Policy on Development and Financial Contributions

Detailed Supporting Document

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QUEENSTOWN LAKES DISTRICT COUNCIL POLICY ON DEVELOPMENT AND FINANCIAL CONTRIBUTIONS

DETAILED SUPPORTING DOCUMENT

This document provides detailed information to support the QLDC Development and Financial Contributions Policy prepared pursuant to Section 106 of the Local Government Act 2002 and contained in the 2015/16 Long Term Plan. The policy is reproduced in its entirety in this document.

The primary reasons for this document are to provide:

- Enhanced detail on calculation methodology.
- Detailed method for assessing contributions for specific subdivision and developments.

Numerous contributors have provided input either directly or indirectly to the preparation of this document. These include those involved in the District Plan Provisions for Financial Contributions. A list of the principal contributors and their role are provided below.

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Date: 1 July 2015

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Introduction

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Policy as per the Long Term Plan 2015/16.

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Part 4 Assessing Contributions for Developments and Subdivisions

Direction for assessing contributions for specific development and subdivisions.

Part 5 Scheme Boundaries

Area of Benefit Diagrams / Contributing Areas - Water, Wastewater, Stormwater and Reserve Land

It should be noted that to align with the page numbering of Long Term Plan 2015/16 (which is Part 1 of the Development Contributions Policy) pages 4 to 114 are not used in this document.

PART 1

Policy on Development Contributions and Financial Contributions

PART 2

Calculation Methodology

As applied to:

- Water Supply
- Wastewater
- Stormwater
- Reserve Improvements
- Community Facilities
- Reserve Land
- Transportation

Definitions

Analysis Period –

The period of time over which the assessment of development contributions is undertaken.

Activity Management Plans (AMP) –

A plan for the management of one or more asset types that combines multidisciplinary management techniques (including technical and financial) over the lifecycle of the asset in the most cost-effective manner to provide a specified level of service. A significant component of the plan is a long term cash flow projection for the activities. *(Source: International Asset Management Manual – Australia/New Zealand Edition (NAMs Manual)).*

Capital Expenditure (CAPEX) –

Expenditure used to create new assets or to increase the capacity of existing assets beyond their original design capacity or service potential. CAPEX increases the value of asset stock. *(Source: NAMs Manual)*

Capital Expenditure for Growth (CAPEX for Growth) –

The proportion of capital expenditure required to meet the demands of growth.

Contributing Area –

A defined geographic area where development contributions are to be calculated by the method described herein and delivering a standard development contribution in terms of $/Dwelling Equivalent. Contributing areas take an integrated approach to the effects of land subdivision/development and associated physical resources and assesses the overall requirements of an identified geographic area. Contributing areas should enable standard development contributions to be determined efficiently and equitably.

Deferred Works –

CAPEX that should have been undertaken at the appropriate time, however has been delayed to a later date.

Design Life –

The number of years from the construction date of an asset to the date at which capacity is reached. The design life of an asset may take other variables into account such as the growth rate, expected life of an asset, financing costs and engineering considerations.

Development –

Any subdivision or other development that generates a demand for Council services, such as Transportation, Wastewater, Water Supply, Reserves, Community Facility and Storm Water, but does not include the pipes and lines of a network utility operator.

Development Contributions –

Development contributions are contributions defined by the provisions of Part 8 Subpart 5 and Schedule 13 of LGA 2002. Contributions are assessed based on the fiscal implications of growth.

Dwelling Equivalent –

A typical residential dwelling, however representing a unit of demand for which non-residential land uses can be described by. Non-residential activities, such as accommodation and commercial, can be converted into dwelling equivalents using land use differentials. Dwelling equivalents enables the demand of different land uses to be considered collectively.

Dwelling Equivalent Development Contribution –

The dwelling equivalent contribution required to be met by a unit of demand to reflect the cost of growth imposed by that unit of demand.

Effective Date –

Date at which the development contributions are assessed.

Expected Life –

Also known as useful life. The period over which a depreciable asset is expected to be used.

Financial Contribution –

Defined by Section 108 of the Resource Management Act 1991 and collected using the provisions of the District Plan. Contributions are assessed based on the environmental effects of growth.

Financial Reports –

Annual reports prepared by Council and externally audited, detailing achievement from the previous financial year, at both a financial and community outcome basis.

Gross Floor Area (GFA) –

The sum of the gross area of the several floors of all buildings on a site, measured from the exterior faces of the exterior walls, or from the centre lines of walls separating two buildings. For the purpose of this policy this definition of GFA, excluding car parking areas, will be used.

Growth Population –

A growth statistic used to measure growth. In this case a dwelling equivalent.

Land Use Differentials –

Factors which are used to convert non-residential properties into dwelling equivalents. Impact on, benefit from and consumption of assets by different land uses can be converted into and described as dwelling equivalents. They have two functions 1) to determine the total dwelling equivalents for apportioning total CAPEX for growth to determine a standard development contribution and 2) enabling a new subdivision or development to be converted into dwelling equivalents, such that the development contributions can be calculated.

Level of Service –

The defined service for a particular activity (i.e. transportation) or service area (i.e. street lighting) against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental acceptability and cost. *(Source: NAMs Manual)*

Long Run Average –

Average taken over a number of years, typically 10 or more for infrastructure assets.

Multi-Unit Residential Developments –

This relates to any development that involves the development of three or more residential units within a single site, it does not include additions, alterations or accessory buildings.

Network Infrastructure –

The provision of roads and other transport, water, wastewater, stormwater collection and management.

Renewal –

Works to refurbish or replace existing facilities with facilities of equivalent capacity or performance capability.

Service Connection –

A physical connection to a service provided by, or on behalf of, Queenstown Lakes District Council.

Standard Contribution –

The amount of a development contribution payable for the addition of one dwelling equivalent.

Statutory Obligation –

Typically relating to CAPEX required to meet the demands of a statute, guideline or standard.

Surplus Capacity –

Additional capacity of an asset whereby uptake of that additional capacity is not to the detriment of existing users.

Units of Demand –

A measurable unit that creates demand for additional capacity or consumes surplus capacity. Often measured in terms of dwelling equivalents.

Weighted Average Cost of Capital (WACC) –

Cost of loan funding capital works. Interest charges for the growth proportion of any capital expenditure. Do not include principal repayments.

Basic Model Description

A high level description of the model used for assessing development contributions is detailed below.

The model used defines a standard development contribution for a specific unit of demand. The unit of demand is a dwelling equivalent. The model calculates a **dwelling equivalent contribution**.

The key concept of the approach is to define the total capital expenditure **(CAPEX) for growth** consumed by the **growth population** over a period of time. This consumption of CAPEX for growth is then apportioned among the increased number of units of demand (dwelling equivalents) over the same time period. This defines the long run average cost of growth per unit of demand. The result of which is defined as the **dwelling equivalent contribution**. This can be represented by the following formula.

$$\text{Dwelling Equivalent Contribution} = \frac{\text{Sum of CAPEX for Growth Consumed In Analysis Period}}{\text{Sum of New Dwelling Equivalents in Analysis Period}}$$

The method can be described simplistically by the following steps.

Step 1: Assess capital expenditure for growth on an asset by asset basis using financial reports (past expenditure) and projected expenditure.

Step 2: Apportion capital expenditure for growth by the growth population (dwelling equivalents) over the **design life** of the asset, to assess the $/unit of demand for each asset described above.

Step 3: For each year in the **analysis period** determine the total consumption of asset capacity for each asset identified, namely –
$/unit of demand x the number units of demand.

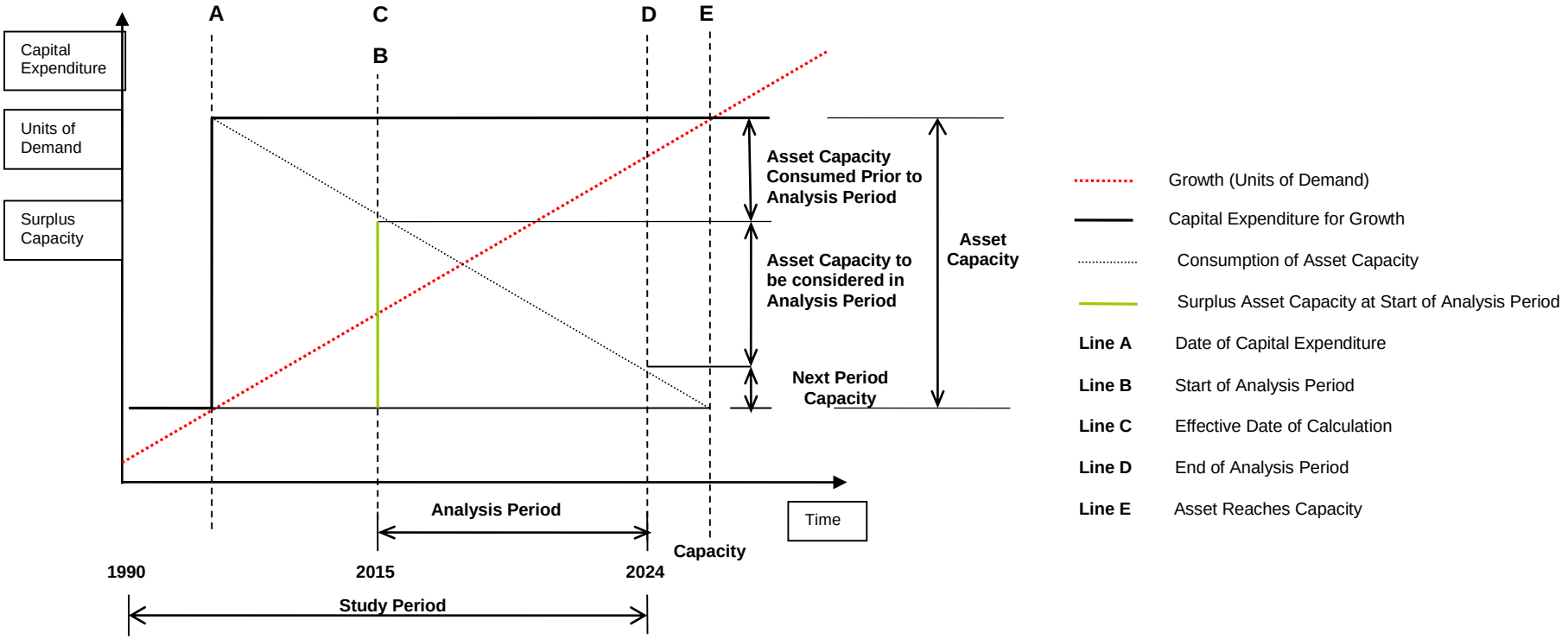
Step 4: Sum for all assets in each year in the analysis period, namely total capacity consumed in that year, measured in $.

Step 5: Sum each year in the ten year analysis period and divide by the growth population (new dwelling equivalents) projected over the analysis period to determine the dwelling equivalent contribution.

Generalised Model Description

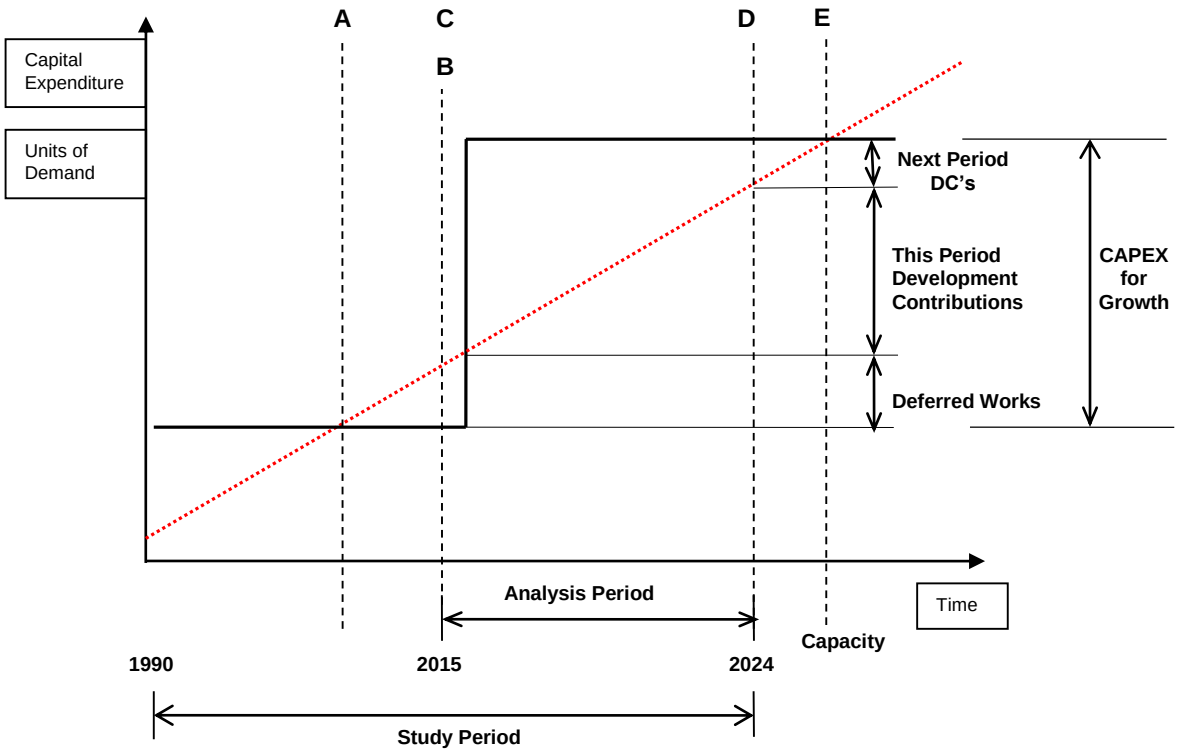
A graphical representation of the generalised model is shown below using three figures. Figure 1 describes how assets with **surplus capacity** are treated and Figure 2 how assets **constructed during** the analysis period are treated. Figure 3 demonstrates how the combination of figure 1 and 2 are combined to assess development contributions.

Figure 1: Assets with Surplus Capacity



Asset capacity acquired during the study period, but before the analysis period (1990 to 2015), can be considered in the calculations. These are assets with **surplus capacity** at the effective date. The surplus capacity is assessed at the start of the analysis period. The surplus capacity consumed during the analysis period is assessed and apportioned amongst the growth population. Surplus capacity at the end of the analysis period is removed from the calculation and considered in subsequent calculations.

Figure .2: Assets Created During Analysis Period



Growth (Units of Demand)

Capital Expenditure for Growth

Line A Year where service capacity of an asset equals demand

Line B Start of Analysis Period

Line C Effective Date/Current Year

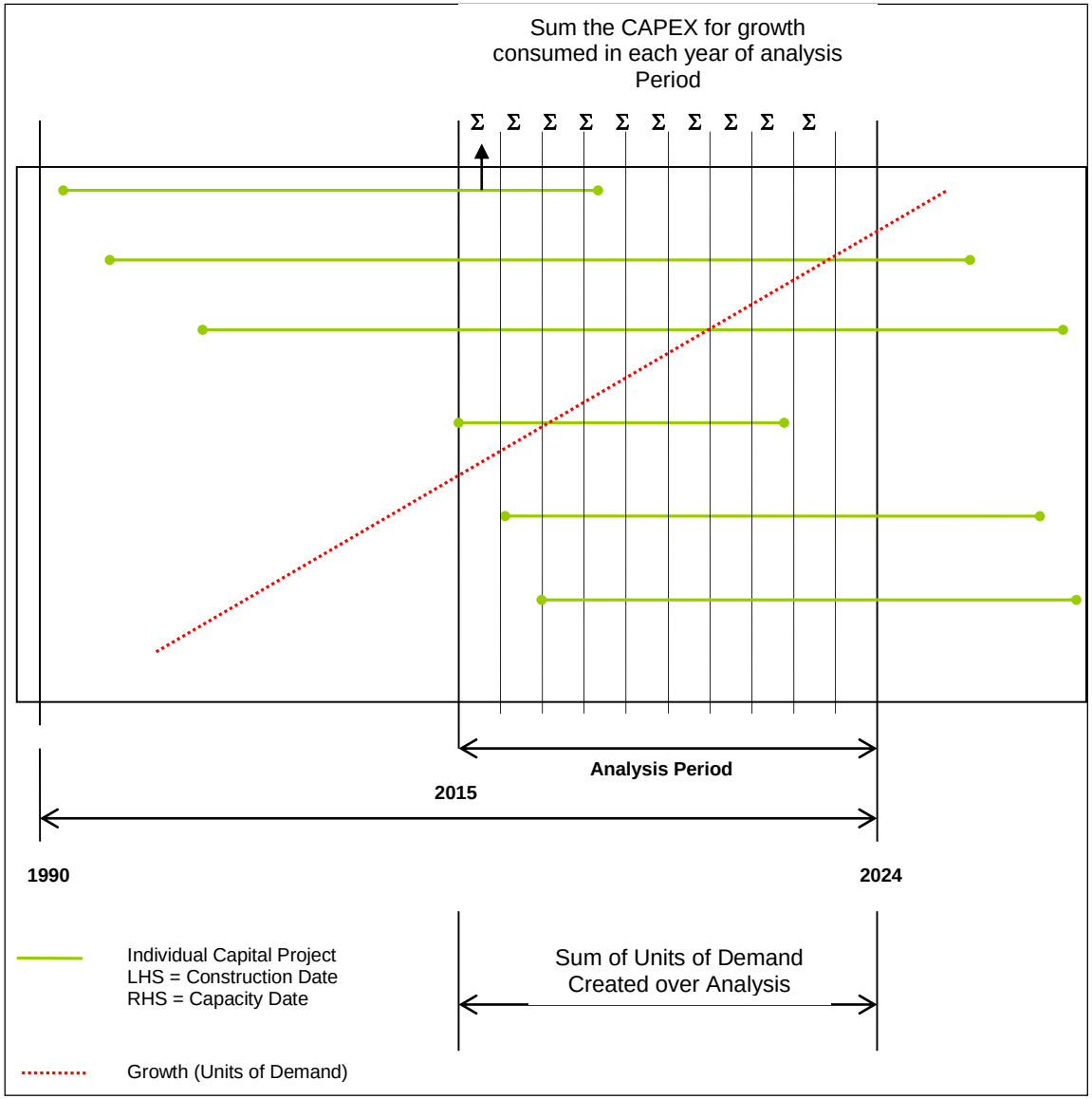
Line D End of Analysis Period

Line E Asset Reaches Capacity

Asset capacity **acquired during** the analysis period is also considered. The consumption of asset capacity during the analysis period is apportioned amongst the growth population. Surplus capacity at the end of the analysis period is removed from the calculation and considered in subsequent calculations.

The key objective of the model is to recover the cost of growth for every capital project over a period of time, namely the date until capacity is reached. The model descriptions in Figures 1 and 2 above both use one capital project as an example. To assess the dwelling equivalent development contribution, the effect of these two diagrams on every capital project providing additional capacity for growth are considered. Figure 3 below demonstrates how each capital project is considered, where each horizontal line represents a CAPEX for growth project.

Figure 3: Assessing Dwelling Equivalent Development Contributions



Where units of demand = dwelling equivalents then:

$$\text{Dwelling Equivalent Development Contribution} = \frac{\text{Sum of CAPEX for Growth Consumed In Analysis Period}}{\text{Sum of New Dwelling Equivalents in Analysis Period}}$$

Detailed Model Elements

Some of the more detailed aspects of the development contribution calculations are identified below. These are relevant to water, wastewater, stormwater, transportation, reserve land, reserve improvements & community facilities at this stage.

Cost Components

- **Capital Expenditure**;
- **CAPEX for growth apportionments**;
- **Weighted Average Cost of Capital (WACC)**;
- **Inflation**;
- **Reserve Land Provision**;

Growth Assessments

- **Growth Projections**
- **Land Use Differentials -** Dwelling Equivalent (unit of demand) Conversion for Non-Residential Activities;

Specific Assessment Matters

Part 3 provides detailed descriptions of these issues.

PART 3

Detailed Model Elements

Including:

Cost Components

- **Capital Expenditure**;
- **CAPEX for growth apportionments**;
- **Weighted Average Cost of Capital (WACC)**;
- **Inflation**;
- **Reserve Land Provision**;

Growth Assessments

- **Growth Projections**
- **Land Use Differentials**

Asset Schedules

Specific Assessment Matters

Capital Expenditure

Only capital expenditure (CAPEX) is considered in the model. All Operational Expenditure is excluded, including internal overheads.

Capital expenditure is identified from two sources, namely.

i) Activity Management Plans (formally Asset Management Plans) (AMPs) and
ii) Financial Reports.

The Activity Management Plans are used for assessing projected CAPEX. The AMPs are formal planning documents that include long term expenditure forecasts. Council has a statutory obligation to ensure these documents are as accurate as possible, namely:

1. An implicit requirement under Local Government Amendment Act 1996 and Local Government Act (LGA) 2002 to have activity management plans.

2. Council has a statutory requirement under LGA 2002 to prepare a Long Term Plan (LTP). The LTP must project all expenditure, revenue, asset value, depreciation, debt levels and other liabilities for no less than 10 years. The LTP populates the annual plan for first 3 years following adoption, with exception reporting required where variations occur.

3. LGA 2002 requires CAPEX to be defined into three categories, namely i) Growth, (ii) Renewal and (iii) Level of Service Shifts/Other.

4. Audit – Office of the Auditor General – The LTP will be subject to audit.

The **financial reports** are used to assess surplus capacity of assets that were acquired by QLDC prior to the analysis period. These are audited reports that are required to form part of all Council Annual Reports. These reports are required by the Local Government Act and must meet Generally Accepted Accounting Practise (GAAP) and Financial Reporting Standard (FRS) series of financial reporting protocols.

CAPEX for Growth Apportionments

The CAPEX identified is apportioned into five cost drivers. These being Growth, Renewal, Level of Service, Statutory and Deferred Works/Other (see definitions). The growth apportionment is the only cost driver used for assessing development contributions, however determining the others can aid in this process. The cost drivers have been assessed using several methods. These are:

- Asset Capacity
- Using Asset Design Life to Approximate Growth Percentage
- Assessed using Professional Judgement.

(i) Asset Capacity – Where the existing asset capacity is known and the capacity of the new capital assets is known, a basic percentage of new capacity vs. existing capacity has been used to determine the growth percentage.

Following the completion of the growth study, Council updated its infrastructure models for water supply (WaterGEMS – Bentley Systems), wastewater (SewerGEMS – Bentley Systems, Mike Urban - DHI) and developed a Transportation and Parking model (Tracks – Gabities Porter). These models provide a detailed insight into the effects of growth and consequently accurate growth apportionments can be made.

This method is also applied to reserve improvements and community infrastructure where the existing and future asset capacities are known.

The following notes on apportioning the growth cost were delivered to the engineering consultants preparing CAPEX programs for Council for water supply, wastewater and transportation.

Attachment 1 CAPEX Apportionments – Consultant Instructions

Location	Project Name	Project Description	Issue or Problem to be resolved	Budget Reference	Expenditure Year	Capex Value (2015/16 $)	Capex Value (Adjusted for Inflation)	Growth	Renewal	LOS Shift	Statutory	Existing Undercapacity (Deferred Works)	Capacity Design/ Payback Period	Year Capacity Reached	Dwelling Equivalents at Construction	Dwelling Equivalents at Capacity

Location = Location of Capital Works as defined by Scheme Boundaries. In some instances the asset may service several contributing areas. Example: Arrowtown to Frankton Ponds wastewater pipeline. This services Arrowtown and Lakes Hayes contributing areas.

Project Name = Name used to typically describe the project i.e. Project Pure

Project Description = A useful description of the project at a basic level. i.e. Pump Upgrade

Issue or problem to be resolved = Additional and more detailed information of the project. This may include information about the existing asset that is being renewed, upgraded, or duplicated.

Budget reference = Source of information from where the project budget originated.

Expenditure Year = Year in which the money is/or has been spent.

CAPEX Value (2015/16 $) = Capital Cost in 1 July 2015 dollars.

CAPEX Value (Adjusted for inflation) = Capital Cost in 1 July of the expenditure date dollars.

The following capex compositions are to be defined in terms of percentages - with total adding to 100%.

If additional information is available to support these percentages, it should be included in the table out to the right hand side.

Growth
Renewal
LOS Shift
Statutory
Deferred Works
Other

Capacity Design/ Payback Period = The number of years an asset has been designed for, in regards to future growth expectation. In some instances the design life maybe for the ultimate capacity of the area to be serviced. In this case the approximate date to achieving ultimate capacity should be defined and the word “ultimate” used in brackets.

Year capacity reached = Expenditure date plus Capacity Design/ Payback Period.

Dwelling Equivalents at Construction = Asset capacity consumption at construction measured in dwelling equivalents.

Dwelling Equivalents at Capacity = Asset capacity measured in dwelling equivalents.

(**Note**: The above helps define the number of additional dwelling equivalents the new asset will service compared to before the project)

CAPEX COMPOSITION

EXAMPLES

Example 1 - Basic:

A. A 1000m existing 150mm pipe is replaced with a 225mm. The existing 150mm is abandoned. The 150mm is 30 years old. Assume the expected life of the 150mm is 90 years. Pipe costs are $150/m (150mm) and $220/m (225mm).

