

# Stormwater 2024

15–17 May | Tākina Wellington Te Whanganui-a-Tara

## PRELIMINARY PROGRAMME

TUESDAY 14 MAY 2024	
08:45 – 15:30	<b>CONNEXIS HIGH SCHOOLS FORUM: RIPPLE EFFECT: EXPLORING STORMWATER CAREERS – [RONGOMĀTĀNE PLENARY HALL]</b>
	This event is a high school forum aiming to inspire and educate our Rangatahi (16-18 years old) about stormwater management and promote careers in the water industry. The vision is to create a future where young minds are passionate about stormwater management, environmental sustainability, and the water industry. See the WaterNZ website for more details <a href="#">here</a> .
08:45 – 09:30	Registration and welcoming mihi whakatau
09:30 – 10:30	Water Stories – Personal experiences and sharing stories on the Past, Present & Future of Stormwater Management; Water Quality and Resources from Droughts to Overflows, Climate Resilience and Sponge Cities – Flooding and Liveable Cities; and Shifts in the Way Water is Managed.
10:30 -11:00	<b>MORNING TEA– [RONGOMĀTĀNE PLENARY HALL]</b>
11:00 – 12:00	Inspiring the future – A panel discussion and questions from the floor A panel of young water professionals, sharing their journey into the industry and answering your questions!
12:00 – 12:45	<b>LUNCH – [RONGOMĀTĀNE PLENARY HALL]</b>
12:45 – 14:45	Afternoon Briefings and Field Trip / Workshop Activities Providing opportunities for Rangatahi to meet with water experts around the industry, sharing the range of challenges facing us now and into the future,
14:45 – 15:30	Wrap up, karakia and open forum
13:00 – 17:00	<b>PRE-CONFERENCE: WORKSHOP - [MATIU]</b>
	<b>After the floods – what have we learnt and what are we going to do differently?</b> Facilitated by Helen Shaw and Fiona Macdonald – Auckland Council Including Craig Mountfort – Hastings District Council, Marama Pohatu – Chair of Muriwhenua Incorporation, Fiona Macdonald – Auckland Council, Jenny Vine – Beca & Ian McComb – Tasman District Council  This workshop hopes to bring together council staff and professionals to share learnings from the range of work happening in Aotearoa around flood response, planning for resilience, adaptation and climate change. The objectives are to increase and facilitate knowledge sharing and collaboration, explore the ‘journey’ from short term response to long term planning, and create an environment where we can share stories and learn from each other. Participants can expect to see and participate in discussions about local and national projects underway, the lessons learnt and outputs of brainstorm session to further explore, connect people to continue the journey together.
17:15	<b>WELCOME DRINKS IN TE PAPA - ICON</b> <b>FILM SCREENING: OUR BLUE WORLD [TE PAPA – SOUNDINGS THEATRE]</b>
	Join us for an exclusive premiere screening of the powerful new documentary from the makers of Brave Blue World - this time featuring the story of the Whanganui River. See the Water New Zealand website for more details <a href="#">here</a> .

