Ancillary Claims Trust	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Office of Film and Literature Classification	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Office of the Ombudsmen	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Pacific Co-operation Foundation	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Pacific Island Business Development Trust	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Panuku Auckland Development	Local Government	Council-Controlled Organisation	Council-Controlled Organisation
Parliamentary Commissioner for the Environment	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise

Name	Group 1	Group 2	Group 3
Pharmaceutical Management Agency	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Ports of Auckland	Local Government	Council or CCO Subsidiary	Council or CCO Subsidiary
Privacy Commissioner	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Public Trust	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Quotable Value Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Radio New Zealand Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Railway	Crown	Crown	Infrastructure and Transport
Real Estate Agents Authority	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Regional Facilities Auckland	Local Government	Council-Controlled Organisation	Council-Controlled Organisation
Research and Education Advanced Network New Zealand	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Reserve Bank of New Zealand	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Reserves, Gazetted, and Other Land	Other	Other	Reserves, Gazetted, and Other Land
Reserves, Gazetted, and Other Land	Crown	Crown	Reserves, Gazetted, and Other Land
Retirement Commissioner	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Schools	Crown	Crown	Schools
Sentencing Council	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Social Workers Registration Board	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise

Name	Group 1	Group 2	Group 3
Solid Energy New Zealand Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Southern Response Earthquake Services Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Sport and Recreation New Zealand	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Standards Council	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Takeovers Panel	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Waitematā Redevelopment Company Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Te Ariki trust	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Te Puru Community Charitable Trust	Local Government	Council-Controlled Organisation	Council-Controlled Organisation
Te Reo Whakapuaki Irirangi (Maori Broadcasting Funding Agency)	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Te Taura Whiri I Te Reo Māori (Maori Language Commission)	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Te Wananga o Aotearoa (Te Awamatu)	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Tertiary Education Institution
Television New Zealand Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Tertiary Education Commission	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
The Contemporary Art Foundation	Local Government	Council-Controlled Organisation	Council-Controlled Organisation
Transport Accident Investigation Commission	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise

Name	Group 1	Group 2	Group 3
Transpower New Zealand Limited	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
Tūpuna Taonga o Tāmaki Makaurau Trust Limited	Other	Tūpuna Taonga o Tāmaki Makaurau	Tūpuna Taonga o Tāmaki Makaurau
Unitec Institute of Technology	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Tertiary Education Institution
University of Auckland	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Tertiary Education Institution
Waitematā District Health Board	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	District Health Board
Watercare Services	Local Government	Council-Controlled Organisation	Tertiary Education Institution
WorkSafe New Zealand	Crown	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise	Crown Agent, Crown Entity, PFA Organisation or Company, or State Owned Enterprise
World Masters Games 2017	Local Government	Council or CCO Subsidiary	Council or CCO Subsidiary

