Logan City Council

Water Netserv Plan

Part A

2017–2021

INNOVATIVE, DYNAMIC, CITY OF THE FUTURE

LOGAN
CITY COUNCIL

Contents

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What is a Water Netserv Plan?

A Water Netserv Plan provides information to customers and other stakeholders about the city's water and wastewater networks and its services. The networks are owned and operated by Logan City Council. A Water Netserv Plan is a statutory requirement under the *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009*.

The Water Netserv Plan aims to:

- ensure water and wastewater services are safe, reliable and secure
- plan for the delivery of water and wastewater infrastructure for the next 20 years
- ensure water and wastewater service planning is integrated with land use and infrastructure planning
- provide strategic planning of water operations
- manage our water and wastewater services in an ecological and sustainable way.

Our Water Netserv Plan is consistent with the South East Queensland Regional Plan 2009-2031 and the expectations of our local community. It comprises two parts:

- Part A sets out Council's commitments to our community and provides general information regarding our water and wastewater services. It explains our commitment to the community, how we serve and engage with customers, how we deliver the right infrastructure, and how we are planning water and wastewater services for the future.
- Part B details how Council will achieve the commitments made in Part A. It is a detailed planning document for use by Council officers.

Our Water Netserv Plan is a key strategic and business management tool for our water and wastewater business.

Section 1

Your City, Your Council

City of Logan - a vibrant community

The City of Logan is a young and vibrant community, home to almost 312,000 people or 6.4 per cent of Queensland's population. Our people come from 215 cultural backgrounds and 39 per cent of our population is aged under 24 years.

The City of Logan was created in 1979, and underwent rapid growth over the next four decades. In 2008, the city's boundaries expanded as part of the Queensland Government's local government reform process. It now includes part or all of a number of former northern suburbs from the Gold Coast City Council and the former Beaudesert Shire Council.

Today, the City of Logan covers 957 square kilometres and has 68 suburbs. Looking ahead to the next 20 years, Logan will continue to be one of the fastest growing cities in Queensland.

The population is expected to increase by up to 200,000 within the next 20 years.

As a young city, Logan's residential neighbourhoods are predominantly fresh and contemporary. New estates continue to flourish, giving locals a wide range of lifestyle options from leafy suburbs to bushland acreage. Over the past decade, many older suburbs predating the city's short history have been revitalised through partnership renewal projects, dynamic facilities, and appealing landscaping.

About Logan City Council

The City is governed by Logan City Council. We are a progressive local government striving to build a better city. We do this by planning for the future in a way that is financially responsible, sustainable and focused on our community's needs.

We aim to provide our community and businesses with quality services, infrastructure and facilities, and work to ensure future growth is planned and managed. We are committed to creating a city of opportunities for families, lifestyle and business.

Our City

City of Logan: Innovative, Dynamic, City of the Future

Our Purpose

To make a positive difference in people's lives through the quality of the services we provide.

Our Goal

To be an organisation where our staff pursue excellence in all that they do with high levels of personal job satisfaction.

Our values

At Logan City Council, we value:

Community first: We work together to know our customers' needs so we deliver what matters and what makes a difference. We make decisions with empathy and recognise that our community's needs are at the core of every decision we make now and into the future.

Our people: We respect, care about, support and develop our people. We promote a safe workplace where people can explore opportunities, enjoy themselves and achieve high levels of personal job satisfaction.

Excellence: We create an environment where people are clear about expectations and accountable for achieving excellent outcomes. We foster enquiry, innovation and creativity with a focus on continuous improvement.

Leadership: We encourage leadership aligned to our values at all levels of our organisation. We work together to best use our skills and knowledge to overcome challenges and deliver excellent services to our customers and community.

Integrity: We are honest and open by saying what we believe, doing what we say and giving permission for others to do the same. We take responsibility, individually and as a team, for all that we do.


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Corporate governance – how we do business

‘Corporate governance’ refers to the way in which Council undertakes its business. We are committed to governance that is responsible, ethical, accountable and transparent. We value behaviour based on excellence and integrity at every level within our organisation.

For Council, governance involves open and transparent decision-making and adherence to legislation, policies, processes and practices that ensure effective direction setting, decision-making and management to achieve organisational objectives. We have adopted specific principles of corporate governance that include our culture and vision, roles and relationships, decision-making, management and accountability. As a local government authority, we operate in accordance with the *Local Government Act 2009*. Our water and wastewater operations are also guided by the *South-East Queensland Water (Distribution, Retail and Restructuring) Act 2009*.

Our Council, comprising the Mayor and 12 Councillors, is the elected body responsible for the good rule of the City of Logan and directs our organisation at the highest level. The elected body has legal obligations requiring members to represent the current and future interests of the residents of Logan. They are democratically elected and accountable to their communities for the decisions they make and the services that Council provides.

The operational arm of Logan City Council consists of the Chief Executive Officer (CEO) and other staff. The operational arm of Council is charged with implementing Council’s resolutions and reporting on the outcomes of those resolutions. The CEO also provides executive leadership to the organisation.

Section 2

Our Water Business

Our role as a South East Queensland (SEQ) Water Service Provider

Logan City Council owns, operates and maintains water and wastewater assets that currently have a replacement value of approximately $3 billion (as at 30 June 2016). This includes land, buildings, water and wastewater infrastructure and plant equipment assets. This replacement value will grow to around $5 billion by 2036. Our continued investment in water and wastewater infrastructure reflects the needs of our growing population, which is projected to be in excess of 490,000 people by 2036.

Council works closely with the other water service providers in the region as well as various state government departments and bodies. This enables us to comply with legislation and regulations to uphold our environmental obligations, meet the Australian Drinking Water Guidelines, and operate efficiently and sustainably.

As an SEQ Distributor/Retailer, we collaborate and engage closely with Seqwater, the state-owned statutory authority responsible for supplying, treating and transporting the bulk water that we deliver to our customers.

The below diagram represents the different functions and responsibilities of the various SEQ Water Service Providers.

seqwater
WATER FOR LIFE

Supplies water from dams, weirs and borefields and is responsible for the catchment, treatment and storage of bulk water.

Moves drinking water from treatments plants and reservoirs through bulk pipelines and into the distribution networks.

Council Owned and Statutory Authorities

LOGAN CITY COUNCIL

Logan City Council is responsible for water distribution and wastewater collection and treatment for the Logan City Council area.

Unitywater

Distributes and retails water and collects, transports and treats wastewater for the Sunshine Coast, Noosa and Moreton Bay regions.

Urban Utilities

Distributes and retails water and collects, transports and treats wastewater for the Brisbane, Scenic Rim, Ipswich, Somerset and Lockyer Valley areas.

CITY OF GOLD COAST.

Gold Coast City Council is responsible for water distribution and wastewater collection and treatment for the Gold Coast City Council area.

Redland CITY COUNCIL

Redland City Council is responsible for water distribution and wastewater collection and treatment for the Redland City Council area.

We are working closely with our regional water and wastewater service provider partners to develop standardised policies and codes. This, coupled with Council's membership of peak water associations, allows networking with industry counterparts, professional development and knowledge-sharing opportunities.

Section 3

Our Service Commitment

Customer service standards

Logan City Council is committed, 24 hours a day, seven days a week, to providing safe and reliable water supply and wastewater services, and providing quality customer service to its customers and residents.

In meeting our customers' water and wastewater needs, we are committed to:

- providing a continuous supply of clean drinking water at an adequate pressure and flow rate for reasonable household and business needs
- collecting, treating and managing wastewater in accordance with our environmental obligations
- maintaining and upgrading our infrastructure assets to ensure a reliable water supply and wastewater service
- working with the community to minimise the inconvenience of our planned maintenance works
- ensuring service interruptions are rectified as a priority to minimise any impact to the community
- delivering quality outcomes and reasonable timeframes to action community requests for service.

Council's customer service standards can be viewed on its website, www.logan.qld.gov.au

Council's Water and Wastewater Customer Service Charter outlines your rights and Council's obligations to provide quality customer service.

We promise to:

- be responsive and accessible 24/7 through normal business hours and for after-hours emergency services
- provide service with genuine respect, helpfulness and an interest in you
- be respectful with your privacy and keep your personal information in strict confidence
- keep your personal information accurate, complete and up-to-date
- be responsive to concerns or complaints you may have about our service.

Council's Water and Wastewater Customer Service Charter can be viewed on its website, www.logan.qld.gov.au

How to contact us

You can contact Logan City Council via the following methods:

Phone: 07 3412 3412
Email: council@logan.qld.gov.au
Website: www.logan.qld.gov.au

All mail should be addressed to:

Chief Executive Officer
Logan City Council
PO Box 3226
Logan City DC QLD 4114

Logan City Council has three customer service centres:

Logan City Council Administration Centre

150 Wembley Rd, Logan Central
Open: 8am-5pm Monday to Friday

Beenleigh Customer Service Centre

58-60 Manila St, Beenleigh
Open: 8am-4:45pm Monday to Friday

Jimboomba Customer Service Centre

18-22 Honora St, Jimboomba
Open: 8am-4:45pm Monday to Friday

How we handle complaints

We welcome feedback from our customers to improve our business. We have adopted a comprehensive complaints management process with escalation points for unresolved or complex issues.

Our complaints management process is:

- backed by a strong commitment to the complaints systems at all levels of the organisation
- fair – we consider all complaints on their merits
- easily accessible and well publicised for all people, including those with special needs
- responsive to customers – we provide a full, impartial and speedy investigation of concerns, and deliver appropriate responses
- inclusive – continuous improvement is entrenched in the process and complaints management is integrated into other business improvement processes
- effective – we are able to address individual customer complaints and use the information collected to improve overall service delivery; we also regularly review our process to ensure it meets customers' needs
- open and accountable – customers can judge for themselves whether the complaints system is working effectively.

Council's commitment to excellence in customer service ensures complaints and enquiries are managed professionally and responsively. We consider complaints as an opportunity to improve how we deliver services to our community.

Energy and Water Ombudsman

Logan City Council is committed to ensuring customers receive a fair, open and honest outcome to their enquiry or complaint. If you are dissatisfied with the way in which we have dealt with your water or wastewater complaint, you can refer your concerns to the Energy and Water Ombudsman Queensland (EWOQ), who may be able to help.

EWOQ is an independent agency that receives and investigates consumer complaints about billing, metering and general complaint-handling processes of service providers in the energy and water industries in South- East Queensland.

Customers can contact the EWOQ by:

Phone: 1800 662 837

Email: complaints@ewoq.com.au or info@ewoq.com.au

Visit: www.ewoq.com.au

Fax: 07 3087 9477

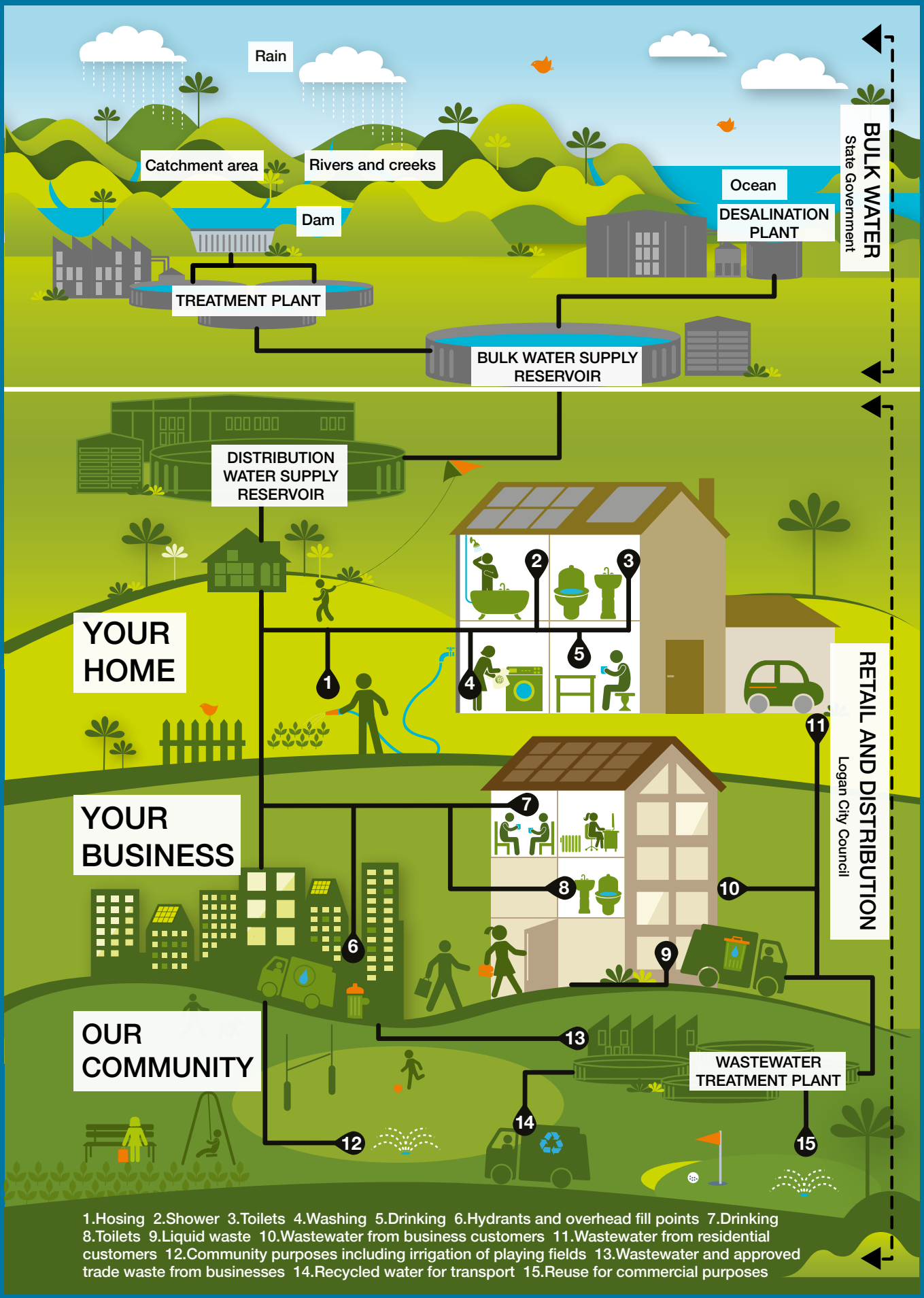
Mail: PO Box 3640, South Brisbane QLD 4101

