GEOSPATIAL STRATEGY 2021-2026

Stakeholder Version

MAY 2021

DOCUMENT INFORMATION

ACKNOWLEDGEMENTS

DISCLAIMER

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BACKGROUND
TO THE STRATEGY

The Taranaki Civil Defence & Emergency Management Group (CDEM) is proud of its geospatial capability. We want to develop this further, along with the capability of our region and sector.

INTRODUCTION

In recent years, there have been significant changes and initiatives highlighting the need for geospatial information that affect emergency management organisations. This includes the *Sendai Framework for Disaster Risk Reduction* (2015), which prioritises the understanding of disaster risk globally *(section 24c)*. Locally, the New Zealand *Government's Ministerial Review on Delivering better responses to natural disasters and other emergencies, (*2018) identified that improved situational awareness is required across the emergency management sector. This is through a common operational picture, of which geospatial technology contributes to. Both reports identified a key area of improvement around the information and resulting intelligence that underpins better decision making before, during and after emergencies.

In New Zealand, there are two prominent initiatives focused on this. Firstly, the increase in accessibility of essential datasets through New Zealand's Agency responsible for geospatial, Land Information New Zealand's (LINZ) "Key Datasets for Resilience" programme. Secondly, the formation of the advocacy group "NZ GIS for Emergency Management (NZGIS4EM)", which has set the back drop for a fresh look at Geographic Information Systems (GIS), and the use of geospatial as a whole in emergencies.

Common themes that emerge from the two initiatives are the importance of interoperability and data sharing. Addressing these can alleviate the challenges when using data. This benefits how we deal with emergencies by improving the underlying information, informing and driving better decision making.

GIS within the Taranaki CDEM Group is in a growth-state. Several improvements in the use of GIS have already been implemented during the development of this strategy. However, technology is everchanging and we cannot afford to delay action towards improving upon our progress going forward. We need to put a strategy in place to enable us to plan and resource GIS in the future, optimising its use across the region. This is including not just Civil Defence, but also within the organisations of our Coordinating Executive Group (CEG) members. The major benefits will be improvement in our situational awareness and collective intelligence. Ultimately enabling better decision making across the "4 R's" of CDEM (reduction, readiness, response and recovery).

This Strategy sets the priorities for the development and resourcing of GIS at the Taranaki CDEM Group for the next five years (2021–2026). The overarching aims are to ensure the Group gets value for money from the investment it makes, based on decisions informed by this strategy, and to support the implementation of the CDEM Group Plan

WHAT IS GIS?

GIS is geospatial technology and works as a framework for gathering, managing, analysing and disseminating data.

Rooted in the science of geography, GIS integrates many types of data. It analyses spatial location and organizes layers of information into visualisations using maps and 3D. With this unique capability, GIS reveals deeper insights into data, such as patterns, relationships, and situations. This provides accessible displays, supporting more informed decision makers.

WHY IS GEOSPATIAL INTEGRAL TO EMERGENCY MANAGEMENT?

Across the 4 R's, there is a need for good information and intelligence to understand and inform activities. In most situations, understanding of location and risk in communities and the natural and built environment is crucial to informed decision making.

Increasingly there are many 'where' and 'what' questions that need answering before, during and after an emergency event. These questions differ depending on contributing factors such as phase of event and audience type but are all similar in the fact that location contributes to the answer.

GIS, as a geospatial tool, is an enabler for data-driven decision making across all four phases of emergency management. This is due to the location information it stores, and the unique insight it can provide to location-based problems.

How location information is collected, analysed and disseminated are all equally important. Fast progression in GIS technology has improved the efficiency and effectiveness of all three of these processes. For example, information can now be collected, analysed and disseminated as accessible intelligence products in near-real time.

For organisations, a holistic and coordinated approach in the design and operation of a GIS system will maximise benefits and future innovations.
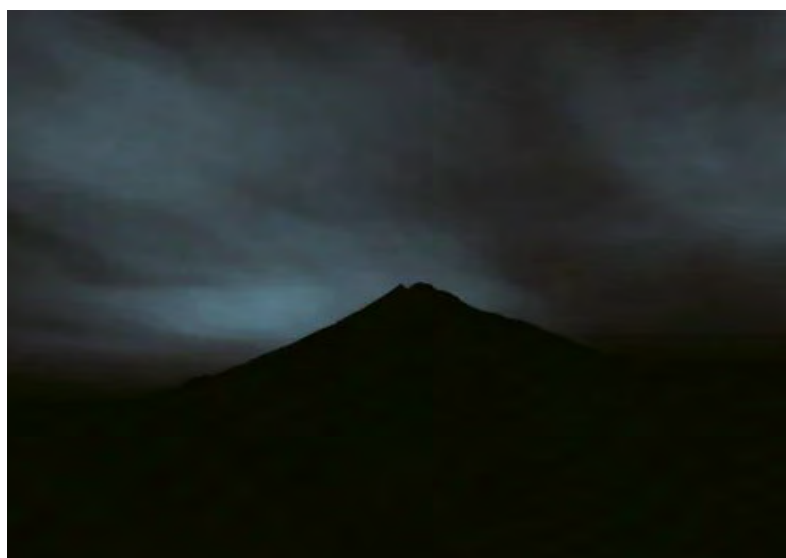
CURRENT OPERATING ENVIRONMENT: CHALLENGES

UNDERSTANDING THE APPLICATION OF GEOSPATIAL TECHNOLOGY

Geospatial software is constantly evolving, with new functionality adding to the depth of existing tools. Understanding and informing decision makers and personnel on what exists, and what's possible is key to targeting effort in the right areas.

PROVIDING INTERNAL STRUCTURE TO A NEW DOMAIN

Geospatial within emergency management is now recognised as a subfunction within the latest iteration of CIMS (3rd Edition). Setting up organisational roles and processes to maintain and grow this subfunction is a challenge due to no previous work in this area.

FINDING AND USING AUTHORITATIVE SOURCES OF THE TRUTH

There are many versions of datasets that are currently available. These vary in source, completeness and when they were last updated. This comes from the ability of anyone, anywhere to create a dataset and share it. In a response, the use and validation of geospatial information is challenge. The absence of clear provenance for a source, then delays us using it for decision-making.

CONNECTING DIFFERENT DATA SOURCES AND SYSTEMS

There is no consistent geospatial software platform used across our stakeholder group (identified in Appendix 1 and 2A). As a result, we do not have data immediately available if required. Impacting our ability to answer information needs during an event.

We have limited data standards in place for organisations if they wish to share data. If they do, we have less capacity to integrate these into our own operating picture.

Data sharing arrangements and storage solutions also need to consider privacy implications. This is due to different datasets having different levels of classification within a response.

DEFINING OUR GIS USERBASE

Geospatial technology now allows the functionality to collaborate and engage a wider audience, from external stakeholders to the general public.

Currently there a gaps in the identification of who needs what information, in what format and when. Geospatial Analysts and technical staff are no longer the userbase, it now extends to anyone with access to a geospatial product.

LIMITED NUMBER OF SKILLED PERSONNEL

Geospatial specialists locally, and nationally are in short supply. There is a dependency on local government specialists on to fulfil majority of geospatial tasks across the 4 R's for emergency management.

