

4 August 2025

Expert Panel
Sunfield Fast-track Application
FTAA – 2503 -1039

Sunfield Fast-track Application: Response to Minute 5 of the Expert Panel

I Zeb Worth of CKL NZ Ltd confirm that the report I prepared, for the Sunfield Fast-track Application, being the Peer Review of the Sunfield Stormwater Management Proof of Concept, was prepared in accordance with the Environment Court Practice Note 2023 (Code of Conduct for Expert Witnesses).

As requested by the Expert Panel, details of my qualifications and relevant experience accompany this letter.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Zeb Worth', written over a horizontal line.

Zeb Worth
Principal Environmental Engineer
CKL

ZEB WORTH

Principal Environmental Engineer

Location

Auckland, New Zealand

Profile

I have over 25 years of experience in various aspects of Civil and Environmental Engineering. This includes spending the last 18 years specialising in the design, consenting and implementation of stormwater management for public infrastructure and land development projects throughout New Zealand and Australia.

I specialise in planning, designing and implementing innovative, holistic and sustainable stormwater management solutions. I feel a personal and professional responsibility to use my knowledge and skills to improve the world we live in and to make a positive contribution to society. I have a passion for investigating and adopting innovative technological solutions to engineering problems to improve efficiency and outcomes.

Technical skills

- Water sensitive urban design
- Drainage Engineering / Storm water Management
- Water quality and catchment management
- Wetland Design
- Hydrology and Watershed Management
- Hydraulic Modelling
- Flood Risk Assessment and Floodplain Management

Education

Bachelor of Civil and Environmental Engineering, University of Auckland 2007

New Zealand Certificate in Engineering (Civil), Unitech Institute of Technology 1998

Relevant training

- Site Safety
- Traffic Controller Inspector
- Mentoring

Professional associations

New Zealand Chartered Professional Engineer (CPEng)

Engineering New Zealand Chartered Member (CMEngNZ)

Water New Zealand - Full Member

Water New Zealand Stormwater Group Member

Professional experience

- **R2 Growth Cell, Hamilton, New Zealand (2024-present): CDL Land Ltd, Stormwater Strategy and Flood Modelling lead**

I am the technical lead for the development of a stormwater catchment management plan and flood modelling for a large future residential area east of Hamilton City. The project site is currently rural and consists of flat topography managed by an existing Land Drainage scheme. My role on the project is to develop the overarching stormwater management strategy, and to provide guidance and oversight to ensure

that the proposed stormwater management strategies are logical, feasible, and achieving environmental outcomes in balance with future development requirements. I also provide technical input and oversight to the flood modelling aspects of the project.

- **Riverhead Private Plan Change 100, Auckland, New Zealand (2024-present): Riverhead Landowner Group, Flood Modelling Technical Expert**

I am the technical expert on this project, overseeing and providing flood modelling inputs to support the re-zoning of a large area of future urban land to mixed residential and business use. The site is located adjacent to a significant flood plain and requires careful and accurate modelling to ensure the objectives of the Auckland Unitary Plan are met, and to ensure alignment with the Auckland Council Network Discharge Consent requirements.

- **Airport Surface Access Network, Auckland, New Zealand (2023 - 2024): Auckland Airport, Stormwater Design Lead**

I was the lead stormwater designer overseeing the stormwater design for the upgrade of the main arterial roads that provide access to the Auckland Airport. The stormwater design includes major cross alignment culverts, pipe upgrades, new stormwater collection and conveyance, and the design of upgraded and new water quality treatment devices. My role includes, planning the stormwater design to meet programme and client requirements, inter-discipline co-ordination of the stormwater design and leading the stormwater design team.

- **Tauriko West Catchment Management Planning, Tauranga, New Zealand (2023 - 2024): Tauranga City Council, Technical Reviewer**

I was the technical reviewer for the development of a stormwater catchment management plan for a large future residential area west of Tauranga City. My role on the project is to provide guidance and oversight to ensure that the proposed stormwater management strategies are logical, feasible, and achieving environmental outcomes in balance with future development requirements.

- **Western Sydney Airport DP009 Drainage Lead, Sydney, NSW, Australia (2022 - 2023): Multiplex, Stormwater Design Lead**

I was the stormwater drainage design lead for the terminal landside design package. This included review of detailed design of parts of the large trunk flood mitigation network, surface drainage modelling reviews and confirming compliance of the design the contract requirements and regulatory guidelines. Review of designs against catchment wide flood modelling and co-ordination with construction teams and stakeholders was required to ensure a compliant design.