In person: Level 16, 53 Albert Street, Brisbane

Section 4:

How We Deliver Services

Our role in delivering water and wastewater services to you



1.Hosing 2.Shower 3.Toilets 4.Washing 5.Drinking 6.Hydrants and overhead fill points 7.Drinking 8.Toilets 9.Liquid waste 10.Wastewater from business customers 11.Wastewater from residential customers 12.Community purposes including irrigation of playing fields 13.Wastewater and approved trade waste from businesses 14.Recycled water for transport 15.Reuse for commercial purposes

Connecting to our network – our connections policy

Council's connection policy applies to all individuals, companies and corporations seeking to connect to our water supply or wastewater networks.

This policy describes:

- our connections area
- the circumstances in which we may approve a connection outside a connections area
- the criteria we will use for providing a connection, with or without conditions, to our water supply or wastewater service.

Some key terms explained

Applicant: The property owner, property owner's authorised agent, or developer.

Connection: The physical connection from a property to our infrastructure.

Connections area: The area in which a property is either connected, or paying vacant water and wastewater service charges to Council to provide connection to water and/or wastewater services.

Infrastructure: Water supply or wastewater network assets owned and operated by Council.

Vacant Charge: The service charge that is applied to vacant land within the city. For specific vacant charges rate, please refer to Council's Budget Financial Statement which can be located on our website at www.logan.qld.gov.au

Properties inside the existing connections area

We provide water and wastewater service connections, disconnections and alterations for properties within the connections area, or those that attract a vacant water and wastewater service charge. Disconnections may only occur with the approval of Council as required by the *Water Supply (Safety and Reliability) Act 2008*. Applicants must pay the appropriate application fee associated with the relevant application.

Application forms are available from Council's Customer Service Centres and online at www.logan.qld.gov.au

Properties outside existing connections areas

We may agree to connect or refuse to connect a service (with or without conditions) for a property located outside the existing connections area. The applicant will be required to pay all costs associated with any approved connection. This may include additional costs to fund any required extension, upgrade and/or re-alignment of the network, or an infrastructure charge contribution from the applicant. We may also negotiate other matters with an applicant.

When considering applications for connections to properties outside the existing connection area, we will consider amongst other relevant matters:

- any costs incurred by Council in providing and maintaining the connection and Council's capacity to fund its share of costs (if any)
- compliance to the Desired Standards of Service (e.g. minimum pressure requirements)
- impacts on the wider infrastructure networks' capacity to accommodate the connection with reference to the current and planned growth of the city in the relevant planning scheme.

You can enquire about connections outside existing connections areas at our Customer Service Centres, or by phoning 3412 3412.

Criteria for providing a connection

If your development is not an existing lawful use, you will need all necessary approvals before making your connection application. These can be requested from Council.

When considering an application for a service connection, we may assess any Infrastructure Agreement, conditions of development approval, outstanding infrastructure charges or adopted infrastructure charge notices relevant to your property.

Development requiring approval

The following types of development require approval:

- reconfiguring a lot
- material change of use
- carrying out operational work
- carrying out building work
- carrying out plumbing or drainage works.

Typical development conditions

We will assess your development application based on its potential impact on our water and wastewater networks. This may result in reasonable and relevant conditions being included on the development approval or compliance permit. These conditions may require reticulation infrastructure to be provided at the applicant's cost or trunk infrastructure to be provided so that efficient, cost effective, functional and sustainable water infrastructure networks are provided and integrated with development. In some instances, an Infrastructure Agreement outlining the obligations of Council and a developer in providing infrastructure may be required.

Typical conditions include that the applicant must:

- provide new and upgraded infrastructure to connect the development to the network (this may include infrastructure beyond the premises)
- pay all costs associated with providing infrastructure required to connect a development to the network (including additional costs associated with extending, upgrading or re-aligning the network)
- pay the cost of Council connecting the new and upgraded infrastructure to the live network
- pay the cost of Council installing new service connections and meters to the premises
- design and construct any water and wastewater infrastructure in accordance with Council's desired standards of service, and design and construction standards in the *South-East Queensland Water Supply and Sewerage Design and Construction Code*
- seek further approvals from Council as necessary, including trade waste approval where relevant.

In most instances, applicants will need to make a subsequent application for a service connection/s to be able to fulfil these conditions of approval.

Application for water or wastewater disconnections

If your property no longer requires a water or wastewater connection, we may agree to have the existing service disconnected and remove the water meter and meter box, or arrange to cap off the wastewater connection on a property. Vacant water or wastewater service charges will still apply.

Applications for disconnection are assessed on an individual basis and are subject to certain terms and conditions.

Disconnection application forms are available from Council's Customer Service Centres and online at www.logan.qld.gov.au.

Managing drinking water quality

The supply of water in Queensland is regulated by the *Water Supply (Safety and Reliability) Act 2008* and the *Public Health Act 2005*. The Queensland Water Supply Regulator, which is part of the Queensland Government's Department of Energy and Water Supply, oversees compliance with the requirements of these Acts.

Logan City Council is committed to managing its drinking water systems to provide safe, high quality water services that ensure the protection of public health and the environment for our community. Our role is to bring a reliable supply of safe drinking water to our residential and commercial customers. We take responsibility for supplying safe drinking water to our customers and meeting our regulatory obligations. This includes having an approved Drinking Water Quality Management Plan, routine monitoring and regulatory reporting, to ensure we deliver safe drinking water to our customers.

We purchase water from our wholesaler, Seqwater, which is responsible for harvesting, storing, and treating water prior to its arrival to our water supply network. As a Seqwater Service Provider, Logan can be supplied with water from a number of catchments, dams, treatment plants and trunk mains as required.

Water is delivered to Logan at a number of bulk water supply points and is distributed to our customers via an extensive reticulation system incorporating pump stations, storage reservoirs and disinfection facilities.

We are committed to providing our customers and community with a reliable source of the highest quality water and our team of water specialists closely monitors the supply and quality of water from the time it enters our system until the point it reaches our customers.

Your water and wastewater charges explained

Billing

To operate, maintain, upgrade and enhance our water supply and wastewater services, we collect water and wastewater charges.

Customer accounts may contain the following types of charges:

- **Bulk water charge:** This is the price the State Government sets and charges Council to purchase water to supply to our customers. This charge is passed on to our customers at cost. It pays for the capturing, storing, treatment and transporting of bulk water from the State Government's bulk water network to our water supply network.
- **Water consumption charge:** This is Council's charge for storing water, maintaining it to drinking quality standards, and transporting it to customers' homes and businesses. This charge includes providing 24/7 emergency response services for unplanned outages, as well as the cost of managing and issuing customer accounts. This charge is based on how much water is used at a particular property which is measured by a water meter.
- **Service or connection charges:** These charges are collected for both water and wastewater services and apply to residential and non-residential properties that have access (connected or unconnected) to our water supply and wastewater networks. These charges also cover the cost of building, maintaining and replacing infrastructure needed to deliver water supply and wastewater services to our customers. This includes water and wastewater mains, pump stations, water reservoirs and wastewater treatment plants.
- **Trade waste charges:** These charges apply to any businesses (commercial or industrial) such as restaurants, service stations, spray painters, butchers, commercial laundries and shopping centres that discharge any liquid waste into Council's wastewater network.

Our water and wastewater fees and charges are developed as part of Council's annual budgeting process. Our current fees and charges can be viewed at www.logan.qld.gov.au.

Meter reading

Water meters are read on a quarterly basis and the calculated charges appear on Council's rate notice. Residents receive a single rate account from Council that covers rates, water and wastewater charges each quarter in July, October, January and April.

The account is an important element of our service to our customers. We are committed to providing customers with accurate, easy-to-understand information, as well as a range of convenient payment options.

To ensure the accuracy of your bill we:

- complete internal audit checks to verify meter readings and changes in consumption patterns
- proactively identify maintenance issues identified through the meter reading process
- manage a program to replace meters that are nearing the end of their lifecycle
- identify and replace meters that have stopped or are no longer registering consumption.

We aim to have all meters read prior to each billing cycle. If this is not possible due to an inaccessible water meter, we will estimate the reading and advise the customer in writing before the bill is issued.

Our ongoing water meter replacement program replaces domestic and large water meters nearing the end of their life cycle. These meters are replaced at no direct cost to our customers.

We are constantly investigating options to adopt smart metering technology that enables efficient reading of water meters or remote monitoring of water meters. This technology may eliminate the need for on-site meter reading and help us identify leaks and unusual water usage patterns sooner. We will consider how well the technology works, and all economic aspects, before making any decisions about smart metering.

Managing water consumption

We encourage customers to proactively manage their water consumption by regularly reading their water meter. This will help quickly identify any sudden increase in usage, which often indicates an internal plumbing leak. Customers can then address any issues as soon as possible and minimise financial impacts associated with higher water usage.

For the same reason, we have a program to identify customers with sudden increases in water use. Customers are notified by mail when significant increases in consumption are identified. This provides customers with an opportunity to minimise the financial impact of water consumption.

Financial assistance

Council has a leak remission policy, which offers partial financial relief to owner-occupied residential customers who have lost water as a result of a difficult to detect plumbing leak on their property.

We appreciate that sometimes unexpected and personal circumstances arise that affect a customer's ability to pay their account on time. If this occurs, it is important you contact us as soon as possible to discuss your options. Each financial hardship case is assessed in accordance with Council policies and relevant legislation.

We also offer a remission on water consumption charges for customers using home dialysis, as well as those who receive home-based medical treatments requiring significant amounts of water. For further information on any of our financial assistance policies, phone 3412 3412, or visit one of our customer service centres.

Pricing Regulation

Council is committed to ensuring our business operates in a sustainable and efficient manner to minimise the cost impacts on our customers.

Our pricing structure must cover the purchase of bulk water, maintenance, compliance, improvement and growth of our water supply and wastewater networks. In setting prices for our services, Council is guided by legislative requirements and other guidelines from the state and federal governments. A significant component of our water supply price is the bulk water charge which is passed on directly to our customers. In 2016, this represented almost 73 per cent of the average water consumption charge and 48 per cent of average total water costs.

The Queensland Competition Authority (QCA) can investigate and report on any matter relating to competition, industry or productivity under Section 10(e) of the *Queensland Competition Authority Act 1997*. In past years, investigations have been undertaken into the retail water price monitoring and developing a long term regulatory framework.

Savings through rationalisation, efficiency reviews and investment in new systems are delivering dividends to our customers.

Managing water demand

We have a number of programs to support sustainable use of our precious water resource. Water demand management is an important part of providing effective and efficient water supply services for the City of Logan.

Managing demand is important to conserve water during drought, as well as allowing customers the freedom to consume water as required, within reason. By managing how much water is used, we aim to keep capital investment down, deferring the need for infrastructure upgrades as well as preserving our regional water supply sources (dams). Understanding the timing of when water is used, as well as the volume of water used, also helps us to manage water quality.

To maximise the useful life of our infrastructure, we undertake accurate demand forecasting to determine network requirements and capacity. Both the amount of water used and the timing of water consumption are important when planning water supply infrastructure. If every consumer within the city uses water at the same time, larger capacity infrastructure is required to handle peak loads, and this is costly. If consumption throughout the day is fairly uniform, the infrastructure capacity does not need to be as large, lowering construction and infrastructure maintenance costs.

Managing and minimising water network leakage (also referred to as water loss) is also critical in preventing wastage and keeping costs down. We are always striving to prevent and minimise network leakage, while ensuring that mitigation and maintenance strategies are economically viable and do not outweigh the cost of the lost water.

