



4 August 2021

Inquiry on the Natural and Built Environments Bill: Parliamentary Paper Submission of PlanTechNZ, a special interest group of the New Zealand Planning Institute

PlanTechNZ welcomes the opportunity to make a submission to the Select Committee on this inquiry.

Submitter Details

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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 projects to remediate and enhance these essential spaces for future generations.

Whilst PlanTechNZ is a recent initiative, we have already started to explore the role of data in modern planning practice. We are currently developing a set of guiding principles on data and planning. We have regular events to share information about new technologies with our members and discuss the impact on planning and potential for better planning outcomes.

Overview of Submission

PlanTechNZ generally supports the exposure draft of the bill on the basis it is a fresh rewrite of the legislation, not a rolling over of the existing Resource Management Act 1991 (RMA) process. Drafting the legislation anew maximises the chance of the new legislation and system being fit for purpose given today's context and modern technologies (and where those technologies are likely to develop over the foreseeable life of the resulting Act). PlanTechNZ is keen to see this system reform deliver a step-change in the use of technology in planning and environmental management.

This submission focuses on two of the key points in the select committee's terms of reference:

- To pay particular attention to the reform objective "improve system efficiency and effectiveness, and reduce complexity, while retaining appropriate local democratic input" when providing feedback on the exposure draft; and
- To collate a list of ideas for making the new system more efficient, more proportionate to the scale and/or risks associated with given activities, more affordable for the end-user, and less complex, compared to the current system".

PlanTechNZ encourages the Select Committee to:

- Be future-focused in considering this bill – modern technology provides a whole new toolkit for environmental management, and this shapes how the system should be designed;
- Be ambitious when it comes to reinventing the system for the technologies and services we now have available, and this may re-invent some of the cornerstone parts of the existing system:
 - permitted activities and triggers for consent;
 - setting environmental limits and using real-time tools from the world of Internet of Things (IoT) such as water quality monitoring sensors and 5G to provide real time feedback;
 - use machine learning/artificial intelligence to analyse the multiple data inputs to determine trends and patterns;

- spatially mapping constraints and threats to the New Zealand environment (including rural, urban, ecological, hazard, hydraulic, infrastructure and climate attributes); and
- more integration of data across the country to allow for more cohesive planning assessments and region-wide planning;
- Focus on the experience of the end-user of the system – look to the leadership of the Digital Public Service in creating a new system that works for New Zealand’s citizens, enables greater participation in local democratic processes and grows New Zealand as a world-leading digital nation;
- Design legislation that actively seeks to draw the public back to the system and ensuring it is made simple and intuitive to interact with; and
- Create a system that works with how modern activities and development are established and operated by enabling the system to work in with automated operations and data-driven processes to minimise the cost to end-users.

The detail below expands on these points further.

PlanTechNZ is willing and able to assist the Committee and officials in addressing any of the submission points raised.

System efficiency and effectiveness

The world is a very different place than when the RMA was created. Most citizens carry internet-connected smart phones fuelling their daily lives with access to an almost limitless amount of information, connection to like-minded people all over the world and the ability to conduct their daily activities and transactions from anywhere and in real-time. What these citizens require of the system is far beyond what it has traditionally delivered.

Understanding what is now possible with technology and where it is likely to go in the foreseeable future, allows us to see more efficient and effective ways to manage natural and built environments. It is now possible to constantly monitor sensitive environments or resource use through remote sensors and other data-collecting devices. This information can be shared in real time allowing environmental interventions to minimise harm like never before (when we were reliant on human observation to trigger a response). As machine learning improves, we can now rely on machine labour to do more complex identification and analysis tasks (e.g. recognising specific natural resources on satellite imagery, processing large amounts of data quickly to identify spatial and temporal trends), enabling a level of understanding of our environments that was simply not viable with human labour alone.

New Zealand’s devolved system of plan-making and consenting has made it more difficult to roll out new technologies. As a nation, we are ‘behind’ on the widespread use of some technologies commonly used overseas. Nations with a more nationalised or centralised system have rolled out new functionality (such as e-plans, national consenting system, open data portals) more effectively. Yet these nations often have to work within a dated environmental management system created by older legislation. New Zealand has a unique opportunity to create a system maximising the benefits of current technology and providing for the emerging technologies of the future.

Specific technological solutions (e.g. apps, hardware, devices, software) will change and evolve. So, it is most critical to understand what these groups of technologies allow us to do and create a platform for realising these opportunities in the new system. These new approaches involve combined efforts, for example the augmented spatial data as illustrated by Taiao (taiao.ai) and many other

examples including the emergence of citizen-focused platforms which are bringing transparency, connectivity and ecological insights to environmental management efforts worldwide.