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WEDNESDAY 15 MAY 2024				
07:30 – 08:30	WATERAID AUSTRALIA – BREAKFAST [MATIU]			
09:00 – 09:30	WELCOME MIHI WHAKATAU AND CONFERENCE OPENING – [RONGOMĀTĀNE PLENARY HALL]			
09:30 – 10:00	KEYNOTE: KARA PUKETAPU-DENTICE – TANGATA WHEUNA PERSPECTIVES – [RONGOMĀTĀNE PLENARY HALL]			
10:00 – 10:30	KEYNOTE: PAUL O'CALLAGHAN (VIRTUAL) BLUETECH RESEARCH – [RONGOMĀTĀNE PLENARY HALL]			
10:30 – 11:00	MORNING TEA [EXHIBITION AREA]			
AM SESSIONS	INFRASTRUCTURE INVESTMENT [RONGOMĀTĀNE A]	FRAMEWORKS [RONGOMĀTĀNE B]	FLOOD MODELLING CASE STUDIES [RONGOMĀTĀNE C]	WORKSHOP 1 [MATIU]
11:00 – 11:30	GREEN FINANCE FOR BLUE WATERS: A GLOBAL OVERVIEW OF INNOVATIVE ECONOMIC INSTRUMENTS AND INCENTIVES Brad Tiller – Tonkin + Taylor	HOW TO STOP BUILDING IN NATURAL HAZARD AREAS Shelley Wharton – Whangarei District Council	RAPID FLOOD INUNDATION MAPPING AT LARGE SCALE USING A MULTI-DISCIPLINARY MACHINE LEARNING APPROACH Jeff Albee – Stantec	HOW TO GUIDE TO BE A GOOD PARTNER TO TANGATA WHENUA  Facilitated by Sarah Nolan – Auckland Council
11:30 – 12:00	STORMING AHEAD: WATER INFRASTRUCTURE FOR GROWTH Mark Hooker – Tonkin + Taylor	SEEING THE UNSEEN – OPPORTUNITIES FROM A HOLISTIC NATIONAL VIEW OF STORMWATER ASSETS AND FUNCTIONS Alistair Allan – Storm Environmental	STREAMLINING MINIMUM FLOOR LEVEL ADVICE DIGITALLY Ivan Kholodov – Wellington Water	
12:00 – 12:30	BALANCING ACTS: STORMWATER MANAGEMENT AMID BREAKNECK GROWTH Danika Ferguson – Beca	EMBRACING CHANGE: INSIGHTS FROM WELLINGTON WATER'S FRAMEWORK Uki Dele – Wellington Water	FLOOD CHALLENGES AND COLLABORATIVE SOLUTIONS: COMPREHENSIVE STORMWATER MODELLING ON EASTERN BUSWAY Tom Newman – AECOM	
12:30 – 13:30	Lunch [Exhibition Area]			
FIRST PM SESSIONS	TE MANA O TE WAI [RONGOMĀTĀNE A]	PLANNING AND PERFORMANCE [RONGOMĀTĀNE B]	CLIMATE CHANGE [RONGOMĀTĀNE C]	WORKSHOP 2 [MATIU]
13:30 – 14:00	GIVING EFFECT TO TE MANA O TE WAI - A KAUAU FOR STORMWATER PROFESSIONALS Troy Brockbank – Beca	IS IT A 'WETLAND'? IS IT A 'RIVER'? NO... IT'S A GREY AREA Justine Quinn – Tonkin + Taylor	CARBON FOOTPRINT OF OPEN CUT PIPELINES (NZ CONTEXT) Kevin Manalo – Massey University	FACILITATING WIDER ACCEPTANCE AND UPTAKE OF NATURE-BASED SOLUTIONS IN AOTEAROA NEW ZEALAND  Facilitated by Liz Gavin and Mark Lewis – Boffa Miskell  Including: Nancy Vance – Boffa Miskell, Tom Mansell – Auckland Council, Myfanwy Hill – Greater Wellington Regional Council, Nigel Wong & Ben Curran – Ministry for the Environment
14:00 – 14:30	LESSONS FROM CO-DEVELOPMENT OF STORMWATER MANAGEMENT PLANS – ENHANCING OUTCOMES Liam Foster – WSP	HARMONY IN BROWNFIELD REVITALISATION: A HOLISTIC NATURE-BASED APPROACH Bidara Pathirage – Woods	UNINTENDED CONSEQUENCES: GROUNDWATER, CLIMATE CHANGE, URBAN DEVELOPMENT, AND IMPROVING INFRASTRUCTURE Dr Helen Rutter – Aqualinc Research	
14:30 – 15:00	BRIDGING INDIGENOUS AND ENVIRONMETNAL SCIENCE: EXPLORING THE ROLE OF MĀTAURANGA MĀORI IN ENVIRONMENTAL MONITORING Mapihi Martin-Paul – Boffa Miskell	A REHABILITATION JOURNEY– THE EVOLUTION OF STORMWATER TREATMENT DESIGN AT WHANGANUI PRISON Reuben Ferguson – Tonkin + Taylor	THE POTENTIAL EFFECT OF CLIMATE CHANGE ON STORMWATER TREATMENT Matthew Murdock – WSP	