Our demand management strategies include:

- proactively monitoring consumption to ensure water is available for our community
- publishing water efficiency information on our website
- communicating information about service-related outages, potential detected leaks and addressing customer water quality concerns
- collaborating and engaging with the water industry regionally, to deliver coordinated, consistent messaging across all SEQ communities
- engaging with our business customers to provide each with the skills and understanding to be better water users
- working with regional water supply organisations and the Department of Energy and Water Supply to support water conservation measures
- minimising system losses from our network and storage facilities
- accurately measuring and monitoring water consumption to inform our demand management and infrastructure planning.

Through our water demand management strategies, we aim to ensure a reliable, sustainable supply of water for our households and businesses, and our natural environment.

Section 5:

How We Care For The Environment

Our commitment to environmentally sustainable practices

We are committed to providing water and wastewater services in a sustainable way that also meets our regulatory obligations. Across our business, we strive for continual improvement in our environmental performance by:

- maintaining a strong relationship with environmental interest groups, regulatory bodies, industry and the community
- complying with regulatory requirements including the *Environmental Protection Act 1994* and subordinate legislation
- monitoring and benchmarking our operational performance against established environmental objectives and targets
- adopting best-practice standards of service for managing our infrastructure, including wastewater pump stations and treatment plants
- seeking out cleaner, more efficient water and wastewater technologies to support our service delivery and benefit the community
- minimising waste products and sustainably managing them in a beneficial manner where possible
- monitoring and assessing greenhouse gas emissions to meet regulatory requirements and support efforts to limit impacts
- minimising hazards associated with commercial and industrial waste discharges to sewer through comprehensive trade waste management

We are an active, contributing member to Healthy Waterways and Catchments. The partnership helps ensure our regional waterways are appropriately managed so that they are preserved for future generations.

We make use of our own National Association of Testing Authorities (NATA) fully accredited laboratory to ensure we remain compliant with our water and wastewater quality requirements (including when we respond to water and wastewater-related incidents). Using the latest technology and equipment, our professional and experienced laboratory services team help protect community and environmental health by:

- testing drinking water to ensure it complies with the Australian Drinking Water Guidelines and regulatory requirements
- monitoring wastewater for compliance with wastewater treatment plant licences
- providing water analysis which assists the assessment of environmental issues within the region's waterways
- responding to customer enquiries and water quality issues.

Managing wastewater

Our wastewater treatment plants are operated and maintained in accordance with strict environmental conditions as set out by the Department of Environment and Heritage Protection (DEHP). We aim to work closely with DEHP as a key stakeholder in all treatment plant capital works upgrades to ensure optimal environmental outcomes are achieved for our community.

Integrated water cycle management planning

Managing our water resource effectively is critical to ensure good outcomes for the community and the environment.

Integrated water cycle management aims to:

1. Reduce demand on potable water supplies
2. Improve water quality in natural waterways
3. Reduce energy consumption.

This is achieved through initiatives such as:

- Nutrient offsets which can reduce capital expenditure on wastewater treatment plant upgrades and enhance the quality of natural waterways by reducing nutrients discharged to the natural environment
- Implementation of recycled water reuse to reduce effluent discharges into natural waterways
- The overflow abatement program, which seeks to reduce wastewater overflows during wet weather, improving the quality of natural waterways and reducing public health risks from uncontrolled wastewater overflows
- Planning for future infrastructure by optimising our network to ensure efficiency and reduce energy consumption
- Demand and pressure management programs that help to reduce demand on potable water supplies and increase the life of assets.

This planning approach is essential to ensure the provision of appropriate, affordable, cost effective urban water services that meet community needs and protect public health and the environment

Emergency and Incident Management

We are committed to providing a continuous supply of water and uninterrupted wastewater services to our customers. From time to time, our water and wastewater network can experience unplanned interruptions.

These may involve:

- water quality issues
- a lack of supply
- regional incidents or network faults
- natural disasters
- wastewater overflows, blockages and inundations.

During any unplanned interruptions, a dedicated team of Council specialists work around the clock to ensure services can be restored as soon as practically possible. Our efforts are not only focused on restoring services to our customers, but also on ensuring that any unplanned interruptions have a minimal environmental impact.

Section 6

How We Manage Our Infrastructure

How we are managing our infrastructure

Logan City Council manages an extensive network of water supply and wastewater infrastructure with a replacement value of approximately $3 billion (as at June 2016). Our infrastructure has been developed over the past 60 years and varies in condition and performance due to age, design and the construction materials used.

Maintaining and operating our assets for optimal performance takes a great deal of planning, coordination and hard work to ensure that, all day, every day, our customers can turn on a tap or flush a toilet, knowing they will receive a safe, high quality and reliable water supply and wastewater service.

How we manage our water and wastewater assets

The City of Logan has an extensive water and wastewater network that services our urban, rural residential and industrial customers. We estimate:

- drinking water is directly supplied to more than 95 per cent of the Logan population
- wastewater services are provided to more than 85 per cent of the Logan population.

Table 1 outlines the number of connections serviced by our infrastructure as at 30 June 2016.

Table 1: Infrastructure connections

Customers	Water connections	Wastewater connections
Residential (homes)	103,740	93,461
Non-residential (business and industry)	5,276	4,605
Vacant properties	1,997	1,794
Total	111,013	99,860

Over the next 20 years, the estimated number of water and wastewater connections is expected to rise by 71 per cent due to unprecedented population growth in the City of Logan. New infrastructure constructed by the water business and developers (contributed assets) over this period is anticipated to increase the total estimated replacement value of the network to $5 billion.

Planning, construction, operation, maintenance and replacement of infrastructure is critical to ensure our current and future customers will always:

- receive clean, safe drinking water compliant with all regulations and standards
- be able to turn on the tap and receive a continuous, pressurised supply of water
- know major service interruptions / faults will be repaired as a matter of priority
- know wastewater is being treated to meet strict environmental licence conditions.

Current water and wastewater network

Bulk Water Supply

Seqwater, a State Government-owned statutory authority, owns and operates:

- a number of dams and water treatment plants throughout South-East Queensland (SEQ)
- the Gold Coast Desalination Plant
- bulk water trunk mains used for transporting drinking water from treatment plants to the distribution system.

Seqwater provides drinking water to all South-East Queensland local government areas. It is responsible for determining the most appropriate water sources to meet the demands of the region and operating its network accordingly.

Our Water Supply Network

Council purchases drinking water from Seqwater. We then distribute it to the Logan community via our trunk and reticulation water supply network. A full definition of trunk infrastructure can be found in Appendix I. In 2016/17, we expect to provide around 21,161 megalitres (ML) of water to homes and businesses.

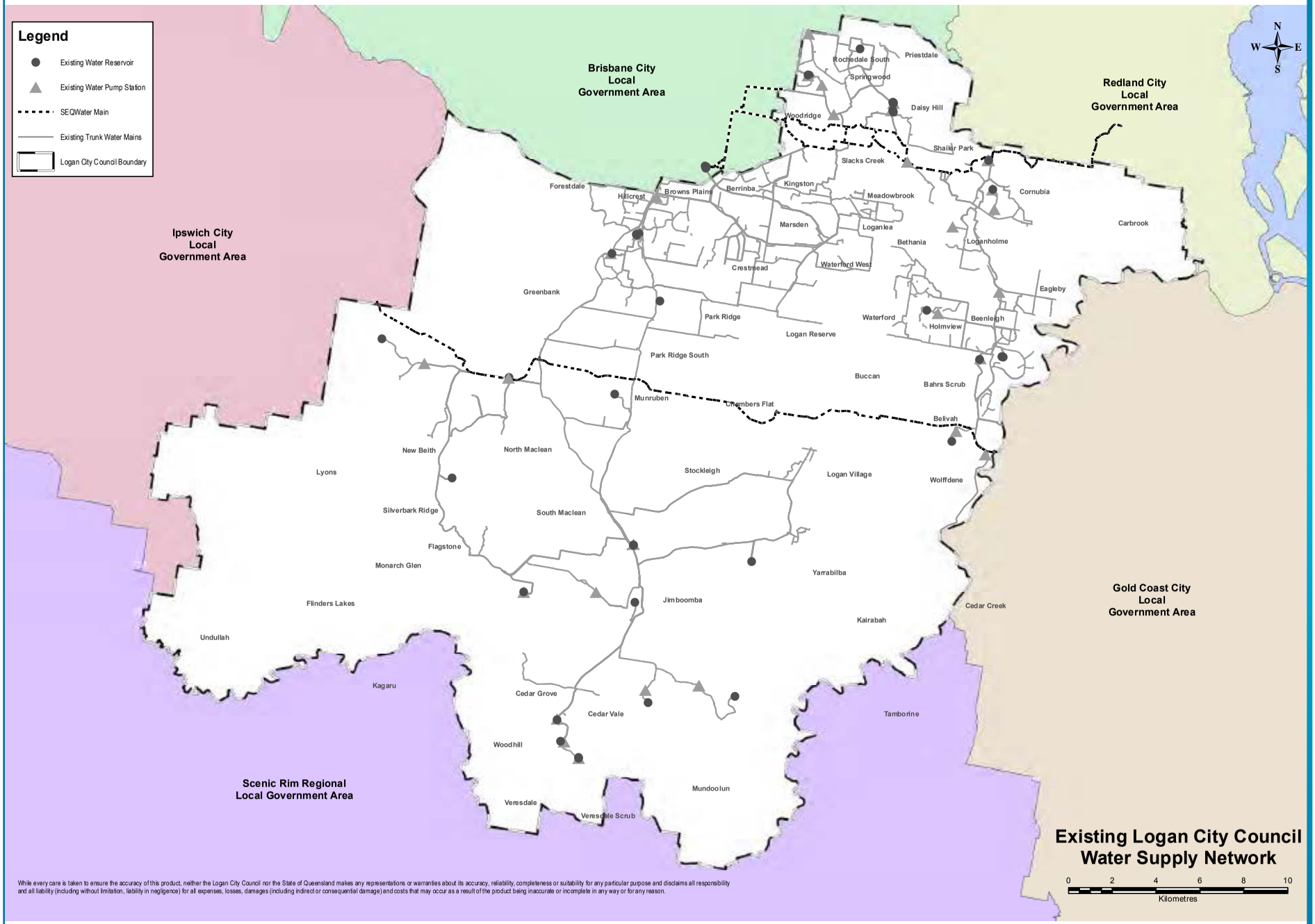
Our water supply network comprises:

- **Trunk distribution mains** – large pipes (generally 200mm to 900mm diameter), used to distribute water to major service zones. They are connected to the bulk water mains owned and operated by Seqwater or to water storage facilities. Trunk mains are generally constructed by Council's water business. Infrastructure charges collected from developers help fund trunk infrastructure.
- **Reticulation mains** – smaller pipes with diameters less than 200mm, connected to the trunk mains and used to reticulate water to homes and businesses. They are generally constructed by developers and become the property of Council's water business.
- **Water pumping stations** – located strategically throughout the supply network, water pumping stations ranging in size from 2kw to 430kw are used to pump water to network storage reservoirs.
- **Reservoirs** – usually built on higher ground, reservoirs ranging in size from 50,000 litres (L) to 35 megalitres (ML) are used to store treated water, maintain pressure in the network and supply water on demand to the reticulation system.
- **Water meters** – installed on all properties connected to the water supply network, water meters are used to determine the volume of water consumed by individual customers. Customers are billed in accordance with set charges per kilolitre.

Table 2 summarises the water supply network assets throughout the city and their associated replacement value as at 30 June 2016.

Table 2: Water supply network assets

Assets	Amount	Replacement Value
Water mains	2,095 km	$910.6 M
Water pumping stations	26	$23.8 M
Reservoirs	39	$81.1 M
Water meters and services	99,621	$131.1 M
Total		$1,146.6 M



Wastewater network

Council's water business is responsible for transporting, treating and discharging wastewater collected from almost 95,000 residential and non-residential properties throughout Logan via our trunk and reticulation wastewater network. A full definition of trunk infrastructure can be found in Appendix I. In 2014/15, more than 24,000ML of wastewater was treated at our wastewater treatment plants.