Q. The new asset doubles the capacity and renews a proportion of the existing capacity. In this instance start by assessing the renewal component.

Renewal: = 1000m x $150 x 30yrs/90yrs
= $50,000

Assuming there are no other CAPEX composition components that need to be considered, then the growth component is all that is remaining.

Total Cost: = $220,000

Growth Component = ($220,000 - $50,000) / $220,000
= 77%

Example 2 – More Complicated

Q. An existing 1000m^3 reservoir is demolished to make way for a new 4000m^3 reservoir. The 1000m^3 has been in operation for 40 years, has a valuation replacement cost of $250,000 and an expected life of 100 years. The new 4000m^3 reservoir has a capital cost of $800,000. The new reservoir is required to meet new demand from growth and aid in meeting emergency storage requirements as set down in Council's level of service standards. It is noted that the storage facility hasn't met the LOS for 5 years, where the dwelling equivalents serviced at the time were 500. The new reservoir has been constructed with a design life of 20 years (ultimate), where after that a new reservoir located elsewhere will create a new pressure zone. The existing facility currently services 750 dwelling equivalents and the new facility 2000 at ultimate. Additional emergency storage amounts to 1000m^3.

A. The new asset doubles the capacity, renews a component of the existing asset, improves the LOS, however the LOS project was delayed and therefore some deferred works must be considered.

Renewal: = $250,000 x 40yrs/100yrs
= $100,000

LOS: 0.5 m^3 (1000 m^3/2000 dwelling equivalents) per dwelling equivalent for emergency storage. Therefore 500 x 0.5 = 250m^3 to be contributed by existing population for their improved LOS, namely

LOS = 250m^3/4000m^3 x $800,000
= $50,000

Deferred Works: The LOS component that has not been contributed towards by the growth population in the last 5 years. Therefore 250 x 0.5 = 125m^3 to be contributed by existing population for deferred works

Deferred Works: = 125m^3/4000m^3 x $800,000
= $25,000

Growth: = ($800,000 – ($100,000 + $50,000 + $25,000)) / $800,000
= 78%

This answer creates a little difference if you assessed growth purely from dwelling equivalents, namely

(2000 – 500) / 2000 = 75% or,
(2000 – 750) / 2000 = 62.5%

Much of this is due to the renewals component, namely the existing population have lost an asset that had 60 years of useful life remaining.

(ii) Use Design Life as an Approximate – Where the specific asset capacity increases are unknown (i.e. capacity characteristics such as pipe diameter, pump characteristics) the design life can be used to assess the growth percentage. Typically this percentage relates to projects of a generic nature to the scheme, such as non-specific pumping projects and reticulation upgrades.

Assets in the calculation are often designed to meet the ultimate dwelling capacity within a certain geographic area. In these cases the design life is the date at which the ultimate capacity is expected to be reached. Council's six month dwelling capacity and growth studies are used for these assessments.

Where this approach is applied the number of dwelling equivalents (DE) at capacity is compared to the dwelling equivalents at construction, namely

Growth Percentage = (DE_{cap} – DE_{con}) / DE_{cap}

Where: DE_{con} = Dwelling Equivalents at Construction
DE_{cap} = Dwelling Equivalents at capacity date

This approach provides for a systematic allocation of the growth component.

This approach provides for a very good approximation of the CAPEX for growth. Assume that a longer design life is assigned, then the percentage attributable to growth may be greater, however the consumption of growth cost is consumed over a greater number of years. The converse of this can be said for applying a shorter design life, namely a low growth percentage, with consumption of growth cost being consumed over a shorter period.

(iii) Professional Judgement – There are some projects where professional judgement is the only tool available to make an assessment of growth. Professional judgment may consider other components of the activity first, namely renewal and level of service.

Council is investing significant resources to understand its assets in greater detail, particularly in terms of asset capacity. These investments include the purchase and population of capacity models. In addition investments into asset management systems will improve Council's understanding of asset condition which will provide for improved renewal assessments. As new information becomes available the Monitoring and Review process identified in the Policy (Part 1) will make adjustments to the calculation where appropriate.

Weighted Average Cost of Capital (WACC)

The weighted average cost of capital (WACC) is used to estimate the cost of loan funding capital works. Depending on the funds available in the development contributions reserve for each contributing area new CAPEX for Growth may need to be loan funded. The Council intends to recover the interest costs associated with these loans using development contributions and the weighted average cost of capital methodology.

The Growth Cost (including interest) is determined using the following formula:

Growth Cost (Incl. Interest) = CAPEX for Growth + (CAPEX for Growth x Interest Factor x Debt Funding Ratio)

With the following:

Term of Loan (Yrs)	Interest Factor
1	0.06
2	0.09
3	0.12
4	0.15
5	0.18
6	0.20
7	0.23
8	0.25
9	0.28
10	0.30
11	0.33
12	0.35
13	0.37
14	0.40
15	0.42
16	0.44
17	0.46
18	0.48
19	0.50
20	0.52
21	0.53
22	0.55
23	0.57
24	0.59
25	0.60
30	0.67
40	0.79
50	0.86

Interest Rate Used = 6.5%

Repayment Period = Design Life / Payback Period (years)

Debt Funding Ratio = Calculated percentage of every capital project requiring debt funding.

Not all projects will require debt funding and this ratio is an attempt to estimate the percentage that will. This percentage is then used to reduce the interest costs on the CAPEX for Growth and hence, the amount to be recovered through development contributions.

The calculation of the Debt Funding Ratio is outlined in the Tables in Part 1. These have been prepared for each asset type in each contributing area. These tables demonstrate the relationship between existing debt, future growth costs (10 years) and the anticipated future income (10 years) from development contributions. A weighting of the debt position against the 10yr growth cost determines the debt percentage. Calculating a weighted average of these debt percentages gives the Debt Funding Ratio.

Inflation

Inflation is applied to all projects prior to the effective date of the analysis (retrospective CAPEX), namely those with surplus capacity.

As we are assessing long run incremental average cost of growth (i.e. including past projects) it is important to have all projects in today's dollars, namely 1 July 2015.

Inflation is applied using the following formula and Statistics NZ indices:

Escalation = 0.5 (L-L')/L' + 0.5 (C-C')/C'

Where:

L = Labour Cost Index: Private Sector: Industry Group – Construction: All Salary and Wage Rates. Published by Statistics New Zealand: (Series ref LC1Q: SA49P1)

C = Producers Price Index: Inputs: Industry Group – Construction: Published by Statistics New Zealand: (Series ref PP1Q: SNE)

' = Represents the base year index.

Reserve Land Contribution

The existing requirement of 27.m^2 per dwelling equivalent is based on the 2002 Reserves Strategy. This consists of both Local Reserves (12.5m^2 per residential dwelling) and Neighbourhood Reserves (15m^2 per residential dwelling). Although Council is moving away from these reserve classifications, the total of **27.5m^2** per residential dwelling or dwelling equivalent is still considered appropriate.

An analysis of projected demand for reserve land has been completed using two contributing areas for the district. It is expected that the total value of reserve land that will be needed over the next 10 years is estimated to be $19.1m. This is based on the 27.5m² desired level of service for each new dwelling equivalent. 100% of this demand can be attributed to growth and will be provided through development contributions either through the provision of land or as cash contribution. Forecasts show that 70% of this total demand is likely to be provided though the provision of vested land from developers.

The total value of reserve land that is expected to be vested in Council amounts to a total of $13.4m for the 10 year period, which equates to an average annual value of $0.94m for the Wakatipu Ward and $0.40m for Wanaka. Council has not included any provision for specific reserve purchases within its 10 Year Plan 10 year capital expenditure. This is because the Asset Management Plan for Reserves does not include the necessary detail to enable this. However, Council has updated its projections in this area and has produced an indicative reserve land acquisition programme. This detail will be included in future versions of the Parks Strategy, Activity Management Plan and 10 Year Plan.

The key assumptions made in the above forecasts are summarised below for each ward. These assumptions are based on the latest growth projections and the dwelling capacity monitor.

- The portion of future development that will occur in brownfield (serviced and unserviced) and greenfield areas,

	Portion of future developments	
Development Type	**Wakatipu**	**Wanaka**
Brownfield (Serviced)	40%	40%
Brownfield (Unserviced)	10%	10%
Greenfield	50%	50%

- The portion of future development that will make reserve land contributions through the provision of land and the portion that will make a cash contribution.

	Wakatipu		Wanaka	
Development Type	**% Land**	**% Cash**	**% Land**	**% Cash**
Brownfield (Serviced)	0%	0%	0%	0%
Brownfield (Unserviced)	10%	90%	10%	90%
Greenfield	90%	10%	90%	10%

- The unserviced brownfield developments are assumed to be capped by the statutory maximum of 20m^2, while greenfield developments are assumed to provide 27.5m^2.

The reserve land acquisition programme is a guide only due to its reliance on average land values rather than actual land values and the effect of the statutory maximums and the land value cap. Therefore it will require frequent monitoring and adjustment.

Growth Projections

These have been estimated using the best information available.

Growth Options Study 2004 – Council engaged services from the market place to complete its own growth study. These projections detailed residential, visitor and commercial/industrial growth. These growth projections have been updated for each subsequent Long Term Plan. Volume 4 of the Long Term Council Community Plan (LTP) explains the results and process in detail. The results of these studies have been applied to all infrastructure studies completed including water, wastewater and transportation.

The following table identifies what growth projections have been applied to different contributing areas or catchments used in specific calculations:

Table 1 – Growth Projections – Source Data

Contributing Area	Growth Projections Used
Wakatipu Ward	QLDC Growth Projections to 2065 (2014)
Queenstown	QLDC Growth Projections to 2065 (2014)
Arrowtown	QLDC Growth Projections to 2065 (2014)
Glenorchy	QLDC Growth Projections to 2065 (2014)
Lake Hayes	QLDC Growth Projections to 2065 (2014)
Arthur's Point	QLDC Growth Projections to 2065 (2014)
Wanaka Ward	QLDC Growth Projections to 2065 (2014)
Wanaka	QLDC Growth Projections to 2065 (2014)
Hawea	QLDC Growth Projections to 2065 (2014)
Albert Town	QLDC Growth Projections to 2065 (2014)
Luggate	QLDC Growth Projections to 2065 (2014)
Kingston	QLDC Growth Projections to 2065 (2014)

Council produces a six monthly **dwelling capacity** study. This study identifies the ultimate number of dwelling in specific areas given the existing district plan zonings. This is used as a guide to define where growth in specific contributing areas will cease.

Growth projections are converted into **units of demand** or dwelling equivalents which are used to apportion the growth cost to define a **dwelling equivalent contribution**. Assessing total dwelling equivalents involves converting non-residential land uses i.e. accommodation, into dwelling equivalents and adding this to the number of dwellings. This is completed using land use differentials (conversion factors). These are described below:

Land Use Differentials

Land use differentials enable all development and subdivision types (residential and non-residential) to be considered in the calculations. Non-residential activities can be described using a common unit of demand,

which in this case is the dwelling equivalent. Conversion factors or land use differentials are used to convert non-residential activities into dwelling equivalents.

The land use differentials are used in several different ways in the calculation of development contributions, these being:

1) **Describe growth in terms of units of demand (dwelling equivalents)** – Apply *factors* (land use differentials) to the existing or past property mix (i.e. residential, accommodation, industrial) to define all property activities as dwelling equivalents. These *factors* represent the average impact/benefit of a non-residential land use in terms of dwelling equivalents and will vary for different activities. Once the property mix (i.e. commercial, accommodation etc) is defined in terms of dwelling equivalents, growth percentages can be applied to assess the total units of demand in future years.

2) **Apportioning asset capacity** – the model apportions asset capacity using the units of demand (dwelling equivalents) defined above in 1). These apportionments include surplus capacity at the start of the analysis period, capacity consumed during the analysis period and surplus capacity remaining at the end of the analysis period.

3) **Determining the number of dwelling equivalent contributions payable at the time of subdivision or development** - a non-residential subdivision or development can be converted into dwelling equivalents to enable a total development contribution payable to be calculated. See Part 4 for detailed method of application.

Describing Growth in Terms of Units of Demand (Dwelling Equivalents)

In terms of utilising land use differentials for the purpose of (1) above, namely describing growth in terms of dwelling equivalents, the approach is briefly described below. Tables and additional descriptions follow.

Water and Wastewater:

These have been assessed based on consumption for different land uses. Part 4 provides a complete description of how these were derived. These were formulated in 2001 and a review of these differentials was undertaken for 2012/13 using water use data from the calibrated water models. See Tables 1 and 2 for dwelling equivalent conversion factors.

Stormwater:

The stormwater differentials should reflect impermeable surface area. See Table 3. A review of the 2001 differentials was undertaken for 2012/13 using typical land areas and the current zoning rules.

Reserve Land, Reserve Improvements & Community Facilities:

These were prepared with the assistance of Market Economics (Doug Fairgray) in 2003 and reviewed in 2004/05 using improved data from Statistics New Zealand. These are based on time availability and therefore asset utilisation. A detailed explanation is provided below.

Transportation:

These were prepared with the assistance of Beca Infrastructure Limited in 2006. These are based on trip generation and therefore asset utilisation. A detailed explanation is provided below.

Conversion Factors – Defining non-residential activities in terms of units of demand (dwelling equivalents)

Table 1 – Water Supply – Dwelling Equivalent Conversion Factors

Land Use	Typical Dwelling Equivalents per Property	Other Characteristics of the Land Use	
Residential	**1.0**	Typical GFA m²/site	160
Accommodation	**2.0**	Typical GFA m²/site	200
Commercial	**2.0**	Typical GFA m²/site	300
Other	**1.5**	Typical GFA m²/site	300
CDB Accom	**2.0**	Typical GFA m²/site	200
CBD Comm	**2.0**	Typical GFA m²/site	300
Primary Industry	**1.0**	Typical GFA m²/site	323
Country Dwelling	**1.0**	Typical GFA m²/site	234
Mixed Use Comm	**1.0**	Typical GFA m²/site	211
Mixed Use Accom	**1.0**	Typical GFA m²/site	211
Vacant	**1.0**	Typical GFA m²/site	160

Table 2 – Wastewater – Dwelling Equivalent Conversion Factors

Land Use	Typical Dwelling Equivalents per Property	Other Characteristics of the Land Use	
RESIDENTIAL	**1.0**	Typical GFA m²/site	160
ACCOMMODATION	**1.41**	Typical GFA m²/site	200
COMMERCIAL	**1.21**	Typical GFA m²/site	300
OTHER	**1.5**	Typical GFA m²/site	300
CBD ACCOM.	**1.41**	Typical GFA m²/site	200
CBD COMM.	**1.21**	Typical GFA m²/site	300
PRIMARY INDUSTRY	**1.0**	Typical GFA m²/site	323
COUNTRY DWELLING	**1.0**	Typical GFA m²/site	234
MIXED USE COMM.	**1.0**	Typical GFA m²/site	211
MIXED USE ACCOM.	**1.0**	Typical GFA m²/site	211
VACANT	**1.0**	Typical GFA m²/site	160

Table 3 – Stormwater – Dwelling Equivalent Conversion Factors

Land Use	Typical Dwelling Equivalents per Property	Building Coverage (Site Standards)	Typical m²/site	Impervious Surface Area, ISA (m²)
RESIDENTIAL	**1.0**	40%	650	260
ACCOMMODATION	**0.5**	55%	231	127
COMMERCIAL	**3.0**	75%	1057	793
RURAL	**1.0**			
OTHER	**1.0**			
CBD ACCOMM	**0.4**	80%	126	101
CBD COMM	**0.4**	80%	146	117
MIXED USE ACCOM.	**2.1**	55%	977	538
MIXED USE COMM	**1.7**	55%	819	450

Reserve Improvements & Community Facilities – Land Use Conversion Factors

The land use differentials are explicitly integrated into the model. The method of assessing land use differentials can be demonstrated by the following diagram.

The assessment described below was completed in 2003 and reviewed in 2004/05.

Figure 1 – Assessment of Land Use Differentials for Reserve Land, Reserve Improvements and Community Facilities

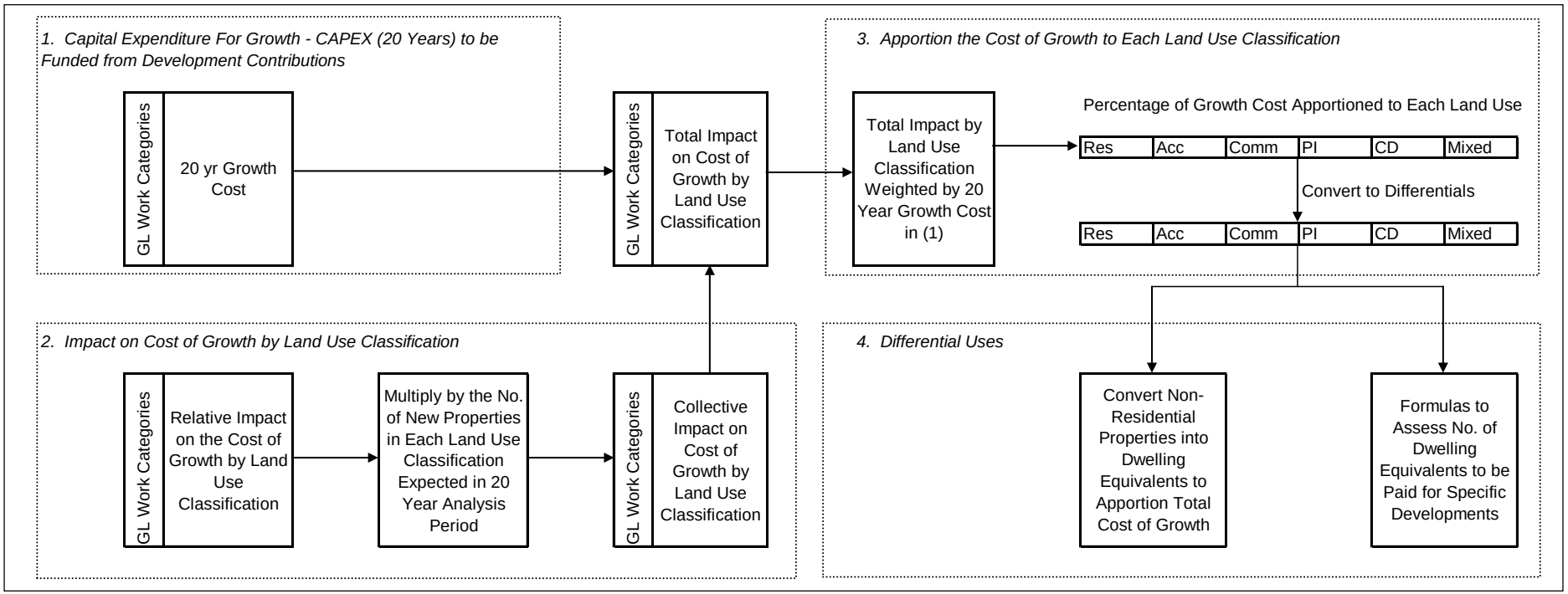


Figure 1 shows that the land use differentials have been assessed considering expenditure over a 20 year period (10 years forward and 10 years back). This should not be confused with the 10 year analysis period for assessing development contributions as the two are not related. The 20 year expenditure period is used as a weighting to define the total impact of each land use activity.

The key components (steps 1 to 3) of figure 1 are described below:

Step 1 –Capital Expenditure for Growth – CAPEX to be Funded from Development Contributions.

Objective: To provide a 20-year total of the CAPEX for growth for each General Ledger (GL) work classification. This provides the basis for weighting impact by land use (step 3).

20-years of capital expenditure for growth has been assessed using the relevant financial reports (10 years back) and Activity Management Plans (10 years forward). These have been assessed using Council's General Ledger (GL) work classification codes.

All non-growth CAPEX has been extracted from the calculation.

Step 2 – Impact on Cost of Growth by Land Use Classification

Objective: To understand the impact on the cost of growth by land use group. This considers number, type, location and impact of different land use groups on different GL work classifications.

This step is the key element in determining the number of units of demand and determining land use differential formulas.

Table 4 shows *Relative Impact*. Relative impact assesses the impact of the typical property in each land use classification compared to one another. Statistics New Zealand's Time Use Survey 1998-99 provided a basis for this calculation. This survey provided detailed information on how much time people spent per day on different activities. This information is on an average day basis which has been determined over the study period of one year.

The relative impacts are then converted into collective impacts. Collective impact is the total impact percentage attributable to each land use on a specific GL work category. To convert relative into collective impact, the relative impact is multiplied by the number of properties in each land use classification.

The impacts have been assessed on the basis of the following typical land use parameters.

Accommodation:

Typical GFA/stay unit = 29m²
Peak Occupancy = 2 people per stay unit

Retail/Commercial/Industrial

Typical GFA/FTE = 30m²

Free Time Differential	Residential	Accommodation	Retail/ Commercial/ Industrial	Primary Industry	Mixed Use	Other
Wakatipu	1	4.3	0.21	1	2.2	1
Wanaka	1	3.1	0.22	1	1.8	1

Table 4 – Relative Impacts for Typical Sized Properties in Each Land Use (Step 2)

Wakatipu	Residential	Accommodation	Retail/ Commercial	Primary Industry	Mixed Use	Other
Facility Usage						
Parks and Reserves	100%	100%	100%	100%	100%	100%
Council Land	100%	100%	100%	100%	100%	100%
Waterway Facilities	100%	100%	0%	100%	67%	100%
Swimming Pools	100%	32%	48%	100%	60%	100%
Halls	100%	16%	0%	100%	39%	100%
Wanaka Community Centre						
Toilets	100%	100%	100%	100%	100%	100%
Community Development	100%	0%	50%	100%	50%	100%
Libraries	100%	10%	100%	100%	70%	100%
Events Centre	100%	32%	48%	100%	60%	100%
Relative Impact						
Parks and Reserves	1.0	4.3	0.2	1.0	2.2	1.0
Council Land	1.0	4.3	0.2	1.0	2.2	1.0
Waterway Facilities	1.0	4.3	0.0	1.0	1.4	1.0
Swimming Pools	1.0	1.4	0.1	1.0	1.3	1.0
Halls	1.0	0.7	0.0	1.0	0.8	1.0
Wanaka Community Centre	0.0	0.0	0.0	0.0	0.0	0.0
Toilets	1.0	4.3	0.2	1.0	2.2	1.0
Community Development	1.0	0.0	0.1	1.0	1.1	1.0
Libraries	1.0	0.4	0.2	1.0	1.5	1.0
Events Centre	1.0	1.4	0.1	1.0	1.3	1.0

Wanaka	Residential	Accommodation	Retail/ Commercial	Primary Industry	Mixed Use	Other
Facility Usage						
Parks and Reserves	100%	100%	100%	100%	100%	100%
Council Land	100%	100%	100%	100%	100%	100%
Waterway Facilities	100%	100%	0%	100%	67%	100%
Swimming Pools	100%	32%	48%	100%	60%	100%
Halls	100%	16%	0%	100%	39%	100%
Wanaka Community Centre	100%	16%	0%	100%	39%	100%
Toilets	100%	100%	100%	100%	100%	100%
Community Development	100%	0%	50%	100%	50%	100%
Libraries	100%	10%	100%	100%	70%	100%
Events Centre	50%	16%	0%	50%	30%	50%
Relative Impact						
Parks and Reserves	1.0	3.1	0.2	1.0	1.8	1.0
Council Land	1.0	3.1	0.2	1.0	1.8	1.0
Waterway Facilities	1.0	3.1	0.0	1.0	1.2	1.0
Swimming Pools	1.0	1.0	0.1	1.0	1.1	1.0
Halls	1.0	0.5	0.0	1.0	0.7	1.0
Wanaka Community Centre	1.0	0.5	0.0	1.0	0.7	1.0
Toilets	1.0	3.1	0.2	1.0	1.8	1.0
Community Development	1.0	0.0	0.1	1.0	0.9	1.0
Libraries	1.0	0.3	0.2	1.0	1.2	1.0
Events Centre	0.5	0.5	0.0	0.5	0.5	0.5

The relative impacts above are converted into collective impacts by multiplying them by the number of additional properties developed for each land use category in the last 10 years and the number expected in the next 10 years (20 year period).

Step 3 – Apportion Cost of Growth to Each Land Use

Objective: To define the percentage of the 20 year total CAPEX for growth to be contributed by each land use classification.

Weighting the impact tables for each land use, assessed in 2 above, by the 20 year CAPEX for growth provides this solution. The results of this are shown below.

Table 5 – Proportion of growth cost to be contributed by Land Use Group

Proportion of cost of growth		
Land Use	**Wakatipu**	**Wanaka**
Residential	51.8%	67.6%
Accommodation	39.5%	20.2%
Retail/Commercial	1.2%	1.35%
Primary Industry	3.6%	5.9%
Mixed Use	3.9%	5.0%
Other	0.03%	0.1%

These are then converted into differentials. This is completed by assuming residential = 1.0, with the other land use classifications being normalised to 1. Table 6 shows the output (and the differentials) once Table 5 has been normalised.

