

Water and Wastewater Servicing Plan

Draft Pukekohe/Paerata
Structure Plan

Prepared by Chris Allen, Watercare Services Limited

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1 Executive Summary

This report confirms that the anticipated development yield from the draft structure plan can be serviced for water and wastewater. This report sets out the water and wastewater plan for servicing the structure plan area. It is based on an anticipated yield from the structure plan area of around 12,500 dwellings, in addition to the existing live zoned residential land in Paerata and any intensification of the existing urban area. Watercare is investing in trunk water and wastewater networks to service the existing live zoned developments underway, allowing to bring forward the structure planning of the future urban zoned land.

1.1.1 Water

Watercare provides both bulk and local water and wastewater services to the Pukekohe/Paerata area. Some of these assets are reaching the limits of their ability to provide water services to a growing community.

There are existing issues within the Pukekohe water network, which expected growth within the structure plan area will exacerbate.

Trunk and local network pipelines providing water to the draft structure plan area are being designed to meet the proposed yield. Watercare will undertake trunk upgrades and work with developers to upgrade water assets to service the structure plan area as required. Water pipelines will follow roading alignments and be constructed in conjunction with the roads, as part of individual development proposals. All new pipelines will consider the future development potential when being designed and constructed.

Trunk and local network pipelines providing water to the draft structure plan area will be designed to meet the anticipated yield. All new pipelines will consider the upstream and downstream development potential when being designed and constructed.

1.1.2 Wastewater

The existing network has limited capacity to accommodate additional flows. Watercare will undertake upgrades in the existing wastewater network to accommodate the anticipated yield. The Pukekohe transmission pump station and the pipe between Pukekohe and the wastewater treatment plant have capacity for the expected growth, and will be upgraded as required to meet additional growth expectations.

Trunk and local network pipelines collecting and conveying wastewater from the structure plan areas are being sized to meet the anticipated development yield. Watercare will undertake trunk upgrades and work with developers to upgrade wastewater assets to service the structure plan area as required. Local wastewater pipes will be constructed in alignment with individual development proposals. All new pipelines will consider the upstream and downstream development potential when being designed and constructed.

2 Introduction

2.1 Purpose and scope of the report

This report sets out the water and wastewater servicing plan for the Pukekohe/Paerata Structure Plan Area. It is a supporting document that forms part of the draft structure plan information.

2.2 Study Area

The study area for the draft Pukekohe/Paerata Structure Plan is the Future Urban zone around Pukekohe/Paerata and the live zoned land in northern Paerata. It comprises around 1,300ha of land. The study area is shown coloured yellow Figure 1 below. The anticipated dwelling yield for the structure plan area is around 12,500 dwellings. The live zoned land at Paerata adds another 4,500 dwellings, the live zoned land at Belmont adds 720 dwellings and there will likely be intensification of the existing urban area.

