BEFORE THE AUCKLAND UNITARY PLAN INDEPENDENT HEARINGS PANEL

IN THE MATTER	of the Resource Management Act 1991 and the Local Government (Auckland Transitional Provisions) Act 2010
AND	
IN THE MATTER	of Topics: 059 Residential objectives and policies; 060 Residential activities; 062 Residential development controls; and 063 Residential controls and assessment
AND	
IN THE MATTER	of the submissions and further submissions set out in the Parties and Issues Report

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STATEMENT OF PRIMARY EVIDENCE DAVID COLIN BLOW ON BEHALF OF AUCKLAND COUNCIL

WATERCARE – RESIDENTIAL ZONES

8 September 2015

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1. SUMMARY

1.1 My full name is David Colin Blow. I am the Strategy and Planning Manager at Watercare Services Limited (**Watercare**). My evidence explains the provision of water supply and wastewater network services as it relates to the Residential Zone provisions.

1.2 Watercare is the Council Controlled Organisation responsible for providing public water supply and wastewater services in Auckland. On 1 November 2010, Watercare transformed into an organisation serving approximately 1.4 million people within its Area of Service. In addition to connections to its wastewater network, Watercare also supplies quality drinking water to around 1.3 million Aucklanders, collected from 10 dams, as well as from rivers and underground springs. Watercare's asset base, which previously included only transmission infrastructure for both water supply and wastewater, now incorporates local networks as inherited from the former territorial authorities and Local Network Operators. Watercare's asset base in total is now valued at $8.1 billion.

1.3 The Proposed Auckland Unitary Plan (**PAUP**), notified by Auckland Council (**Council**) in September 2013, has regard to the strategic direction of the Auckland Plan. Watercare's Asset Management Plan sets out how Watercare will operate, maintain and renew existing assets and provide new assets to meet current demands and service standards for the foreseeable future in accordance with the direction set by the Auckland Plan.

1.4 Since the PAUP was notified and following mediation with submitters, the Council has proposed changes to the development controls in the Residential Zones with the aim of providing for more intensification and flexibility. These changes include the removal of density controls in those zones that included them in the notified PAUP. These changes provide for a significant uplift in development capcity within the Residential Zones, thus enabling further intensification.

1.5 Watercare supports intensification because it enables the efficient use of existing infrastructure. As I have previously discussed in my evidence for Topic 013 RPS Urban Growth, intensification puts pressure on the existing

network because it has not been designed to accommodate the level of development envisioned by Auckland Council in the PAUP. The challenge for Watercare is to know when and where to focus network upgrades to accommodate development within the existing urban areas. The other challenge is knowing how to plan for the total level of development, particularly with the removal and/or change to residential density controls.

1.6 Watercare's network is planned and managed to provide for both new and existing customers. Those customers who are connected to Watercare's network require a Level of Service consistent with Watercare's statutory obligations and its Statement of Intent. This is one of three key business driver for Watercare and reflects the organisation's determination to develop, maintain and renew assets to a high standard across the network.

1.7 A second key business driver is growth. Watercare seeks to implement the Council's vision for a quality compact city in accordance with section 58 of the Local Government (Auckland Council) Act 2009. The Regional Policy Statement (**RPS**) provisions in the PAUP provide clarity to Watercare as an infrastructure provider, and the Residential Zone of the PAUP assist it to understand the potential for growth within certain locations across the region.

1.8 Watercare has developed a set of Service Categories to inform planning and funding for the growth component of the Watercare infrastructure capital programme in accordance with the growth patterns projected at the time the PAUP was notified. The challenge is with the changes requested to development patterns within Auckland (which will be influenced in part by changes to the density controls), a lot more development can occur within the Residential zones.

1.9 What is unknown is the timing and quantum of growth that will occur through intensification of the existing area of metropolitan Auckland. The issue confronting Watercare is how it plans for the additional growth, which is further challenged by the unpredictable nature of change as well as the quantitative information currently available to inform infrastructure planning.

1.10 Watercare's catchments perform differently. Parts of the network are capable of accommodating significant growth immediately while parts of the network cannot cater for any growth at present. All parts of the network are capable of

being upgraded to accommodate growth, however Watercare seeks to understand the Council's specific plans for growth, current population data, and feasible development capacity so that it can anticipate and cater for growth as and where it occurs.

