Smart Water Infrastructure Group – 2023 Water Conference workshop

Accelerating Digital Transformation

water NEW ZEALAND
The New Zealand Water & Wastes Association Waiora Aotearoa

water NEW ZEALAND CONFERENCE & EXPO
17–19 OCTOBER 2023
Tākina, Te Whanganui-a-Tara Wellington

Welcome

Nicolette Voskuilen

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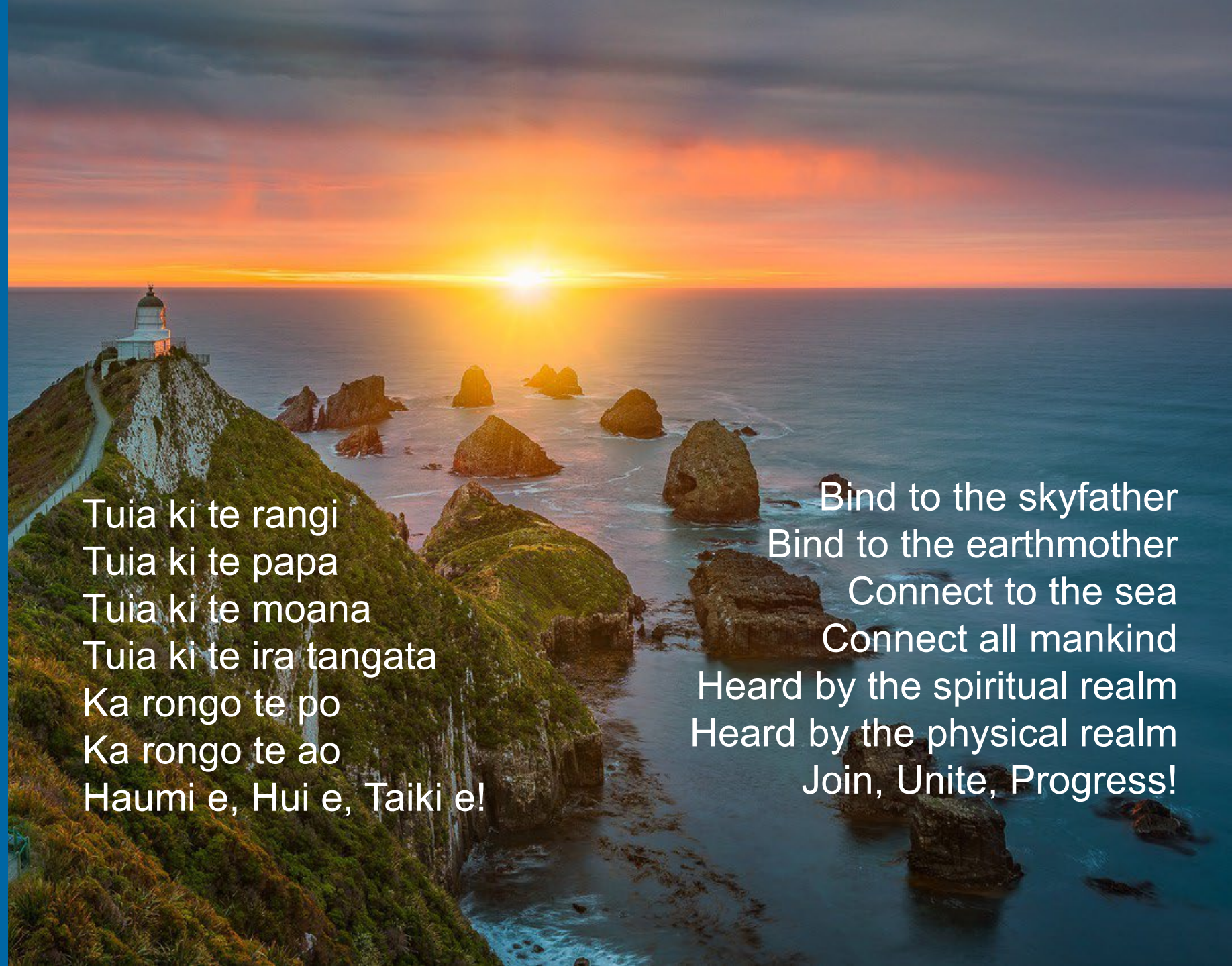
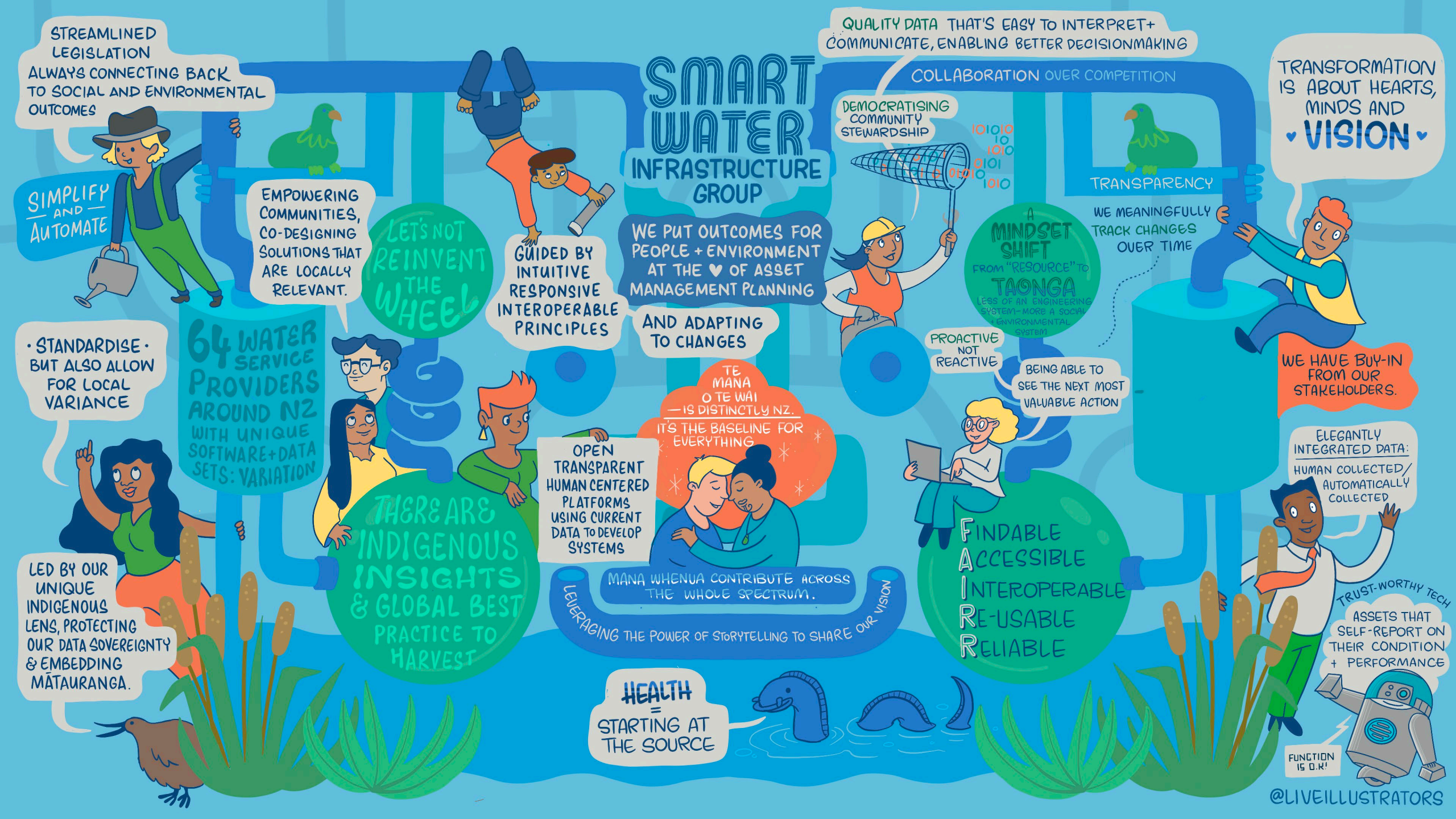
Opening Karakia




STREAMLINED LEGISLATION ALWAYS CONNECTING BACK TO SOCIAL AND ENVIRONMENTAL OUTCOMES
SIMPLIFY AND AUTOMATE
EMPOWERING COMMUNITIES, CO-DESIGNING SOLUTIONS THAT ARE LOCALLY RELEVANT.
LET'S NOT REINVENT THE WHEEL
SMART WATER INFRASTRUCTURE GROUP
GUIDED BY INTUITIVE RESPONSIVE INTEROPERABLE PRINCIPLES
WE PUT OUTCOMES FOR PEOPLE + ENVIRONMENT AT THE ♥ OF ASSET MANAGEMENT PLANNING
AND ADAPTING TO CHANGES
QUALITY DATA THAT'S EASY TO INTERPRET+ COMMUNICATE, ENABLING BETTER DECISIONMAKING
COLLABORATION OVER COMPETITION
DEMOCRATISING COMMUNITY STEWARDSHIP
TRANSFORMATION IS ABOUT HEARTS, MINDS AND ♥ VISION ♥
TRANSPARENCY
A MINDSET SHIFT FROM "RESOURCE" TO TAONGA
LESS OF AN ENGINEERING SYSTEM- MORE A SOCIAL + ENVIRONMENTAL SYSTEM
WE MEANINGFULLY TRACK CHANGES OVER TIME
WE HAVE BUY-IN FROM OUR STAKEHOLDERS.
PROACTIVE NOT REACTIVE
BEING ABLE TO SEE THE NEXT MOST VALUABLE ACTION
• STANDARDISE • BUT ALSO ALLOW FOR LOCAL VARIANCE
64 WATER SERVICE PROVIDERS AROUND NZ WITH UNIQUE SOFTWARE+DATA SETS: VARIATION
TE MANA O TE WAI —IS DISTINCTLY NZ. IT'S THE BASELINE FOR EVERYTHING
OPEN TRANSPARENT HUMAN CENTERED PLATFORMS USING CURRENT DATA TO DEVELOP SYSTEMS
THERE ARE INDIGENOUS INSIGHTS & GLOBAL BEST PRACTICE TO HARVEST
FINDABLE ACCESSIBLE INTEROPERABLE RE-USABLE RELIABLE
ELEGANTLY INTEGRATED DATA: HUMAN COLLECTED/ AUTOMATICALLY COLLECTED
TRUST-WORTHY TECH
ASSETS THAT SELF-REPORT ON THEIR CONDITION + PERFORMANCE
FUNCTION IS O.K!
LED BY OUR UNIQUE INDIGENOUS LENS, PROTECTING OUR DATA SOVEREIGNTY & EMBEDDING MĀTAURANGA.
MANA WHENUA CONTRIBUTE ACROSS THE WHOLE SPECTRUM.
LEVERAGING THE POWER OF STORYTELLING TO SHARE OUR VISION
HEALTH = STARTING AT THE SOURCE
@LIVEILLUSTRATORS

