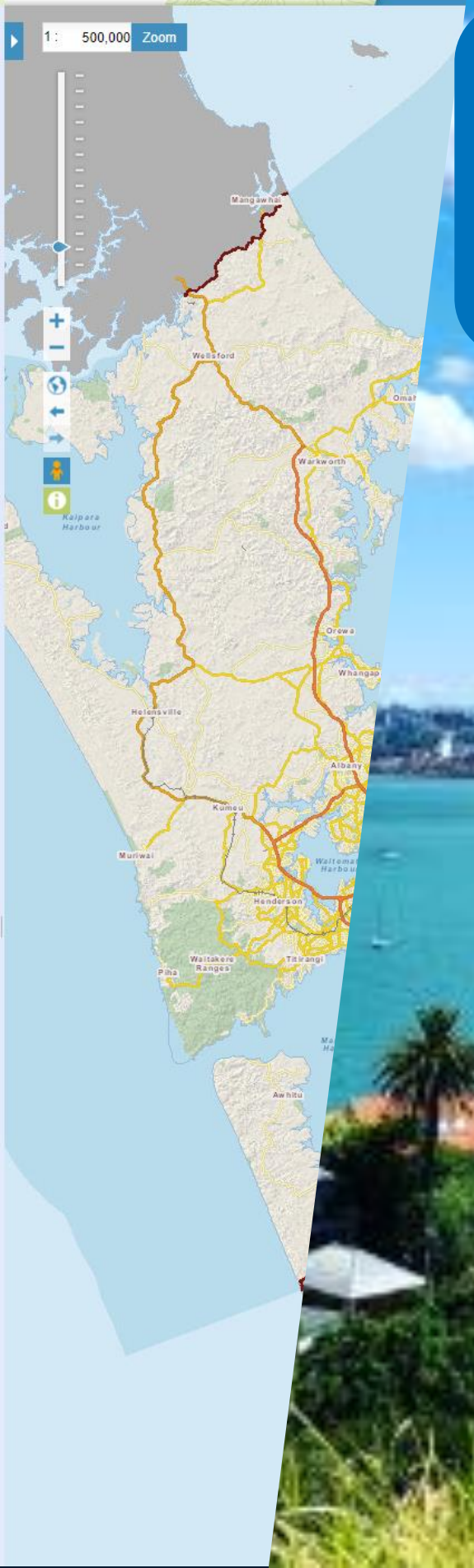




Geospatial Technology Benefits for Auckland Council



UNDERSTANDING THE VALUE OF GIS
A Review of Utilisation and Benefits

Understanding Our Customers

Who Uses Our Viewers? A Survey of Users

UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits



To enhance our knowledge of how geospatial capabilities and data is being utilised by Auckland Council and Aucklanders we conducted several surveys, the results of which are outlined in the following sections.

1,045

SURVEY RESPONSES

159 from Council Staff
886 General Public

100%

of staff in our teams rated geospatial technology or data as being

“ESSENTIAL”

to fulfil statutory, regulatory or Long-Term Plan requirements for some aspects of their team's responsibilities.

98%

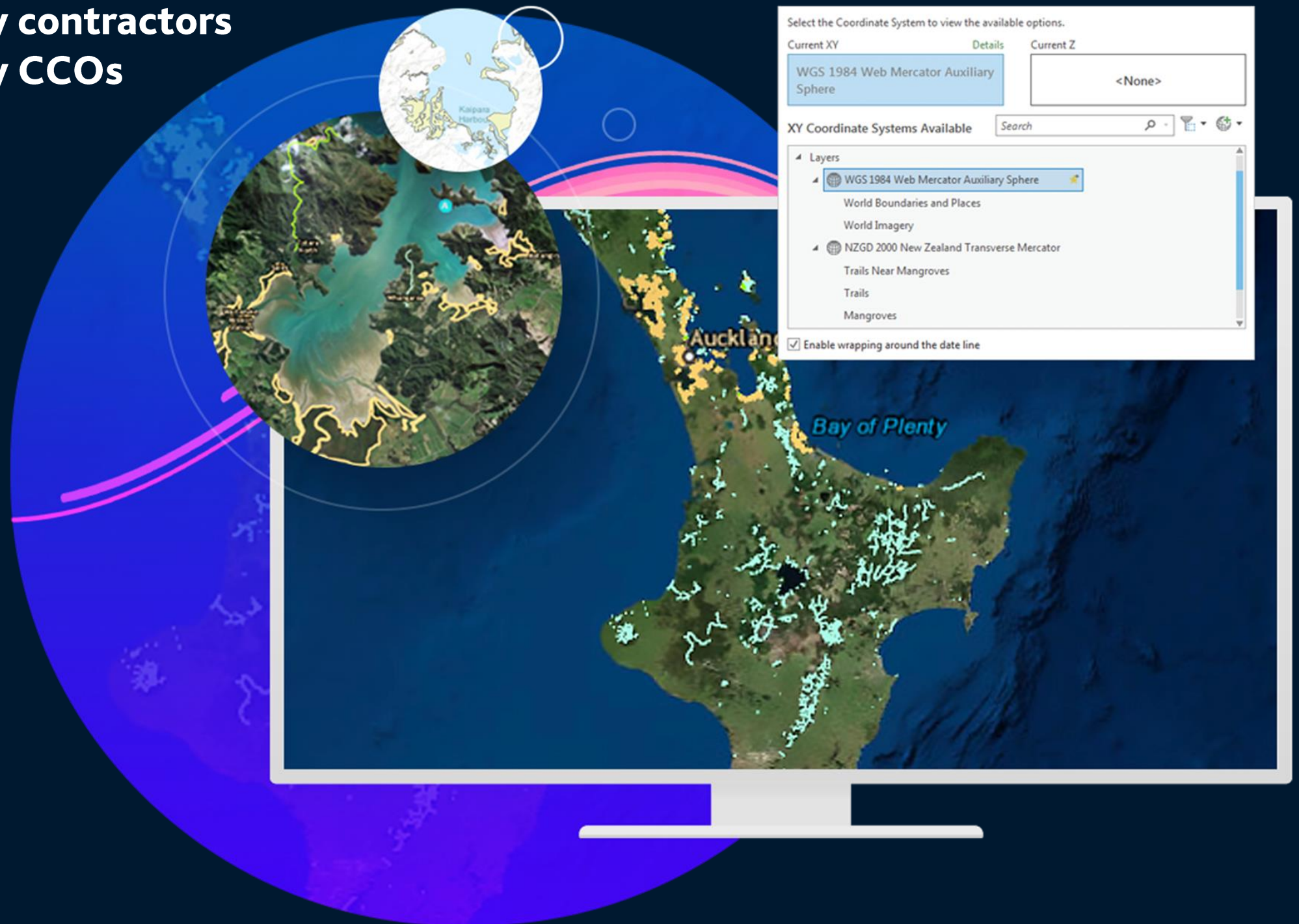
of Auckland Council personnel rated geospatial technology provides

“ESSENTIAL” or “IMPORTANT”

benefits demonstrated through enhanced efficiency, productivity, quality, capacity, revenue, or reduced risks or costs.

Part 1: Internal

Auckland Council personnel
+ partial use by contractors
+ partial use by CCOs





80%

OF ALL DATA IS GEOSPATIAL

Most data elements reference an address, a property, a jurisdiction, an electoral boundary, a planning zone, a restricted area, a site, a suburb or a region of environmental importance. Everything happens somewhere

3,000

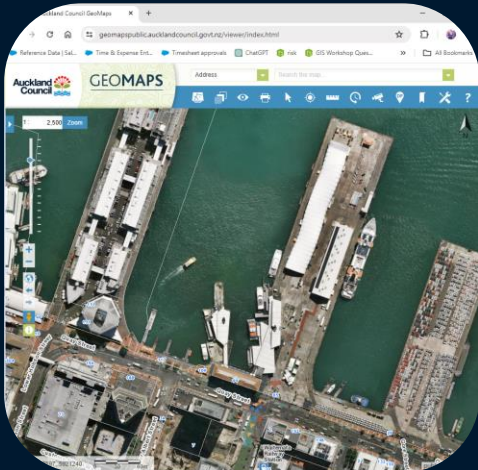
personnel are frequent users

System statistics indicate that three thousand Auckland Council personnel regularly use Internal GeoMaps. Thousands more use other geospatial capabilities and datasets on a frequent basis. Geospatial technology is a core platform for meeting many Council responsibilities.

300

personnel are 'super-users'

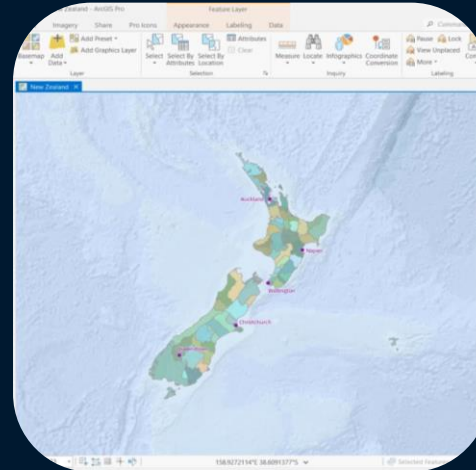
Across various teams there are a number of specialist users. These staff are highly skilled in the use of this technology and tend to have elevated access to high-performance geospatial technology. There is an aspiration to enhance cross-team collaboration to achieve even more.



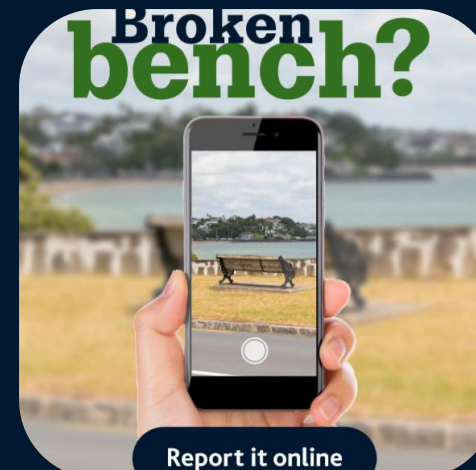
GeoMaps



Ruru



Desktop Applications



Mobile Apps



Specialist Uses

To enhance our knowledge of how these tools and geospatial data is being utilized by Auckland Council personnel we conducted several surveys, the results of which are outlined in the following sections.

A Key Enabler for Auckland's Growth

How Geospatial Contributes to Council Objectives (Overview)

UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits



The Auckland Council Long Term Plan 2024-2034 (LTP) defines seven key focus areas for action in the next ten years. The following assessment centers around geospatial capabilities are used to support those focus areas. These are key themes mentioned in the LTP where geospatial capabilities will (or already do) provide essential contributions. The following document is an examination of public facing viewers. This is being augmented with similar assessment of our internal capabilities through Council staff engagement.





The data presented in the following study demonstrates that there are clear links to all of the focus areas within the Auckland Council's Long Term Plan and other key strategic initiatives as well as supporting a wide range of Auckland Council's core responsibilities. Links to the LTP focus areas are summarised in this section.

Water



Geospatial tools are vital for stormwater operations, asset management, and clean water. It ensures accurate asset identification, supports Health and Safety by preventing reducing risk, and plays a crucial role in environmental protection. GIS tools enhance efficiency by enabling desktop assessments, aid in emergency management through real-time monitoring,. GIS is indispensable for effective planning, compliance, and operational efficiency for managing Auckland's water resources.

Built Environment



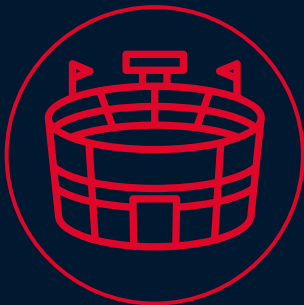
GIS is indispensable for the processing of resource consents and plan assessments. It consolidates critical information such as zoning, natural hazards, and environmental data, enabling effective analysis that save time and resources. Without tool such as GeoMaps, many tasks—such as determining planning provisions, assessing hazards, and ensuring compliance with environmental regulations—would be significantly harder or impossible.

Natural Environment



Geospatial technology is crucial for various environmental assessment processes. It allows for the analysis of natural environments, ecological areas, flood risks, ownership details, and more. GeoMaps supports informed decision-making by providing comprehensive data, which is vital for tasks such as assessing environmental impacts, determining land use suitability, and ensuring compliance with regulations. It essential for effective governance and environmental stewardship.

Economic and cultural development



Geospatial tools are essential for identifying and preserving cultural heritage. They help determine the location of culturally significant sites, ensuring preservation during land use planning. Tools like GeoMaps provide critical data on historical or heritage locations, such as those recognized by Mana Whenua, allowing for informed decision-making. This approach ensures that cultural values are recognised and safeguarded in line with obligations under the Resource Management Act and other heritage legislation.

Community



Geospatial technology is used for managing community facilities and activities, enabling effective spatial planning equitably across the region. Just a few examples include dog access rules, alcohol bans, and open space provisions. Geospatial tools are crucial for forecasting budgetary needs, informing council policies, and understanding current and future demands as Auckland grows. GIS also aids in customer service, allowing staff to access vital information for public inquiries. Without GIS, managing and planning for the community's needs would be much more difficult.

Well-managed local government



Geospatial technology improves decision-making and data quality by consolidating and enhancing information, leading to faster and more productive analyses. Staff benefit from modern tools that enhance service and target high-need locations. It also reduces risks including health and safety, legal issues, and procedural challenges as well as ensuring all relevant data is available. Geospatial technology cuts costs by boosting efficiency, reducing site visits, and minimizing consultancy fees.

Transport



The primary responsibility for the provision of transport information resides with Auckland Transport, so was not directly assessed as part of this study, however there were some suggestions from respondents that greater integration of datasets between agencies is something to aspire to in the future.

Benefits of Geospatial

Perspectives from Auckland Council personnel

There are several ways that geospatial technology reduces costs, the primary way is through efficiency gains, however there are also significant benefits through the elimination or optimization of expensive site visits or through reduction in fees or penalties. There are also many examples of using skilled internal resources to reduce reliance on expensive consultancy.

60%

respondents indicate essential or important cost savings

While there are few direct charges, there are essential contributions to several revenue streams

\$\$\$

consents, permits, LIMs and leases

Raise Revenues

Lower Costs

Increase Productivity

Increase Capacity

69%

state that geospatial tools increase capacity

By virtue of greater efficiency this creates opportunities for increased throughput and faster generation of maps, reports and analysis

84%

responses indicate essential or important productivity gains

A great deal of information is presented 'in one place' meaning that analysis is streamlined. The ability of geospatial tools to collate a multitude of disparate datasets through a unique 'common denominator' (geography) means that many processes are more productive.

UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits



Staff appreciate having modern tools to assist them to provide excellent service to Aucklanders

many statements about increased staff & customer satisfaction

Increase Satisfaction

Improve Quality

Increase Efficiency

Decrease Risk



Risk to life
reduced as well as risks to assets, finances, data etc

Risks include (but are not limited to): Health & Safety of residents and Council staff, legal risks, emergency & climate risks as well as procedural risks around failing to access all relevant data.

One key benefit that geospatial technology produces is enhanced and expedited decision making. There are also many geospatial tools that are being used to improve the quality of data and services that are provided to users and external interested parties.

59%

staff indicate improved decision making

63%

Targeting of activities to locations of the highest priority

Through enhanced awareness of location factors efficiencies are being demonstrated with targeting activity to the locations that have the greatest needs. Efficiency gains are accelerating with the increasing adoption of smarter technologies such as satellite imagery GeoAI analysis.

Evidence from a small subset of quotes from our staff follows...

Geographic Information

Percentages from Auckland Council Geospatial Power Users Survey

Benefits of Geospatial

A Small Subset of Examples from Personnel

* Percentages from
Power Users Survey

UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits



Parks & Community Facilities

“Out of the box tools available in GIS saves us money in hiring a developer and consultants to build a customised GIS tool for our customers.”

Regulatory Engineering “it would be extremely difficult to effectively do our job and would be of significant cost to Council and/or property owners wishing to obtain resource consent. Often from Geomaps we can save council/property owners money if we don't require a site visit and can undertake a desktop assessment instead.”

Licensing & Regulatory Compliance

“We rely on Geomaps to learn more about the properties we conduct site visits to. For low risk sites we can carry out assessments remotely.”

Plans & Places (Heritage) “You have developed a tool that is now a critical part of our daily work practice. Literally, we can't do our work if we can't use it.”

RIMU “I estimate it would take 10x more time to perform analyses without geospatial tools”

Plans & Places (Aucklandwide) “Without geospatial capabilities it would increase time three folds and productivity would be minimum.”

Plans & Places “A lot more time. Maybe 10-20 times longer depending on the task. I also think there is an increased chance of human error and the output will not be as accurate.”

RIMU “Increased capacity to plan field work more efficiently when working in remote locations, ie optimising approach, navigation, provides greater time in field for biodiversity data collection. “

Plans & Places “Cannot do our job without GeoMaps data. We have a GIS team supporting us who are able to provide reports and other analysis based on data from GeoMaps. This greatly increases our efficiency and capacity. “

Creative Industries

“If we cannot issue permits, Tāmaki Makaurau risks losing filming productions, and millions of dollars in investment into our economy (last report was \$1.7B).”

Raise Revenues

Lower Costs

Increase Productivity

Increase Capacity

Geographic Information

Licensing & Regulatory Compliance “It helps us to do our job well - with all the information at our fingertips”

Environmental Services

“love seeing the addition we are making to biodiversity on screen”

Increase Satisfaction

Improve Quality

Increase Efficiency

Decrease Risk

Planning & Consents “Reduces risk to projects by providing certainty of information (so that decisions are not being made on incorrect info or an absence of info).”

Healthy Waters “GIS powers the Safeswim website, which Auckland Council uses to display recreational water quality information in real-time. This is used by hundreds of thousands of people”

Chief Executive Office (Economic Transformation)

“Different variables or subsets of spatial data can be presented visually very quickly in a way that is more impactful and uses less time than generating tables and charts which don't present spatial data in a way most users readily understand.”

Auckland Plan Strategy & Research

“Using geospatial tools effectively contributes to increased quality decision making through being able to track progress and visualise data instead of presenting it in a spreadsheet to present alongside advice.”

Healthy Waters “GIS applications in the field mean that less manual input is required, leading to reduced errors. Data QA is also easier to perform using GIS applications.”

Resilient Land & Coasts “We use Geomaps on a daily basis to provide site specific information for our landfills. E.g, I recently used the Parks / Garden Turfs layer to establish whether there were existing coastal structures at a number of our sites to feed into the scope for an upcoming project. If Geomaps was not available for me to look at this information, this would delay the project by a considerable amount of time & delay addressing areas that have been identified as key risks for our team. “

Environmental Services - Infra & Env

“We use GeoMaps on a daily basis to do our jobs, we need to check addresses and property details, view aerials and layers relating to our work (mostly the Natural Environment Conservation layers) as well as information on flood plans, overland flow paths, Significant Ecological Areas and statutory boundaries.”

Criticality Levels and Outage Impacts

How Important are Reliable Geospatial Capabilities?

UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits



Surveys of Auckland Council personnel asked what the impact would be if geospatial systems were not operational. The table below summarises the responses that were given with a rating of overall severity of impacts, along with more specific categories of risks. The categories were further refined to indicate whether the risks would be immediate (impacts within hours) or whether impacts would only be if unavailability was for a sustained period (i.e. for a few days). Greater details of just a few of the examples of commentary relating to these risks and impacts follow in the next section (there were many more similar comments from across the organisation that were omitted for the sake of brevity, but which are available in the detailed results).



Departments	Severity Rating	Threat to Life	Operational Impairment	Management Impairment	Environmental Risks	Risks to Assets	Legal Risks	Financial Risks
Auckland Emergency Management	Severe							
Healthy Waters	Severe							
Licensing & Regulatory Compliance	Severe							
Building Consents	Severe							
Creative Industries	Severe							
Connected Communities	Severe							
Digital & Customer Experience	Severe							
Plans & Places	Severe							
Regulatory Engineering/Resource Consents	Severe							
Auckland Transport	Severe							
AucklandWide	Severe							
Environmental Services - Infra & Env	Severe							
Parks & Community Facilities	Severe							
Planning & Consents	Severe							
Auckland Plan Strategy & Research	Severe							
Unitary Plan	Severe							
Treasury	Severe							
Resilient Land & Coasts	Major							
Property Portfolio	Major							
Waste Solutions	Major							
Regional Services & Strategy	Major							
Corporate Support Services	Significant							
Community & Social Policy	Significant							
Risk & Assurance	Minor							
Local Board Services	Insignificant							

Criticality Levels and Outage Impacts

A Small Subset of Examples from Personnel

UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits



Auckland Emergency Management
“reliable real time data reduce the risk of misallocating resources and/or misunderstanding the impact of an event”

Healthy Waters “Need good maps to identify and unblock the correct stormwater pipes and make safe. Risk of life if the wrong asset is worked on and Council risks negligence.”

Parks & Community Facilities “We wouldn't be able to check the location of an injured staff member in real time based on their phone location which could take longer and result in more risk.”

Regulatory Engineering: “We work near waterways (streams/wetlands) health and safety would be at risk without first establishing "high risk" areas on sites before going out.”

Parks & Community Facilities
“I map and SAP assets for Community Facilities. We, in council have access to other applications but our contractors use GeoMaps to locate assets. If this went down then they may not be able to carry out maintenance and audit checks, thus public safety is at risk. “

Threat to life

Immediate Impact

Eventual Impact



Operational Impairment

Auckland Transport
“GeoMaps are used throughout everyday by my team. 80% of my work needs GeoMaps.”

Management Impairment

Plans & Places “The most up to date information is required to ensure that we reduce the risk from natural hazards on people, buildings and property.”

Environmental Impact

Environmental Services
“Targeted fieldwork reduces the risk of spreading soil borne diseases like Kauri dieback”

Risk to Assets

Healthy Waters “Call center receives RFS for say flooding. They use GeoMaps to find location of assets etc. We use GeoMaps to make assets safe and manage a repair.”

Legal Risks

Environmental Services - Infra & Env
“Biosecurity and Conservation delivery work relies on knowledge of legal property boundaries and land information. Maps support safe and effective delivery of programs and ensures legal privacy and H&S obligations are met.”

Healthy Waters "GeoMaps is the primary tool we have for understanding the public stormwater network; without it we would be unable to determine connectivity, request or record work on specific assets, determine ownership (ie public or private), record operating costs against assets, or be able to access records on previous work done against assets. Creation of RFS (a proportion of which are for H&S issues such as missing/damaged manhole covers) would be more difficult without being able to understand what the asset is and who maintains it, increasing the likelihood of delayed or misdirected response, and re-work."

Environmental Services - Infra & Env “A failure of the environmental monitoring programmes to deliver data to the web services and emergency management will have critical implications at regional and national levels. The reporting includes data on water quality and river flood levels. A failure to perform advanced analysis and research projects will affect the Council staff's ability to accomplish the monitoring work and the Council's reporting obligations.”

Auckland Transport “Engineers in Design & standards us the Council layers daily especially those for utility services, Catchment & Hydrology etc. not having these either on AT's GIS or access to this site means we can't look up vital information to enable use to continue our job. especially when it comes to Customer complaints.”

Healthy Waters “Aerial imagery and hazard layers allow for identification of potential hazards before we head into the field. We can also attach specific hazards and mitigations onto our maps for ease of use in the field.”

Regulatory Engineering and Resource Consents “My team relies on GIS for day-to-day work. Unavailability of GeoMaps may be able to be absorbed for a day or two, but beyond that our ability to start new work would be impacted, as would our ability to meet statutory timeframes for delivery of work.”

Financial Losses

Auckland Plan Strategy & Research
“The impact would be severe in that various financial recovery processes, strategic planning and asset planning, and statutory requirements would not be able to be met. “

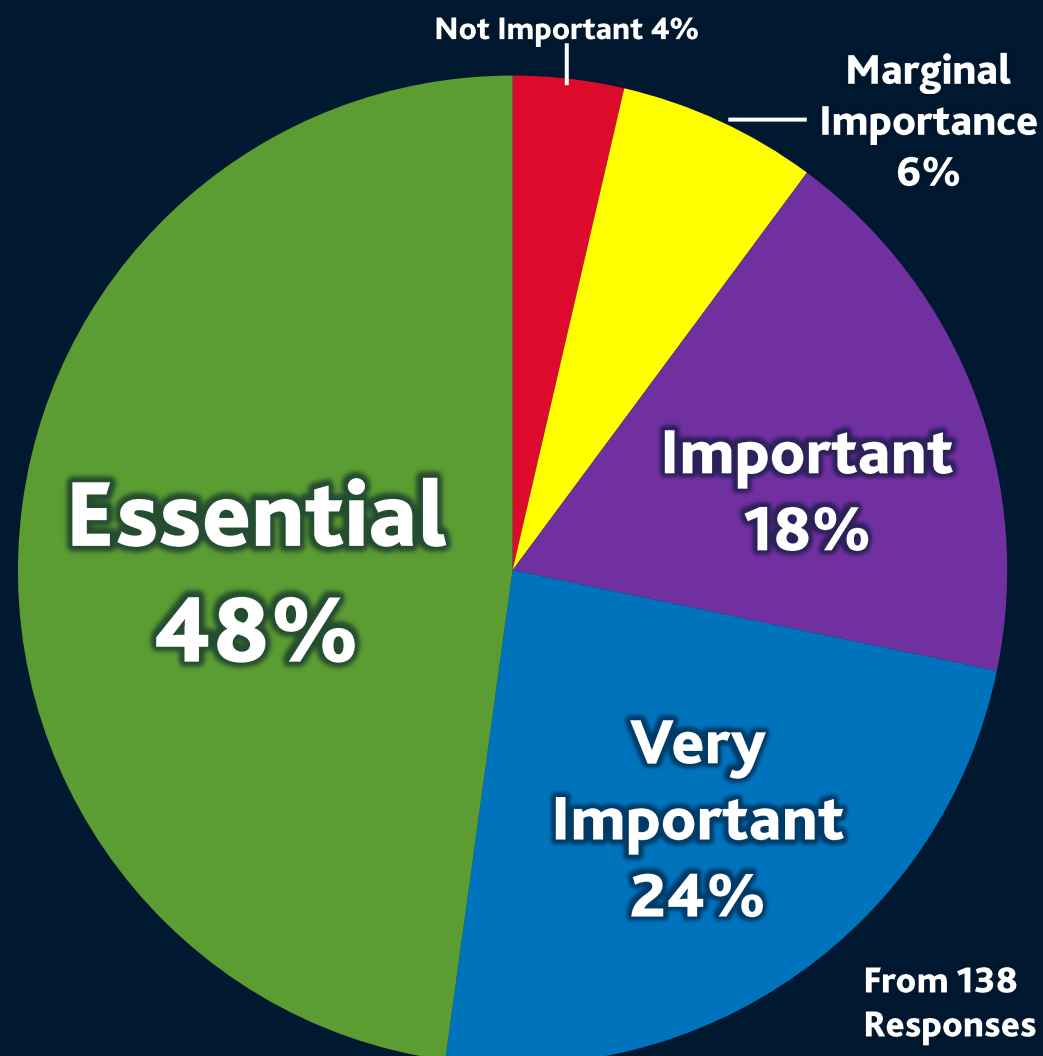
Risk & Assurance “Geospatial tools are essential for investigating insurance claims and reviewing loss modelling results.”



