

# INFRASTRUCTURE MEMORANDUM

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To: Adriaan Vlok (Hounsell Holdings Limited)  
From: Kong Zhong (Maven Associates Limited)  
Subject: Wastewater / Water Supply / Stormwater and Utility Servicing for the Rotokauri Greenway and Arterial Road Development  
Date: 7<sup>th</sup> November 2022

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## 1 INTRODUCTION

The proposed project for which a fast-track application under the **COVID-19 Recovery (Fast-track Consenting) Act 2020** is being applied for is the consenting and construction of:

- the Rotokauri Greenway;
- the Minor Arterial;
- the bulk watermain under the Minor Arterial and other roads;
- the wastewater rising main; and
- strategic wastewater pipeline and pump station.

The purpose of this project is to provide the necessary infrastructure pertaining to stormwater management and discharge along with critical roading connectivity to enable the residential development of the Rotokauri, a 'live' zoned residential growth cell in Hamilton north. The Rotokauri growth cell has a planned capacity of approximately 7,000 homes for approximately 20,000 people (noting this could increase with the recent proposed change under Hamilton City Council's Plan Change 12). Appropriate and necessary infrastructure is required to enable the balance of this growth cell. The key objective of this project is to design, consent and enable high-quality infrastructure that supports well-functioning urban development that can provide for the social, cultural and economic well-being of the community and wider Waikato region.

As highlighted above, there are two key components to this proposal, the Greenway and the Minor Arterial, which integrate and need to be designed and consented in parallel. Both pieces of infrastructure are critical features of the existing Rotokauri Structure Plan contained in the Hamilton City District Plan and certified Rotokauri Integrated Catchment Management Plan (ICMP).

The Greenway is a multi-functioning ecological corridor that will provide for stormwater management, open space and an active transport network. The Greenway traverses a range of adjacent land use and offers a range of opportunities including ecological restoration, water runoff treatment, recreational activities and cultural reinstatement. The Greenway will include a fluvial system of swales, artificial wetlands and ponds, with extensive planting of indigenous species along the length of the corridor. The approximate 4.7km length corridor will run

between Lake Waiwhakareke (high point) and Lake Rotokauri (low point) to effectively manage and attenuate stormwater within the area, treating stormwater prior to discharge to enhance the water quality and surrounding natural environments and ecosystems. The overarching purpose of the Greenway is to provide treatment, conveyance of flows and flood attenuation from Lake Waiwhakareke at the upper extent of the catchment to Lake Rotokauri approximately 4km north. Construction of the Greenway includes major re-alignment and re-contouring of the existing Rotokauri Drain, as well as an upgrade to the culvert below Exelby Road and the construction of check dams in the lower reaches to assist in managing flows. The Greenway includes a 5 metre wide shared path on the southern side and a 3 metre wide secondary path on the north side.

The Minor Arterial is a key piece of enabling infrastructure that promotes a housing development within Rotokauri. The Minor Arterial extends 3.8km in length from Te Wetini Drive to the northern boundary of Hounsell Holdings land, including the collector road to the Chalmers Road underpass and the northern boundary of Hounsell Holdings land to the underpass that links to Te Kowhai East Road. The Minor Arterial will also support three water infrastructure sized to cater for the wider catchment which includes:

- the bulk watermain under the Minor Arterial;
- wastewater rising main;
- strategic wastewater pipeline; and
- pump station

This memo provides a high-level overview and assessment of the wastewater, water supply and stormwater infrastructure to support this fast-track approval application.

## 2 SITE DESCRIPTION

### 2.1 Site Description

The area of land owned by HHL comprises 70 hectares total, including many parcels of land. The site is located west of State Highway 1 with existing road networks surrounding the site providing ease of access to the site.

The land mass is irregular in shape and currently zoned under many different categories: Industrial zone, Residential Zone – Medium Density Residential, Special Natural Zone and Future Urban Zone.

Most of the site is covered by pastoral farmland and by several low and medium flood plains as per Hamilton Flood Maps.

The site is gently sloping from the south to north direction from RL 55m to 32m. The average slope across the site is 5%.

An aerial photograph of the site is shown below.