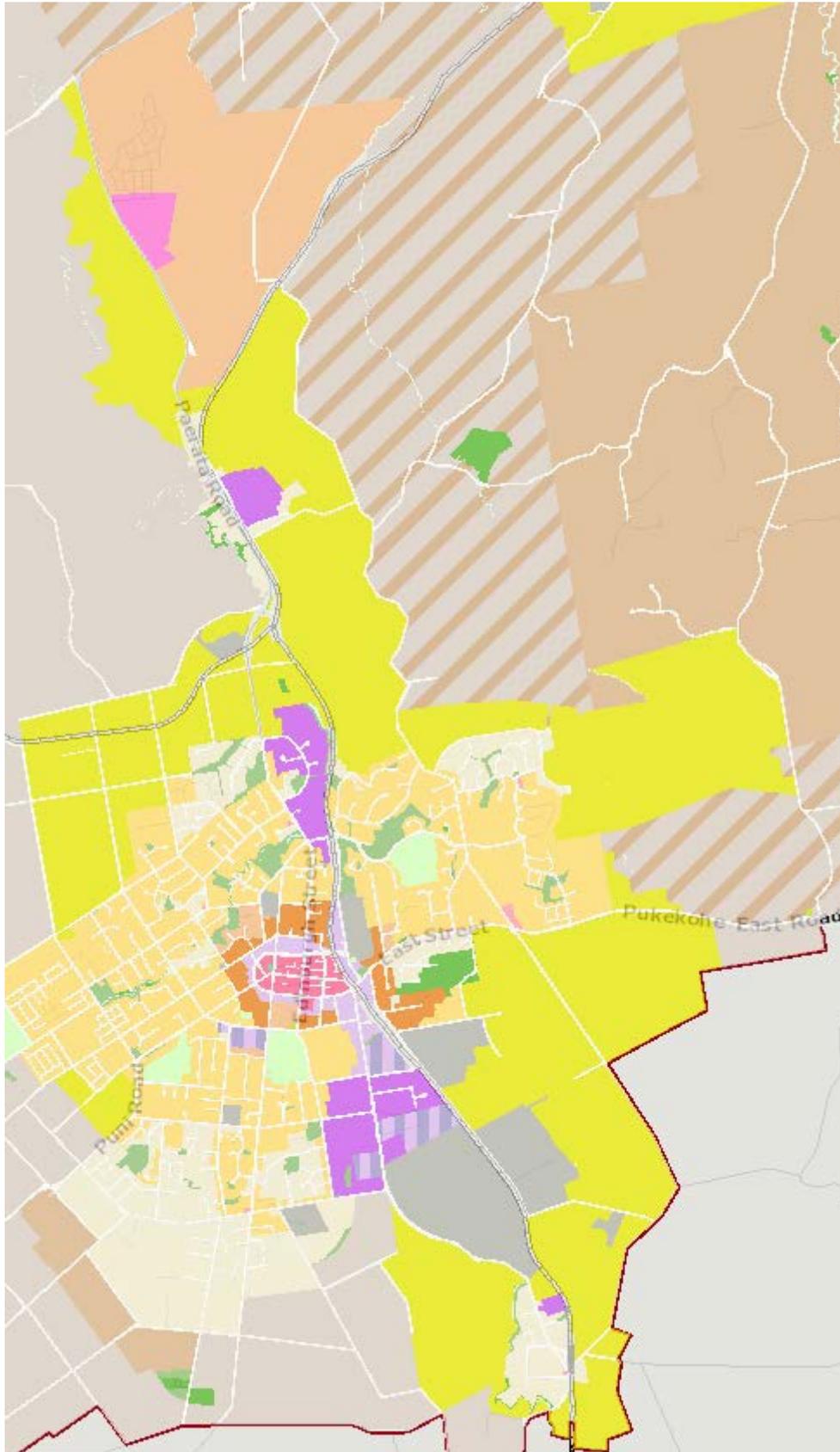


Figure 1: Pukekohe/Paerata structure plan study area (coloured yellow)

3 Existing environment

3.1 Description of study area

There is existing network infrastructure in place to provide both water and wastewater services to the existing urban area in Pukekohe/Paerata. There are currently no constructed assets in the draft structure plan area, although services are being constructed by developers as development occurs. The existing Paerata development has constructed both water and wastewater services, connected to the urban Pukekohe network, to provide these services.

3.1.1 Water

Water is abstracted from the Waikato River and treated at the Waikato water treatment plant. Treated water is then transferred through the Waikato 1 watermain to the Redoubt Road reservoir complex servicing wider Auckland. Pukekohe 1 watermain connected from the Waikato 1 runs along Pukekohe East Road into Pukekohe. This watermain feeds storage reservoirs at Totara Avenue and Kitchener Road reservoirs. The Kitchener Road pump station supplies the Anzac reservoir. The Anzac Road pump station then supplies the Hill Reservoir also on Anzac Road. These reservoirs supply the local networks servicing the individual customers.

In addition to the transmission mains, there are also hundreds of kilometres of smaller diameter pipes in each street, servicing individual customers.

3.1.2 Wastewater

The existing Pukekohe/Paerata wastewater network is predominantly a gravity system, but also includes a number of pump stations, and has limited capacity for population growth. The wastewater network collects wastewater from Pukekohe/Paerata, transferring it to the Pukekohe wastewater treatment plant via the recently constructed Pukekohe transmission pump station at the Pukekohe Raceway. The Pukekohe plant also collects and treats flows from Pokeno and Tuakau as well. Highly treated wastewater is then discharged back into the Waikato River. The treatment plant has recently been granted a 35 year discharge consent by the Waikato Regional Council.