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WEDNESDAY 15 MAY 2024 (continued)				
15:00 – 15:30	AFTERNOON TEA [EXHIBITION AREA]			
SECOND PM SESSIONS	RAIN GARDENS [RONGOMĀTĀNE A]	FLOODING, FROM POLICY TO CASE STUDIES [RONGOMĀTĀNE B]	DATA, MODELLING & RESILIENCE [RONGOMĀTĀNE C]	SECONDARY SYSTEMS (WORKSHOP 3) AND PRIMARY SYSTEMS (PRESENTATION) [MATIU]
15:30 – 16:00	THE RISE AND FALL OF RAIN GARDENS IN AUCKLAND: DRIVERS AND SOLUTIONS FOR THEIR EFFECTIVE USE AS NATURE-BASED SOLUTIONS Sue Ira – Koru Environmental	AUCKLAND FLOODS 2023: ASSESSING RISK TO LIFE FROM FLOODING AT THE PROPERTY LEVEL Fiona Macdonald – Auckland Council	BREAKING DATA SILOS FOR EFFECTIVE DECISION MAKING Nasrine Tomasi – Mott MacDonald	WORKSHOP 3: URBAN SECONDARY FLOWPATH MANAGEMENT  Facilitated by Ian McComb – Tasman District Council
16:00 – 16:30	OUR RAIN GARDEN SUCKS! INVESTIGATING A NATURE-BASED SOLUTION FOR VOLUME REDUCTION AND CLIMATE CHANGE RESILIENCE Julia Watson – Stormwater360		DEVELOPMENT OF THE NATIONAL STORMWATER MODELLING GUIDE Michael Arthur – Metis Consultants	
16:30 – 17:00	STRUCTURAL SOIL TREE PITS FOR ENHANCED STORMWATER MANAGEMENT: DRAFT DESIGN GUIDE Zoe Avery – Auckland Council	WHAT THE SWOC? – POST CYCLONE STORMWATER STRATEGY DEVELOPMENT Kyleah Hess – Beca	DEFINING RESILIENCE: A PREREQUISITE FOR EFFECTIVE FLOOD MANAGEMENT Alex Cartwright – Tonkin + Taylor	PRESENTATION: CULVERT, THE CHOKING POINT OF NETWORK RESILIENCE Boniface Kinnear – Woods
17:00 – 18:00	INTERGROUP WELCOME FUNCTION [EXHIBITION AREA]			

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THURSDAY 16 MAY 2024				
07:00	REGISTRATION OPENS			
08:00 – 09:00	PANEL DISCUSSION: CAN WE ENABLE INVESTMENT THROUGH SUSTAINABLE FINANCE? FACILITATED BY BRAD TILLER – TONKIN + TAYLOR INCLUDING: SAM STUBBS - SIMPLICITY (NZ), TONIA HASKELL – WELLINGTON WATER, HELMUT MODLIK - TE RŪNANGA O TOA RANGATIRA, DEAN SPICER – ANZ, AND DAVID HALL – TOHA [RONGOMĀTĀNE PLENARY HALL]			
09:00 – 10:00	INNOVATION SHOWCASE – [RONGOMĀTĀNE PLENARY HALL]			
10:00 – 10:30	MORNING TEA [EXHIBITION AREA]			