Appendix 2 to the parliamentary paper contains a list of possible system efficiencies. We suggest that some of these ideas, while useful, work within the mindset of the existing legislation. The suggested ideas involve 'streamlining' or clarifying existing processes. Instead, we would like to see the very basis of these tools and processes explored. To ask, 'are these still the right methods to meet our objectives?'

For example, as we are designing a system that sets clear environmental limits and expresses positive outcomes then the distinction between activities which are permitted or which need consent becomes less important. What we are concerned about is impact on the environment and measuring and collecting data. This raises questions on whether permitted activities should be required to provide data (via the equivalent of standards) and on whether technological solutions can provide adequate supervision and monitoring of activities such that the assurances achieved via a consenting process can be dispensed with. We may no longer need to think of activities in a duality of 'permitted' or 'needing consent' and instead see them on a continuum. Different data collection requirements and environmental interventions are applied based on actual need and site-specific circumstances.

Submission: The Select Committee should recommend to the government that the new system is designed to make the best use of the technological opportunities for environmental management. This may mean a disruptive change to the very building blocks (e.g. consents, permitted activities) around which the system is designed, but this may more efficiently and effectively achieve the system's environmental objectives.

Reducing complexity

Reducing complexity in the system is a challenge in a world where data is growing exponentially. The system needs to recognise that the deluge of data is here to stay. The system needs to build in automation and other tools to help those working in the system process and gain insights from this data sustainably. There is little in the way of working relationships between data professionals and planning professionals at present and this should change. Working alongside technologies such as automated processes, machine learning, and algorithms is also vital to countering the growing complexity planners and other professionals face.

New technology offers huge potential to reduce complexity for the public using the system. Smart service design can allow all users of the system to take part regardless of their existing knowledge. The public need not fill in lengthy submission forms. Simple user profiles can be created, and then giving input on an issue or proposal can be as simple as swiping left or right a few times to share their views and opinions.

Submission: Create a system that manages complexity by its design which:

- Provides for the ever-increasing use of data in system processes and decisions;
- Has interfaces that enable technology to mask the underlying complexity of the system;
- Supports professionals in the system through automation (e.g. automated process, rules-as-code) and technology; and
- Makes the system's processes extremely user friendly for the public.

Local participation and democratic input

The reform objective is to 'retain' appropriate local democratic input. We would argue that the complexity in the system which has been identified has pushed many citizens out of participating in the system's processes. The percentage of citizens engaged in local democratic input in the system at present is very low.

Therefore, the new system needs to pursue a more active objective to re-engage the public with the system, planning, and their local democracy. Through the support of technology, the new system can be much more participatory. Engagement and participation in system processes can be redesigned for the modern age. For example, there is a case for asynchronous public input. The public can provide feedback on resources or places they care for which can then be included in the next formal process rather than requiring people to look out for a limited 20 working day period to get involved.

Submission: The Select Committee should recommend to the government that the bill takes a more proactive approach to rebuild public participation in the system. Technology provides the vehicle to allow this, removing obstacles to all in society becoming involved rather than favouring the well-resourced. Setting a measurable target around this may be useful. Growing the percentage of the 'team of 5 million' engaged in the system will deliver a data-driven way to measure and grow public input.

Affordable for end-user

Whilst technological solutions can be expensive to develop and set up, done right, they can create efficiencies over time, saving money in the long run and increasing the effectiveness of environmental management. Bringing together local authorities to create single regional NBE plans is a positive step, as is the National Planning Framework.

The data in the system should be collected in real-time and analysed quickly to allow quicker decision making. The new system should capture this opportunity, move away from slow policy production cycles, and strengthen adaptive management opportunities. Lengthy drawn-out processes are a key driver for cost to users of the system.

The digital technologies changing the world are the same globally and across sectors. Most businesses and organisations collect data and monitor their operations with similar sets of technologies. By understanding these commonalities, the system can work efficiently with a large proportion of end-users and their existing systems and data flows. This promotes cost-effectiveness. The new system should consider how modern activities, developments and infrastructure work. Whilst there will be a percentage who work with analogue systems, these will diminish over time, so designing for the modern digital citizen, community group and/or business will create the best user experience and minimise costs to end-users.

Submission: Understand from submitters appearing before the Select Committee how their activities operate and are managed and look for ways to integrate the new system with modern business practices and technologies. Look for good overseas examples of digital improvements in governance, smart cities and spatial mapping combined with digital monitoring.