Appendix C – List of tests to identify and classify publicly owned land

Notes on table

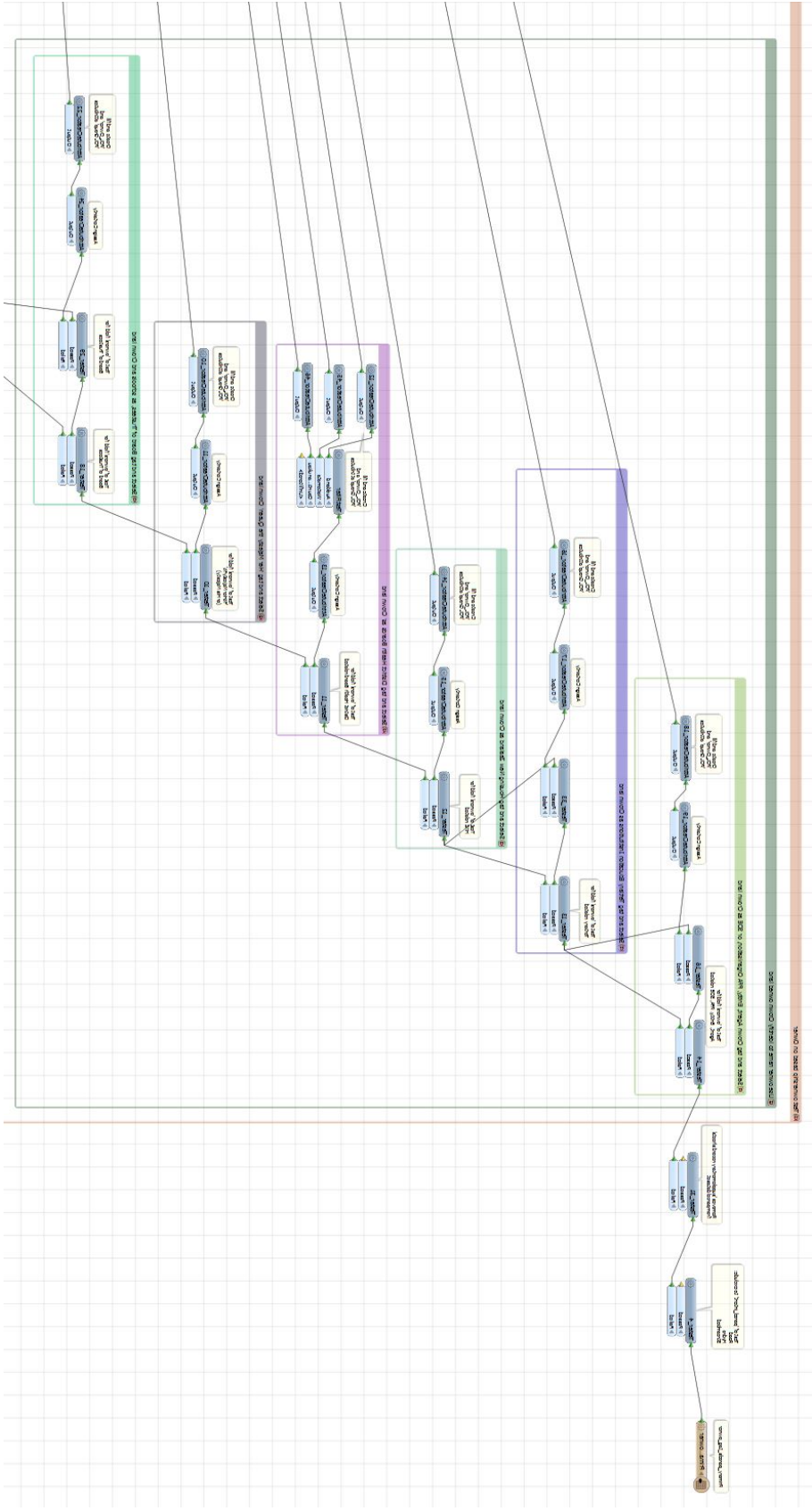
- † Denotes that the owner field has been populated with a standardised owner name. This is done where a number of owner's names were found for a single organisation. This usually occurs where an entity has had a name change or has transitioned to become a different organisation, such as the merger of councils in Auckland in 2010.
- § Denotes where the ownership information has been determined from a source other than title ownership information and should not be considered 100 per cent correct.