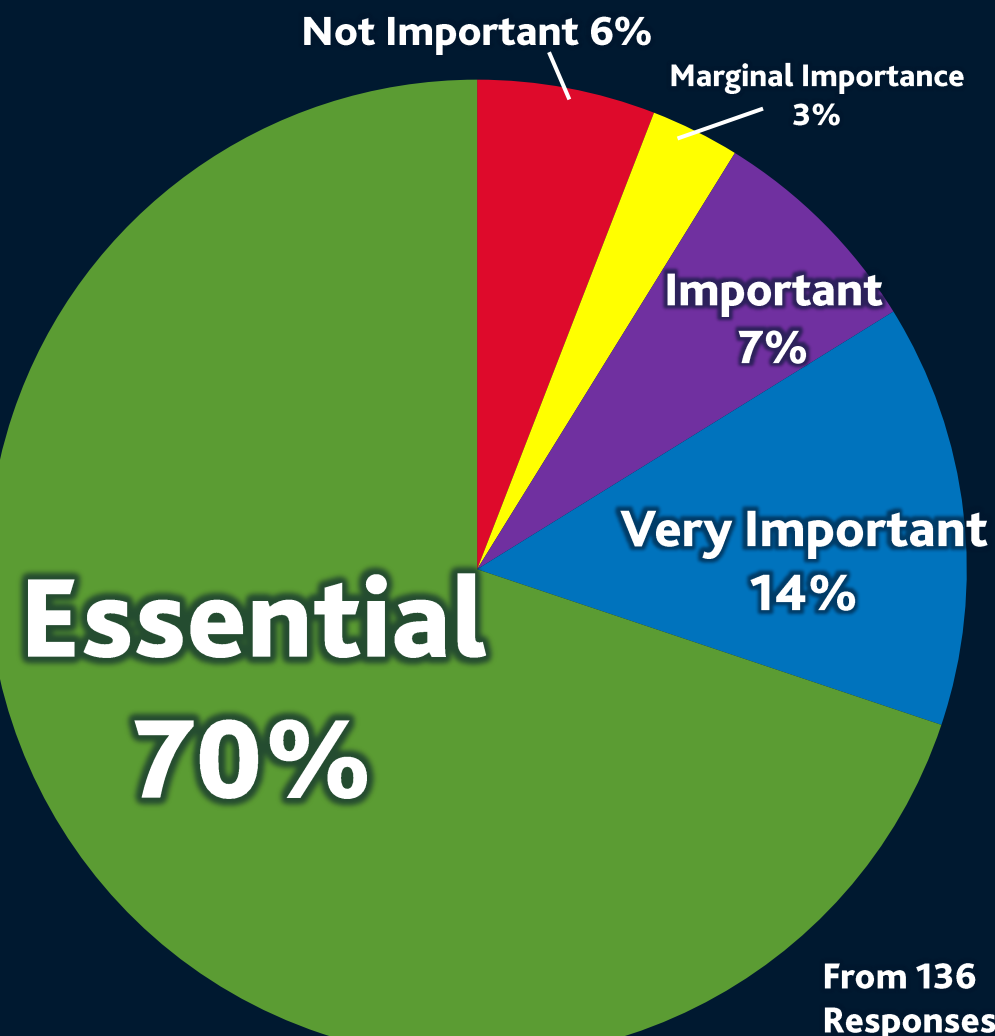
How important are geospatial tools to meet our responsibilities?

Respondents were asked to rate the importance of these geospatial technology for meeting the responsibilities against multiple statutes, laws, regulations, by-laws and aspects of the Auckland Long Term Plan. The following section summarises the key findings from that analysis, with quoted examples on the following pages.

Local Govt Act



Resource Management Act



Just one example selected comment from the many received: Auckland Plan Strategy & Research “Geospatial tools enable us to map out spatial areas for the Future Development Strategy (as well as being a requirement of the LGACA, we are also required to prepare the FDS under the National Policy Statement Urban Development, making the FDS a document prepared under an RMA instrument). In addition, geospatial tools allow us to monitor progress against the strategy (e.g. location of resource consents, private plan changes), and develop materials for consultation for our strategic work. The FDS must include consider spatial scenarios -access to geospatial tools is essential to the scenario process. Throughout the development of the spatial scenarios - geospatial tools were used to develop spatial scenarios which consider how household, population and employment growth is distributed in the region over a 30 year period. This project included a variety of workshops with internal and external teams and the results went out for public consultation. Our team also provides strategic advice and assessments on plan change applications (Schedule 1 RMA Clause 21). When assessing private plan change applications, using geospatial tools are important to assess site context, location, strategic context, location of other plan changes and consent applications, location of the plan change with relation to strategy areas (ie FDS spatial priority areas).”

Achieving Our Objectives

Perspectives from our Personnel (Part 1)

UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits



Environmental Impact

"Supports fundamental geospatial datasets that enable our wider department to administer Councils obligations outlined within the RMA."

Environmental Services



Waterway Preservation

"Knowing where waterways are is essential if they are to be considered and protected."

Community & Social Policy



Atmospheric Emissions

Rated 'very important' for meeting Auckland Council's *Air Quality Bylaw for Indoor Domestic Fires 2017*

*Regulatory Engineering/
Resource Consents*



Bio-diversity

"Geospatial tools allow for effective understanding/management/prioritisation etc. of works being undertaken in relation to biodiversity"-
Essential under Wildlife Act 1953

Environmental Services



Bio-security

"Essential to providing appropriate responses to incursions on pest free islands. We use GIS extensively for managing pest animal and plant control programmes".

Environmental Services



Maintaining greenspaces

"Provides the best tools for visualizing and analyzing Greenspaces. The ability to map & measure change over time allows us to see trends to understand the drivers for change both positive & negative."
Essential under Reserves Act 1977

Parks & Community Facilities



Flood Management

"Overlaying information on zoning, property boundaries, flood risk, contours, land stability etc. allows us to better understand the context, risks and legal requirements for our structures."
Important under Building Act 2004

Parks & Community Facilities



Coastal Inundation

We provide daily information to assist external or internal customers to know their responsibilities in coastal inundation areas.
Important for the Auckland Council Shoreline Adaptation Programme

Regulatory Engineering/Resource Consents



Storm Response

"If we can't see our stormwater assets on Geomaps we simply can't do our job as stormwater operations."

Healthy Waters



Water Quality

"We use GIS to plan water quality sampling investigations, which ideally lead to reduced or eliminated wastewater contamination into the natural environment."
Essential for Long Term Plan

Healthy Waters



Protecting Heritage

"Sure, we can google, use Retrolens etc but it would take longer and doesn't have the multiple layers necessary to implement RMA and AUP"

Plans & Places



Planning

"We use GeoMaps daily to do our work, which includes council plan changes, private plan changes, notices of requirement, etc"

Plans & Places



Landslide Prevention and Response

"Important for understanding of hazard and risk for natural hazards - landslides and land instability etc."

Resilient Land & Coasts



Drought Prevention & Response

"Provision of safe drinking water in a drought to our over 40,000 households that are not serviced by Watercare."

Auckland Plan Strategy & Research



Hazardous Substances

"Mapping of chemical containment facilities on park for staff use and emergency situations. Reporting on chemical use on parks."

Parks & Community Facilities

Achieving Our Objectives

Perspectives from our Personnel (Part 2)

UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits



Local Area 'Liveability'

"It is far easier to view any aspect of spatial planning or livability on a map and this is the best format to convey very rich spatial datasets."

Essential for Auckland Unitary Plan

Investment & Industry



Infrastructure Provision

"Geomaps is used as a tool to ascertain what infrastructure needs to be provided by developers when undertaking land development."

Auckland Transport



Housing Provision

"Work programmes require the capacity data, including the Housing and Business Capacity Assessment (HBA), which is a statutory requirement".

Auckland Plan Strategy & Research



Facilities Provision

"We can identify areas subject to, or potentially subject to, natural hazards) so we can avoid them when considering location for open space or community facilities."

Community & Social Policy



Transport Network

"GIS allows us to visualize and analyze our transport network. The ability to use remote sensing and overlay temporal data on the spatial data allow real time analysis and response to issues."

Parks & Community Facilities



Urban Beautification

"Aids in analysing tree cover and opportunities for synergies between public open space and private land."

Community & Social Policy



Building & Structure Safety

"using GIS data, showing which Council buildings' seismic rating and which ones have asbestos issues."

Parks & Community Facilities



Utilities provision

"Simply put, GIS provides the best range of tools for understanding infrastructure requirements and provision."

Essential for Auckland Lptm

Parks & Community Facilities



Elected Officials Support

"We use Geomaps to provide advice to local boards to help inform their decision-making"

Regional Services & Strategy



Litter reduction

"rubbish bins, recycling bins and waste transfer stations are mapped and managed in GIS. This drives the waste collection contracts and gives public visibility" *Important under AC Waste Management and Minimisation Plan*

Parks & Community Facilities



Waste Management

"It is essential for our team so we can provide appropriate service to our customers as stated in core tasks."

Essential for Local Government Act 2002

Waste Solutions



Mitigating Contamination

"We can identify areas subject to, or potentially subject to anthropogenic hazards (soil contamination) so we can avoid them when considering location for open space or community facilities."

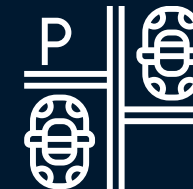
Community & Social Policy



Facility Utilisation

"essential to our contract management and RFS system, drives our renewals program, allows us to meet asset management standards, manage leases, analyze infrastructure provision, audit contractor performance etc."

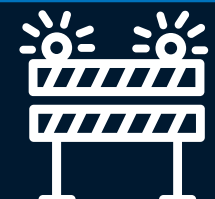
Parks & Community Facilities



Parking Management

"I store a ton of parking data in the waterfront in my File Geodatabase"

Eke Panuku- Strategy & Planning



Road Safety

"Mapping areas for events including no-go areas, parking, hazards etc."

Parks & Community Facilities

Achieving Our Objectives

Perspectives from our Personnel (Part 3)

UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits



Permits and Enforcement

“providing information to inform bylaw enforcement under *Reserves Act 1977*, and planning pest control specific under *Waitākere Ranges Heritage Act 2008* where they may differ from other regions”

Parks & Community Facilities



Public Safety

“we are focused on managing risks and also creating opportunities for these parks. Geospatial knowledge is fundamental to gaining understandings of multiple risks and opportunities”

Regional Services & Strategy



Light Pollution

“Identifying zones under the AUP regarding light and noise restrictions.”

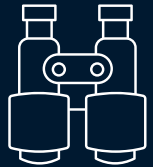
Creative Industries



Asset Management

“If staff cannot do condition assessment through the mobile GIS app in a timely manner, this will have downstream effect to the business, e.g. not updated condition rating for renewals forecasting, investment programming, etc”

Parks & Community Facilities



Viewshed Consideration

“impossible to manage viewsheds without GIS”

Plans & Places



Crowd Control

“we provide information to assist external or internal customers in support of their events applications”

Regulatory Services



Public Health

“informed decisions should mean better implementation of AUP provisions including environmental & public health protections”

Regulatory Services



Regulatory Compliance

“We use Geomaps to confirm if there are any hazards on a site. Also using the Unitary Plan viewer to determine zoning, overlays & controls which are key to our assessments.”

Regulatory Engineering/Resource Consents



Public Participation

“We also undertake public consultation as required by the LGA and spatial data is often a core part of this”

Plans & Places



Alcohol Management

“we provide information to assist external or internal customers in support of their licensing applications.”

Regulatory Services



Animal Control

“We get calls on rates, waste, stormwater, maintenance, compliance, bylaws, animals, dog issues ... we would refer to Geo on almost all of these.”

Digital & Customer Experience



Noise Pollution

“There is extensive use of Geomaps that includes airport approach and aircraft noise”

Regulatory Engineering/Resource Consents



Maritime Safety

“Check ownership of coastal assets that come up for maintenance or renewal or where complaints are raised.”

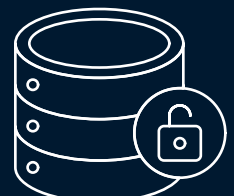
Resilient Land & Coasts



Data Privacy

"Layer views and API service layers can filter and anonymize PII data. GIS platforms are required to be secured (PP5 Storage security), [core software] products comply with ISO 27001 and its cloud service providers are ISO 27018."

Auckland Emergency Management



Data Accessibility

“enable us to more easily respond to LGOIMAs in an efficient manner by having easy access organized to the data required.”

Environmental Services

Achieving Our Objectives

Perspectives from our Personnel (Part 4)

UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits



Iwi Māori Partnership

“Spatial awareness of iwi and rūpū and their boundaries to approach appropriate stakeholders, reporting on KPIs set out by the LTP, enforcement of bylaws and checking parkland boundaries”
Important for Local Government Act 2002

Parks & Community Facilities



Location Accuracy

“I’m contact centre. We use Geomaps on almost every call to establish locations, property ownership, affected assets and more.”

Digital & Customer Experience



Consent Processing

“GeoMaps is a fundamental tool. We require it to determine planning provisions and other environmental information to process resource consents. Without it, we could no longer process resource consents.”

Regulatory Engineering/Resource Consents



Council Damage and Loss

“Ability to spatially analyse these results allows Auckland Council to identify hot spots of high risk Auckland Council locations, can potentially reduce the financial risk to council in the long term”

Risk & Assurance



Protecting Places of High Social or Cultural Value

“allows cultural sites to be prioritised, and when there are concerns or activities related to a specific place they can be understood through the use of GeoMaps”

Plans & Places



Council fleet management

“To investigate integrity related concerns raised to Risk and Assurance, it is sometimes necessary to look at a spatial aspect to the investigation (where an alleged incident occurred, where a fleet vehicle travelled to.”

Risk & Assurance



Council Customer Service

“The digital RFS system has revolutionized how the public can seek responses to issues. This is based on the GIS data”

Parks & Community Facilities



Equitable services

“This data bank can be queried to assist Local Boards and the Governing Body to make good decisions. Lack of information about council's services and assets that are spread across the region risks poor decision-making.”

Regional Services & Strategy



Council Finance

“An important aspect of our work is to provide evidence, analysis and advice on a wide range of aspects of council (and Crown) activity (spatial planning, investment decisions, determining priority areas for action).”

Economic Transformation



Council Communications

“GIS tools are a fantastic way of communication the work that council is undertaking, and the outcomes we are achieving. They streamline communications within the department and also with external stakeholders.”

Environmental Services



Permitting

“Film permitting facilitators require both broad information and pin point delineation of landownership, to do our jobs.”

Creative Industries



Management Reporting

Investigations: often from management - for information on site or activity consent history. GeoMaps critical for identifying property information that services like GoogleMaps or data.linz cannot easily provide.

Eke Panuku- Strategy & Planning



Council premises management

“GIS provides visual and analytical tools to help understand our assets and liabilities. It is fundamental to managing our contracts for maintenance and renewal of Council/ Community assets.”

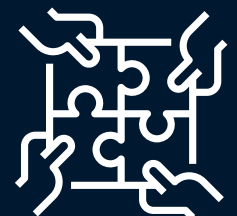
Parks & Community Facilities



Council Staff Health and Safety

Essential “for Health and Safety processes - for example; tracking a vehicle to find a staff member who hasn't reported into work”

Parks & Community Facilities



Partnerships

“GIS tools are a main way data is shared with council partners for strategy and planning”

Auckland Plan Strategy & Research



Recommendation: In many organisations similar to Auckland Council a geospatial 'Community of Practice' has been established. There is significant support from our personnel to initiate a cross-department matrix group (or groups) to share knowledge and resources between different parts of the organisation.



