

Indigenous Water Sensitive Urban Design

An Aotearoa New Zealand Perspective

T Brockbank, E Afoa

INTRODUCTION

The economic, social, amenity, and environmental values of water sensitive urban design (WSUD) are widely understood, often seen in practice, and well documented. However, cultural connection and indigenous knowledge within these core values, either as a standalone value or subtly and intrinsically woven throughout, are typically poorly represented.

Indigenous values – from knowledge accumulated over thousands of years – are often considered as a ‘last minute addition’, compartmentalised as a separate ‘cultural bottom line’ indicator, or in many projects, it seems they are being excluded (whether by intent or oversight).

Māori culture is indigenous to Aotearoa New Zealand. *Te Ao Māori* – the Māori worldview – recognises that environmental management has integral links with the *mauri* (wellbeing) of the environment and concepts of *kaitiakitanga* (guardianship/stewardship).

Māori are acknowledged as *tangata whenua*, meaning “people of the land”. The expression illustrates the profound relationship Māori have with land and the environment – more than a physical connection to the land. It is essential to understand the emphasis *Te Ao Māori* places on a spiritual connection with the land.

The aim of this paper is to demonstrate the intrinsic relationship between people, water, and the natural environment embedded across both the physical and spiritual planes within *Te Ao Māori*. We discuss how these connections promote stewardship and protection of *te taiao* (the natural world); and therefore, how indigenous values – specifically holistic values reflected in *Te Ao Māori* – can inform, enhance, and complement WSUD as it is commonly implemented.

*Nā ngā tūpuna ngā taonga i tuku iho.
Treasures passed down from our ancestors.*

HIGHLIGHTS

- Recognising and validating indigenous water sensitive design
- Advocating for indigenous water knowledge to be equally respected alongside western science
- In an evolving world we need to use past knowledge to inform innovation and adaption

MĀORI CONCEPTS

This paper builds on research undertaken for the ‘Activating WSUD for healthy resilient communities’ research stream commissioned by the Building Better Homes Towns and Cities National Science Challenge (Afoa & Brockbank, 2019). It is intended as a capacity building exercise for WSUD practitioners with future scope to encompass a broader range of written and oral narratives. It reflects our understanding of *Te Ao Māori* and our experiences to date – it is not intended to represent the view of all Māori.

The following concepts comprise foundational Māori concepts that underpin holistic catchment management and WSUD.

Whakapapa

Traditional creation stories underpin Māori identity and connection with *te taiao*. Creation stories broadly reference the personification of, and separation of, *Papatūānuku* (earth mother) and *Ranginui* (sky father) as primal parents. Once the parents were separated their progeny – personified as natural phenomena – occupied and flourished in the various realms created.

It is not only all Māori who are connected in genealogical tables – all things are related by descent and so it becomes difficult to separate aspects of the environment

for specific comment without considering them in a broader environmental and intergenerational context.

*Ko au te whenua, ko te whenua ko au.
I am the land; the land is me.*

Whakapapa – loosely translated as genealogy – does not have an exact English language equivalent. It is the central principle that orders the universe. Describing the genealogical sequence within the creation story, it traverses both spiritual and physical realms.

Whakapapa demonstrates interconnectivity between everything placing all humans in an environmental context with all other flora, fauna, and natural resources, and expresses our fundamental kinship with the *atua* (deities) and the natural world.

Mātauranga Māori

Māori have an intricate, holistic, and interconnected relationship with the natural world, with a rich knowledge base – *mātauranga Māori* – developed over thousands of years and dating back to life in Hawaiki, Polynesia, and trans-Pacific migrations.

Māori culture is based on strong oral narratives, including *maramataka* (Māori lunar calendar used to guide planting, harvesting, fishing, and hunting; dynamic and tested through experiential learning), *whakataukī* (proverbs), and *pūrākau* (traditional Māori narratives).

Oral narratives are frameworks by which Māori understand and comprehend *Te Taiao* (the universe, the natural world), add to and test that knowledge, share it within generations, and pass it down through the generations. *Mātauranga Māori* spans knowledge, culture, values, and worldview, and incorporates knowledge generated using techniques consistent with the scientific method but explained according to a Māori world view.

However, oral narratives are not well represented in western science-based considerations. Dismissing oral narratives as simply myths, legends, and folklore does not value *Te Ao Māori* or the importance of alternate world views in teaching, learning, and the intergenerational transfer of knowledge. Meanings may not be immediately apparent without knowing the historical, cultural, and linguistic context from which the narrative originated. What those who disregard oral narratives fail to comprehend, is that the knowledge was generated using scientific methods, explained according to a Māori world view.

*He hanga nā te waha o te ngutu nō mua iho anō.
Although seeming to be only from the lips,
it is actually of ancient origin.*

CULTURALLY ENHANCED WSUD

WSUD is strongly linked to the broader concept of urban design and cultural landscape, although it is often considered in a narrow stormwater centric perspective in Aotearoa New Zealand. However, people and nature are inseparable and WSUD provides a pathway to integrate built and natural form and character, whereby the intrinsic value and integrity of the ecosystem is considered in the design process to enhance urban development and socio-cultural outcomes. *Te Ao Māori* enhances this by reconnecting people to the spiritual world in tandem with the physical world, recognising the physical world has intrinsic value in and of itself separate to human use. A strong connection to nature has been demonstrated to support improved mental health, social cohesion, and physical behaviour within communities – linking healthy ecosystems to people's cultural, spiritual, and physical wellbeing.