INVESTING TO IMPROVE EXISTING TECHNOLOGY

Taranaki CDEM currently has no allocated annual budget for the ongoing procurement, resourcing and development of geospatial technology. Therefore, specialists and staff have minimal time and capital available to enhance the existing capability.

CURRENT OPERATING ENVIRONMENT: OPPORTUNITIES

WE HAVE INITIAL GEOSPATIAL CAPABILITY

Geospatial systems are already in use for many other district and regional council functions in Taranaki.

Taranaki CDEM, resourced in response by staff of its CEG, have already demonstrated the extent of expertise available, and the speed at which they can create tools to collect and visualise data. Simplistic risk reduction tools have also been created in the past to conduct analysis on lifeline assets as part of a previous NEMA funded resilience project.

Recent responses such as COVID-19 have highlighted the geospatial work of Taranaki as best practice on the world stage, with Harvard University singling out Taranaki CDEM's map detailing what key public facilities and businesses were open as one of the world's leading examples of local government best-practice for geospatial.

THERE IS GROWING ADOPTION OF GIS WITHIN THE SECTOR

The COVID-19 response has highlighted the extensive adoption of geospatial technology in response, both locally and globally. This has been supported by a mandate to improve systems, including geospatial to provide intelligence to reduce, respond and build back infrastructure in a way more resilient to impacts.

Across the sector, training pathways available for internal and stakeholder personnel to upskill to use or data or operate geospatial software are improving. New Zealand is fortunate to also have an active community advocating for best-practice for using GIS in Emergency Management known as NZGIS4EM (New Zealand GIS for Emergency Management).

Members of this community share, and advocate for continuous improvement of the use of the technology, which Taranaki-based staff are leveraging, and feeding back into.

ALIGNS WITH CENTRAL GOVERNMENT INITIATIVES

Both the National Emergency Management Agency (NEMA) and LINZ have ongoing work streams dedicated to geospatial. These include advocating for the use of geospatial or supporting the release of interoperable key information sources that geospatial technology can consume.

GEOSPATIAL DATA IS READILY AVAILABLE FOR USE

Central Government Open Data initiatives have been successful in providing New Zealand a wealth of information, including geospatial in ready-to-use formats. The breadth and depth of data available, that fulfils many standing information requirements is available for those who have software to use it. TEMO, through its engagement on geospatial over the past few years, has created relationships with many of the organisations who are the source of truth for other datasets required to fulfil information needs.

TECHNOLOGY CAN BE USED TO SUPPORT OF KEY WORKFLOWS

Geospatial technology and software has evolved to now support specific targeted workflows alongside it's original purpose. Being able to collect, analyse and disseminate information in a way that aligns to the Coordinated Incident Management System (CIMS) is one example of this (see Appendix 3). With software being primarily web-based, this is opening up new possibilities for intelligence sharing and improving common operational pictures. Taranaki CDEM is well placed to take advantage of this.

GEOSPATIAL STRATEGY
2021-2026

GEOSPATIAL
STRATEGY TO 2026

PURPOSE

It is recognised that a geospatial capability is not merely about the tools used during responses. Therefore this strategy was designed with the following purposes in mind.

- Build on our progress so far

- Provide a sense of purpose and direction

- Enhance decision making abilities from GIS

- Focus our attention on matters that will make a difference

- Enable targeted, responsible and sustainable investment

- Meet objective DRR5 in the Civil Defence Emergency Management Group Plan

VISION

Our vision is that GIS becomes a key part of our common operating picture for the region.

AIM

Our aim is that as a group, we have the best-available information at any time, that is accessible to inform our decision-making across the 4 R's.

PRIORITY

Our immediate priority is to review, develop and invest in an Implementation plan for using GIS in response. Additionally, auditing the status of data required for this.

OUTCOMES

TEMO and our stakeholders will be able to use GIS information for decision making, which will involve:

1. Enabling better evidence-based decision making using geospatial information across the 4 R's

2. Skilled personnel to innovate and support our investment

3. Embedded geospatial use and understanding across our people and their activities

4. Interoperable data sources that are the best available, and are supported by strong collaborative relationships between data owners and the Taranaki CDEM Group.

Our internal staff, stakeholders and communities that we serve will all benefit from these.

WHAT SUCCESS LOOKS LIKE:

We will know we've been successful when:

- Our users and staff understand the use and benefit of geospatial information and analysis within the context of Disaster Risk Reduction

- We are using, and confident in the accuracy of all our geospatial data we use at Taranaki CDEM

- Taranaki CDEM staff across all functions are confident in using and tasking geospatial information for decision making

- We use our geospatial platform for engaging our communities across the 4 R's

- We use our geospatial platform for receiving and sharing information with our Coordinating Executive Group Stakeholders, other Civil Defence Groups and other central government agencies

- Our essential elements of information, (including our minimal essential datasets) are available as geospatial data for use at any time.

- We have dedicated staffing and processes for using geospatial in the Taranaki CDEM Group for any response level, and timeframe.

Taranaki CDEM understands that by continuing to demonstrate in our use of geospatial technology that we care about what we do and how we do it, other people will respond accordingly.

STRUCTURE

This Geospatial Strategy is comprised of four objectives that acknowledge and build on gathered knowledge and experiences to date, reflect the challenges identified by stakeholders, and reflect advancements in geospatial technology and use.

The objectives are as follows:

1. DEVELOPING PEOPLE & PROCESSES
2. GATHER ONGOING REQUIREMENTS
3. ENABLING INTEROPERABLE DATA
4. INVEST IN GEOSPATIAL TECHNOLOGY

Each objective focuses on a key theme aimed to deliver the best outcomes over the next five years.

These objectives are introduced and shown as an interconnected approach to meet our outcomes.

Key milestones from these activities are then shown in our overall roadmap to 2026.

Each objective is then defined, which in turn are supported by deliverable activities.

SUMMARY OF OBJECTIVES

Each of these objectives focus on a key theme that will support the growth of our geospatial capabilities over the next 5 years:

1. DEVELOPING PEOPLE AND PROCESSES

Current and future geospatial staff need their roles identified and implemented. This will allow our technology investment to be used to best effect. This applies to our organisation too, including establishing roles and responsibilities, backed by process to guide our activities.

2. UNDERSTAND THE ONGOING NEEDS OF USERS

Bringing stakeholders who will be using our geospatial information and tools across the 4 R's along on our journey, and understanding their needs allows targeted geospatial delivery. Delivering to these needs will promote stronger use and relationships locally, and nationally.

OUR GEOSPATIAL CAPABILITY

4. INVESTING IN GEOSPATIAL SOFTWARE

Once our process, people, needs and information sources are identified and planned for, we need to focus investment, time and effort to develop our geospatial technology platform. This will allow us to collect and analyse information, from our stakeholders, and share and disseminate it in a way that meets the needs of our users.

3. ENABLING INTEROPERABLE DATA

We want the right information in the right format, in a timely manner. To do this requires us to identify and review sources of data required for our essential elements of information. We then must work with stakeholders to provide these as interoperable data sources, and provide structure to ensure sustainability of these services.

Figure 1: Conceptual view of our geospatial capability, and the inter-relationships of objectives that will achieve it.