Table 6 – Differentials by Land Use Group – for Reserve Improvements & Community Facilities

Land Use Differentials		
Land Use	**Wakatipu**	**Wanaka**
Residential	1.00	1.00
Accommodation	1.90	2.85
Commercial	0.12	0.19
Primary Industry	1.00	1.00
Mixed Use	1.44	1.64
Other	1.00	1.00
CBD Accommodation	1.90	2.85
CBD Commercial	0.12	0.19
MU Accommodation	1.44	1.64
Country Dwelling	1.00	1.00

Note that Primary Industry and Country Dwellings have been assumed to only use a local reserve 25% as much as a Residential Dwelling would but the benefit from a neighbourhood reserve is considered to be the same for all dwelling types. This assumption therefore reduces the Reserve Land - Land Use Differential for Primary Industry and Country Dwellings down to 0.66 for both Wakatipu and Wanaka.

Table 7 – Differentials by Land Use Group – for Reserve Land

Land Use Differentials		
Land Use	**Wakatipu**	**Wanaka**
Residential	1.00	1.00
Accommodation	1.90	2.85
Commercial	0.12	0.19
Primary Industry	0.66	0.66
Mixed Use	1.44	1.64
Other	1.00	1.00
CBD Accommodation	1.90	2.85
CBD Commercial	0.12	0.19
MU Accommodation	1.44	1.63
Country Dwelling	0.66	0.66

Note: Non-residential developments are not levied a Reserve Improvements or a Reserve Land contribution.

Transportation – Land Use Conversion Factors

The land use differentials are explicitly integrated into the model. The method of assessing land use differentials can be demonstrated by the following diagram. The assessment described below was completed in 2009.

Figure 2 – Assessment of Land Use Differentials for Transportation

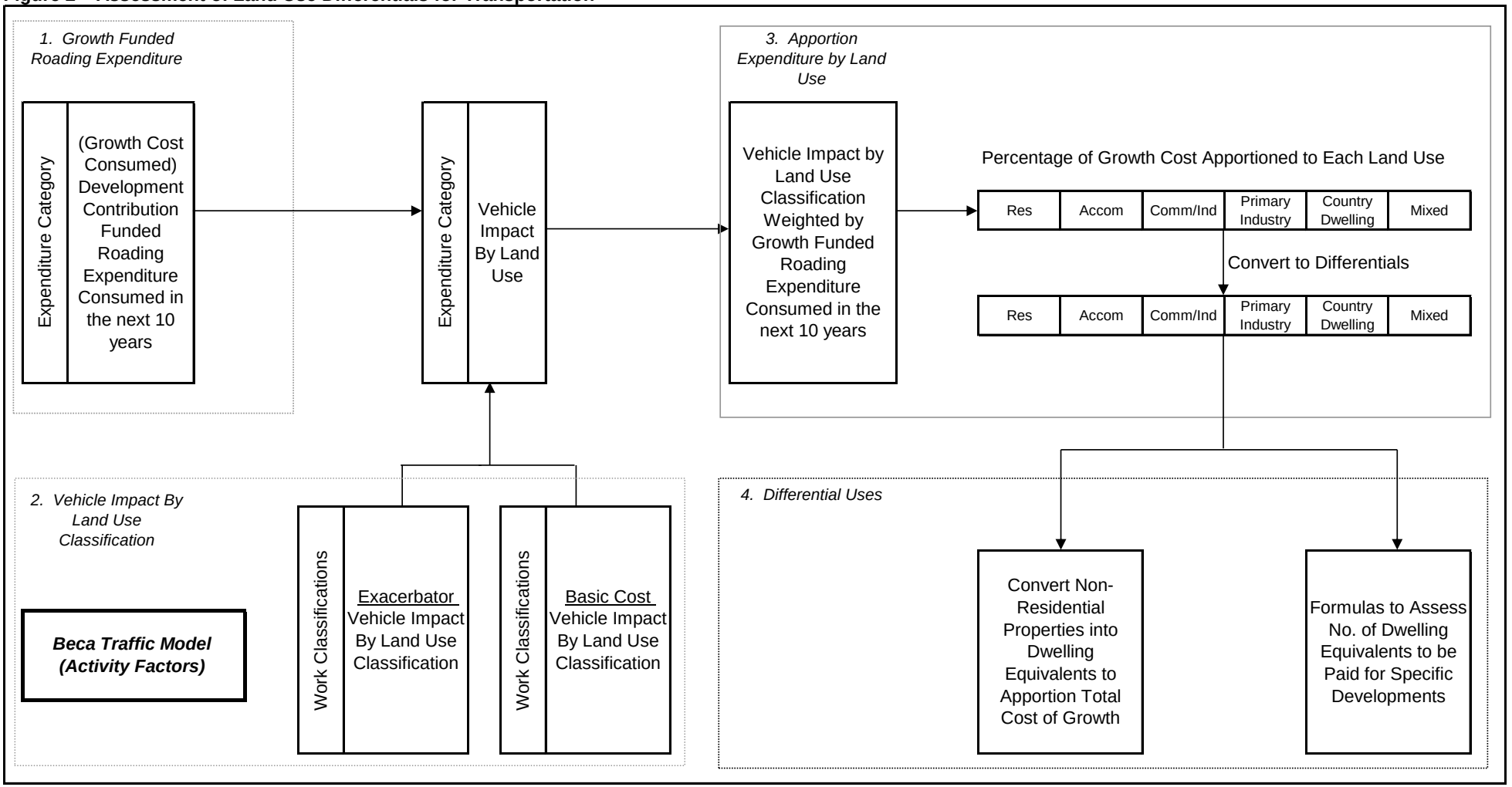


Figure 2 shows that the land use differentials have been assessed considering growth CAPEX consumed over a 10 year period (10 years forward). The 10 year period is used as a weighting to define the total impact of each land use activity.

The key components (steps 1 to 3) of figure 1 are described below:

Step 1 –Capital Expenditure for Growth – CAPEX to be Funded from Development Contributions.

Objective: To provide a 10-year total of the consumed CAPEX for growth for each General Ledger (GL) work classification. This provides the basis for weighting impact by land use (step 3).

10-years of consumed capital expenditure for growth has been assessed using past expenditure and the Transportation Activity Management Plan (10 years forward). These have been assessed using Council's General Ledger (GL) work classification codes.

All non-growth CAPEX has been extracted from the calculation.

Step 2 – Impact on Cost of Growth by Land Use Classification

Objective: To understand the impact on the cost of growth by land use group. This considers number, type, location and impact of different land use groups on different GL work classifications.

This step is the key element in determining the number of units of demand and determining land use differential formulas.

Tables 9 and 10 show ***Relative Impacts***. Relative impacts assess the impact of the typical property in each land use classification compared to one another. Beca's activity model provided the basis for this calculation. This model considers the trip generation on an average day from each land use classification and also considers the exacerbator components associated with each land use classification. The concept of "exacerbators" separates the proportion of costs which can be related to specific activities or land use categories and allocates them in proportion to their relative contribution to those costs.

An example of this is kerb and channel construction where 65% of the growth cost is attributed to urban. This 65% is then further apportioned to the urban properties. In this instance the 65% is equally shared between residential, accommodation and commercial.

The relative impacts are then converted into collective impacts. Collective impact is the total impact percentage attributable to each land use on a specific GL work category. To convert relative into collective impact, the relative impact is multiplied by the number of new dwelling equivalents expected over the next 10 years in each land use classification.

The impacts have been assessed on the basis of the following typical land use parameters.

Table 8 – Trip Generation by Land Use Group

Wakatipu:	**Average Size**	**unit**	**Trip Generation Rate per Unit**
Residential	1	Dwell	7.5
Accommodation	5.5	Units	3.5
Commercial/Industrial	256	m^2	0.17
Primary Industry	26.9	ha	0.41
Country Dwelling	1	Dwell	6
Mixed Use	1	Dwell	15

Wanaka:	**Average Size**	**unit**	**Trip Generation Rate per Unit**
Residential	1	Dwell	7.5
Accommodation	5.4	Units	3.5
Commercial/Industrial	316	m^2	0.15
Primary Industry	40.5	ha	0.27
Country Dwelling	1	Dwell	6
Mixed Use	1	Dwell	15

Table 9 – Relative Impact – Basic Cost

Wakatipu

Activity	Grouping	Residential	Accommodation	Commercial /Industrial	Primary Industry	Country Dwelling	Mixed Use Commercial	Mixed Use Accommodation
Structures	A	1	2.9	6.6	1.5	0.8	2.4	3.8
Footpaths and Streetlighting	B	1	2.9	6.6	1.5	0.8	2.4	3.8
General Activities	C	1	2.9	6.6	1.5	0.8	2.4	3.8
Town Centres	D	1	2.9	6.6	1.5	0.8	2.4	3.8
Seal Extensions	E	1	2.9	6.6	1.5	0.8	2.4	3.8
Reseals	F	1	2.9	6.6	1.5	0.8	2.4	3.8
Rehabilitations	G	1	2.9	6.6	1.5	0.8	2.4	3.8
Power Reticulation Undergrounding	H	1	1	1	1	1	1	1
Noxious Weeds	I	1	1	1	1	1	1	1
Maintenance Metalling	J	1	2.9	6.6	1.5	0.8	2.4	3.8
Dust Supression	K	1	2.9	6.6	1.5	0.8	2.4	3.8
Services	L	1	2.9	6.6	1.5	0.8	2.4	3.8

Wanaka

Activity	Grouping	Residential	Accommodation	Commercial /Industrial	Primary Industry	Country Dwelling	Mixed Use Commercial	Mixed Use Accommodation
Structures	A	1	2.5	6.6	1.5	0.8	2.4	3.8
Footpaths and Streetlighting	B	1	2.5	6.6	1.5	0.8	2.4	3.8
General Activities	C	1	2.5	6.6	1.5	0.8	2.4	3.8
Town Centres	D	1	2.5	6.6	1.5	0.8	2.4	3.8
Seal Extensions	E	1	2.5	6.6	1.5	0.8	2.4	3.8
Reseals	F	1	2.5	6.6	1.5	0.8	2.4	3.8
Rehabilitations	G	1	2.5	6.6	1.5	0.8	2.4	3.8
Power Reticulation Undergrounding	H	1	1	1	1	1	1	1
Noxious Weeds	I	1	1	1	1	1	1	1
Maintenance Metalling	J	1	2.5	6.6	1.5	0.8	2.4	3.8
Dust Suppression	K	1	2.5	6.6	1.5	0.8	2.4	3.8
Services	L	1	2.5	6.6	1.5	0.8	2.4	3.8

Table 10 – Relative Impact – Exacerbator Cost

Wakatipu

Activity	Grouping	Residential	Accommodation	Commercial /Industrial	Primary Industry	Country Dwelling	Mixed Use - Commercial	Mixed Use - Accommodation
Structures	A	-	1.00	0.71	0.25	0.01	-	-
Footpaths and Streetlighting	B	1.00	1.00	1.00	-	-	-	-
General Activities	C	-	1.00	0.71	0.25	0.01	-	-
Town Centres	D	-	1.00	0.71	-	-	-	-
Seal Extensions	E	-	-	-	-	1.00	-	-
Reseals	F	-	1.00	0.71	0.25	0.01	-	-
Rehabilitations	G	-	1.00	0.71	0.25	0.01	-	-
Power Reticulation Undergrounding	H	-	-	-	-	-	-	-
Noxious Weeds	I	-	-	-	1.00	1.00	-	-
Maintenance Metalling	J	-	-	-	1.00	1.00	-	-
Dust Supression	K	-	-	-	1.00	1.00	-	-
Services	L	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Wanaka

Activity	Grouping	Residential	Accommodation	Commercial /Industrial	Primary Industry	Country Dwelling	Mixed Use - Commercial	Mixed Use - Accommodation
Structures	A	-	1.00	1.10	0.29	0.01	-	-
Footpaths and Streetlighting	B	1.00	1.00	1.00	-	-	-	-
General Activities	C	-	1.00	1.10	0.29	0.01	-	-
Town Centres	D	-	1.00	1.00	-	-	-	-
Seal Extensions	E	-	-	-	-	1.00	-	-
Reseals	F	-	1.00	1.10	0.29	0.01	-	-
Rehabilitations	G	-	1.00	1.10	0.29	0.01	-	-
Power Reticulation Undergrounding	H	-	-	-	-	-	-	-
Noxious Weeds	I	-	-	-	1.00	1.00	-	-
Maintenance Metalling	J	-	-	-	1.00	1.00	-	-
Dust Supression	K	-	-	-	1.00	1.00	-	-
Services	L	1.00	1.00	1.00	1.00	1.00	1.00	1.00

In addition to table 10 an urban exacerbator component has been allowed for against the major growth projects that are required due to congestion, namely; Advanced Property Purchase, New Roads, Studies and Strategies. In this instance 60% of the growth cost has been equally shared between residential, mixed use commercial and mixed use accommodation.

Table 11 – Collective Impact – Combining Basic and Exacerbator Cost Components

Wakatipu

Exacerbator Types	COMBINED - COLLECTIVE IMPACT	Growth CAPEX Consumed in 10yr Period	EXACERBATOR Percentage	*Residential*	*Accommodation*	*Commercial / Industrial*	*Primary Industry*	*Country Dwelling*	*Mixed Use - Comm*	*Mixed Use - Accom*
Urban	Advance property purchase	752,167	60%	69%	7%	0%	18%	0%	1%	1%
-	Amenity enhancement	-	0%	29%	18%	0%	45%	0%	3%	1%
-	Associated improvements	235,505	0%	29%	18%	0%	45%	0%	3%	1%
-	Community programmes	-	0%	29%	18%	0%	45%	0%	3%	1%
Urban	Cycle facilities	190,590	65%	29%	18%	0%	45%	0%	3%	1%
-	Demand management	-	0%	29%	18%	0%	45%	0%	3%	1%
-	Drainage renewals	288,603	0%	29%	18%	0%	45%	0%	3%	1%
-	Emergency Works Contingency	-	0%	29%	18%	0%	45%	0%	3%	1%
-	Environmental renewals	111	0%	29%	18%	0%	45%	0%	3%	1%
Urban	Kerb & Channel Construction	52,570	65%	55%	16%	0%	26%	0%	1%	0%
-	Minor Improvements	801,288	0%	29%	18%	0%	45%	0%	3%	1%
Urban	New roads	1,692,755	60%	69%	7%	0%	18%	0%	1%	1%
-	New traffic management facilities	-	0%	29%	18%	0%	45%	0%	3%	1%
HCV	Other Structures	280	30%	20%	29%	0%	45%	0%	2%	1%
-	Passenger transport facilities ops & mtce	-	0%	29%	18%	0%	45%	0%	3%	1%
-	Passenger transport infrastructure	43,117	0%	29%	18%	0%	45%	0%	3%	1%
-	Passenger transport road improvements	-	0%	29%	18%	0%	45%	0%	3%	1%
Urban	Pedestrian and cycle facilities	35,784	65%	55%	16%	0%	26%	0%	1%	0%
Urban	Pedestrian facilities	155,150	65%	55%	16%	0%	26%	0%	1%	0%
-	Power Reticulation Undergrounding	-	0%	61%	13%	0%	14%	0%	9%	1%
-	Preventive maintenance	25,434	0%	29%	18%	0%	45%	0%	3%	1%
-	Property purchase (local roads)	128,698	0%	29%	18%	0%	45%	0%	3%	1%
HCV	Replacement of bridges & other structures	26,933	30%	20%	29%	0%	45%	0%	2%	1%
HCV	Road reconstruction	746,379	50%	15%	37%	0%	45%	0%	2%	0%
-	Roading General	342,074	0%	29%	18%	0%	45%	0%	3%	1%
Rural	Seal extension	373,824	65%	10%	6%	0%	16%	0%	66%	0%
HCV	Sealed road pavement rehabilitation	2,644,202	50%	15%	37%	0%	45%	0%	2%	0%
HCV	Sealed road resurfacing	1,622,897	50%	15%	37%	0%	45%	0%	2%	0%
Comm/Accom	Street Furniture	6,307	50%	15%	37%	0%	45%	0%	2%	0%
Urban	Streetlighting	64,580	65%	55%	16%	0%	26%	0%	1%	0%

Exacerbator Types	COMBINED - COLLECTIVE IMPACT	Growth CAPEX Consumed in 10yr Period	EXACERBATOR Percentage	*Residential*	*Accommodation*	*Commercial / Industrial*	*Primary Industry*	*Country Dwelling*	*Mixed Use - Comm*	*Mixed Use - Accom*
HCV	Structures component replacements	16,437	30%	20%	29%	0%	45%	0%	2%	1%
Urban	Studies and strategies	-	60%	69%	7%	0%	18%	0%	1%	1%
Comm/Accom	Town Centre Improvements	456,290	50%	15%	37%	0%	45%	0%	2%	0%
-	Traffic management	-	0%	29%	18%	0%	45%	0%	3%	1%
-	Traffic services renewals	888,891	0%	29%	18%	0%	45%	0%	3%	1%
Rural	Unsealed road metalling	336,303	65%	10%	6%	0%	16%	0%	66%	0%
		11,927,170								

Wanaka

Exacerbator Types	COMBINED - COLLECTIVE IMPACT	Growth CAPEX Consumed in 10yr Period	EXACERBATOR Percentage	*Residential*	*Accommodation*	*Commercial / Industrial*	*Primary Industry*	*Country Dwelling*	*Mixed Use - Comm*	*Mixed Use - Accom*
Urban	Advance property purchase	-	60%	73%	3%	0%	15%	0%	3%	1%
-	Amenity enhancement	-	0%	40%	8%	0%	38%	0%	8%	1%
-	Associated improvements	55,431	0%	40%	8%	0%	38%	0%	8%	1%
-	Community programmes	-	0%	40%	8%	0%	38%	0%	8%	1%
Urban	Cycle facilities	79,112	65%	67%	7%	0%	21%	0%	3%	0%
-	Demand management	-	0%	40%	8%	0%	38%	0%	8%	1%
-	Drainage renewals	197,504	0%	40%	8%	0%	38%	0%	8%	1%
-	Emergency Works Contingency	-	0%	40%	8%	0%	38%	0%	8%	1%
-	Environmental renewals	177	0%	40%	8%	0%	38%	0%	8%	1%
Urban	Kerb & Channel Construction	96,284	65%	67%	7%	0%	21%	0%	3%	0%
-	Minor Improvements	623,620	0%	40%	8%	0%	38%	0%	8%	1%
Urban	New roads	503,159	60%	73%	3%	0%	15%	0%	3%	1%
-	New traffic management facilities	-	0%	40%	8%	0%	38%	0%	8%	1%
HCV	Other Structures	-	30%	28%	15%	0%	47%	0%	6%	0%
-	Passenger transport facilities ops & mtce	-	0%	40%	8%	0%	38%	0%	8%	1%
-	Passenger transport infrastructure	7,433	0%	40%	8%	0%	38%	0%	8%	1%
-	Passenger transport road improvements	-	0%	40%	8%	0%	38%	0%	8%	1%
Urban	Pedestrian and cycle facilities	933	65%	67%	7%	0%	21%	0%	3%	0%
Urban	Pedestrian facilities	62,618	65%	67%	7%	0%	21%	0%	3%	0%
-	Power Reticulation Undergrounding	-	0%	66%	5%	0%	9%	0%	17%	0%
-	Preventive maintenance	9,057	0%	40%	8%	0%	38%	0%	8%	1%
-	Property purchase (local roads)	20,770	0%	40%	8%	0%	38%	0%	8%	1%
HCV	Replacement of bridges & other structures	27,141	30%	28%	15%	0%	47%	0%	6%	0%
HCV	Road reconstruction	336,127	50%	20%	20%	0%	53%	0%	5%	0%
-	Roading General	104,178	0%	40%	8%	0%	38%	0%	8%	1%
Rural	Seal extension	1,455,569	65%	14%	3%	0%	13%	0%	68%	0%
Rural/Urban	Seal extension - residential	1,212,044	65%	50%	3%	0%	13%	0%	31%	0%
HCV	Sealed road pavement rehabilitation	495,380	50%	20%	20%	0%	53%	0%	5%	0%
HCV	Sealed road resurfacing	1,253,449	50%	20%	20%	0%	53%	0%	5%	0%
Comm/Accom	Street Furniture	3,679	50%	20%	21%	0%	52%	0%	4%	0%
Urban	Streetlighting	49,072	65%	67%	7%	0%	21%	0%	3%	0%
HCV	Structures component replacements	10,828	30%	28%	15%	0%	47%	0%	6%	0%
Urban	Studies and strategies	-	60%	73%	3%	0%	15%	0%	3%	1%

Exacerbator Types	COMBINED - COLLECTIVE IMPACT	Growth CAPEX Consumed in 10yr Period	EXACERBATOR Percentage	*Residential*	*Accommodation*	*Commercial / Industrial*	*Primary Industry*	*Country Dwelling*	*Mixed Use - Comm*	*Mixed Use - Accom*
Comm/Accom	Town Centre Improvements	83,386	50%	20%	21%	0%	52%	0%	4%	0%
-	Traffic management	-	0%	40%	8%	0%	38%	0%	8%	1%
-	Traffic services renewals	211,398	0%	40%	8%	0%	38%	0%	8%	1%
Rural	Unsealed road metalling	345,533	65%	14%	3%	0%	13%	0%	68%	0%
		7,243,883								

Step 3 – Apportion Cost of Growth to Each Land Use

Objective: To define the percentage of the 10 year total consumed CAPEX for growth to be contributed by each land use classification.

Weighting the impact tables for each land use, assessed in 2 above, by the 10 year consumed CAPEX for growth provides this solution. The results of this are shown below.

Table 11 – Proportion of consumed growth cost to be contributed by Land Use Group

	Wakatipu	Wanaka
Residential	30.5%	32.4%
Accommodation	23.4%	8.9%
Commercial/Industrial	36.9%	29.9%
Primary Industry	0.03%	0.06%
Country Dwelling	5.9%	25.2%
Mixed Use – Commercial	0.5%	0.3%
Mixed Use – Accommodation	2.7%	3.3%
	100%	**100%**

These are then converted into differentials. This is completed by assuming residential = 1.0, with the other land use classifications being normalised to 1. Table 13 shows the output (and the differentials) once Table 11 has been normalised.

The commercial and industrial land use category (previously commercial) has been split into separate categories to recognise that the demand on transportation for industrial developments is significantly different to other commercial activities.

The method used to calculate a differential for the commercial and industrial categories are based on Beca's latest traffic activity model. The vehicle impact of the respective categories are normalised against the existing combined category. The method is summarised in the following table:

Table 12 – Commercial and Industrial Differentials

Wakatipu	Property Size (m^2)	Trip Rate (vpd/100m^2)	HCV %	HCV Factor	Vehicle Impact	Differential
Commercial/Industrial	288	17.2	3.1%	6.1	57.3	5.1
Commercial	278	22.4	1.4%	6.1	66.7	6.0
Industrial	310	6.6	15.0%	6.1	36.1	3.2
Wanaka						
Commercial/Industrial	331	15.1	4.2%	5.4	59.0	6.4
Commercial	313	22.4	1.4%	5.4	74.4	8.0
Industrial	355	6.6	15.0%	5.4	38.9	4.2

The separate differentials and average gross floor areas have been added to the following table.

Table 13 – Differentials by Land Use Group

	Wakatipu	Wanaka
Residential	1.0	1.0
Accommodation	3.7	3.6
Commercial	6.0	8.0
Industrial	3.2	4.2
Primary Industry	1.7	1.8
Country Dwelling	1.3	3.0
Mixed Use – Commercial	1.7	1.6
Mixed Use - Accommodation	2.5	2.5

Table 14 – Transportation Average Gross Floor Areas

	Wakatipu	Wanaka
Residential	160	160
Accommodation	212	166
Commercial	278	313
Industrial	310	355
Primary Industry	27 Ha	40 Ha
Country Dwelling	224	189
Mixed Use Commercial	177	164
Mixed Use Accommodation	191	181

Asset Schedules

A copy of the Asset Schedules can be obtained upon request from QLDC offices. The schedules show for each project/assets funded from development contributions:

- The total capital cost,
- The proportion of the capital cost that QLDC proposes to recover through development contributions,
- The proportion of the capital cost that QLDC proposes to recover from other sources,
- Proportion of the Capital Cost that QLDC proposes to recover in the 2015/16 Policy (over the next 10 years).

PART 4

Assessing Contributions for Subdivisions and Developments

Method for assessing development contributions payable for:

Water Supply
Wastewater
Stormwater
Reserve Land
Reserve Improvements
Community Facilities
Transportation

Note:

The Policy below differs from the policy adopted by Council in June 2014. The core differences are:

- *Changes to the assessment of Reserve Land contributions (Council is intending to reduce the requirement so that contributions are only applicable where there is currently limited provision).*
- *New contributing area for Shotover Country – confirming existing approach to water and wastewater contributions in the area.*
- *New contributing area for Frankton Flats – proposed approach to fund provision of planned new stormwater capex in the area.*

Introduction

The primary objective here is to provide a means for calculating a fair development contribution for a non-residential development of any type and size. The calculations below provide differentials (multipliers) in terms of dwelling equivalents.