Our wastewater network comprises:

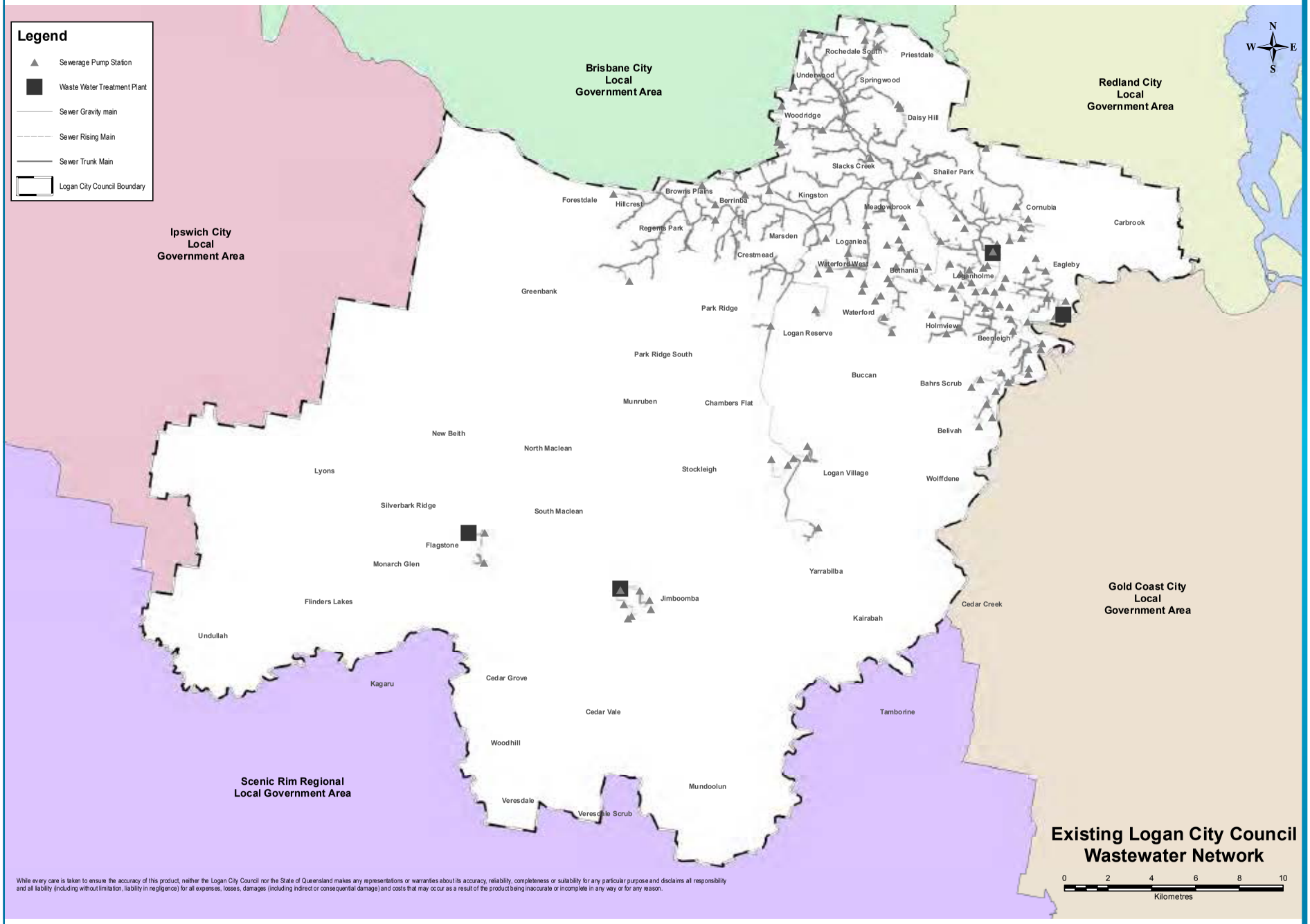
- Trunk wastewater mains – large pipes (generally 225mm to 1,800mm diameter), used to transport wastewater from catchment areas to our pump stations and wastewater treatment plants (WWTP). They comprise of both gravity and rising mains. Trunk mains are generally constructed by Council's water business. Infrastructure charges paid for by developers help fund trunk infrastructure.
- Reticulation mains – small pipes with diameters less than 225mm, used to transport wastewater from homes and businesses to our trunk mains. They are generally constructed by developers and become the property of Council.
- Manholes – located throughout trunk wastewater and reticulation mains, manholes allow access to the pipes for maintenance purposes.
- Wastewater pumping stations – located strategically throughout the wastewater network, pumping stations ranging in size from 2kw to more than 600kw are used to pump wastewater over long distances between catchments and to wastewater treatment plants.
- Wastewater treatment plants – wastewater collected from homes and businesses is treated in accordance with strict environmental licence conditions before being discharged to waterways or recycled.

Table 3 summarises the wastewater network assets and associated replacement values as at 30 June 2016.

Table 3: Wastewater supply network assets

Assets	Amount	Replacement Value
Sewer mains	2,263 km	$1,372.7 M
Manholes	41,283	$163.7 M
Wastewater pumping stations	122	$104.3 M
Wastewater treatment plants	4	$205.3 M
Total		$1,846.0 M

Appendix B outlines our current wastewater network as at September 2016.



Managing ageing infrastructure

Some water and wastewater infrastructure was provided in Logan in the 1960s. However, the majority of our water and wastewater networks were developed during the city's substantial growth period, between the 1970s and the 1990s. As the network ages, greater levels of maintenance and capital works spending will be required to ensure service standards are retained. Figures 1.1 and 1.2 present the installation dates for the water and wastewater mains.

Figure 1.1: Water mains installed

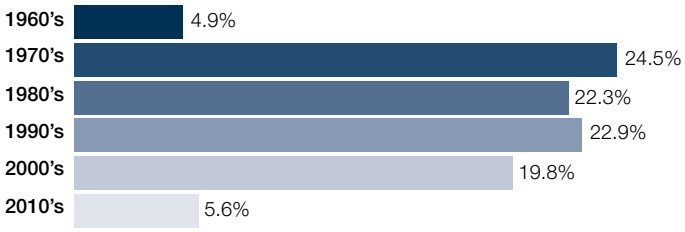
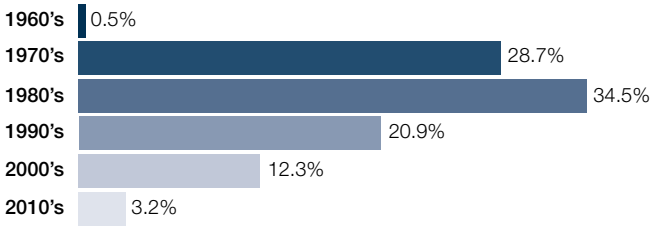


Figure 1.2: Wastewater mains installed



This means assets created from the 1970s to the 1990s are ageing and some will require replacement over the next 10 years.

A variety of construction materials for water and wastewater mains have been used over the years, each with varying life spans. The majority of the water supply mains have a lifespan of around 60 to 80 years, with wastewater mains being around 50 to 70 years due to the more corrosive nature of the material being transported.

In addition, the networks also comprise active assets such as reservoirs, pumping stations and wastewater treatment plants. The mechanical and electrical nature of these assets means more frequent replacement of parts such as motors, valves, switchboards and telemetry (radio communication) equipment. Useful life spans for these assets are in the order of 10 to 30 years for non-structural elements.

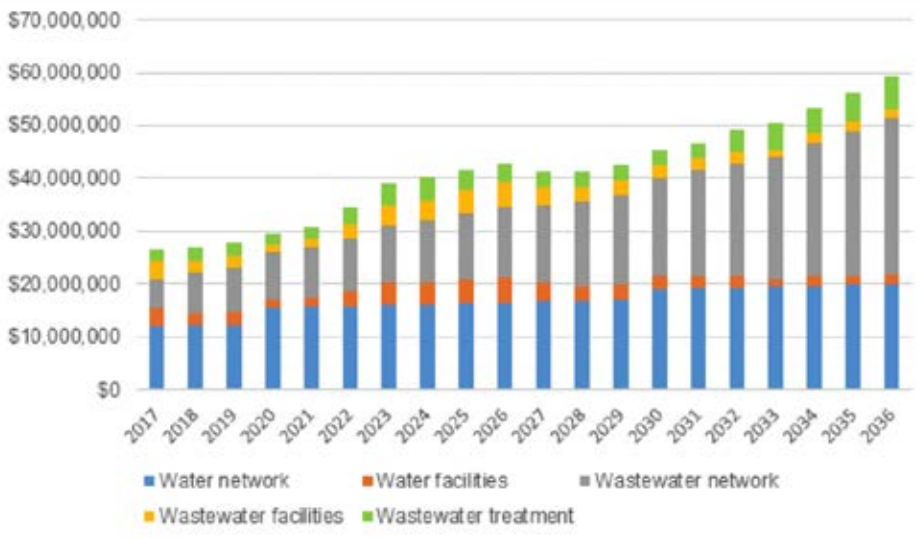
We undertake regular asset condition assessments and risk analysis and use sophisticated models and planning practices to determine which assets require replacing over the next 30 years.

Infrastructure replacement costs

Figure 2 represents our estimated annual expenditure for replacing water and wastewater infrastructure assets over the next 20 years. These amounts do not represent actual budget figures. Instead, they show trends that guide asset management activities. Actual three-year capital works programs are refined and prioritised based on detailed information and analysis.

We continue to develop medium to long-term strategies, plans and management activities to address these pending replacement programs, which are expected to peak over 10 to 15 years.

Figure 2: Water and wastewater assets replacement program



Our Infrastructure Asset Standards

Developer contributed assets

Developer contributed assets are primarily non-trunk infrastructure constructed to support new developments. Once the infrastructure becomes a donated asset, Council becomes responsible for all costs related to its lifecycle.

We are required to build new infrastructure to the standards set out in the *South-East Queensland Design and Construction Code*. The code has been developed as a collaborative project of water and wastewater providers across South-East Queensland, as required under the *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009*.

The code applies to all South-East Queensland Water Supply Authorities. By standardising water supply and wastewater infrastructure works across South-East Queensland, the code aims to provide:

- greater consistency in asset planning, design and construction standards
- greater standardisation of processes, including development assessments, and consistency in planning of asset networks
- a common reference point for regulators when assessing construction standards
- better service and lower costs to our customers.

By 2036, approximately 490,000 people will call Logan City home. Further investment in water and wastewater infrastructure is required to support this growth.

Section 6

How We Plan For The Future

Drivers of growth in our city

Over the last 20 years, South-East Queensland's population has increased from around 1.5 million people to 2.8 million. The region is expected to reach 4.4 million people by 2031. An additional 754,000 dwellings will be required by 2031 to accommodate this growth.

The Queensland Government's South-East Queensland Regional Plan 2009-2031 (SEQ Regional Plan) is a statutory instrument that seeks to proactively manage regional growth. It identifies sufficient land to accommodate the projected population and contains the preferred settlement pattern for the region. The SEQ Regional Plan provides the framework within which Council plans and manages its future growth.

In 2016, Logan's population is around 311,900 people. By 2036, the projected population is expected to be more than 490,000.

Table 4: Population projections for Logan City

Projected population			
Year	Low	Medium	High
2016	311,006	311,911	312,812
2021	334,060	341,344	348,773
2026	367,010	384,454	402,518
2031	401,054	429,909	460,081
2036	445,465	490,522	538,020

Coordinated infrastructure to meet our growing needs

Growth in Logan can only occur with timely delivery of state and local infrastructure. This infrastructure and associated services needs to be planned, coordinated and delivered to support the regional settlement pattern and desired community outcomes. Water and wastewater in particular will be an important focus across our region. In this way, we can create a more sustainable region, while ensuring a safe and reliable drinking water supply and providing wastewater services that protect public and environmental health.

There is a strong link between the State Infrastructure Plan (SIP), the Logan Planning Scheme and the Water Netserv Plan. Together, they coordinate planning, infrastructure and service delivery in Logan. Developing regionally significant growth areas in Logan will depend on timely delivery of state and local infrastructure, particularly water and wastewater, road and public transport infrastructure.

It is important we identify and plan future water and wastewater infrastructure to support the State Government's preferred settlement pattern, and provide greater certainty for development as recognised in the SEQ Regional Plan and the Logan Planning Scheme. The use of infrastructure programs to support and direct development can influence the preferred settlement pattern and urban form. This includes broad-hectare areas, urban infill and redevelopment sites and activity centres. The location and timing of infrastructure delivery can also drive economic development and the distribution of employment opportunities.

We need to ensure Logan has efficient, cost-effective, functional, safe, well-integrated and sustainable infrastructure. This can be achieved through the efficient use of existing infrastructure and the efficient sequencing of development and infrastructure networks to deliver cost-effective growth.

Regional and local planning

Council undertakes planning activities for water and wastewater in Logan to meet legislative and business obligations and to ensure consistency and coordination with the State Government. Both levels of government undertake water planning to ensure sufficient water is supplied to support a comfortable, sustainable and prosperous lifestyle, while meeting the needs of urban, industrial and rural growth, and the environment.

The SEQ Regional Plan sits within the Queensland land use planning framework and reflects and informs state planning policy and priorities. It informs local government plans and policies. It also informs non-statutory processes, such as planning for natural resource management and planning for urban renewal and new growth areas at district and neighbourhood levels.

Seqwater's Water for Life Strategy provides a planning framework for bringing on supplies at appropriate times to meet projections of normal demand, and options for filling a potential short-term gap in supply. The *Water Act 2000* establishes a system for the planning, allocation and use of water. Sustainable management under the Act requires that water be allocated by the State Government for the wellbeing of the people of Queensland and the protection of the biological diversity and health of natural ecosystems, within limits that can be sustained indefinitely.

Catchment-based water resource plans take into account surface water, groundwater and overland flow, and provide for environmental needs as well as human uses by providing secure water entitlements with a specified probability of supply. Water resource plans have been completed for the Moreton, Gold Coast, Logan and Mary basins in the region.