HOW OUR STRATEGY SUPPORTS A COMMON VIEW

Having common goals enables a collaborative approach to our key pieces of work over the next 5 years. This diagram aims to show what role this strategy plays in a geospatial focussed landscape.
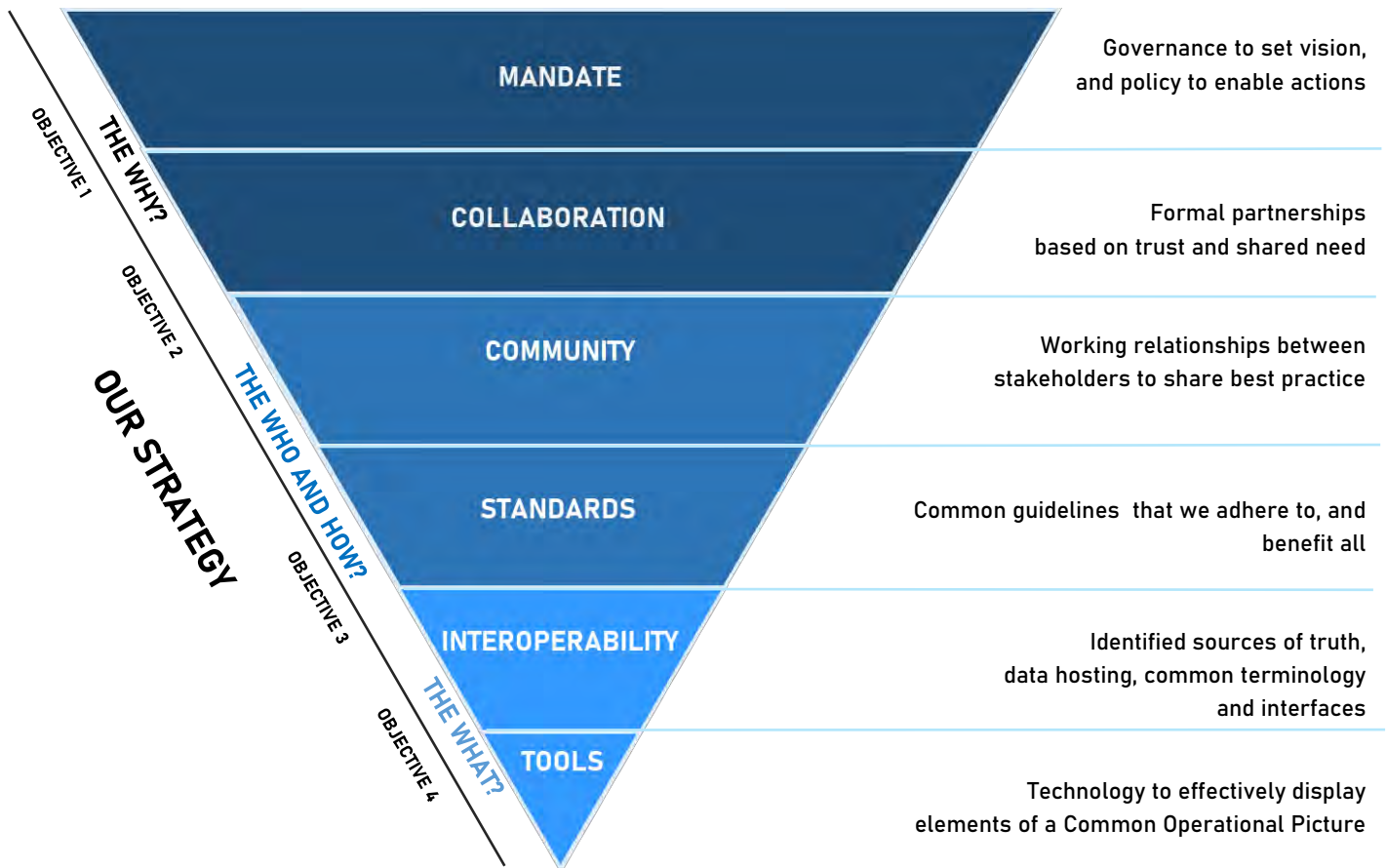
Figure 2: The factors enabling a successful geospatial technology capability, and how this strategy addresses these (adapted from Phyn, D., 2018).

THIS FRAMEWORK WILL ULTIMATELY SUPPORT INFORMED DECISION MAKING ACROSS THESE CATEGORIES:*

HAZARDS   RESPONSE   SOCIAL ENVIRONMENT   BUILT ENVIRONMENT

LIFELINE UTILITIES   RECOVERY   ECONOMIC ENVIRONMENT   NATURAL ENVIRONMENT

*These categories were prioritised by internal stakeholder workshops held as part of this strategy development

OUR ROAD MAP TO 2026

	NOW	YEAR ONE	YEAR TWO
	OBJECTIVES	2021/22	2022/23

DEVELOPING PEOPLE AND PROCESS

Audit existing resources and skills across the Taranaki region, and in neighbouring regions to create a shared knowledge, people and data register. Form an Innovation Working Group (IWG) to deliver prototype response solutions

Governance structure under CEG established, including the creation of a response technology portfolio. All processes documented. Staff members on a geospatial training pathway. Skills learnt are then applied to begin to self-servicing applications from the IWG.

UNDERSTANDING ONGOING NEEDS OF USERS

Capture requirements and user stories of external and internal users. Review existing solutions in place across New Zealand. Schedule a review of needs annually, and after each major response.
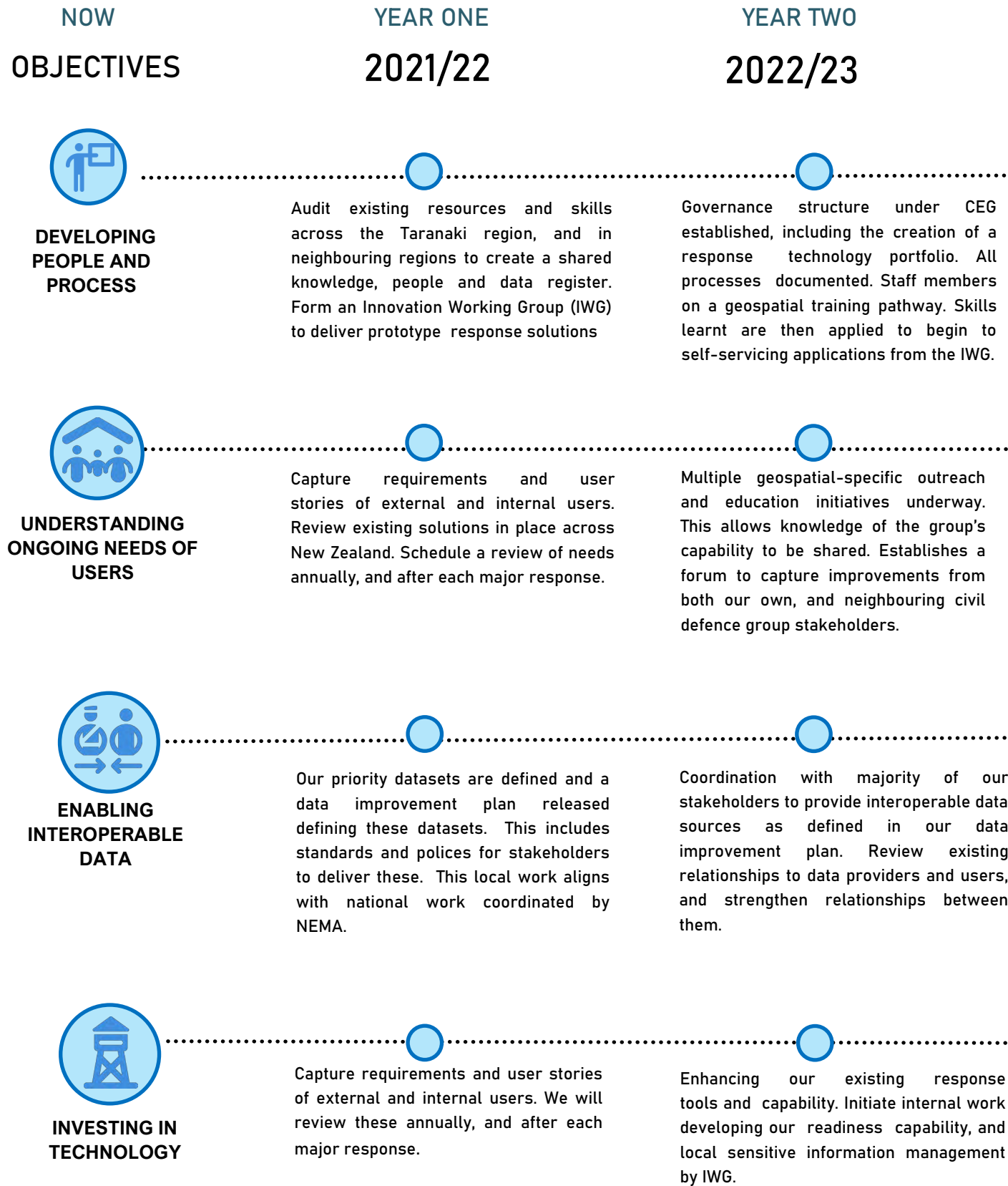
Multiple geospatial-specific outreach and education initiatives underway. This allows knowledge of the group's capability to be shared. Establishes a forum to capture improvements from both our own, and neighbouring civil defence group stakeholders.

