



15 November 2021

Resource Management (Enabling Housing supply and other Matters) Amendment Bill (the Bill) Submission of PlanTechNZ, a special interest group of the New Zealand Planning Institute

To Chairperson Eugenie Sage

Environment Committee

Select Committees

New Zealand Parliament

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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. It aims to bring planning and resource management practitioners together to make the most of new technologies in the planning profession and 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 in responding to the impact of emerging technology on the profession and advancing PlanTech awareness, understanding, and capabilities in NZ planners 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 share 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 urban cities and rural town environments. We also support the concept that the planning profession has a complex knowledge base and skill set 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 software. Therefore, planning professionals should be involved in the design processes for these technologies to help achieve quality environmental outcomes.

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 the potential for better planning outcomes.

Overview of Submission

PlanTechNZ has focused its feedback on the bill concerning the aspects in which technology could support the bill's objectives.

Critically the bill is not supported by a detailed analysis of housing uptake figures under the present system or as proposed in the new planning system proposed in this bill. It is difficult to make decisions on housing interventions when the amount of new housing in the approval pipeline is not available.

The submitter suggests this lack of data on new housing in the pipeline is because New Zealand lacks a good system for near real-time data of new housing development. Until politicians, central government officials, local government, infrastructure providers, businesses and the public have a good system to understand housing as it is developed, it is difficult to make timely interventions. This bill provides a good opportunity to develop such a system which can then be deployed more widely. This would deliver a modern, centralised and data-based system to understand the flow of new housing in New Zealand.

Technology can also improve the implementation of the measures proposed in this bill. If the changes to the RMA are combined with modern technologies, they can unlock more sustainable and affordable housing for critical areas of New Zealand. PlanTechNZ is keen to see this Bill include more technology in planning as a step-change into the more comprehensive National Built Environment Act and Strategic Planning Act changes.

The submission will cover four topic areas based on what has been provided in the bill.

- Lost opportunity to collect better data on housing development to support evidence-based interventions;
- Need to digitalise urban form to provide information for government and infrastructure providers;
- Visualise data to make better decisions on where this development should occur; and
- Provide guidance/better development standards to support better design outcomes.

As an overview, the digitalisation of urban form is a layer that can sit between service and infrastructure systems, which will be a requirement of the new bill when you rapidly increase density. As an overlay, digitalisation can improve the performance, efficiency, resilience and sustainability of those systems.

Data Collection on the Medium Density outcomes will not be available once resource consenting is no longer required for these forms of development. For multiple reasons, the data would help us map, manage, and monitor the impacts and requirements of medium-density over time.

The benefit of collecting real-time information on housing development(s) gives us opportunities to forward plan the hard (transport, three waters) and social (open space and community facilities) infrastructure requirements. We currently lack systems to collect adequately detailed near-real-time data on housing development(s). Resource consents provide much earlier insight into housing development than waiting for building applications to be made.

PlanTechNZ encourages the Select Committee to:

- Be future-focused in considering this bill – modern technology provides a whole new toolkit for urban and city management, and this shapes how the system should be designed or best amended;
- Be ambitious when it comes to deploying technologies we now have available:
 - Require activities that become permitted activities due to the provisions of this bill to provide data to monitor the effectiveness of this bill;
 - Require councils affected by this bill to provide data for their city showing development uptake to determine trends and patterns across urban areas;
 - Require the government to monitor the uptake of the development under this bill using modern digital technologies to give a comprehensive overview of implementation;
 - Require early steps of a digital twin for these areas to enable all stakeholders, including infrastructure providers, to service these areas effectively; and
 - Spatially map these areas and visualise the data for better insights; and
- Ensure councils have guidance to support evidence-based development controls to support good design outcomes from development now made permitted.

The detail below expands on these points further.