AM SESSIONS	<b>WATER QUALITY</b> <b>[RONGOMĀTĀNE A]</b>	<b>KŌRERO, ATUATANGA AND TE TĀIAO, AND SW STORIES</b> <b>[RONGOMĀTĀNE B]</b>	<b>WATER QUANTITY</b> <b>[RONGOMĀTĀNE C]</b>	<b>WORKSHOPS 4 &amp; 5</b> <b>[MATIU]</b>
10:30 – 11:00	WILL WATER SENSITIVE URBAN DESIGN RESULT IN MEASURABLE IMPROVEMENTS IN ECOLOGICAL HEALTH OF URBAN STREAMS? Dr Elizabeth Graham – NIWA	TE MANA O TE WAI - INDUSTRY KŌRERO Sarah Nolan – Auckland Council	SPONGIFYING OUR CITIES - WHAT CAN WE LEARN FROM CHRISTCHURCH'S TWENTY YEAR "EXPERIMENT" Liam Foster – WSP	WHOSE LINE IS IT ANYWAY? - ADDRESSING SHARED MANAGEMENT OF WATERCOURSE AND STORMWATER INFRASTRUCTURE FOR URBAN AND RURAL STORMWATER  Facilitated by Alistair Allan – WSP
11:00 – 11:30	PROGRESS IN DEVELOPING A METAL ISOTOPE TOOLKIT FOR IDENTIFYING METAL SOURCES IN THE ENVIRONMENT Dr Jenni Gadd – Hydrotoxy Research	ATUATANGA AND TE TĀIAO: A TE TAI TOKERAU WORLDVIEW ON WATER MANAGEMENT AND ETHICAL DECISION-MAKING Troy Brockbank – Beca and April Nordstorm - Northland Regional Council	WHAT DO WE DO WHEN ADDING CAPACITY MIGHT NOT ADEQUATELY REDUCE FLOOD RISK? Dr Laura Robichaux – Beca	
11:30 – 12:00	ASSESSING THE PERFORMANCE OF STORMWATER TREATMENT FACILITIES IN SUBURBAN CHRISTCHURCH Ingrid Cooper – Pattle Delamore Partners	EMBRACING INTERNATIONAL PRACTICE TO TRANSFORM AOTEAROA'S STORMWATER MANAGEMENT – LESSONS FROM A WINSTON CHURCHILL FELLOWSHIP Josh Irvine – WSP	RECENT EXPERIENCES PLANNING FOR STORMWATER VOLUME TARGETS Dr Alex Sims – Alluvium Consulting	
12:00 – 12:30	PERFORMANCE ASSESSMENT OF STORMINATOR™ BARREL: A DISSOLVED METAL TREATMENT SYSTEM Frances Charters – University of Canterbury	STORMWATER MANAGEMENT IN THE WAIKATO: AN UNEXPECTED JOURNEY Stu Joyce – Morphem Environmental	COULD SOMEONE PLEASE TURN DOWN THE VOLUME? UNPACKING MYTHS, MISUNDERSTANDINGS AND OPPORTUNITIES WITH STORMWATER RETENTION Stu Farrant – Morphem Environmental	DIVERSITY, EQUITY & INCLUSION - IDEAS AND INNOVATION TO ENABLE MORE RESILIENT STORMWATER OUTCOMES  Facilitated by Deborah Lind – Aurecon & Gillian Blythe – WaterNZ
12:30 – 13:30	LUNCH [EXHIBITION AREA]			
	POSTER Q&A SESSION [EXHIBITION AREA]			