48

Individuals are interested to contribute to a Geospatial Community of Practice

What are the benefits of a Geospatial Community of Practice and GeoMaps Super User Group?

- **Promote thought leadership and innovation.**
- **Connects geospatial to other groups at Auckland Council.**
- **Empowering geospatial staff when working on geospatial business issues.**
- **Reduces the risk of losing relevant business knowledge.**
- **Shared accountability and oversight over the delivery of geospatial.**
- **Establishing a focus on best practices.**



26

Individuals are interested in joining targeted GeoMaps Super User group

What are the perspectives of our personnel?

- “Understanding how other teams use geospatial tools is important - often you find out about functionality you weren't aware of, or hadn't considered using for a particular purpose.” - *Risk & Assurance*
- “(Enabling) Input from the business into Geospatial technology, data and strategies” - *Plans & Places*
- “We are a team with deep experience in geospatial data science and coding using GDAL based solutions which enable greater flexibility and efficiency than what can be provided via the standard high-level toolkit. Skills such as this would need to be well represented within any community of practice so *[any specific vendor]* view of GIS doesn't dominate the opinion of how geospatial analysis should be undertaken.” - *Auckland Plan Strategy & Research*
- “Better visibility of what geospatial teams across council are working on to enable collaboration and less accidental duplication or cross-over. Bit of a disconnect at times across geospatial teams, only coming together for GIS day but not much else.” - *Environmental Services - Infra & Env*

Future Aspirations

Common requests from our personnel

UNDERSTANDING THE VALUE OF GIS

A Review of Utilisation and Benefits



High-Resolution Aerial Imagery

Many users requested access to high-quality aerial or satellite imagery that is updated more frequently.



Historical Aerial Imagery

Many users requested additional historical aerial photographs, such as those available through Retrolens.



Enhanced Data Layers

Additional and up to date data has been requested by users such as: land cover, transportation networks, and utility networks.



Updated Software

Users have indicated they are often using outdated software. Latest features for manipulating spatial data has been requested.



Customisable Mapping Tools

Users want more flexibility in how they create and customise maps, such as custom color schemes, symbols, and annotation tools.



Advanced Analytical Tools

There is a demand for more spatial analysis tools that allow users to perform tasks like spatial summary, proximity analysis, and predictive modeling.



Mobile Offline

For fieldwork or in areas with limited internet access, users have requested the ability to download maps, tools.



Collaborative Tools

Users want to collaborate using maps and apps in real-time. It is recommended that licensing arrangements and permission settings be reviewed.



Temporal and Historical Analysis

Users want to be able to easily compare data between different time periods to detect change. This can be through dedicated tools or apps.



Climate and Environmental Focused Capability

Dedicated tools and datasets focused on climate change, environmental degradation, and natural resource management.



3D Visualization and Analysis

The ability to visualise buildings and terrain in three dimensions, and allow users to calculate results such as volume, height, and views.

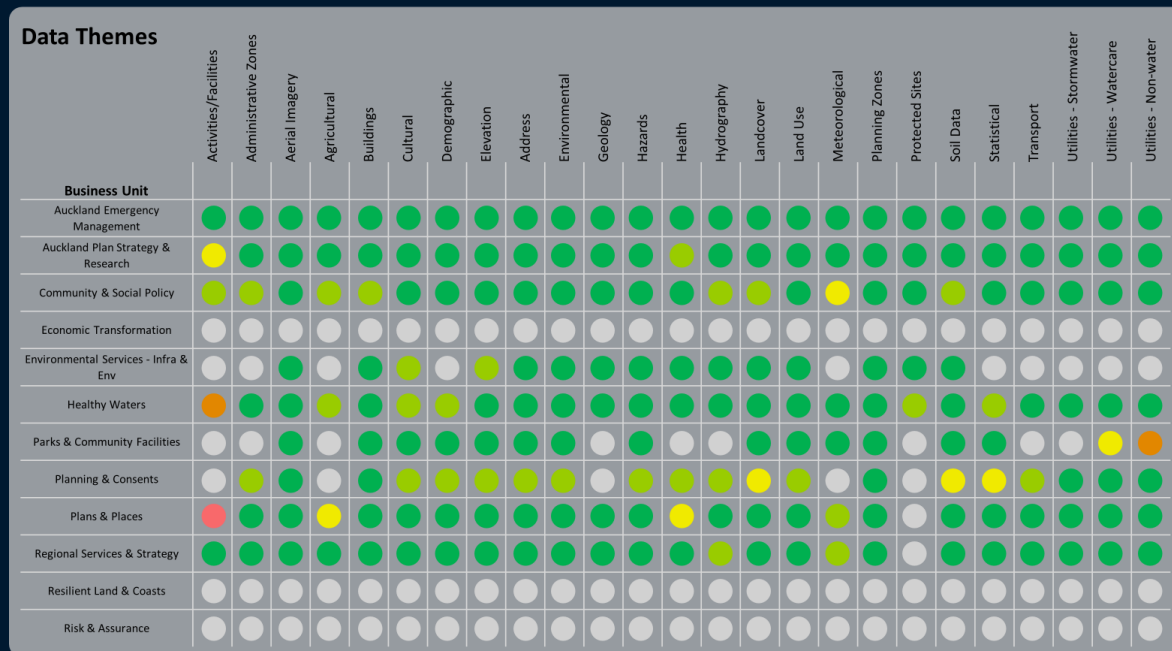


Improved Mobile Features

There are requests for mobile-friendly versions of apps such as GeoMaps. Also, the ability to integrate mobile features such as camera.

GIS Utilisation Key Findings

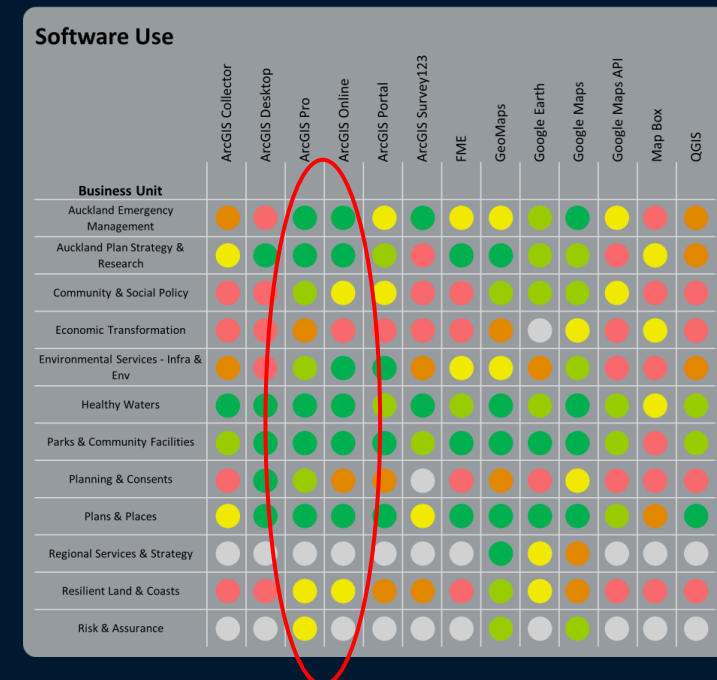
Zoom in – Matrix available in appendix



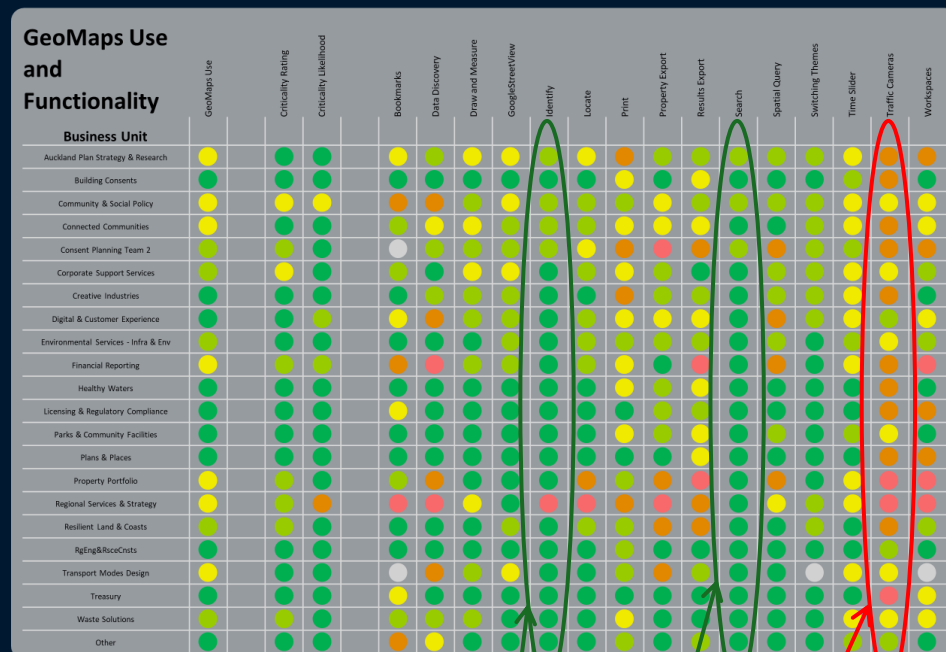
For Geospatial Power Users, most teams have indicated that data across the spectrum of data themes are all important for their work.

UNDERSTANDING THE VALUE OF GIS

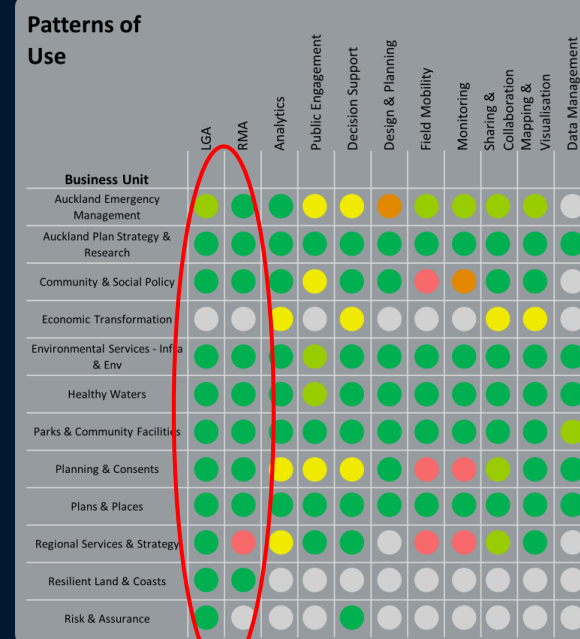
A Review of Utilisation and Benefits



Different teams utilise different geospatial software in their work. While some teams use a range different software, ArcGIS Pro and ArcGIS Online are the most widely used.



Internal GeoMaps serves as a critical tool for most teams at Auckland Council. **Identify** and **Search** are the most important functions, while **Traffic Cameras** are less used.



Majority of teams use geospatial tools and data in different ways to meet their responsibilities. These teams are also able to realise a spectrum of benefits to the way they work





Strategic Approach

1) It is recommended that this benefits study be used as the first step towards a renewed Geospatial Strategy for Auckland Council. While there are valuable insights in this report there are aspects where additional research is recommended:

- Workshops with key or missing stakeholder groups
- External influences (PEST Analysis)
- Enhanced technology trends considerations

Applications

2) The application lifecycle of core geospatial software should be reviewed with a view to a more frequent update cycle. Modernised software capabilities should be considered.

3) Existing information about apps (including from this study) should be melded to form an Application Portfolio.

4) Licensing requests should be reviewed.

5) Requests to be able to share map apps more widely should be considered.

Data

6) There are many requests for aerial imagery to be refreshed on a more frequent basis and with higher resolution.

7) Additional historic imagery to be made available, including through existing viewers.

8) Requests should be evaluated for additional or enhanced datasets or integrated data services to be made available.

9) Existing metadata should be enhanced to create a user-friendly data catalogue.

Engagement

10) It is recommended that a geospatial Community of Practice be established to enhance collaboration between all staff that have an interest in geospatial capabilities.

11) It is recommended that there is continued engagement with external users of Auckland Council's geospatial viewers and open data site.

12) It is recommended that a Geospatial Governance Committee be established and to review approval policies and procedures.

People

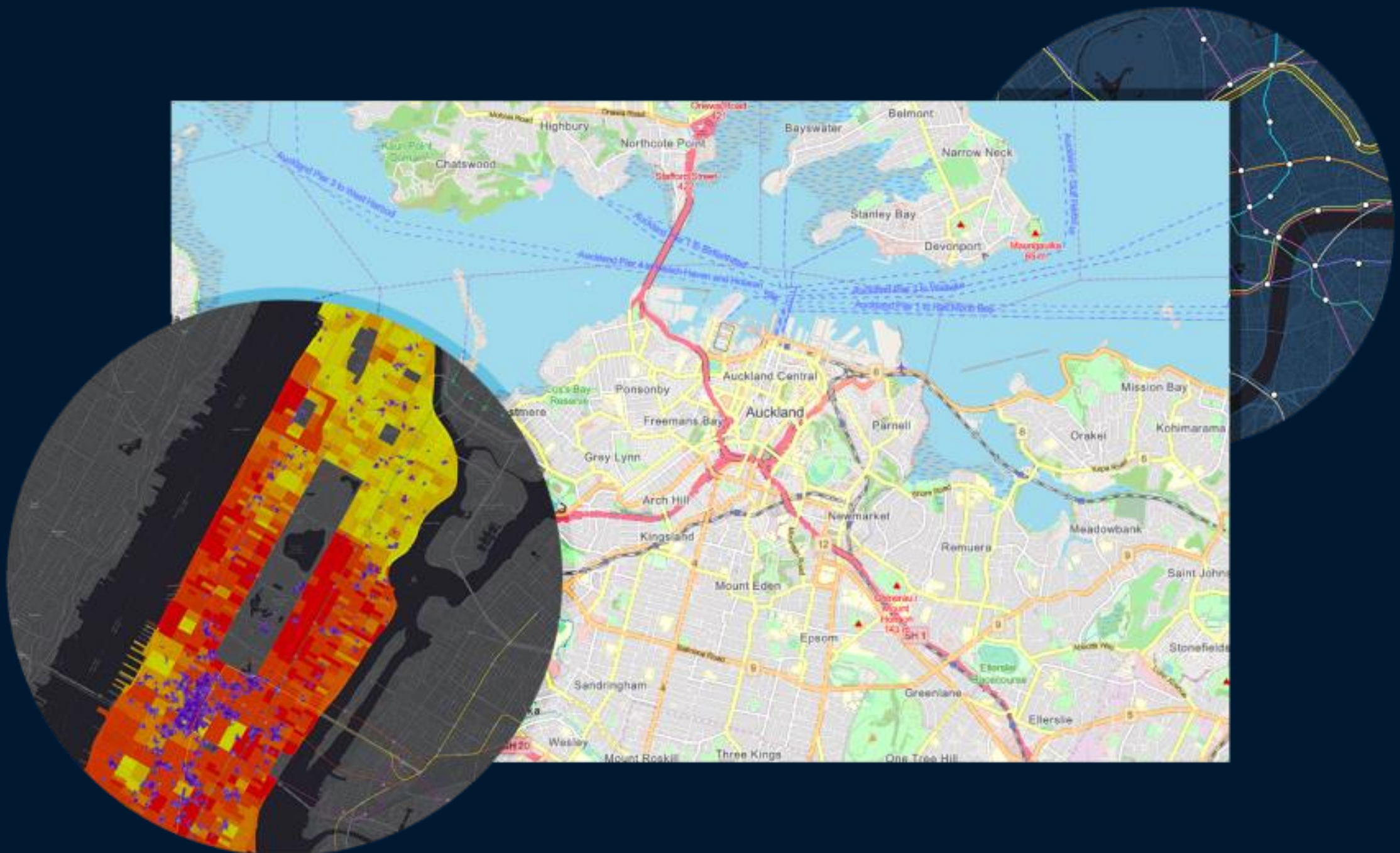
12) More training or awareness of existing training resources is recommended.

