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TO Gary Craig, Hutt City Council

FROM Emily Greenberg, Land Development

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REGARDING Advice on three-waters cost estimates for CBD intensification and Wainuiomata North

Summary

Wellington Water was asked to provide advice on two high-level assessments prepared by GHD for the three waters infrastructure needed to service the Hutt City CBD intensification and the Wainuiomata North Development Area.

For the Hutt City CBD, we understand HCC seeks advice on the appropriateness of the assessments to identified infrastructure needs and the setting of future development contributions, a breakdown of what projects are currently allowed in the LTP, and which of those projects relate to the Riverlink project.

For the Wainuiomata North Development Area, we understand HCC needs to understand the potential scale of infrastructure costs prior to public discussions about the future of this area.

Our recommended strategic approach to growth is to understand the long term infrastructure needs of the wider area and then identify the components of that long term vision that are required to enable the planned growth and redevelopment. This helps to realise the opportunities that growth presents to sustain or enhance the delivery of 3 waters services, while also helping to reduce the risks to the developer. Our ability to deliver on this strategic approach is based on the information and analysis available to assess the long term infrastructure needs of the wider area. For both the Hutt CBD and Wainuiomata the understanding of the long term infrastructure needs are only partial and are still in development. However we are able to provide some guidance on the GHD reports based on our work completed to date.

The engineering solutions in the GHD reports that have been identified for each of the areas are considered 'high level solutions'. In the CBD the solutions were developed in the absence of hydraulic models and with a focus on specific neighbourhoods rather than the entire network. For the proposed

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Wainuiomata North Development Area the solutions are also considered ‘high-level’ as they were developed with the goal of assisting with initial discussions on concept-level redevelopment.

We recommend that more detailed assessment of cost estimates is completed for the Hutt City CBD before using the values in the GHD reports to set development contributions or to allocate funding as these appear to have a wide range of uncertainty. Completed stormwater and wastewater hydraulic models for this area are still a couple of years away, but a more detailed assessment should consider the provision of three-waters infrastructure in a wider context.

The high-level cost estimates for the Wainuiomata North Development Area are considered appropriate for the public discussions, given the conceptual nature of the development proposal.

Hutt City CBD Intensification

In early 2018, we were requested to confirm if the draft Hutt City LTP included funding needed to support intensification of the CBD. The current LTP budgets do not provide for three waters upgrades associated with the CBD intensification or Riverlink.

Original presentations to HCC on the growth components were planned as part of the LTP process but were never presented to Council in FY 17/18. Our understanding from discussions with Bruce Sherlock at the time is that there is a separate growth fund budget, which is excluded from the three-waters budgets.

The following table contains the proposed infrastructure needs and costs in the GHD report.

	GHD Estimate	Basis of estimate	Comment
Water supply	\$2.8M	Based on upgrading mains for water supply.	We note that the reservoirs that supply this area do not have sufficient storage to cater for the planned growth and are already below target Levels of Service. The costs of additional storage have not been included in the GHD reports.
Wastewater	\$6M (storage) or \$8.2M (upgraded pipes)		The costs for wastewater storage should be recalculated to include an additional \$3M (so \$9M or

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			\$8.2M).
(growth subtotal)	\$8.8 to \$11M		~\$12M
Stormwater	\$27M to \$32M	Largely existing issue so not growth related	Does not include all costs for land purchase
total	\$35.8 to \$43M		\$39M to \$44M Plus costs for land for stormwater pumping stations

Based on the spreadsheet provided in the GHD report, the \$6M identified for wastewater storage should be approximately \$9M.

The reports identify that growth would not affect stormwater flows as the area is already built out, but that existing flooding requires pumping or detention solutions. Therefore, the costs for stormwater infrastructure were associated with an existing flooding issue as opposed being considered as costs associated with growth.

The following table illustrates our assessment of the existing condition of the three-waters systems in the Hutt City CBD and confidence in GHD’s proposed solution and costs (green=confident, amber=caution, red=concerned).

WWL Assessment	Stormwater	Water supply	Wastewater
Expected Hydraulic Modelling Completion	2019/20	Complete*	2020/21
Existing condition			
Report Technical Solution Confidence			
Report Cost Confidence			

*Note: GHD’s assessment was completed prior to completion of water supply model

We suggest some caution with the high-level technical solutions provided in the GHD reports, given that the solutions were prepared in the absence of calibrated hydraulic models for all three waters. More holistic solutions could be determined when the hydraulic models are completed.

We recommend that the cost estimates are peer-reviewed based on the new hydraulic model for water supply and in accordance with our Cost Estimation Manual prior to using them for assessment of development contributions. This will provide a more robust estimate based on risk and provide a cost tolerance.

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Ideally, the cost review and development contribution calculation should be delayed until the hydraulic models for wastewater and stormwater are available and the capacity and constraints of the three water systems have been re-evaluated, however we appreciate that that does not meet the required HCC timeframes.

Wainuiomata North Development Area

In June 2018 GHD re-evaluated their 2014 report on infrastructure needs for the Wainuiomata North area so that the most up-to date 2018 Development Framework could be assessed.

The following table contains the proposed infrastructure needs and costs in the GHD report.

	GHD estimate	Comment
Water supply	\$5.6M to \$5.9M	Includes water main upgrades and a reservoir
Wastewater	\$4M	Does not include the cost of land for storage facility for wastewater
Stormwater	\$3M	Does not include cost of land for stormwater detention
Stormwater channels	\$7.3M	stormwater channel upgrades
total	~\$20M	Does not include costs for land wastewater storage and stormwater detention

The following table illustrates our assessment of the existing condition of the three-waters systems in the Wainuiomata North Development Area and confidence in GHD's proposed solution and costs (green=confident, amber=caution, red=concerned).

WWL Assessment	Stormwater	Water supply	Wastewater
Hydraulic Modelling Completion	Complete	Complete	Complete
Existing condition			
Report Technical Solution Confidence			
Report Cost Confidence			

We cautiously support GHD's proposed high-level solutions for this development concept. In particular, it is important to be aware that the whole of the existing Wainuiomata wastewater system is

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constrained by the size of the Wainuiomata Hill Service Tunnel, as mentioned in the 2014 GHD report. This results in regular overflows of untreated wastewater to the ground and to freshwater which create a risk to health and safety and are an unacceptable environmental outcome. Although detention is a likely technical solution for the Wainuiomata North Development Area, the proposed development should be assessed with a more comprehensive, system-wide assessment that considers the whole of Wainuiomata wastewater system.

The report clearly indicates the reservoirs would be overcommitted by the development.

The amber colour for the proposed costs indicates we supports the high-level cost estimates for purpose of exploring the development potential of this area, noting the need for caution around the following:

- 1) the cost of land associated with stormwater and wastewater detention is not included
- 2) the costs for the wastewater pumping station are underestimated (the \$100k estimated for the cost of a wastewater pumping station included in the estimates above is considered to be too low and is based on 8hr storage which is inconsistent with the 24hr storage proposed for the CBD. For comparison, the GHD report for the Hutt City CBD estimates a pumping station to cost \$500k)
- 3) the upsizing of water mains identified in the GHD report as part of Council's renewal programme are identified but not prioritised to occur in the near future, and
- 4) any cost estimates for a development of this size need to be prepared in a more robust manner before funding decisions are made using the Wellington Water Cost Estimation Manual to provide sufficient visibility over cost risk and accuracy tolerances.