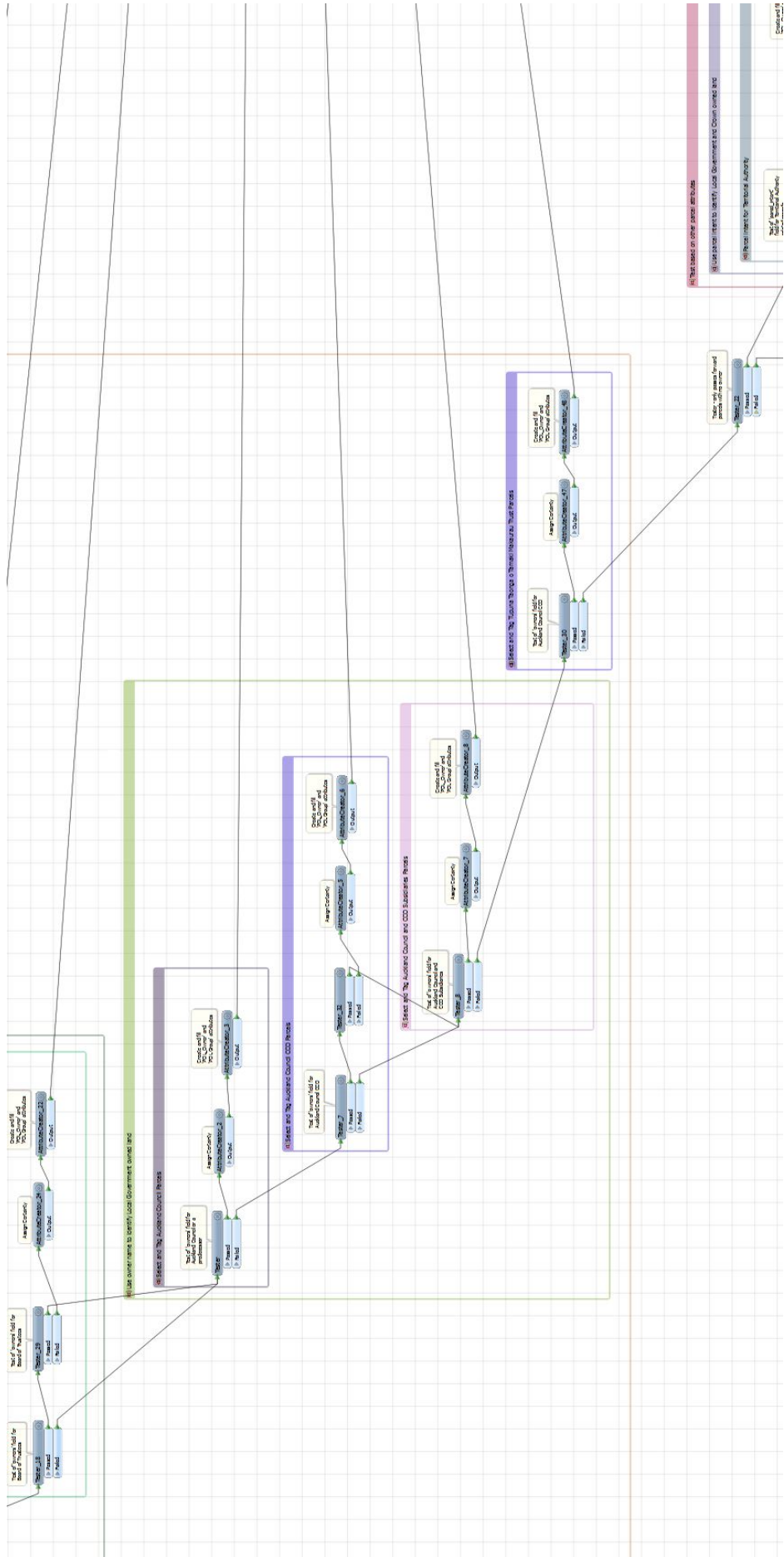
Table 20: List of tests to identify and classify publicly owned land