Agenda

Chris Miller

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Agenda

- **Maturity Modelling and Preparing for Water Reform, Where are We and Where to From Here**
  Michael Howden
- **Maturity Model - Approach 1:**
  Organisation Digital Maturity - Implementing Digital Strategy
  Eric Skowron
- **Maturity Model - Approach 2:**
  Specific Process - Applying Maturity Modelling to Water Loss Management
  Christine McCormack
- **Individual Activity: What's our Digital Maturity?**
  Nasrine Tomasi
- **Group Activity: NZ Industry Maturity Analysis**
  SWIG members
- **Discussion and Conclusion**
  Nicolette Voskuilen

Maturity Modelling and Preparing for Water Reform:
Where are We and Where to From Here?

Michael Howden

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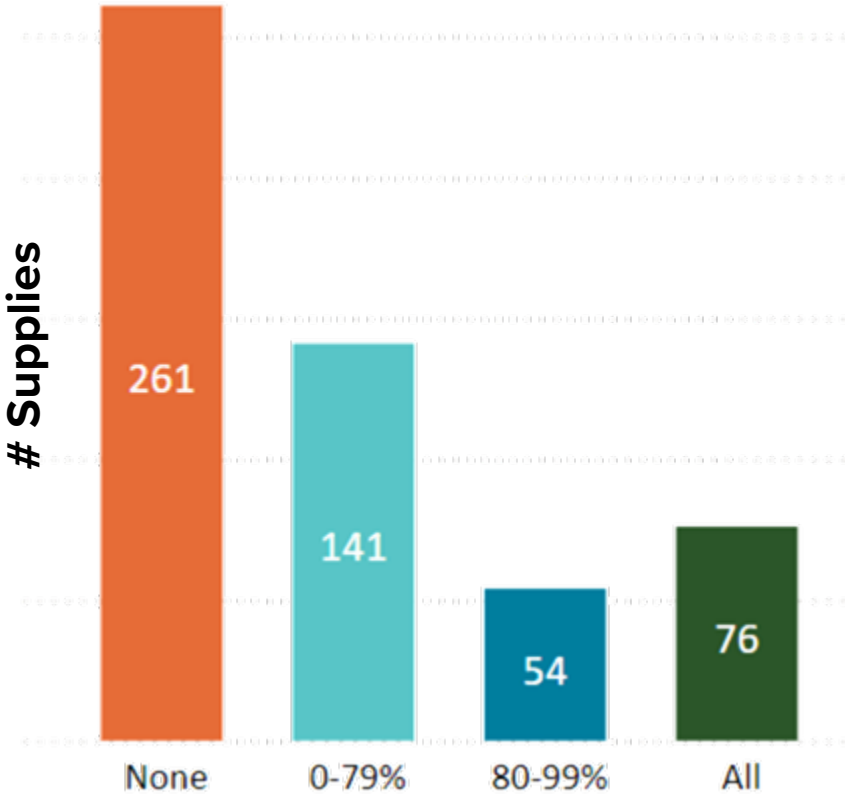
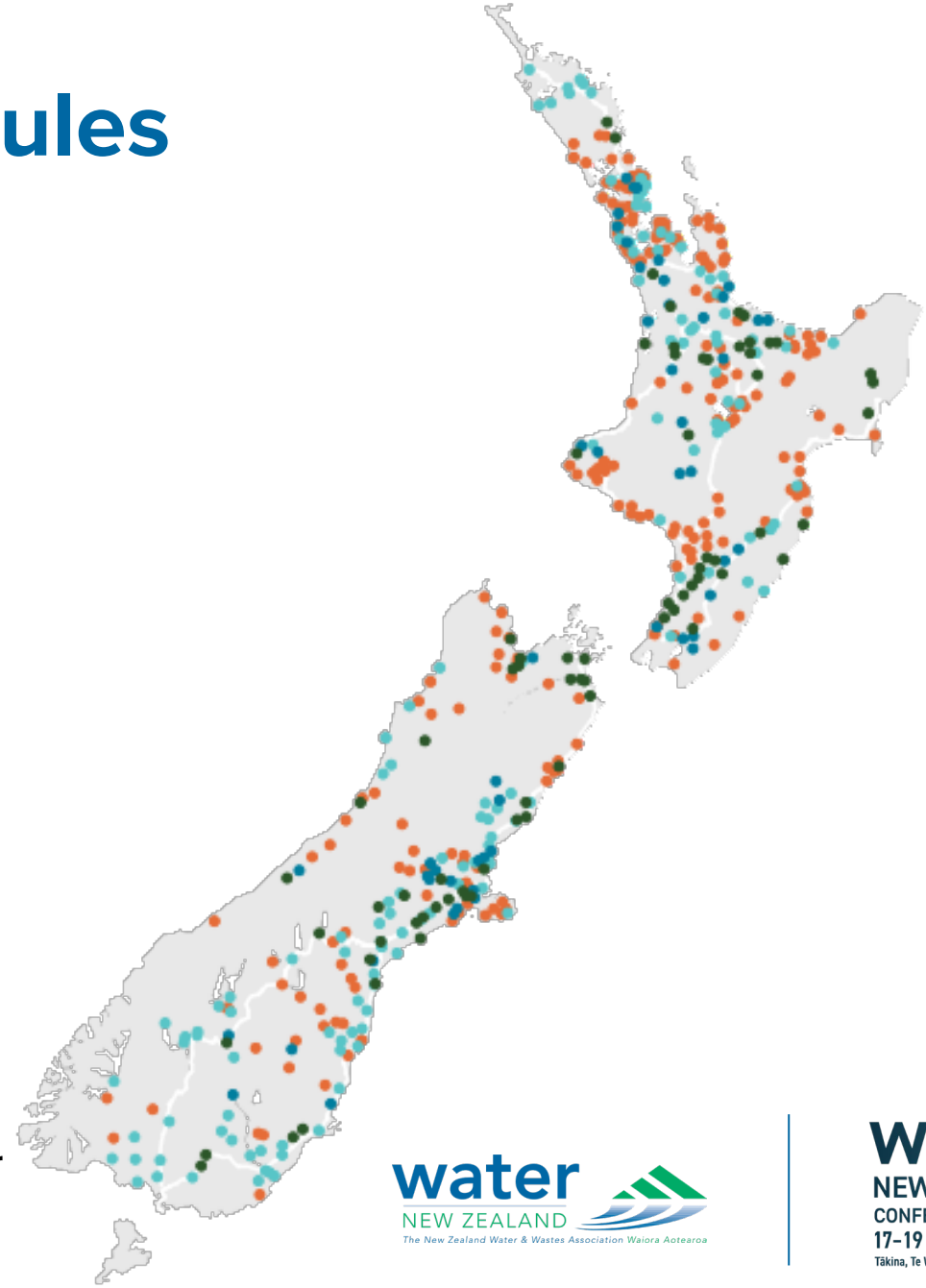
Your reporting against the rules





Completion rate for supplies reporting on bacterial monitoring rules for distribution zones (D1.1, D2.1 or D3.29)

1 January 2023 – 30 September 2023

Maturity Model - Approach 1: Organisation Digital Maturity - Implementing Digital Strategy

Eric Skowron

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Maturity Levels for Digital Water Utility

Level 5: Pioneering	Innovating as an industry leader
Level 4: Optimizing	Fusing information across the utility and potentially beyond the utility (e.g., customers, regulators) to increase measurable benefits
Level 3: Integrating	Merging technologies and processes across the utility and demonstrating cross-functional measurable benefits
Level 2: Enabling	Having a clear utility-wide strategy and investing in pilots based on the strategy
Level 1: Initiating	Exploring the options, developing a strategy, and conducting isolated pilots to test technology and processes
Level 0: Baseline	The level before any significant steps are taken toward implementing digitization

1. Strategy/Vision

Level 5: Measured	Performance measured against strategy and investment priorities aligns with closing gaps
Level 4: Focused	Strategic plans and vision in place at organizational level including long-term focused goals
Level 3: Organisational	Organizational-level strategic plans guide long-range planning
Level 2: Departmental	Strategic plans focused at work-group or department level
Level 1: Operational	Plans focused on operational goals, generally short term
Level 0: Reactionary	No planning in place; work is typically done on an ad hoc basis, management response is reactionary

