



Ministry for the
Environment
Manatū Mō Te Taiao

Proposed National Planning Standards evaluation report 2018

Part 2E – Electronic functionality and accessibility and
mapping

Evaluation for the proposed first set of National Planning Standards

This document may be cited as: Ministry for the Environment. 2018. *Proposed National Planning Standards evaluation report 2018: Part 2E – Electronic functionality and accessibility and mapping*. Wellington: Ministry for the Environment.

Published in June 2018 by the
Ministry for the Environment
Manatū Mō Te Taiao
PO Box 10362, Wellington 6143, New Zealand

ISBN: 978-1-98-852557-0 (online)

Publication number: ME 1360

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Context to this document

This document forms part of the *Evaluation Report for the Proposed National Planning Standards*. This document should be read in conjunction with the other documents that make up the report as a whole. The *Evaluation Report for the Proposed National Planning Standards* report is set out as follows:

Part 1 – Overall assessment

Part 2 – Individual standard assessments

Part 2A Plan and policy statement structure and format

Part 2B Spatial planning tools and zone framework

Part 2C Definitions

Part 2D Noise Metrics

Part 2E Electronic functionality and accessibility and mapping

Part 2F Tangata whenua provisions

Part 3 – Implementation

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1 Introduction

1.1 Current electronic functionality and accessibility of RMA plans and policy statements

New Zealand council functions as originally set out in the Municipal Corporations Act 1867¹ were of their time, and the access of services was in person or paper based. However methods of communication and methods for the public interaction have changed significantly over 140 years. Good local government today is defined under the Local Government Act 2002.²

“It must meet current and future needs for good-quality local infrastructure, public services and regulatory functions. The infrastructure, services and functions must be efficient, effective, and appropriate now and into the future.”³

Good local government today is defined in section 9 of the Local Government Act 1995.⁴

“It must meet current and future needs for good-quality local infrastructure, public services and regulatory functions. The infrastructure, services and functions must be efficient, effective, and appropriate now and into the future.”⁵

Resource Management Act 1991 (RMA) plans have also evolved from being available only in paper-based form to being available in a basic electronic form (that is, PDFs on websites). While paper copies of plans are still available, the majority of users now access plans electronically via council websites. For many people these plans will be their first interaction with the planning system. Their impressions of the planning system will therefore be strongly influenced by the ease with which they can find the information they need. Traditional paper-based plans (and their PDF equivalents) can be large documents and intimidating for the average plan user to find the information they need.

Plans have evolved from paper to a basic electronic form, but many are still in basic PDF format. PDFs do not allow for the required (and expected) user interactivity. Moving from a paper to PDF form of plans should free up council resources, however plan users⁶ report frustration in trying to navigate through scattered PDFs. This impacts council staff time often for a repetition of simplistic queries. Having PDF plans online was progressive in the early days of the RMA, but this no longer represents best practice.

Some councils have continued to evolve the format used to publish their RMA plans. An early adopter of HTML/document management system-based plans was Christchurch City Council. But technology has continued to evolve. Specialist software is now available for councils to use for their plans. ePlan software supports a higher level of user interaction with plans, such as property-based or activity-based searches. This results in plans that are responsive to users’

¹ See www.nzlii.org/nz/legis/hist_act/mca186731v1867n24381/

² Section 9 of the Local Government Act 2002. See www.legislation.govt.nz/act/public/2002/0084/latest/DLM4927103.html

³ Local Government Commission, *The Reorganisation Process*. Wellington; Local Government Commission Retrieved from www.lgc.govt.nz/the-reorganisation-process/

⁴ See www.legislation.govt.nz/act/public/2002/0084/latest/DLM4927103.html

⁵ Local Government Commission, *The Reorganisation Process*. <http://www.lgc.govt.nz/the-reorganisation-process>

⁶ From Ministry for the Environment primary (2016 ePlanning and 2017 Regional workshops) and secondary commissioned research.

particular needs, improving the interaction and navigation of plan users' experience, with the end result being a planning system that is easier to access and understand.

A key component of plans are the planning maps, which are the spatial presentation of relevant planning data (for example, heritage items, roads, hazard areas) and spatial planning tools used to manage certain environmental issues (for example, zones, overlays). In paper formats maps are commonly contained in an appendix or separate volume(s), and in this way spatial data is disconnected from the written policy provision. While the policies and text of the RMA plan provides the detail, the visual elements and layers are the simplest route to present the plan to the widest audience. 2D spatial analysis also helps planners to understand the spatial organisation of a 3D city.⁷ Both regular plan users and lay people using plans for the first time⁸ prefer to look at the planning maps first – usually at a specific property level to find information about the property, before they look at the written components of the plan.

The disconnected nature of the written text from the planning maps does not assist efficiency in using the plan and adds to the complexity of interacting with the RMA plan. The latest interactive digital ePlans have plan text fully integrated to the geographical information system, making plans significantly more accessible.