13) There is high demand for skilled geospatial resources to be made available to meet the needs of business teams (or greater devolution and training so that teams can generate their own results).

14) There are options to 'insource' some activities that are currently carried out by contractors if suitable training is in place.

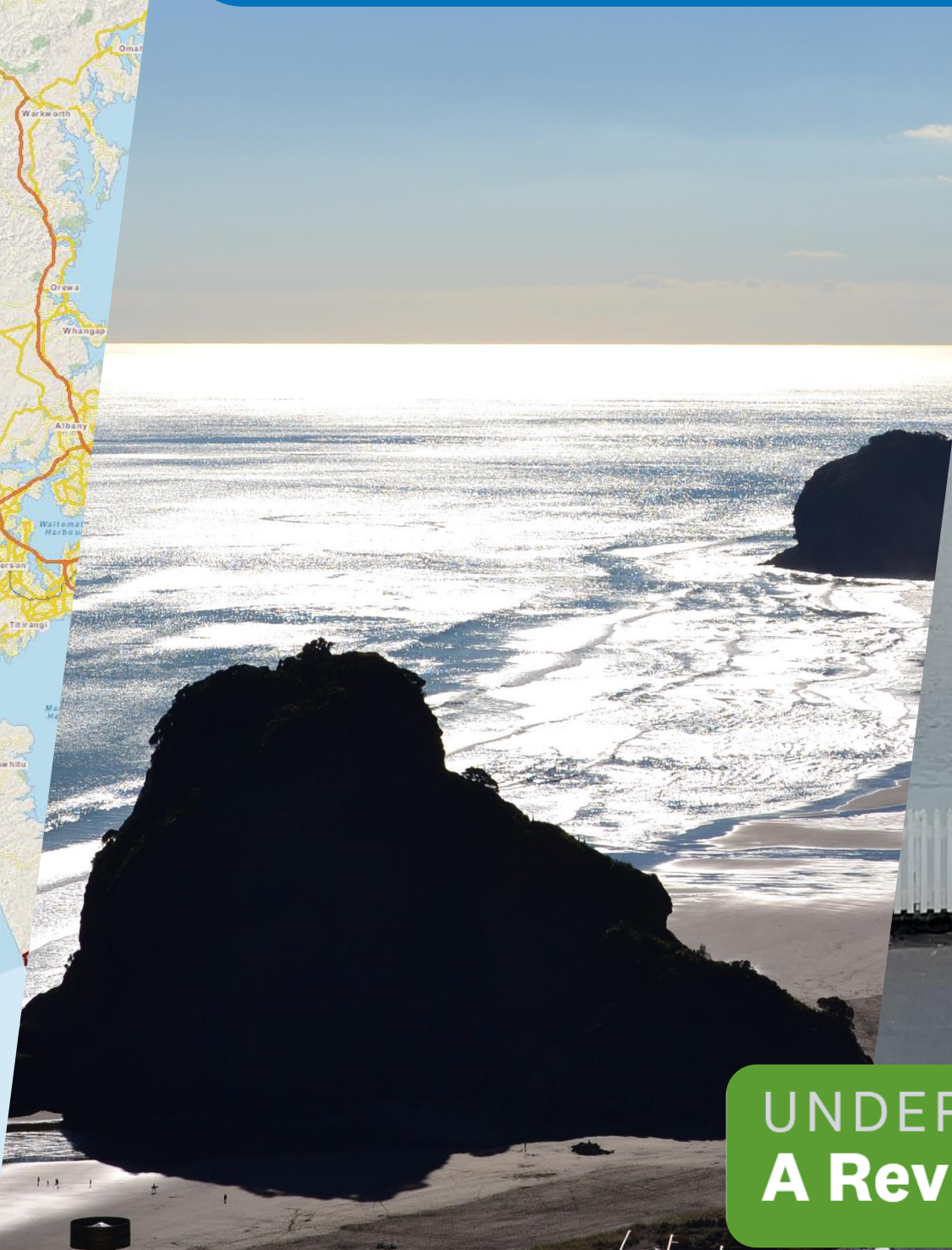
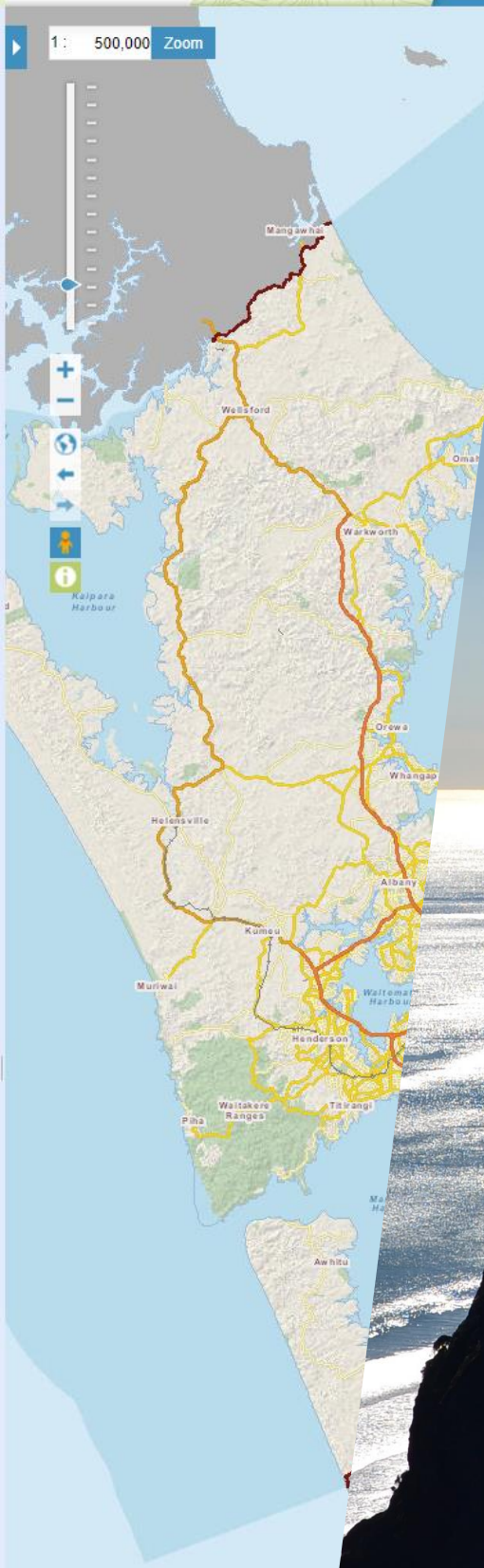
Part 2: External

General public (personal or professional external users of Council data or apps)



Investment - Development Protection - Future

An Assessment of Auckland Council Public Geospatial Viewers



UNDERSTANDING THE VALUE OF GIS
A Review of Utilisation and Benefits

Understanding Our Customers

Who Uses Our Viewers? A Survey of Users.

UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits



80%

OF ALL DATA IS GEOSPATIAL

Most data elements reference an address, a property, a jurisdiction, an electoral boundary, a planning zone, a restricted area, a site, a suburb or a region of environmental importance. Everything happens somewhere

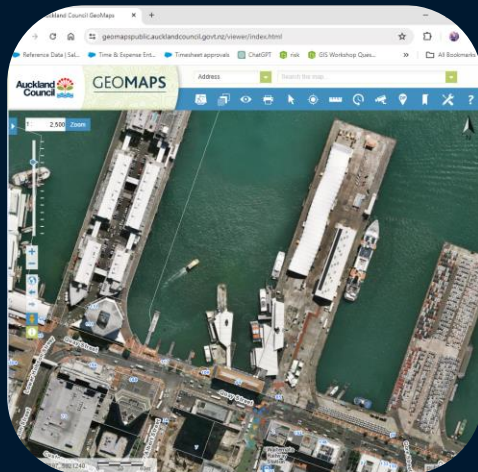
15,000

UNIQUE VISITORS

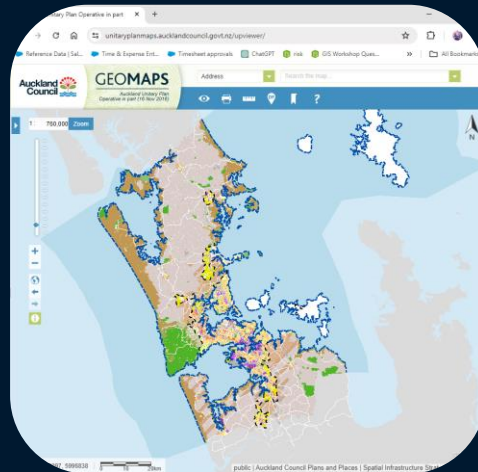
...access Auckland Council's GeoMaps web viewer every week, making it one of the most visited parts of our website. Many more utilize other viewers such as the planning and hazards viewers.

8 years

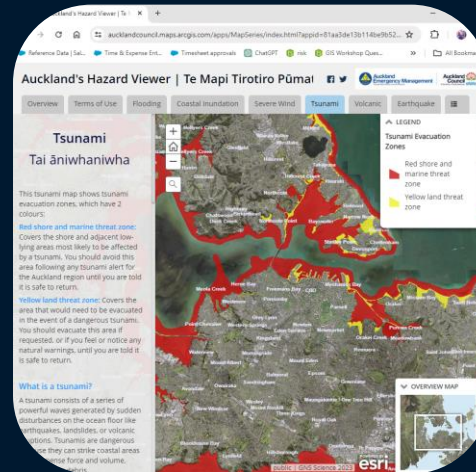
since the foundation of these viewers and there has only been limited knowledge about the people using these systems. *Until now.*



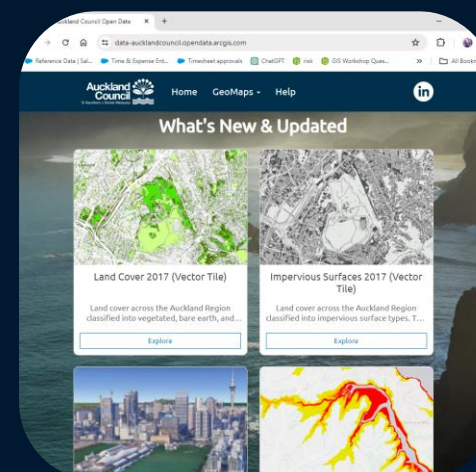
GeoMaps



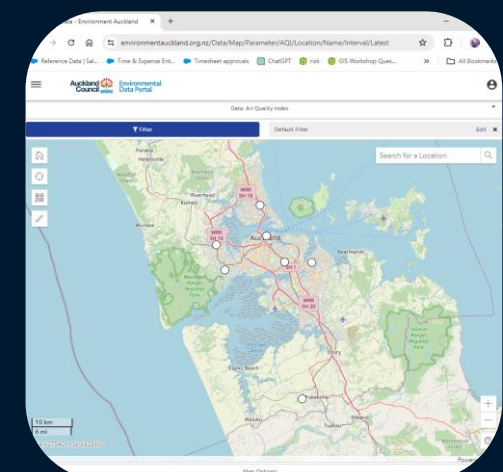
Planning Viewers



Hazards Viewer



Open Data



Specialist viewers

To enhance our knowledge of how these tools and geospatial data is being utilized by Auckland citizens, ratepayers, organisations and businesses we conducted a survey, the results of which are outlined in the following sections.

A Key Enabler for Auckland's Growth

How Geospatial Contributes to Council Objectives.

UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits



The Auckland Council Long Term Plan 2024-2034 (LTP) defines seven key focus areas for action in the next ten years. The following assessment centers around geospatial capabilities are used to support those focus areas. These are key themes mentioned in the LTP where geospatial capabilities will (or already do) provide essential contributions. The following document is an examination of public facing viewers. This is being augmented with similar assessment of our internal capabilities through Council staff engagement.