2. Risk/Resiliency

Level 5: Measured	Effectiveness of resiliency efforts is measured, with plans and methodologies adjusted accordingly
Level 4: Designed	Reliability/resiliency designed into systems; system architectures configured to incorporate backups and alternate paths
Level 3: Considered	Reliability/resiliency are considered during initial requirements and design; alerts and outage notifications are available
Level 2: Reactive	Reliability/resiliency of systems and functions are not considered during initial requirements and design phase; failure detection and response are reactive
Level 1: Ad Hoc	Nothing in place to prepare for unusual incidents; the utility is at risk of not achieving its mission
Level 0: Unknown	Risk and resiliency are not considered by the organization in any normal operations

3. Workforce

Level 5: Skilled	Information used to optimize availability/use of the workforce; workforce experienced with both use and production of information
Level 4: Digital	Workforce appropriately structured and trained to perform expected roles including specializations for development and management of information and insight
Level 3: Trained	Workforce is trained to work in a digital organization
Level 2: Aligned	Workforce skills are basically aligned to job responsibilities
Level 1: Disjointed	Workforce skillsets are not aligned to their job responsibilities
Level 0: Ad Hoc	The workforce is employed and allocated to job responsibilities in an ad hoc manner

4. Asset Management

Level 5: Optimised	Information used to optimize availability and use of assets
Level 4: Managed	Information used to manage asset maintenance to maximize time between maintenance while minimizing failures
Level 3: Analysed	Failure mechanisms analyzed and tracked for assets
Level 2 Responsive	Information used to trigger response to asset failures, with preventative maintenance based on defined periods
Level 1: Reactive	Maintenance based on time in use or actual failure
Level 0: Unmanaged	Assets are not managed; maintenance undertaken when assets fail

5. Data Management

Level 5: Reliable	Data are validated, verified, and available, and considered highly reliable for making sound business decisions
Level 4: Unique	Redundant data sources are eliminated so that only data that have a use are collected; each data source is a single source of truth
Level 3: Timely	Data collected and communicated in timely manner; data quality monitored and managed
Level 2 As needed	The right data are collected to support information creation; data sources confirmed/calibrated
Level 1: Manual	Data sources may exist, with data collected and stored; data collection not always continuous
Level 0: Ad Hoc	Data collected manually as/when needed

6. Integration/Interoperability

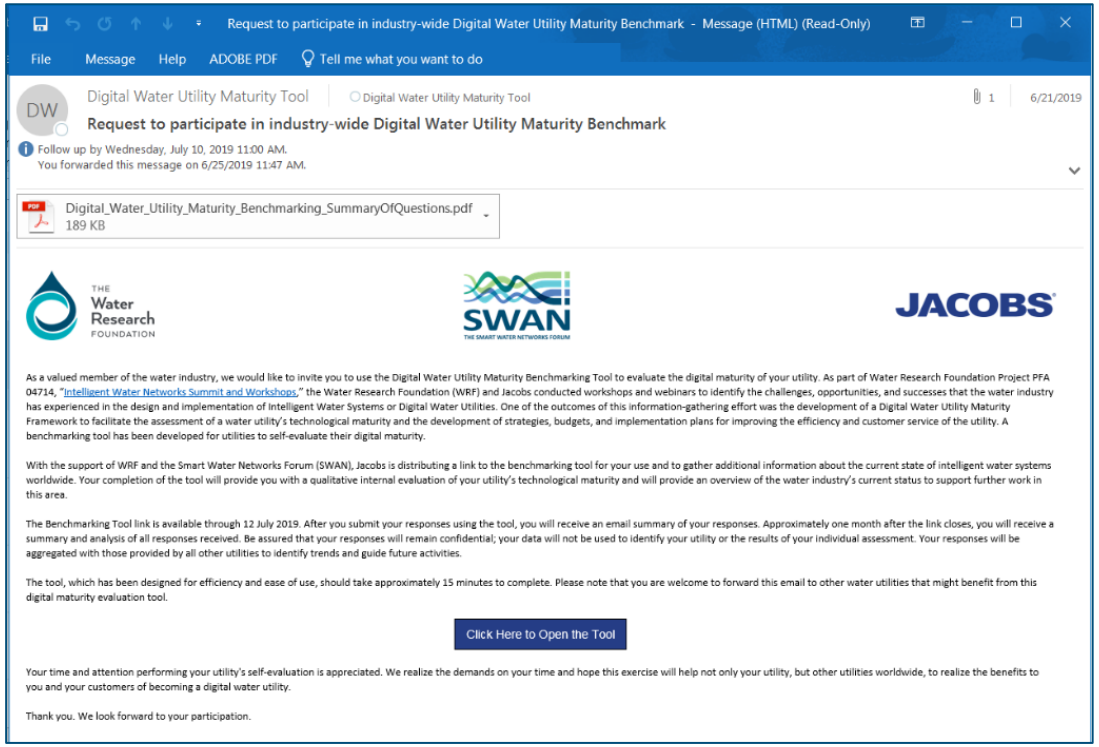
Level 5: Integrated	Automated integration of information allows interoperability and fusion across functions
Level 4: Interdepartmental	Information sharing and fusion occurs across departments such as HR, finance, and operations
Level 3: Interoperability	Routine interfaces convey information between systems. Automated fusion of information allows interoperability across functions
Level 2 Intra-departmental	Information sharing and fusion occurs within an individual department
Level 1: 'Stove-piped'	Data sources are typically self-contained and may occasionally share information manually with others; data may be stored in individual spreadsheets throughout the utility
Level 0: Separated	Data sources are self-contained with no integration

7. Analytics/Information Use

Level 5: Predictive	Proactive and predictive analytics integrate into systems to manage operations
Level 4: Proactive	Analytics integrated with software tools continuously compare modeled expectations to real results; models updated accordingly; trends inform operational, strategic decision-making
Level 3: Current	Diagnostic and descriptive analytics identify and explain real-time events
Level 2 Investigative	Diagnostic and descriptive analytics identify and explain past events
Level 1: Simple	Basic spreadsheets and time-series trending plots are used
Level 0: Ad Hoc	No analytics are used to analyze data

Maturity Levels for Digital Water Utility

Strategy & Vision	3.5
Risk & Resiliency	3.4
Workforce	2.8
Asset Management	2.6
Data Management	2.3
Integration & Interoperability	2.8
Analytics & Information Use	2.2



Request to participate in industry-wide Digital Water Utility Maturity Benchmark - Message (HTML) (Read-Only)

File Message Help ADOBE PDF Tell me what you want to do

DW Digital Water Utility Maturity Tool Digital Water Utility Maturity Tool 1 6/21/2019

Request to participate in industry-wide Digital Water Utility Maturity Benchmark

Follow up by Wednesday, July 10, 2019 11:00 AM.
You forwarded this message on 6/25/2019 11:47 AM.

Digital_Water_Utility_Maturity_Benchmarking_SummaryOfQuestions.pdf
189 KB

THE Water Research FOUNDATION SWAN JACOBS

As a valued member of the water industry, we would like to invite you to use the Digital Water Utility Maturity Benchmarking Tool to evaluate the digital maturity of your utility. As part of Water Research Foundation Project PFA 04714, "Intelligent Water Networks Summit and Workshops," the Water Research Foundation (WRF) and Jacobs conducted workshops and webinars to identify the challenges, opportunities, and successes that the water industry has experienced in the design and implementation of Intelligent Water Systems or Digital Water Utilities. One of the outcomes of this information-gathering effort was the development of a Digital Water Utility Maturity Framework to facilitate the assessment of a water utility's technological maturity and the development of strategies, budgets, and implementation plans for improving the efficiency and customer service of the utility. A benchmarking tool has been developed for utilities to self-evaluate their digital maturity.

With the support of WRF and the Smart Water Networks Forum (SWAN), Jacobs is distributing a link to the benchmarking tool for your use and to gather additional information about the current state of intelligent water systems worldwide. Your completion of the tool will provide you with a qualitative internal evaluation of your utility's technological maturity and will provide an overview of the water industry's current status to support further work in this area.

The Benchmarking Tool link is available through 12 July 2019. After you submit your responses using the tool, you will receive an email summary of your responses. Approximately one month after the link closes, you will receive a summary and analysis of all responses received. Be assured that your responses will remain confidential; your data will not be used to identify your utility or the results of your individual assessment. Your responses will be aggregated with those provided by all other utilities to identify trends and guide future activities.

The tool, which has been designed for efficiency and ease of use, should take approximately 15 minutes to complete. Please note that you are welcome to forward this email to other water utilities that might benefit from this digital maturity evaluation tool.

Click Here to Open the Tool

Your time and attention performing your utility's self-evaluation is appreciated. We realize the demands on your time and hope this exercise will help not only your utility, but other utilities worldwide, to realize the benefits to you and your customers of becoming a digital water utility.

Thank you. We look forward to your participation.

