

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of a Board of Inquiry appointed under s149J of the Resource Management Act 1991 to consider Notice of Requirements and applications for Resource Consent made by the New Zealand Transport Agency in relation to the East West Link roading proposal in Auckland.

**SUMMARY OF EVIDENCE OF ANDRÉS ROA ON BEHALF OF AUCKLAND
COUNCIL
OPERATIONAL STORMWATER**

1. Corrections to Evidence

- (a) My evidence in chief in paragraph 7.2.(d) comments on the risk of salt water intrusion potentially resulting in significant adverse effects on the receiving aquatic environments. I should qualify that the degree and severity of the effects would depend on the length of time that the stormwater treatment systems are off-line as a result of such event.

2. Overview of Key Conclusions of Evidence

- (a) If properly designed and managed, the project is likely to result in a number of positive effects and benefits from a stormwater perspective, including stormwater treatment to the project itself and circa 611 hectares of urban land within the Onehunga Penrose catchment, in addition to improved stormwater conveyance for primary and secondary storms, leachate treatment and the opportunity for spill containment management.
- (b) To my knowledge combined wetland-biofiltration devices in a coastal context such as the ones proposed have not been tested in NZ. The true resilience of these systems to salt water inundation, including the ability to flush and recover “over weeks and months” as claimed by Dr Allison in his rebuttal evidence, has not been observed or ratified.
- (c) In this respect the design of the external bund level is a key aspect of the design. The ability of the currently proposed bund level of RL3.0m to address salt water intrusion risks and climate change adaptation objectives is still uncertain. This aspect will need to be further considered through the detailed design process, in an integrated way that recognises other project drivers.
- (d) There are residual risks associated with reliance on mechanical and electrical systems and sea level rise, which can be adequately addressed through appropriately designed, resilient infrastructure and the implementation of robust operation and maintenance plans.
- (e) Similarly, residual risks associated with the need for adaptation to sea level rise can be addressed through suitably designed infrastructure and the implementation of appropriate operation and maintenance plans.

3. Summary of Issues

- (a) The key issues that were discussed and resolved either through the expert conferencing or subsequent evidence presented by the Applicant are summarised as follows.
 - (i) The project meets good practice from a stormwater quality perspective, and will likely result in significant benefits to the project itself and the wider urban areas where currently water quality is relatively poor.
 - (ii) The project applies a unique stormwater treatment approach that in theory achieves a very high level of treatment within a given footprint, and that it presents a significant opportunity to provide comprehensive stormwater treatment to an established urban area where no other such opportunities exist.
 - (iii) The project design proposes adaptation of stormwater infrastructure to respond to sea level rise, including an agreed period of no less than 20 years from the time of hand over before adaptation work is required.
 - (iv) The occasional failure or blockage of mechanical equipment is unlikely to have a significant impact on the foreshore stormwater quality and quantity, providing an appropriate management plan is in place to cater for these eventualities. I am comfortable with the level of resilience offered by the concept design of the mechanical elements associated with the foreshore treatment devices and conveyance and flood management systems.
 - (v) The overall design outcomes and general intent of the design have been agreed, subject to the proposed consent conditions, and therefore there are no matters that remain unresolved as such.
- (b) A number of the finer design details will need to be worked through and addressed during detailed design and handover, in accordance with the

consent conditions and the NZTA and Auckland Council MoU. These design aspects include:

- (i) Design criteria to determine the level of the outer bund, to address salt water intrusion risks and future climate adaptation requirements.
- (ii) The extent to which pumps are necessary to drain the wetland and biofiltration areas. In this respect all parties have recognised that if achievable, a gravity arrangement for the outlet would be preferred over pumped systems.