1.11 It is necessary to understand how different parts of the network cope with growth. Generally Watercare's metropolitan network is better able to accommodate intensification whereas non-metropolitan plants that treat wastewater conveyed from satellite towns and serviced villages (which comprise a residential zone) are less capable to receiving new connections.

1.12 The proposed development controls DI.7.20 (Mixed Housing Suburban zone), DI.8.21 (Mixed Housing Urban zone) and DI.9.18 (Terraced Housing Apartments and Buildings zone) are very important to the efficient functioning of Watercare's network. It is necessary for Watercare to have the means to manage connections to its network while planning for growth via its works programme.

2. INTRODUCTION

2.1 My full name is David Colin Blow. I am the Strategy and Planning Manager at Watercare; a role I have had since May 2006. My prior roles include Infrastructure Planning Manager, Asset Planning Manager, Projects Manager, and Wastewater Planning Manager at Watercare, and Project Co-Ordinator and Drainage Construction Engineer at the Auckland Regional Council.

2.2 I have a Bachelor of Engineering (Civil) and a Diploma of Business (Information Systems) from the University of Auckland.

2.3 I am a Chartered Professional Engineer and I am a member of the Institution of Professional Engineers New Zealand (IPENZ). I have 35 years of professional experience in the design, operations, planning and management of water and wastewater services. This includes responsibility for the planning and development of the water and wastewater infrastructure to meet the current and future water supply and wastewater needs of the Auckland region. Details of my qualifications and experience are set out in **Attachment A**.

3. SCOPE

3.1 My evidence will address:

(a) the structure and responsibilities of Watercare;

(b) the relationship between Auckland Council's objectives set out in the RPS provisions of the PAUP and the Auckland Plan (the Council's strategic direction), and how Watercare contributes to the implementation of those objectives through its internal planning and asset management processes;

(c) the processes that Watercare undertakes to plan for and fund a balanced programme of capital investment through its Asset Management Plan to address levels of service, asset renewal, and growth;

(d) Watercare's role in enabling development, including the application of Service Categories;

(e) Watercare's initial assessment of the impact of Auckland Council's proposed changes to residential density to its wastewater network; and

(f) the role of Auckland Council's proposed development controls.

4. STRUCTURE AND RESPONSIBILITIES OF WATERCARE

4.1 The scale and function of Watercare's responsibilities as a Council Controlled Organisation is discussed in my evidence for Topic 013 (RPS Urban Growth - RPS B2.1, B2.3 and B2.5).

4.2 As discussed in Mr Raveen Jaduram's evidence in Topic 012 (RPS Significant Infrastructure and Energy – RPS B3.2), Watercare supplies 330 million litres of treated water a day, treats around 380 million litres of wastewater a day, and operates and maintains over 16,000 km of water supply and wastewater network. The existing bulk water supply system – as well as Watercare's proposed bulk Water supply projects – is shown as

Attachment B. The existing bulk wastewater network – as well as Watercare's proposed bulk wastewater network projects – is shown as **Attachment C**.

5. FACILITATING THE STRATEGIC DIRECTION OF AUCKLAND COUNCIL

5.1 Watercare is required to give effect to the relevant aspects of the Long Term Plan, and in accordance with section 58 of the Local Government (Auckland Council) Act 2009 to "act consistently" with the relevant aspects of any other plan or strategy of Auckland Council. As such, Watercare takes direction in planning for growth from Auckland Council. Key strategic documents that set out the direction for growth include: the Auckland Plan, Local Area Plans, and RPS in the PAUP. Direction is also included in non-statutory strategies and programmes currently under development such as the Infrastructure Strategy and the Future Urban Land Supply Strategy. Council also provides direction via the Statement of Intent.

5.2 As discussed in my evidence for Topic 013 (RPS Urban Growth - RPS B2.1, B2.3 and B2.5), a compact urban form with the majority of new urban growth enabled in the metropolitan area 2010 as outlined in the RPS of the PAUP will assist Watercare to deliver efficient and affordable water supply and wastewater services for Auckland. A quality compact urban form with a 70:40 focus of providing for new urban growth outside and inside the metropolitan area 2010 will in my view assist Watercare to deliver efficient and affordable water supply and wastewater services for Auckland.

