

Before the Expert Fast-Track Consenting Panel

In the Matter of the COVID-19 Recovery (Fast-Track Consenting)
Act 2020

And

In the Matter of an application by ICD Property in relation to the
Federal Street Residences

Statement of Evidence of Bradley Rudsits on behalf of P0012 Auckland NZ Pty
Limited in Response to Invited Comments Received on the Federal Street
Residences Project

Dated 24 June 2022

Jeremy Brabant
Barrister
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Introduction

1. My full name is Bradley John Rudsits. I am a Technical Principal – Water for WSP Ltd. I hold Bachelor of Engineering (Honours) – Civil Engineering degree, and I am a Chartered Professional Engineer with a practice area in the design, and design management, for civil infrastructure, including construction observation, administration and management related to water, storm water and wastewater infrastructure.
2. I have 21 years' experience as a civil engineer, all within the water industry. My professional background is within all three waters from concept design of raw water intakes through to construction supervision of wastewater treatment plants. I have been involved in a detailed design of greenfield and brownfield land development projects and development of servicing strategies for long term planning purposes. I have worked and resided in New Zealand and Australia, with design and project management involvement in projects in those countries in addition to the Pacific, Philippines, and Middle East.
3. I was instructed by ICD Property in 28 February 2022 to review the feasibility options for wastewater servicing and develop a design for Resource Consent purposes. I am familiar with the area to which the application for resource consent relates.
4. Although this is not a hearing before the Environment Court, I record that I have read and agree to and abide by the Environment Court's Code of Conduct for Expert Witnesses as specified in the Environment Court's Practice Note 2014. This evidence is within my area of expertise, except where I state that I rely upon the evidence of other expert witnesses as presented to this hearing. I have not omitted to consider any material facts known to me that might alter or detract from the opinions expressed.

Scope of Evidence

5. My evidence will address the following options there were considered for providing wastewater service to the Federal Street Residences (FSR), and the preferred servicing option:

- Option 1 - Applicability of removing the wastewater network throttle on Fanshawe Street;
- Option 2 - Potential for on-site storage with off-peak discharge;
- Option 3 - Applicability to connect to the new manhole installed as part of the City Rail Link project that connects to the Orakei Main Sewer, this being the preferred wastewater servicing option;

The evidence has been documented in detail in '1-14855 65 Federal WW Feas Report', Revision 2.0, and '1-14855 FSR RC Design Memo', Revision F.

Wastewater Servicing Context

6. Watercare Services ("Watercare") provided comments on the Fast Track Consent application on 8 April 2022, for the Federal Street Residences (FSR). Watercare identified capacity constraints in their downstream wastewater network, as per the excerpt below:

7. "Capacity constraints have been identified in the downstream network, related to a modelled predicted overflow at one of the downstream EOPs. The proposed development will increase the frequency of the overflows in the downstream network.

Watercare has started to investigate the issue and identify potential solutions. However, the timing is uncertain, and it is unlikely to meet the development's timeframe.

The developer will need to consider options to prevent adverse environmental impacts should the connection be required before resolving the downstream constraints. Private storage tanks with off-peak discharge to the network may be successful as an interim solution or other solution as

agreed with Watercare. The design needs to be provided and approved as part of the Resource Consent Process.”

8. Further correspondence with Watercare was undertaken on 5 May 2022, 6 May 2022, 9 May 2022, 25 May 2022 and 10 June 2022. The discussion points during the correspondence were as follows:

- New wastewater infrastructure in the form of drop shaft on Orakei Main Sewer, satellite manhole and pipelines have been constructed as part of City Rail Link. Asbuilt information for the new infrastructure is currently unavailable.
- Connecting to the new manhole WWMH 01-01 (constructed as part of City Rail Link) would be a preferable option for providing wastewater servicing to the Federal Street Residences.
- A detailed design cannot be provided at Resource Consent Stage, as there are unknowns which cannot be resolved within the Fast Track Consenting time period. These include but not limited to confirmation of asbuilt details of the new wastewater infrastructure as constructed by CRL, other services within the road reserve, geotechnical and hydro-geological conditions.
- With appropriate investigations and design the risk associated with the unknowns can be managed and mitigated. These investigations and design would form part of the Engineering Plan Approval (EPA) after Resource Consent. The Engineering Plan Approval process for the design and construction of new wastewater infrastructure by the Developer would include further consultation with Watercare on design specific details including connection to the new manhole WWMH 01-01.
- The connection to the new manhole WWMH 01-01 means that temporary on site storage would not be required.