Land Use Differentials Table

The following table summarises how to calculate the number of dwelling equivalents (DE's) for a non-residential subdivision or development based on the Gross Floor Area (GFA).

Table 1 – Land Use Differentials

	Water Supply		Wastewater	Stormwater	Reserve Improvements & Community Facilities		Reserve Land		Transportation	
Category	Dwelling Equivalents per 100m² GFA	Plus Network Factor Dwelling Equivalents	Dwelling Equivalents per 100m² GFA	Dwelling Equivalents per 100m² Impervious Surface Area	Dwelling Equivalents per 100m² GFA for Wakatipu	Dwelling Equivalents per 100m² GFA for Wanaka	Dwelling Equivalents per 100m² GFA for Wakatipu	Dwelling Equivalents per 100m² GFA for Wanaka	Dwelling Equivalents per 100m² GFA for Wakatipu	Dwelling Equivalents per 100m² GFA for Wanaka
Residential	1 Dwelling Equivalent (DE) per Dwelling Unit									
Residential Flat	0.37	0.40	0.62	0.38	0.62	0.62	0.62	0.62	0.62	0.62
Multi Unit Residential	0.37	0.40	0.62	0.38	0.62	0.62	0.62	0.62	0.62	0.62
Accommodation	0.25	1.30	0.50	0.38	0.90	1.71	0.90	1.71	1.72	2.17
Commercial	0.16	1.17	0.20	0.38	0.04	0.06	0.00	0.00	2.15	2.56
Industrial	0.16	1.17	0.20	0.38	0.04	0.06	0.00	0.00	1.04	1.19
Country Dwelling	1 DE per Dwelling		1 DE per Dwelling	1 DE per Dwelling	1 DE per Dwelling		0.66 DE's per Dwelling		1.34 DE's per Dwelling	3.01 DE's per Dwelling
Other	To be individually assessed at the time of application									
CBD Accommodation	0.25	1.30	0.50	0.38	0.90	1.71	0.90	1.71	1.72	2.17
CBD Commercial	0.16	1.17	0.20	0.38	0.04	0.06	0.00	0.00	2.15	2.56
Mixed Use Accomm.	1 DE per Dwelling		1 DE per Dwelling	0.38	0.78	0.95	0.78	0.95	1.30	1.38
Mixed Use Comm.	1 DE per Dwelling		1 DE per Dwelling	0.38	0.78	0.95	0.59	0.71	0.97	0.99
Primary Industry	1 DE per Dwelling		1 DE per Dwelling	1 DE per Dwelling	1 DE per Dwelling		0.66 DE's per Dwelling		1.69 DE's per 27Ha	1.83 DE's per 41Ha
Restaurant/Bar	0.83	1.17	0.46	0.38	0.04	0.06	0.00	0.00	2.15	2.56

Note: A residential property is always 1 Dwelling Equivalent (DE) or has 160m² GFA and 260m² impervious surface area (ISA). Gross Floor Area (GFA) is defined, as in the Partially Operative District Plan, as 'the sum of the gross area of the several floors of all buildings on a site, measured from the exterior faces of the exterior walls, or form the centre lines of walls separating two buildings'. For the purpose of this policy this definition of GFA, excluding car parking areas, will be used.

The detailed methodology and formulas used to develop the above table are explained in the following sections.

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If the Gross Floor Area (GFA) is unknown, which may be the case at the subdivision and land use consent stage, then the following table should be used to estimate the GFA.

Table 2 – Gross Floor Area (GFA) Estimates

Category	Building Coverage	No. of Floors
Residential	**Assume 160m² per Dwelling Unit**	
Accommodation	**55%**	**2**
Commercial	**75%**	**1**
Industrial	**30%**	**1**
Country Dwelling	**Assume 160m² Dwelling Unit**	
Other	**To be individually assessed**	
CBD Accommodation	**80%**	**2**
CBD Commercial	**80%**	**2**
Mixed Use Accommodation	**55%**	**1**
Mixed Use Commercial	**55%**	**1**
Primary Industry	**Assume 160m² per Dwelling Unit**	
Restaurant/Bar	**Use Commercial or CBD Commercial**	

Note: When an estimate of the GFA is used in the development contribution assessment (usually at subdivision consent) then Council will only charge 75% of the calculated contribution at this stage

Residential Flats

When assessing the number of dwelling equivalents for residential flat developments instead of allowing one dwelling equivalent per unit this assessment is done using the GFA and the residential flat differentials shown in the above table. In other words, the assessment is done as it would be for visitor accommodation (i.e. on a per 100m² GFA basis) but using the residential flat differentials.

Multi Unit Residential Developments

When assessing the number of dwelling equivalents for multi-unit developments instead of allowing one dwelling equivalent per unit this assessment is done using the GFA and the residential differentials shown in the above table. In other words, the assessment is done as it would be for visitor accommodation (i.e. on a per 100m² GFA basis) but using the residential differentials.

This method more clearly defines the impact of multi-unit residential developments when compared to visitor accommodation and will make most residential units more affordable.

Visitor Accommodation Definition

The visitor accommodation definition means residential dwellings wanted to be rented out for more than 90 days must apply for resource consent to operate as visitor accommodation.

Those residential dwellings applying for a change of use to operate as visitor accommodation under this new definition will be assessed development contributions as Mixed Use Accommodation. Furthermore it has been assessed that this change in use will not create additional demand for reserve land. However, as our differentials for reserve improvements and community facilities are based on a person's free time (of which a visitor has more) it is considered this change in use will create additional demand for these activities.

All land use categories are defined in the rating policy with the exception of those listed below. For the purpose of assessing development contributions these exceptions are:

Residential Flat – A residential activity that:

- Consists of no more than one flat in the same ownership as the residential unit; and
- Is contained within the same residential unit; and
- If attached to a detached accessory building does not cover more than 50% of the total Gross Floor Area of the building containing the flat and detached accessory building; and
- Contains no more than one kitchen and one laundry; and
- Does not cover more than 35% of the total Gross Floor Area of the building(s) containing the residential unit and flat (but excluding accessory buildings).

Multi-Unit Residential – Any development that involves the development of three or more residential units within a single site, it does not include additions, alterations or accessory buildings.

Commercial and Industrial - All rating units used exclusively or principally for commercial activities excluding properties categorised as Hydro-Electric Power, Accommodation, CBD Accommodation, Primary Industry, or pursuant to clause 11 (Mixed Use Apportioned) or clause 7 (CBD Commercial).

All developments that fall within the above definition will be assessed for development contributions based on the following groupings:

Commercial
Retail,
Recreation
Tourist operations,
Offices,
Rest homes

Industrial
Industrial,
Transport,
Utility services,
Storage

Restaurant/Bar - any land and/or buildings, or part of a building, in which meals are supplied for sale to the general public for consumption on the premises, including such premises which a licence has been granted pursuant to the Sale of Liquor Act 1989.

Water Supply Dwelling Equivalents

The proposed equation for calculating the number of dwelling equivalents for the development contribution for water supply is shown below:

Equation 1 Water Supply Dwelling Equivalent Calculation

$$\boldsymbol{Water\ Supply\ Dwelling\ Equivalents} = \left(\boldsymbol{WCF} * \left(\frac{\boldsymbol{GFA}}{\boldsymbol{160}}\right) * \boldsymbol{WCIF}\right) + (\boldsymbol{NCF} * \boldsymbol{NCIF})$$

Where:
WCF = Working Charge Factor
GFA = Gross Floor Area (m²)
WCIF = Working Charge Impact Factor
NCF = Network Charge Factor
NCIF = Network Charge Impact Factor
160 = Average Gross Floor Area (GFA) for a residential dwelling

The equation is designed to assess the growth impact on the water supply network for both the type (land use) and size of a development. The equation returns the number of dwelling equivalents.

The equation is aimed at two specific cost centres. The first is a working charge and the second is a network charge.

The working charge is to mitigate the effects on the network from additional consumption. The objective here is to recognise the marginal cost of the additional development in terms of water consumption i.e. it recognises the type of land use and the size of that development.

The network charge is a fixed charge by land use category. This component of the charge is based on the additional capacity for fire fighting.

The derivation of the separate charges, are described below.

The Working Charge

Definition: The marginal cost of growth on the water supply network recognising both the type (land use category) and the size of a development.

The working charge is represented by this part of the equation:

Equation 2 – Working Charge Component

$$\boldsymbol{Working\ Charge} = \boldsymbol{WCF} * (\frac{\boldsymbol{GFA}}{\boldsymbol{160}}) * \boldsymbol{WCIF}$$

The working charge component in ***Equation 2*** has been designed to recognise the effect of both the type and the size of a development on the water supply network. The components of the equation are described below.

The Working Charge Factor (WCF).

The Working Charge Factor assesses the impact of different land uses relative to the impact of a residential dwelling. In essence it assesses the per person water consumption for retail, restaurants, industrial and accommodation developments relative to a residential dwelling.

By approaching the problem in this manner we are able to remove the problem of double dipping. An example of double dipping is where a visitor uses local accommodation. Their total water consumption is unlikely to be fully undertaken at their place of accommodation. They are likely to also use restaurants and perhaps other residential properties. Therefore the impact of an additional visitor should not be entirely reflected in the accommodation differential. A similar situation occurs with permanent residents that go to work. We can conclude that an individual's total water consumption cannot be attributed to one land use category.

Data from the calibrated water supply network models was used for assessing the relative consumptions by land use types. This differs from previous policy where a textbook or sample water meter data was analysis was completed. The figures supporting this analysis can be found in Table A1 in Appendix A.

Table A1 in Appendix A firstly shows water consumption by land use types. The average water consumption for each land use type has then been converted to peak consumption per 100 m² GFA.

The working charge factors are as follows:

Table 3 – Water Working Charge Factors

Category	Working Charge Factor (WCF)
Residential	1.0
Retail/Commercial	0.4
Restaurant/Bar	2.0
Accommodation	0.8

The flows used for this analysis are from the 2009 water supply calibrated model. The split between retail/commercial and Restaurant/Bar land uses was completed using data from the 2006 differentials analysis.

Other parts of the Working Charge.

There are two other parts of the equation namely, "GFA/160" and "WCIF".

The "GFA/160" takes the GFA of the development (see above for estimates of GFA for each land use) and divides it by 160 m² to bring it back to a dwelling equivalent. The 160 m² is the average GFA for a residential dwelling.

The WCIF – Working Charge Impact Factor, is used to assess the relative infrastructure cost impact of the Working Charge compared to the Network Charge. The derivation of both WCIF and the NCIF can be found below in ***Section 3.3 – Impact Factors.***

The Network Charge

Definition: Charge for additional infrastructure over and above that required for consumption.

The part of the equation relating to the Network Charge is:

Equation 3 – The Network Charge

$$Network\ Charge = NCF * NCIF$$

In effect the network charge is to cover the provision for fire flows. Fire flows, demand greater infrastructure capacity than that needed for consumption (working charge). The land use category and location of that land use has an effect on the infrastructure that Council is required to supply.

The Network Charge Factor (NCF)

The Network Charge Factor has been calculated considering the impact of the 2003 New Zealand Fire Service Code of Practice for Fire Fighting Water Supplies.

See Table A2 in Appendix A for further details of the calculation. The basis for this calculation, namely costs, can be found in Table A3 in Appendix A.

The NCF is assessed relative to a residential dwelling (dwelling equivalent). The calculation takes into account a differential for reticulation, hydrants and storage. Fire risk classifications, including relative proportions of that fire risk have been applied to each land use category.

The Network Charge Factors for water supply are as follows: (Refer Table A2 - Appendix A)

Table 4 – Water Network Charge Factors

Land Use Category	*Network Charge Factor (NCF)*
Residential	1
Retail/Commercial	2.9
Restaurants	2.9
Accommodation	3.2

The Network Charge Impact Factor (NCIF)

This is similar to the Working Charge Factor. See description provided below in ***Section 3.3 – Impact Factors***.

Impact Factors

There are two impact factors namely the Working Charge Impact Factor (WCIF) and the Network Charge Impact Factor (NCIF). These recognise the relative cost of the working (consumption) and the network components of the water supply infrastructure.

Table 5 shows the impact factors. Refer to Table A4 in Appendix A for further details of the calculation.

Table 5 – Water Impact Factors

Working Charge Impact Factor (WCIF)	60%
Network Charge Impact Factor (NCIF)	40%

Wastewater Dwelling Equivalents

The wastewater differential does not challenge us with the same difficulties that the water supply differential does. The network charge component of the water differential equation can be removed, as sewerage assets do not have the requirement for additional facilities such as fire fighting. Taking out the network charge component removes the need for the Working Charge Impact Factor (WCIF).

Data from the calibrated wastewater network models was used for assessing the relative consumptions by land use types. This differs from previous policy where the water consumption data was used with an assumed irrigation factor.

The equation to be used is as follows:

Equation 4 – Wastewater Dwelling Equivalent Calculation

$$\boldsymbol{Wastewater\ Dwelling\ Equivalents} = \boldsymbol{WCF} * \frac{\boldsymbol{GFA}}{\boldsymbol{160}}$$

Where:
WCF = Working Charge Factor
GFA **=** Gross Floor Area (m²)
160 = Average Gross Floor Area (GFA) for a residential dwelling

See Table A1 in Appendix A for the calculation of the wastewater working charge factors.

The wastewater working charge factors are as follows:

Table 6 – Wastewater Working Charge Factors

Category	Working Charge Factors (WCF)
Residential	1.0
Retail/Commercial	0.6
Restaurant/Bar	2.0
Accommodation	1.0

The flows used for this analysis are from the 2009 wastewater calibrated model. For wastewater the model includes the retail/commercial and Restaurant/Bar land uses.

Stormwater Dwelling Equivalents

The number of stormwater dwelling equivalents is simply a ratio of the Impermeable Surface Area (ISA) of the development over the typical ISA for a residential dwelling.

Equation 5 – Stormwater Dwelling Equivalent Calculation

$$\boldsymbol{Stormwater\ Dwelling\ Equivalents} = \frac{\boldsymbol{ISA}}{\boldsymbol{260}}$$

Where:
ISA **=** Impermeable Surface Area (m²)
260 = Typical Impermeable Surface Area (ISA) for a residential dwelling

The ISA for a development can be estimated using the following table if the actual ISA is not known at the time of calculating the development contribution.

Table 7 – Impermeable Surface Area (ISA) Estimates

Land Use	Building Coverage (Site Standards)
ACCOMMODATION	55%
COMMERCIAL	75%
CBD ACCOMMODATION	80%
CBD COMMERCIAL	80%
MIXED ACCOMMODATION	55%
MIXED COMMERCIAL	55%

Reserve Land, Reserve Improvements and Community Facilities

The following are applied against both the **Land** and **Cash** components of the contributions**.**

See Part 3 for derivation of the differentials for Reserve Land, Reserve Improvements and Community Facilities. Part 3 described the usage of differentials for assessing growth and in particular the number of dwelling equivalents to apportion the cost of growth by. Formulas here are provided for assessing contributions at the time of subdivision and development.

Application of Differentials

The following formula defines the number of dwelling equivalents to be paid towards non-residential subdivisions and development for both **land** and **cash** contributions.

The equation to be used is as follows:

Equation 6 – Reserve Land, Reserve Improvements & Community Facilities Dwelling Equivalent Calculation

$$Dwelling\ Equivalents = Differential * \frac{GFA}{160}$$

Where:
Differential = Land Use Differential
GFA **=** Gross Floor Area (m²)
160 = Average Gross Floor Area (GFA) of a dwelling

See Part 3 for the calculation of the Reserve Land Use Differentials.

The Land Use Differentials for reserve land, reserve improvements and community facilities are as follows:

Table 8 – Reserve Land, Reserve Improvements & Community Facilities Land Use Differentials

	Reserve Land		Reserve Improvements & Community Facilities	
	Wakatipu	**Wanaka**	**Wakatipu**	**Wanaka**
Residential	1.00	1.00	1.00	1.00
Accommodation	1.90	2.85	1.90	2.85
Commercial	0.12	0.19	0.12	0.19
Primary Industry	0.66	0.66	1.00	1.00
MU Commercial	1.44	1.64	1.44	1.64
Other	1.00	1.00	1.00	1.00
CBD Accommodation	1.90	2.85	1.90	2.85
CBD Commercial	0.12	0.19	0.12	0.19
MU Accommodation	1.44	1.64	1.44	1.64
Country Dwelling	0.66	0.66	1.00	1.00

Reserve Land Contributions

The land contribution has been assessed at 27.5m² for each residential property. At Council's discretion the contribution can be either land or cash or a combination of land and cash.

If a cash contribution is required, the value of the land shall fall into the category of either urban or township. The land values for the two wards relating to urban or township have been calculated as averages as follows:

Category of Land	Land Value	
	WAKATIPU WARD	**WANAKA**
Urban	$335/m²	$235/m²
Township	$150/m²	$150/m²

These values will be reviewed yearly; however as these values are subject to Section 203 of the Local Government Act 2002 which allows the following maximum contributions (see following clause).

If the applicant considers these values to be incorrect, then the applicant may request Council to obtain a valuation of the land which is at the applicant's expense. Where this process is applied, payment shall be calculated as follows:

a) The market value of the new sites is the sale value of the sites at the date on which the valuation is requested.

b) The market value of the new sites shall be capped at $1500 per m² and this maximum value will be reviewed by Council annually.

c) Lots for roads, utilities, reserves, access or similar purposes shall be excluded from the calculation.

d) Market value of a new site in the case of a stratum title under the Unit Titles Act, where the site is not situated on the ground, shall be calculated as if the site were on the ground.

e) In Rural Zones (except for Rural Visitor Zones), where the lots created are greater than 4000m², the market value of each lot shall be the market value of the rural residential site of 4000m² within that lot, being the most likely site for a building platform.

f) The value of the land contribution per m², in Rural Zones (except for Rural Visitor Zones) shall be the market value as defined in (e) above divided by 1000m².

Maximum Contributions

Section 203 of the Local Government Act 2002 allows the following maximum contributions.
203. Maximum development contributions not to be exceeded—

(1) Development contributions for reserves must not exceed the greater of—

(a) 7.5% of the value of the additional allotments created by a subdivision; and

(b) the value equivalent of 20 square metres of land for each additional household unit created by the development.

Transportation Dwelling Equivalents

The following formula defines the number of dwelling equivalents to be paid towards non-residential subdivisions and development for transportation contributions.

Equation 7 – Transportation Dwelling Equivalent Calculation

$$Dwelling\ Equivalents = Differential * (\frac{GFA}{GFA_{\ Average}})$$

Where:
Differential = Land Use Differential
GFA = Gross Floor Area (m²)
$GFA_{Average}$ = Average Gross Floor Area (GFA) for the land use activity

The Land Use Differentials for transportation are as follows:

Table 9 – Transportation Land Use Differentials

	Wakatipu	Wanaka
Residential	1.0	1.0
Accommodation	3.7	3.6
Commercial	6.0	8.0
Industrial	3.2	4.2
Primary Industry	1.7	1.8
Country Dwelling	1.3	3.0
Mixed Use – Commercial	1.7	1.6
Mixed Use - Accommodation	2.5	2.5

The transportation differentials have been developed from the Beca activity model using the average sized property for each land use category. Therefore when calculating the number of dwelling equivalents the average GFA for each land use category is used rather than using the average residential GFA. These average GFA's for each land use category are as follows:

Table 10 – Transportation Average Gross Floor Areas

	Wakatipu	Wanaka
Residential	160	160
Accommodation	212	166
Commercial	278	313
Industrial	310	355
Primary Industry	27 Ha	40 Ha
Country Dwelling	224	189
Mixed Use Commercial	177	164
Mixed Use Accommodation	191	181

Examples

Dwelling equivalent calculation examples are shown below.

Example 1. Residential Subdivision:

Creation of an 850m² section in Arrowtown valued at $350,000.

Water Dwelling Equivalents	1	
Wastewater Dwelling Equivalents	1	
Stormwater Dwelling Equivalents	1	
Reserve Improvements & Community Facilities Dwelling Equivalents	1	
Reserve Land Dwelling Equivalents	1	
Transportation Dwelling Equivalents	1	
Reserve Land Contribution	= 1 x 27.5m² x $350,000 / 850m²	$11,324

Example 2. Accommodation Subdivision:

A parcel of land is to be subdivided to create a 7000 m² lot in Frankton Flats. The land is valued at $3.5M and is intended to be used for a new hotel.

Gross Floor Estimate (m²)	=7,000 x 0.55 x 2	7,700
(only charge 75% of the GFA estimate)	=7,700 x 75%	5,775
Water Dwelling Equivalents	=5,775 / 100 x 0.25 + 1.3	15.7
Wastewater Dwelling Equivalents	=5,775 / 100 x 0.5	28.9
Stormwater Dwelling Equivalents	=(7,000 x 0.55 x 75%)/100 x 0.38	11
Reserve Improvements & Community Facilities Dwelling Equivalents	= 5,775 / 100 x 0.9	52
Reserve Land Dwelling Equivalents	=5,775 / 100 x 0.9	52
Transportation Dwelling Equivalents	=5,775 / 100 x 1.72	99.3
Reserve Land Contribution		= DE's x 27.5m² x $3.5M / 7,000m²
	= 52 x 27.5m² x $3.5M / 7,000m²	$ 715,000
Adjusted Statutory Reserve Land Maximum	=7.5% of $3.5M	$262,500

Example 3. Restaurant Development

A restaurant is developed on an existing Wanaka site with a land value of $450,000. The site is 267m² with the Gross Floor Area of the development being 200m². It is a single story development.

Water Dwelling Equivalents	=200 / 100 x 0.83 + 1.17		2.8
Wastewater Dwelling Equivalents	=200 / 100 x 0.46		0.9
Stormwater Dwelling Equivalents	=200 / 100 x 0.38		0.8
Community Facilities Dwelling Equivalents	=200 / 100 x 0.06		0.1
Reserve Improvements Dwelling Equivalents	=200 / 100 x 0		0
Reserve Land Dwelling Equivalents	=200 / 100 x 0		0
Transportation Dwelling Equivalents	=200 / 100 x 2.56		5.12
Reserve Land Contribution	=0 x 27.5m² x $450,000 / 267m²	$	-

Adjusted Statutory Reserve Land Maximum + Land Value Cap	= 0 x 20m² x $1,500/m²	$	-

Example 4. Rural Subdivision

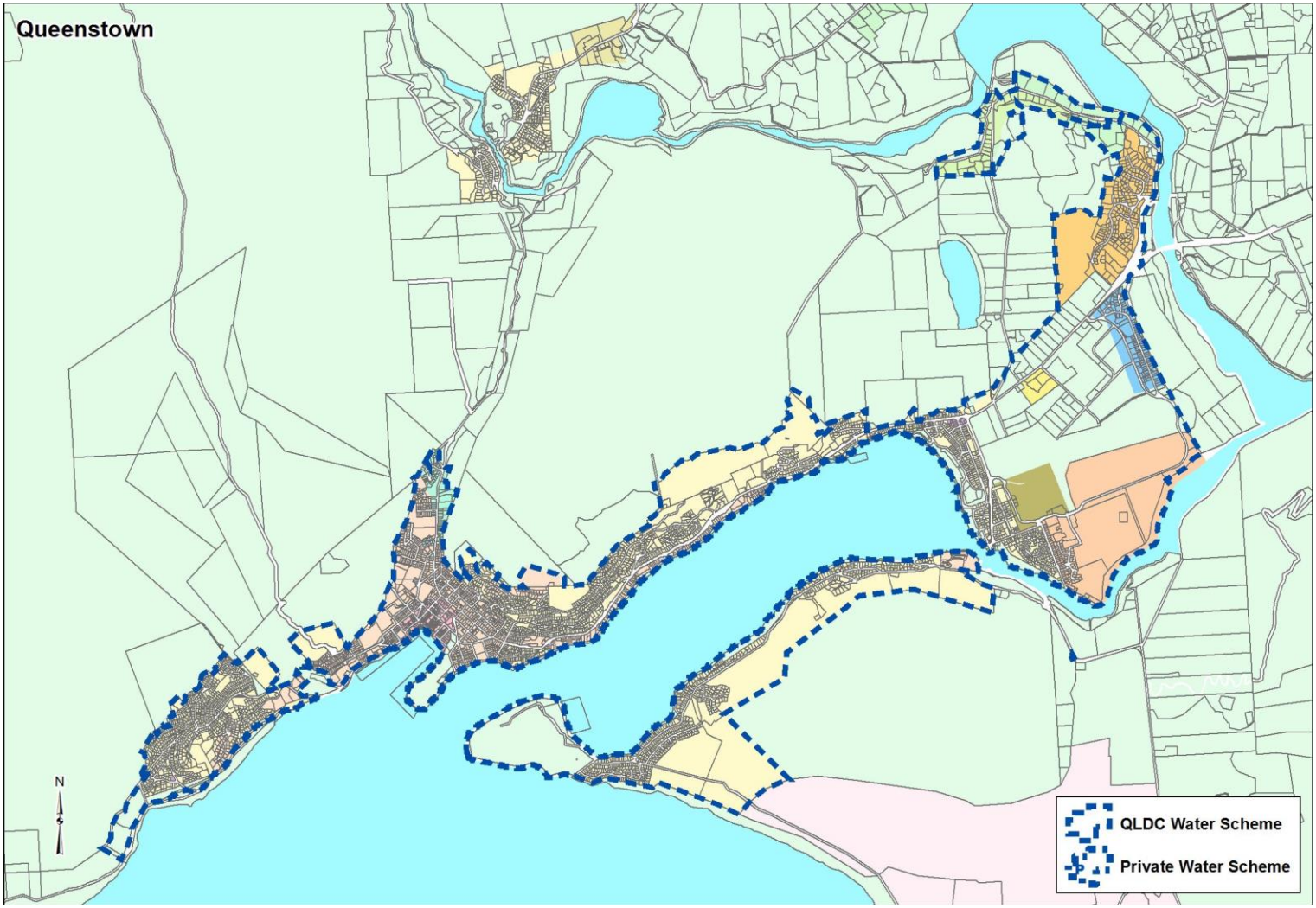
A Lake Hayes Rural Residential allotment of 6,000m² is subdivided from an existing 10,000 m² existing rural residential allotment. The unimproved market value of the new allotment is $850,000. A valuation on 1,000m², being the most likely site for a building platform, was assessed at $600,000.