Our research⁹ considered lay users' experiences of interacting with plans. This research highlighted that if people are to feel comfortable interacting with plans, then more needs to be done to improve their user-friendliness. The key conclusions from the study were:

- Lay people interact with plans with an end goal in mind. They will generally be seeking the answer to the question “Do I need resource consent?” and they want to find the answer to this question in the most efficient way.
- RMA plans/council websites do not currently facilitate this behaviour. The plans are inherently complex and lay people acknowledge that they are likely written from a legal and technical perspective. This is reinforced by the size, format, structure and language used in the plans.

The solution identified in the research was to apply a ‘lay-person-centric approach’ in the development and presentation of plans. This approach would ideally capitalise on advances in technology and facilitate the lay person getting an answer to their question (which is the key driver of their behaviour). Importantly the answer comes to them, rather than them having to go searching for it. Current examples of ePlans do exactly this.

1.1.1 Current status of RMA plan presentation/format

A survey¹⁰ of all district, unitary and regional council websites in January 2017 (last updated February 2018) to explore the usability of councils' plans found the following:

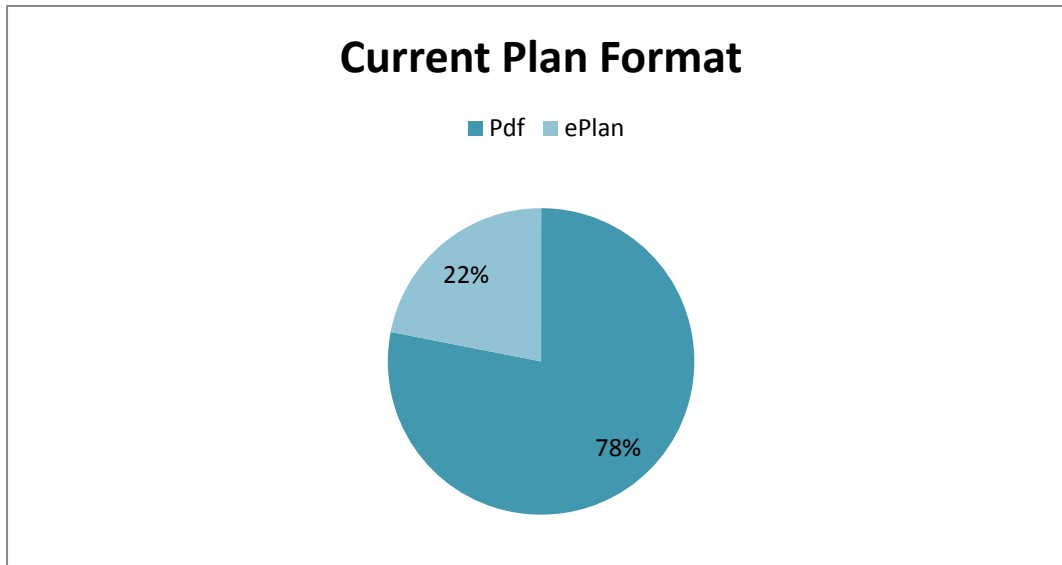
⁷ Koomen E. 2008. *Spatial analysis in support of physical planning*. Amsterdam: VU University.

⁸ 4Sight Consulting. 2017. *Research on RMA plan-user experience*. Wellington: Ministry for the Environment. Retrieved from www.mfe.govt.nz/publications/rma/research-rma-plan-user-experience

⁹ 4Sight Consulting. 2017. *Plan Users' Experience Ministry for the Environment*. Retrieved from www.mfe.govt.nz/publications/rma/research-rma-plan-user-experience

¹⁰ Presented in appendix 1, Plan Scan – levels of ePlanning in plans provisions.

Figure 1: Plan delivery formats for district and unitary councils



- Seventy-eight per cent of district and unitary councils have their plans in some PDF format online, Twenty-two per cent have an interactive online plan.
- Ninety per cent of regional councils currently use PDF (in some form) plans on their website.
- The majority of PDF plans were separated into chapters, making it difficult to search the entire plan with ease; impacting on plan usability overall. Some PDFs had very low functionality, preventing simple word search queries.
- Ninety per cent of authorities have some level of interactive geographic information systems (GIS) mapping (including some hybrids with text in PDFs with links to a GIS system) on their sites, but not all of these are fully linked with the plan. The remaining 10 per cent only have flat PDF maps without interactivity, which provides static spatial information at a set scale.
- Recently some regional councils have provided a GIS platform for district councils to display their plans on a GIS viewer; for example, Environment Canterbury and West Coast Regional Council.
- The quality and ease of use of council websites and plans varies significantly. It can be difficult to locate planning information on council websites, with planning information being hosted in differently named areas of council websites. Some plans hyperlink internally to relevant provisions and definitions, while others are PDF, and only available in individual chapters.

