Response to Simon Collins at the New Zealand Herald regarding the impact of intensification on the combined stormwater and wastewater network

17 January 2017

1. **Combined stormwater and wastewater network**

   A. **What are combined networks?**

   Combined networks carry both stormwater and wastewater. They are in older parts of the central city where there is infrastructure dating back to the early twentieth century.

   Most of the time, combined networks effectively convey wastewater from private properties to the Mangere Wastewater Treatment Plant. However, during heavy rainfall they are designed to release diluted wastewater and stormwater into the environment. This reduces the likelihood of overflows onto private property and helps to protect public health.

   In heavy rainfall, the volume of water that drains from the average roof is equivalent to the wastewater flows from more than 40 households.

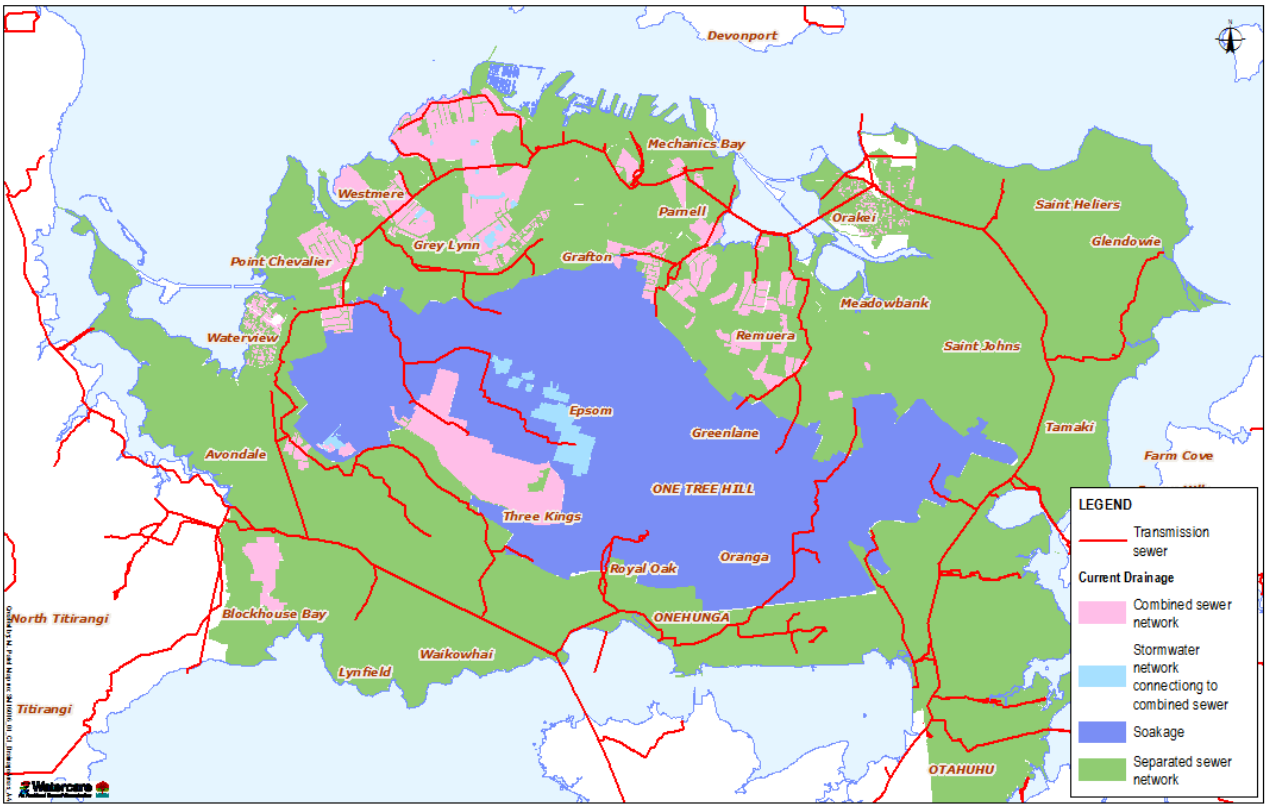
   B. **How many homes in Auckland are connected to the combined networks?**

   In Auckland, Watercare services an area covering 62,300 hectares. There are:

   1. 16,000 properties connected to a combined stormwater and wastewater network
   2. 415,000 properties connected to a separate wastewater network.

   C. **Where are the combined networks?**

   Below is a map showing where there are combined networks. This is available on the memory stick.



2. Overflows

A. What are overflows?

There are two types of overflows: dry-weather overflows and wet-weather overflows.

Dry-weather overflows occur when there is a fault within the wastewater network. For example, overflows due to a build-up of fat in a pipe or a power failure at a pump station.

Wet-weather overflows occur when the volume of stormwater entering the combined network – or infiltrating the wastewater network – exceeds the capacity of the pipes.