Water Dwelling Equivalents	= 1		
Wastewater Dwelling Equivalents	= 1		
Stormwater Dwelling Equivalents	= 1		
Reserve Improvements & Community Facilities Dwelling Equivalents	= 1		
Reserve Land Dwelling Equivalents	=0.66		0.66
Transportation Dwelling Equivalents	=1.34		
Reserve Land Contribution	=0.66 x 27.5m² x $600,000 / 1,000m²		$10,890

PART 5

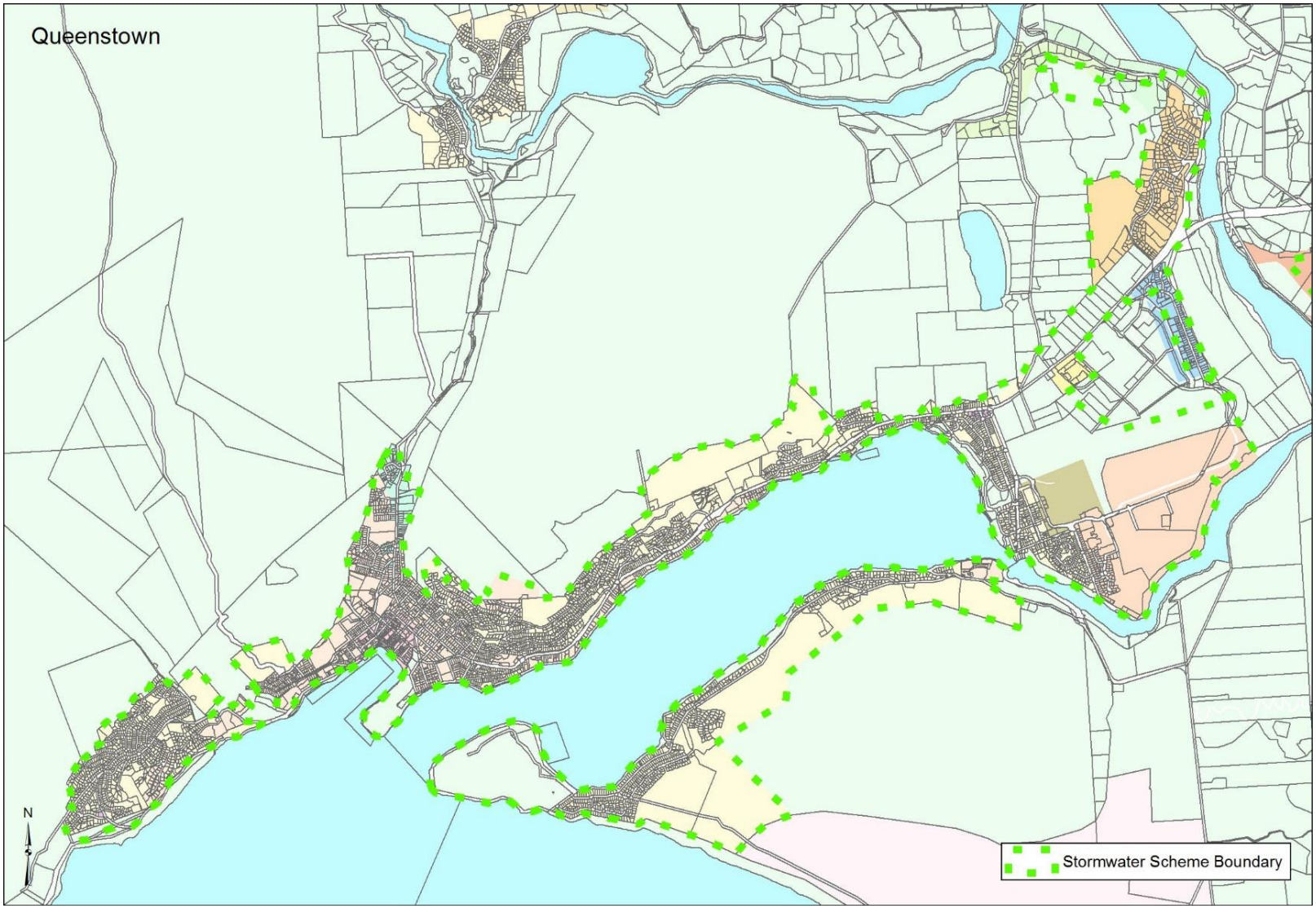
Scheme Boundaries

1.0 QUEENSTOWN – Water Supply



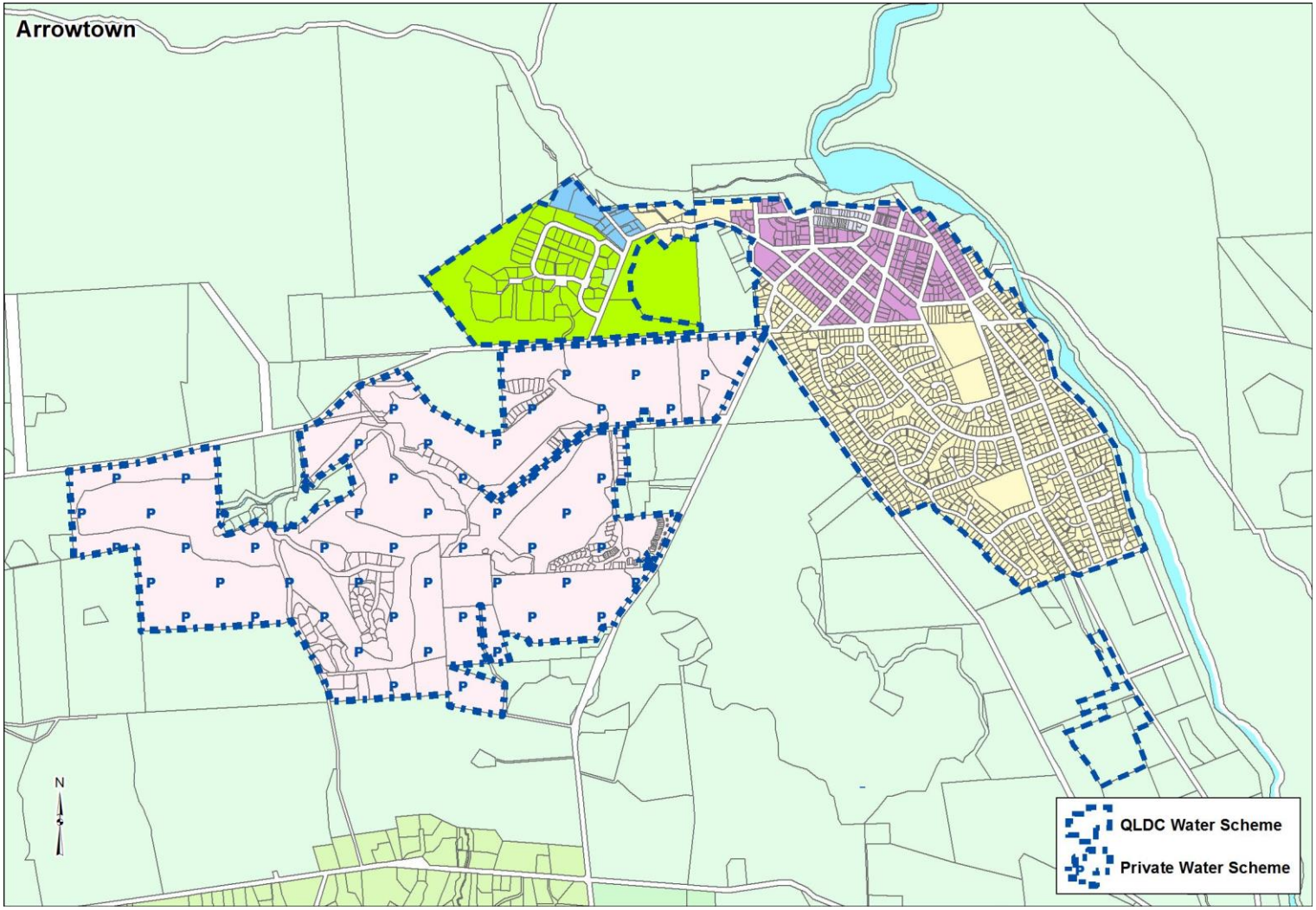
1.1 QUEENSTOWN – Wastewater

1.2 QUEENSTOWN – Stormwater

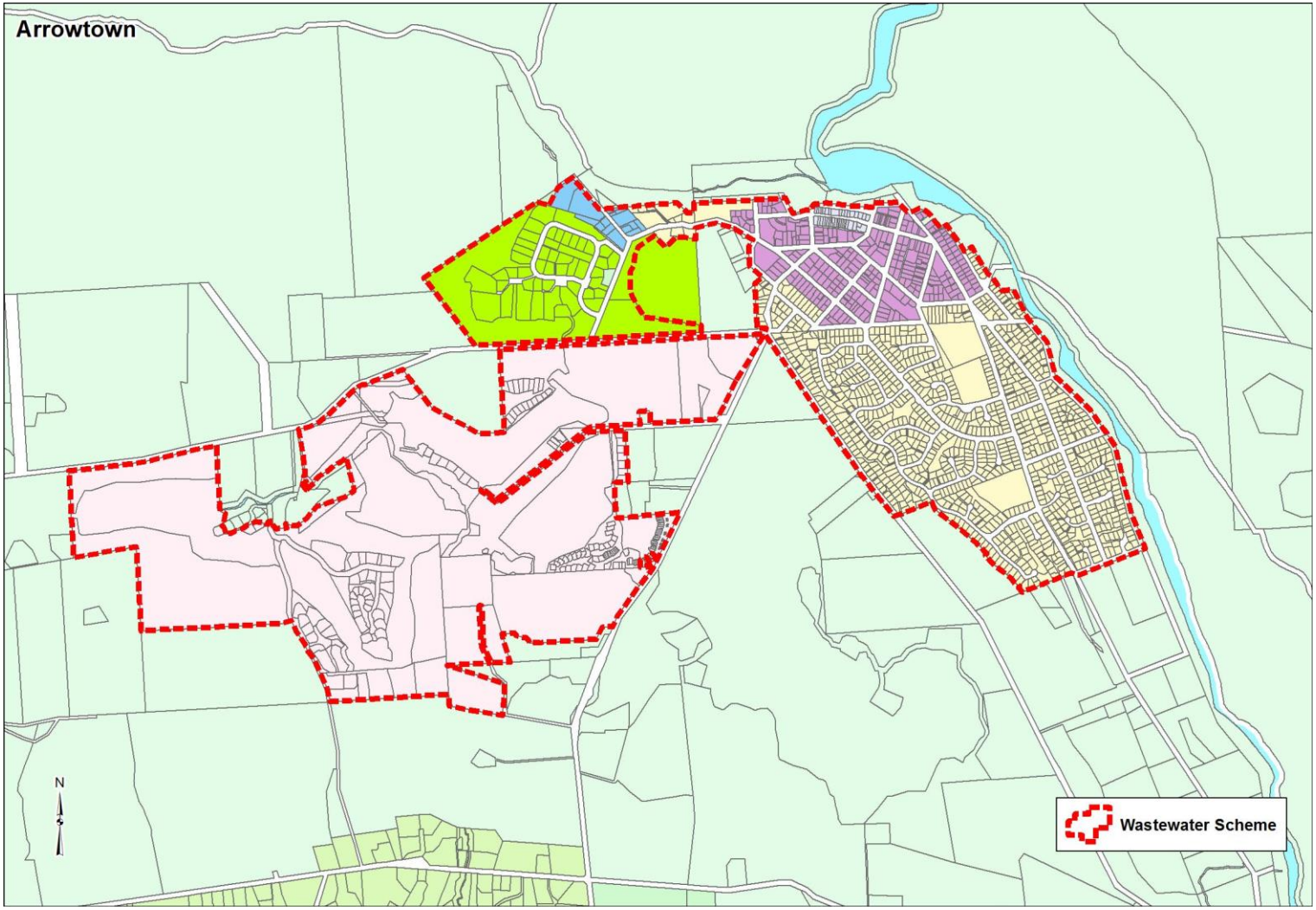


1.3 QUEENSTOWN – Reserve Land

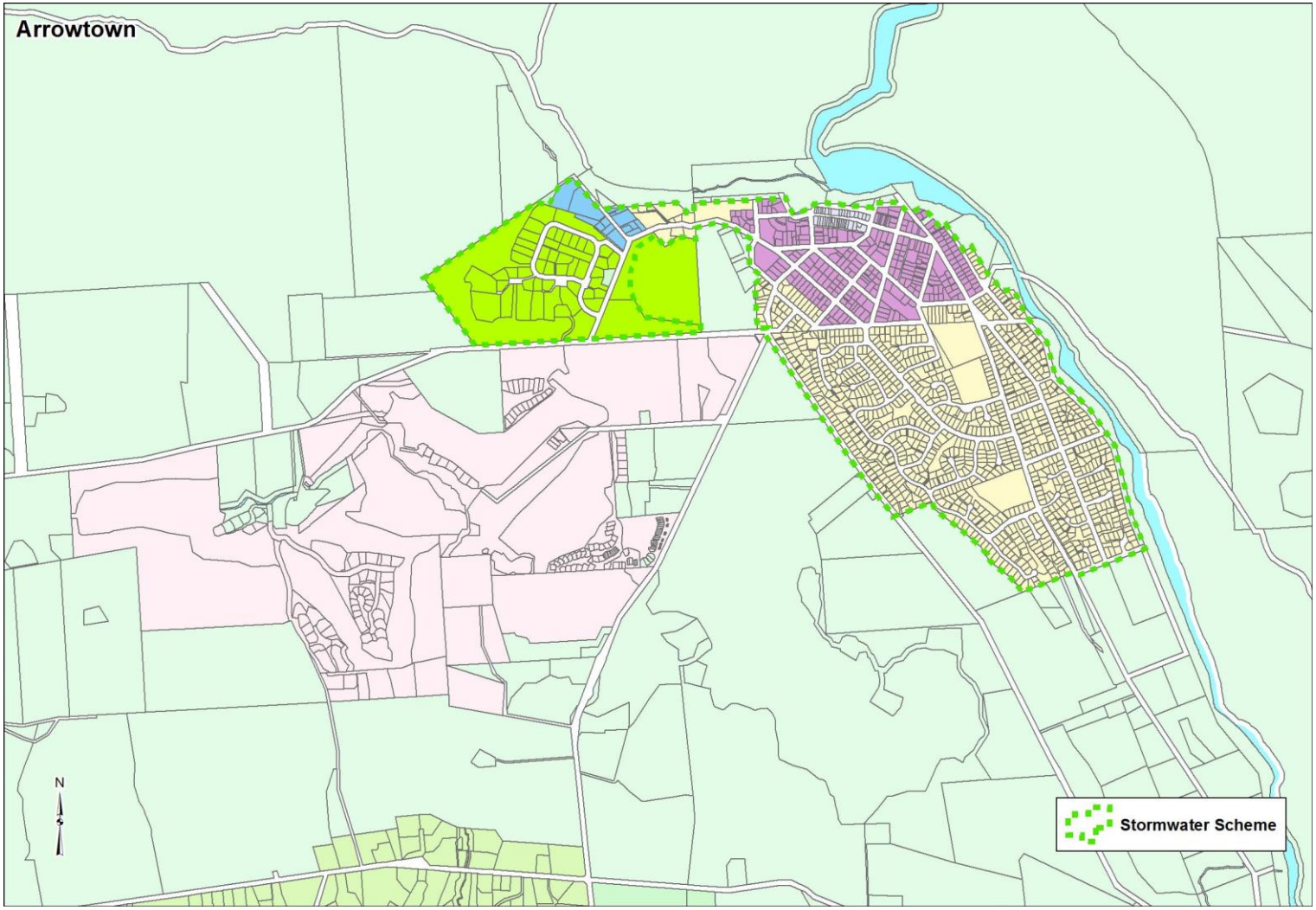
2.0 ARROWTOWN – Water Supply



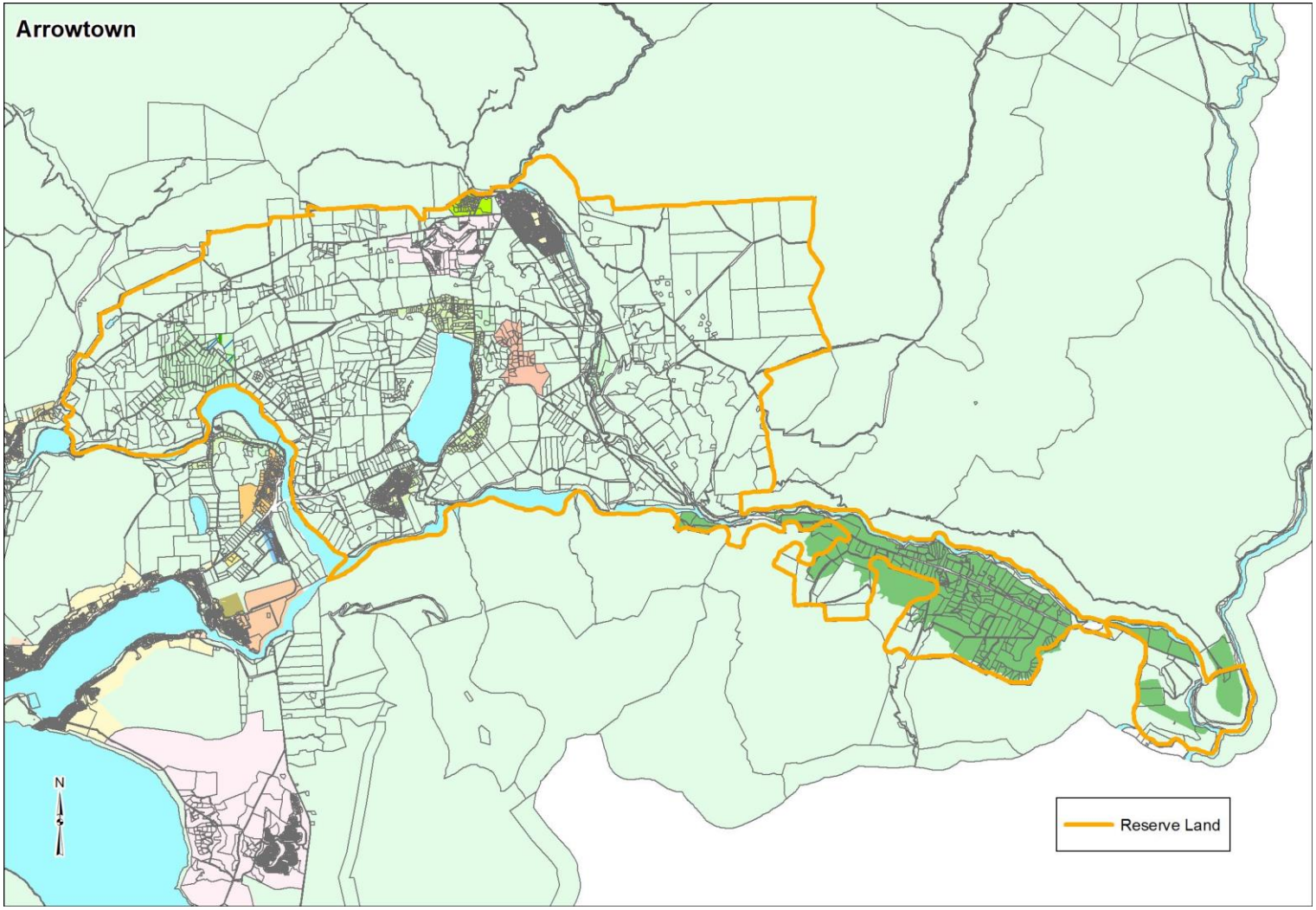
2.1 ARROWTOWN – Wastewater



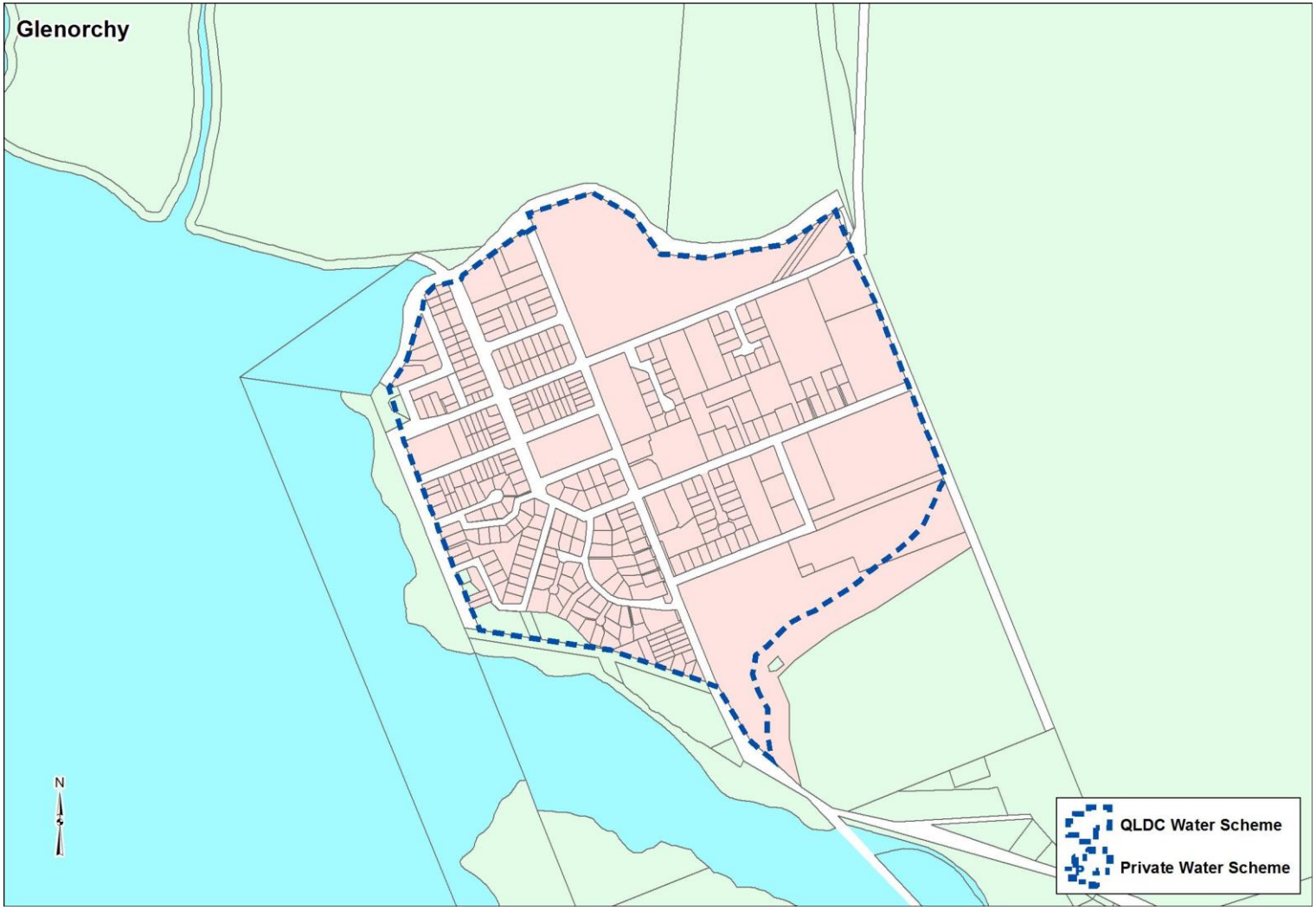
2.2 ARROWTOWN – Stormwater



2.3 ARROWTOWN – Reserve Land

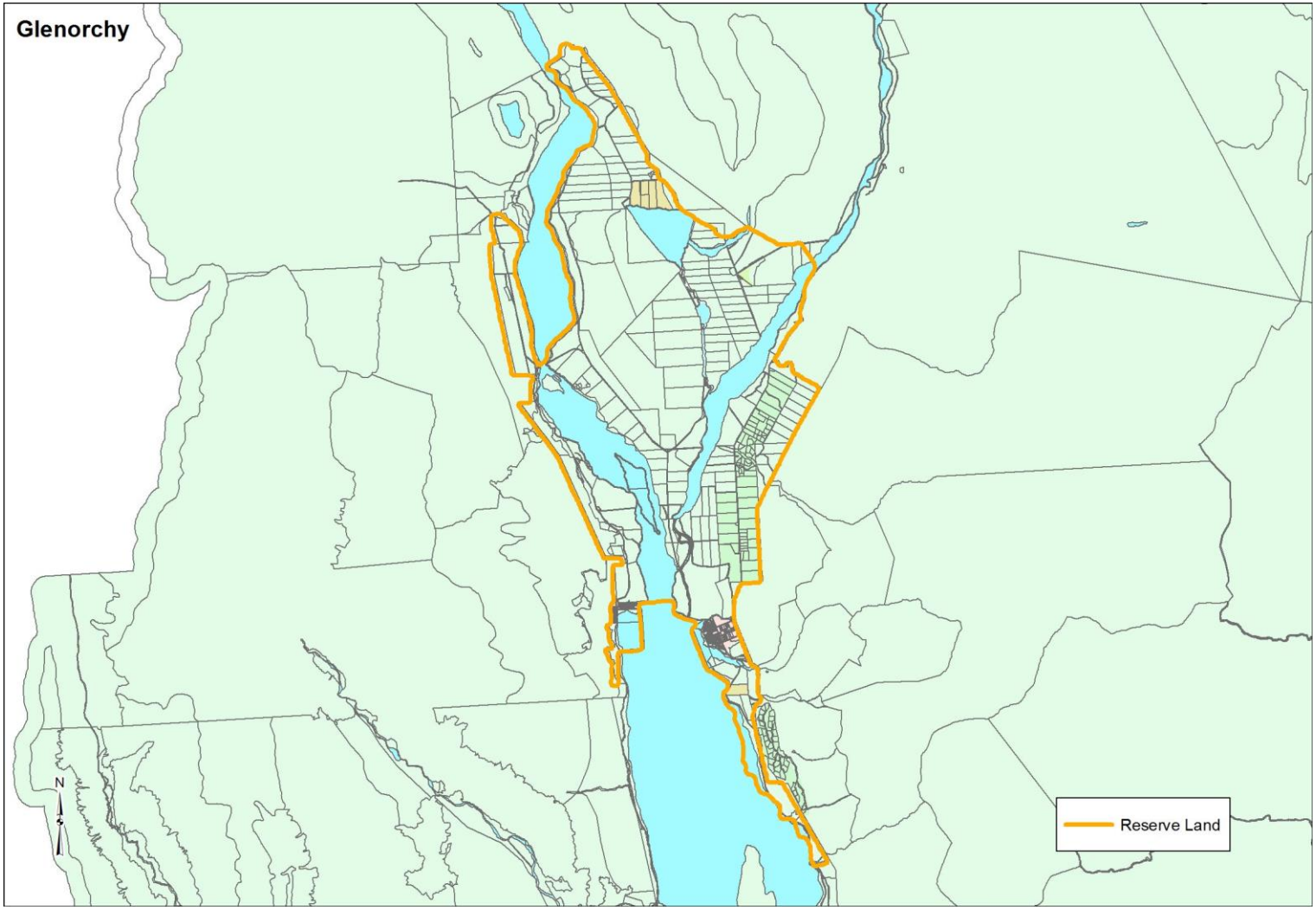


3.0 GLENORCHY – Water Supply

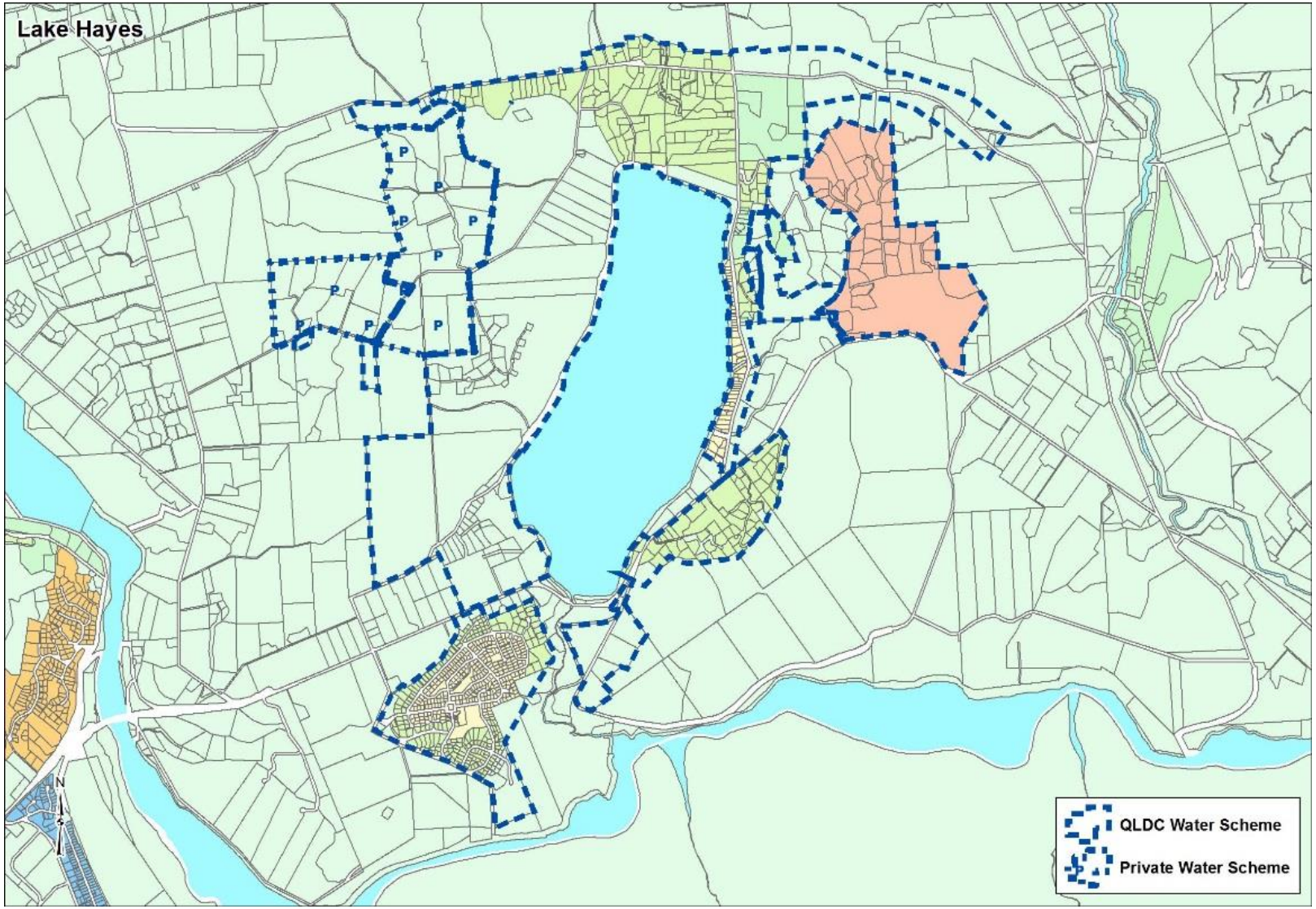


3.1 GLENORCHY – Stormwater

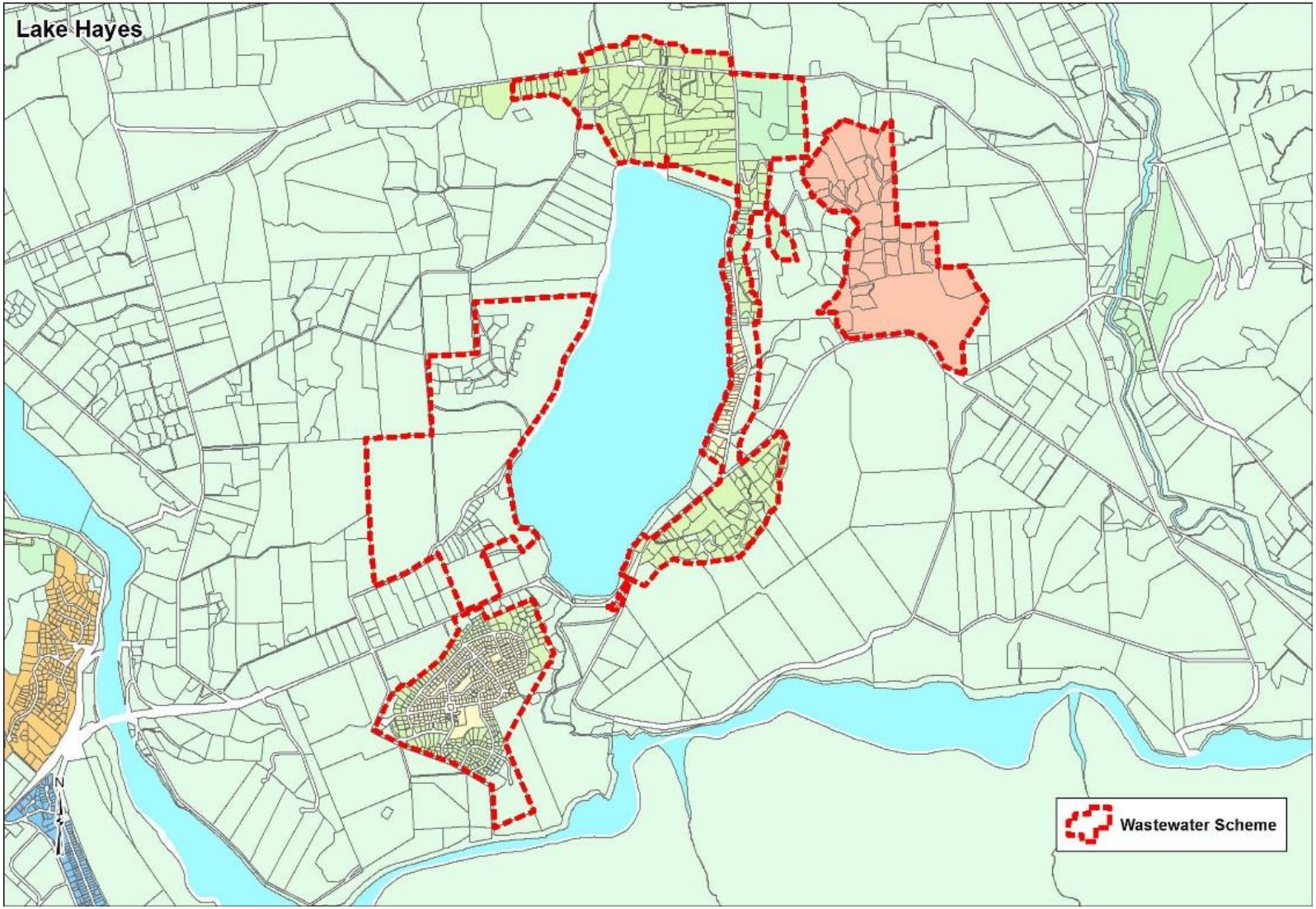
3.2 GLENORCHY – Reserve Land



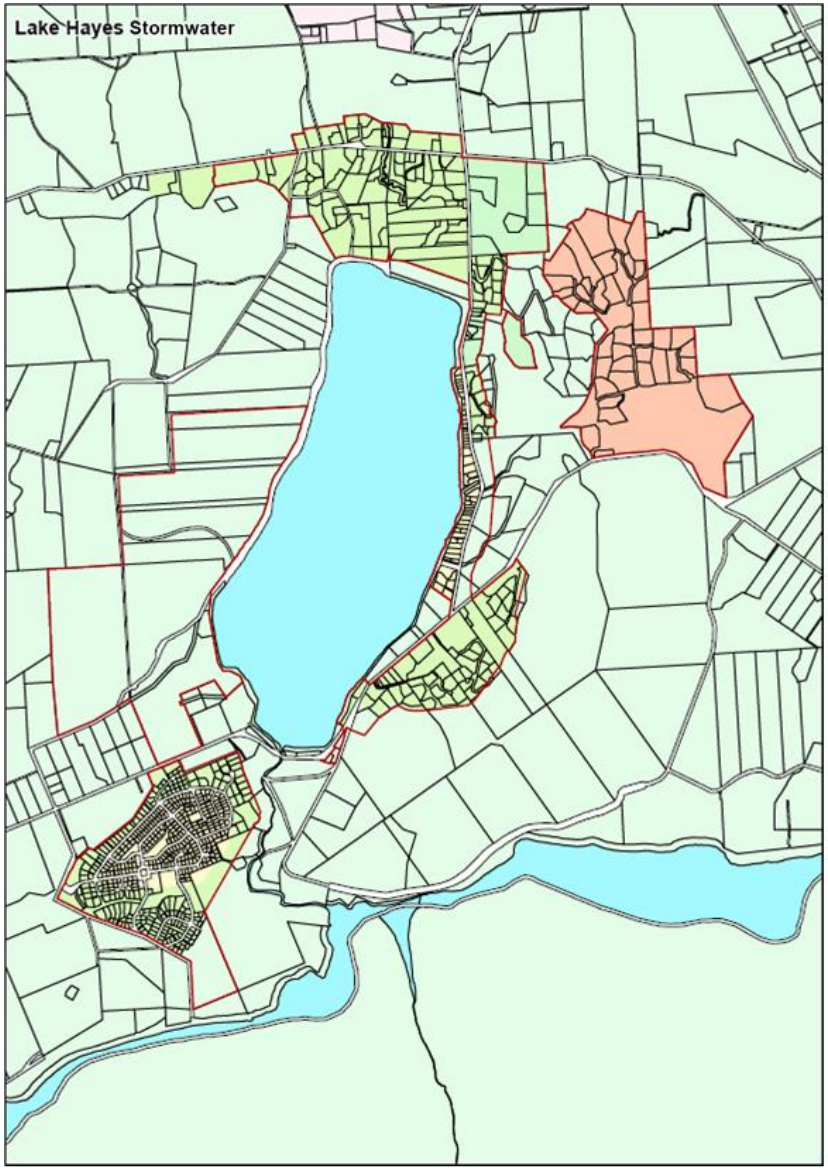
4.0 LAKE HAYES – Water Supply



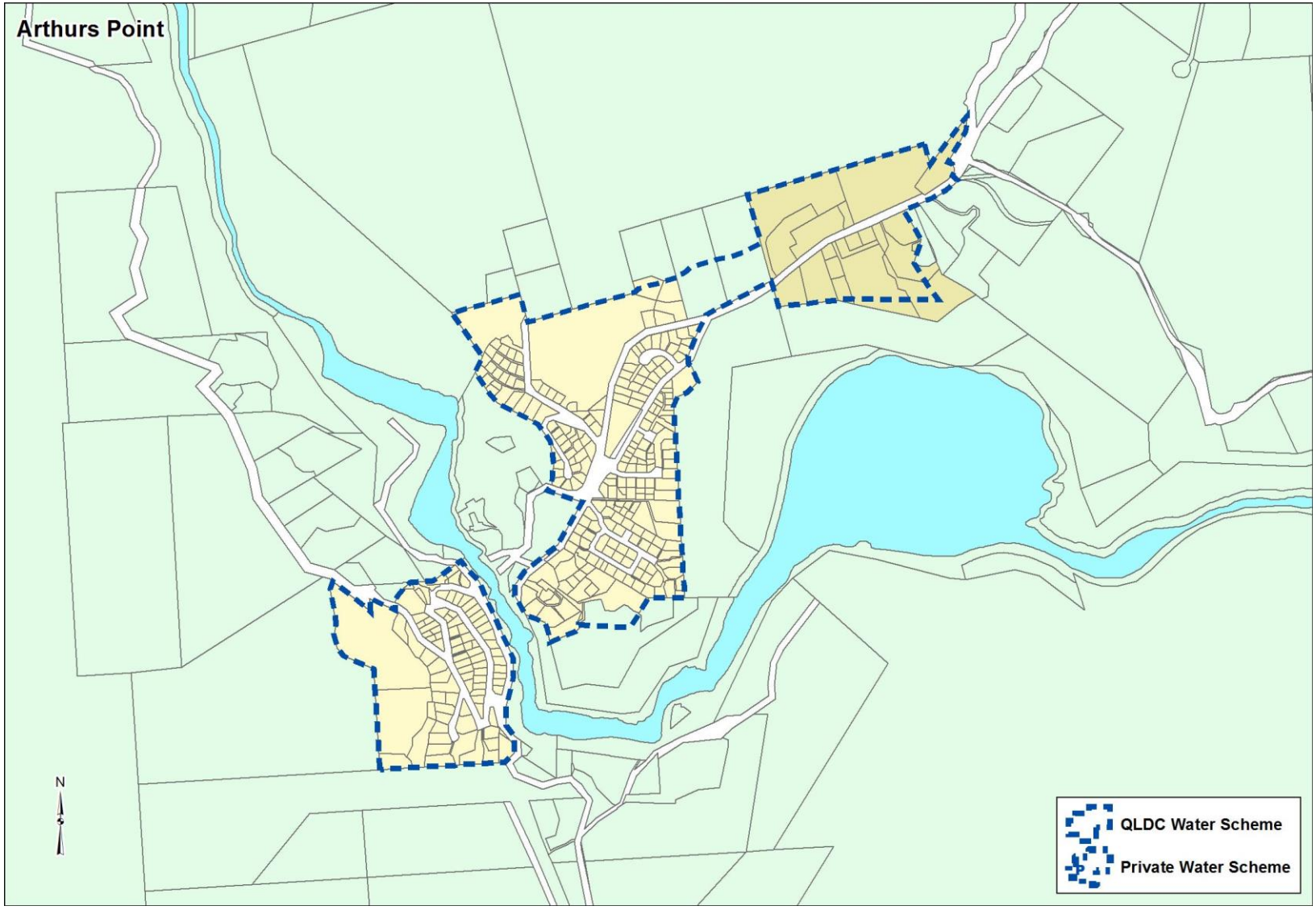
4.1 LAKE HAYES – Wastewater



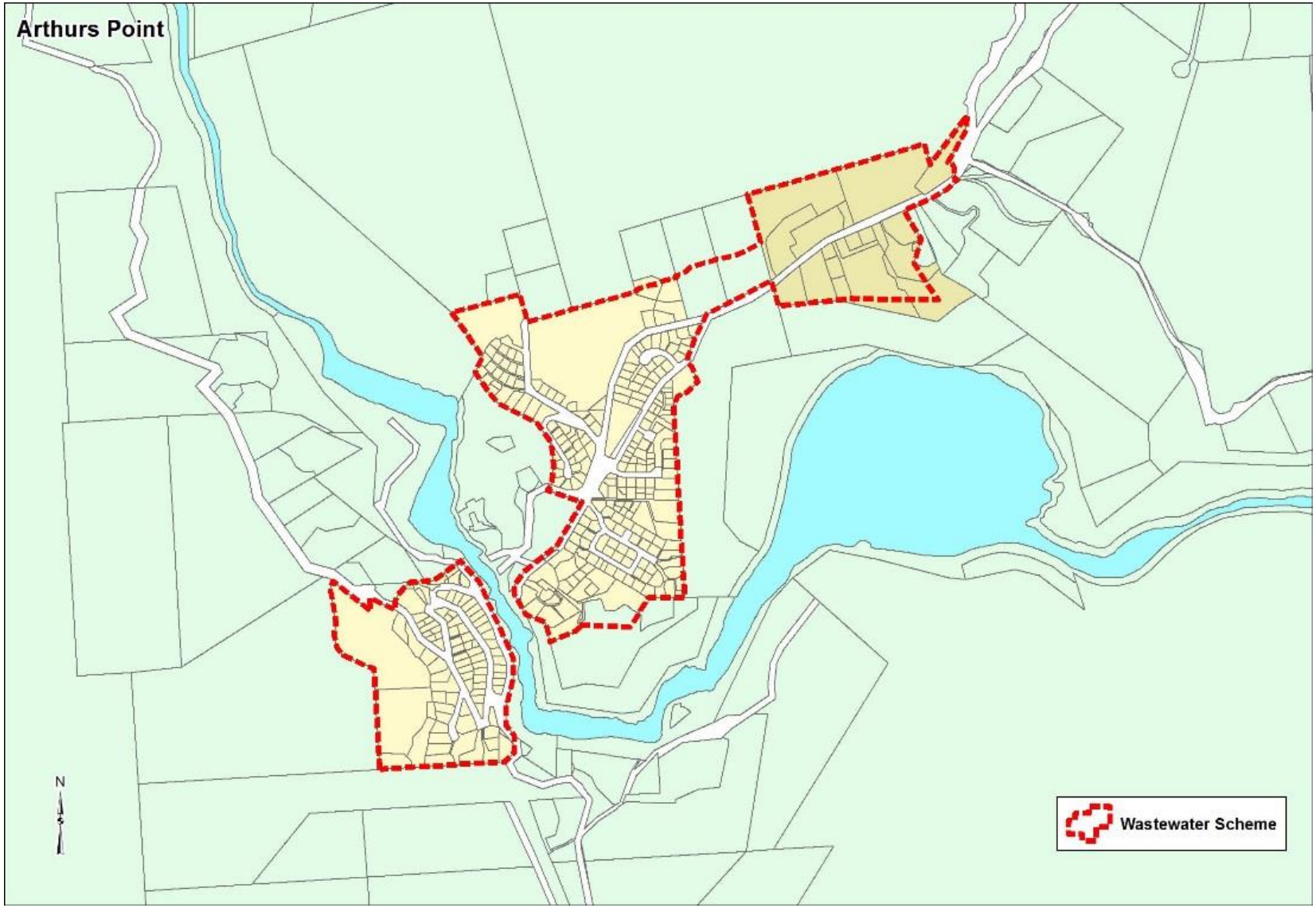
4.2 LAKE HAYES – Stormwater



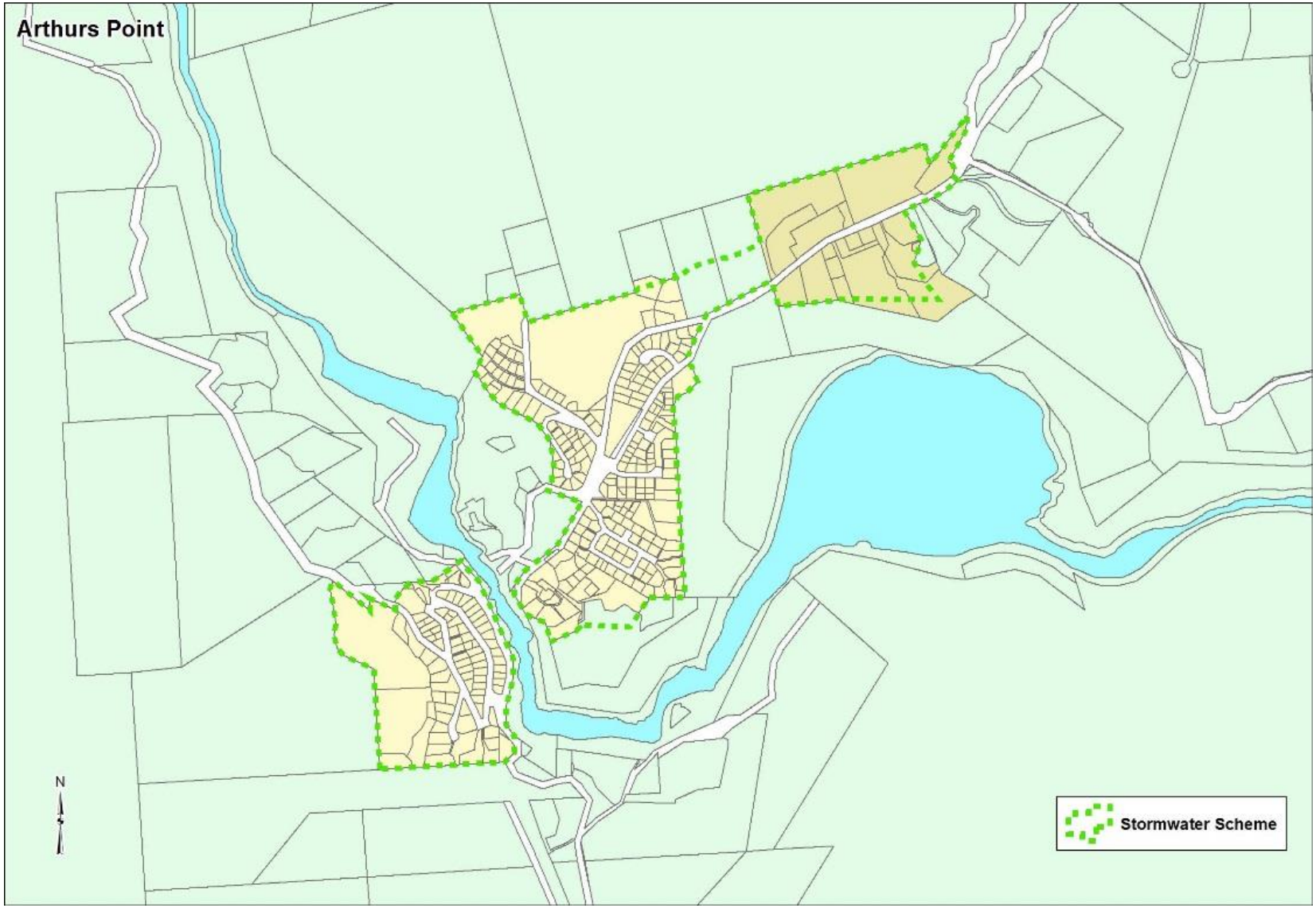