Almost one-third of councils have transitioned to an ePlan or are in the process of transitioning because they recognise the benefits for their plan users. They also recognise the benefits to the council in having a more effective content management system for their RMA plans. This investment supports the growing public expectation that government services take advantage of technology advances:

“Government is in the information business – a business that is changing dramatically. The bureaucracy built for the industrial age needs to be transformed to meet the needs of the information age, with new models better suited to the requirements of the 21st

century. The government is committed to making public information accessible to everyone. Information should be available in the way you want it, when you want it.”¹¹

“People are using personal digital devices in increasingly sophisticated ways. In everyday activities such as banking and shopping, customers expect that goods and services are integrated, easily accessible through any digital device, and quickly available. The same applies to government. Increasingly, people expect to ‘consume’ public services in the same way, and to the same standard, as when transacting with a bank or an internet-based retailer.”¹²

¹¹ Ministry of Economic Development. 2008. *The Digital Strategy 2.0*. Wellington; Ministry of Economic Development.

¹² Department of Internal Affairs. 2015. *ICT Strategy 2015*. Wellington; Department of Internal Affairs Retrieved from www.ict.govt.nz/strategy-and-action-plan/strategy/digital-services/

2 Current practice in the spatial representation of information on planning maps

In the absence of direction, today there is very little standardisation even for the most basic elements of the plan. Zoning representations and features are represented differently across the country. Planning maps have a variety of colours, symbology and layer combinations. There is also variation in the terminology used and conventions of mapping.

For example, research conducted with 12 different regional plans¹³ found that over 266 layers were used. The research report found there were no consistent trends across regional planning documents in terms of how the maps were produced or presented. The map number, cartographic style, themes and layout varied greatly. District plan maps also have similar issues.

Inconsistencies such as the colour of a zone, the symbol for a notable tree or significant natural area have resulted in maps that have become difficult to understand and are not easily comparable between districts and regions, let alone nationally. Plan users waste time in attempting to comprehend the plan, which leads to costs on councils to help individuals understand how the plan works.

Some basic colour convention consistency has carried through from early cartography traditions and legalisation that took root in Commonwealth countries such as Canada, Australia and New Zealand,¹⁴ such as shades of pinks and purples for business and industrial zoned land and greens for open space or conservation-zoned land. These have not been universally carried through into all plans, but did provide a constructive starting point for the development of the proposed mapping standards.

Councils have differing levels of investment, capacity and capability to produce detailed maps for plans. These differences include investment in mapping technology (generally GIS technology) through to the availability and skillsets of staff to complete the mapping processes. While most councils use GIS to manage council data and processes, not all make a GIS viewer that includes plan layer information available to the public; many councils still rely on printed maps/PDFs.

Land Information New Zealand's (LINZ's) *Geospatial Strategy* outlines:

“The lack of effective governance over geospatial information and systems across the public sector is constraining the contribution that geospatial information is making, and can make, to the day-to-day business activities of all government agencies, as well as making geospatial information less effective in solving the increasingly complex problems facing society.”¹⁵

¹³ Beca. 2016. *Review of Structure and Format of Regional Plans and Interaction with District Plan*. Wellington: Beca

¹⁴ Symbology and main zone colour hues as they were last mandated in the New Zealand Town and Country Planning Regulations 1960 are commonly still used, such as reds for commercial zones and green for open space.

¹⁵ Land Information New Zealand. 2007. *Geospatial Strategy*. Wellington: LINZ

It is difficult to quantify the exact benefits of moving information to a uniform digital platform, but the publishing of consistent information online has wider benefits to the country's economy.¹⁶

¹⁶ See www.ict.govt.nz/guidance-and-resources/open-government/.

3 Definitions of ePlan and ePlanning

The terms ePlan and ePlanning are used in this report. In the 2017 discussion paper on Electronic functionality and accessibility of plans and policy statements ¹⁷ on this topic they were described:

- ePlan is a form of eDelivery, ¹⁸ typically used to describe a fully interactive electronic plan located on a website, which is hyperlinked through the policies with an embedded GIS system
- ePlanning is a broader concept and refers to moving all planning functions, services and processes to an online format, for example, lodging submissions and resource consent applications online, tracking processing of consents and completing monitoring obligations online.

¹⁷ Ministry for the Environment. 2017. *Electronic functionality and accessibility of plans and policy statements*. Wellington: Ministry for the Environment

¹⁸ eDelivery was a term used frequently in the 2017 Discussion document on this topic, but is not used in this report. eDelivery was a generic reference to describe the electronic delivery of Resource Management Act 1991 (RMA) plans online, the level of information available, and the format it is presented in.

4 Description of the standards

4.1 Electronic functionality and accessibility standard

This standard has two components. The first sets out baseline accessibility and functionality standards that all plans must achieve within 12 months (whether in ePlan or some other web-based format such as PDF). The second main requirement requires all PDF plans transition to a fully interactive online ePlan within five years (or seven years for specifically identified councils). The Electronic Accessibility and Functionality scale identifies different levels of ePlans and ePlanning. Councils must achieve Level 5 on that standard.

The standards also specify data standards that help to support access to open source data and data transferability.

4.2 Mapping standards

This standard sets out requirements for a colour palette for the proposed zone framework and symbology that provides for a range of other commonly mapped plan features (for example, notable trees, heritage features, hazard area).

