Improving Aotearoa New Zealand's environmental reporting system – proposed amendments to the Environmental Reporting Act 2015, Ministry for the Environment dated February 2022

Submission from PlanTechNZ, a special interest group of the NZ Planning Institute

About PlanTechNZ

PlanTechNZ is a Special Interest Group of the NZPI. PlanTechNZ comprises NZPI planners who are passionate and curious about the role of emerging technologies in the future of planning practice. Its aim is to bring planning and resource management practitioners together to make the most of new technologies in the planning profession, and to achieve better outcomes in planning practice for communities and the environment.

PlanTechNZ's purpose is to support the NZPI, NZ planners, and the profession's role as a whole in responding to the impact of emerging technology on the profession and advancing PlanTech awareness, understanding, and capabilities in NZ planners for the benefit of New Zealand.

Our main work areas are to:

- Explore the opportunities and challenges which new technologies present to planning in New Zealand;
- Introduce PlanTech concepts and tools to the wider NZPI membership and NZ planning practice;
- Provide insightful input to New Zealand's planning profession and its leadership on issues concerning new and emerging technologies;
- Build relationships within New Zealand relating to the success of PlanTech; and
- Contribute to the international PlanTech community and sharing knowledge to improve planning practice.

A key message of our group is that new technologies offer new solutions to how we manage and monitor our cities, rural areas and natural environments. This includes how we gather data and information to guide decision making to better enable and promote wellbeing of people and communities and well-functioning rural and urban environments. Data and its analysis enable the opportunity for agile and faster decision making to support growing urban areas and the management of risks to the natural environments.

We also support the concept that the planning profession has a complex knowledge base and skillset related to managing urban areas, the environment, running public processes and integrating decision making. These competencies are vital to ensuring robust, ethical and well-designed planning and environmental management (PlanTech) software. Planning professionals should be involved in the design processes for adapting practice with these technologies to help achieve quality environmental outcomes and development of programs and project to remediate and enhance these essential spaces for future generations.

General Feedback

PlanTechNZ recognises the importance of developing New Zealand's systems for dealing with data about the natural and built environments.

PlanTechNZ has some concerns about how this proposed set of changes meets the actual demands in New Zealand for a future proofed system to manage environmental data. Whilst noting the document's statement on scope, it is important that national environmental reporting delivers its share of the changes needed to New Zealand's information system about the environment.

Specific concerns include:

- The scope of 'the environment' - The scope of the term environment is very narrow and is largely focused on the natural environment which the regional councils manage. This represents a small wedge of the complex natural and build environments which make up New Zealand. National reporting and state of the environment reporting should take a broader view of 'the environment'.

- The scope of the 'data' - As with environment, the data and information about the environment to be reported on appears narrow. Data sources and the amount of data generation via more connected things have changed dramatically in recent years and the proposal seems to assume a dated concept about the data to be used in national reporting.

- The source of data - Data is no longer only from 'official' (i.e. government or academic) sources, it is made up of a complex mix of different sources (with high tech businesses and new digital platforms being amongst the largest sources of data about our environment these days). These proposals seem to reflect an expectation that data can be managed top down, instead future environmental data management will be about government being a steward of a vast array of data sources, bringing them together to assist in environmental management. There needs to be a place for private data and wide data concepts in this system and amendments to legislation such as this are a good opportunity to design a system which meets the challenges and demands of the modern data environment.

- Environmental data is public data – The document discusses the limits on the ability to require data and some immediate ways to improve this. Overseas the 'public good' aspect of data about the environment is being recognised in a variety of legal, ethical and policy mechanisms. Again, identifying the data which could be gained by changing the legal status of environmental data creates the need to make a place for such information in the national reporting requirements. New Zealand's implementation plan of the Open Data Charter states the focus is on "principle 4 of the Charter: comparable and interoperable. This principle is about ensuring data can be easily compared between sectors, across geographical locations, and over time. It highlights the importance of standardisation, consistent formats, accessible metadata and good documentation to enable interoperability and ease of data integration."

- Disconnect from stated government outcomes for digital and data - The Strategy for a Digital Public Service vision is that "the public service is modern at its heart and all New Zealanders are thriving in a digital age". People want to be more involved in environmental issues and they need environmental data to take part in an informed way. The public needs access to high quality reporting on the environment, and the data which informs this reporting so that they can critique the data for themselves. An alternative or supplementary way to provide the national

environmental reporting information would be as a data dashboard or other means for the data to be shared with the public.