5.0 ARTHURS POINT – Water Supply



5.1 ARTHURS POINT – Wastewater

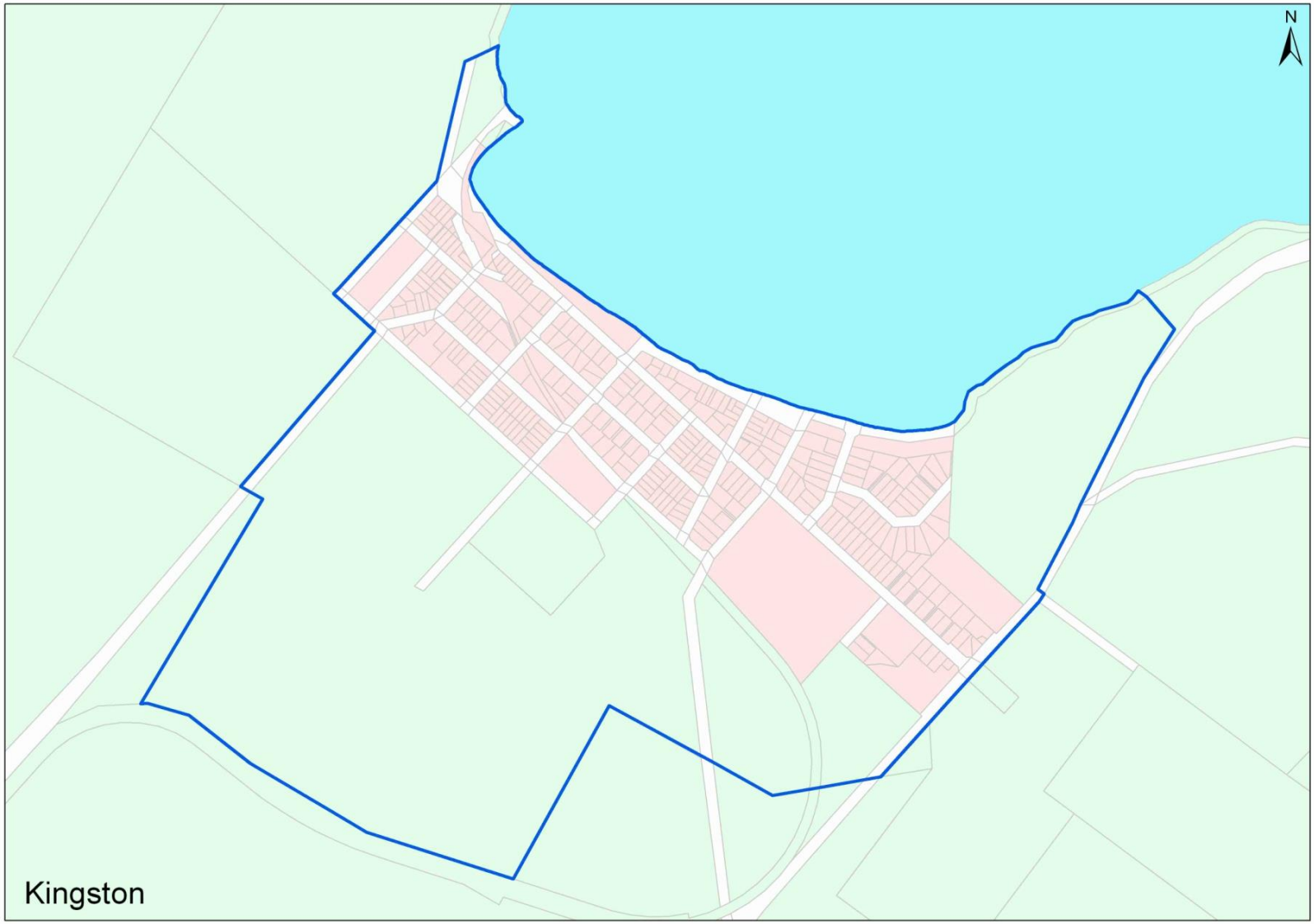


5.2 ARTHURS POINT –Stormwater

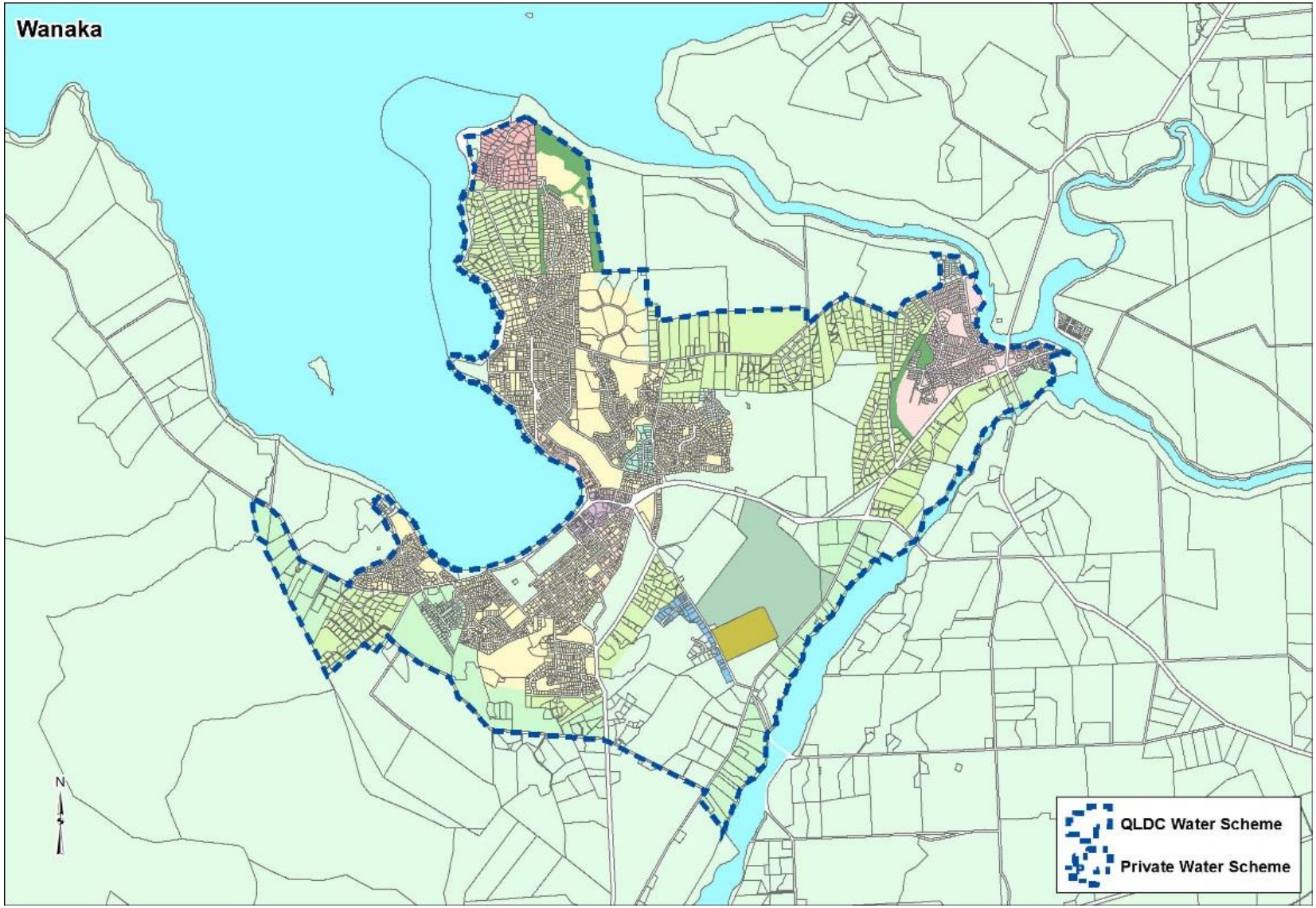


6.0 KINGSTON – Reserve Land

6.1 KINGSTON – Stormwater



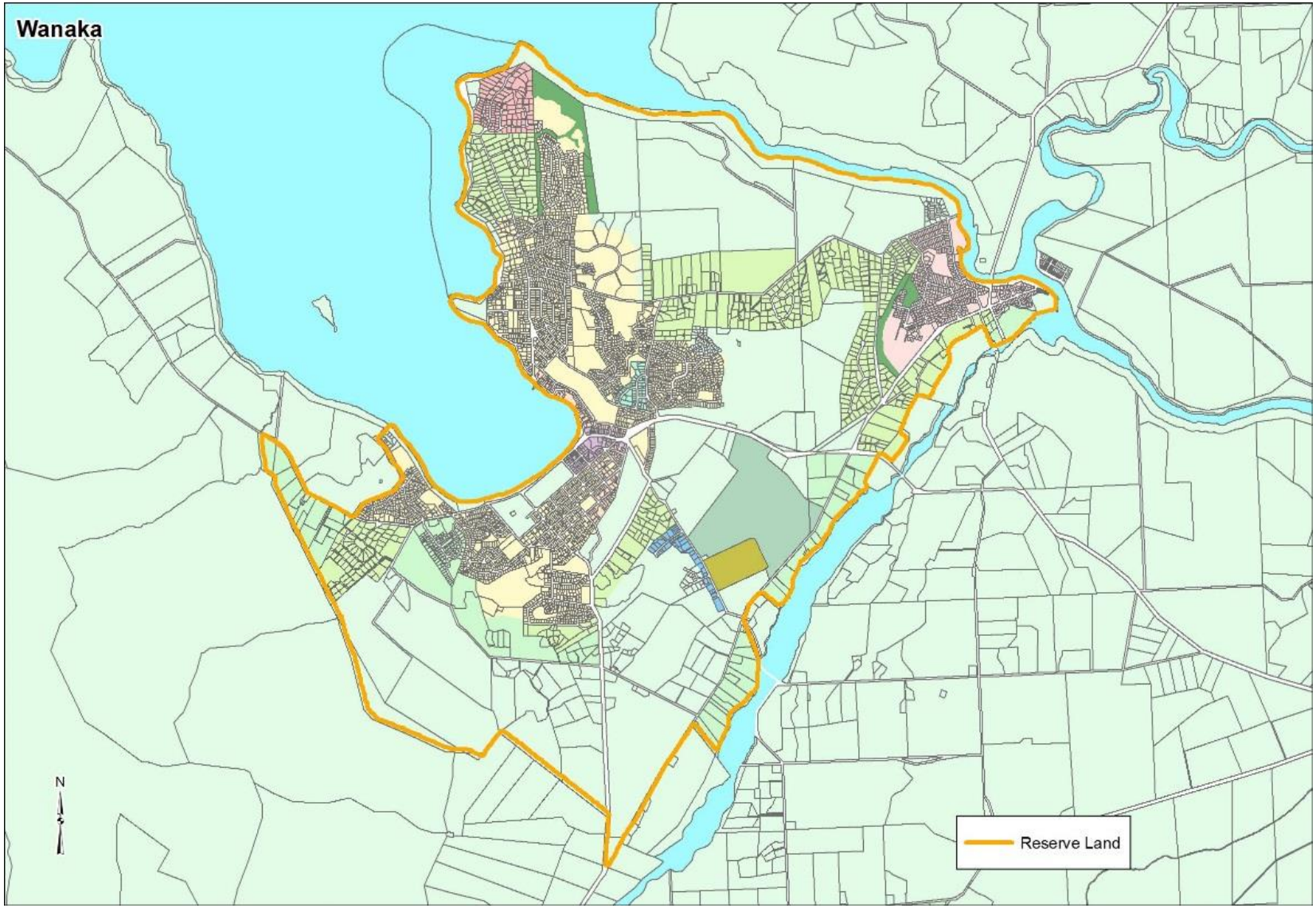
7.0 WANAKA / ALBERT TOWN – Water Supply



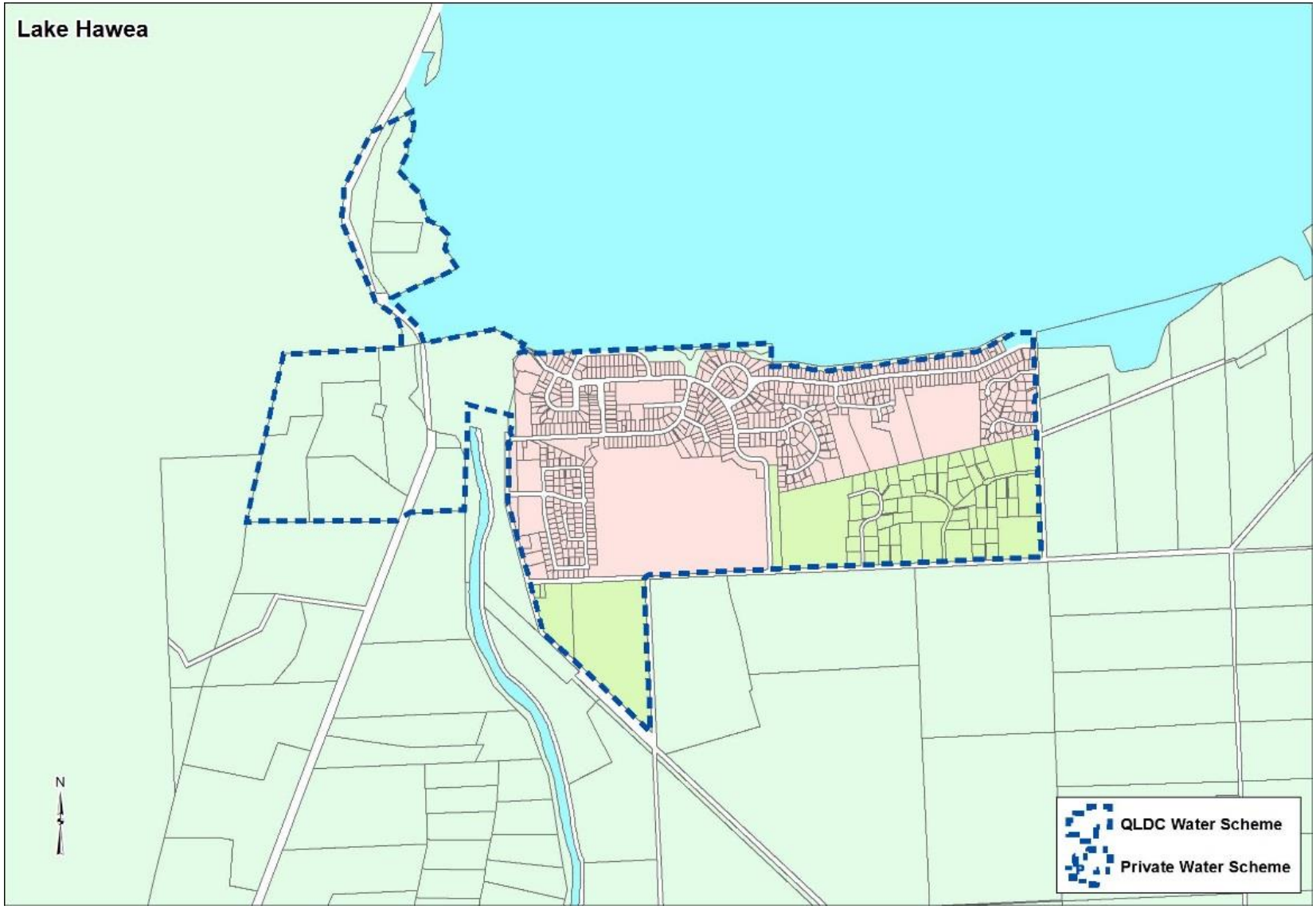
7.1 WANAKA / ALBERT TOWN – Wastewater

7.2 WANAKA / ALBERT TOWN – Stormwater

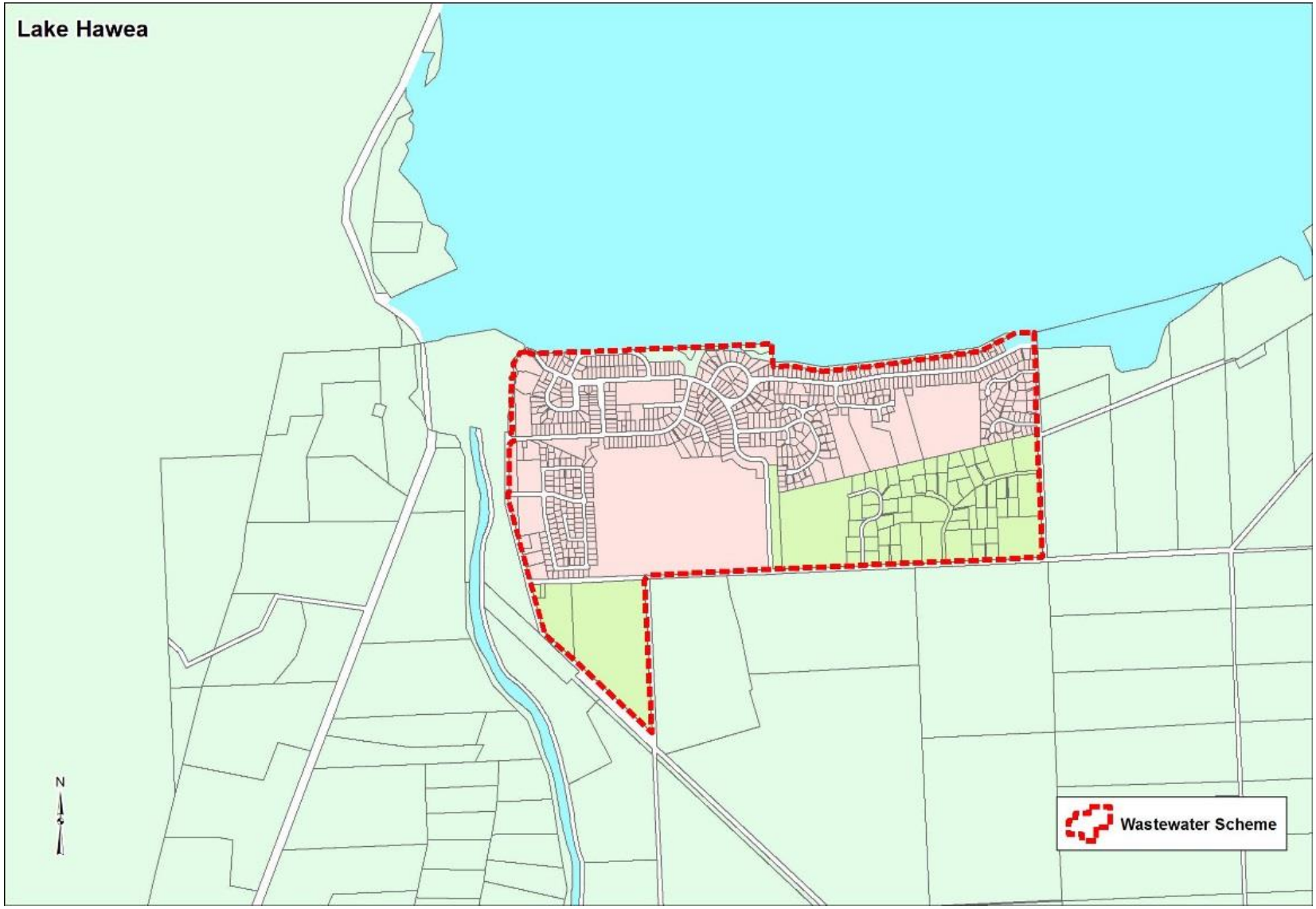
7.3 WANAKA – Reserve Land



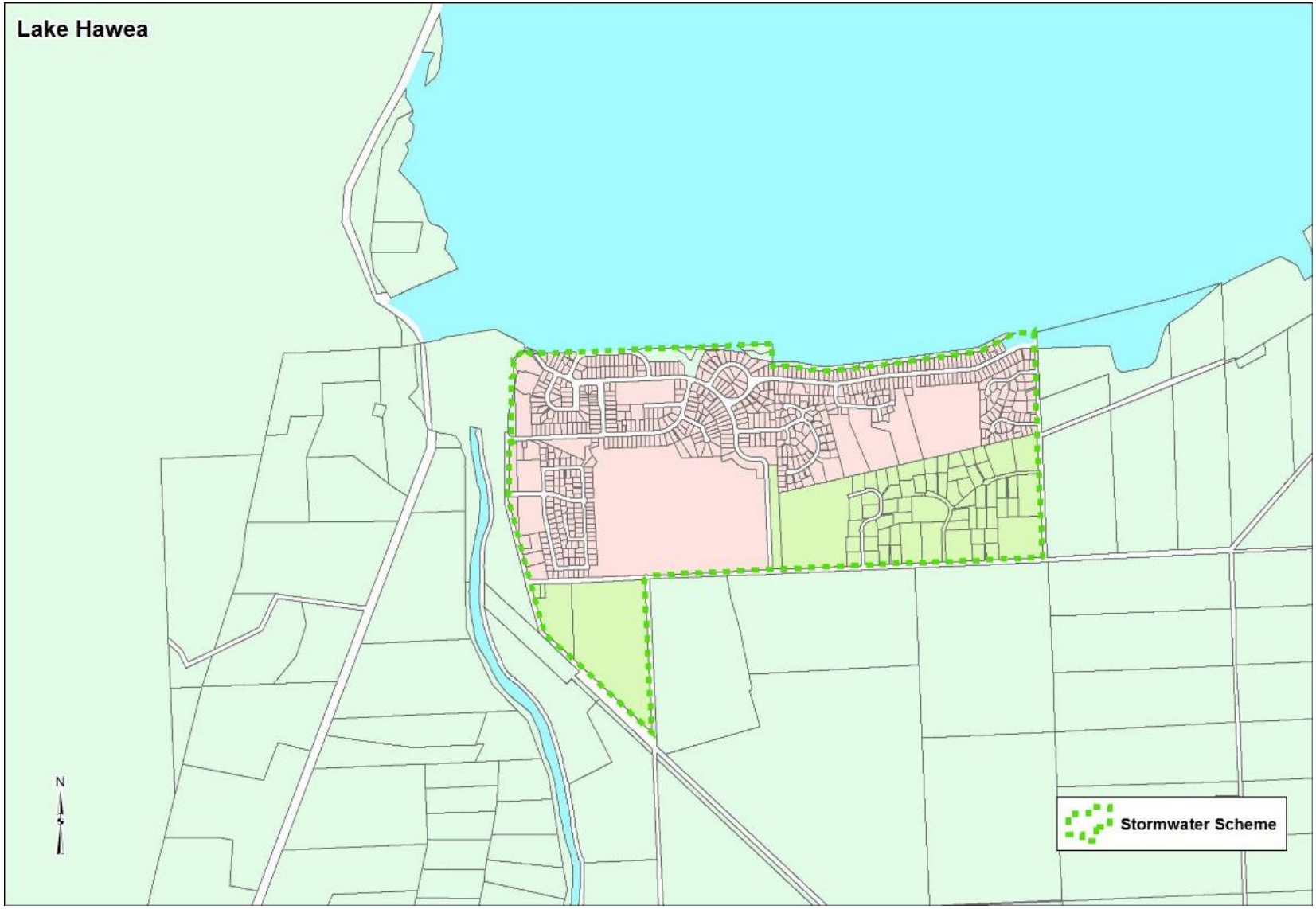
8.0 HAWEA – Water Supply



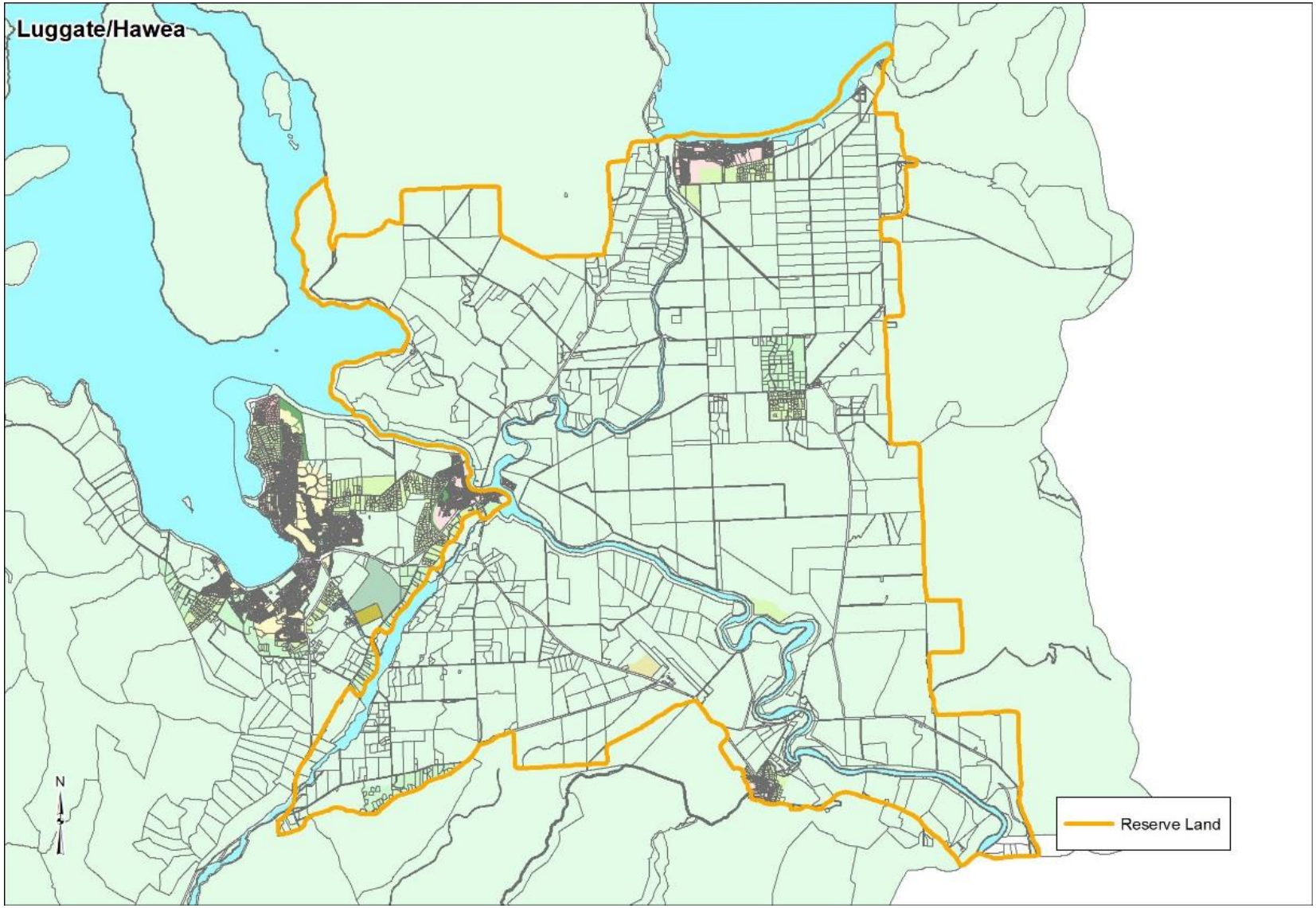
8.1 HAWEA – Wastewater



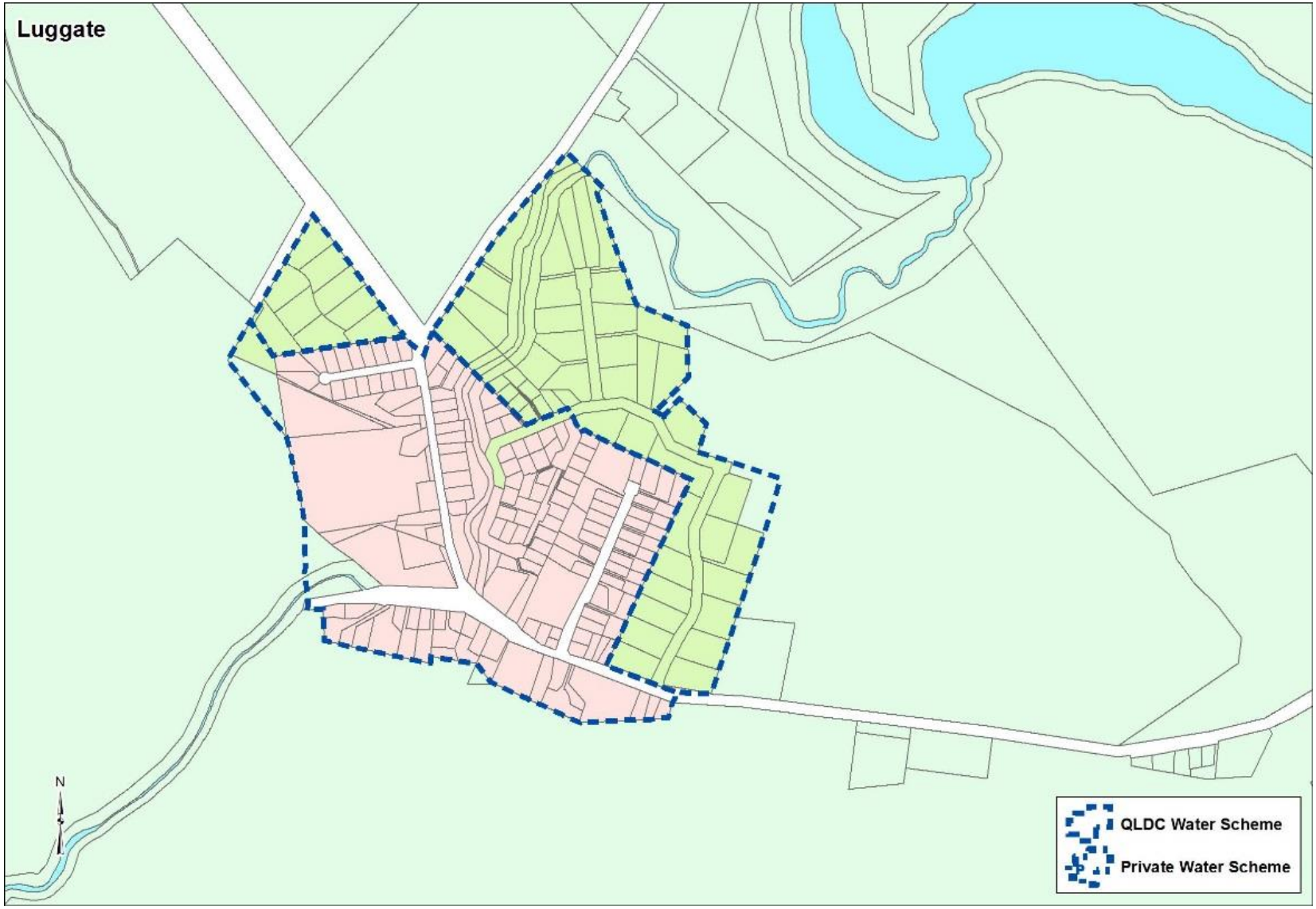
8.2 HAWEA – Stormwater



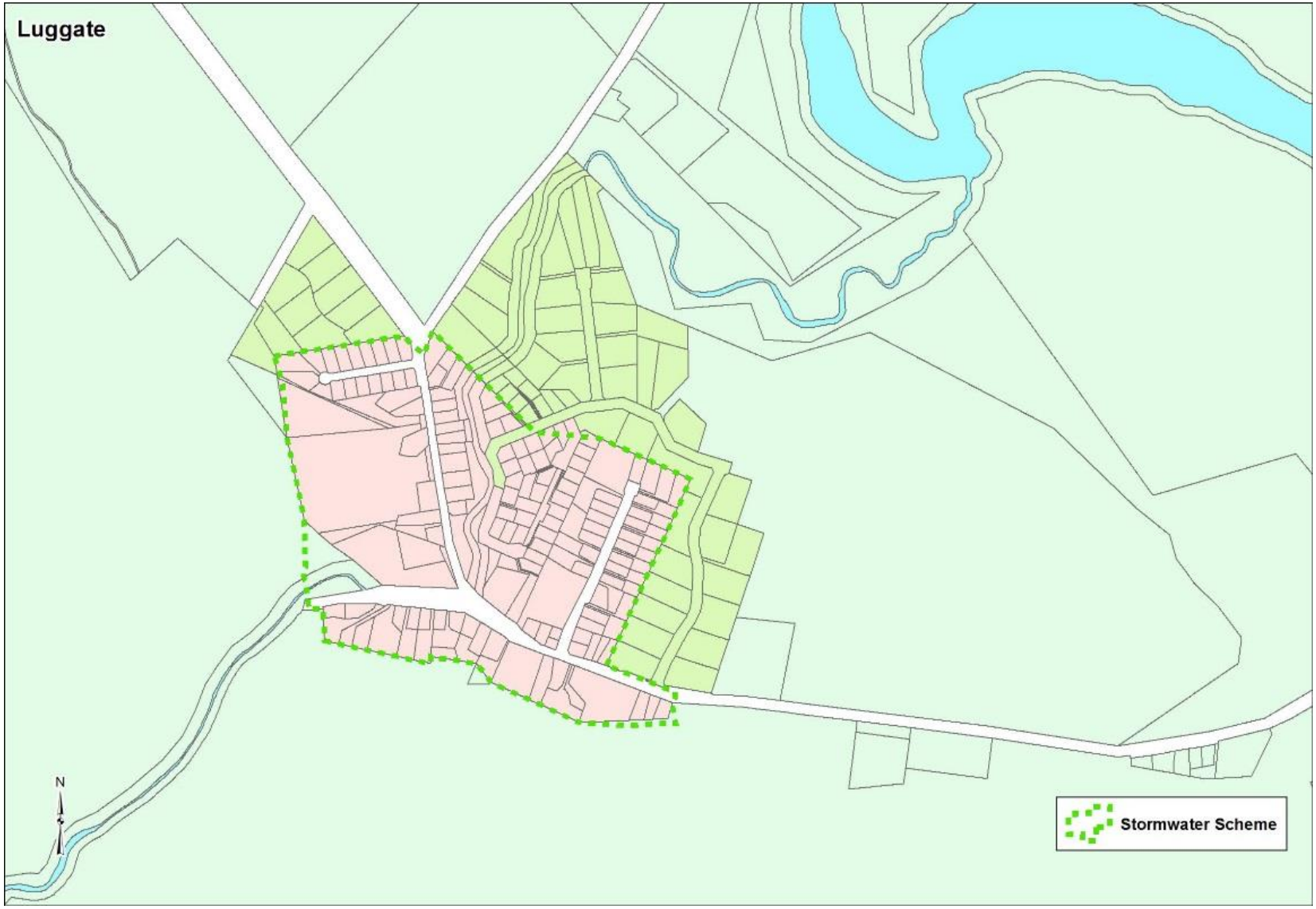
8.3 LUGGATE / HAWEA – Reserve Land



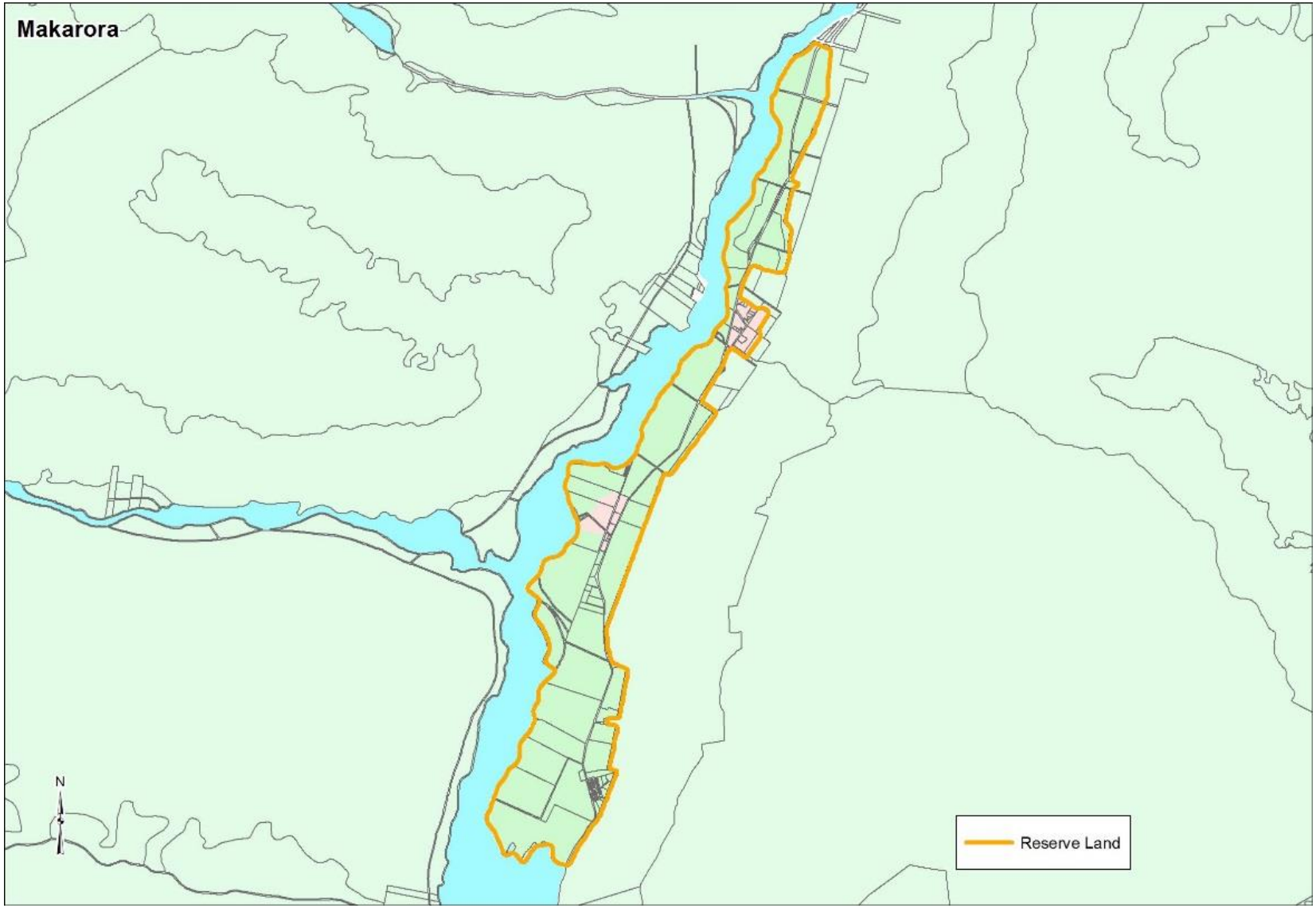
9.0 LUGGATE – Water Supply



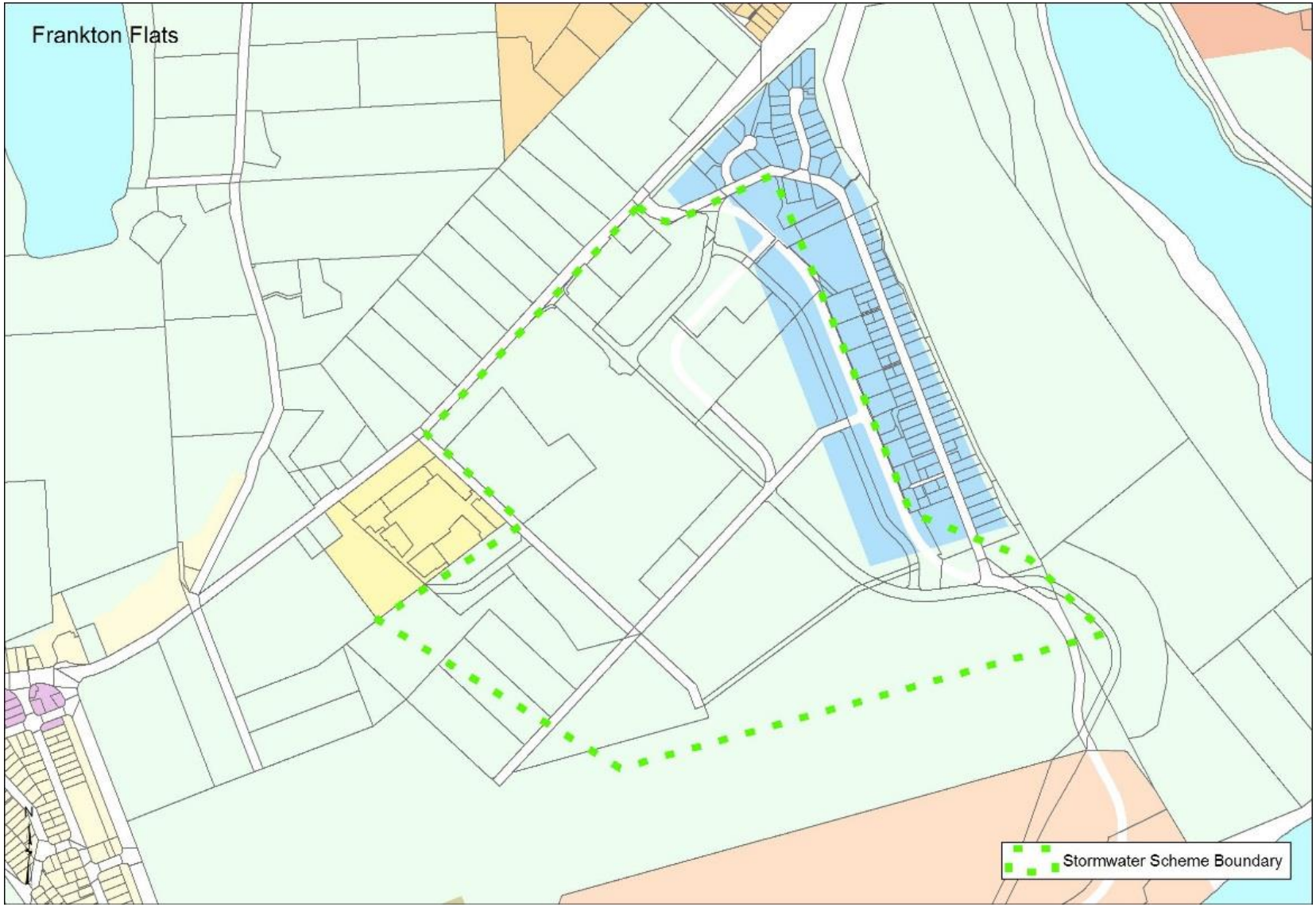
9.1 LUGGATE – Stormwater



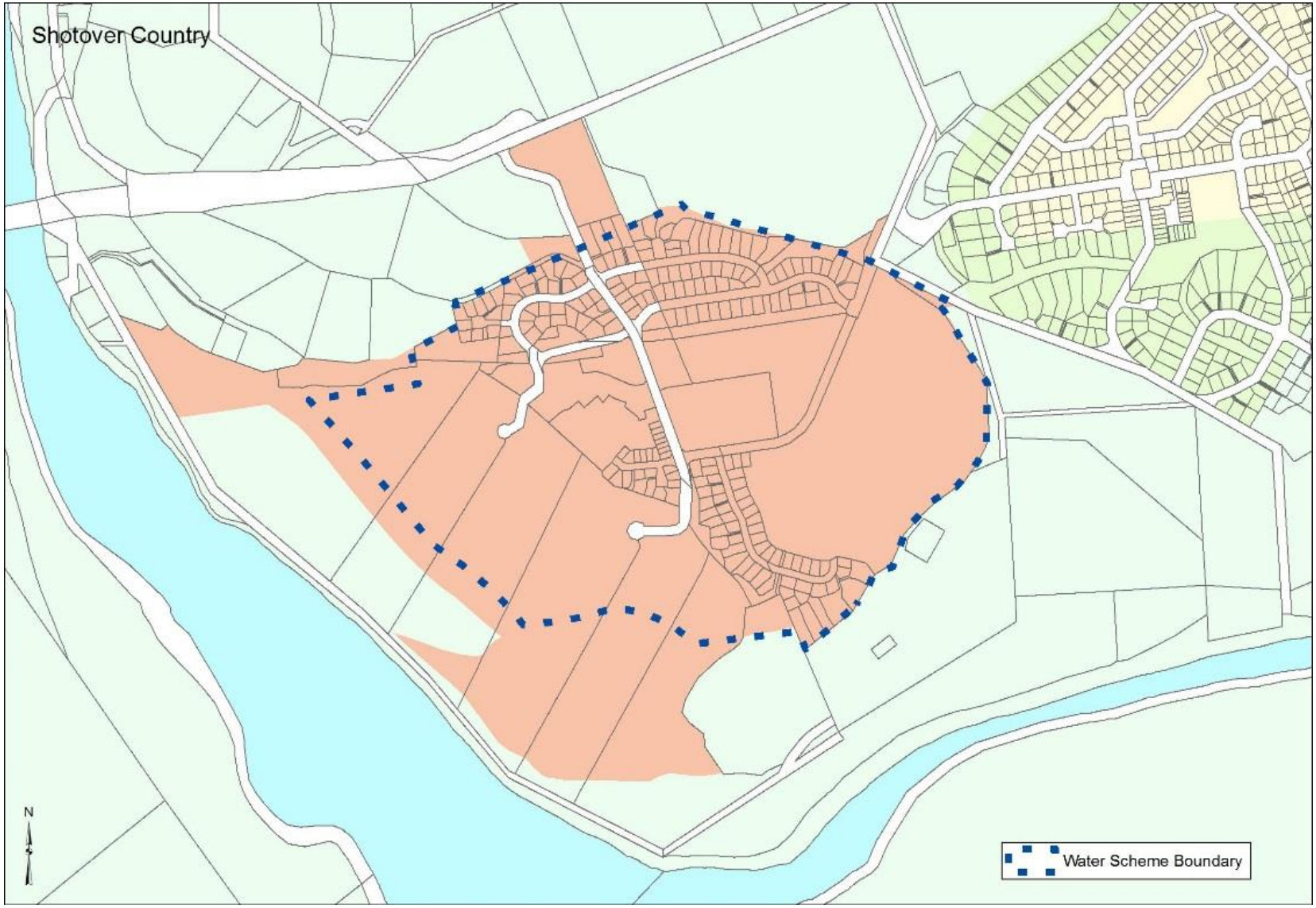
10.0 MAKARORA – Reserve Land



11.0 FRANKTON FLATS – Stormwater



12.0 SHOTOVER COUNTRY – Water Supply



12.1 SHOTOVER COUNTRY – Wastewater

12.2 SHOTOVER COUNTRY – Stormwater

APPENDIX A

ADDITIONAL DETAIL

Table A1 – Working Charge Factors

Category	Peak l/100m²/d	Working Charge Factor (WCF)
Water Supply		
Residential	940	1.0
Retail/Commercial	360	0.4