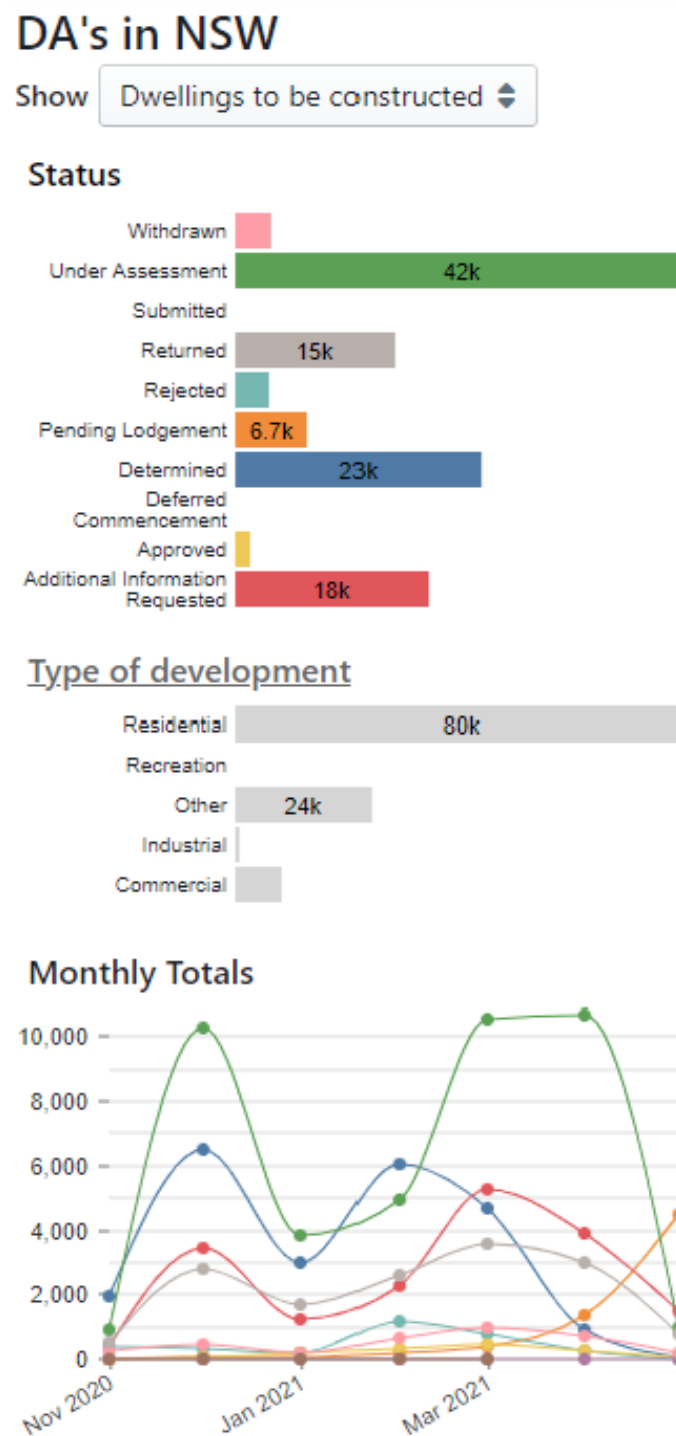
PlanTechNZ is willing and able to assist the Committee and officials in addressing any submission points raised.

Tracking and utilising Housing data

Comparing NZ and Australia indicates Australia has much better data systems on housing numbers, typology, and tracking of the pipeline. An example is the [NSW¹](https://giraffe-city-dev.web.app/nsw) State government, where anyone can view this data (see Figure 1). This shows, for example, 18,000 dwellings in the system as part of applications on hold for more information or 42,000 dwellings being actively processed through the system. This macro-scale reporting is what is needed to make proper evidence-based decisions on our policy interventions. Additionally, over time this data can be analysed to identify trends such as what proportion enter the system but do not complete the process. This fine-tunes the ability of the data system to make an accurate prediction of what housing will be delivered on the ground.

¹ <https://giraffe-city-dev.web.app/nsw>

Figure 1: Extract from NSW's data portal on new dwelling in the system (Source <https://giraffe-city-dev.web.app/nsw>)



Because the bill is about making more things permitted (thus, there won't be resource consent application data to collect), there could be a way to add a duty to notify the Council when they exercise this development. This would allow the councils to collate the data and provide data on the impact of the changes introduced in this bill. This bill results in more development coming from permitted development rights proportionally, we need to rethink how we manage this permitted activity regime, and data collection will be the key.

Through data analytics (AI and machine learning), we can better understand what is happening and model changes to those systems. For example, what infrastructure upgrades will be required if 50%

of this neighbourhood changes from single house use to medium density. Using three waters wastewater as an example, will the conveyance system of pipes and the treatment system cope at what point will we see a tipping point.