9. Design analysis and augmentation consideration for the Orakei Main Sewer was not undertaken. This was because estimating the flows for the

significantly large contributing catchment area would be require a number of critical assumptions. Verification of the critical assumptions would affect the flow estimate and would be unlikely to correlate with the Watercare calibrated dynamic hydraulic models.

10. With reference to Watercare comments on the Fast Track Consent application, the development of upgrades or capacity augmentation for the Orakei Main Sewer has currently commenced. However the timing for implementation of any upgrades or capacity augmentations may not align with the construction period for FSR.
11. The development of options for Orakei Main Sewer by the applicant to provide for the peak design flow increase of 11.5 L/s from FSR to the Orakei Main Sewer was not considered appropriate or feasible for Resource Consent purposes.

Option 1 - Remove Network Throttle on Fanshawe Street

12. The existing wastewater infrastructure in the vicinity of the development would be used to convey the additional flows. The network includes a 150mm pipe section on the intersection of Nelson and Wyndham Street that functions as a network throttle, throttling the network flow to only 13.47 L/s. Calculations indicated that even with upgrading the 150mm network throttle there would still be insufficient capacity to cater for future flows in Peak Design Flow conditions.

Option 2 - On-site Storage and Off-Peak Discharge

13. This option considered storing all the FSR wastewater discharge over 24 hour period and then discharging it during the off-peak hours of 9 pm to 5 am. Due to the location and volume of wastewater needing to be stored, it was recommended to split the wastewater into multiple vessels such as with 8 Number 2.5m diameter x 5.75m long vessels. The flow of 17.4 L/s which would need to be discharged during the off-peak periods to the existing network. However, this flow would still be throttled by the 150mm diameter pipe at the intersection of Nelson and Wyndham Street. Subsequently, for this option to provide the required level of service, the

throttle would need to be removed and downstream section of pipe upgraded to 300mm diameter.

Option 3 - Connect to New Manhole Upstream of Orakei Main Sewer

14. This option considered a new 300mm diameter connecting pipeline to a new manhole installed immediately upstream of the Orakei Main Sewer in Victoria Street as part of the City Rail Link Project. The connecting pipeline would be from existing manholes (GIS ID 509792) to (GIS ID 522703). Thereafter the pipeline would connect to the new manhole (WWMH 01-01). Details of the new network installed by City Rail Link were unknown and assumptions were made with regards to pipe sizing, location and invert levels.
15. Hydraulic analysis of the FSR flows and their contribution to the overall flows within the Orakei Main Sewer was not undertaken.

Preferred Wastewater Servicing Option

16. The preferred servicing option was Option 3, a connection to the new manhole installed upstream of the existing Orakei Main Sewer in Victoria Street.
17. The connecting pipeline can service FSR and surrounding existing connections as estimated. Further the connecting pipeline meets the Watercare Code of Practice requirements with regards to velocities.
18. The proposed horizontal and vertical alignments show that FSR can be serviced for wastewater. There is further design refinement opportunities for the alignments that would be realised after verification of existing wastewater network levels.
19. Temporary on-site storage has not been included in the preferred wastewater servicing option.
20. Watercare accept wastewater discharge from FSR where the connection location is new manhole WWMH 01-01.

Assumptions

21. It is recommended that the following assumptions and alignment considerations be verified in EPA design phase:

- The levels of manholes be confirmed to ascertain the accuracy of assumptions;
- Locations of other underground services (stormwater etc) to be confirmed and the wastewater horizontal and vertical design to take into account the clearance requirements to these services;
- It is assumed that implementing the new connecting pipeline would be possible. Existing manholes on Federal St will require replacement to allow the design pipe invert levels to be obtained.
- The capacity of the sewer network built by City Rail Link up to connection with Orakei Main Sewer, will be adequate for the flow rate required.

Bradley John Rudsits

Dated 24 June 2022