Restaurant/Bar	1,860	2.0
Accommodation	765	0.8
Wastewater		
Residential	690	1.0
Retail/Commercial	190	0.6
Restaurant/Bar	1,400	2.0
Accommodation	685	1.0

Notes

1. The water supply peak day demand comes from the calibrated network model for Queenstown developed by Tonkin and Taylor Ltd. This is assumed to represent typical water demand for the district.
2. The wastewater peak day generation rates come from the calibrated network model developed by Rationale Ltd. This is assumed to represent typical water demand for the district.

Table A2 - Network Charge Factor (NCF) Calculation

Network Charge Factor- as a result of fire flow requirements

Fire Codes by Land Use

Land Use Category	***General Fire Code Rating and Mix***		
Residential	85% W3	15% W4	0% W5
Retail/Commercial	0% W3	50% W4	50% W5
Restaurants	0% W3	50% W4	50% W5
Accommodation	0% W3	25% W4	75% W5

Pipes + Hydrants

Land Use Category	***Relative Pipe + Hydrant Costs***	***Pipe + Hydrant Differentials***
Residential	97.43	1
Retail/Commercial	180.74	1.9
Restaurants	180.74	1.9
Accommodation	198.33	2.0

Storage

Land Use Category	***Relative Storage Differentials***	***Storage Differentials***
Residential	1.6	1
Retail/Commercial	6.2	4.0
Restaurants	6.2	4.0
Accommodation	6.9	4.5

Network Charge Factor Calculation - *Assumes a 50/50 allocation of the two differentials above*