5.3 As discussed in Mr Jaduram's evidence in Topic 012 (RPS Significant Infrastructure and Energy – RPS B3.2), Watercare's ability to deliver its programme in an efficient and cost effective manner will be a key determinant in Auckland achieving its strategic direction and is fundamental to Auckland's ability to:

(a) meet the substantial demand for affordable housing, housing, offices, factories, commercial and public facilities;

(b) minimise the environmental effects of the network on freshwater and marine environments;

(c) optimise the cost of upgrading and operating the network; and

(d) meet the cultural values of Tangata Whenua.

6. ASSET MANAGEMENT PLAN – WATERCARE'S TOOL FOR RESPONDING TO BUSINESS DRIVERS

6.1 As discussed in my evidence in Topic 013 (RPS Urban Growth RPS – B2.1, B2.3 and B2.5), Watercare prepares a 10-year Asset Management Plan (**AMP**) that guides the cost effective maintenance, renewal and incremental expansion of the water supply and wastewater network in order to accommodate growth and support the long-term strategic goals of Auckland Council. The AMP is updated every year to align with Auckland Council's Annual Plan and Long Term Plan process. It also allows Watercare to adjust its works programme to reflect Auckland Council's revised growth forecasts and priorities over time.

6.2 Watercare responds, via the AMP, to the strategic direction for growth and development in the region. Watercare's overall asset management objective is to operate, maintain, replace and develop assets over the long term to meet delivery standards for levels of service and foreseeable future needs at a minimum cost to customers collectively.

6.3 Watercare plans a significant $4.2 billion capital works programme to be undertaken over the ten-year period of the AMP. Watercare has three main drivers of investment:

(a) levels of services: to facilitate compliance with legislation and provide operational efficiency to enable continual improvement in service delivery across the region. This constitutes approximately 25 per cent of Watercare's capital investment;

(b) renewals: the replacement of assets is derived from the age profiles, maintenance histories and on-going condition assessment and risk analysis work. Capital works are prioritised according to the probability and/or consequence of system failure. This constitutes approximately 30 per cent of Watercare's capital investment; and

(c) growth: is based on forecast increases in population and changes in land use, provided to Watercare by Auckland Council, and daily water demand. Optimal planning for growth also requires certainty around where the growth will take place and the quantum of growth to ensure that infrastructure is built on time and in the right location to meet desired service levels. This constitutes approximately 45 per cent ($1.9 billion) of Watercare's capital investment.

6.4 Watercare's AMP contributes to the achievement of the relevant 30-year outcomes set out in the Auckland Plan. The strategic asset management response to growth and demand management aims to:

(a) identify strategies to manage the gap between anticipated demand and current asset capacity;

(b) enable staged development of new assets to meet future demand over time, and

(c) optimise utilisation of resources by considering demand management strategies and other non-asset based solutions.

6.5 Although the focus of the AMP is a 10-year horizon, internally Watercare undertakes longer term planning to ensure that short, medium and long-term decisions are well informed.

7. ENABLING DEVELOPMENT

7.1 Watercare's role is to enable the provision of infrastructure necessary to support development in Auckland. It seeks to support residential, commercial and industrial development that is consistent with Auckland Council's growth strategy.

7.2 As discussed in my evidence in Topic 013 (RPS Urban Growth RPS – B2.1, B2.3 and B2.5), Watercare has developed a set of Service Categories to inform planning and funding for the growth component of the Watercare infrastructure capital programme:

(a) Category 1: Developments within Watercare's Area of Service (generally the existing urban area);

(b) Category 2: Developments that are in the RUB and are contiguous with Watercare's Area of Service;

(c) Category 3: Developments that are in the RUB but not contiguous with Watercare's Area of Service; and

(d) Category 4: Outside of the RUB (Watercare will not provide service outside the Rural Urban Boundary).