B. How are they monitored and measured?

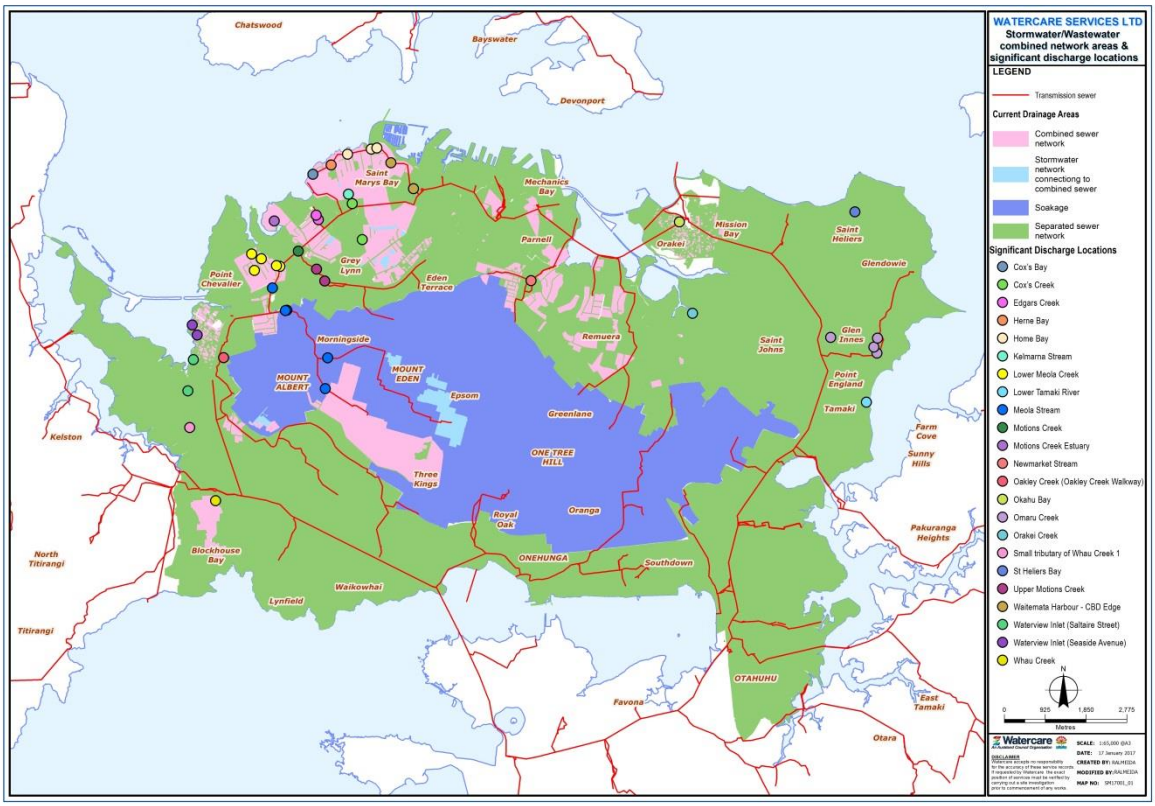
Watercare can electronically detect and measure dry and wet-weather overflows that occur at its pump stations. Engineered overflow points (EOPs) and manholes are not electronically monitored. We use modelling to estimate the frequency and volume of wet-weather overflows and we carry out visual inspections of EOPs. We also receive reports regarding dry and wet-weather overflows from our customers.

C. Are overflows permitted?

Yes. In 2014, Watercare's Network Discharge Consent was renewed by Auckland Council authorising the discharge of wastewater from the existing and future networks.

D. Where do they occur?

Below is a map showing engineered overflow points in Auckland that spill more than 12 times per year with an annual total volume of greater than 10,000m3. This is based on our modelling as engineered overflow points are not electronically monitored. This is available on the memory stick.



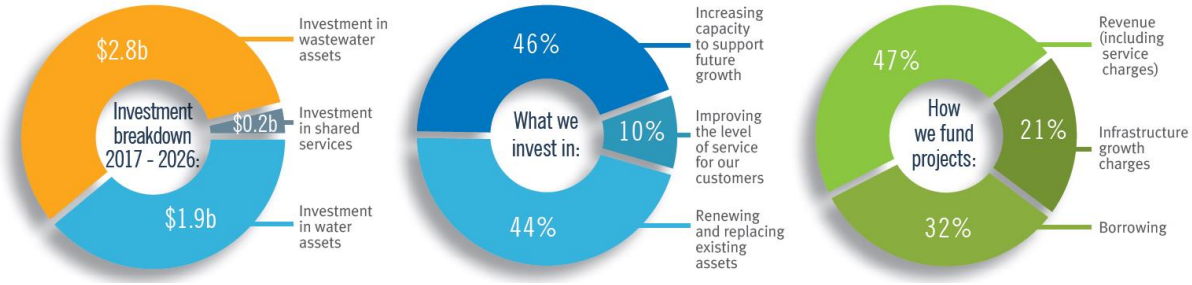
3. Providing for growth

A. What is the Asset Management Plan?

Every year we update our Asset Management Plan (AMP) that sets out what infrastructure we will deliver, where, when and how much it will cost.