5 Statutory context

5.1 Sections 6, 7 and 8 of the Resource Management Act 1991 (RMA)

There are no section 6 or 7 matters, and no section 8 principles, that are relevant to this topic.

5.2 Section 58G: Scope of the standards

Section 58G(2) of the RMA states that the first set of National Planning Standards (planning standards, or standards) must include certain elements that are considered the minimum requirements. These are:

- (a) a structure and form for policy statements and plans, including references to relevant national policy statements, national environmental standards, and regulations made under this Act; and
- (b) definitions; and
- (c) requirements for the electronic functionality and accessibility of policy statements and plans.

The Electronic Accessibility and Functionality standard reflects section 58G(2)(c).

Plan maps are a component of the zone framework and plan structure. If a strict interpretation of the requirements in section 58G(2)(a) is applied, the minimum requirements may not include an approach to plan mapping. The Mapping standard does however add considerable consistency and is the most visible way to demonstrate consistency in plans to plan users.

5.3 Section 18A

Section 18A of the RMA states procedural principles under the RMA. The principles in this section set out how people exercising powers and functions under the RMA must act. The Electronic Accessibility and Functionality standards, as well as the Mapping standards, help to achieve some of the requirements of this section, as set out in table 1.

Table 1: How the Electronic Accessibility and Functionality, and Mapping standards assist councils in meeting section 18A procedural principles

Section Number	Provision	How these standards assist
18A(a)	(a) use timely, efficient, consistent, and cost-effective processes that are proportionate to the functions or powers being performed or exercised	The Electronic Accessibility and Functionality standard will significantly improve the ease of navigating plans for plan users as a result of enhanced searchability. Initially this will occur within 12 months through improved hyperlinks in PDF plans, and significant advancements will be made once all councils have ePlans – enabling property- and activity-based searches. The Mapping standards will provide greater consistency of how spatial data is visually presented. This will reduce ambiguity in plans and time taken to analyse plans, improving efficiency overall.
18A(c)	(c) promote collaboration between or among	Consistent mapping approaches make it more viable

Section Number	Provision	How these standards assists
	local authorities on their common resource management issues.	to consider sharing services across multiple district and regional councils, as evidenced by the approaches taken in Canterbury (Canterbury maps) and the West Coast (West maps). Shared services are also technically feasible for the ePlan requirements, though there are some constraints to overcome given the current variation in plans and stages of plans in their 10-year review cycle. Shared procurement is a possibility.

5.4 National instruments

There are five National Policy Statements (NPSs) and six National Environmental Standards (NESs). All planning standards must give effect to NPSs and be consistent with NESs.

There are no NPSs or NESs directly relevant to these standards, though the mapping standard does seek to include a requirement for the mapping of National Grid lines agreed with Transpower.

5.5 National (and international) guidance documents

A number of guides and published documents were used to inform the development of the planning standard as shown in table 2.

Table 2: National and international guidance relevant to these standards

Document	Relevant section or provisions
Ministry of Economic Development (2008) Digital Strategy 2.0 ¹⁹	Transforming Government (page 11) and Digital Services
New Zealand Government Open Access and Licensing framework (NZGOAL) Guidance Notes ²⁰	NZGOAL Guidance Note 4: Databases and Datasets for guidance on how to encourage the open data for reuse as a raw material for the economy.
New Zealand Government (2015) ICT Strategy ²¹	“Digital Services” section for services provided by government.
New Zealand Department of Internal Affairs, Web	The Web Accessibility Standard 1.0 ²² and Web Usability

¹⁹ Ministry of Economic Development. 2008. *The Digital Strategy 2.0*. Wellington: Ministry of Economic Development.

²⁰ See www.ict.govt.nz/guidance-and-resources/open-government/new-zealand-government-open-access-and-licensing-nzgoal-framework/nzgoal-guidance-notes/

²¹ See www.ict.govt.nz/strategy-and-action-plan/strategy/digital-services/

²² See <https://webtoolkit.govt.nz/standards/web-accessibility-standard-1-0/>

Tool Kit (2014)	Standard 1.2 ²³ provides specific requirements for how councils provide information on their website to the public. This should include RMA plans.
Town and County Planning Regulations 1960 ²⁴	Second schedule part 1, notations for maps. This was the basic zoning palette that elements are still utilised in many RMA plans and formed the basis of the proposed planning standards.
Department of Conservation (2014) Mapping the services and benefits of indigenous biodiversity and historic heritage in New Zealand. ²⁵	Recommendation 11, Prioritise the development of new national GIS layers representing ecosystem services and historic heritage services.
Statistics New Zealand (2014) Design principles for maps using New Zealand's statistical data ²⁶	Fundamentals for cartographical features and maps: user friendly and easy to read and portray a clear message without any confusion.
The Intergovernmental Committee on Surveying and Mapping (ICSM) (Australia and New Zealand)	Advice on symbols in maps, ²⁷ such as utilising internationally recognised symbols for important features such as hospitals and airports.
How maps work visual representation and design (MacEachren, A. 2004) ²⁸	Detailed advice on symbology in maps.
Five primary design principles for cartography (Buckley, A. 2012). ²⁹	Advice public usability and instant recognition within symbology of maps.