7.3 The proposed Service Categories are designed to provide greater clarity to the development community as to Watercare's approach to managing development, while facilitating Auckland Council's growth expectations for the Auckland region. These Service Categories will inform Watercare's future AMP and assist in the prioritisation of capital investment and generally align with the approach to managing growth outlined in B2.1, B2.3 and B2.5 of the RPS.

7.4 Watercare funds its trunk infrastructure (i.e. regional plants and transmission pipes) through its significant capital works programme. Local reticulation infrastructure is funded by the developer at the time of a new development that connects to Watercare's network.

7.5 Where Watercare does not have funding in its AMP, any new assets need to be funded by the development community. Where Watercare has identified funding in its AMP but a developer wants a project brought forward, the developer will be required to fund the consequential cost, noting that other projects may be subject to a re-sequencing of priorities.

7.6 Watercare seeks to provide new infrastructure and the augmentation of existing infrastructure to cater for upgrades. Extensions to the network are done on a 'just in time' basis to ensure effective and optimal utility over the life of its assets. This approach means that Auckland Council's planning and in particular the growth sequence outlined in a land release programme followed by structure planning (referred to in the policies of B2.3 and Appendix 1.1 of the RPS) very important to Watercare's planning.

7.7 As discussed in my evidence in Topic 013 (RPS Urban Growth RPS – B2.1, B2.3 and B2.5), Watercare has more than 200 projects currently underway, including significant capital projects tailored to cater for growth within its Area of Service. Examples of significant capital projects include the Northern Interceptor, which has a capital cost of $300 million, and the Central Interceptor, which has a capital cost of $1 billion. These and other capital projects are designed to meet required service levels and foreseeable future needs.

The role of Residential Zones

7.8 The increased rate of population growth that is forecast to occur requires the Council to provide current and ongoing information on the feasible development capacity within metropolitan Auckland. Prioritisation and sequencing of individual areas will be required, as it is not possible for Watercare to upgrade all infrastructure throughout the region at the same time.

7.9 When planning for growth, Watercare takes direction from Auckland Council. Key strategic documents that set out the direction for growth include: the Auckland Plan, Local Area Plans and the RPS. Watercare has assessed the available spare capacity within the existing water and wastewater networks and has identified that it currently has capacity for 45,000 additional dwellings throughout the city. This current capacity is designed to support targeted growth and development in given areas.

7.10 This capacity is allocated as requests are received for new connections. Accessing trunk water or wastewater capacity is not a constraint to commencing development on any Special Housing Area (**SHA**) site. In some locations, however, the water supply or wastewater network is already at maximum capacity. In these areas the construction of additional network capacity is necessary to ensure that the levels of service are not compromised.

8. ASSESSING THE IMPACT OF CHANGES IN DEVELOPMENT CONTROLS ON THE PERFORMANCE OF WATERCARE'S WASTEWATER NETWORK

8.1 Watercare plans for and manages its network as a whole:

(a) Regional plants;

(b) Transmission pipes; and

(c) Pump Stations and local conveyance pipes.

8.2 Watercare is working to consider a range of growth and development scenarios and the potential impact of each scenario on Watercare's network performance. This information will in turn inform future system improvement costs to meet Level of Service (**LOS**) requirements.

8.3 Watercare is now working to model the impact of the amended residential provisions supplied by Auckland Council, which are set out in proposed amendments to Residential Zone 059 – 063. Development within Watercare's Area of Service puts pressure on Watercare to upgrade the network as it has not historically been designed to accommodate the level of development that would be possible if the amended density controls become operative. While development may be enabled by upzoning permitted under the PAUP, it is generally driven by market demand.

8.4 The key challenge for Watercare is to analyse and understand the changing trends in market demand and investment enabled by upzoning as well as changes to market demand; and build into the planning model the capacity to change the timing and quantum of investment. The majority of areas in the Auckland region have capacity for further wastewater connections. However, where certain locations have reached or are nearing capacity, temporary restrictions that limit new wastewater connections may be required until Watercare can expand its network.

8.5 The timing of upgrades to Watercare's existing network will depend on a range of factors:

(a) the extent and timing of any additional development;

(b) the availability of funding;

(c) capacity within the construction industry, and

(d) the condition of the asset.