ENABLING INTEROPERABLE DATA

Our priority datasets are defined and a data improvement plan released defining these datasets. This includes standards and polices for stakeholders to deliver these. This local work aligns with national work coordinated by NEMA.

Coordination with majority of our stakeholders to provide interoperable data sources as defined in our data improvement plan. Review existing relationships to data providers and users, and strengthen relationships between them.

INVESTING IN TECHNOLOGY

Capture requirements and user stories of external and internal users. We will review these annually, and after each major response.

Enhancing our existing response tools and capability. Initiate internal work developing our readiness capability, and local sensitive information management by IWG.

Figure 3: Strategy objectives roadmap showing categorised tasks by outcome workstream, and year.

OUR ROAD MAP TO 2026

YEAR THREE
2023/24

YEAR FOUR
2024/25

YEAR FIVE
OUTCOMES

Resourcing and process has been formalised for readiness & response. Business case for a full-time Geospatial Technician to focus on data Integration tasks. Shared training agreement across stakeholders.

Development of our processes to include technical staff and users from cross CEG members.

At year-end, review progress of our staff, assess priorities and plan tasks for next strategic period.

WE ARE INNOVATING & SUPPORTED BY SKILLED PERSONNEL

Scheduled review of needs from existing userbase. Establish new requirements gathering initiative targeting our CEG advisory and coordination group userbase

Scheduled review of needs and requirements from existing userbase. New requirements gathering initiative targeting our community outreach userbase.

At year end, review and plan with a focus on our benefits realisation to our users.

WE HAVE GEOSPATIAL USE ACROSS OUR STAFF & ACTIVITIES

Data integration project underway to deliver datasets unable to be delivered by stakeholder in required format, and enhance solution for the local storage of sensitive datasets

Report on spatial data integrity against our data improvement plan. Refresh our spatial data inventory based on current best practice

At year-end, review and plan with the focus on our internal information and intelligence outcome maturity assessment .

WE HAVE COLLABORATIVE INFORMATION SHARING WITH ALL OUR STAKEHOLDERS

Development of our geospatial reduction capability by IWG (in addition to enhancing our existing capability).
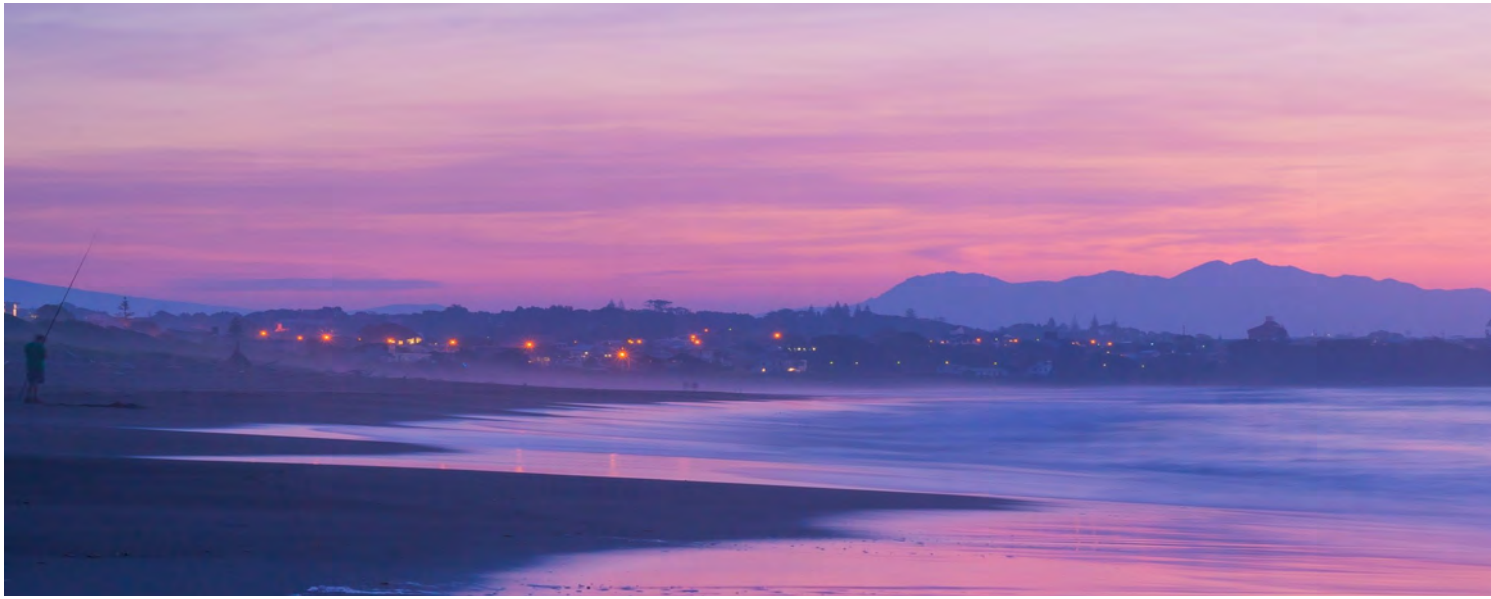
Development of recovery capability by IWG (in addition to enhancing our existing capability).

At year-end, review and plan with a focus on updating our geospatial roadmap.