²³ See <https://webtoolkit.govt.nz/standards/web-usability-standard-1-2/>

²⁴ See www.nzlii.org/nz/legis/num_reg/tacpr1960402/

²⁵ Department of Conservation. 2014. *Mapping the services and benefits of indigenous biodiversity and historic heritage in New Zealand*. Wellington: Department of Conservation.

²⁶ Statistics New Zealand. 2014. *Design Principles for Maps Using New Zealand's Statistical Data*. Wellington: Statistics New Zealand.

²⁷ See www.icsm.gov.au/mapping/marginalia.html

²⁸ MacEachren A. 2004. *How Maps Work Visual Representation and Design*. New York: Guilford.

²⁹ Buckley A. 2012. *Five Primary Design Principles for Cartography*. ESRI. Retrieved from www.esri.com/news/arcuser/0112/make-maps-people-want-to-look-at.html

6 Research and practice that informed the development of these standards

6.1 Recent practice considerations

Current practice has been considered in respect of this topic, with a review undertaken of all councils' plans and policies and where they are at in the progression from paper, to PDF, to ePlans. Even ePlans have evolved from the early adopters such as Christchurch and Auckland Councils. Other councils have since upgraded to ePlans and new functionality requirements were identified and provided. ePlans such as those developed by Waikato District Council, Hurunui District Council, Wellington City, Thames–Coromandel, and Marlborough District Council are continuing to evolve. The Tāupo District Council ePlan provides a good example of what level 5 of the Electronic and Accessibility scale looks like.

The New Plymouth District Council has continued to advance the functionality of ePlans. Their ePlan has some additional features, which demonstrate the focus on how to display parts of the plan to provide a positive user experience (such as a traffic light colour coding system for plan rules).³⁰

6.2 Internal and external research

Table 3 summarises the extent of consultation/research carried out over a two-and-a-half-year period that is specific to this standard.

Of note is the information and communications technology (ICT) and GIS group of professionals³¹ that the Ministry for the Environment sought particular support from during 2017 as it was developing the planning standard for mapping and electronic accessibility.

Table 3: Internal and external research

Who	What	When	Relevant issues raised
Australian Planning system (New South Wales and Victoria) teleconferences and study visit.	Establishment of ePlanning systems Implementation Functionality Mapping	2015 and 2016	<ul style="list-style-type: none"> rationale for state government provided software the benefits of standardised ePlanning such as cartography.
Think tank	Initial scoping of the standards	September 2015 onwards	Various inputs and suggestions around maps and electronic functionality.
The Ministry ePlan workshops, held at Waikato, Canterbury, West coast, and Wairapapa	Exploring experiences with ePlans, scoping potential standards	Mid 2016	<ul style="list-style-type: none"> potential functionality requirements implementation challenges.
Meetings with ePlan software providers (Isovist, TechOne, TwentyFour)	Functionality of interactive ePlans	Mid 2016, ongoing	<ul style="list-style-type: none"> updates on council-requested functionality implementation of ePlans integration with online consenting.
Practitioners' drafting group	Feedback on draft	September	Refinements to many aspects of draft

³⁰ See www.mfe.govt.nz/rma/rma-processes-and-how-get-involved/council-plans-and-where-find-them

³¹ ICT/GIS group – Staff from Auckland Council, New Plymouth District Council, LINZ, DIA

Who	What	When	Relevant issues raised
	standard	2017	standard, such as symbology.
Pilot councils, group of New Zealand councils. Included focused work alongside Tāupo and New Plymouth	Feedback on draft standards	August 2017 to January 2018	<ul style="list-style-type: none"> • various refinements of symbology • importance of plotting geospatial elements which in turn allow practical reuse.
LINZ geospatial office and GIS professionals working in Planning as part of a Ministry ICT/GIS group	Feedback on draft standards	Throughout 2017	<ul style="list-style-type: none"> • GIS professionals' input • importance of plotting features to feed to open data requirements • link to wider initiatives such as Intergrated Property Services.
Māori Advisory Group	Feedback on draft standard	September 2017	Input on mapping conventions of Māori aspects of the plan and requested symbology.
Industry groups	Feedback on discussion document and draft standard.	May to December 2017	ePlan and mapping functionality.
New Plymouth District Council and New Zealand Transport Authority (NZTA) GIS technician	Testing and feedback on mapping standards	February 2018	<ul style="list-style-type: none"> • colour palette functionality issues • symbol sizing • special purpose zone patterns.
Transpower	Suggested mapping symbols to enable national direction	February 2018	Enabling National Policy Statement on Electricity Transmission requirements for plan mapping with symbology.
Environment Court	Feedback on use of ePlans as a regular user of plans.	March 2018	<p>Environment Court is strongly supportive of move to ePlans to enhance user experiences.</p> <p>Courts need assurance that the ePlan represents the plan as approved by the Council.</p> <p>Courts require that a 'clean' copy of approved plan can be produced on request.</p> <p>Legal status of ePlans.</p>