Land Use Category	***Pipe + Hydrant Differentials***	***Storage Differentials***	***Network Charge Factor (NCF)***
Residential	1	1	1
Retail/Commercial	1.9	4	2.9
Restaurants	1.9	4	2.9
Accommodation	2.0	4	3.2

Table A3 - Basis for the NCF Calculation

Network Charge Factor
Assumptions:
Pipe Calculation

Assume Class W3 is a 100mm pipe

Assume that each risk classification jump means an increase in pipe capacity of 100%

Pipe Calculation	*Fire Risk Classification*	*Pipe Radius (mm)*	*Pipe Diameter Required*	*$/m*
	W3 - 25 l/sec		100	$84.00
	W4 - 50 l/sec	0.07	150	$140.00
	W5 - 100 l/sec	0.10	200	$210.00

Cost extracted from 2004 LTCCP Reports

Hydrant Calculation

Hydrant Cost	*Fire Risk Classification*	*Max. No. of fire hydrants to provide flow*	*$/m*
	W3	2	4.94
	W4	3	5.56
	W5	4	5.93

Storage Calculation

Storage Cost	*Fire Risk Classification*	*Volume (m3)*	*Cost ($)*	*Storage Differential*
	W3	45	30,000	1.0
	W4	180	140,000	4.7
	W5	540	230,000	7.7

Table A4 - IMPACT FACTOR CALCULATION

Asset Component	*Valuation ($M)*	*Percentage of Network Value*	*Percentage of Working Charge*	*Percentage of Network Charge Charge*
Reticulation	30.05	75%	50%	50%
Treatment	0.34	1%	100%	
Pumping	4.41	11%	100%	
Storage	5.04	13%	78%	22%
	39.84		**59%**	**41%**

Working Charge Impact Factor (WCIF)	**60%**
Network Charge Impact Factor (NCIF)	**40%**