- **Port Hacking Overflow Study, Sydney, NSW, Australia (2021 - 2023): Sydney Water, Water Quality Monitoring Lead**

I was the technical specialist responsible for co-ordination and development of flow monitoring and water quality monitoring programmes for a combined, wastewater, stormwater, and bathymetric hydraulic model. This project combines hydraulic and water quality modelling by coupling one dimensional and two-dimensional models of the different components of the water systems to investigate the potential causes of hydraulic and water quality impacts of wastewater overflows into Port Hacking, south of Sydney Australia

- **Gippsland Line Upgrade, Melbourne, Victoria, Australia (2021 - 2023): Rail Projects Victoria, Stormwater Design Lead**

I was the technical lead designer for the drainage aspects of four station upgrades along the Gippsland Rail line east of Melbourne. I was responsible for technical oversight, hydraulic model design and review, detailed design and drainage package verification against stakeholder requirements and guidelines. This project was an alliance established for the delivery of upgrades (double tracking, station upgrades and associated urban design upgrades) to the regional rail in south-eastern Victoria, Australia.

- **City Rail Link, Auckland, New Zealand (2020 - 2021): Link Alliance, Senior Stormwater Engineer**

I was seconded to the Link Alliance Stormwater Team as a senior Stormwater Engineer to lead the design of major stormwater drainage systems associated with the Aotea, Mt Eden underground stations and the eastern line rail tie in at Normandy Road. I was responsible for detailed design of significant stormwater network realignments, utility clash detection/resolution, hydraulic modelling and detailing of bespoke drainage structures such as drop shafts, diversion structures and connections to existing infrastructure. This involved interfacing with Auckland Council, Watercare and other utility owners, as well as collaboration with constructors and other disciplines in congested urban environments to meet tight project deadlines.

- **Whites Creek Stream Naturalisation, Sydney, NSW, Australia (2020): Sydney Water, Lead Modeller**

I was the lead hydrological and hydraulic modeller responsible for development of a coupled one dimensional/two dimensional TUFLOW model, and concept design and testing of potential naturalisation options. This project was undertaken to test and establish the hydraulic impacts of proposed stream naturalisation on flood levels and risk within the Whites Creek catchment in inner-west Sydney, Australia. This project included validation of the model against earlier catchment flood models that used different hydrology methods, requiring reanalysis using ARR 2016 methodologies and calibration of results to observed historic flooding.

- **Tongatapu Multi Hazard Risk Assessment, Nuku'alofa, Tonga (2020 - 2021): Asia Development Bank, Lead Flood Modeller**

I led the development of a TUFLOW pluvial flood model to assess and map the flood risks arising from rainfall on the island of Tongatapu. The results of the flood study fed into a wider multi-hazard risk assessment to quantify the risk to buildings and infrastructure and inform future investment.

- **Puhinui Southern Gateway Industrial Subdivision, Auckland, New Zealand (2018 - 2019): Southern Gateway Consortium, Stormwater Technical Lead**

I was the Technical Design Lead for the Stormwater aspects of a large lot industrial development in Wiri, Auckland, including a road bridge over Puhinui Stream. Responsible for hydrological and hydraulic modelling, flood frequency analysis, catchment management strategy development and Stormwater management device design.

- Rotokauri North flood modelling, Hamilton, New Zealand (2017): Green Seed, Stormwater Technical Lead**
 I was responsible to the two-dimensional flood modelling (Rapid Flood Hazard Assessment) and concept Stormwater Management Strategy to guide development of a large land holding east of Hamilton City, which had been left out of the modelling and detailed planning within the overarching Rotokauri ICMP. The design required solutions consistent with the ICMP outcomes, which would operate hydraulically within the flat terrain with high groundwater tables. A detailed understanding of the objectives and outcomes of the ICMP was required to be able to apply my judgement in setting design parameters due to the lack of specific details for the subcatchment within the ICMP.
- Peka Peka to Ōtaki Expressway, Wellington, New Zealand (2014 - 2016): Waka Kotahi/NZTA, Senior Stormwater Engineer**
 I was the lead stormwater design Engineer for the specimen design of a 12km expressway on SH1 north of Wellington. I was responsible for leading the design of the stormwater elements of the project, including culvert systems, flood mitigation, Water Quality treatment devices and road drainage. I was also involved as the Stormwater SME for the Principal during the subsequent tender phase of the project.
- AMETI Stage 1, Auckland, New Zealand (2011 - 2013): Auckland Transport, Senior Stormwater Engineer**
 I was the Senior Stormwater Engineer for Phase 1 of the AMETI project, which included a new arterial road, intersection upgrades and road realignments in Panmure, Auckland. I was responsible for the design of the stormwater collection and conveyance systems, major culverts, Water Quality treatment design and flood mitigation works on the project, including incorporating elements of Water Sensitive Urban Design and design integration with the cultural heritage of the site, and Landscape and Urban Design framework.

Professional History

CKL, Principal Environmental Engineer	2024 - current
WSP, Technical Principal – Stormwater Design	2023 - 2024
Arup, Senior Stormwater Lead	2019 - 2023
CKL, Technical Lead Environmental Engineering	2017 - 2019
Opus, Work Group Manager	2014 - 2017
Opus, Stormwater Engineer	2006 - 2017
Opus, Building Structures Design Technician	2004 - 2006
Opus, Civil Infrastructure Technician	2003 - 2004
Opus, Transportation Technician	2001 - 2003
Pryda, Design Technician	1999 - 2001
Bruce Wallace Partners, Engineering Technician	1998 - 1999