7 Summary of the issues analysis

Based on the analysis and consultation outlined above, the following issues have been identified:

Table 4: Summary of issues analysis

Issue	Comment	Response
Issue 1: Internet connectivity across New Zealand	<ul style="list-style-type: none"> the accessibility of Resource Management Act 1991 (RMA) plans electronically requires internet access concerns that this would be a factor for the move from PDF to ePlans particularly in remote areas. 	<ul style="list-style-type: none"> the separation of the plan into multiple PDF documents requires more data than an ePlan when downloading information from a website internet access has moved away from the need for fixed line access to via mobile devices various government supported initiatives to improve access to broadband infrastructure have improved access.
Issue 2: Implementation and transition impacts	<ul style="list-style-type: none"> upfront software costs FTE capability to implement and maintain ePlan timing of proposed implementation 12-month requirements to improve quality of PDFs. 	<ul style="list-style-type: none"> acknowledge the transition costs will be more significant for some authorities than others. Government is currently investigating support options to recognise this.
Issue 3: Legal status of ePlans	<ul style="list-style-type: none"> Concerns that ePlans not considered the legal version of the ePlan if a common seal is not affixed. 	<ul style="list-style-type: none"> it is possible for councils to demonstrate to the Court the legal status of an ePlan. Standard must provide specific requirements of ePlans to ensure legal status.
Issue 4: Clarity needed on specific mapping standards	<ul style="list-style-type: none"> general widespread support for standardised approach to mapping some concerns regarding GIS capability and capacity in local government rural colours come under particular scrutiny standardise scales and grids on maps. 	<ul style="list-style-type: none"> mapping standards have been tested and are effective on basic levels of GIS software colour palette has been amended including rural colour schemes planning standards are not prescribing set scales or grids in the standards.
Issue 5: Standardising visual representation for other spatial planning tools	<p>Concerns it would be difficult to accommodate some councils' requirements for a large amount of overlays and precincts, in response to the current zone framework removing unique district-specific zones.</p>	<ul style="list-style-type: none"> agreed it is difficult to pre-empt and prescribe all map layers for all spatial planning tools. Commonly used mapping symbols have been prescribed.
Issue 6: Transition from paper to online map, data accuracy concerns	<p>Councils required to check and potentially redo data collection to ensure data accuracy at a range of scales. Cost and time to do this.</p>	<ul style="list-style-type: none"> acknowledge the transition costs for councils; however, in respect of data it is necessary for councils to have quality data sets to support good resource management the transition to ePlans does not change that requirement, but accept it makes it more usable if this is not an issue for councils it is expected that councils ensure the necessary quality of data for maps.

8 Amendments to the standards as a result of consultation

This standard has evolved as a result of consultation and also testing of the proposed zone colours and symbology. Key changes are summarised in table 5.

Table 5: Amendments to Electronic Functionality and Accessibility and Mapping as a result of consultation

Matter amended	Why
Greater clarity of functionality requested	<p>Levels 5 and 6 of the Electronic and Accessibility Scale were amended to provide greater clarity on the functionality expected at these levels, as this is where most councils will be moving to. Councils need to understand exactly what is required to meet the standard. This also provides an easier checklist for the Ministry for the Environment to monitor progress of councils towards achieving the standard.</p> <p>One level 6 requirement (online submissions) was moved back to level 5. The ability to make submissions to plans online is a level of functionality some councils are already supporting, though this is usually a separate online submissions tools from the ePlan. The requirement to have a submissions tool linked more directly to an ePlan will significantly improve the user experience of making submissions and reduce councils' administrative requirements in managing submission processes.</p> <p>In addition, some supplementary guidance material was prepared that collates examples of the functionality that submitters considered was fundamental to a fully, integrated ePlan. This guidance document does not form part of the standard, as the level of detail set out is regarded as too specific, and so susceptible to becoming out of date.</p>
New requirement added	<p>A new requirement to provide links between district and regional plans was added for activities that may require consent under the other plan. Having a note (with associated hyperlink to relevant plan chapter) that makes plan users aware of the potential need to obtain consent for the same activity from another resource management plan puts the needs of the plan user first, and ensures compliance with all relevant plans in a given area.</p>
Mapping changes: zone colours	<p>New zones were added to the zone framework, so additional zone colours were selected to support this.</p> <p>The saturation levels of the colours originally selected were found to be too high during the testing phase. Some zone colours were indistinguishable from each other (ie, not enough contrast between similar zones). The colour palette was amended and similar colours were tested against each other to ensure the distinction was recognisable on maps.</p>
Symbology	<p>Symbols developed for special purpose zones were removed as it was found to be difficult to coherently represent pattern in various polygon shapes during testing. Also, while the concept was innovative, ePlans negate the need for such symbols as one click on the property will quickly clarify the main purpose of the special purpose zone.</p> <p>White background around symbols added to increase visibility with multiple overlays and when in aerial mode.</p> <p>The symbol for sites of significance to Māori was removed due to consultation with local authorities that believed the symbol is best decided on in consultation with local iwi.</p>

Electronic accessibility and functionality standard discussed in this evaluation report has become draft planning standard F-1.