Maturity Model - Approach 2: Specific Process - Applying Maturity Modelling to Water Loss Management

Christine McCormack

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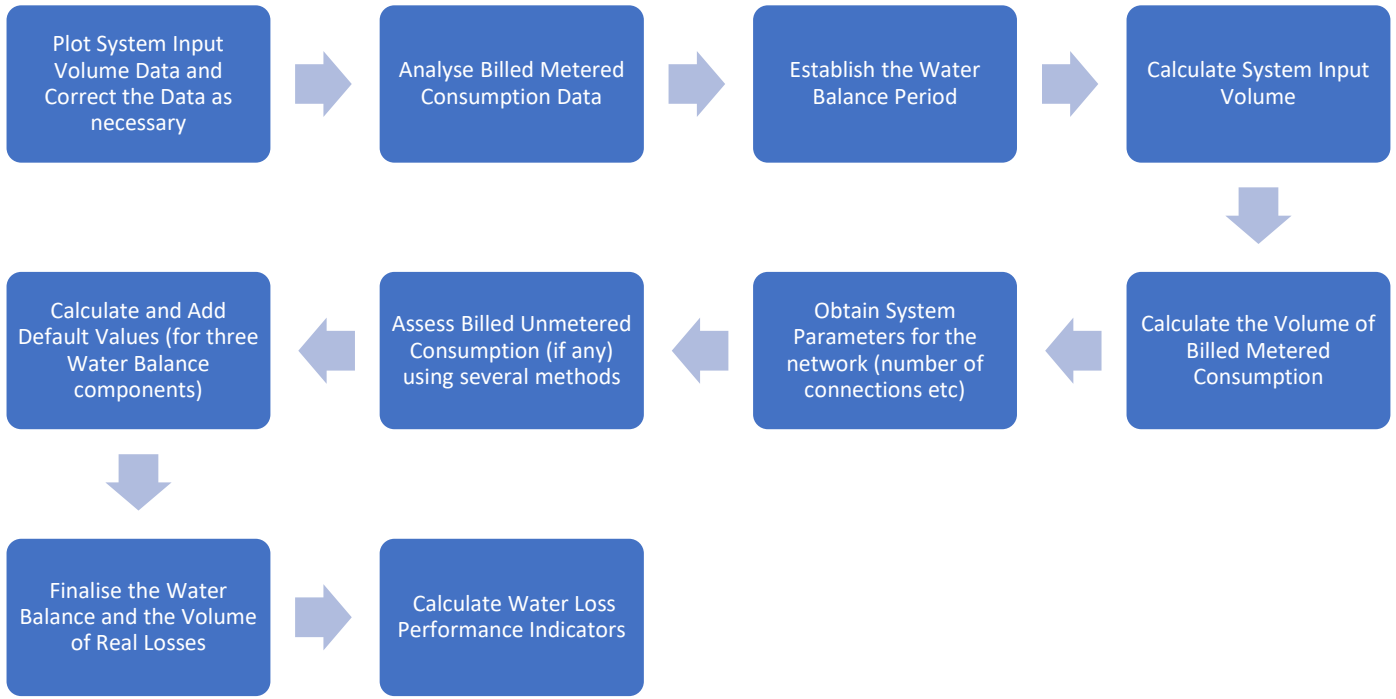
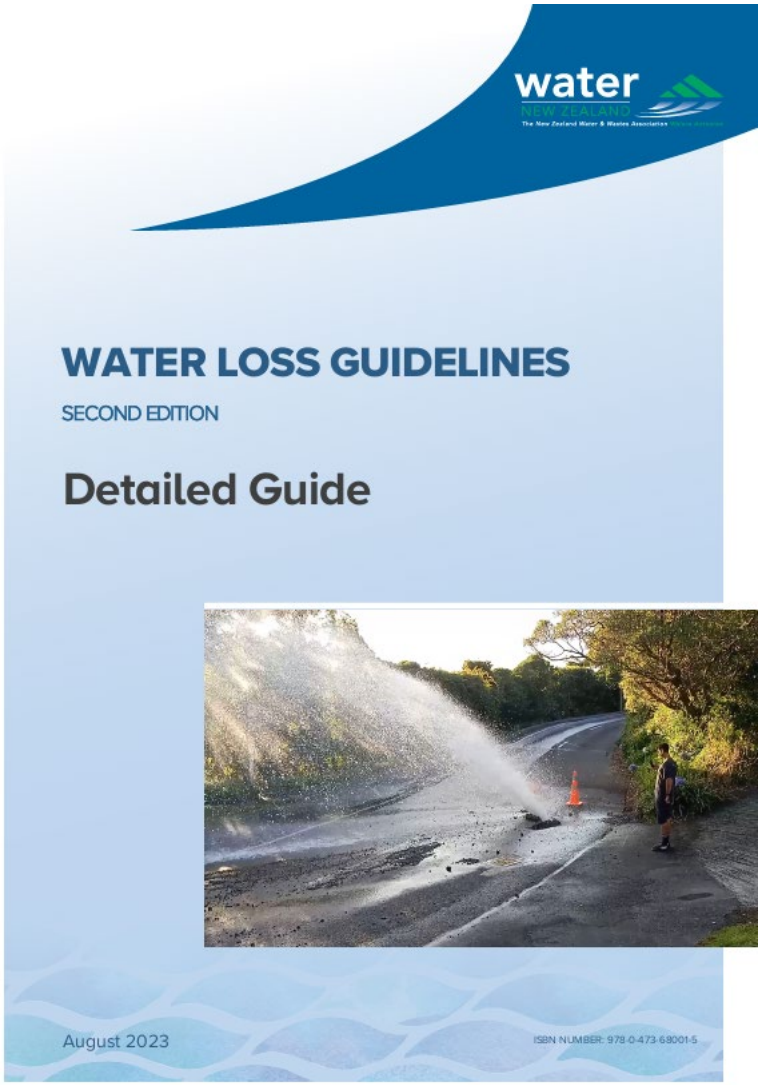
Water Loss Guidelines 2023

Steps for calculating a water balance





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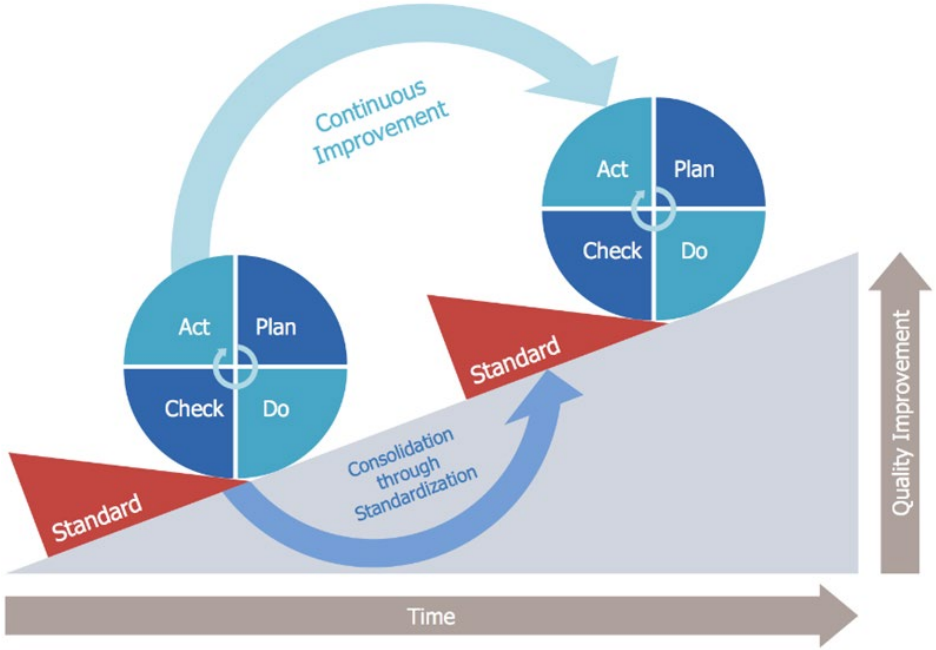
Approach for Assessing Water Loss Maturity

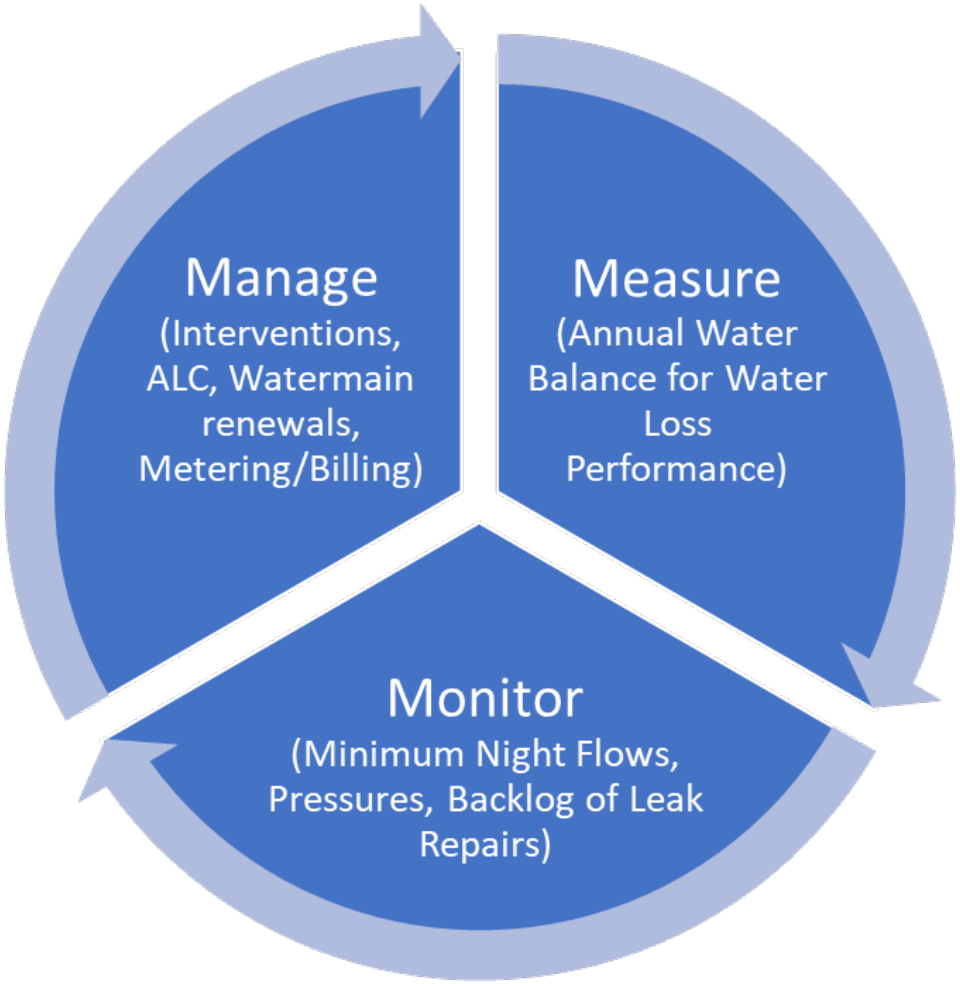
Modelled on the Asset Management Maturity Assessment approach (IIMM)