8.6 Auckland Council's revised Feasible Enabled Capacity Model (August 2015) maps the feasible development potential under the amended residential provisions. This includes 181,600 residential dwellings. This represents an increase from the 64,400 dwellings proposed under the PAUP as notified in September 2013.

8.7 Watercare notes that Housing New Zealand (**HNZ**) owns over 30,800 properties in the Auckland region. The HNZ property portfolio is therefore significant and needs to be considered in addition to the Council's development described in 8.6 (above). HNZ has carried out its own modelling of the potential increase to the allowable number of dwellings within its existing property portfolio under the proposed amendments to the residential provisions under PAUP. We have also developed as a number of scenarios for the redevelopment of Housing New Zealand's property portfolio based on: (a) our understanding of the location of its properties throughout the region, and (b) HNZ's zone requests as set out in submission 839.

8.8 Information regarding the feasible development capacity (including Housing New Zealand) allows Watercare to gain a better understanding of potential development in a spatial context. This allows Watercare to model the impact of development scenarios spatially across its network.

8.9 I discuss a case study to illustrate the impact on Watercare's network planning.

Case Study: Rosedale Strategic Management Area (SMA)

8.10 Watercare has assessed the effects of brown and greenfields growth in the Rosedale Strategic Management Area (SMA) on its wastewater transmission network. The Rosedale SMA is based on the strategic wastewater computer model developed for the former North Shore City Council (NSCC) as part of

its Project CARE (Council Action in Respect of the Environment) in 2006-2008.

8.11 The design level of service target for the Project CARE capital works programme was to achieve a containment standard for the North Shore's wastewater network of no more than two wastewater overflows per year on average by 2021. The Project CARE wastewater network computer model has been in use and incremental development for over 15 years. Because of this lengthy development, Watercare has confidence in the outputs from the model.

8.12 Watercare is investigating areas targeted for intensification and development to understand the current Level of Service, i.e. for the current growth projections (planned growth) whether the locations already fail wastewater Level of Service targets e.g. for dry weather overflows and uncontrolled overflows. Planned urban intensification provides significant economic benefits, including:

(a) encouraging growth to occur in areas that have latent network capacity; and

(b) encouraging growth to occur in areas where Watercare has performance issues that require rectification (i.e. solutions can be sized to incorporate growth in a cost effective manner and therefore growth can be accommodated).

8.13 The Rosedale case-study on growth showed:

(a) a decreasing capital works cost per person when the growth occurs as planned intensification of housing within existing urban areas (see paragraph 7.2: Category 1); and

(b) providing infrastructure for unplanned growth (i.e. growth not anticipated in Watercare's development model) within existing urban areas costs approximately 50 per cent more than planned growth[1]. However, the range of zones and the inclusion of 'locational' aspects

[1] The Base model used the old North Shore District Plan land use information and Auckland Council's Auckland Residential Futures Model (ARFM) – Medium Population Projection Model v16 developed in 2008.

on the Objectives and Policies will assist Watercare to plan for infrastructure to cater for future growth through the intensification of its Area of Service.

8.14 The important message from this case study is that Watercare cannot upgrade services to all growth areas at once due to financial and industry constraints. Therefore Watercare's response to population growth needs to be managed in a prioritised way that meets and aligns with Auckland Council's strategic objectives, supports market demand and optimises the use of existing assets.

8.15 To plan for growth effectively Watercare requires accurate population projections and where possible indicative information on the possible form of the development, e.g. size, location and timing. The more accurate population projections and development data, the more effective Watercare's infrastructure planning can be to appropriately size the infrastructure required to service demand Underestimating population growth will mean that the infrastructure will need to be duplicated sooner than is necessary, while overestimating population growth leads to underutilised assets. Both of these scenarios are economically inefficient.

Serviced Villages – retaining the Single House zone

8.16 The Residential Zones include both the metropolitan area of Watercare's network as well as the Serviced Villages identified in the Auckland Plan. Serviced Villages are defined as a settlement comprising an urban area that has access to a wastewater network. Watercare currently provides either full or partial wastewater network coverage to a number of Serviced Villages identified in the PAUP. I highlight this because servicing Residential Zones in these areas presents a challenge because the marginal cost (i.e. cost per household) of a capacity upgrade for these locations is significant and generally higher than for upgrades in the metropolitan Area of Service.