The AMP aligns with Auckland Council's strategic plans and looks at how we will tactically and cost-effectively manage our infrastructure. While the AMP has a 20-year horizon, in reality, our planning extends more than 50 years due to the long life and strategic nature of our infrastructure assets.

Our latest AMP (2016) outlines how we will spend close to $11 billion over the next 20 years to support growth, renew existing assets and improve the levels of service to our customers.



Our investment is self-funded. We receive no income from Auckland Council property rates or the government.

B. What initiatives and major projects to accommodate growth and address overflows in central Auckland are currently underway and/or planned? *(snapshot only)*

i. *Central Interceptor tunnel and link sewers ($920 million):* The Central Interceptor will be a 13-kilometre-long wastewater tunnel that will run from Western Springs to the Mangere Wastewater Treatment Plant. It will increase capacity in central Auckland to meet growth beyond 2030. It will also duplicate the lower section of the Western Interceptor, particularly the Hillsborough Tunnel and Manukau Siphon, which are ageing. Importantly, it will **reduce wet-weather overflows by 80 per cent**. Construction will begin in 2019 and finish in 2026.

ii. *Central Auckland stormwater and wastewater network optimisation programme:* Watercare is working with Auckland Council to develop and implement strategies to effectively manage wastewater and stormwater in the long-term: accommodating growth and significantly reducing overflows. These strategies will be incorporated into the draft 2018 Long-Term Plan by 30 June 2017. It will include work to separate stormwater and wastewater in combined areas as well as to optimise catchment areas.

It includes:

1. St Marys Bay options assessment (public consultation will start soon)

2. Stormwater/wastewater separation
   a. Hepburn, Picton and Anglesea Streets
   b. Collingwood Street and Franklin Road (underway)
   c. Three Kings
   d. Waterview
   e. Okahu Bay
   f. Newmarket (Carlton Gore Road stage 2)

3. Stormwater/wastewater optimisation
   a. Herne Bay
   b. Edgars Creek
   c. Motions Creek
   d. Westmere
   e. Meola
   f. Haverstock catchment (Branch 8)
   g. Lyons catchment (Edendale)
   h. Oakley Creek

C. What initiatives and major projects to accommodate growth and address overflows in other parts of Auckland are currently underway and/or planned? *(snapshot only)*

i. Fred Thomas Drive storage tank and pump station ($27.7 million): A pump station and large storage tank are being constructed in Takapuna to accommodate growth and reduce overflows to the local area. Refer to memory stick for photos.

ii. Glen Eden storage tank ($17.6 million): A large storage tank is being constructed in west Auckland to accommodate growth and reduce overflows to the local area. Refer to memory stick for a time lapse video as well as photos.

iii. Pukekohe wastewater upgrade ($120 million): The wastewater network servicing Pukekohe, Buckland and Tuakau is significantly under capacity. We are currently constructing a pump station on Buckland Road and a 6.4-kilometre-long pipeline between the pump station and the Pukekohe Wastewater Treatment Plant to increase the local capacity and reduce overflows.

iv. East Coast Bays Link Sewer ($30 million): In late 2017, work will begin on a new wastewater pipe that will run from Scorpio Place to Rosedale Wastewater Treatment Plant. The existing pipe is old and is not able to cope with the flow during heavy or prolonged rain. The new pipe will have capacity to meet future demand and will reduce overflows to Mairangi Bay beach.

D. What major projects to accommodate growth and address overflows in central Auckland were recently completed? *(snapshot only)*

i. Kohimarama Storage Tank and branch sewer upgrades ($12 million): A large storage tank was constructed and the local network was upgraded to accommodate growth and reduce overflows to the local area. The project was completed in early 2016. Refer to memory stick for photos.

ii. **Project Hobson ($121 million):** An ageing sewer pipe that crossed Hobson Bay was replaced with a 3-kilometre-long tunnel that connects to a new pump station in the Orakei Domain. The tunnel and pump station can accommodate growth and have virtually eliminated overflows from this part of the network. The project was completed in 2011. Refer to memory stick for photos.

4. <u>Kelmarna – Special Housing Area</u>

The former Gables Tavern site on 1, Kelmarna Ave was approved as a Special Housing Area (SHA) by Auckland Council, which was then gazetted (a form of public notice) by central Government.

Before council approved the SHA, the Housing Project Office of council considered a wide range of factors including the impact on local infrastructure such as roads, stormwater and water supply.

Our requirement to council was that **onsite stormwater retention tanks are incorporated into the development to ensure there will be no impact on the environment in terms of the frequency or volume of overflows.**

Note: When considering the volume of stormwater created by a development, it is the impermeable footprint of the building and outside concrete areas that has an impact rather than the height. For example, a single story building with an impermeable footprint of 1,000m2 generates essentially the same volume of stormwater as a 10 story building with an impermeable footprint of 1,000m2.