Maturity Levels				
Aware	Basic	Core	Intermediate	Advanced
0-20	21-40	41-60	61-80	81-100

Water Loss Maturity		
Basic/Core	Intermediate	Advanced



Water Loss Maturity Topics



1. Water balance calculations
2. Water loss performance measures
3. Four main components of managing real losses
4. Resourcing for water loss management
5. Enhanced use of water balance calculations
6. Water loss management – General (network size)

Overview

APPENDIX A – BASIC DESCRIPTION OF WATER LOSS MATURITY

	Description	Basic/Core	Intermediate	Advanced	Water loss guidelines section
FOR WATER BALANCE CALCULATIONS	Ability to carry out robust water balance calculations	System input volume is unavailable or unreliable due to the absence of, or inaccurate meter(s)	System input volume is reliable but no SCADA Data is available	System input volume is reliable and SCADA data is available	4.2.1
	Billed metered consumption (over the 12-month water balance period)	Infrequent customer meter readings (i.e., annual or six-monthly) and using manual (hard copy) meter reading sheets.	Six-monthly meter reading and billing, plus monthly accounts for high water users.	All meters are read and billed either two-monthly or monthly using digital handheld devices for meter reading and/or smart meters.	4.2.2 7.9
	Customer water meters	Customer meters are very unreliable and likely to be inaccurate.	Customer meters are quite unreliable and may be inaccurate.	Customer meters are mostly accurate and well-maintained.	4.2.2 7.9
FOR WATER LOSS PIs	System parameters (i.e., length of mains, number of connections, average system pressure)	GIS is not up-to-date and does not show all water mains and connections. Uncertain data.	GIS is up-to-date and accurate, showing all water mains and connections.	GIS is up-to-date and accurate, showing all water mains and connections.	4.3.2

Water balance calculations

	Description	Basic/core	Intermediate	Advanced	Guidelines reference
FOR WATER BALANCE CALCULATIONS	System input volume (12-month volume of water supplied into a water supply network for water balance calculation)	System input volume is unreliable due to the absence of, or inaccurate meter(s) (such as an oversized meter, or a very old mechanical meter). No SCADA data is being transmitted, but manual meter readings are taken at least monthly.	System input volume is reliable with a suitably sized water meter(s) in place. Flow data (15 min or less frequency) and daily volume data is being transmitted using the SCADA system. No quality control of SCADA data (i.e., no checks that SCADA volumes = meter throughput). Only ad-hoc manual (visual) checks are made to ensure daily flows and volumes are within the expected range.	System input volume is reliable with a suitably sized water meter(s) in place. Flow data (15 min or less frequency) and daily volume data is being transmitted using the SCADA system. Manual meter reads are taken and used to confirm the accuracy of the SCADA data (i.e., annual volume ex SCADA = throughput volume on meter register). Automated systems in place to report of data outages or of very high/low flowrates. Unusual trends in daily or weekly water use are automatically reported.	3.2.1
	Billed metered Consumption (over the 12-month water balance period)	Infrequent customer meter readings (i.e., annual or six-monthly) and using manual (hard-copy) meter reading sheets. Poor data quality and lack of processes for dealing with unusual meter readings. May involve the use of spreadsheets to record meter readings. No reliable billing reports.	Six-monthly meter reading and billing, plus monthly accounts for high water users, using digital handheld devices for meter readings. Good dat ensuring billing da Informal meter rea water wri Good wa water bill	All meters read and billed either two monthly or monthly using digital handheld devices for meter reading and/or smart meters.	3.2.2 6.9
	Customer water meters	Customer meters are very unreliable and likely to be inaccurate. There are no maintenance or replacement programmes in place.	Custome significan There is programr		

	Description	Basic/core	Intermediate	Advanced	Guidelines reference
ENHANCED USE OF WATER BALANCE CALCULATIONS	Other		Water balances are being carried out more frequently than annually for leakage-management purposes, using six-monthly billed metered consumption data. This provides a more frequent 'measure' of water loss performance in the network.	Water balances are being carried out more frequently than annually for leakage-management purposes, and for sub-areas, using two- or three- monthly billed metered consumption data for specific zones and/or using smart metering data. This provides a more frequent 'measure' of water loss performance in the network. Where the network has smart meters on all connections/customers, water balances are effectively available daily, providing daily accurate water loss measurement and performance.	7 TGN 8

Water loss measures – system parameters

	Description	Basic/core	Intermediate	Advanced	Guidelines reference
FOR WATER LOSS PERFORMANCE MEASURES	Accuracy of system parameters (i.e., length of mains, number of connections, average system pressure), which affect ILI calculations	GIS is not up-to-date and does not show all water mains and connections. Water billing system (if any) may not have complete records of every metered water connection. Rating system may not have an accurate record of unmetered properties (paying a uniform annual charge). There are no processes in place to manage new connections, meter changes, disconnections etc. Casual informal approach. No water network model. Figure for average system pressure is approximate only.	GIS is up-to-date and accurate, showing all watermains and connections. Water billing system probably has full and complete records of every metered water connection. Rating system likely has an accurate record of unmetered connected properties (paying a uniform annual charge). Some processes are in place to manage new connections, meter changes, disconnections etc. Water network model is not up-to-date or calibrated. Figure for average system pressure is not necessarily accurate.	GIS is up-to-date and accurate, showing all water mains and connections. Water billing system has full and complete records of every metered water connection. Rating system has accurate record of unmetered connected properties (paying a uniform annual charge). Formal processes are in place to manage new connections, meter changes, disconnections etc. Water network model is up-to-date and calibrated so that the figure for average system pressure is accurate.	3.3.2

Water loss management – network size

	Supply Size	Serviced population	Basic	Intermediate	Advanced	Guidelines reference
WATER LOSS MANAGEMENT - GENERAL	Large city (such as Whangarei, Nelson, Invercargill)	40,000 – 200,000	Unable to monitor MNFs into areas within the network due to inadequate zoning, inadequate metering at reservoirs and/or lack of real-time (daily) data.	MNFs can be monitored, but there are no front-end monitoring systems in place. Staff manually check MNFs and intervene on an ad-hoc basis.	Front-end monitoring systems have been developed to manage the high number of DMAs. There are automated systems to alert of high/increased levels of leakage. Intervention levels for each zone are in place. There is a good understanding of water loss performance in each DMA.	6.2
	Major metropolis (Auckland, Wellington, Christchurch)	Over 200,000		MNFs can be monitored, but there are no front-end monitoring systems in place. Staff manually check MNFs and intervene on an ad-hoc basis.	Sophisticated front-end monitoring systems are developed to manage data from the large number of DMAs. There are automated systems to alert of high/increased levels of leakage. There is a good understanding of water loss performance in each DMA.	6.2
	Rural schemes (such as at Hauraki Plains, Hurunui, Clutha)	NA. Restricted supply to extensive rural/ farming areas.	No management of water losses or water demand at all. No checks on restrictors (on individual connections). No interventions (ALC, network inspections etc) are carried out except in a supply emergency.	Daily volumes are being monitored infrequently (say monthly). Restrictors (on connections) are being checked every two to three years. Interventions (ALC, network inspections etc) are carried out infrequently to manage real losses and water demand.	Daily volumes are being monitored at least weekly and compared against allocated units. Restrictors (on connections) are being checked at least annually. Large rural networks are sectorised and 24-hour data is being received from network meters for monitoring. Interventions (ALC, network inspections etc) are carried out effectively to manage real losses.	6.2

Individual Activity:
What's our Digital Maturity?

Nasrine Tomasi

water
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The New Zealand Water & Wastes Association Waiora Aotearoa

water
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Individual Activity

Measuring digital maturity across ~~the Industry~~ the room

What will we use?

The Data and Digital Benchmarking Survey co-created between Mott MacDonald and the UK Infrastructure Client Group (ICG).

Developed from Project 13 to measure asset owners' wider supply chains.

Used by the Digital Transformation Task Group (DTTG) to benchmark their progress annually.

Developed specifically for the built environment and infrastructure industry, to provide a **holistic view of digital maturity** across an organisation.

UK organisations who have completed the index:

& many more!

Individual Activity

Measuring digital maturity across ~~the Industry~~ the room

How do we do this?

Use your personal device and follow this link or QR code provided

https://www.surveymonkey.co.uk/r/sandbox

The survey takes approximately 10minutes

Fill this survey on your behalf, to reflect the organization you are currently working for.