8.17 Watercare has assessed the impact of changes to the density controls on the Serviced Villages that comprise a Single House zone. As a general statement the wastewater network in the Serviced Villages is the least resilient and a number of non-metropolitan wastewater treatment plants are subject to significant capacity constraints. Retaining a Single House zone is

important in these areas of constraint, and additional subdivision controls may also be required to limit growth in accordance with available capacity:

(a) **Clarks Beach**: The Clarks Beach wastewater treatment plant treats wastewater from Clarks Beach, Glenbrook Beach and Waiau Beach. This plant is near capacity and should not be identified as a plant that can take new connections. Watercare is currently preparing a consent application to enable a significant plant upgrade, but cannot accept new connections until discharge consent has been granted and upgrade works are completed;

(b) **Maraetai**: Maraetai's service location is Beachlands. Recent projects have been delivered to service the known growth at the Beachlands Village and Pine Harbour marina, including an upgrade to the Te Puru pump station. There are known issues with inflow and infiltration in the network, and the capacity of the network is sensitive to the location of likely growth. Some of the pump stations are already at their theoretical capacity, although still compliant with the network discharge consent conditions. However, further capital works would likely be required to accommodate significant future development;

(c) **Omaha**: The Omaha wastewater treatment plant treats wastewater from Matakana, Omaha and Point Wells. This plant has consent and plant capacity for 5,500 people. While the population served is below capacity, the peak summer capacity more than triples. This plant is currently subject to a consenting process to replace the expired discharge consent, and until this process is finalised significant further connections are problematic; and

(d) **Patumahoe**: Patumahoe is connected to the Pukekohe wastewater network by the Fletchers Road pump station, and at 25l/s, is able to service a population of approximately 1,500 people. The existing population is between 650 and 700. However, at the connection to the Pukekohe network, the gravity system is already at capacity and hence there is limited potential to upsize the pump station at Patumahoe any further, due to this downstream constraint.

8.18 While Watercare's non-metropolitan wastewater treatment plants and local network are generally subject to capacity constraints, those constraints can be addressed as Watercare obtains the necessary discharge consents and completes upgrade works. This means carefully monitoring the capacity of the serviced villages and aligning upgrade work to complement the quantum and timing of growth forecast by Auckland Council.

Kawakawa Bay wastewater treatment plant

8.19 Following mediation and further investigation, Watercare advised Auckland Council that the Kawakawa Bay Wastewater Treatment Plant is consented to treat 180m3 of wastewater per day and, at present, receives 65m3 per day, from 254 connections. This means the plant runs at about one third capacity and can accept more connections.

8.20 The Kawakawa Bay wastewater treatment plant is not modular and not readily capable for expansion. Engineering options for how Watercare would manage future demand beyond that plant's capacity would need to be considered in the future.

9. PROPOSED DEVELOPMENT CONTROLS

9.1 The proposed Rules DI.7.20, DI.8.21 and DI.9.18 state:

> There should be adequate capacity ~~in the existing stormwater and wastewater network~~ to service the proposed development through available connections to the public reticulated stormwater, potable water and wastewater networks.

9.2 Worded in this way, the control would allow an application to be turned down by Auckland Council if adequate capacity does not exist and if a suitable alternative is not proposed by the applicant that would allow the proposal to proceed. Watercare supports these development controls as revised.

9.3 The Comprehensive Wastewater Network Discharge Permit (Network Discharge Consent (**NDC**)) requires Watercare to manage the wastewater network to achieve no more than two wet weather overflow events per year at Engineered Overflow Points; or if this cannot be achieved, to determine an Alternative Discharge Frequency based upon a best practicable option. There are currently a number of locations where the two wastewater

overflows per year target is not being met, generally in the combined wastewater network.

9.4 Watercare is developing a Wastewater Network Strategy, to be refreshed at six-yearly intervals, which will outline a prioritised, long-term works programme to achieve the target levels of service of no more than two wet weather overflows per year at Engineered Overflow Points, and which will accommodate future growth. This programme of works is constrained by funding.