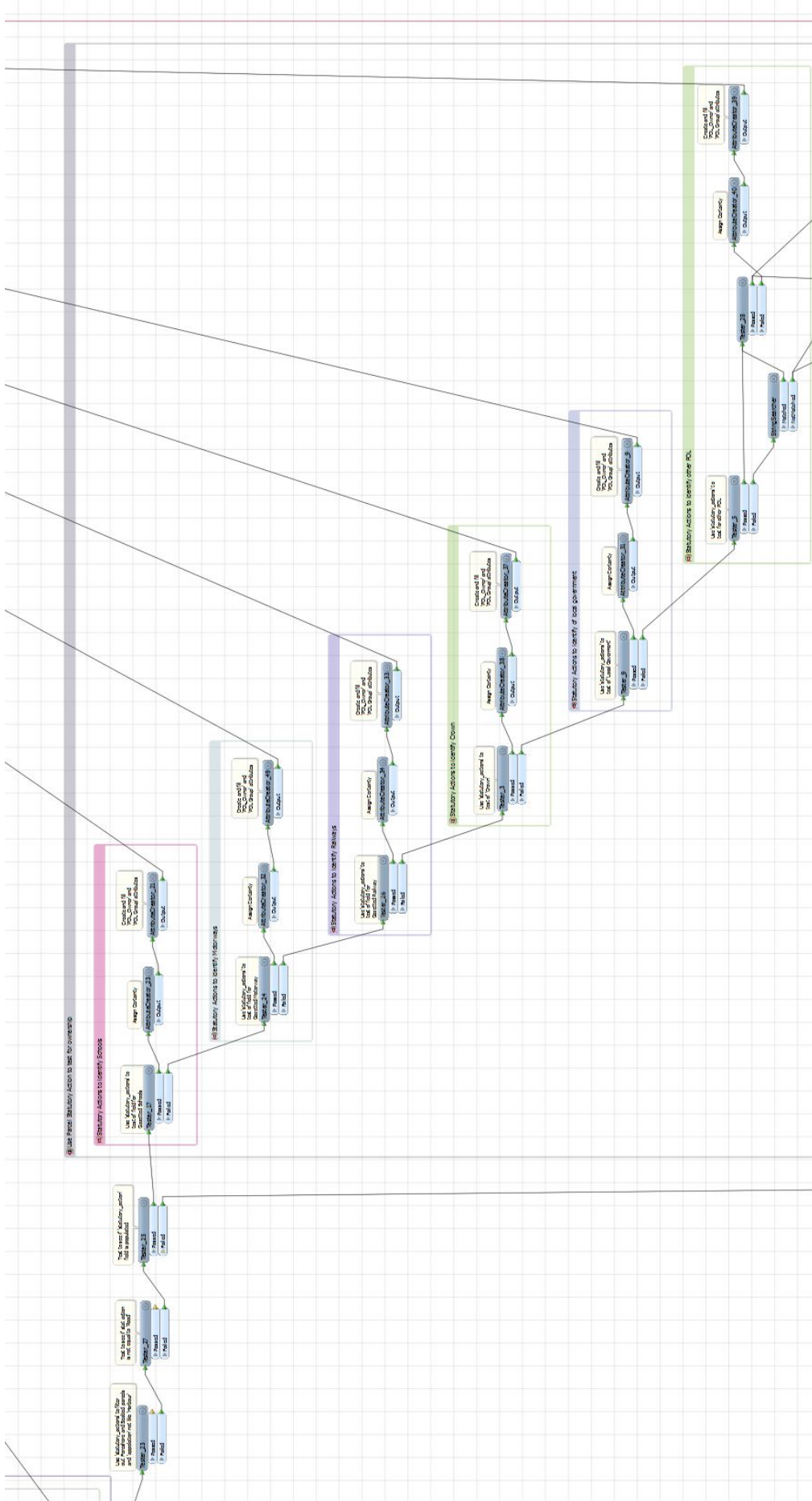
Test	Test Name	Note	Owner
Tests using owner to identify Crown owned land			
Test 1	Crown agents, Crown entities, Public Finance Act Schedule 4 organisations and companies, and state owned enterprises	Includes search for all Crown entities included in the State Service Commission's list (October 2015).	Owner name from title information
Test 2	Tertiary education institutions	Includes search for all universities, polytechnics/institutes of technology, and wananga.	Owner name from title information
Test 3	Housing New Zealand	Housing New Zealand is a Crown agent, but for the purposes of this exercise has been included in its own query to allow easy identification for analysis. This test also includes searching for HNZ predecessors.	Housing New Zealand [†]
Test 4	District health boards	District Health Boards are Crown agents, but for the purposes of this exercise have been included in their own query to allow easy identification for analysis. Some property owned by DHBs still have their predecessors listed as owners (Crown Health Enterprises established as part of the 1993 health reform programme)	District health board name [†]
Test 5	Her Majesty the Queen	Most Crown owned property that is used by public service departments has an owner of 'Her Majesty the Queen', so only a single query is needed to identify these parcels.	Her Majesty the Queen
Test 6	School Boards of Trustees	Many parcels that make up public schools have the owner listed as 'Her Majesty the Queen' but there are several instances where the Board of Trustees of some schools are listed as the owner. This query captures these.	Owner name from title information
Tests using owner to identify council owned land			