Aggregated results will be shared publicly
Personal data will only be used by the SWIG to share these results
You can choose not to enter your personal information by entering a dummy email at the end of the survey

Individual Activity

Measuring digital maturity across the room

Glossary

Phrase	Definition
Data & Digital	Digital devices and technology, and the data they generate
Data Maturity	The extent to which a company uses data for decision-making
Digital Maturity	The ability of an organisation to respond to developments in technology
Data Quality	How much can you trust the data is fit for purpose – that it is accurate and relevant to the other data it will be measured against?
Digital Divide	Inequalities between parties that have computers and online access, and those that do not. May be individuals, companies, or different departments within one company.
Digital Transformation Strategy	A strategy that addresses how digital technologies will be incorporated into existing business procedures
FAIR Principles	A set of principles used to assess data quality - FAIR stands for Findable, Accessible, Interoperable, and Reusable.
System Boundaries	How data and information can flow between disparate pieces of software.

Group Activity:
NZ Industry Maturity Analysis

SWIG Members

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Group Activity

NZ Industry Maturity Analysis

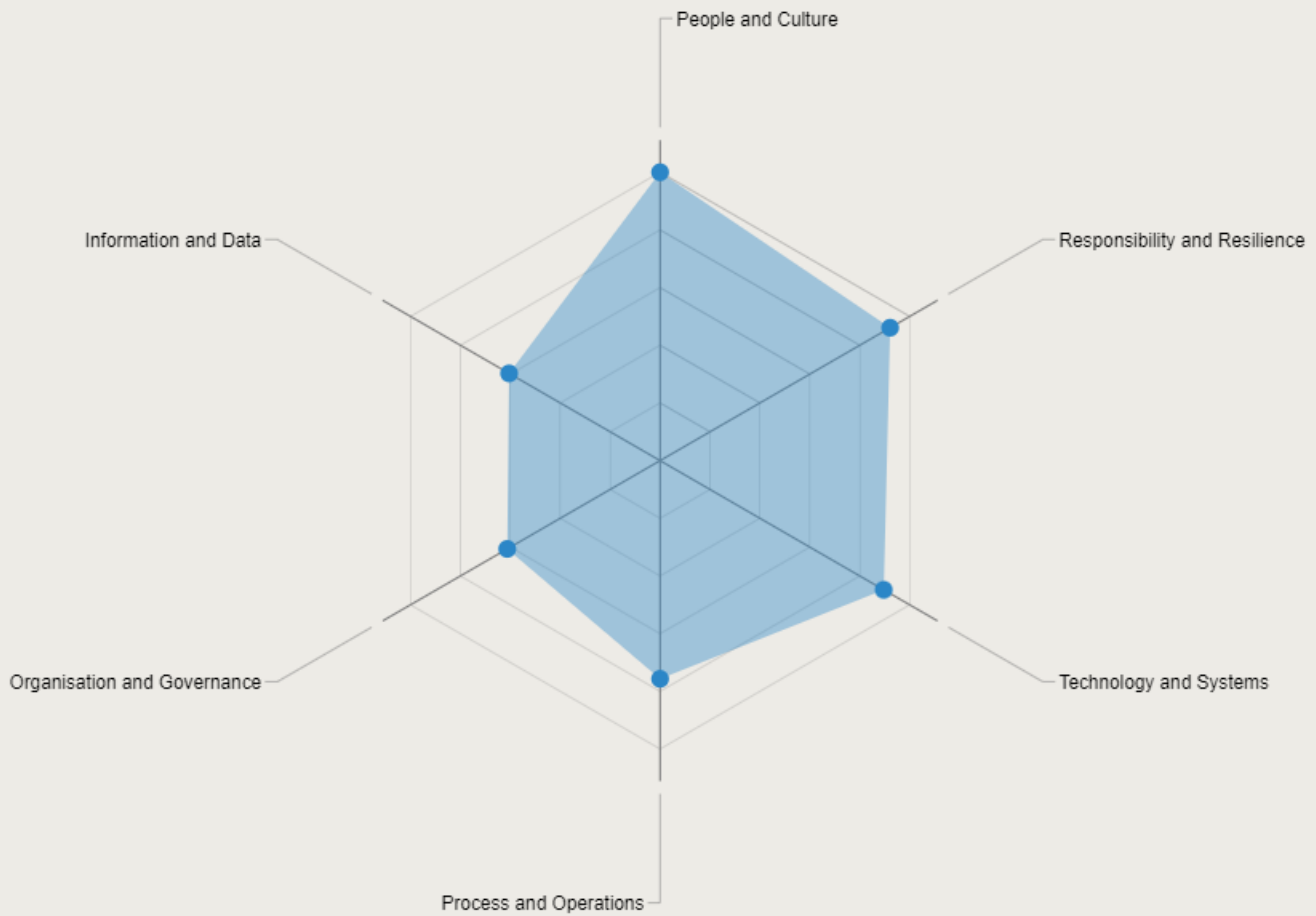
Each table will review the results of a specific section of the survey.

Select a speaker at the table and summarise in 3 minutes:

- Survey findings
- Interpretation
- Steps for improvements

The Data and Digital Index

"If you can't measure it, you can't manage it"



Overall Score: 2.94

People and Culture

Addresses the digital pulse of the organization, examining how awareness, skills, and leadership shape the way digital methods become an integral part of the workplace culture and communication ethos.

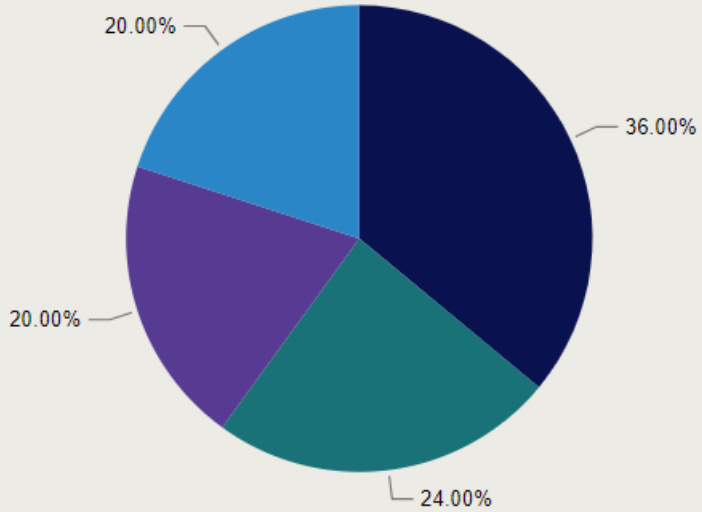
In this tab, you can see your organisation's overall score for the people and culture category, as well as how this score varies by question and theme.

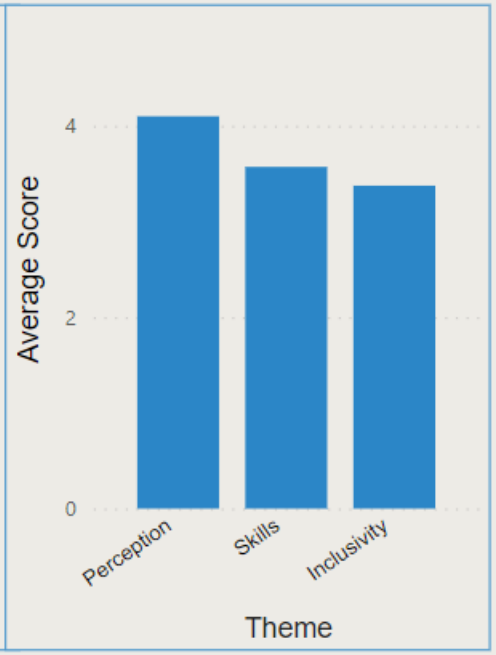
Category Score: 3.72

Regarding data and digital **leadership** in your organisation, please select the 3 most relevant options from the list below. Leadership is...

Questions
Do you agree that the language used to communicate data and digital initiatives is understood by individuals who do not have data and digital-related roles?
Do you agree that your organisation understands their data and digital skills gap?
Do you agree you are supported and able to develop your data and digital skills? E.g., you are aware of training and development available for digital upskilling.
Do you agree your needs are considered when decisions are made on data and digital initiatives?
Do you feel able to talk with colleagues about the change and impact data and digital will have on your work?
Do you feel data and digital adds value to your work?

Question Score: 3.72





Organisation and Governance

Captures the strategic anchors and frameworks guiding digital endeavours, underscoring the balance between visionary leadership, resource allocation, and organisational agility.

In this tab, you can see your organisation's overall score for the organisation and governance category, as well as how this score varies by question and theme.

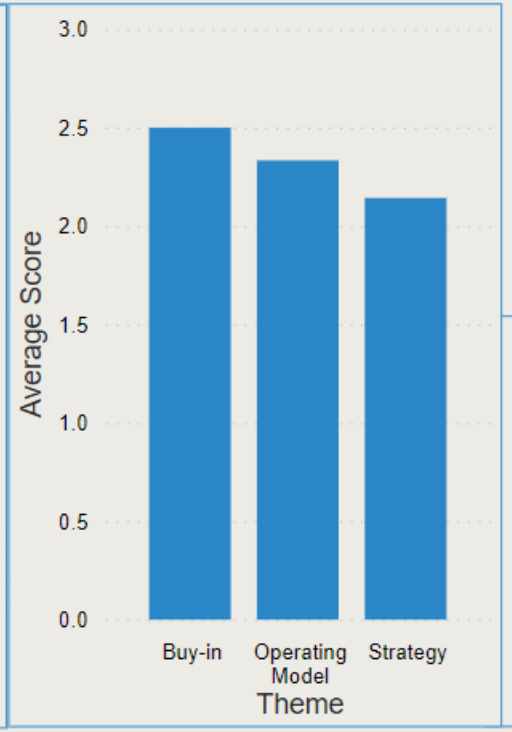
Category Score: 2.28

What stage do you feel your organisation is at in having an **enterprise digital transformation strategy** that spans the organisation and considers the supplier ecosystem?