- User design and voice – The national reporting requirements are one of the few ways the public can gain information about the environment. Has user research been undertaken to determine what the wide range of possible user groups require of this national reporting. This user analysis is critical to ensuring the improved system is fit for purpose.

Feedback on Opportunities and Objectives

PlanTechNZ agrees that "there are substantial limitations within the ERA on measuring and reporting on what is happening in the environment".

1. Would you add any issues to this list? Why?

Whilst touched on in some of the other issues, there is an overarching issue around the lack of a collective vision for a "fit-for-purpose designed national environmental reporting system" might look like. The fragmentation and lack of data at present is symptomatic of the lack of a purposeful and active design for a system. It should focus on the environmental issues which matter and set about finding the right data and information sources to properly report on that issue, rather than doing the best it can out of limited data available at present.

2. Which of these issues are the most important to fix? Why?

As above, moving to proactively design the flows of data to support the environmental information we need to most take action on.

PlanTechNZ generally agrees with the objectives, however these can go further. Rather than focus on a 'clear purpose' for environmental reporting, it could go a step further and "design the environmental reporting requirements to support the collection of data which will offer meaningful interventions and improvements in the environment".

3. Are these objectives the most effective for improving environmental reporting? If not, what should the objectives be, and why?

To set up the first step in a move towards a data-driven, more real time monitoring of much more of New Zealand's environment to provide data and information which can be used by a range of organisations and people to understand the state of New Zealand's environment and the issues facing it. See examples used later in this submission, that via technology it will be possible to monitor sensitive parts of the environment rather than just use indicator/sample sites. This requires and enables a drastically different methodology to national environmental monitoring.

Feedback on Specific Proposals

Proposal One: Clarify the purpose of environmental reporting

4. Do you agree with the proposal to expand the purpose of the ERA to include the reasons why we need environmental reporting? Please explain your answer.

Agree with the proposal to separate both the 'why' and the 'how' but each needs to go further. As with the comments on opportunities and objectives above, the national environmental reporting needs to be

designed with a new ethos. It needs to firmly direct what needs to be measured, by who and in what formats. When it comes to reporting on the environment, the most important sources of information will be there because all those in the system have been tasked with 'doing their bit' to deliver the necessary information.

Proposal Nine: Establish a set of core environmental indicators

38. Do you foresee any problems with the proposal to establish a set of core environmental indicators? Please describe.

The example/case study used is an "indicator on freshwater species". This relates to relevant themes of biodiversity and Freshwater. The statistics form the core of the environmental indicators, but shortcomings identified indicate that it is ad hoc, driven by available data rather than targeted data. There are no statutory requirements to collect this or other data, which the changes to the legislation hope to improve.

The discussion document states that these core environmental indicators may not be tied to baseline information. So the establishment of the environmental indicators might be compromised from the beginning. One way to mitigate this baseline bias would be to run comparative studies to identify what compromised indicators look like and what uncompromised ones look like. An excellent example of this is the health of streams from pristine (usually located in native bush areas), rural (compromised by agriculture) and urban (compromised by organic and inorganic contaminants).

We are concerned about whether environmental indicators are the best method to collect data and react to environmental changes. You are looking at one of more indicators rather than the entire ecosystem and what is happening with it. Ecosystem services would be a better approach to monitoring an environment. This will allow the monitoring of the ecosystem rather than picking key indicators, although they could be a component of the services. Ideally, the system needs to take in the ecosystem's overall health and make changes and iterations if there is a decline. It will also help in tracking improvements. We note that with more urban and rural pressures, the climatic changes occurring will be rapid and need quicker adaptation than is proposed through the changes.

39. What are some pros and cons of publishing updates to environmental indicators outside the reporting cycle?

The pros are that it is recognised that the current environmental system and reporting are slow, imprecise and contains massive gaps. It is noted in the discussion document that the collection/monitoring of environmental data over the long term is time-consuming and costly.

The cons are that publishing environmental indicator information is old-world thinking, whether inside or outside the reporting cycle. This information should be freely available all of the time and constantly updated. With improved technology available from IoT devices, AI, linked to GIS and augmented by Citizen science, there is a real opportunity to do away with reporting cycles and have the information in real-time. Dashboards of ecosystem services would help policy and decision-makers, government departments, local government, communities and iwi make real-time adjustments to maintain and improve environments.