Mapping standard discussed in this evaluation report has become draft planning standard F-2.

9 Quantification of benefits and costs

The Ministry for the Environment commissioned economists to study the initial cost-benefit analysis of all potential standards as set out on the discussion documents released in May 2017. An updated economic evaluation was completed in February 2018³², to reflect the proposed standards in their current form. The economic evaluation is available on the Ministry for the Environment [website](#).

The revised report was based on a set of proposals being developed by the Ministry as a result of the consultation feedback. In this report, the economic accessibility and functionality proposals were grouped combined with the mapping standard proposals, reflecting their interconnected nature. Their report showed that electronic functionality proposal has a benefit-cost ratio (BCR) of 1.74. The findings included the comment on page 8 that:

Electronic functionality... has the greatest total benefits – largely through user time-savings from the information accessibility provided by an ePlan – but it also has the highest associated costs.

Of relevance to the implementation timeframes, at page 26 the report noted that:

The electronic functionality standard shows a marginal increase in BCR from three to ten years. Although the benefits take longer to be realised, the costs reduce by accounting for councils that otherwise intend to upgrade to ePlans.

It is expected that the majority of councils will need to procure an ePlan product, along with the expertise of an ePlan software provider. This makes this standard unique compared to other aspects of the standards that can, in theory, be adopted with existing council expertise. It is noted that some councils have developed their own ePlan platform. These councils typically had existing software they could re-purpose, in-house capability to do the work, other financial resources, and a champion who was able to prioritise this work.

The specific cost of an ePlan is generally tailored, reflecting the size and complexity of the plan. The economic analysis used an average figure of \$70,000, based on their interviews with councils and software providers. The cost is also influenced by whether the plan will be hosted by the council or externally, and whether additional technical support is required. Annual licensing, maintenance and support fees are also typically required, and in the economic analysis, this contributed to the long-term administration costs of councils complying with the planning standards.

³² Castalia. 2018. *Economic Evaluation of the Introduction of the National Planning Standards*. Prepared for the Ministry for the Environment. Wellington: Ministry for the Environment.

10 Options assessed

For each potential approach an evaluation has been undertaken relating to the costs, benefits and the certainty and sufficiency of information in order to determine the effectiveness and efficiency of the approach, and whether it is the most appropriate way to achieve the relevant objective(s). These evaluations are outlined below.

Table 6 provides an overview of the main options considered for both of the proposed standards.

Table 6: Overview of options

	Option 1	Option 2	Option 3
Electronic assessment and functionality standard	Modest requirement for improvements in accessibility, ie, reformatting existing PDF plans and minor website changes	A full requirement for open data. Interactive ePlan with embedded GIS system.	Government-procured, centralised national platform containing all plans, allowing one central portal for all plan users.
	Option 1	Option 2	
Mapping standard	Do nothing	Mandatory use of standardised colour palette for zone framework, symbology for commonly used map features. Standardised symbology for commonly used overlays.	

10.1 Scale and significance

As noted in Part A of this evaluation report, section 32(1)(c) of the Resource Management Act 1991 (RMA) states that a section 32 evaluation must contain a level of detail that corresponds to the scale and significance of the effects of the proposal. It is considered that the National Planning Standards (planning standards, or standards) as a package are of a large scale and of high significance. However, each individual standard will be of varying scale and significance.

These electronic accessibility standards are considered to be of large scale and high significance because they will lead to changes in the way plans are displayed online. This will require ongoing resources and costs for all councils across the country. This is reflected in the level of analysis contained in the following table.

10.2 Costs assessed

As these standards will not directly affect material changes in environmental outcomes the costs and benefits considered in the table below are not categorised as environmental, economic, social and cultural costs and benefits as often occurs in RMA plan section 32 assessments.

Although the standards will not have a direct effect on environmental outcomes, they will create opportunity benefits for individual planning process and the planning system as a whole, by enabling more resources to be directed to managing environmental effects instead of administrative matters.

Table 7: Planning standards objectives

Overview	
<p>Objective 1: An appropriate level of standardisation is achieved for matters that don't need local variation:</p> <ul style="list-style-type: none"> • avoid duplication of effort • ensure that only matters that do not need local input are included in the standard • standardise how national direction is represented and implemented in plans • ensure that the effort put in by councils to implement the standards is commensurate with the level of national plan standardisation achieved. 	<p>Objective 2: Improve the accessibility and usability of plans:</p> <ul style="list-style-type: none"> • plans are easier to access • plans are easier to understand • plans are easier to use • electronic functionality is used to improve accessibility wherever possible.
<p>Objective 3: Improve plan making baseline performance:</p> <ul style="list-style-type: none"> • be created under shorter timeframes • be less resource intensive to produce • focus more on local outcomes • assist in good practice being adopted in a timely manner. 	<p>Objective 4: Ensure that the implementation of the standards is practical and feasible:</p> <ul style="list-style-type: none"> • the level of resource intensity needed to implement the standards • the capacity and capability of councils to implement the standards • the efficiency of central government having ownership, associated ongoing responsibility and maintenance costs for this level of standard.