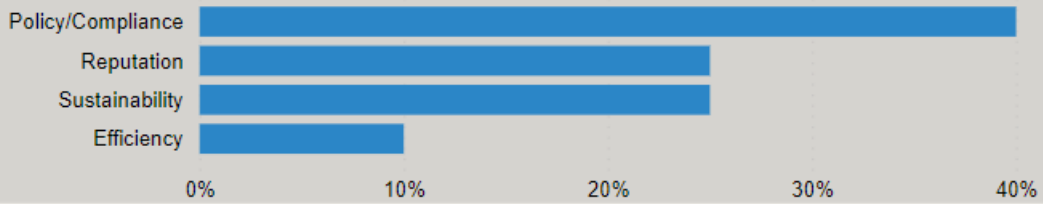
Stage of enterprise digital transformation strategy	% Score
There is an enterprise digital transformation strategy which includes the supplier ecosystem	33.33%
There is nothing in place similar to an enterprise digital transformation strategy	33.33%
I don't know	16.67%
There is an overarching document that pulls together digital initiatives and plans (e.g. a document that brings together BIM, digital twins and information management)	16.67%

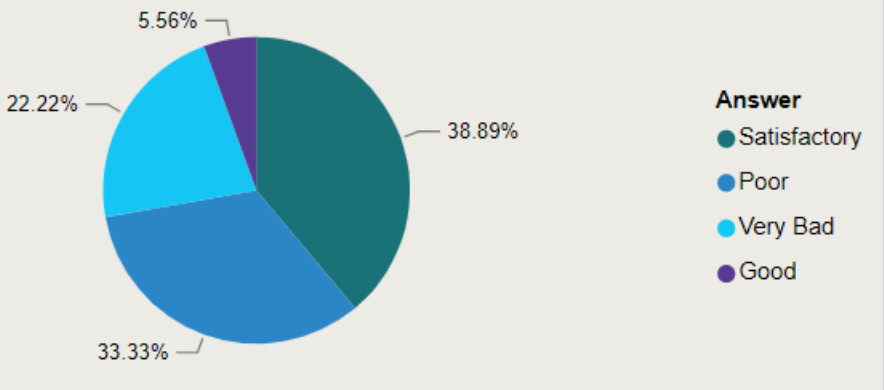
Questions
Do you agree the benefits of data and digital initiatives are effectively tracked and managed?
Do you agree your organisation's organisational structure supports the ability to make optimum decisions regarding data and digital?
Do you agree your organisation's vision for utilising data and digital is clear and aligned to business outcomes?
Do you believe your organisation collaborates with its supply chain to co-create and deliver data and digital initiatives?
Do you believe your organisation has roles and responsibilities for data and digital that are clearly defined and understood?
Do you believe your organisation is committing an appropriate level of resources (investment and people) into data and digital, in relation to what they aim to achieve?

Question Score: 2.28



Regarding business drivers in your organisation that are steering digital transformation, please rank the following in order of most to least relevant. Driving digital transformation is...





Information and Data

Emphasizes the value of data as a decisive asset, fostering a culture of informed decision-making, harmonized data sourcing, and cohesive data management practices.

In this tab, you can see your organisation's overall score for the information and data category, as well as how this score varies by question and theme.

Category Score: 2.25

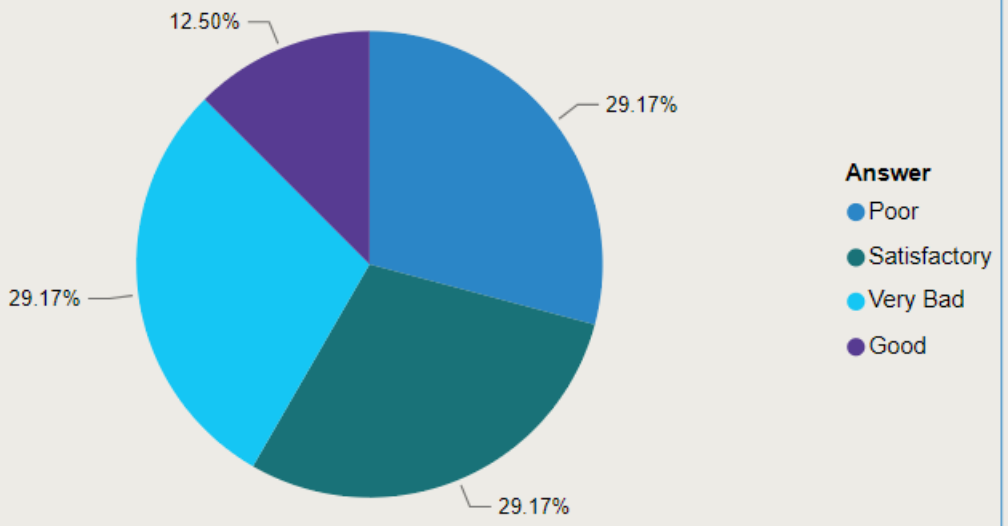
Regarding the use of data analytics for enhanced decision-making, please rank the following in order of most to least relevant:

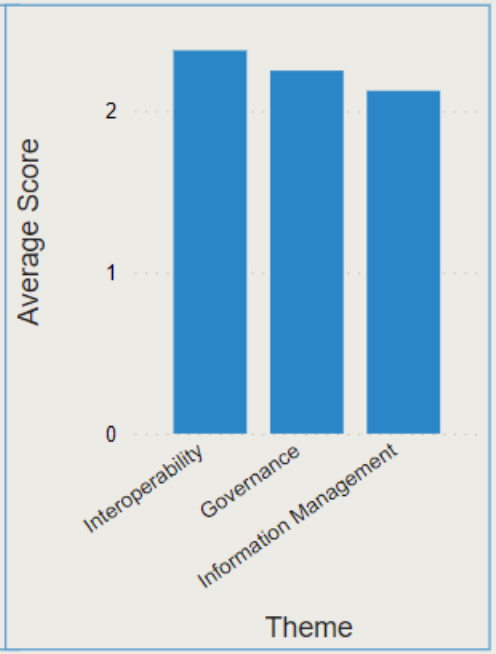
The use of data analytics	% Score
My organisation does use data analytics and mainly to describe what events happened in the past	30.67%
My organisation does use data analytics and mainly to diagnose why events happened in the past	22.67%
My organisation does not use data analytics and decisions are mostly based on intuition and experience	17.33%
My organisation does use data analytics and mainly to predict what could happen in future events	16.00%
My organisation does use data analytics and mainly to act and inform on what should happen in future events	13.33%

Questions

- Do you agree there is appropriate measures in place to govern and manage information and data? This includes the ability to report errors and non-compliance.
- Do you believe information and data that is exchanged across organisational boundaries is done so securely?
- Do you believe your organisation has the right tools needed to share information and data in a common way across system boundaries?
- Do you have access to the right information at the right time to make effective decisions?
- How often are project and asset information requirements defined, communicated, and used?
- How often does the quality of information and data affect your ability to trust and use it?

Question Score: 2.25





Technology and Systems

Reflects the organisation's alignment with technological trends, showcasing a harmonious blend of current tools and an eye towards future integrations.

In this tab, you can see your organisation's overall score for the technology and systems category, as well as how this score varies by question and theme.

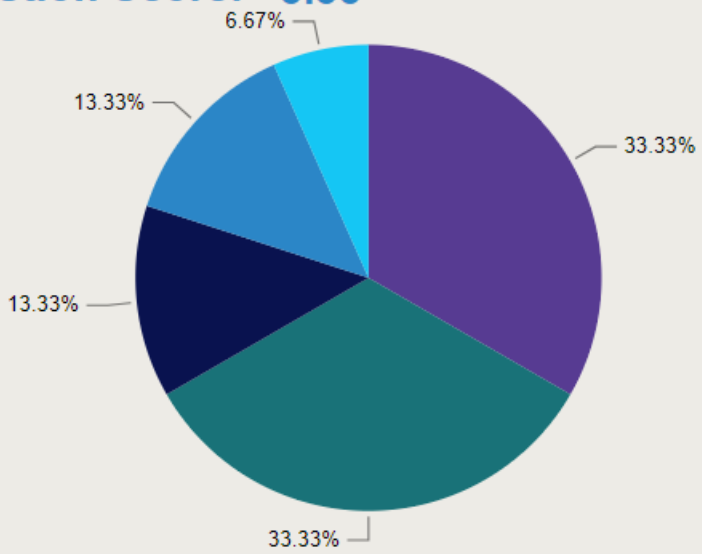
Category Score: 3.33

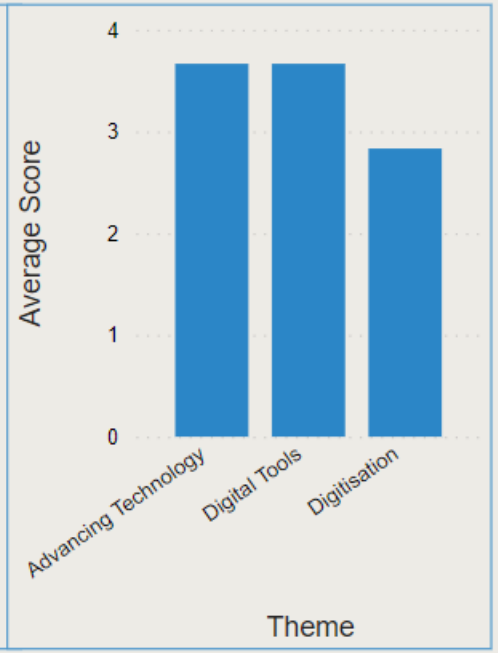
Please select which of the following options most accurately describes how digital twins are used in your organisation:

How digital twins are used	% Score
	100.00%

Questions
Do you believe you can access the necessary digital tools required to carry out your role effectively?
Do you believe your organisation stays informed about emerging technologies and assesses their potential for future application across the business?
How frequently do you use paper-based processes in your regular activities?
How frequently is information unnecessarily duplicated across multiple systems?
How satisfied are you with the suitability of digital tools you interact with, and their intended purposes?