As demonstrated through the development and growing implementation of WSUD, we are living in an evolving world – *Te Ao Hurihuri*. In Aotearoa New Zealand there are a range of policies and guidelines that provide connection between *Te Ao Māori* and urban water management. These initiatives empower the naturalisation of *Te Ao Māori* in water management for healthy and resilient communities in Aotearoa. These are some examples.

National Policy for Freshwater Management

The National Policy Statement for Freshwater Management 2020 (NPS-FM) comes into effect in September 2020. It expands upon *Te Mana o te Wai* – a holistic concept introduced in earlier iterations of the NPS-FM. It also provides a clearly defined hierarchy of obligation, prioritising:

- first, the health and well-being of water bodies and freshwater ecosystems
- second, the health needs of people (such as drinking water)
- third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

Urban Water Principles

Ngā Wai Manga, or Urban Water Principles, (MfE 2018) are based on the concept of *Te Mana me Te Mauri o Te Wai*. These are interpreted as the integrated and holistic well-being of a freshwater body, whereby we recognise that each water body has its own *mauri* (wellbeing) and its own *mana* (authority) which must come first to protect the integrity of the water body.

The principles are intended to guide decision-making, promote sustainable behaviours and the creation of water sensitive urban spaces by drawing on *mātauranga*, the lessons of the past, international best practice, the needs of our present communities, and a vision of a sustainable, resilient future.

Te Aranga Principles

These are a set of outcome-based principles founded on Māori cultural values and formulated to provide practical guidance for enhancing outcomes for the design environment.

Māori culture recognises that environmental care has integral links with the *mauri* of the environment and concepts of *kaitiakitanga* (stewardship) and *manaakitanga* (to protect and look after). *Te Ao Māori* does not separate spiritual and intangible aspects from the non-spiritual and tangible. *Te Ao Māori* links the roles and health of people to supporting the wellbeing of the environment, through the intrinsic relationship between people, water, and *te taiāo*.

Integrating core water sensitive design values with *mātauranga Māori* and principles of *tikanga Māori* (traditional indigenous practices) provides a holistic, culturally enhanced approach to protecting our water for future generations, more in line with natural hydrological processes, and inherently providing for enhanced socio-cultural outcomes, in addition to environmental stewardship. This is to the benefit of the wider environment (people and natural) as it prioritises the *mauri* of the community and their surroundings.

Whilst this approach may be considered different, a holistic culturally enhanced WSUD approach can be a successful, long-term solution to the effects of urbanisation.

A WAY FORWARD

Empowering understanding of Māori oral traditions is essential to gain insight to traditional knowledge and practices in the context of contemporary applications of that knowledge. We must value *mātauranga Māori* in science as an equally valid knowledge system and aim to bring to life a cultural narrative of science.

The principles of WSUD and intended outcomes are already interwoven within the fabric of *Te Ao Māori*, drawing upon fundamental Māori values like *whakapapa*, *whanaungatanga*, *kaitiakitanga*, *manaakitanga*, and *mātauranga Māori*.

Aotearoa New Zealand is moving towards a more explicit recognition of Māori values, through the NPS-FM, and Urban Water and Te Aranga principles, but *Te Ao Māori* is not yet prevalent within mainstream planning and design.

We propose that integration of *mātauranga Māori* into WSUD is not the goal. Rather than trying to integrate *Te Ao Māori*, we need to recognise that WSUD and its intended outcomes already draw upon fundamental Māori values and consider the different perspectives in parallel.

We conclude that design through the lens of *te ao Māori*, applied as a mainstream principle through the WSUD framework, will create the desired social and environmental connections; and create spaces which encourage community participation and membership, to prevent isolation or segregation of members of the community.

The effective implementation of *mātauranga Māori* to achieve goals for sustainable urban development will be essential if cultural identity, history, and traditions of both Māori and *Tauīwi* (non-Māori) are to be truly reflected in the built and natural environment.

The desired outcome is to remove the compartmentalisation of *mātauranga Māori* as a separate “cultural bottom line” indicator, and to instead recognise that the holistic values reflected in *Te Ao Māori* benefit the wider community as a whole and should be embraced in parallel.

To this effect, we cannot properly approach *mātauranga māori* without *Te Reo* (the Māori language), so it will also be important to provide opportunities to educate and encourage the update and normalisation of *Te Reo* within both colloquial and professional language.

The implementation of both cultural revitalisation and water management can form a successful, long-term holistic ‘stewardship’ solution for what are becoming increasingly complex and important environmental and socio-cultural objectives.

*Titiro whakamuri, Haere whakamua.
We look to the past, as we move forward into the future.*

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THE AUTHORS



Troy Brockbank

Troy Brockbank (Te Rarawa, Ngāti Hine, Ngāpuhi) is a Kaitohutohu Mātua Taiao with WSP and has over 14yrs professional experience in the water industry. He is passionate about culturally enhanced water sensitive design approach – weaving together both indigenous and western knowledge for holistic outcomes.



Emily Afoa

Emily Afoa (Ngāpuhi, Ngāti Maniapoto) is a partner & Environmental Engineer at Tektus Consultants Ltd with over 14yrs experience gained through roles in tertiary institutions, local government, and consultancy firms. Emily has a passion for water sensitive solutions that value Te Ao Māori and provide benefit to both community and the natural environment.