The length of trunk main to the plant is around 7km overall, the majority of which is in the Waikato region. There are also hundreds of kilometres of smaller diameter pipes in each suburb and street, servicing individual customers.

The existing network has capacity during dry weather, but is significantly influenced by wet weather events as rain enters the wastewater network eroding capacity. There is limited capacity to accept additional growth in the existing network. The recently constructed Pukekohe transmission pump station has been constructed to accommodate ultimate future flows from Pukekohe/Paerata, and has capacity for the flows from the structure plan

area, as well as the lived zoned undeveloped land and forecast intensification within the existing urban area.

4 Draft Pukekohe/Paerata Structure Plan

4.1 Overview of draft Pukekohe/Paerata Structure Plan

The draft Pukekohe/Paerata Structure Plan 2019 shows the arrangement of various land uses (residential, business, and parks) and infrastructure. It also shows how these areas connect to adjacent urban areas and wider infrastructure networks. Important cultural values, natural features and heritage values are also addressed.

With the development of the residential zonings shown on the draft Pukekohe/Paerata - Structure Plan 2019, the population of Pukekohe-Paerata could roughly double to a total population of approximately 65,750. The proposed residential zonings will add capacity for around 12,500 new dwellings in the structure plan area. Live zoned land at Paerata adds a further 4,500 dwellings, the live zoned land at Belmont adds 720 dwellings and there will be some intensification within the existing urban area. The draft Pukekohe/Paerata Structure Plan 2019 is also estimated to provide for 5,000 new jobs. These estimates are based on current development feasibility and exclude areas that may not be developable because of constraints.

4.2 Assessment of the Draft Pukekohe/Paerata Structure Plan

4.2.1 Draft Structure Plan Development Yield

The development yield anticipated by the draft structure plan can be serviced for water and wastewater. The above ground assets are generally minimal. Land requirements for these assets vary depending on the population connected to them, and can range from approximately one standard lot size up to four or five standard lots sizes. These lots are created as part of development proposals as required, or located on publicly owned land where appropriate. The land is transferred to Watercare as part of the development, but is not normally designated.

4.2.2 Water

The existing water services to Pukekohe/Paerata will remain operational. There is some capacity to accept additional growth, however these assets are reaching the limits of their ability to provide a water service to a growing community.

There are existing issues within the Pukekohe water network, including low pressure areas, high pressure areas, high headlosses, high velocities, high water age estimates and security of supply concerns. Watercare has recently completed an investigation of the issues and has started an improvement programme. Expected growth within the structure plan area will exacerbate these issues, however infrastructure required to service the expected growth will also offer opportunities for solutions.

To service the full development of the Paerata area a new local service reservoir will be required. It will connect into the existing infrastructure. To service the growth in western Pukekohe a new transmission service reservoir and boost pump station are required. These will be connected to the existing Pukekohe 1 transmission watermain.

Longer term, to give security of supply to Pukekohe a new transmission watermain will be constructed from Drury also connected to the Totara Road reservoir. This main is not required to facilitate growth. It provides source resilience to the community, and will be constructed as necessary to minimise outage risks.

The Runciman Reservoirs are under construction currently. Generally these balancing tanks do not service the structure plan area. The reservoir does however provide resilience to the Pukekohe and Paerata water supply. Under emergency conditions water can be fed to the reservoir from the Drury pump station to the north, and service can be maintained for Pukekohe and Paerata through these reservoirs.

Trunk and local network pipelines providing water to the draft structure plan area are being designed to meet the anticipated yield. Watercare will undertake trunk upgrades and work with developers to upgrade water assets to service the structure plan area as required. As much as practical, water pipelines will follow roading alignments as this is preferred for consenting and access during construction, maintenance and renewal. All new pipelines will consider the future development potential when being designed and constructed. The

majority of these assets will be constructed by developers in conjunction with their development proposals.