WE HAVE TOOLS FOR DECISION-MAKER SITUATIONAL AWARENESS ACROSS THE 4 R'S
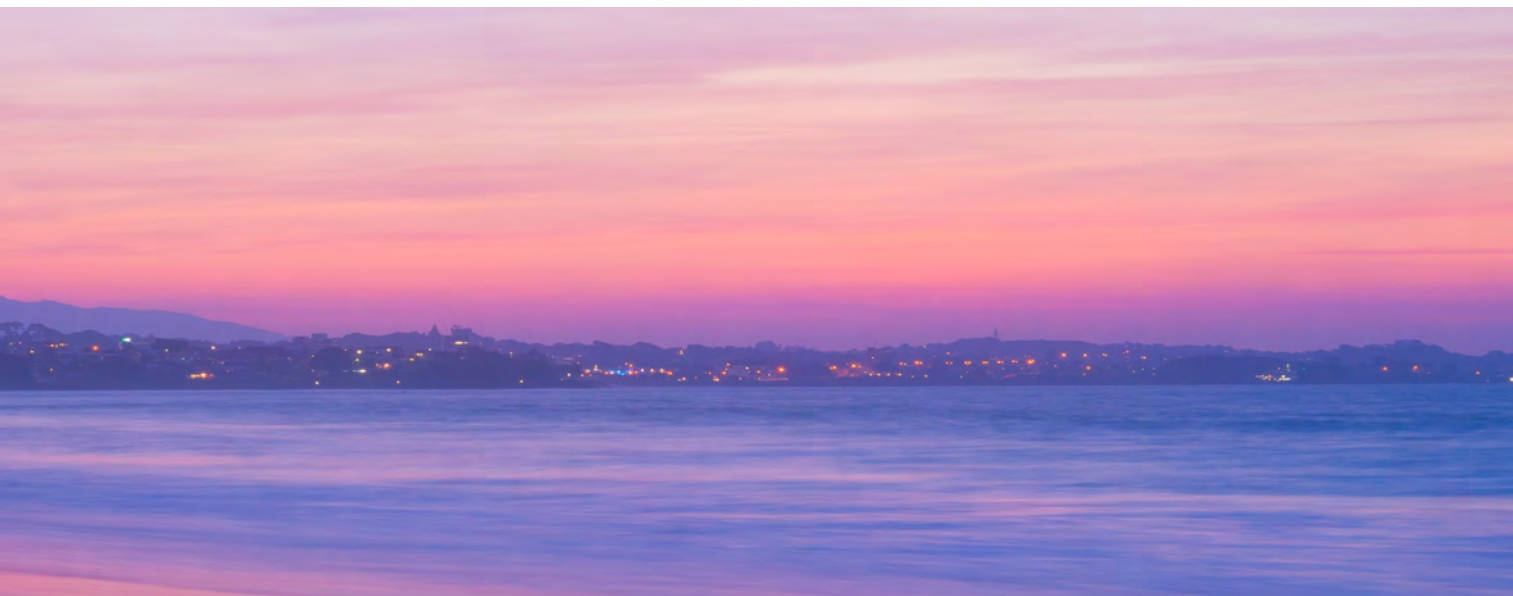
OUR OBJECTIVES

OBJECTIVE 1: DEVELOPING PEOPLE AND GOVERNANCE

Current and future geospatial staff need their roles identified and implemented. This will allow our technology investment to be used to best effect This applies to our organisation too, including   establishing roles and responsibilities backed by process to guide our activities.

ID	TASKS	MEASURE	DATE BY
1.1	Define the current state of geospatial systems and skills across our CDEM Group	An audit of existing systems and skills across the region (and in neighbouring regions) to create a shared knowledge, people and data register.	2021/22 Q3
1.2	Formalise governance of the CDEM Groups Geospatial Capability	Establish an Innovation Working Group to research and provide regular updates of significant technology advancements and progress toward strategy implementation	2021/22 Q3
		Establish a response technology governance structure that includes geospatial.	2022/23 Q2
1.3	Plan for how GIS will be staffed, including assigning roles and responsibilities	A response technology portfolio position established, the individual responsible will have oversight, and the ability to report to CEG Partners on the implementation of this strategy.	2022/23 Q4
		Our data improvement plan (Objective 3) used to identify staffing resourcing needed to perform any integration and product development.	2023/24 Q1

Table 1: Objective 1 Tasks, measures and timeframes.

OUR OBJECTIVES

OBJECTIVE 2: UNDERSTAND THE ONGOING NEEDS OF USERS

Bringing stakeholders who will be using our geospatial information and tools across the 4 R's along on our journey, and understanding their needs allows targeted geospatial delivery. Delivering to these needs will promote stronger use and relationships locally, and nationally.

ID	TASKS	MEASURE	DATE BY
2.1	Engage with stakeholders to understand their needs from geospatial on an ongoing basis	Capture initial requirements (gap analysis) and user stories of emergency management geospatial information. User requirements are reviewed annually and after each major response.	2021/22 Q2
		Produce a communications document that raises awareness of the role of GIS in emergency management.	2021/22 Q3
2.2	Holding workshops, exercises and debriefs to continuously improve where geospatial can meet information needs across 4 R'S	A training pathway in geospatial software that grows awareness and skills of staff and decision makers to begin to self-service, allowing time for specialists to focus on design, templates and integration.	2022/23 Q1
		Hold six geospatial-specific outreach and education initiatives to build and share knowledge of the CDEM group's capability both internally and externally.	2022/23 Q4

Table 2: Objective 2 Tasks, measures and timeframes.

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OUR OBJECTIVES

OBJECTIVE 3: ENABLING INTEROPERABLE DATA

We want the right information in the right format, in a timely manner. To do this requires identifying and reviewing sources of data required. We must then work with stakeholders to provide these as interoperable data sources, and provide structure to ensure sustainability of these services.

ID	TASKS	MEASURE	DATE BY
3.1	Identify and prioritise information requirements	Audit existing data and then define our datasets and products (*see Appendix 3)* that are highest priority for the Taranaki CDEM Group and the region (by classifying layers in our data and service catalogue).	2021/22 Q2
		Provide a data improvement plan based on information and product needs defined by the Taranaki CDEM Group and stakeholders	2021/22 Q4
3.2	Identify and build relationships with key points of contact through the Innovation Working Group to provide interoperable data sources *(see Appendix 1)*	Technically enabled the ability to share geospatial data with our neighbouring civil defence emergency management groups	2022/23 Q1
		Have coordination with 80% of our public and private stakeholders to provided interoperable data sources for our highest priority datasets (as defined in our data improvement plan).	2022/23 Q2
3.3	Set mandate, standards, privacy & security policies and agree on common data schemas and terminology across our data providers	Defined our required standards and policies for stakeholder data, that align with those provided by NEMA or the authoritative agency.	2021/22 Q4

Table 3: Objective 3 Tasks, measures and timeframes.

OUR OBJECTIVES

OBJECTIVE 4: INVESTING IN GEOSPATIAL TECHNOLOGY

We need to focus investment, time and effort to develop our geospatial technology platform. This will allow us to collect and analyse information, from our stakeholders and share and disseminate it in a way that meets the needs of our users.