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<b>LUNCHTIME POSTER SESSION</b>	IMPROVING ROAD STORMWATER RUNOFF QUALITY THROUGH TETRATRAP IMPLEMENTATION Tiannui Wang & Michael Fray – GHD	THE 3 STAGES IN IDENTIFYING GHG EMISSIONS IN STORMWATER PROJECTS Kevin Manalo – Massey University	INTEGRATING WSUD MODELLING, DESIGN, CONSTRUCTION & MAINTENANCE Mircea Stancu – Cleanstormwater	THE ART OF NZ MANHOLE DESIGN Timothy Strang – Wellington Water	SPACE TO SATURATE Kenya Ashcroft & Liam Foster – WSP	SUSTAINING PLANT LIFE IN HIGH HYDRAULIC CONDUCTIVITY MEDIA Josh Daken, Julia Watson & Kevin Jonathan – Stormwater360	UNVEILING STORMWATER MANAGEMENT: KEY DIFFERENCES BETWEEN GREENFIELD AND BROWNFIELD SITES Ricky Kiddle & Kobe Daniel - Woods
<b>13:00 – 13:30</b>							

THURSDAY 16 MAY 2024 (continued)				
FIRST PM SESSIONS	SYSTEMS, SEDIMENT AND SKILLS [RONGOMĀTĀNE A]	RENEWED AND REFRESHED [RONGOMĀTĀNE B]	INFRASTRUCTURE [RONGOMĀTĀNE C]	WORKSHOP 6 [MATIU]
13:30 – 14:00	FIXING WATER WITHOUT BREAKING THE BANK David Norman – GHD	RED ZONE RENAISSANCE: ŌTĀKARO/AVON RIVER CORRIDOR REGENERATION - LEARNINGS FROM THE WAITAKI STREET STORMWATER PROJECT Zoe Evans – GHD	REGENERATIVE STORMWATER MANAGEMENT: A SYSTEMS THINKING APPROACH Josh Hodson – Tonkin + Taylor	INFRASTRUCTURE RESILIENCE - GLOBAL AND NEW ZEALAND RESPONSES  Facilitated by Hugh Blake-Manson – Waugh Infrastructure  Including: Assoc. Prof. Theuns Henning, Prof. Asaad Shamseldin and Dr. Colin Whittaker – University of Auckland
14:00 – 14:30	DON'T LANDFILL! STORMWATER POND SEDIMENT MAY BE BENEFICIALLY USED AS SOILS AND SOIL AMENDMENTS Dr Robyn Simcock – Manaaki Whenua Landcare Research NZ	FROM ASSUMPTIONS TO FACTS, SHIFTING THE CONVERSATION TO BETTER MANAGE TIME, EFFORT, AND MONEY Abi Croutear-Foy – AquaWatch Solutions	EMBRACING CHANGE THROUGH INNOVATION: THE PIPE-I ROBOT Marcus Hall – Beca	
14:30 – 15:00	ORPHAN CHILD, INVISIBLE GORILLA, DUNG BEETLE ...? THE POWER OF ENVIRONMENTAL SECTOR ASSOCIATIONS TO SAVE THE WORLD Clare Feeney – Environmental Communications	THE \$GREEN BENEFITS OF WATER SENSITIVE DESIGN Linda Norman – ACH Consulting	CASHMERE VALLEY, APPLYING DAM PRINCIPLES TO STORMWATER Marcus Burrows and Petra O'Bery – Stantec	
15:00 – 15:30	AFTERNOON TEA [EXHIBITION AREA]			
SECOND PM SESSIONS	AUCKLAND CASE STUDIES [RONGOMĀTĀNE A]	NETWORK PERFORMANCE [RONGOMĀTĀNE B]	FLOOD DEBRIS [RONGOMĀTĀNE C]	URBAN SW INTERACTIONS [MATIU]
15:30 – 16:00	MAXIMISING THE BENEFITS OF AUCKLAND COUNCILS FISH PASSAGE REMEDIATION PROGRAMME THROUGH A REGIONWIDE GLOBAL CONSENT Jenny Vince – Beca	CONNECTED WATERS: UNLEASHING THE POWER OF DIGITAL TRACKING IN WATER QUALITY/NETWORK IMPROVEMENT PROGRAMMES Hana Judd – Morphum Environmental	CONSIDERATIONS FOR DYNAMIC FLOOD-BORNE DEBRIS IMPACT LOADS Reza Shafiei – Beca	ASSESSING THE IMPACT OF WET WEATHER OVERFLOWS USING EFFECTS- BASED ASSESSMENT Kalyan Chakravarthy – DHI Water & Environment
16:00 – 16:30	BEST FOR AUCKLAND STORMWATER OUTCOMES FOR EASTERN BUSWAY Paul May – Jacobs	MONITORING & EVALUATING STORMWATER NETWORK PERFORMANCE IN TĀMAKI MAKĀURAU (AUCKLAND) Gemma Chuah – Auckland Council	ROOM TO MOVE: ACCOMMODATING WOODY DEBRIS IN STREAM CHANNELS AS FISH AND INVERTEBRATE HABITAT Brendan Hicks – Morphum Environmental	URBAN STOCK WATER RACES AND THE DILEMMA OF OBLIGATIONS Stephen Stern – AECOM

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16:30 – 17:00	STORMWATER GROUP – ANNUAL MEETING OF THE STORMWATER SPECIAL INTEREST GROUP - [MATIU]
19:00 – 23:00	STANTEC CONFERENCE DINNER & INDUSTRY AWARDS – TE PAPA, WELLINGTON FOYER