The Regional Water Security Program will detail supply and demand measures required to achieve water security for the region. It is guided by sub-regional planning, and can specify key water cycle objectives that must be reflected in land use and infrastructure planning. Within this framework we will have to ensure that local water and wastewater infrastructure and services are sufficient to support planning and development.

Like all Councils in the region, we prepare our Planning Scheme in accordance with the *Sustainable Planning Act 2009* to integrate land use planning and future infrastructure.

The Logan Planning Scheme 2015 provides a land use framework for the entire city, as well as providing streamlined and efficient application processes and assessment rules.

The Local Government Infrastructure Plan

The Local Government Infrastructure Plan (LGIP) is a key component of our Planning Scheme. Its purpose is to:

- integrate and coordinate land use planning and infrastructure planning
- ensure that trunk infrastructure is planned and provided in an efficient and orderly manner.

The LGIP aims to minimise the cost to ratepayers by planning and providing infrastructure in an efficient, coordinated and orderly way. One way to achieve this is to promote development at locations where the existing infrastructure has spare capacity.

In broad terms, the LGIP comprises:

- the priority infrastructure area – identifying the geographic area intended to accommodate between 10 and 15 years' projected development
- the planning assumptions – projecting future demand for trunk infrastructure
- the desired standards of service – setting the preferred standard of performance for the networks
- the plans for trunk infrastructure – identifying both existing and future trunk infrastructure items.

In essence, the LGIP details what, where and when trunk infrastructure is required for the following networks:

- water supply
- wastewater
- transport
- parks and land for community facilities
- stormwater.

The LGIP supports Council in meeting our city's future water and wastewater needs by ensuring the two networks are provided in a coordinated way with the other networks.

For our water supply and wastewater service in particular, the LGIP:

- details water infrastructure planning for the community
- identifies the future water infrastructure needs
- enables water services and facilities to be provided more efficiently and cost effectively
- enables current and future residents to be supported by high quality water infrastructure
- helps manage the city's growth
- provides the framework for ongoing development, which in turn encourages investment.

Planning assumptions

Planning assumptions are critical as they define the type, location, scale and timing of existing and projected future development within our city. These assumptions are converted into demand for the various networks which, together with the desired standards of service, provide the basis for network planning.

Our planning assumptions are based on the provisions of our planning scheme, as well as projections developed by the Australian Bureau of Statistics and the State Government. Our planning assumptions are expressed in quantitative terms, and provide information on the following:

- Existing and projected population
- Existing and projected employees
- Existing and projected dwellings
- Existing and projected non-residential floor space
- Existing and projected net developable area.

Infrastructure charges will be levied in accordance with the relevant adopted infrastructure charge resolution.

Our planning assumptions and Logan Adopted Infrastructure Charges Resolution can be located on our website www.logan.qld.gov.au

Our plans for new infrastructure

Water and wastewater infrastructure planning ensures our city's infrastructure networks continue to provide efficient and affordable services to the Logan community, while providing for development and growth.

Infrastructure planning ensures that our customers' needs are met by:

- maintaining standards of service for water supply and wastewater collection and treatment
- providing capacity in the water and wastewater systems for local and regional growth
- providing a safe and reliable drinking water supply
- managing wastewater treatment and treated effluent
- protecting the environment and waterways by optimising the wastewater collection system and minimising overflows
- improving water efficiency by reducing water network leakage, managing pressure, improving the system, and improving water conservation
- renewing and replacing ageing infrastructure.

We follow a rigorous planning framework to ensure we meet optimal water and wastewater system requirements. This framework forms the basis for our ongoing investment. Our servicing strategies need to ensure we meet the desired standards of service and customer service levels.

We start with strategic and master planning, taking a long-term view of the city's water and wastewater needs. This approach provides a basis for future capital works programs for up to 40 years, on a rolling five-year timeframe.

The next phase of planning is catchment-based. It determines the most appropriate solution through analysis of various options to meet current and future needs. At this stage, planning assumptions such as population growth, future land use, employment growth, development timing and resulting demand are confirmed by local and state planning documents.

The next step involves detailed planning for specific infrastructure items, ensuring all infrastructure solutions are efficient and cost effective. This creates a basis for designing and constructing infrastructure to meet the needs of current and future capital programs.

We consider all associated impacts and benefits, and incorporate non-infrastructure solutions into our planning. This ensures our decisions about infrastructure investment are not only based on cost, but also factor in social equity and environmental issues.

Planning considerations include:

- integrated water cycle management planning
- full life cycle costs, sustainability and triple bottom line considerations
- non-asset solutions
- operational improvements
- risk
- maximising existing infrastructure life
- flexibility in servicing strategies to provide for uncertainties.

Council's Local Government Infrastructure Plan is identified out of this process, and infrastructure contributions and forward funding are planned based on the identified schedule of works. This Local Government Infrastructure Plan can be located on Council's website at www.logan.qld.gov.au.

Water supply and wastewater projects

The City of Logan has preliminary planning under way for approximately $438 million worth of investment in water and wastewater infrastructure up to 2020/21. This includes investment in water storage reservoirs, pipes, pump stations, water meters, wastewater treatment plants and network control and monitoring systems.

A breakdown of planned capital works expenditure for the next five years is given in Table 5.

Table 5 - Planned capital works spending 2016/17 - 2020/21 (indexed as per 2016/2017 budget)[1]

	2016/17	2017/18	2018/19	2019/20	2020/21
Wastewater					
New	$24.8 M	$53.5 M	$62.0 M	$58.5 M	$42.8 M
Renewal	$17.3 M	$11.4 M	$10.3 M	$9.8 M	$11.1 M
Total Wastewater	$42.1 M	$64.9 M	$72.3 M	$68.3 M	$53.9 M
Water					
New	$5.2 M	$2.6 M	$2.7 M	$14.1 M	$25.0 M
Renewal	$16.2 M	$14.3 M	$15.1 M	$17.4 M	$15.3 M
Total Water	$21.4 M	$16.9 M	$17.8 M	$31.5 M	$40.3 M
TOTAL PROGRAM	$63.5 M	$81.8 M	$90.1 M	$99.8 M	$94.2 M

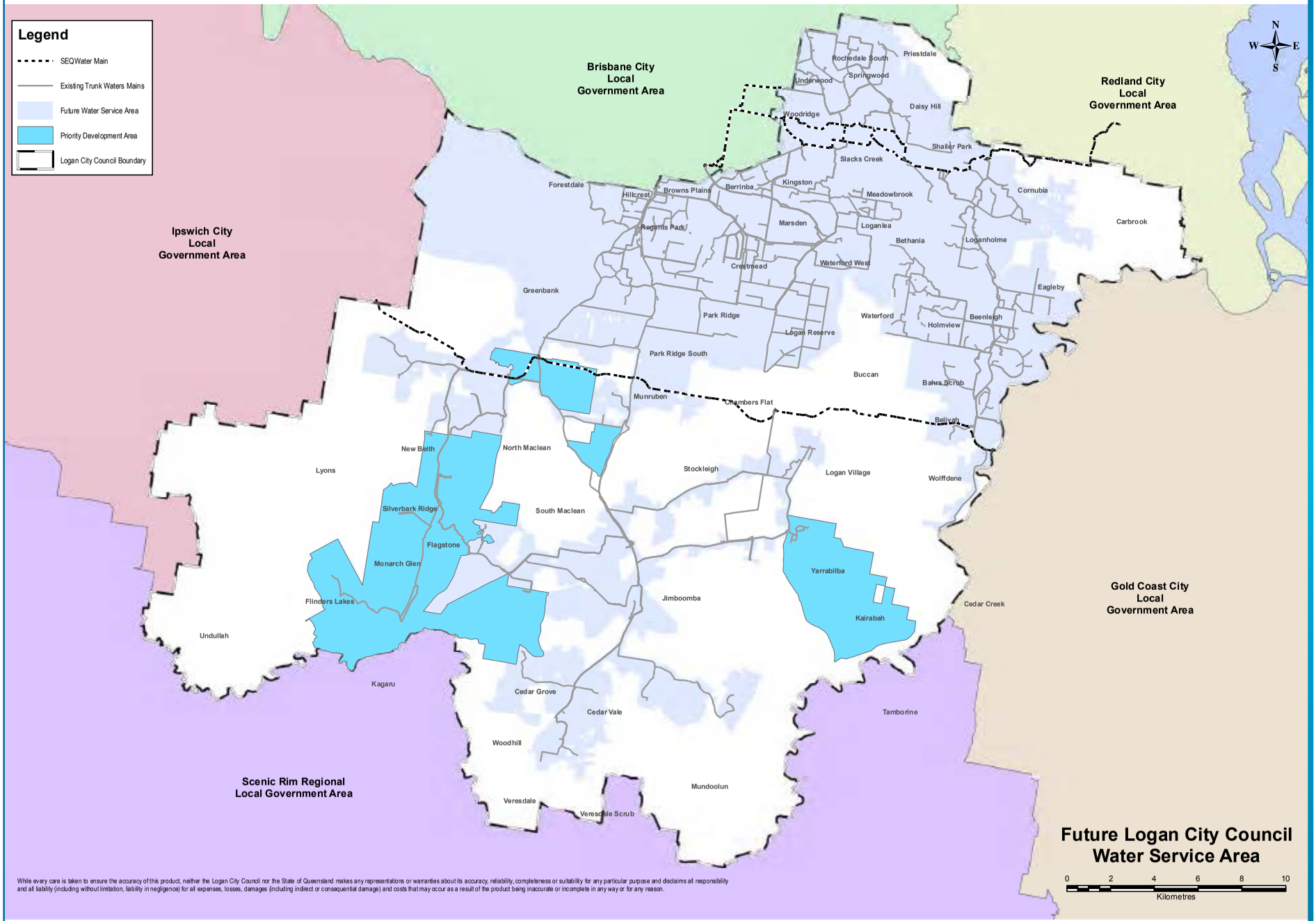
[1]These figures are estimates only and are subject to change

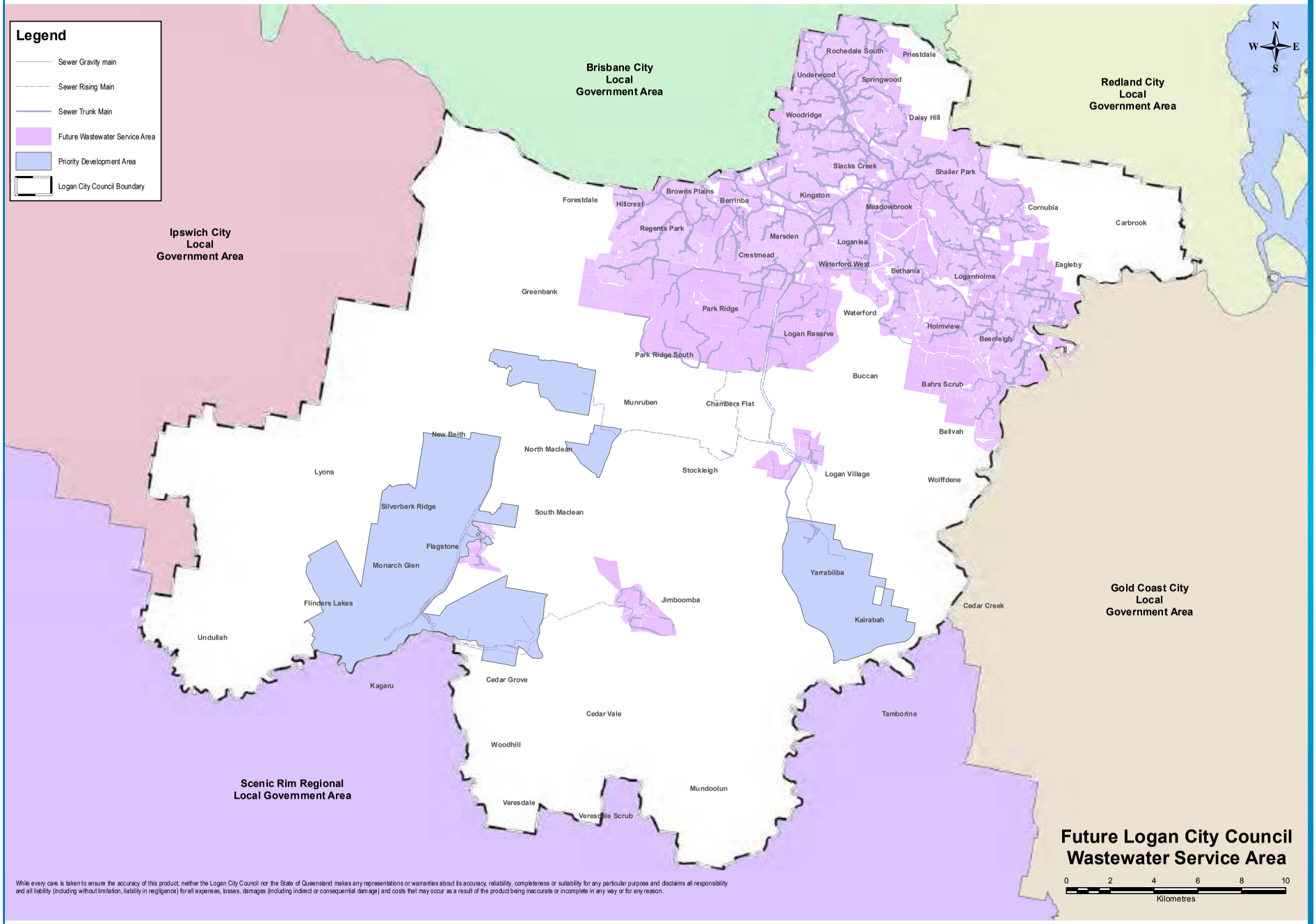
Table 6 presents our estimated 20-year capital works spending, at five-yearly intervals, for our water and wastewater networks.

