

20 YEARS OF CHANGE – THE POWER OF WATERCOURSE ASSESSMENT RESURVEY DATA AND ITS IMPLICATIONS FOR WATERWAYS MANAGEMENT UNDER TE MANA/MAURI O TE WAI

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ABSTRACT

Watercourse Assessment (WA) surveys in the Auckland region were first undertaken on the North Shore in 2002. WA surveys provide a single point-in-time “baseline” condition assessment of our waterways including their ecological health, the state of stormwater infrastructure in the watercourse corridor and their conveyance capacity. With robust field survey requirements and data quality assurance processes, WA provides useful information for maintaining our waterways. To date, over 1,400 km of streams possess WA information, mostly from urban streams but expanding considerably into rural areas where future growth is predicted.

The WA methodology (WAM) is now 20-years old. Despite this, many of the parameters measured remain the same or very similar to the original method. Importantly, re-surveys of WA have begun in Auckland catchments. Methodological consistency permits the assessment of change in WA indicators over two decades since original baseline surveys.

To date, four catchments have been resurveyed using the WAM, that have experienced differing urban growth and stormwater infrastructure decisions. Of these, Kahika was almost fully developed when originally surveyed in 2002 with stormwater infrastructure focused on conveyance only, with limited treatment. Oteha Valley was originally surveyed in 2003 immediately following large-scale greenfield development, with stormwater network designs following TP-10 guidelines. Lignite, initially surveyed in 2002 has continued to develop over the last 20 years with a reduction in rural for increasing residential land use, and following TP-10 guidance. The fourth catchment resurveyed by WA is Long Bay (Vaughan’s Stream), originally surveyed in 2002 and which has experienced by far the greatest land use change over the last two decades (e.g., shifting from 71% rural to 63% residential). Development of Long Bay was undertaken under a structure plan.

This paper provides an overview of key changes observed in WA over two decades and how our streams evolve over time under differing pressures and management. Waterway health is a key regulatory requirement of Auckland Council to manage for and the WA offers insights on numerous measures thereof. Our talk will summarise changes in bank stability and riparian condition and examine how effective stormwater infrastructure has been at managing for development pressures, most notably stormwater outlets.

Improving our understanding of waterway responses to land use change, under varying stormwater management is valuable to the water and development sectors. Regulators and Entities alike are obliged under Te Mana/Mauri o te Wai, to prioritise and deliver outcomes for the health and wellbeing of freshwater above all other considerations now (National Policy Statement for Freshwater Management 2020, Resource Management Act 1991, Water Services Bill 2). The long-term consistency and meaningful measures of waterway health enable the WA programme to be a powerful means of improving

delivery of statutory functions in Auckland Council and outcome from network users. Our talk will highlight potential to revise stormwater network planning, guidance and investment decision-making with WA.

KEYWORDS

Watercourse Assessment, Erosion, Geomorphology, Survey, Riparian management, Stormwater outlets, asset condition, Renewal, Operation and maintenance; Monitoring, Land use change, Urban development, Environmental effects.