Please see the link below of a system that has shifted land maintenance (mowing of pastoral land) and monitoring. From a policy/statistic/physical monitoring system to the technology of satellite and AI to

analyse the mowing of fields (as landowners are required to do to qualify for a subsidy) in close to real-time. The system can also identify vegetation types, so the opportunities for adding AI to our monitoring systems have great potential.

https://earsc.org/sebs/wp-content/uploads/2021/05/Grassland-Monitoring-in-Estonia_vfinal.pdf

40. Should the indicators include topics based on te ao Māori and mātauranga Māori?

Yes, absolutely, but this needs to be developed by Māori and specific to a rohe and related to and informed by the local hapū/kaitiaki. Te ao Māori and mātauranga Māori provide us a unique opportunity to recognise the historical knowledge concerning Te Taiao (whilst respecting Māori data sovereignty considerations). What environmental changes impacted most on the environment, e.g., climatic, the introduction of new species, land use, discharges etc. Māori indicators could be developed and applied alongside citizen science as a way to input into the ecosystem services model directly. Giving Māori a platform or technology to record or monitor the ecosystem would capture the knowledge and could be linked to broader databases across the country. As a starting point New Zealand coastline is part of a Large Marine Ecosystem (46), which Māori could add significant macro and micro information to across environmental, historical and cultural elements. See the link for more detail.
http://www.mwpress.co.nz/__data/assets/pdf_file/0005/77045/1_17_MacDiarmid.pdf A method for response may be to establish a process with capacity for Māori to set their own indicators as part of this reporting process. To develop tools enabling them to build or develop their own methodologies; and, collate the information they can apply in this space that "complements" the standard data systems. The NPSFM 2020 sets the benchmark for a Mātauranga Māori approach and what is required.

41. In your view, have we overlooked any costs, benefits, risks or opportunities? Please describe these and any mitigations.

Yes, the proposed changes have missed an opportunity to stick to environmental indicators rather than an ecosystem services approach and augment this with technology. While there may be a higher upfront cost, the benefits received will exponentially pay for themselves. As the Estonia examples illustrate, you can potentially cover the entire environment near real-time data rather than sampling, initiate actions to change behaviour and quickly modify the ecosystems. This will be increasingly important in adapting to climate change and other pressures.

Proposal Ten: Strengthen the mechanisms for data collection
PlanTechNZ supports Proposal 10. Access to good quality data is essential for monitoring and reporting on the health of New Zealand's natural environment.

Support Option One for the Government to build relationships with data providers and acquire data voluntarily and through agreements. Consideration should be given to collaboration with data providers to develop data collection tools and technology.

42. Do you foresee any problems with the proposal to include provisions in the ERA to require data for national environmental reporting? Please describe.

Yes. As mentioned above, the system needs to be modified and augmented with technology. We need a comprehensive and representative national monitoring system that is consistent with collecting, managing, and analysing data. The only way to do that is to include IoT, digital monitoring for those in

the field to upload to a cloud-based system (national databases), using satellite and GIS technology to geolocate and track information. AI to run analytics and improve monitoring over time (potential for predictive assessment) and interventions.

43. How can we strengthen the way we collect data to reflect the perspective and values of te ao Māori?

Provide Māori with the capacity and the opportunity to develop the tools and systems to input into ecosystem services. It could be likened to how Citizen Science is incorporated into wider monitoring and research as a way to augment the current scientific knowledge. For example, a recent intervention by Ngati Hei, the Rohe of Optio Bay (Coromandel), with support from the community (and critical groups), saw a rāhui placed over the area. This was to allow the local scallop population to replenish, subsequently ratified by the Minister and supported by monitoring/collecting the shellfish. The environmental reporting system improvements you propose would not have achieved this outcome as scallops were monitored throughout this area have shown an overall decline. However, they were still allowed to be taken through dredging until the availability of the scallops dropped off, and the site was effectively barren. The values of te ao Māori identified a problem and took action in the form of a rāhui rather than wait for scientific studies to confirm this and then for various parties to argue the issues while the scallop population declined and the habitat was damaged.

44. In your view, have we overlooked any costs, benefits, risks or opportunities? Please describe these and any mitigations.

Yes, please see above. Check out https://earsc.org/sebs/ as an example of what could be achieved under current technological solutions. The whole environmental monitoring and reporting system needs to be looked at. The process should include local government, business and academics working on an ecosystem services approach. Coordinate the monitoring and collection of data; centralise where it is to be stored and make it accessible to all (open source), to make it real-time and analyzable. Statistical data is valid and can be the backbone of the system used in multiple data sets (Fast data) gives you the width to hunt for what you need. Governments no longer hold all of the data. The system needs to tap into the variety of sources available to test and cross-reference assumptions, so the decision making in ecosystem services is appropriate to the scale and adaptable.