Table 6: Estimated 20-year capital works program (indexed as per 2016/2017 budget)[2]

Description	Water	Wastewater	Total
New			
2016/17 to 2020/21	$49.7 M	$241.5 M	$291.2 M
2021/22 to 2025/26	$35.5 M	$165.9 M	$201.4 M
2026/27 to 2030/31	$17.3 M	$150.1 M	$167.4 M
2031/32 to 2035/36	$43.6 M	$167.2 M	$210.8 M
Sub-total	**$146.1 M**	**$724.7 M**	**$870.8 M**
Renewals			
2016/17 to 2020/21	$78.4 M	$59.8 M	$138.2 M
2021/22 to 2025/26	$71.1 M	$69.8 M	$140.9 M
2026/27 to 2030/31	$141.1 M	$105.1 M	$246.2 M
2031/32 to 2035/36	$248.1 M	$133.1 M	$381.2 M
Sub-totals	**$538.7 M**	**$367.8 M**	**$906.5 M**
Total (new and renewals)	$684.8 M	$1,092.5 M	$1,777.3 M

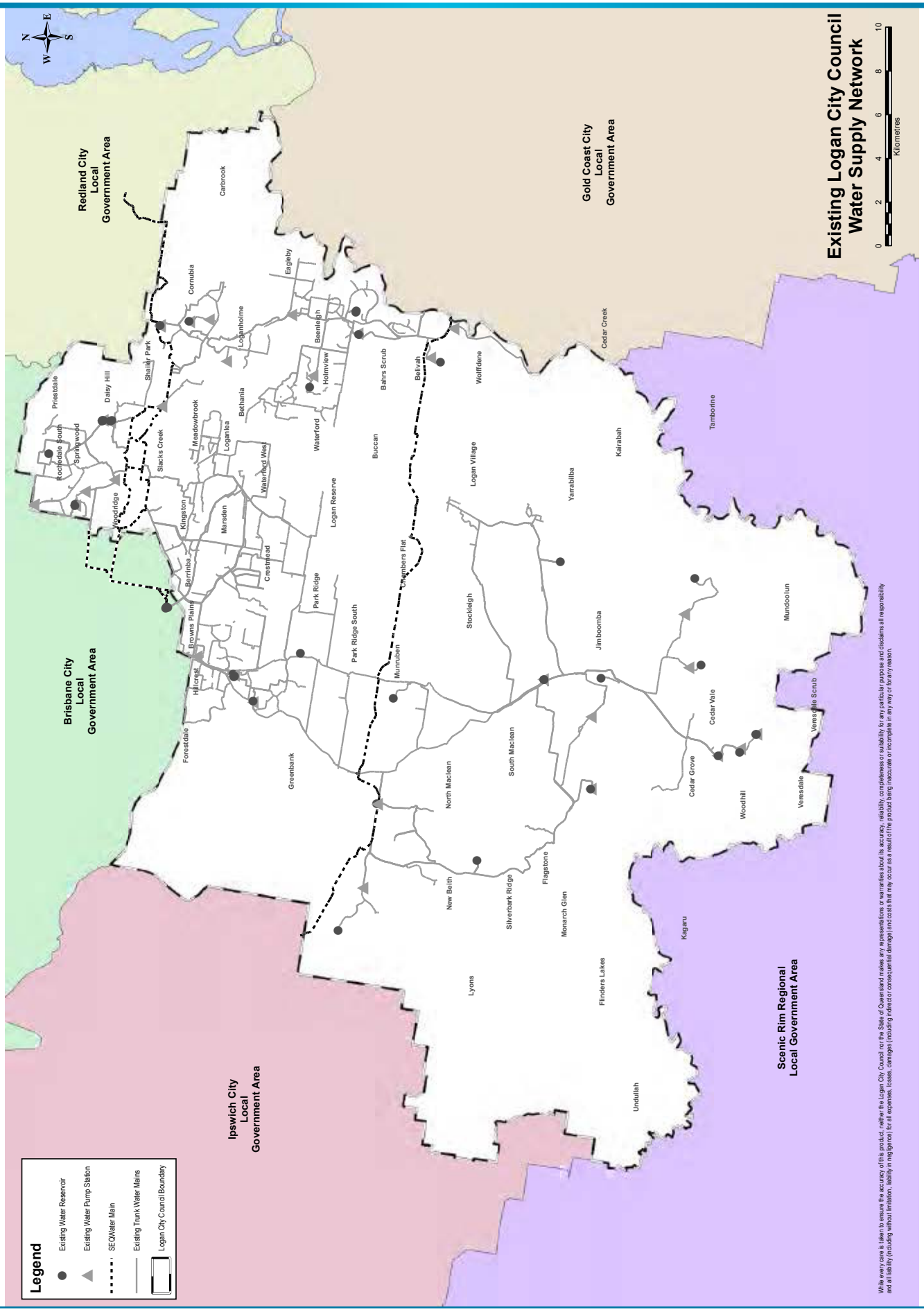
[2]These figures are estimates only and are subject to change



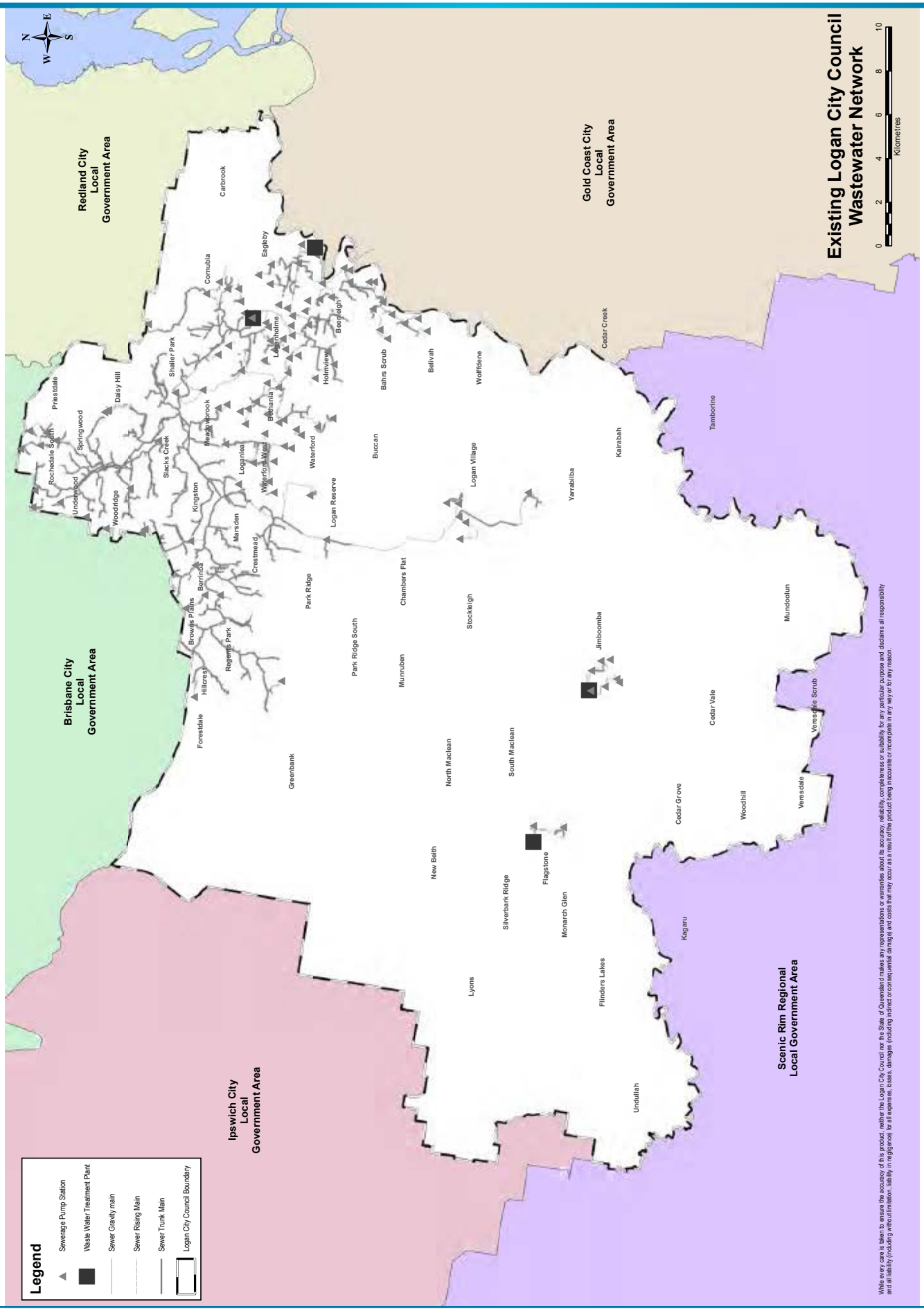

Legend
Sewer Gravity main
Sewer Rising Main
Sewer Trunk Main
Future Wastewater Service Area
Priority Development Area
Logan City Council Boundary
Brisbane City Local Government Area
Redland City Local Government Area
Ipswich City Local Government Area
Scenic Rim Regional Local Government Area
Gold Coast City Local Government Area
Rochedale South
Priestdale
Underwood
Springwood
Woodridge
Daisy Hill
Slacks Creek
Shailer Park
Browns Plains
Kingston
Forestdale
Hillcrest
Berrinba
Meadowbrook
Cornubia
Carbrook
Regents Park
Marsden
Loganlea
Crestmead
Waterford West
Bethania
Loganholme
Eagleby
Greenbank
Park Ridge
Waterford
Holmview
Logan Reserve
Beenleigh
Park Ridge South
Buccan
Bahrs Scrub
Munruben
Chambers Flat
Belivah
New Beith
North Maclean
Stockleigh
Logan Village
Wolffdene
Lyons
Silverbark Ridge
South Maclean
Flagstone
Monarch Glen
Yarrabilba
Jimboomba
Flinders Lakes
Cedar Creek
Kairabah
Undullah
Cedar Grove
Kagaru
Cedar Vale
Tamborine
Woodhill
Mundoolun
Veresdale
Veresdale Scrub
N
W
E
S
Future Logan City Council Wastewater Service Area
0 2 4 6 8 10
Kilometres
While every care is taken to ensure the accuracy of this product, neither the Logan City Council nor the State of Queensland makes any representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs that may occur as a result of the product being inaccurate or incomplete in any way or for any reason.