Understanding Our Customers

Who Uses Our Viewers? A Survey of Our Users

UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits



884
SURVEY RESPONSES

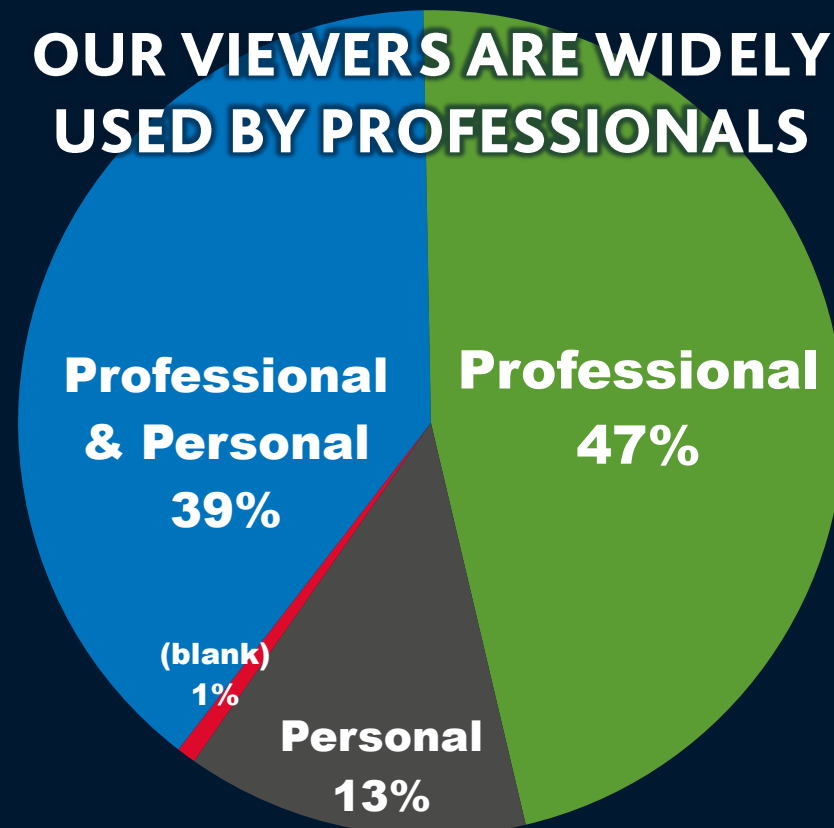
...were received during the 4 weeks that the survey was open. This represents

6%

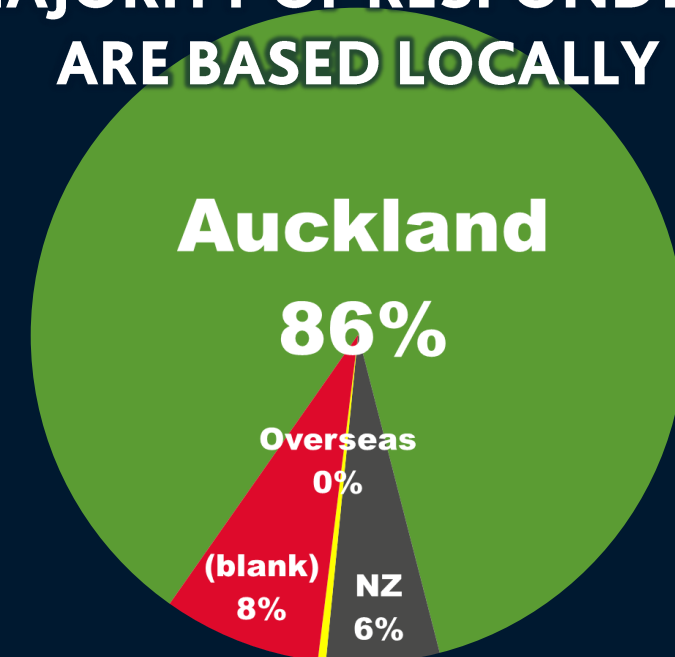
of the 15,000 people accessing the site per week.

This is an excellent response and sample size for this type of survey.

OUR VIEWERS ARE WIDELY USED BY PROFESSIONALS



MAJORITY OF RESPONDEES ARE BASED LOCALLY



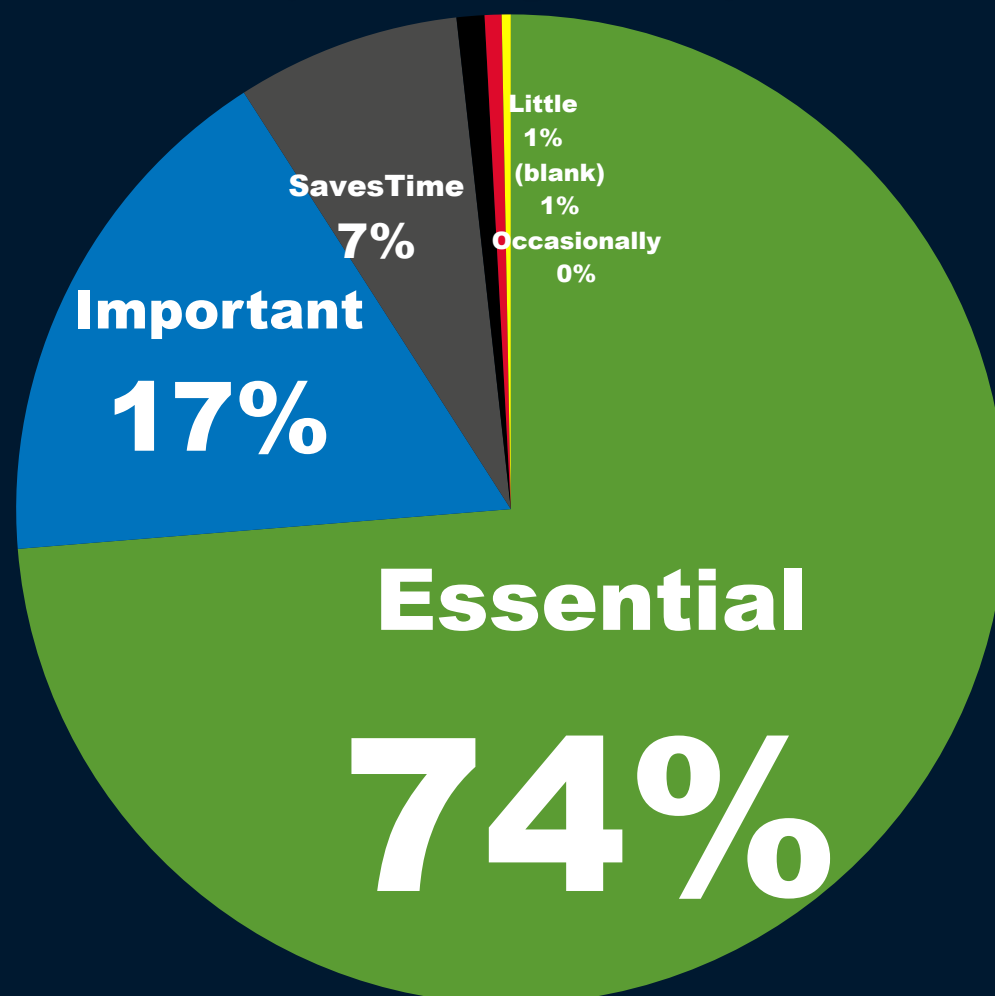
Evidence suggests those based elsewhere in NZ or the World are working on Auckland projects

Understanding Our Customers

How Important Are Our Viewers? A Survey of Users

How important are resources such as these viewers to businesses and personal users?

PROFESSIONAL USERS (745 Responses)



UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits

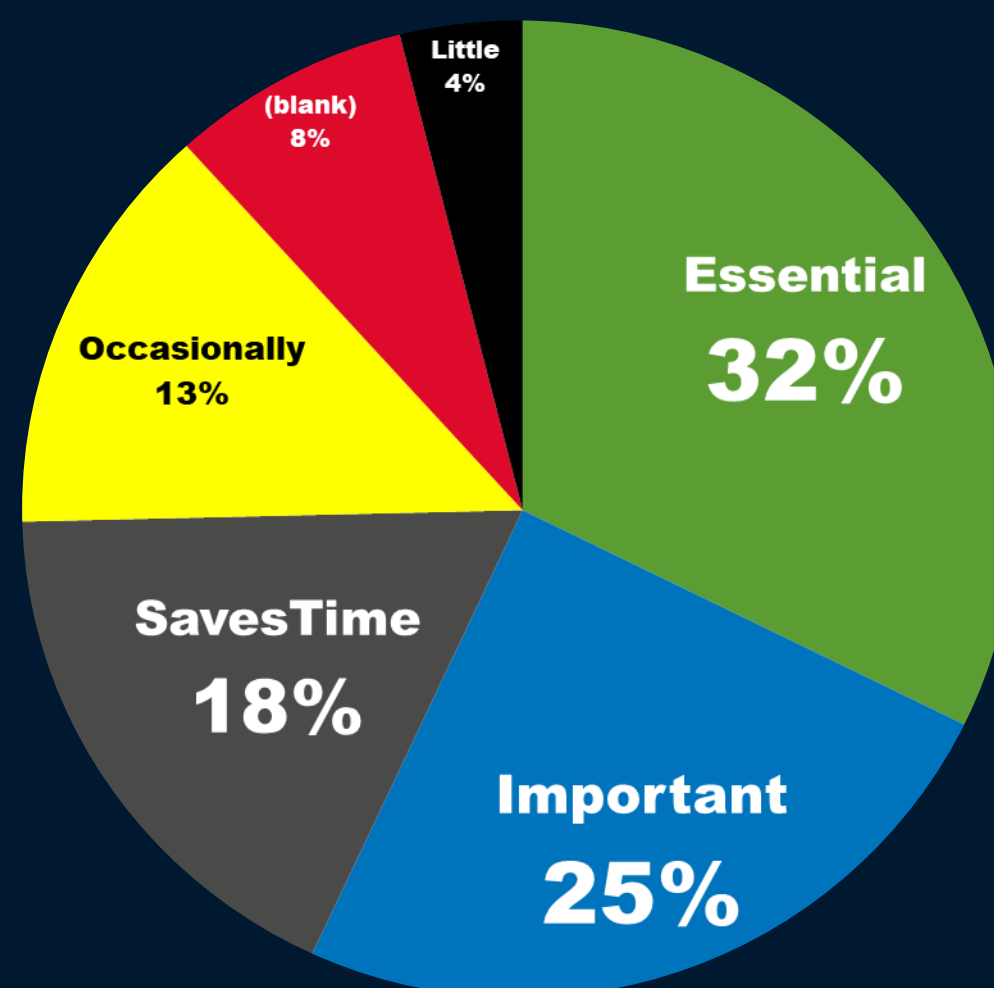


Respondents were asked to rate the importance of these viewers based on the following :

How important is it to you or your business that tools such as Geomaps (or other Auckland Council Geospatial Viewers) are available?

- Having tools such as this is essential to my interests or my business
- Having tools such as this is important to my interests or my business
- Tools such as this saves time and effort for my business or my interests
- It is occasionally interesting
- It is of little value

PERSONAL USERS (128 Responses)





From site selection through to compliance

The construction sector is clearly the dominant sector that utilizes our geospatial capabilities.

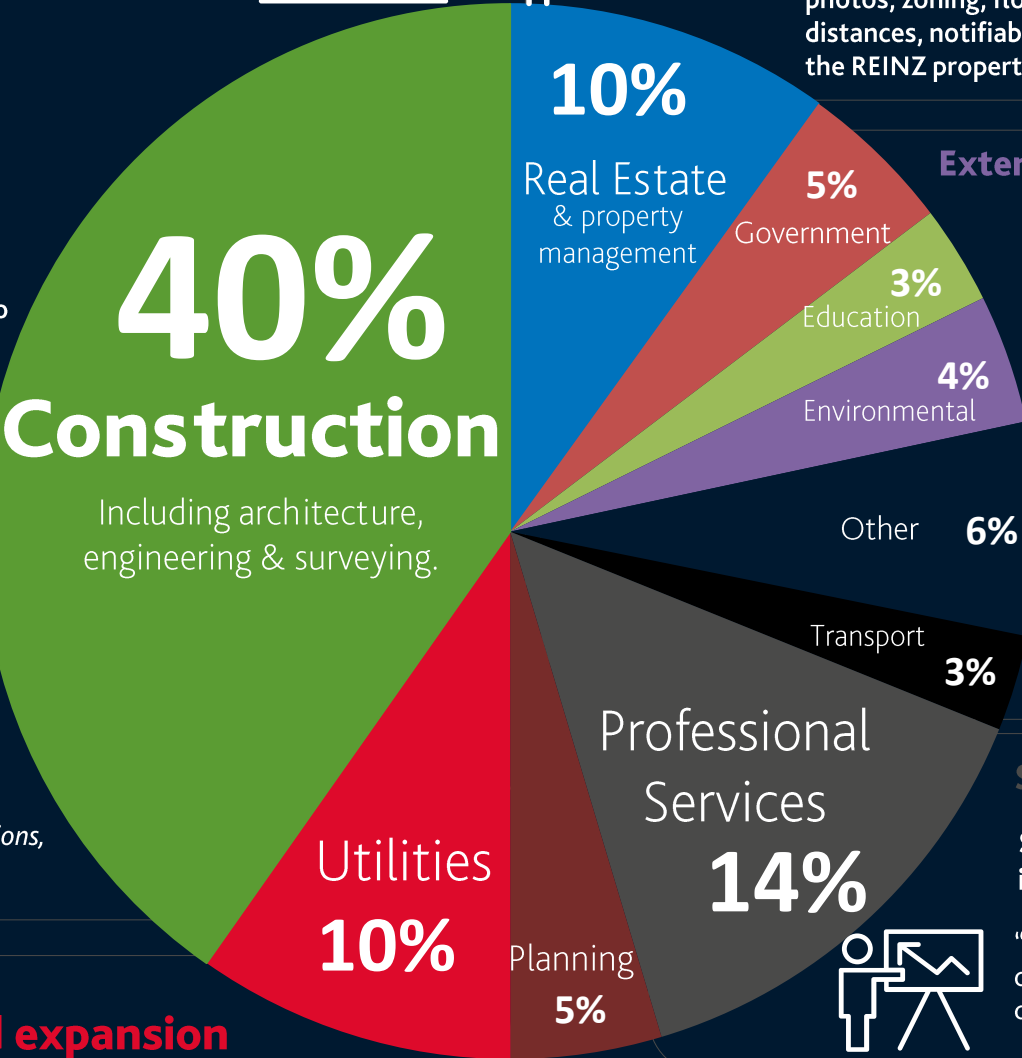
Some of the feedback received from this sector included:
Profession: architect – “I use these tools constantly in understanding clients properties and the planning constraints, flood risk, as well as the neighbours homes and surrounding areas - this is invaluable to me.”

“Looking at flood hazards, erosion zones, coastal inundation and underground drainage services are essential to doing my work as a civil engineer.”

“Our company works with engineering design and consultation. The geospatial tools are essential for our work to be undertaken. Without them is practically impossible to comply with Auckland requirements.”

“Understanding what affects property i.e. zoning, management layers, natural hazards is important. The Auckland Flood Viewer, GeoMaps & Natural Hazards Viewer provide easy access to this information. It is incredibly helpful to be able to access all of this info as a public user, very thankful to have this functionality free to use. I have shown many friends & families where to go for this info and how nice the user experience is.”