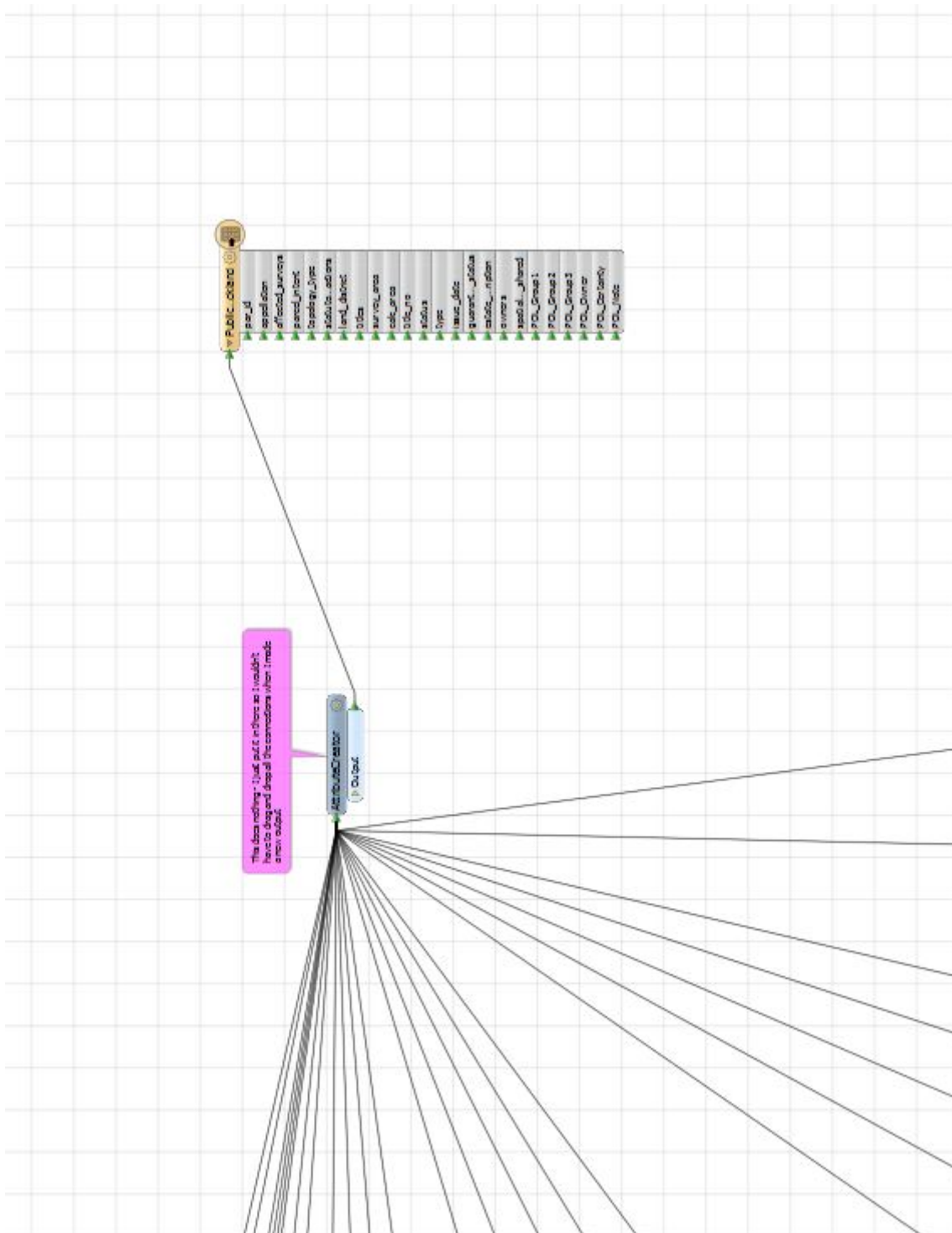
Test	Test Name	Note	Owner
Test 7	Auckland Council (and predecessors)	Most council property has 'Auckland Council' listed as the owner, but there are a few examples that have its predecessors, both immediate and distant (for example councils that were disestablished under the 1989 local government reforms), as owners.	Auckland Council†
Test 8	Auckland Council CCOs (and predecessors)	Council currently has six 'substantive' CCOs and a number of legacy CCOs	Owner name from title information
Test 9	Auckland Council subsidiaries or CCO subsidiaries	Auckland Council and its CCOs also have subsidiaries, as well shareholdings in companies; where these are known they have been included in this test.	Owner name from title information
Test 10	Tūpuna Taonga o Tāmaki Makaurau Trust	Auckland's maunga are to held in trust for the common benefit of the iwi/hapū of Ngā Mana Whenua o Tāmaki Makaurau and the other people of by the Tūpuna Maunga o Tāmaki Makaurau Authority (Tūpuna Taonga o Tāmaki Makaurau Trust)	Tūpuna Taonga o Tāmaki Makaurau
Tests using parcel intent to identify owner			
Test 11	Territorial Authority	Where parcel intent specifically states that a parcel has been vested to a territorial authority.	Auckland Council [§]
Test 12	Railway	Where parcel intent specifically states that it is used for rail purposes.	Crown [§]