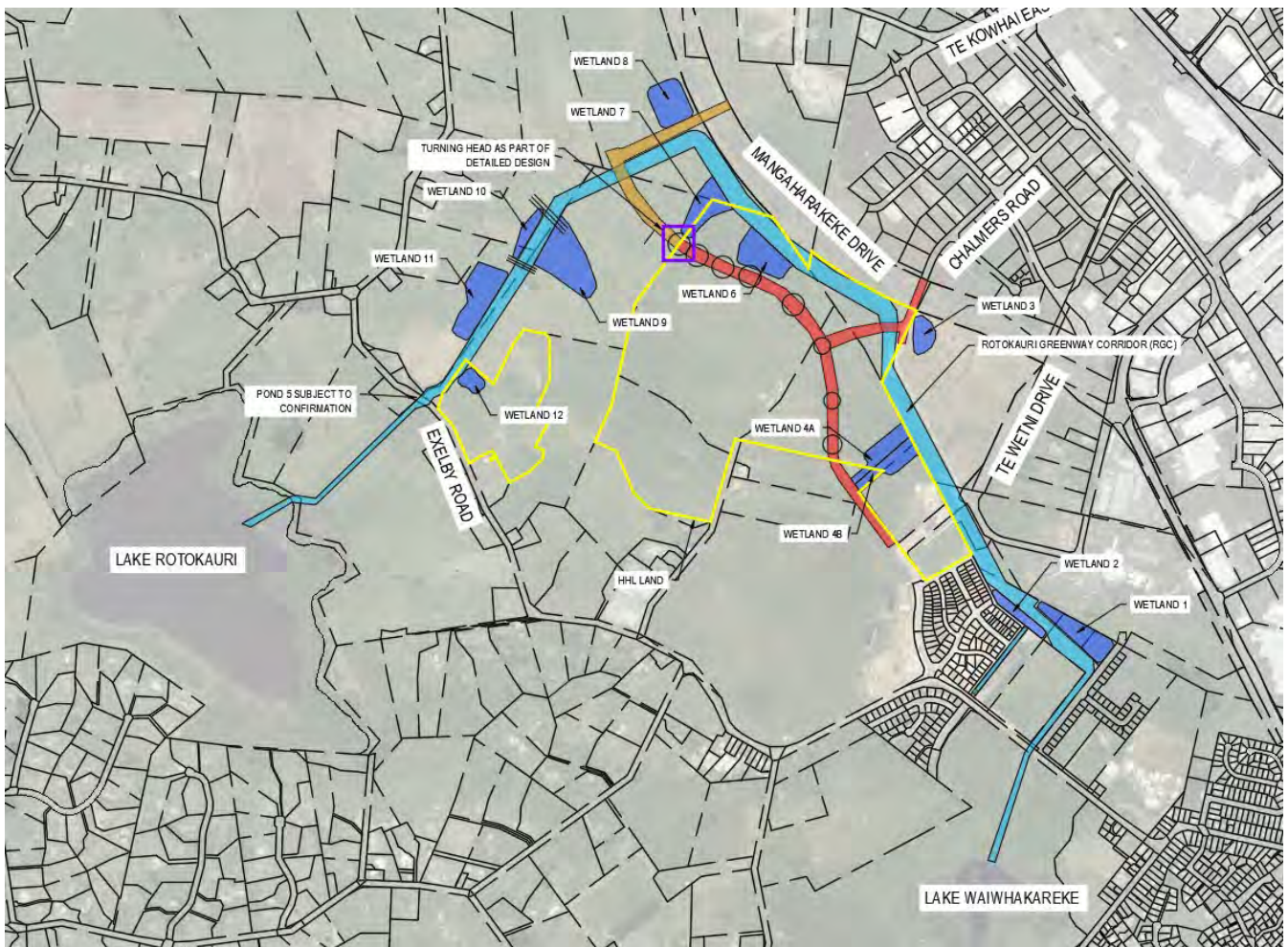


Figure 1: Aerial Photo showing Rotokauri Arterial and Greenway Concept

### 3 Infrastructure Assessment

#### 3.1 Wastewater

As per HCC GIS Maps, an existing wastewater reticulation network is available from Te Wetini Drive including a pump station, raising main and gravity piping. This network passes through the site onto Chalmers Road and travels along parallel to State Highway 1, on the opposite side of the subject site.

A high-level wastewater servicing plan has been developed by HCC as part of the ICMP. The existing gravity wastewater network will be extended into the proposed development area along the proposed Arterial Road to service the southern portion of the subject site.