The map that shows an indicative servicing plan for transmission water infrastructure in the draft structure plan area is below. As noted above, the majority of the water assets will be constructed by developers as part of their development proposals.

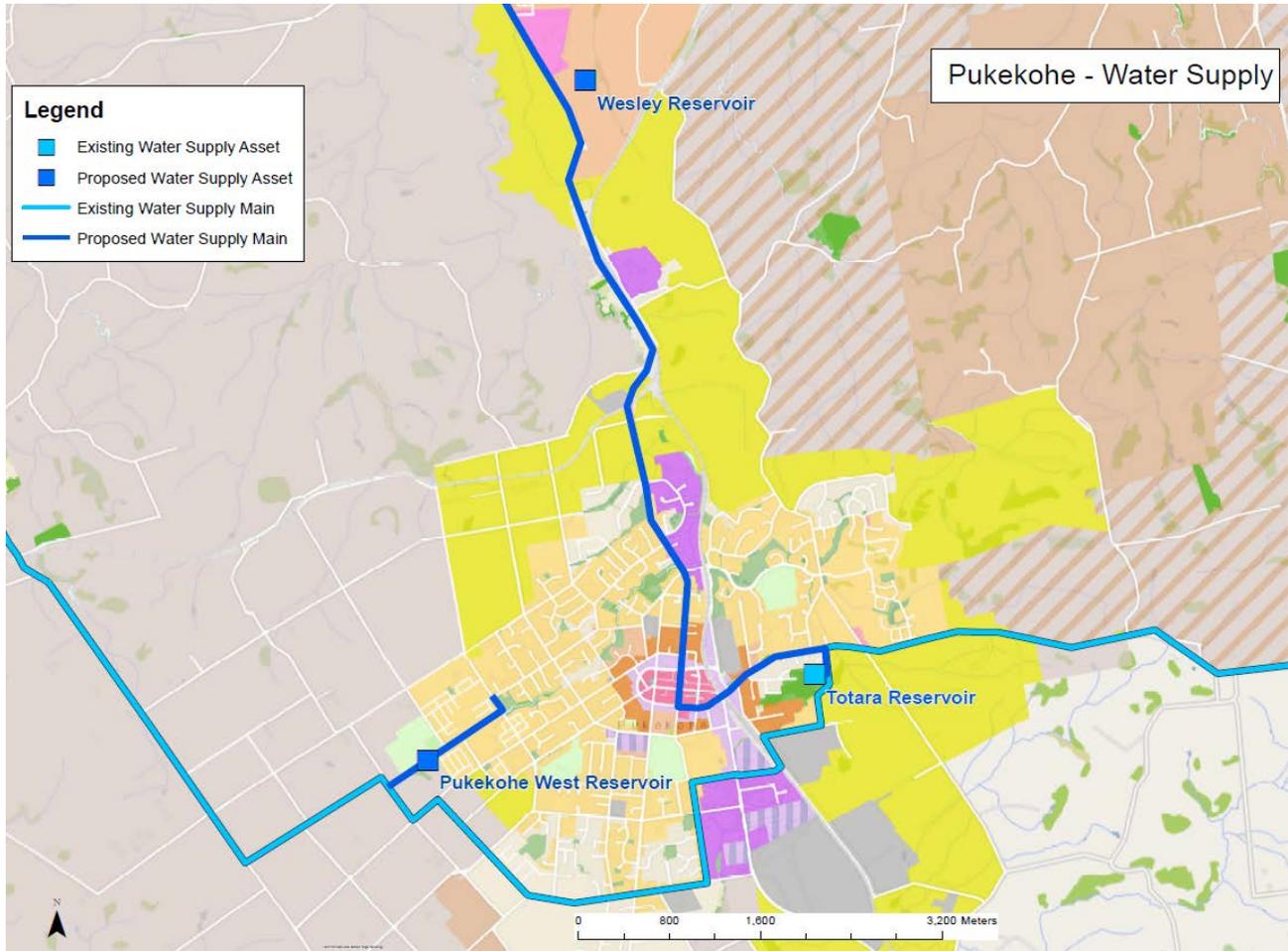


Figure 2: Indicative Pukekohe/Paerata Water Servicing Plan

4.2.3 Wastewater

The northern, north western and north eastern portion of the Pukekohe/Paerata draft structure plan population will connect to the existing wastewater network immediately to the north of the Raceway. A transmission new pump station will be required in the area around Isabella Drive. This new pump station will collect the flows from the northern portion of the structure plan area and transfer the flows to new networks connecting back into the existing network immediately upstream of the Raceway, and then into the existing Pukekohe transmission pump station. The pump station itself and the pipe to the treatment plant have capacity for the expected growth, and will be upgraded as required into the future to accommodate growth outside of the 30 year structure plan timeframes. The

required infrastructure will be staged to meet development, starting with the new transmission pump station near Isobella Drive.

The existing network has limited capacity to accommodate additional flows. A study of the wastewater network is currently underway, to identify the operational and asset options at a more detailed level. Options to provide additional capacity will include operational measures including inflow and infiltration programmes and real time control of the existing pump stations, as well as capital measures upgrading and augmenting the existing network with new infrastructure.

The south eastern portion of the area will connect more directly to the Pukekohe transmission pump station, with most of the wastewater infrastructure constructed by developers, working with Watercare around servicing, as part of their development proposals.

The south western area is likely to require new assets augmenting the existing network. These assets will be constructed by developers and connect into the Pukekohe transmission pump station.

The draft structure plan area will have gravity collector sewers in all catchments, supported by a number of pump stations where required. These assets will be constructed by developers in conjunction with their development proposals.

Trunk and local network pipelines collecting and conveying wastewater from the structure plan areas are being sized to meet the anticipated development yield. While gravity wastewater networks are heavily influenced by local topography, as much as practical pipelines will follow roading alignments as this is preferred for consenting and access during construction, maintenance and renewal. All new pipelines will consider the upstream and downstream development potential when being designed and constructed. Watercare will undertake trunk upgrades and work with developers to upgrade wastewater assets to service the structure plan area as required.

The map that shows an indicative servicing plan for wastewater infrastructure in the draft structure plan area is below. This includes assets expected to be constructed by Watercare, as well as assets servicing the local catchments, expected to be constructed by developers.