It should be noted that several other key sectors also partially contribute to construction activities (environmental considerations, utilities, planning, and many professional services activities).



Powering utilities maintenance and expansion

Safe and reliable power, gas, telecommunications and water services is of critical importance to Aucklanders. Collaboration and information sharing between Auckland Council and other service providers is visualized through the GeoMaps viewer.

Some of the feedback received from this sector included:
“I am involved in planning the electricity network, and so these tools are a crucial interface for understanding zoning, planning requirements, existing utilities etc.”



“The 3 most critical factors in real estate: Location, Location, Location”

Our viewers are widely used by both commercial property companies and by individual members of the public when deciding which property to buy.

“I am looking for a house to buy to live in. this tool helps a lot in identifying potential issues with the property and is critical for hazard identification for insurance reasons.”

“I use it every day. Things I use it for are, property boundaries, services, aerial photos, zoning, flood zones and overland flows, measurement of areas and distances, notifiable trees, contours, old aerial photos. I will be doing a training for the REINZ property managers on the GeoMaps uses.”

Extensive uses by a wide range of other industries

A multitude of other industry sectors also make significant use of our geospatial capabilities.

- Other sectors include:
- Central Government agencies
 - Environmental organisations (including many non-profits)
 - Transportation and traffic researchers
 - Academia and training providers
 - Agriculture and horticulture
 - Social service providers
 - Social, cultural and sporting groups
 - News media
 - Archaeology and cultural heritage organisations
 - Legal service providers
 - Emergency services

Servicing the needs of Auckland business

Service providers in areas such as scientific research or information technology are a significant user group.

“Research associated with ecological impact assessments, resource consent applications, technical advice to private and public sector clients (including to Auckland Council)”

Planning for economic, environmental, social and cultural well-being

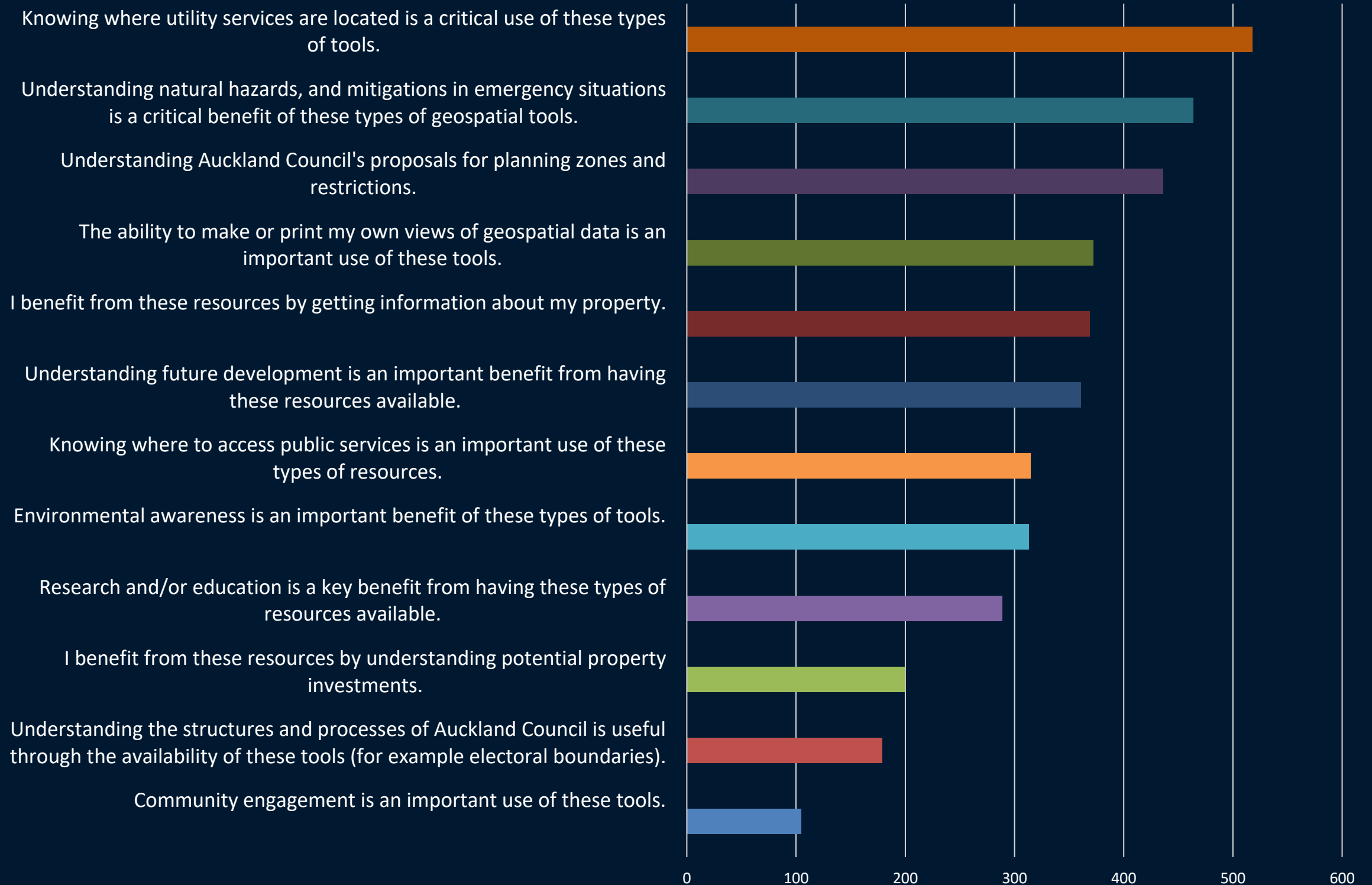
Across the many planning disciplines these tools are widely used

“Used for service locations, planning overlays, OLFP, services offsets, unitary plan compliance, notifiable trees, erosion, ecological districts and ecosystem types & extents, wind zones, exposure zones. Its all super helpful!!!! Used for compliance to NZBC, unitary plan rules and overlays & bylaws.”





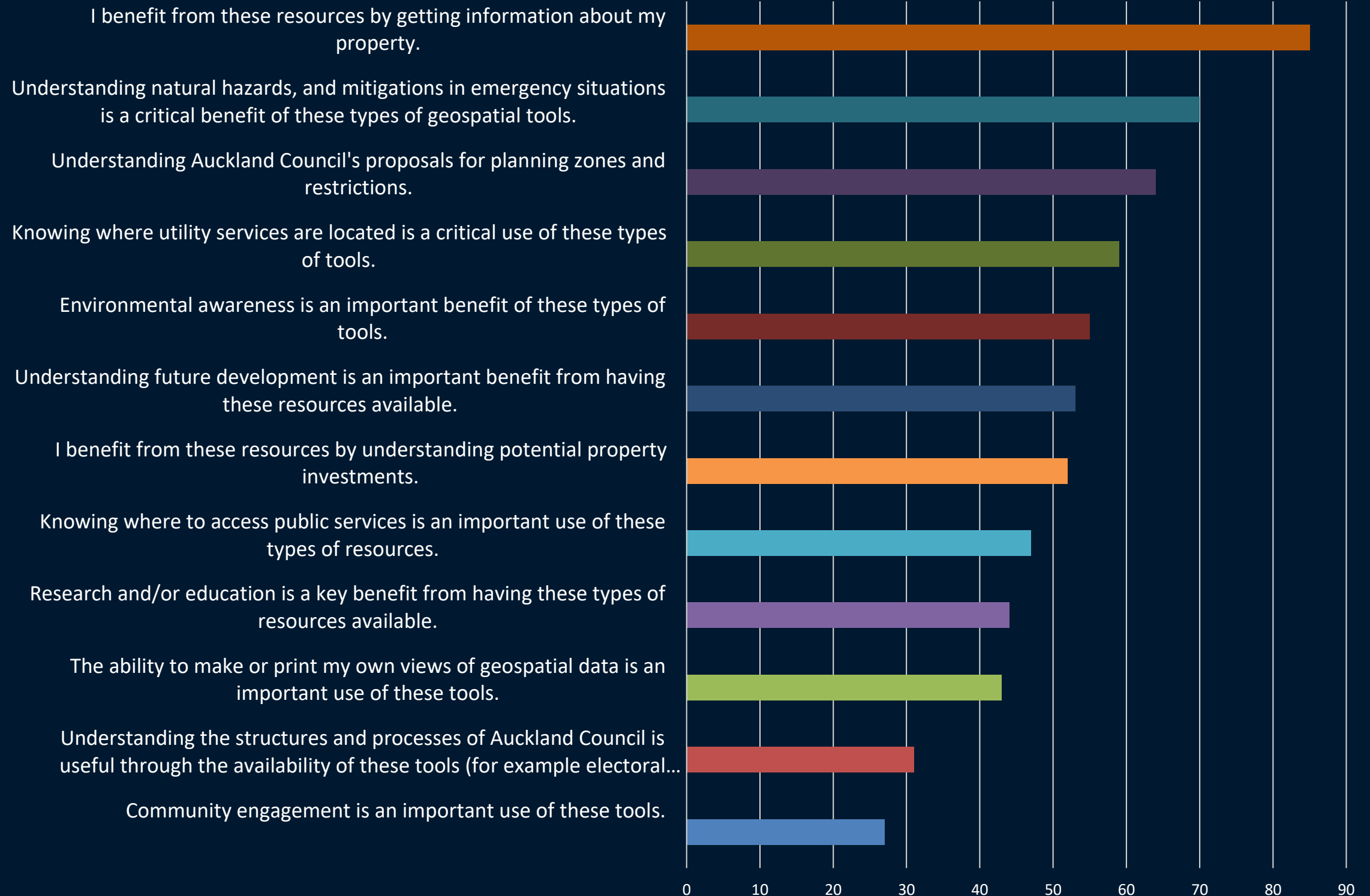
Benefits Ranked for Professional Users*



* Includes people that responded with both professional and personal.



Benefits Ranked for Personal Users





**Importance for
Climate and
Disaster
Resilience**

122 Flood
67 Storm

**< mentions of
these keywords
in written text
responses**

The general public and professionals are clearly concerned

These viewers are providing a valued service to Auckland residents and businesses as indicated in the following responses:

"I use and recommend using GeoMaps to view property and surrounding information before buying. I checked flood planes and flood zones before buying my house, during Cyclone Gabrielle we had zero flooding or flood damage (and we live in a vulnerable region)."

"I mainly use GeoMaps as a civil engineer and GeoMaps technician to view existing public services (stormwater, wastewater etc) as well as environmental information such as flood plains, flow paths etc. I also use various other layers for GeoMaps analysis/situational awareness. Having easy access to these data is a crucial part of the land development process, compliance with Council standards, and communicating information with clients/other consultants."

"The availability of physical information allows me to assess and make more efficient decisions. I can often scope new problems or enquiries without asking Council for information about the stormwater network and flood hazards or undertaking a site visit."

"I am an occupational therapist and specialise in prescribing housing modifications for people with disability e.g ramps, lifts and wheelchair accessible bathroom. I use GeoMaps in my housing modification reports for ACC and disability funding. I will use GeoMaps aerial view of the property to give an overview of the property location and layout in a funding report. I have also used the flooding and coastal inundation information to provide guidance on emergency plans & evacuations for clients who have impaired mobility."

"Yes, I frequently use these tools when making assessments for stormwater consent and bylaw applications required by the AUP and Council's EPA processes."

Large Numbers Don't Say It All

Who Uses Our Viewers? Industry Sector Observations.

UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits



While not included in a specific question, nevertheless text-based responses have highlighted that there are many small-to-medium enterprises that make significant use of these tools.

Many Small To Medium Enterprises

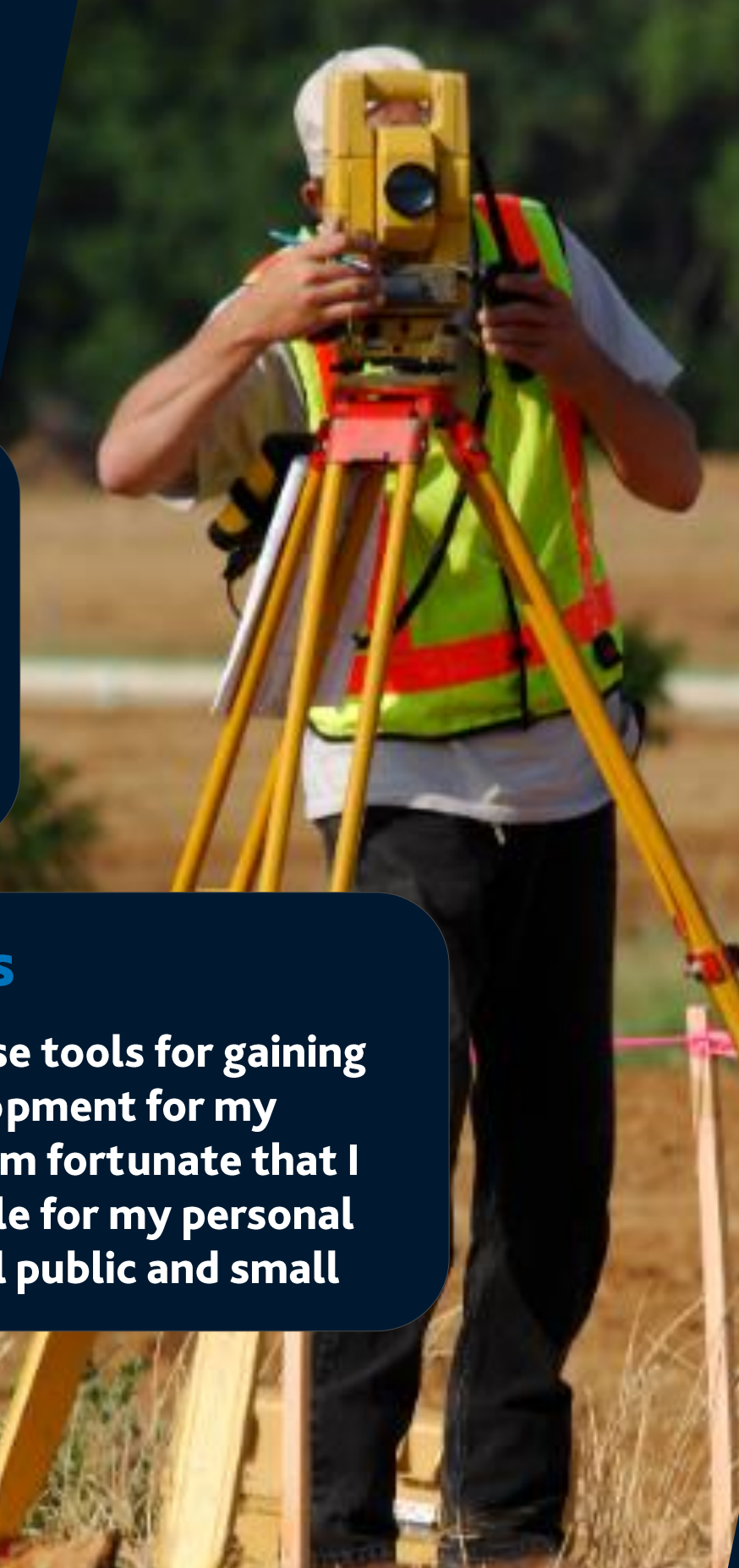
"I am an architectural designer, quantity surveyor and a carpenter. This tool is very valuable to my company from both a design and construction point of view."