Test 13	Crown	Where parcel intent specifically states that a parcel has been vested to the Crown.	Crown [§]
Test 14	Reserves and other gazetted land	Where parcel intent states that a parcel has been vested as a reserve or through a gazette notice, but the owner may be the Crown, a territorial authority, or another body.	Crown [§]
Test 15	Common Marine and Coastal Area	Where parcels have no owner, but are for public use, under the Marine and Coastal Area (Takutai Moana) Act.	Other [§]
Tests using statutory action to identify own			
Test 16	Schools	Where an action includes the term school, education, or college, and does not include the term 'disposed of'.	Crown [§]
Test 17	Motorways	Where an action includes the term motorway, and does not include the term 'disposed of'.	Crown [§]
Test 18	Railway	Where an action includes the term railway, and does not include the term 'disposed of'.	Crown [§]
Test 19	Crown	Where an action includes the term 'crown'.	Crown [§]
Test 20	Local government	Where action includes the term 'Town Hall'.	Auckland Council
Test 21	Other land	Where an action includes the terms related to reserves, stream and river beds, defence land, and conservation areas.	Crown, Territorial Authority, or other body
Other tests to identify owner			
Test 22	Within the DOC estate	This is a spatial query; where a parcel is within the DOC estate, it is selected and tagged.	Crown [§]