9.5 Watercare will need to retain the ability to restrict connections to the network where there is insufficient existing capacity and no planned improvement works, unless a Best Practicable Option to achieve an Alternative Discharge Frequency, as defined by the NDC, can be identified. The majority of areas in the Auckland region have capacity for further wastewater connections. However, certain locations within Auckland have now reached or are nearing their capacity. These areas have temporary restrictions limiting new wastewater connections.

9.6 It is important to note that the option of identifying an Alternative Discharge Frequency is intended for the management of combined networks, which carry both stormwater and wastewater and are designed to spill to the environment in wet weather. Alternative Discharge Frequencies are therefore a targeted tool applicable to certain areas and for use in existing situations that are a legacy issue, and not to allow increased discharge frequencies in separated areas as a response to growth. Watercare's approach is to maintain a complying overflow frequency where this is already being achieved, or prioritising additional growth in areas where projects are being developed and can be sized to address future (growth related) issues.

10. CONCLUSIONS

10.1 In this evidence, I have provided context for Watercare's role and function as a Council Controlled Organisation. Watercare relies upon and responds to Auckland Council's strategic direction, including the location, timing and quantum of growth required to cater for Auckland's future population.

10.2 Watercare's proposed Service Categories will assist Watercare to plan for and manage growth-related development. These Service Categories will inform Watercare's future AMP and assist in the prioritisation of capital investment, while facilitating Auckland Council's growth expectations for the Auckland region.

10.3 The amended development controls proposed by Auckland Council will enable market-driven investment in Residential Zones. Within Watercare's area of service, this will require Watercare to reassess the performance of its network and potentially amend its capital works programme. Watercare will be required to adjust the timing and quantum of its capital works programme to reflect population change and intensification within different parts of its Area of Service.

10.4 Watercare's initial analysis indicates that where growth is planned and has been foreshadowed, Watercare can achieve a decreasing capital works cost per person associated with increased populations. However, unplanned growth triggers an initial high increase in capital works cost per person. Changes to the density provisions will challenge Watercare to better understand the extent of development will be possible (measured in terms of both location and time as well as the quantum of development to occur) as well as the options for enabling growth through the provision (and scale) of infrastructure.

10.5 Watercare will need to ensure that planning for its infrastructure network is informed by ongoing quantitative information about trends in land development (particularly upzoning within the Area of Service). The provision of rigorous and continual information about changing market behaviour allows Watercare to respond to upzoning within the Residential Zone, thus necessitating changes to Watercare's capital works programme.

10.6 The application of proposed Rules DI.7.20, DI.8.21 and D19.18 will enable Watercare to signal where potential new connections can or cannot be accommodated by the existing network. Development controls are only a stop-gap measure so as to allow Watercare to develop options to cater for growth while not breaching the Comprehensive Wastewater Network Discharge Permit. The organisation is focused on managing the wastewater network so as to not limit and minimise wet weather overflows.

David Blow
8 September 2015

ATTACHMENT A

Qualifications and Experience of David Blow

Qualifications & Affiliations

- Bachelor of Engineering (Civil)
- Diploma in Business (Information Systems)
- Registered Engineer
- George S Holmes Memorial Prize recipient for most Meritorious Diploma in Business Studies