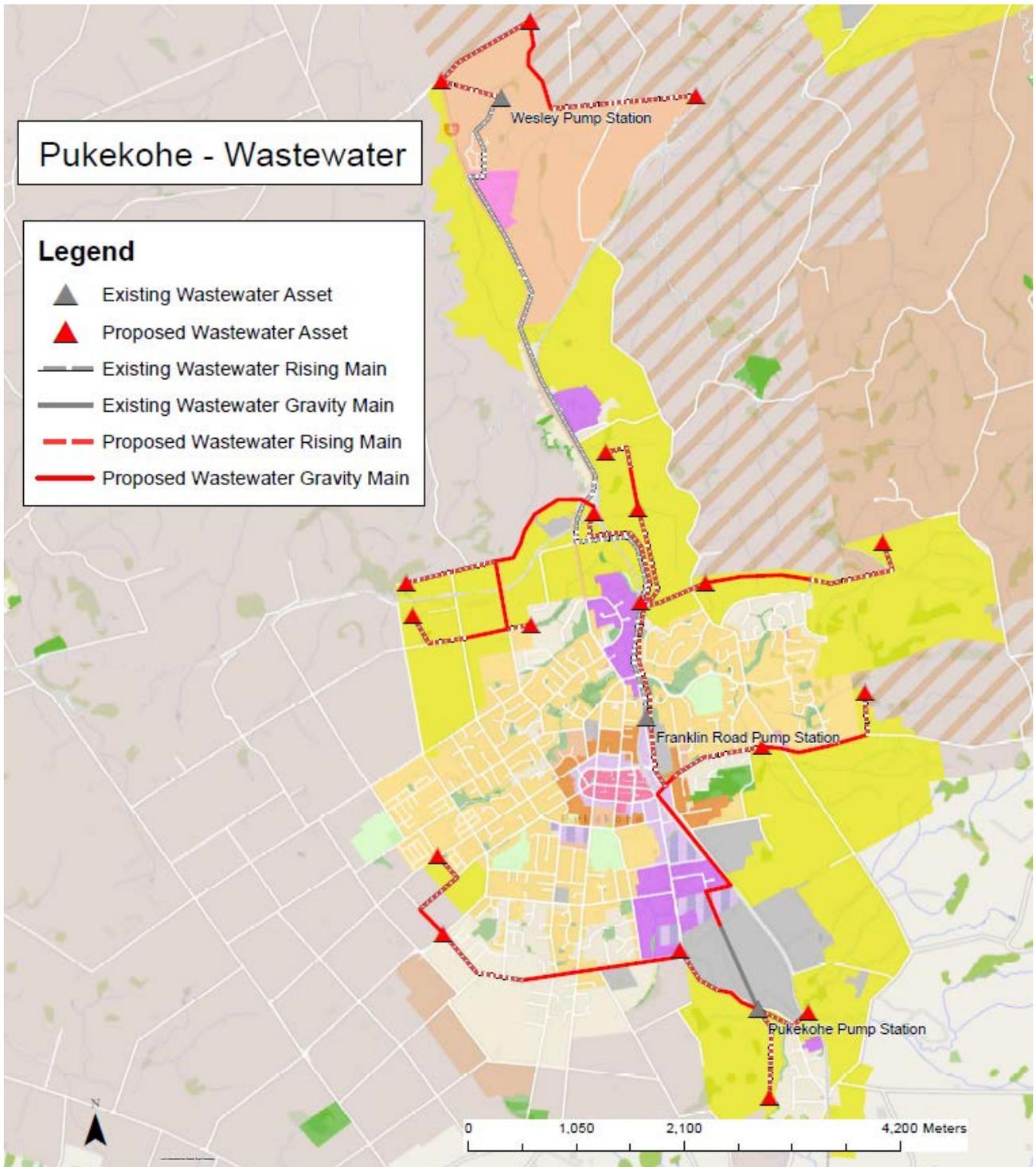


Figure 3: Indicative Pukekohe/Paerata Wastewater Servicing Plan

4.2.4 National Policy Statement/s

4.2.4.1 National Policy Statement on Urban Development Capacity 2016 (NPS-UDC)

Auckland is defined as high growth area (by MFE guidance), and accordingly there are a number of objectives which must be implemented to give effect to the NPS-UDC. In particular, Objective OD1 of the NPS-UDC requires the integration of urban growth and

infrastructure. Objective D1 is delivered in part by Policy A3 which applies to any urban environment that is expected to experience growth.

Policy A3: When making planning decisions that affect the way and the rate at which development capacity is provided, decision-makers shall provide for the social, economic, cultural and environmental wellbeing of people and communities and future generations, whilst having particular regard to:

a) Providing for choices that will meet the needs of people and communities and future generations for a range of dwelling types and locations, working environments and places to locate businesses;

b) Promoting the efficient use of urban land and development infrastructure and other infrastructure; and

c) Limiting as much as possible adverse impacts on the competitive operation of land and development markets.

The key messages from the NPS-UDC is to provide a range of housing choice, efficient use of land and infrastructure and provide for current and future people and communities.

4.2.4.2 National Policy Statement for Freshwater Management 2014

The National Policy Statement for Freshwater Management (Freshwater NPS) provides direction for the council on the management of freshwater. The council must give effect to the Freshwater NPS through the provisions of AUPOP – notably through RPS B7.4 and the Auckland-wide provisions. Some of these provisions are relevant to structure planning.

Wastewater

(10) Manage the adverse effects of wastewater discharges to freshwater and coastal water by all of the following:

(a) ensuring that new development is supported by wastewater infrastructure with sufficient capacity to serve the development;

(b) progressively reducing existing network overflows and associated adverse effects by all of the following:

(i) making receiving environments that are sensitive to the adverse effects of wastewater discharges a priority;

(ii) adopting the best practicable option for preventing or minimising the adverse effects of discharges from wastewater networks including works to reduce overflow frequencies and volumes;

(iii) ensuring plans are in place for the effective operation and maintenance of the wastewater network and to minimise dry weather overflow discharges;

(iv) ensuring processes are in place to mitigate the adverse effects of overflows on public health and safety and the environment where the overflows occur;

(c) adopting the best practicable option for minimising the adverse effects of discharges from wastewater treatment plants; and

(d) ensuring on-site wastewater systems avoid significant adverse effects on freshwater and coastal water.