ID	TASKS	MEASURE	DATE BY
4.1	Keep up to date with good practice within the emergency management community, with an initial focus on response tools	Establish an advanced geospatial platform for response, building on existing good practice across the New Zealand GIS in emergency management community.	2022/23 Q1
4.2	Plan, design and implement appropriate technology to meet current needs and future growth. (See Appendix 2b)	A business case prepared for annual budget allocation for the procurement, resourcing and development of geospatial technology.	2021/22 Q3
4.3	Use GIS as an intelligence source across the 4 R's by creating applications to collect, analyse and disseminate information in a timely manner	Report to CEG reviewing how GIS has been used to assist with emergency management.	Annually
		Identified resourcing needed to provide data feeds from our data improvement plan	2022/23 Q1
		Identified gaps in current technology platform by documenting existing processes used for geospatial use in emergency management locally	2022/23 Q2

Table 4: Objective 4 Tasks, measures and timeframes.

APPENDICES

APPENDIX 1:

COORDINATING EXECUTIVE GROUP STATUS: CURRENT GIS PLATFORM AND INFORMATION

CEG MEMBER NAME	GEOSPATIAL INFORMATION DATA THEMES THEY MAINTAIN AND CAN CONTRIBUTE	SOFTWARE USED
Taranaki Emergency Management Office	Response	Esri
Taranaki Regional Council	Hazards, Population, Natural Environment	Esri
New Plymouth District Council	Population, Building, Transportation, Infrastructure and Economic	Esri
Stratford District Council	Population, Building, Transportation, Infrastructure and Economic	QGIS
South Taranaki District Council	Population, Building, Transportation, Infrastructure, Economic	QGIS
Iwi Stakeholders (Ngāti Tama/ Ngāti Mutunga/ Te Atiawa/ Ngāti Maru/ Taranaki Iwi/ Ngāruahine/ Ngāti Ruanui/ Ngaa Rauru Kiitahi/ Ngāti Maniapoto)	Response, Population, Economic and Natural Environment	Esri
New Zealand Police	Hazards, Response	Esri
Fire & Emergency New Zealand	Hazards, Response	Esri
Taranaki District Health Board	Response, Population, Infrastructure and Economic	Esri
St John Ambulance Service	Response, Population	Esri
Welfare Co-ordination Group Lifelines Advisory Group Taranaki Seismic and Volcanic Advisory Group Rural Advisory Group Hazards Advisory Group Hazardous Substances Technical Liaison Committee Health Emergency Management Group	Hazards, Response, Population, Building, Transportation, Infrastructure, Economic and Natural Environment	Unknown

Table 5: Coordinating Executive Members, information sources they collect and current geospatial software in-use.

APPENDIX 2A:

CURRENT SITUATION - TECHNICAL

TECHNICAL ENVIRONMENT SYSTEM CONTEXT

TEMO's current technical environment has limited collaboration and limited few real–time datasets from stakeholders.
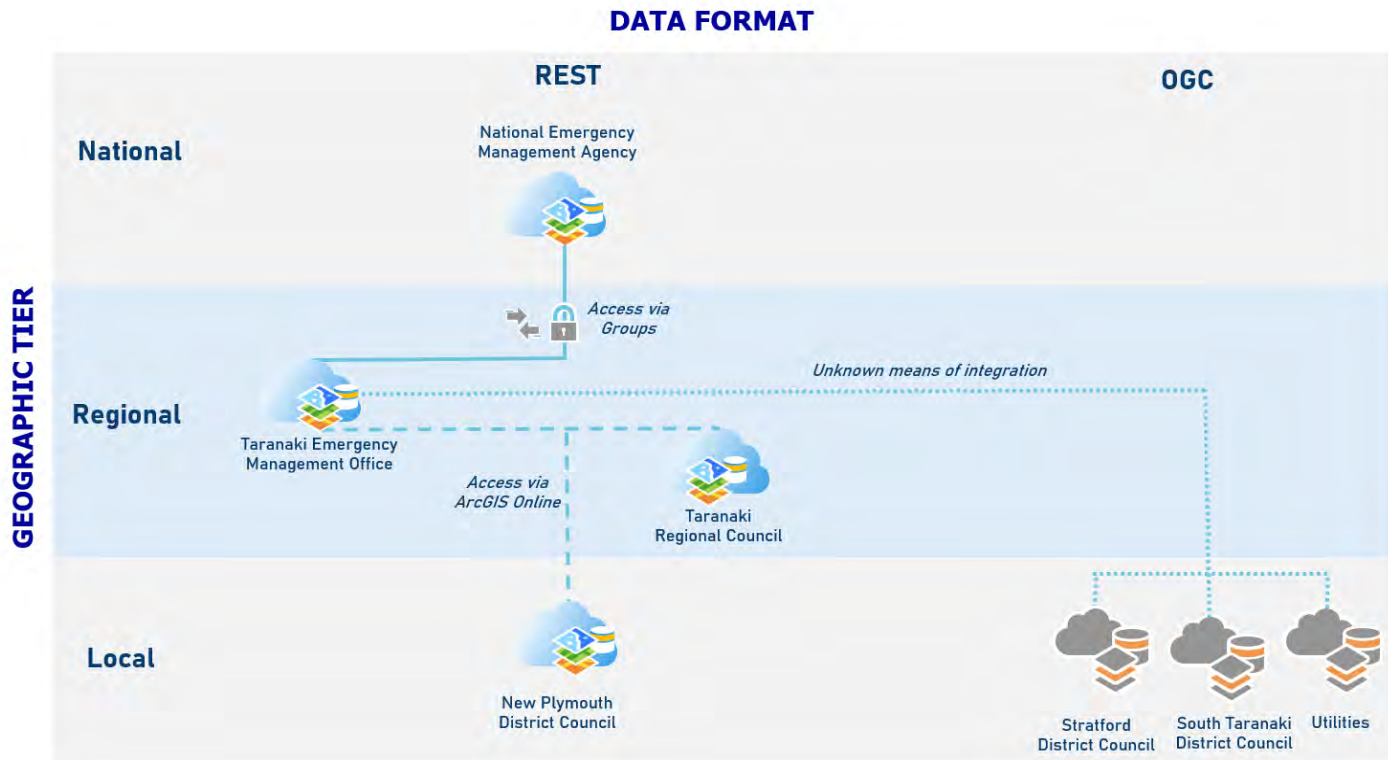

Figure 3: High–level system context diagram of stakeholder geospatial software environments (current state).

APPENDIX 2A:
CURRENT SITUATION - STAFFING

TECHNICAL STAFFING RACI MATRIX

To resource current civil defence activities, most of the current technical roles are local government FTE's coordinated when required by TEMO.

	TEMO Analyst	NPDC Analyst	TRC Analyst	STDC Analyst	SDC Analyst
Developing Strategy	A	A	A	A	A
Data Management	A	R/A	A	C	C
Platform Administration	A	A	I	I	I
Response Staffing	A	A	A	I	I
Procurement	A	C	I	I	I
Training Delivery	A	C	I	I	I

Table 6: Current areas of responsibility for civil defence geospatial use, and who is responsible.