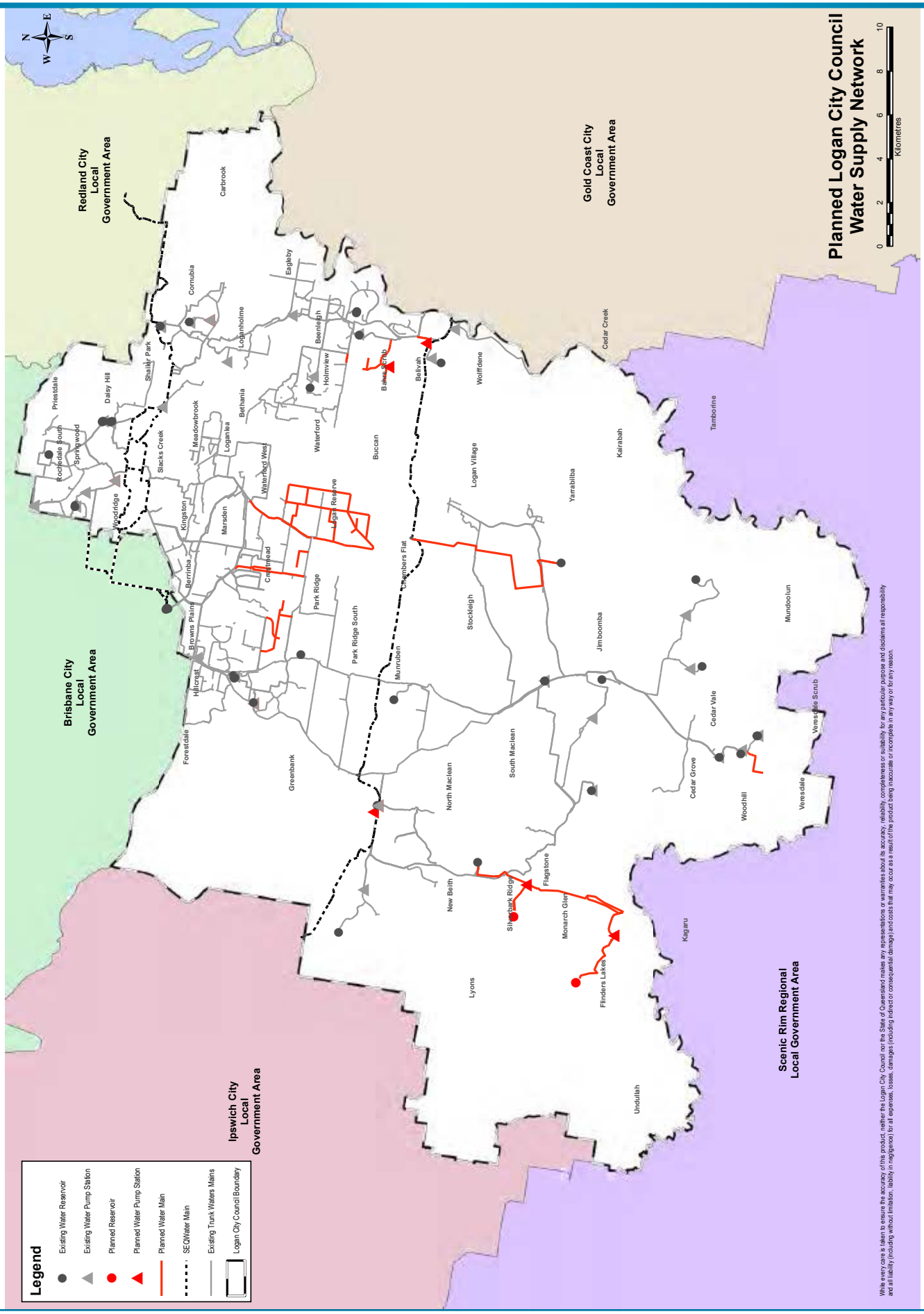
Appendices

Appendix A Network Map: Existing Logan City Council Water Supply Network



Appendix B Network Map: Existing Logan City Council Wastewater Network




Planned Logan City Council
Water Supply Network
0 2 4 6 8 10
Kilometres
N
E
S
W
Redland City
Local
Government Area
Gold Coast City
Local
Government Area
Brisbane City
Local
Government Area
Ipswich City
Local
Government Area
Scenic Rim Regional
Local Government Area
Carbrook
Cornubia
Eagleby
Loganholme
Beenleigh
Holmview
Bahrs Scrub
Belivah
Wolffdene
Cedar Creek
Tamborine
Kairabah
Priestdale
Daisy Hill
Shailer Park
Rochedale South
Springwood
Slacks Creek
Meadowbrook
Loganlea
Bethania
Waterford
Waterford West
Logan Reserve
Buccan
Logan Village
Yarrabilba
Kingston
Marsden
Woodridge
Berrinba
Crestmead
Park Ridge
Park Ridge South
Chambers Flat
Browns Plains
Hillcrest
Forestdale
Greenbank
Munruben
Stockleigh
Jimboomba
Mundoolun
North Maclean
South Maclean
Cedar Vale
Cedar Grove
Woodhill
Veresdale
Veresdale Scrub
New Beith
Silvertrack Ridge
Flagstone
Monarch Glen
Kagaru
Flinders Lakes
Lyons
Undullah
Legend
Existing Water Reservoir
Existing Water Pump Station
Planned Reservoir
Planned Water Pump Station
Planned Water Main
SEQWater Main
Existing Trunk Waters Mains
Logan City Council Boundary
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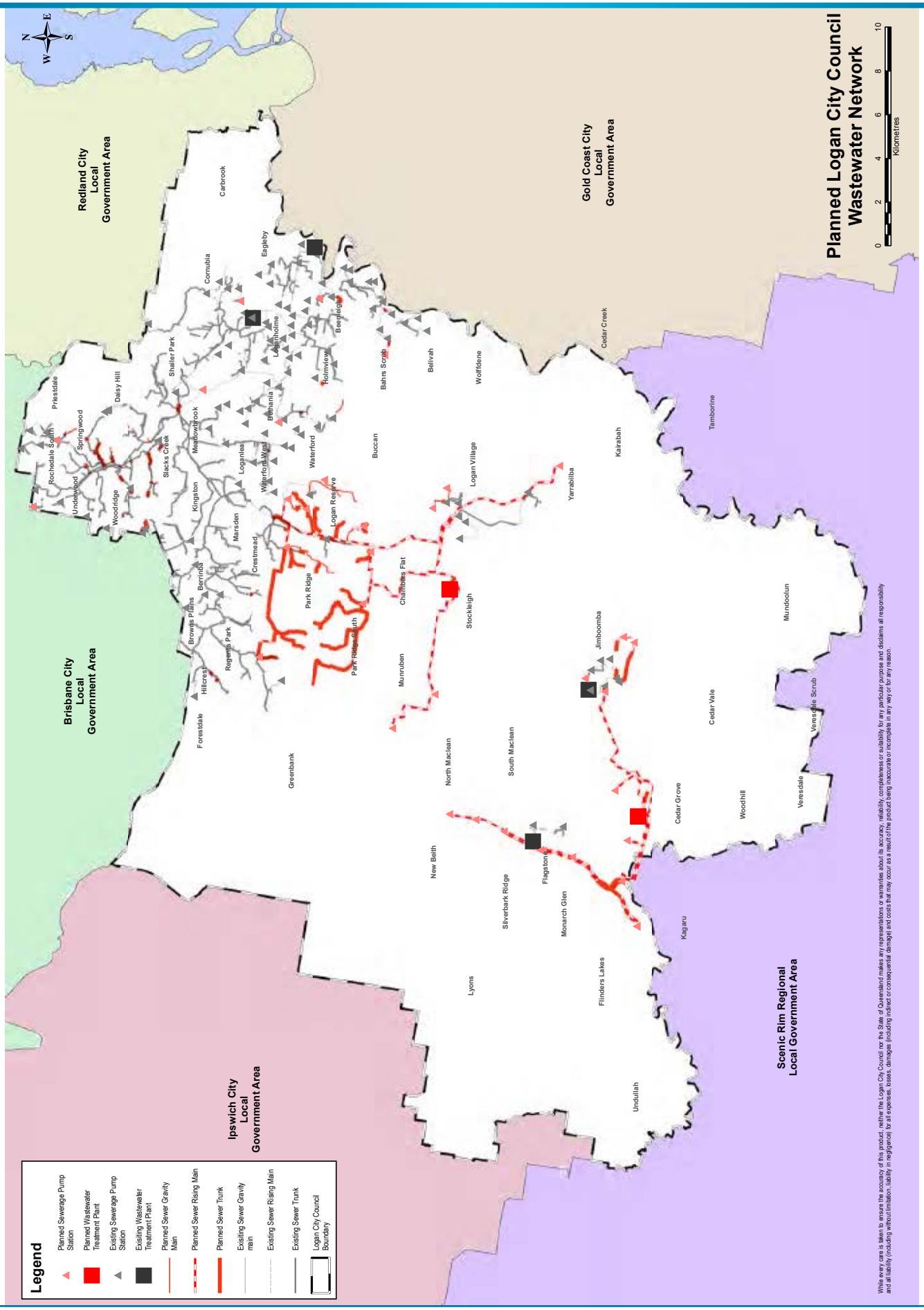
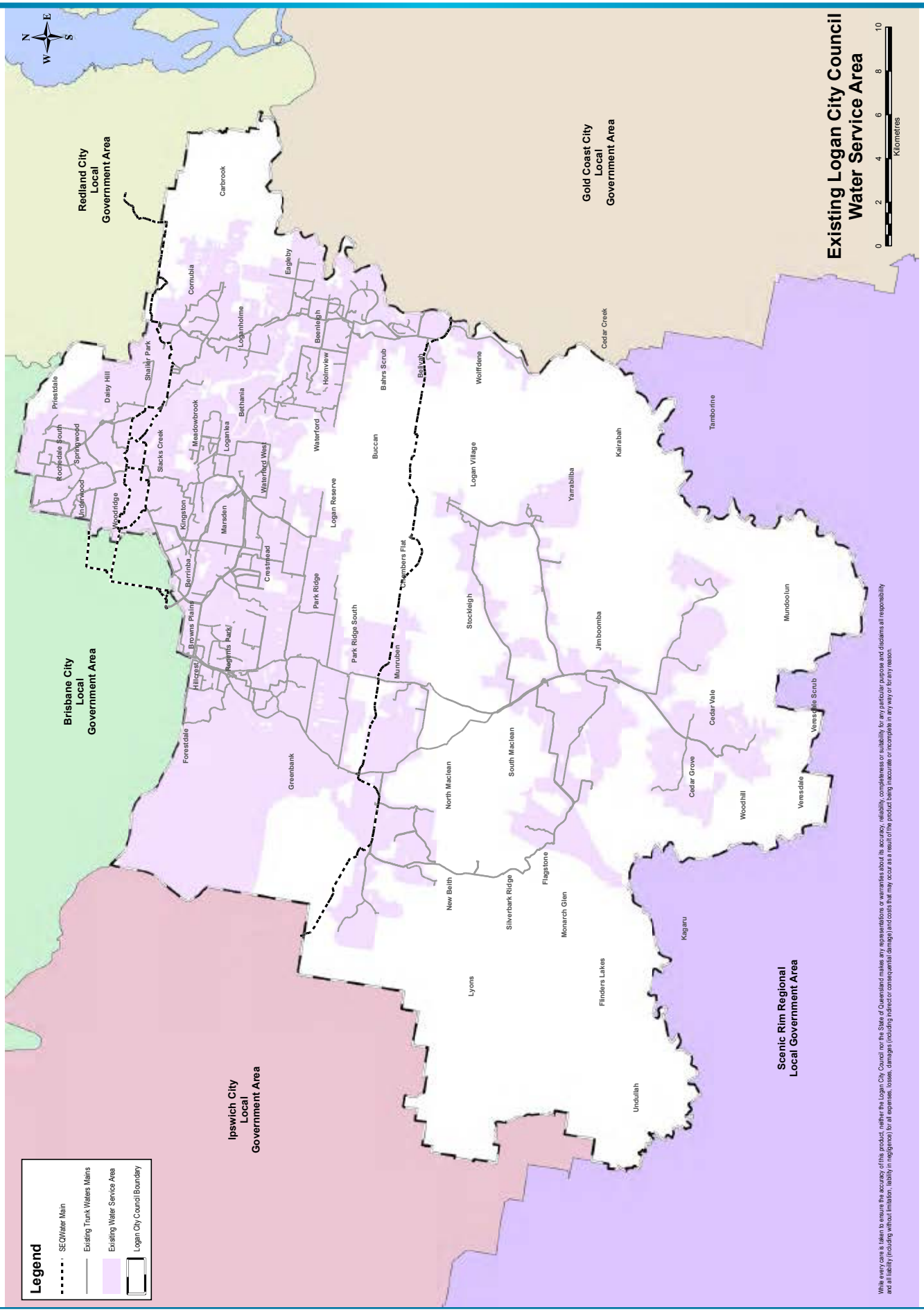
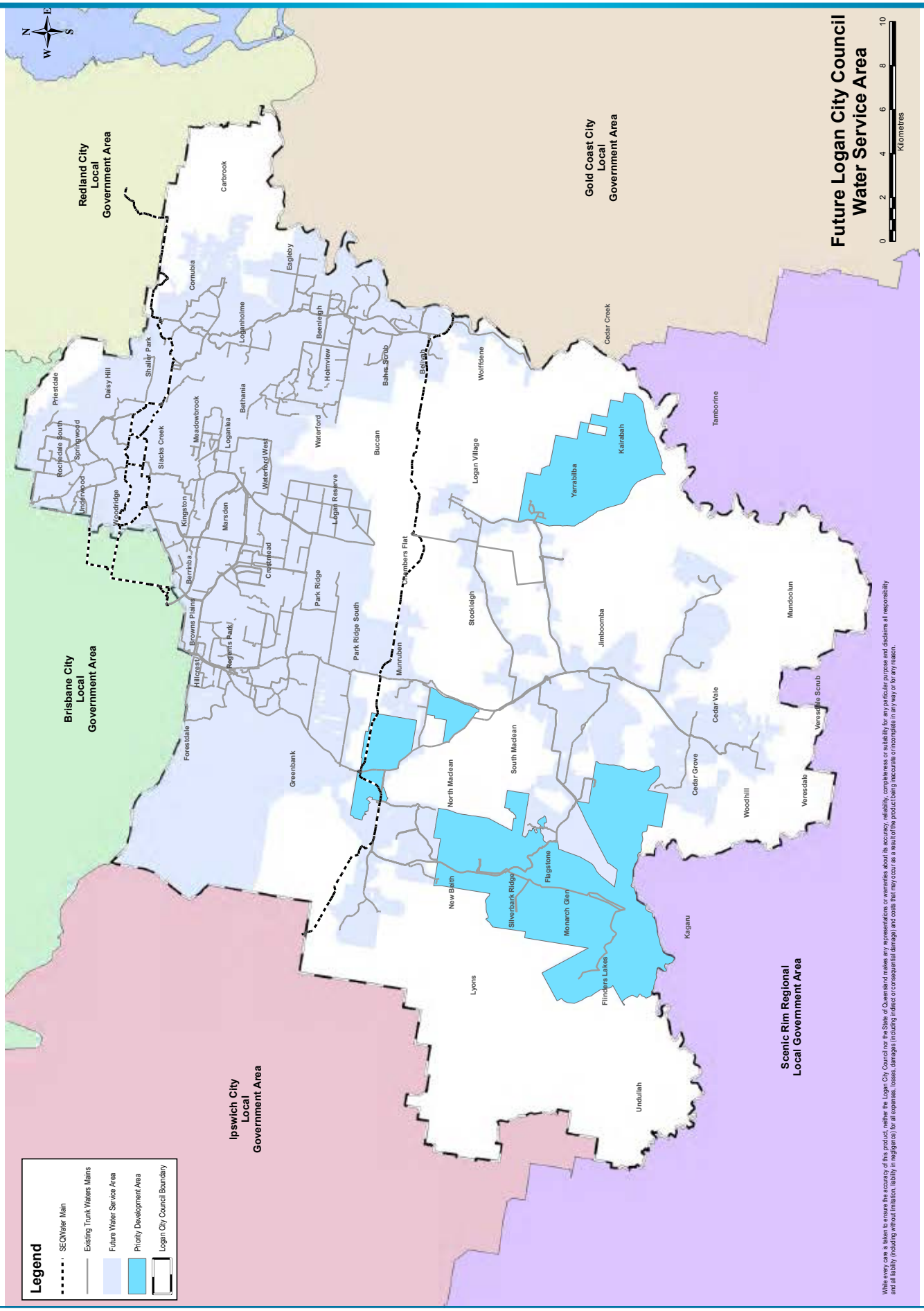
Appendix D Network Map: Planned Logan City Council Wastewater Network