"accurate mapping of properties as a sole-trader consultant who can't afford professional access software/memberships"

Used By Multi-National Enterprises

A response from a member of a multi-national company: "I use these tools for gaining topographic, environmental utility/council data, past development for my professional work and my home and for investment decisions. I am fortunate that I have access to similar GeoMaps tools in my profession and Google for my personal use. But Auckland Council GeoMaps website is great for general public and small companies."

Investment



436 or 50%

Of survey respondents indicated that these tools are used for compliance with Auckland Council consenting, permits, by-laws, legislation, or to assist with a wide range of other official requirements.

resource consent planning plan rma building council stormwater regulations compliance development unitary information act work sup zones rules land design environmental hazards layers geomaps infrastructure wind essential approvals sites natural services zoning practice code bylaw epa access property areas assessments flow overland overlays watercare wastewater standards comply from text responses



Development

Wide Ranging Benefits

Who Uses Our Viewers? Industry Sector Observations

UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits



There were many other interesting aspects to the responses indicating a wide range of uses for these capabilities. Some of the interesting comments from the community have been highlighted below.



Kaupapa Māori

- "I am using this as an educator and the Tangata Whenua data is very valuable."
- "Used to check for infrastructure, flood hazards, cultural heritage items, tangata whenua interests, legal descriptions, land areas, zoning, surrounding land uses and activities"
- "We use it a lot to make sure we are within property boundaries and being mindful of Māori taonga sites "



Cultural, Sporting and Community

- "Searching for larger farms in the district so we as a sports club can approach owners to hold events on them (hopefully)"
- "As chair of the [name redacted for privacy] Environmental Group I use Geomaps to investigate possible restoration projects, identify reserve and private property boundaries for same, create maps for funding applications & requests for service from Auckland Council and Auckland Transport and for advocacy submissions on environmental issues."
- "I use them to share locations for community events and to highlight paths etc community can use to reach locations on foot or bicycle"
- "[Community conservation group]: Overlays such as aerial images are crucial for assessing the vegetation cover (and observing changes over time). Contour overlays allow us to factor in slope steepness when considering health and safety when planning events. The flood viewer is great for stimulating conversations about the need to preserve native biodiversity in order to mitigate against the impacts of climate change."



Localised Interests

- "I am a landscape architect. My husband a planner. We both use the council GeoMaps on a daily basis to utilise and check all kinds of information. Up to date aerials, underground services, flood mapping, ownership are all key to our business. We also use them in a community capacity as members of the local ratepayers group to understand new development proposals etc. Our environmental group also uses the tools when looking at new planting areas, measuring planting areas etc for ordering plants."
- "To advise a local community group on the performance of storm and waste water infrastructure"
- "It would be very useful to be able to overlay data collected by Auckland Council (or otherwise available) about things such as deprivation; income, overcrowding & ethnicity; crime; air quality; vandalism, litter & dumping; animal, noise & signage complaints/bylaw breaches; and locations of vape/Lotto/fast-food stores, cycle-ways, social housing, pokies, social services & govt orgs. In terms of tools, it would be amazing to be able to go back in time (e.g. to previous years) and see how things have changed / are changing. "



Climate Adaptation and Net Zero

- "For environmental and climate risk assessments. Understanding the risk to public & private industry and current & future infrastructure"
- "Find out the natural hazard risks that properties are exposed to in order to understand how best to mitigate/build climate resilience and/or whether insurance for that property will be affected. It would be helpful to know which RCP/SSP the natural hazard modelling is based on and also have options to choose a timeframe into the future to see what the hazards will look like 10, 30, 50 years down the line."



Important Data Themes

How Users Rate Data. Industry Sector Observations

UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits

Assessment of the data themes of most interest to the users indicates that Aerial Photography or Satellite Imagery is of greatest importance. There were many comments requesting that this data be updated frequently.

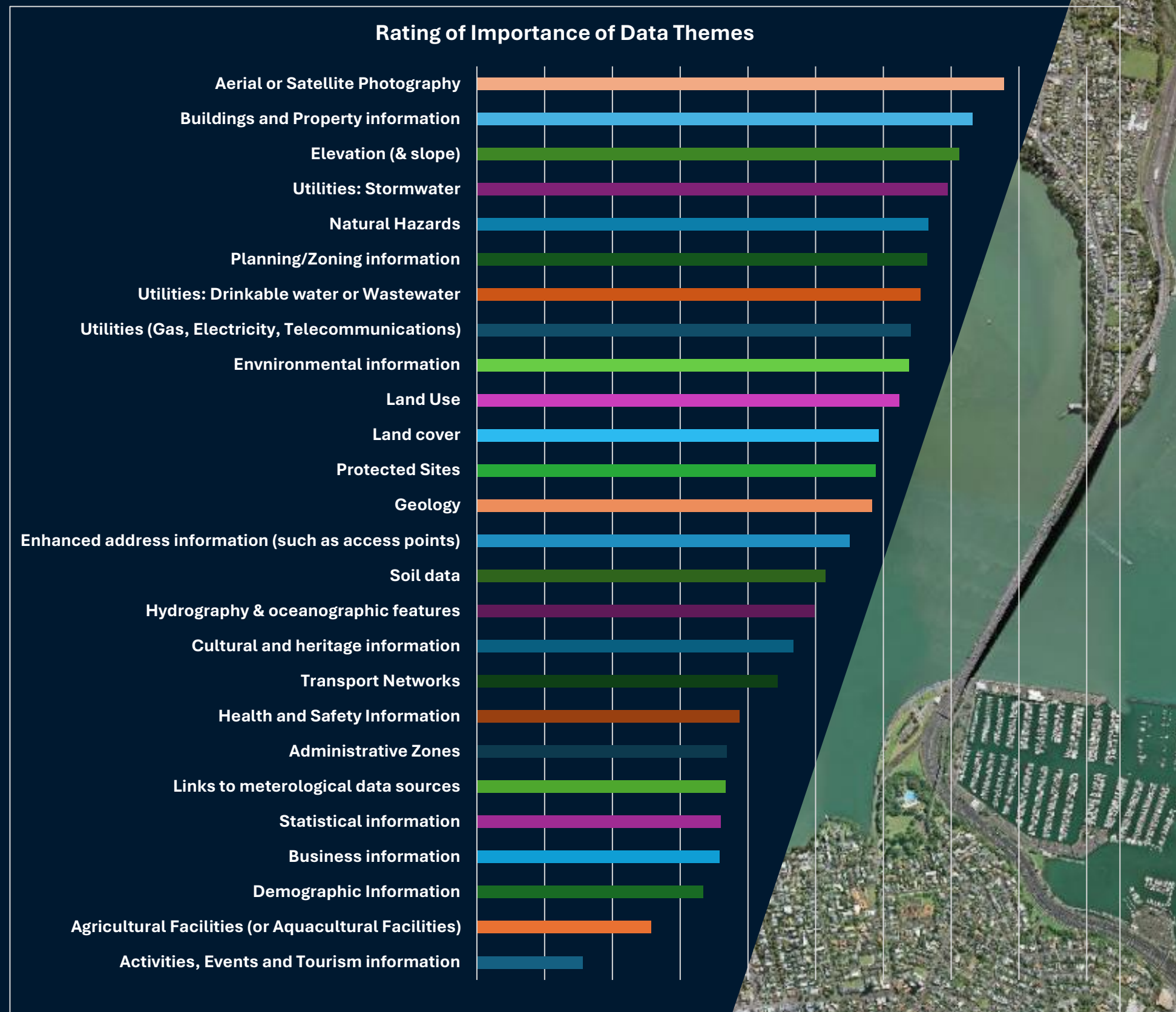
Other data themes at the top of the list support the importance of these data themes for the Architecture, Engineering and Construction sector.

Some comments included:

“I would like to see the most up to date aerial imagery as Auckland is rapidly changing and it is important to have the most up to date information available.”

“Updated aerials are essential to my work as Google maps measurements/quality is unreliable”

“Ability to accurately measure between locations. [Has] better resolution than Google maps for rural areas.”



Key Data Requests

What Enhancements Users Would Like to See

UNDERSTANDING THE VALUE OF GIS A Review of Utilisation and Benefits



Furthering the previous section: users were given the opportunity to indicate enhancements they would like to see to geospatial data themes made available. A summary of the key requests is outlined below. It should be noted that several requests were for items that already exist, which may indicate a training/awareness issue, however in other cases there was a request for better quality/currency of existing data.

IMPORTANT: Many of these requests would require significant budgets and inter-agency agreements before they are achievable. Therefore, presence of a request in the list below should not be taken as an indication that this will be carried out in the near future, however it will be taken into account for future planning and prioritisation.



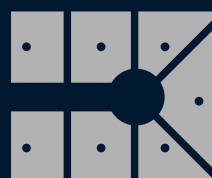
Aerial Images

- More up-to-date aerial or satellite imagery, including post-significant events (e.g. Auckland Anniversary Rainfall).
- Historical imagery overlays: Incorporating more historical aerial photos from Retrolens and integrating these into a timeslider for comprehensive historical analysis.



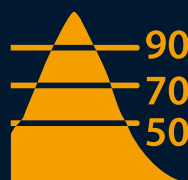
Hazards

- Accurate, up-to-date flood plain data at property levels and more information on overland flow paths.
- Climate risk and historical natural hazard data: Future climate projections and hazard information for various timeframes (e.g., 10, 50, and 100 years).



Planning & Construction

- Resource and building consent details: Including in-progress consents, future development strategy, and revaluation data.
- Geotechnical and land stability data: Information on areas with slope stability issues and land subject to instability.
- Overlay of AUP layers within GeoMaps: Significant Ecological Areas, Outstanding Natural Landscapes, and Highly Productive Land.



Elevation/ LiDAR

- Detailed DEM and LiDAR data: For more precise elevation data and slope stability issues.
- Contour interval options: Downloadable in different layers for flexibility in map usage.



Utilities

- Inclusion of all utility services: This includes gas lines, electricity, internet and telephone lines, and detailed drainage information.
- Detailed underground utility information: Depths, gradients, and flow directions of stormwater and wastewater lines.
- Private drainage assets: Particularly for cross-lease properties.



Hydrology

- Sub hydrology catchments: Detailed catchment information for water management.
- Rivers, streams, and stream ecology monitoring sites: Including data on water quality and ecology.

Others



Soil

- Geological maps and soil categories: Providing detailed geological information, soil classifications, and instability mapping.
- Information on soil contamination and asbestos: Making this data publicly accessible.



3D

- Enhancing spatial understanding and planning.
- Interactions of gradient with other layers: soil stability, utilities gradients etc.



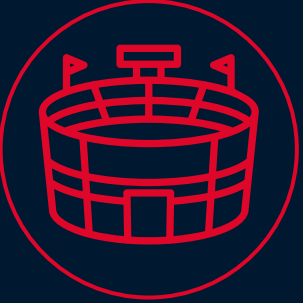
Transport

- Greater integration with Auckland Transport so that layers from both organisations can be overlaid or processed together.
- Cycleways, walkways, and cycle paths: Clear delineation and accessibility information.



Education

- Public education: Tutorials or videos illustrating how to use the data effectively.

The data revealed in this survey demonstrates that there are clear links to all of the focus areas within the Auckland Council's Long Term Plan, with particular strengths supporting: (1) maintenance and expansion of the built environment, (2) management of freshwater, stormwater and wastewater (3) protection of the natural environment.	Water  This survey clearly indicated the importance of GeoMaps for many external users that have an interest in freshwater, stormwater and wastewater, as well as watercourses. A large proportion of responses were from the utilities sector, where a large majority of respondents indicated that GeoMaps is essential to their business interests. There was also a strong group of responses that indicated the importance of GeoMaps for dealing with flooding and storm events.	Built Environment  The results presented here clearly indicate the importance of GeoMaps and the planning and hazard viewers to the construction sector. GeoMaps assists in infrastructure management by mapping and monitoring the condition of roads, pipes, and community buildings. It also facilitates the future delivery of public services by spatially analyzing population demographics, identifying service gaps, and optimizing service locations.	Natural Environment  GeoMaps is used to map and manage natural resources such as harbours, beaches, forests, and islands. It identifies protected areas, managing biodiversity, and planning for sustainable development while preserving the natural environment. GeoMaps is used for monitoring and managing environmental challenges such as habitat degradation, pollution, and invasive species such as Caulerpa, and minimising Kauri Die-Back.
Economic and cultural development  GeoMaps is used to map cultural and sporting facilities, event venues, and heritage sites. It is used in event planning, crowd management, transport options and parking, and can promote utilisation of these assets by creating interactive maps and virtual tours of cultural landmarks and sporting venues.	Community  Maps provide intuitive information that is used by council personnel for planning, local boards to aid with decision making, also to engage with local communities on many topics including urban regeneration and climate resilience. These viewers are a primary channel for the communication of a vast variety of data held by Auckland Council out to the public that it serves.	Well-managed local government  GeoMaps contains comprehensive spatial inventory of all council-owned properties and assets, including buildings, land parcels, infrastructure, facilities, and amenities. It provides tools to visualize the services and operations provided by Auckland Council in an easily understood way. The geospatial viewers also provide a key method of informing the public about Auckland Council's plans for the future.	Transport  The primary responsibility for the provision of transport information resides with Auckland Transport, so was not directly assessed as part of this study, however there were some suggestions from respondents that greater integration of datasets between agencies is something to aspire to in the future.

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