TABLE KEY

R	Responsible
A	Accountable
C	Consulted
I	Informed

APPENDIX 2B:

FUTURE SITUATION - TECHNICAL

TECHNICAL ENVIRONMENT SYSTEM CONTEXT

TEMO's future technical environment will have multi-tier collaboration. This includes real-time datasets from stakeholders-achieved through integrating multiple instances of the same platform, or a data feed.
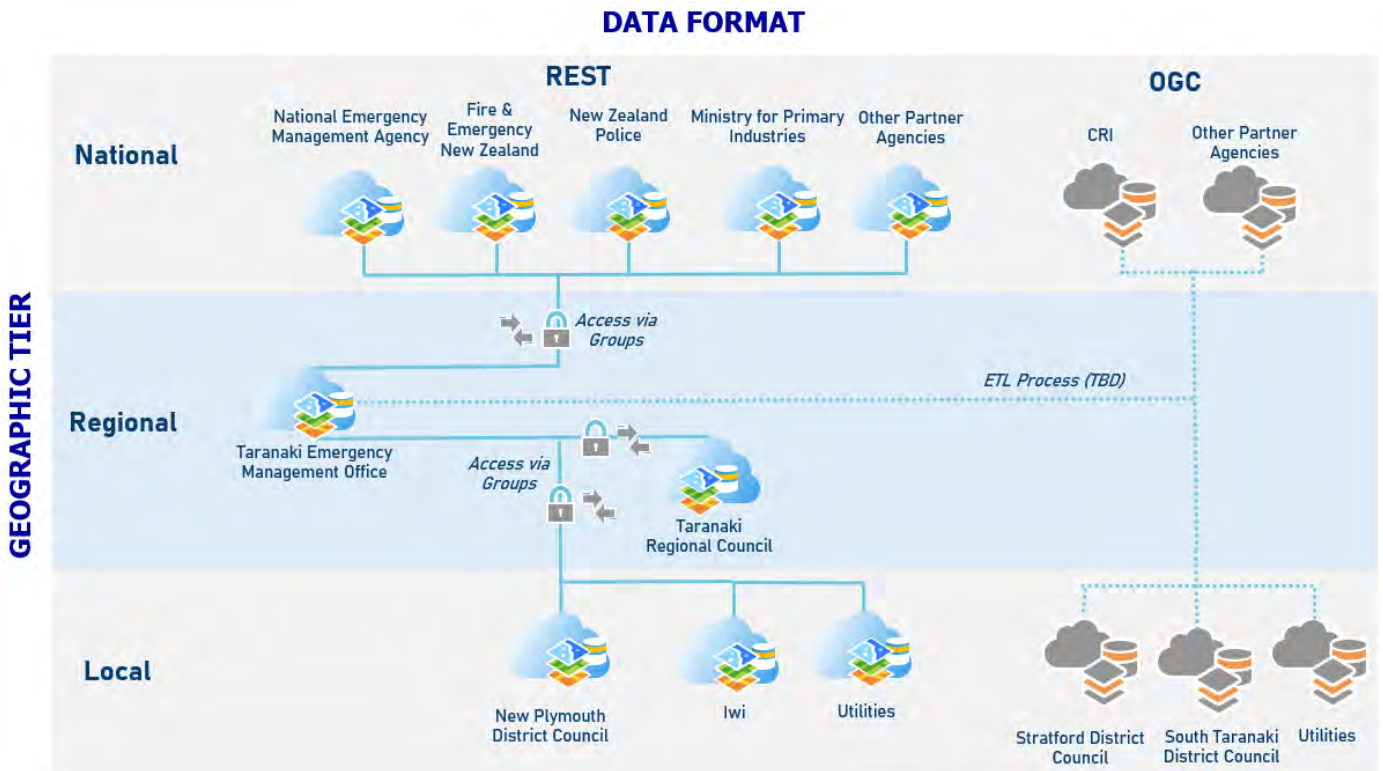

Figure 4: High-level system context diagram of stakeholder geospatial software environments (future-state).

APPENDIX 2B:
FUTURE SITUATION—STAFFING

TECHNICAL STAFFING RACI MATRIX

To resource the activities required as part of this strategy, most of the technical roles will be local   government FTE's coordinated by TEMO's response technology portfolio lead.

	TEMO Coordinator	NPDC Analyst	TRC Analyst	STDC Analyst	SDC Analyst	Other CEG Analysts
Strategy Implementation	R	A	A	A	A	A
Stakeholder Relationships	R	A	A	A	A	A
Solution Prototyping	R	A	A	C	C	C
Data Improvement Plan Draft	R	C	C	C	C	C
Data Extraction	R	A	A	A	A	A
Data Delivery	R	A	A	A	A	A
Training Delivery	R	C	C	C	C	C
Innovation Working Group	R	A	A	A	A	A
Response Staffing	R	A	A	A	A	A

Table 7: Future areas of responsibility for civil defence geospatial use, and who will be responsible.

TABLE KEY

R	Responsible
A	Accountable
C	Consulted
I	Informed

APPENDIX 3:
OUR END STATE—WHAT WILL OUR TOOLS DELIVER?