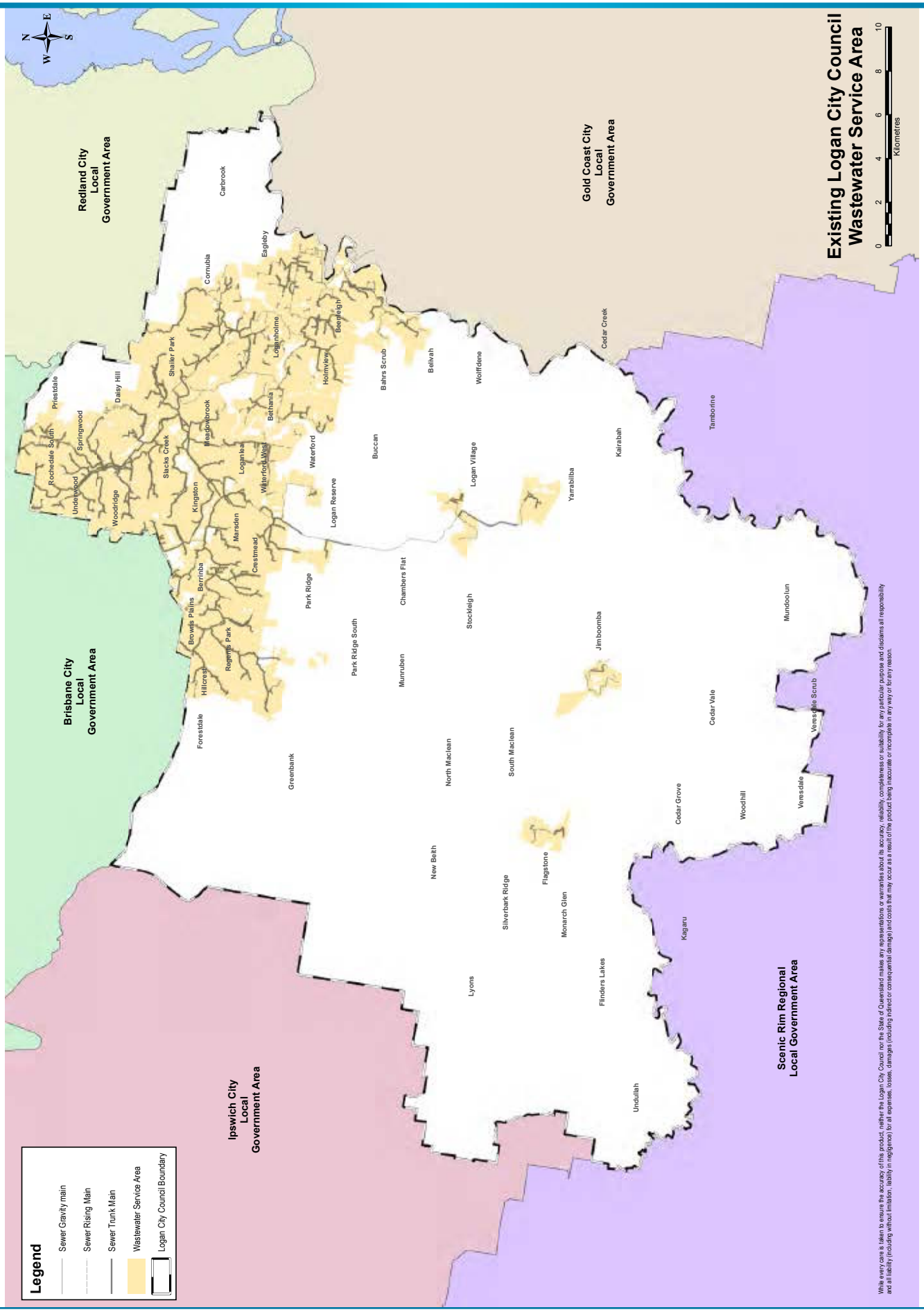
Appendix E Network Map: Existing Logan City Council Water Service Area



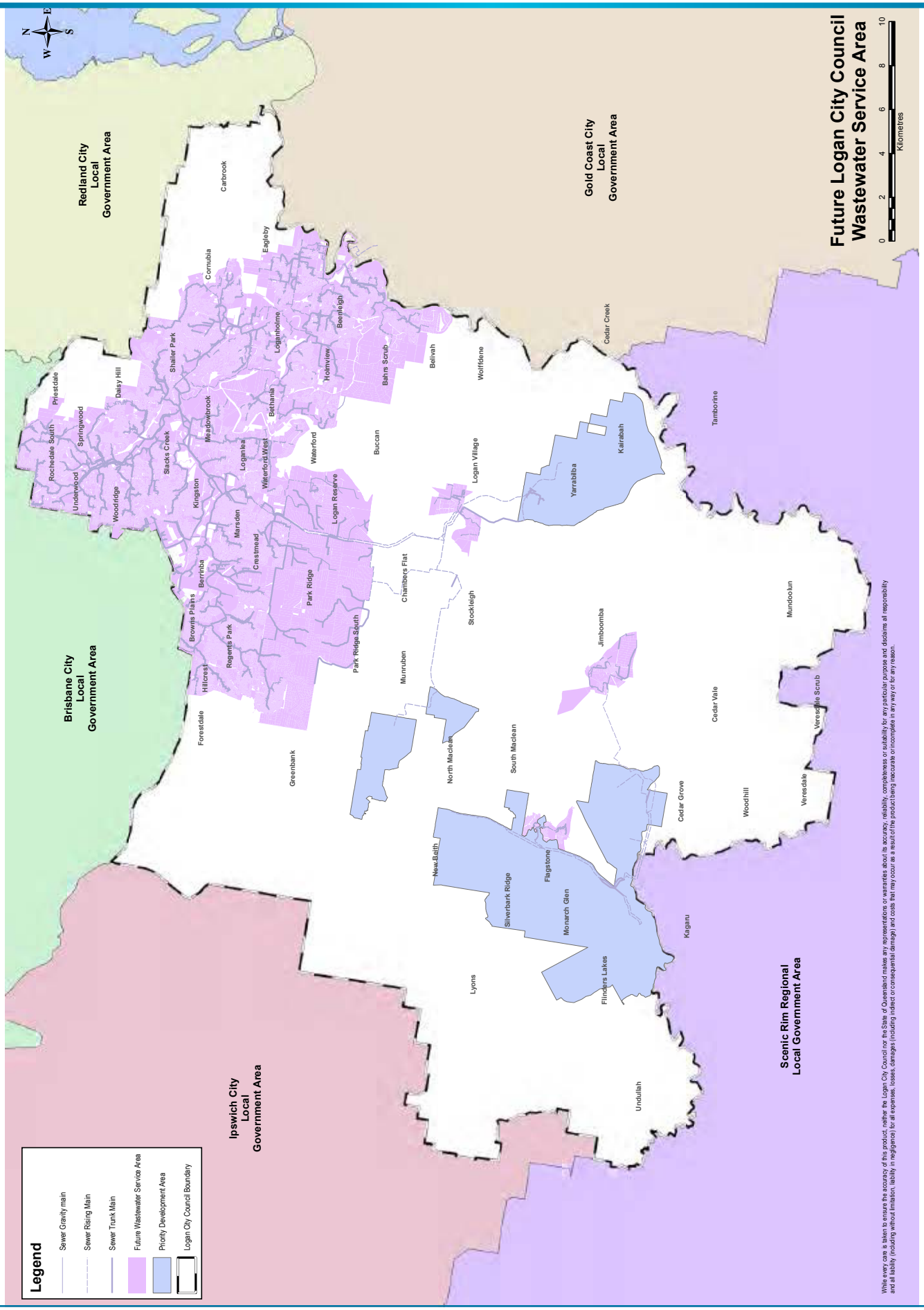
Appendix F Network Map: Future Logan City Council Water Service Area



Appendix G Network Map: Existing Logan City Council Wastewater Service Area



Appendix H Network Map: Future Logan City Council Wastewater Service Area



Appendix I Logan City Council Definition of Trunk Infrastructure

1. Trunk infrastructure is higher order or shared development infrastructure, which services a number of users. The primary purpose of trunk infrastructure is to service larger 'catchment' areas rather than provide connections to individuals or small groups of users.
2. Trunk assets are owned by the distributor-retailer or will be owned by the distributor-retailer when it is accepted on maintenance. Privately owned assets are not considered trunk infrastructure.
3. Planning for trunk infrastructure must take into consideration the following:
   a) Appropriate sizing and alignment to efficiently service the entirety of the natural catchment area
   b) It must follow best practice planning and design principles
   c) It must deliver an efficient solution which requires that the scope of works be the best means of achieving the desired outcomes having regard to all options available including non-infrastructure alternatives.
4. Trunk water infrastructure includes the following:
   a) Water storage facility where the ultimate total capacity is greater than or equal to 150 kilolitres including directly associated telemetry, monitoring and control equipment
   b) Pump stations (including boosters) which are required to deliver an ultimate design demand of greater than or equal to 10 litres per second normal peak demand (excluding fire flow demand) including directly associated telemetry, monitoring and control equipment
   c) A water main having a nominal diameter greater than or equal to 200 millimetres including directly associated fittings being valves, hydrants, scours and air valves. Smaller size mains may be trunk where they are the principal network component for transporting water from source of supply to distribution or storage reservoirs, and/or from storage reservoirs to the reticulation system
   d) Chlorination and re-chlorination facilities including directly associated telemetry, monitoring and control equipment
   e) Flow meters that are not directly associated with any other equipment except for a water main including directly associated telemetry, monitoring and control equipment
   f) Pressure and flow control valves associated with trunk assets including directly associated telemetry, monitoring and control equipment.
5. Trunk wastewater infrastructure includes the following:
   a) Wastewater treatment plants including outfall structures and disposal systems including directly associated telemetry, monitoring and control equipment
   b) Wastewater pump stations which are required to deliver an ultimate design peak wet weather flow of greater than or equal to nine litres per second including directly associated telemetry, monitoring and control equipment, emergency storage facilities, emergency overflow structures and odour management
   c) Rising mains associated with a trunk sewage pump station including associated fittings being valves, scours, air valves and discharge maintenance holes
   d) Gravity mains having a nominal diameter greater than or equal to 225mm including directly associated maintenance structures and emergency overflow structures
   e) Gravity mains which:
      i. have a nominal diameter less than 225 millimetres including directly associated maintenance structures and emergency overflow structures
      ii. augment another gravity sewer where they share a common upstream maintenance structure which splits the flow and a common downstream maintenance structure which re-joins the flow.
   f) An infrastructure item which receives flow from an upstream infrastructure item that is trunk infrastructure under subparagraphs (a) to (e) above.

The references to the terms "Trunk" and "Reticulation" as used in this document bear no relation to those same terms as used in the SEQ Code specification for design and construction of water and sewerage infrastructure.

INNOVATIVE, DYNAMIC, CITY OF THE FUTURE

LOGAN
CITY COUNCIL