Freshwater and geothermal water quantity, allocation and use

(11) Promote the efficient allocation of freshwater and geothermal water by all of the following:

(a) establishing clear limits for water allocation;

(b) avoiding over-allocation of water, including phasing out any existing overallocation;

(c) safeguarding spring flows, surface waterbody base flows, ecosystem processes, life-supporting capacity, the recharge of adjacent aquifers, and geothermal temperature and amenity; and

(d) providing for the reasonable requirements of domestic and municipal water supplies.

(12) Promote the efficient use of freshwater and geothermal water.

(13) Promote the taking of groundwater rather than the taking of water from rivers and streams in areas where groundwater is available for allocation.

(14) Enable the harvesting and storage of freshwater and rainwater to meet increasing demand for water and to manage water scarcity conditions, including those made worse by climate change.

4.2.5 Auckland Plan 2050 (2018)

The Auckland Plan 2050 (“Auckland Plan”) is a long-term spatial plan to ensure Auckland grows in a way that will meet the opportunities and challenges of the future.

The Development Strategy in this plan and 30-year Infrastructure Strategy address the prioritisation, sequencing and funding of essential infrastructure. This includes requirements under the National Policy Statement on Urban Development Capacity to provide sufficient feasible development capacity in the medium and long term.

Within the Auckland Plan, Pukekohe/Paerata structure plan area is defined as a satellite town functioning as the major rural node in the south of Auckland. It provides a range of services to the surrounding rural areas. Significant future employment growth is anticipated alongside residential growth.

The Auckland Plan is a critical document in future Resource Management Act 1991 processes in Auckland. It will be a key driver of future plan changes to Unitary Plan, including Council-initiated and private plan changes to "live zone" future urban areas. It will also be relevant for the assessment of future resource consent applications. The Auckland Plan has close links with the Future Urban Land Supply Strategy. The strategy informs the greenfield element of the Auckland Plan Development Strategy which makes up a portion of the overall growth anticipated over the next 30 years. The FULSS sets out sequencing for the release of development ready land (large future urban areas).

4.2.6 Future Urban Land Supply Strategy

The purpose of the Future Urban Land Supply Strategy (FULSS 2017) is to identify the sequencing and timing of future urban land for development over a 30-year timeframe. This is to integrate supply of greenfield land for development and provision of infrastructure. The proposed sequencing of development ready future urban zoned land in Pukekohe/Paerata is as follows:

- Paerata (Wesley) (live zoned now)
- Paerata (remainder) (Decade One 1st half 2018-2022)
- Pukekohe (Decade One 2nd half 2023-2027)

This strategy also addresses the council's obligations under The NPS-UDC which requires the council to ensure there is greater focus on enabling urban development and that there is sufficient capacity for housing and businesses. As noted in section 4.1.1, NPS-UDC requires the integration of urban growth and infrastructure.

4.2.7 The Auckland Unitary Plan (Operative in Part) (2016)

Regional Policy Statement

The Regional Policy Statement (RPS) is part of the AUPOP. It sets out the overall strategic framework for Auckland. Sections B1 to B10 of the RPS all have varying degrees of relevance to structure planning.

Of particular relevance is Section B3 – Infrastructure, which sets out objectives and policies relating to infrastructure. Policy 5 for example, requires that Infrastructure planning and land use planning are integrated to service growth efficiently. Policy 6 requires that Infrastructure is protected from reverse sensitivity effects caused by incompatible subdivision, use and development.