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### FRIDAY 17 MAY 2024

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08:00 – 09:00	REGISTRATION OPENS		
09:00 – 09:30	KEYNOTE: NICOLA PATRICK AND JONNY OSBORNE – GREATER WELLINGTON REGIONAL COUNCIL – [RONGOMĀTĀNE PLENARY HALL]		
09:30 – 10:00	KEYNOTE: ROBERT C BREARS – OUR FUTURE WATER – [RONGOMĀTĀNE PLENARY HALL]  THE URGENCY OF SUSTAINABLE URBAN WATER MANAGEMENT: BRIEF OVERVIEW OF THE ESCALATING CHALLENGES TO OUR CITIES. STORMWATER HARVESTING: A MULTIFACETED SOLUTION FOR URBAN SUSTAINABILITY AND A CASE STUDY. GROUNDWATER RECHARGE WITH STORMWATER: SECURING OUR WATER FUTURE. INNOVATIVE PRACTICES IN STORMWATER MANAGEMENT: GREEN, GREY AND HYBRID SOLUTIONS. BEYOND STORMWATER: ENVISIONING A SUSTAINABLE URBAN WATER LANDSCAPE.		
10:00 – 10:30	MORNING TEA [EXHIBITION AREA] AND CONFERENCE CLOSURE		
10:30 – 13:30	SITE VISITS		
	<div><p><b>SITE VISIT ONE:</b> <b>ELSDON PARK PORIRUA WETLAND (TE KUKUWAI O TOA) AND KENUPURU LANDING</b> <b>Facilitated by Ngāti Toa &amp; GHD</b></p><p>This newly constructed wetland, gifted the name Te Kukuwai o Toa by local iwi Ngāti Toa, transcends stormwater flood attenuation. By augmenting an existing greenspace, the urban community is connected to the natural environment through an environmentally sensitive solution. The site boasts 35,000 native plants established to improve the health of the harbour and immediately attracted indigenous fauna into the new ecological heart of central Porirua. The wetland provides an outdoor, interactive classroom, for three kura that encompass the wetland perimeter. Contributing to a range of important topics, the public asset offers education on the area’s physical and cultural history, local species, and sustainable stormwater management.</p><p>Kenupuru landing is just a few minutes away from Te Kukuwai o Toa and should be a pleasant stroll from one site to another.</p><p>PPE requirements: not required for Elsdon Park, to be confirmed for Kenupuru Landing</p></div>	<div><p><b>SITE VISIT TWO:</b> <b>E WAI TAKAMORI O TE AWA KAIRANGI – DELIVERING RIVERLINK</b> <b>Facilitated by Greater Wellington Regional Council</b></p><p>Te Wai Takamori o Te Awa Kairangi – Delivering Riverlink is a collaborative partnership between Greater Wellington Regional Council, Hutt City Council, New Zealand Transport Agency - Waka Kotahi, iwi mana whenua Taranaki Whānui ki te Upoko o te Ika (Taranaki Whānui), Ngāti Toa Rangatira (Ngāti Toa), and the AECOM-Fletcher alliance who are working together to transform Te Awa Kairangi ki Tai - Lower Hutt. It includes crucial flood protection and river restoration work, improvements to public transport, walking &amp; cycling routes, local roads and the SH2 Melling Interchange, as well as urban revitalisation of the Lower Hutt city centre.</p><p>The field trip includes the Belmont Wetland - the forerunner for schemes designed to manage stream and stormwater run-off into Te Awa Kairangi / Hutt River, improving its water quality and supporting habitats for wildlife, and the works underway for raising the stopbank by up to 1.5 metres between Melling Bridge and north of Mills Street. The existing stopbank between existing Melling Bridge and Mills Street currently has the lowest level of flood protection in the area, with only 1 in 65 year flood event protection. When all of the works under Te Awa Kairangi programme are completed, the Hutt Valley will be protected from a 2,800m³/s flood (approximately 1 in 440 year flood event including for future climate change).</p><p>PPE requirements: Hard hat, glasses, hi-vis vest, and steel toe boots.</p></div>	<div><p><b>SITE VISIT THREE:</b> <b>URBAN STREAM WALK</b> <b>Facilitated by: Morphum Environmental</b></p><p>The hills which flank Te Whanganui-a-Tara have been shaped by the power of water over millennia creating a patchwork of streams, wetlands and estuaries. These once abundant waterways attracted early Māori settlers who recognised the value of freshwater to support communities establishing pa, kainga and mara almost always connected with freshwater. The arrival of European colonists in the 1800’s saw a dramatic shift that viewed our freshwater in a different light, a resource to be utilised to support a booming urban populace. Streams were drained for town supplies, managed as open drains which spread disease and eventually incarcerated in pipes beneath our increasingly busy streets. But the streams still flow from the hills to the sea....out of site but not out of mind.</p><p>Join us on a waterfront walk to learn about the history, ecological significance and future of our ‘lost’ urban awa which still discharge water to the great harbour of Tara. Crossing the paths of Kumutoto, Waikoukou, Waimaphihi, Moturoa and Waitangi awa this engaging and informative walk will provide insights into the legacy of past decisions, the importance of decisions we make today and the opportunities to consider Te Mana o te Wai in our urban landscapes.</p><p>No PPE is required for this site visit.</p></div>