The outcome of the activities in this strategy will deliver decision support tools for all stakeholders across all phases of disaster risk reduction. What this will look like can be seen in proposed future design that the Innovation Working Group will coordinate to deliver in phases below:
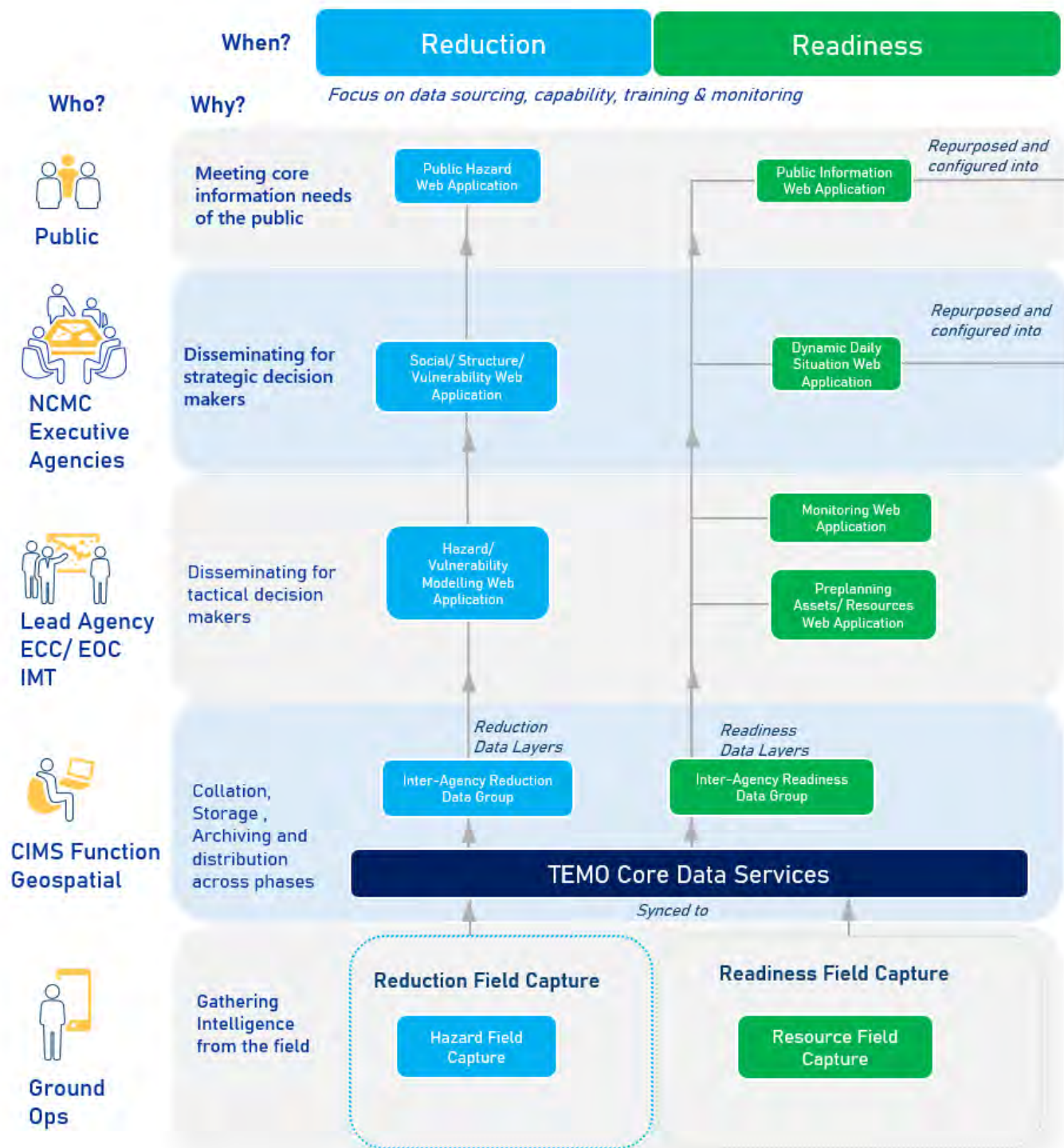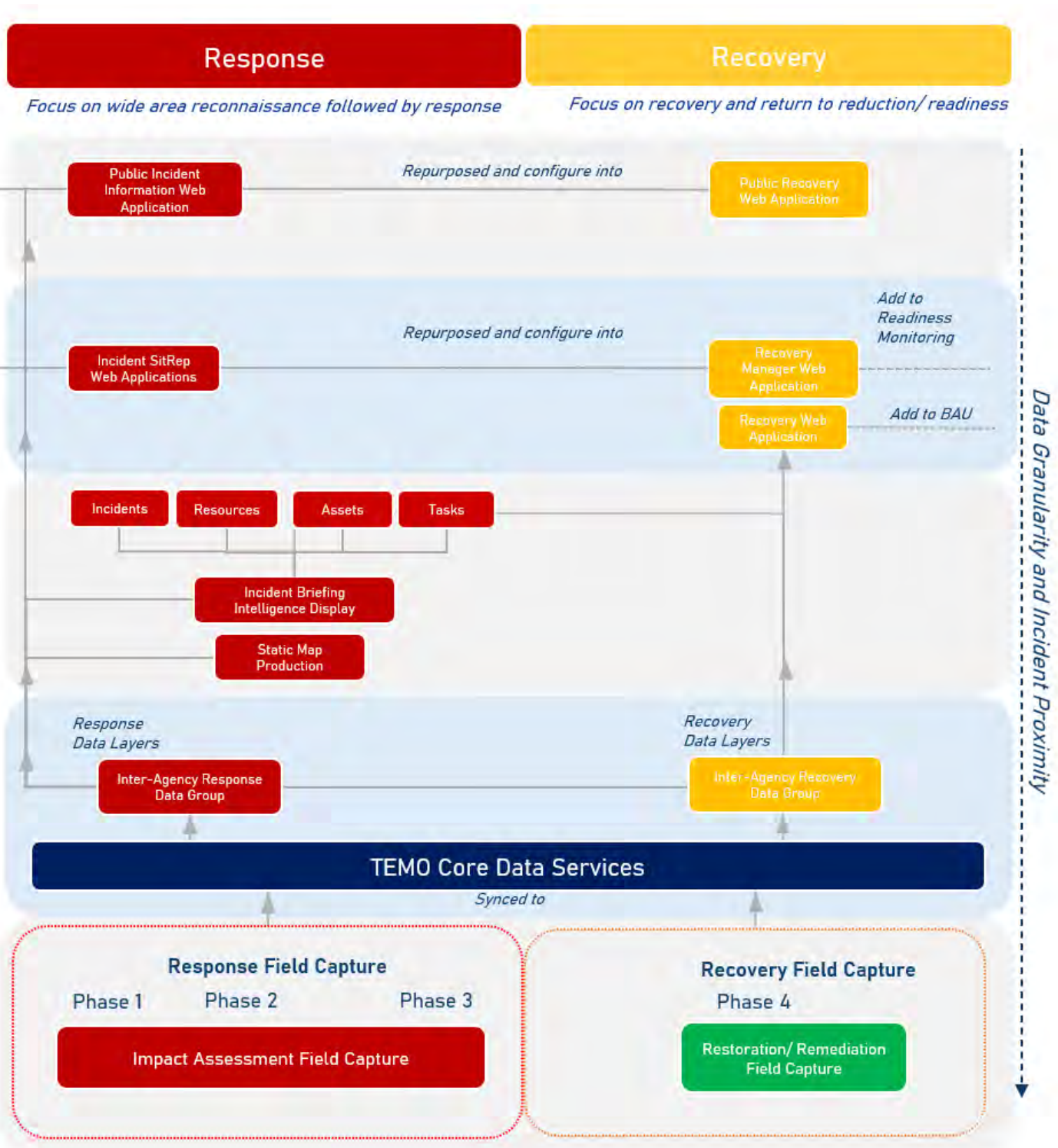

Figure 5: High-level geospatial systems context diagram, based on current configuration.

APPENDIX 3:
CONTINUED

Our approach of prioritising data, people and defined requirements, allows TEMO to be resilient and adapt to new technologies when they become available. This allows our strategy outcomes to be met now and into the future.

GLOSSARY

CDEM

Acronym for Civil Defence Emergency Management Groups. These groups provide regional coordination of reduction, readiness, response and recovery activities.

CEG

Acronym for Coordinating Executive Group. The Co-ordinating Executive Group (CEG) implements the decisions of the Civil Defence Emergency Management (CDEM) Group and is able to commit the resources of their representatives to the agreed work plan and projects (as consists of senior representatives of local authorities, and Civil Defence Emergency Management Group member organisations.

GIS

Acronym for Geographic Information Systems. These are systems designed to capture, store, manipulate, analyse, manage, and present all types of geographical data.

Iwi

Focal economic and political unit of Māori descent-and kinship-based hierarchy of: Waka (founding canoe) | Iwi (tribe) | Hapū (sub-tribe) | Whānau (family).

LIFELINES

Refers to Lifeline utilities. These are entities that provide essential infrastructure services to the community such as water, wastewater, transport, energy and telecommunications.

NEMA

Acronym for National Emergency Management Agency. NEMA is the Government lead for emergency management in Aotearoa New Zealand.

RACI

Acronym for Responsible, Accountable, Consulted or Informed. This is part of a tool called the RACI matrix which is a responsibility assignment chart.

TEMO

Acronym for Taranaki Emergency Management Office. TEMO is a shared service between all four councils in Taranaki who coordinate CDEM activities in the Taranaki region.