Appendix D – FME workbench showing modelling process to identify publicly owned land in Auckland

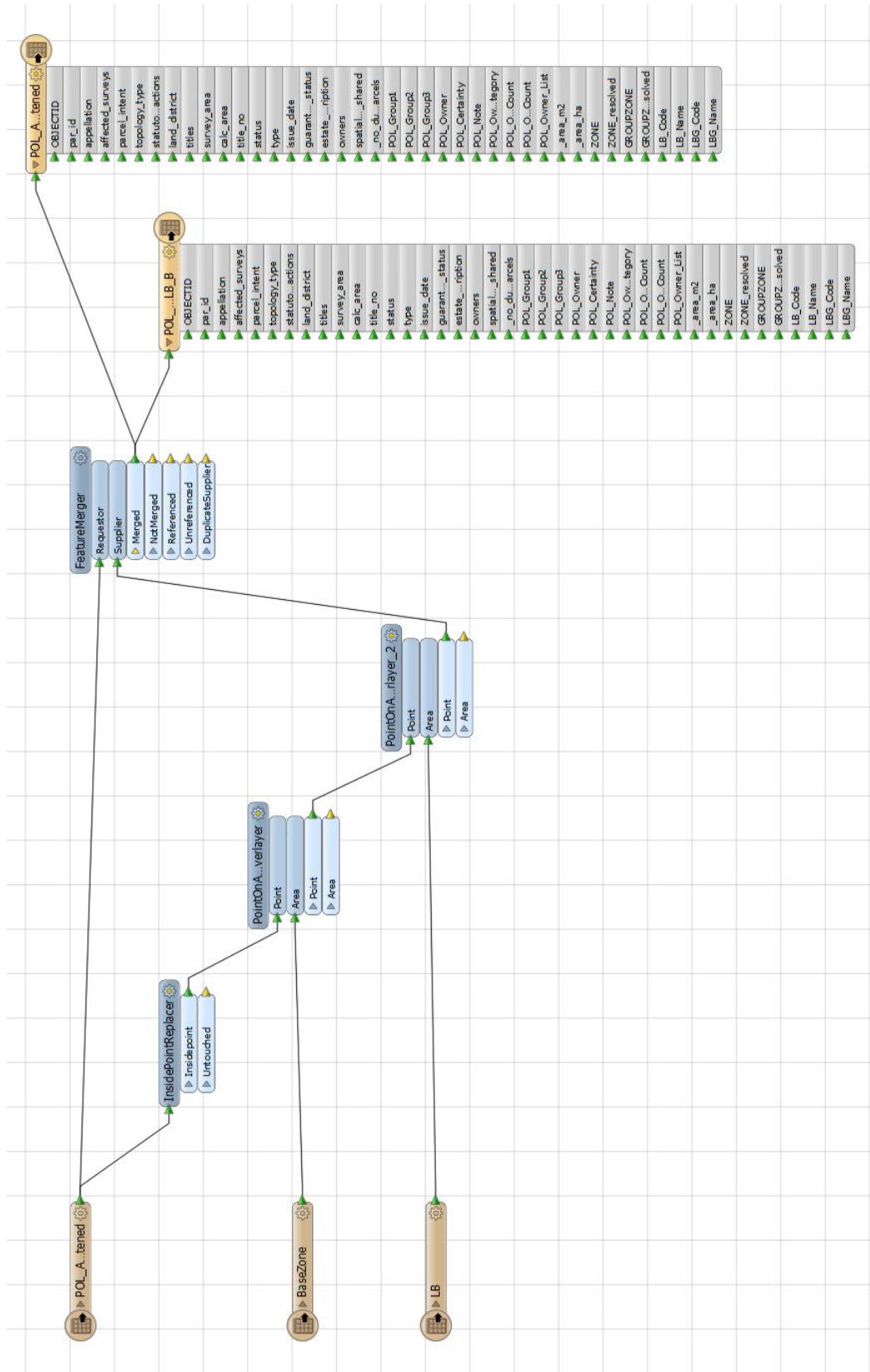








Appendix F – FME workbench showing modelling process to create flattened publicly owned land dataset for analysis



Find out more: phone 09 301 0101, email rimu@aucklandcouncil.govt.nz or visit aucklandcouncil.govt.nz and knowledgeauckland.org.nz