Question Score: 3.33





Process and Operations

Highlights the adaptability and efficiency of workflows, influenced by feedback-driven improvements, emphasizing consistency and flexibility in the face of varied projects and operations.

In this tab, you can see your organisation's overall score for the process and operations category, as well as how this score varies by question and theme.

Category Score: 2.81

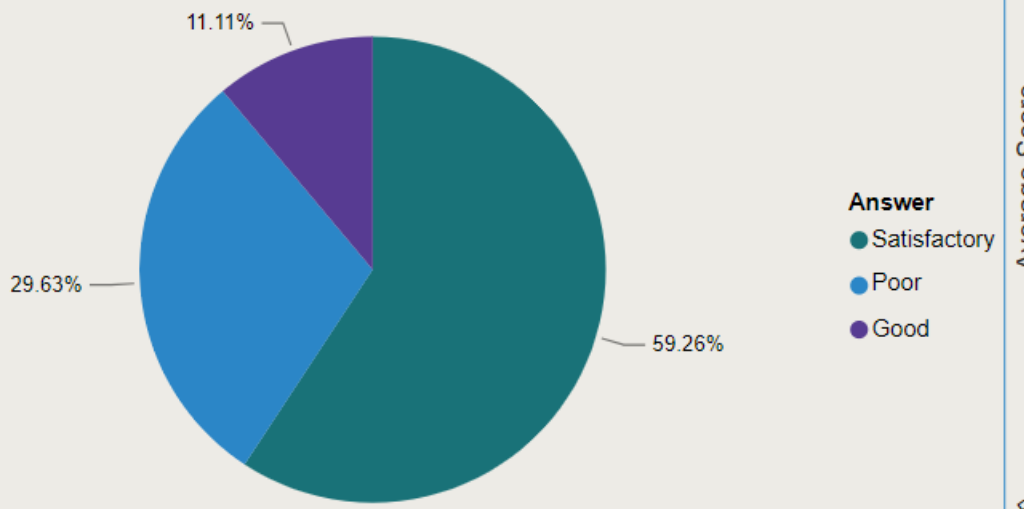
Regarding **process automation** in your organisation, please rank the following in order of most to least relevant:

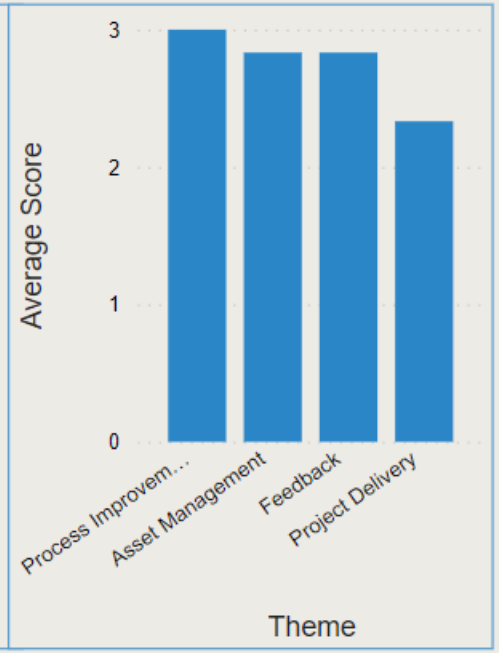
Level of process automation	% Score
My organisation uses elements of automation (assisted automation) to support processes, mainly set-up by the data and digital teams. E.g., standard communication and record keeping	37.50%
My organisation does not use automation to support any processes, all are completed manually by people	22.50%
My organisation uses automation to perform repetitive and rule-based tasks (robotic process automation), some of which can be done by individuals outside of the data and digital teams. E.g., automating when emails or reminders are sent	20.00%
My organisation uses automation with artificial intelligence (cognitive automation) to perform complex tasks. E.g., asset image identification	20.00%

Questions

- Do you believe data and digital is providing the right level of remote access required to complete tasks away from site?
- Do you believe data and digital is supporting asset investment planning and action towards maintenance?
- Do you believe data and digital is supporting your organisation in promptly identifying and addressing performance, maintenance, and issues through real-time monitoring?
- Do you believe data and digital is used effectively to prepare for project handover?
- Do you believe data and digital provides decision support on asset performance?
- Do you believe that common data environments are providing the right level of collaboration?
- Do you believe that your organisation has

Question Score: 2.81





Responsibility and Resilience

Encompasses the organization's commitment to safeguarding its digital integrity and reputation, marked by a proactive stance on security, ethics, and transparent practices.

In this tab, you can see your organisation's overall score for the responsibility and resilience category, as well as how this score varies by question and theme.

Category Score: 3.43

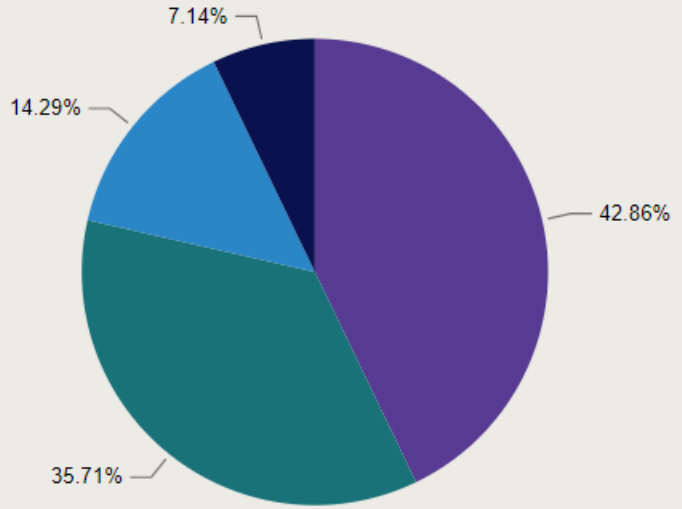
In what ways do you believe your organisation thinks critically about the **impact** data and digital has on its employees, supply chain, customers, and wider society?

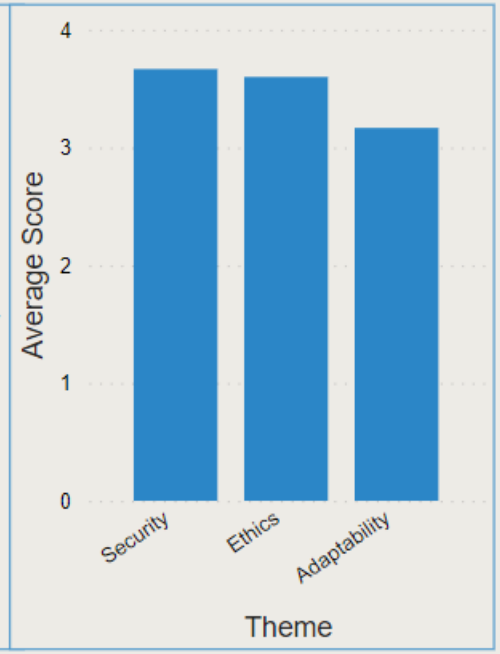
Critical thoughts on the impact of data and digital	% Score
The data and digital technologies employed by my organisation are used in a way that promote fairness and don't discriminate against any group or individual	40.00%
My organisation clearly communicates about how personal data collected during digital initiatives is used	20.00%
My organisation holds itself accountable for any potential negative impacts or misuse of data and digital initiatives	20.00%
My organisation thinks critically about the impact data and digital has on its employees, supply chain, customers, and wider society, but not in the ways listed above	20.00%

Questions

- Do you believe your organisation acts responsibly and transparently to make ethical decisions related to data and digital?
- Do you believe your organisation is 'security minded' and actively uses data and digital to improve physical and personal security, as well as cyber-security?
- Do you believe your organisation routinely shares and seeks lessons learnt with other similar organisations?
- Do you believe your organisation takes adequate steps to ensure inclusivity and prevent a 'digital divide' during the implementation of digital and data initiatives?
- Do you believe your organisation's digital vision, strategy and/or initiatives can effectively respond to changes in the external environment?

Question Score: 3.43





Conclusion

Nicolette Voskuilen

water NEW ZEALAND
The New Zealand Water & Wastes Association Waiora Aotearoa

water NEW ZEALAND CONFERENCE & EXPO 17–19 OCTOBER 2023
Tākina, Te Whanganui-a-Tara Wellington

Karakia Whakamutunga

Unuhia, Unuhia,	Take off and remove
Unuhia i te uru tapa nui	Take off -
Kia wātea, kia māmā te ngakau,	remove and unplug yourself from what has occurred
Te tinana te wairua ara tangata	So that the body mind and spirit are free
Koia rā e Rongo whakairia, ake ki runga	and at ease to continue living
Kia tina! Tina	And affirm you are free and at ease
Haumi e! Hui e! Taiki e!	Sneeze, the breath of life!

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