Key Skills

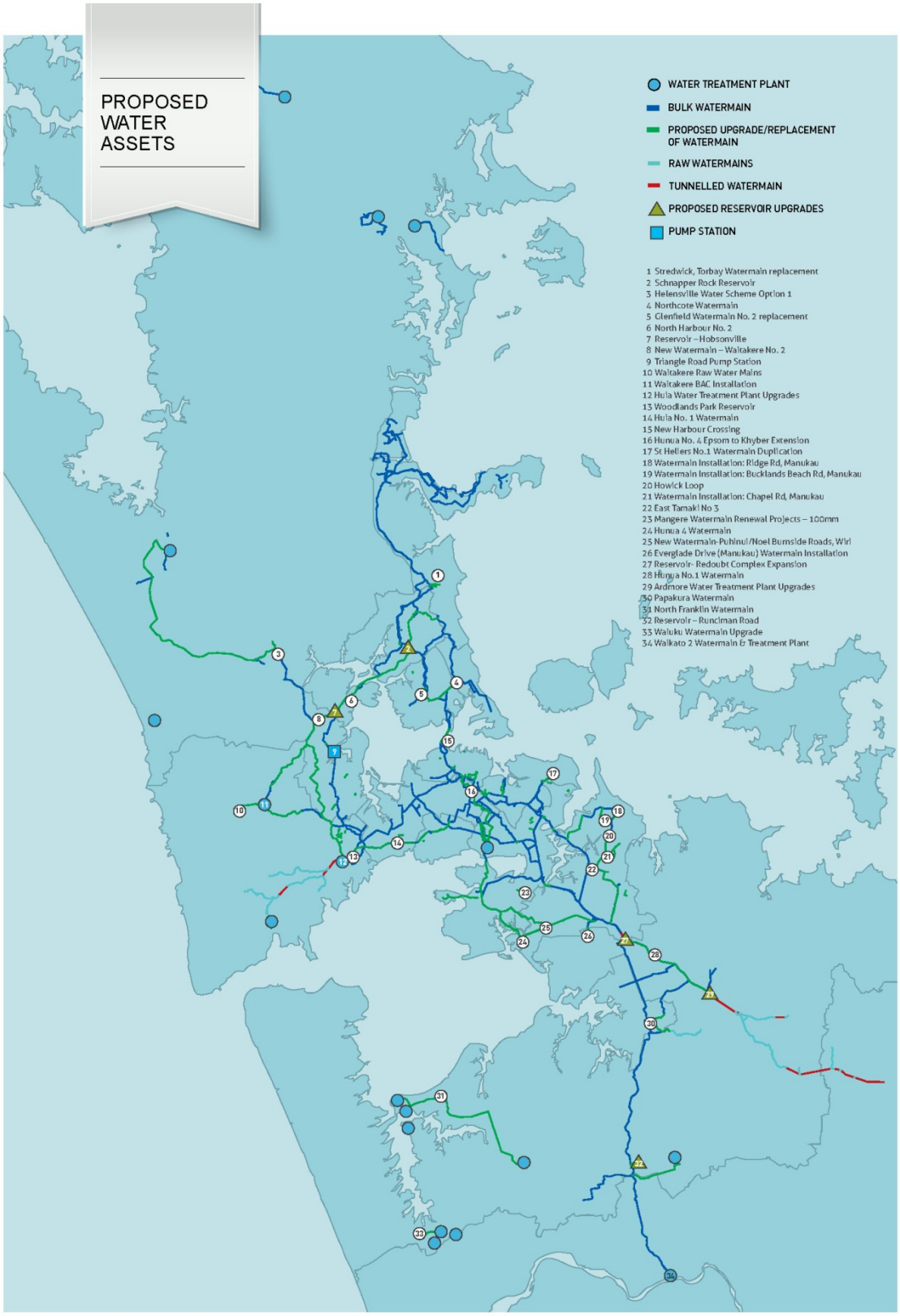
- Network infrastructure planning; high-level population modelling; water supply and wastewater network planning; capital projects

Work Experience

- 2015 Planning Manager, Strategy & Planning - Watercare Services Limited
- 2010 Infrastructure Planning Manager – Watercare Services Limited
  Project Management Advisor, Auckland Transition Agency (Secondment)
- 2006 Asset Planning Manager – Watercare Services Limited
- 2004 Projects Control Manager, Asset Management – Watercare Services Limited
- 2001 Planning Manager Wastewater - Watercare
- 1997 Corporate Planning Manager, Business Development – Watercare
- 1995 Operations Manager Wastewater – Watercare
- 1992-1995 Wastewater Influent Manager - Watercare
  Executive Assistant (Secondment)
- 1987-1992 Auckland Regional Council (ARC)
  - Drainage Maintenance & Operations Engineer
  - Executive Engineer
  - Projects Coordinator
- 1979-1987 Auckland Regional Authority (ARA)
  - Investigations Engineer
  - Engineer Drainage Design
  - Engineer Drainage Construction
  - Construction Engineer – Drainage
- 1979 Graduate Engineer – Hamilton City Council

ATTACHMENT B

Water Supply Bulk Network – Existing and Proposed



ATTACHMENT C

Wastewater Bulk Network – Existing and Proposed