Digitalisation of urban form

Having data on the medium density outcomes of both Greenfield and brownfield infill and tracking it in real-time will be necessary for the infrastructure providers (Hard and social).

The infrastructure can then be linked to the services it provides for citizens/customers. A digital layer is the piece missing in this equation and is a potential criticism of this Bill on the system infrastructure/servicing front. A digital layer required at the micro-level as part of the medium density zoning will provide better data earlier to enable infrastructure providers to analyse that data and respond to the growth pressures.

The development of a digital twin approach could help to maximise integration and coordination of development. The development could be mandated to provide key data points for the digital twin. Overtime the data could include all resource and building consents, engineering plans (initially for residential developments), and infrastructure projects including transport routes, e.g. buses. This would enable the creation of a 3D digital model of the Tier 1 councils residential development. With these areas digitalised, we can start to analyse the performance of rules and our urban environments. The draft New Zealand Infrastructure Strategy² promotes Digital Twins, including Wellington Cities Digital Twin.

Utilisation of the data – visualisation and analysis

Given that PWC and Sense Partners have undertaken data analysis of the potential development opportunities generated by the bill, the submission requests that this data be made available. It would be beneficial to have a baseline GIS overlay per the bill. Then once councils have implemented the bill, it can be seen where Council(s) have successfully used the 'qualifying matters' to exclude the property from requirements. Then real-time tracking (based around building consent data) can be used to monitor uptake.

Visualisation of the data provides the evidence-base to understand what is suited in different locations. It will also help the local government provide transparency of the number of dwellings currently under construction in suburbs impacts communities, neighbourhoods, and adjacent properties. The data capture needs to be prioritised, whether from individual buildings, wastewater discharges, to vehicle movements. Analysing the data allows for simple visualisation of information, e.g. is there a shortage of housing in an area, will infrastructure cope with rapid changes to the density etc. The Government should consider the creation of a national portal for the data representation that each Council feeds into the portal.

With the powers devolved to the Minister for the Environment, TA's could quickly amend the development controls to allow more or less housing in different locations. Making the density and development permitted puts more pressure on the development controls to catch any poor design elements. Not all plans have good enough development controls to do this, as they presume consent is needed for such development. This bill needs to be supported with some fresh thinking and evidence-based development controls to ensure successful implementation without poor design outcomes and substandard living conditions for future residents.

² <https://www.tewaihang.govt.nz/assets/Uploads/211012-Draft-New-Zealand-Infrastructure-Strategy.pdf>

Guidance

Digitalisation of zoning (rules), building and infrastructure will help develop the quality urban outcomes being sought. The NPS-UD³ Objective 1: New Zealand has well-functioning urban environments that enable all people and communities to provide for their social, economic, and cultural wellbeing and their health and safety, now and into the future is set around creating healthy communities. This guidance could also include permitted standards that need to be met around green building certification and monitoring, on-site water retention and reuse. Include solar activation of passive solar capture and future-proofing solar capture through the building phase, where new owners can add solar capture and retention.

These initiatives would also support the climate change commission recommendations of reducing ecological footprints. IoT devices can already capture a range of building data, including internal environments. To allow for adjustment to building heating, airflow. External/internal moisture measurements of surfaces exposed to the weather can give early warning material damage and leaky buildings, as has occurred in the past.

As part of this guidance, consider some permitted standards or guidance around the following:

- Consider applying good Green Building⁴ practices as per the New Zealand Green Building Council. New medium-density homes should be similar to those built for Kāinga Ora (Ngā Kāinga Anamata⁵).
- Consider on-site retention of water and reuse of water in greywater systems throughout new buildings where possible

New buildings should include opportunities for active solar collection in the future with orientation and roof pitch. There should be internal wiring in place or cavities to retrofit solar panels and retention systems across the medium density build on-site as a future proof option. Providing solar potential supports climate change initiatives and provide future power opportunities.

³ <https://environment.govt.nz/assets/Publications/Files/AA-Gazetted-NPSUD-17.07.2020-pdf.pdf>

⁴ <https://www.nzgbc.org.nz/about-us-and-membership/our-vision>

⁵ <https://kaingaora.govt.nz/news/new-zealand-public-housing-pilot-to-feature-at-un-climate-change-conference/>