The northern portion of the subject site will be serviced by a new pump station and raising main from Te Kowhai East Road extension which will discharge wastewater into the existing Far Western Interceptor. A new gravity wastewater network is proposed along the Arterial Road to convey wastewater into the proposed pump station.

Information to date indicates that the existing downstream wastewater infrastructure has sufficient capacity to cater for the future Rotokauri growth cell. The new network extension and pump station will be sufficiently sized and installed to service the future upstream catchments associated with this proposed Arterial and Greenway development.

### 3.2 Water Supply

There is currently no existing water infrastructure within the subject site.

Water supply for the Rotokauri Growth Cell has been planned as part of the ICMP. The stage 1 water supply works, which include a 450 mm diameter trunk watermain along Te Wetini Drive has been established. Future development within the growth cell will be serviced by this existing trunk watermain and a new 450 mm diameter trunk watermain which will be extended from the existing bulk supply point at Te Kowhai East Road. Additional 250 mm diameter trunk mains will be installed within the growth cell region to create loop water networks to service future development.

As part of the Arterial and Greenway development, a 250 mm diameter looped water supply infrastructure will be extended from the existing 450 mm diameter trunk watermain on Te Wetini Drive and installed along the Arterial Road corridor to support HHL's future subdivision works. The proposed network can be further extended to service the rest of the growth cell area as it develops in the future.

Water supply proposal for the Arterial and Greenway development is consistent with the ICMP developed by HCC and sufficient water supply will be available to service the future development. Water Impact Assessments will be provided to accompany future consent applications and be submitted to Council for approval.

### 3.3 Stormwater

The existing stormwater infrastructure supporting what is mostly pastoral farmland runoff within the site includes a mixture of undersized informal farm drains, basins, wetlands and culverts. Stormwater runoff collected from these infrastructure components ultimately discharge into Lake Rotokauri. There are some existing stormwater reticulation systems surrounding the site; to the south of the site on Te Wetini Drive and to the east of the site on Chalmers Road.

To enable the development of the growth cell's stormwater reticulation system, HCC's ICMP requires the upgrade of the existing stormwater management system through the design of an approximately 50m wide and 4.7km long Greenway channel to effectively manage the stormwater issues associated with development plans. The Greenway will begin at Lake Waiwhakareke and travel in a north and then westerly direction discharging into Lake Rotokauri. The development of this Greenway is critical to support not only HHL's owned land, but also to support the wider Rotokauri growth cell, as the wider area cannot commence development until the Greenway is constructed.

In addition to the Greenway channel, 12 wetlands are also proposed to provide stormwater quality treatment. Stormwater discharge from the Rotokauri growth cell will be directed to the wetlands prior to reaching the Greenway channel.

The proposed stormwater infrastructure for this consent will act as the backbone for the Rotokauri growth cell's stormwater reticulation system enabling the future development of the growth cell.

### 3.4 Services

Power, telecommunications, fibre, gas are all available near the site in the urbanised areas. Utility authorities will be contacted in due course to ensure that the services network can be extended in the site.



## 4 CONCLUSION

The agreement between Hounsell Holdings Limited and Hamilton City Council ensures that not only the land owned by Hounsell Holdings Limited is able to be developed, but it also ensures the wider Rotokauri growth cell is able to be developed. The infrastructure design for this application forms the backbone of all the infrastructure required for the wider area that other developers and HCC can leverage off within their own projects – it is in essence a catalyst and enabler for a total of 7000 new homes and upon completion of the works described in this application, will provide the area with suitable infrastructure and water supply within the vicinity of the site with sufficient flows and pressure to service both domestic and firefighting needs.

A 3.8km Arterial Road is proposed in agreement with Hamilton City Council to allow for future road networks to be developed. The Arterial Road is 28m wide with a two-lane carriageway, footpaths, cycle paths, parking and berm.

Wastewater and water supply infrastructure will be extended within the site. Hamilton City Council have confirmed that their existing networks have enough capacity for Rotokauri future development plans.

In agreement with Hamilton City Council, a 4.7km Greenway channel is proposed as part of Hamilton City Council's ICMP. The channel is 50m wide and will use 12 wetlands to control the flow and quality of stormwater to protect the receiving environment.

Information provided to date confirms that the development can be serviced in accordance with HCC's requirements.