B3. - Infrastructure, transport and energy

B3.2.1. Objectives

- (1) Infrastructure is resilient, efficient and effective.
- (2) The benefits of infrastructure are recognised, including:

- (a) providing essential services for the functioning of communities, businesses and industries within and beyond Auckland;
 - (b) enabling economic growth;
 - (c) contributing to the economy of Auckland and New Zealand;
 - (d) providing for public health, safety and the well-being of people and communities;
 - (e) protecting the quality of the natural environment; and
 - (f) enabling interaction and communication, including national and international links for trade and tourism.
- (3) Development, operation, maintenance, and upgrading of infrastructure is enabled, while managing adverse effects on:
- (a) the quality of the environment and, in particular, natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, Mana Whenua, natural resources, coastal environment, historic heritage and special character;
 - (b) the health and safety of communities and amenity values.
- (4) The functional and operational needs of infrastructure are recognised.
- (5) Infrastructure planning and land use planning are integrated to service growth efficiently.
- (6) Infrastructure is protected from reverse sensitivity effects caused by incompatible subdivision, use and development.
- (7) The national significance of the National Grid is recognised and provided for and it's effective development, operation, maintenance and upgrading are enabled.
- (8) The adverse effects of infrastructure are avoided, remedied or mitigated

In terms of RPS relevant objectives, it is noted that:

- The proposed Water and Wastewater Servicing plan generally integrates land use and infrastructure to service future growth of the Pukekohe/Paerata Structure Plan area efficiently
- The Plan will provide essential services for the functioning of communities, businesses and industries within and beyond Pukekohe/Paerata;
- Proposed water and wastewater infrastructure is protected from reverse sensitivity effects caused by incompatible future subdivision, use and development.

Chapter E26 of the Auckland-Wide provisions sets out District Level objectives, policies and rules relating to infrastructure. These provisions provide a framework for the development, operation, use, maintenance, repair, upgrading and removal of infrastructure.

The plan recognises that Infrastructure is critical to the social, economic, and cultural well-being of people and communities and the quality of the environment. This means that in some circumstances other activities and development need to be managed in a way that does not impede the operation of infrastructure.

The plan also acknowledges that as well as benefits infrastructure can have a range of adverse effects on the environment, visual amenity of an area, and public health and safety. The sensitivity of adjacent activities, particularly residential, to these effects can lead to complaints and ultimately constraints on the operation of infrastructure. Managing these reverse sensitivity effects is essential.

E26. Infrastructure

E26.2.1. Objectives [rp/dp]

- (1) The benefits of infrastructure are recognised.
- (2) The value of investment in infrastructure is recognised.
- (3) Safe, efficient and secure infrastructure is enabled, to service the needs of existing and authorised proposed subdivision, use and development.
- (4) Development, operation, maintenance, repair, replacement, renewal, upgrading and removal of infrastructure is enabled.
- (5) The resilience of infrastructure is improved and continuity of service is enabled.
- (6) Infrastructure is appropriately protected from incompatible subdivision, use and development, and reverse sensitivity effects.
- (9) The adverse effects of infrastructure are avoided, remedied or mitigated

In relation to the relevant District level Infrastructure provisions,:

- The proposed water and wastewater plan will enable the safe, efficient and secure infrastructure to service the needs of existing and authorised proposed subdivision, use and development in Pukekohe/Paerata
- The proposed water and wastewater plan will provide for resilient infrastructure in the Structure Plan area as improved and continuity of service is enabled.

5 Conclusion

Overall it is considered that the yield from the draft structure plan, as well as the live zoned undeveloped land and intensification in the existing urban area, can be serviced for water and wastewater.

Future water connections to existing transmission networks are required to service this structure plan area. Watercare is engaging with the current developers to consider the shorter term infrastructure needs. A water servicing blue print has been developed to support longer term growth aspirations. Trunk and local network pipelines providing water to the draft structure plan area will be designed to meet the anticipated development yield.

Wastewater will be connected to the existing Pukekohe transmission pump station, and conveyed to the Pukekohe wastewater treatment plant. The Pukekohe transmission pump station and associated downstream infrastructure has recently been constructed, sized to service expected ultimate growth. The Pukekohe wastewater treatment plant has recently had a new discharge consent granted and the upgrade process is underway to meet required growth and consent requirements. Trunk and local network pipelines collecting and conveying wastewater from the draft structure plan area will be sized to meet the anticipated development yield.

The majority of the water and wastewater assets for the structure plan area will be constructed by developers, in discussion with Watercare, to service their developments.