Electronic accessibility and functionality option 1: Modest improvements to plan accessibility and functionality

	Costs	Benefits
<p>Twelve baseline standards that all councils must apply within 12 months.</p> <p>These relate to plan accessibility on council websites, quality of functionality associated with the PDF or ePlan to assist plan user searches of the plan, cross referencing in the plan and to other relevant plans and standards relating to data.</p>	<p>Councils</p> <ul style="list-style-type: none"> minimal, as all councils have some form of their plan located on their website councils will need to make changes to the council website to better locate and highlight location of the Resource Management Act 1991 (RMA) plan, but this is not a significant cost some councils have suggested inserting hyperlinks in the PDF plan where these don't currently exist, will require additional resources. The complexity of the plan will influence how much time this will take, but it is still considered achievable within 12 months. <p>Ministry for the Environment, central government</p> <p>Resourcing has been one full-time equivalent (FTE) over three years to research current approaches to online plans and develop the standard.</p> <p>Plan users</p> <p>No costs</p> <p>General public</p> <p>No costs (though ratepayers ultimately fund council costs).</p>	<p>Councils</p> <p>Improvements to plan functionality for the two councils that currently have poor quality PDF plans.</p> <p>Ministry for the Environment, central government/plan users/ general public</p> <ul style="list-style-type: none"> improvements to plan functionality for the two councils that currently have poor quality PDF plans moderate improvements in accessibility to plans as a result of: <ul style="list-style-type: none"> requirements for more direct links from council website home pages to RMA plans some improvements to plan user navigation of plans and understanding of the planning system due to more effective cross-referencing in the plan and to other provisions in relevant plans within a given geographic area saving people time in locating plans.
Effectiveness and efficiency	<p>Effectiveness</p> <p>The effectiveness of this option is limited. It sets out baseline requirements to improve the usability and functionality, particularly for those few plans that do not currently represent best practice for how plans should be displayed on websites or the level of functionality needed for PDF plans. On its own, the option does not make significant improvements to the ability for plan users to interrogate plans in multiple ways depending on their needs.</p>	<p>Efficiency</p> <p>The changes required should be able to be achieved with existing council resources and capability. Some elements of the baseline requirements will require more time to implement than others (ie, cross referencing with plans and to other plans), but in lieu of having an ePlan available, the time invested by councils to improve the accessibility of their PDF plan is considered necessary to meet the objectives.</p> <p>There is a risk that councils who are currently transitioning to an ePlan (or those about to embark on this process), will view some of the requirements</p>

		<p>to improve the quality of the current PDF plan not be an efficient use of resources. The efficiency of this option will depend on how long the transition to an ePlan is expected to take.</p> <p>The changes proposed in this option are designed to address both short- and long-term needs to improve plan accessibility and functionality. Some of the baseline requirements are required regardless of whether the plan is delivered as a PDF or an ePlan.</p>
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Overall evaluation	<p>This option represents partial fulfilment of Objective 2, but this option is not considered to be the most appropriate approach.</p> <ul style="list-style-type: none"> • It is appropriate as a means to raise the bar of the lowest quality plans in terms of their accessibility and functionality and to improve other plan features such as cross referencing. • However, does not take advantage of technology advances to significantly improve the way plan users can interact with plans, navigate through them or easily find the relevant information they need to make informed decisions. PDF plans are not responsive to plan users key needs, ie, to answer the question “Do I need resource consent?” • Regarding Objective 1, setting standardised requirements for the presentation of plans is not a matter that requires local variation and therefore can be reasonably standardised at the national level. While this option makes some improvements in accessibility and functionality of plans, there are other ePlanning tools that would meet objective 1 to a greater extent. • Will not make a significant impact on baseline planning performance.
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Electronic accessibility and functionality standard option 2: Full ePlan option as well as option 1

	Costs	Benefits
Adoption of Option 1 above, and within five years (or seven years for specifically identified councils), all local authorities to achieve Level 5 on Electronic and Accessibility Scale (ie, requires transition to an ePlan)	<p>Councils</p> <ul style="list-style-type: none"> • in the economic analysis the cost to upgrade to ePlan was averaged at \$70, 000 per council but this varies based on complexity of plan and hosting of website; in 2017, a Ministry for the Environment survey suggested 53 councils needed to upgrade to an ePlan, 11 councils would require a moderate upgrade, and 14 councils would not need to upgrade to meet the proposed standard (cost estimated as \$2.91million net present value (NPV) for all councils who don’t have an ePlan) • annual ePlan support/maintenance is estimated to cost \$23,000 (NPV over 30 years). 	<p>Councils</p> <ul style="list-style-type: none"> • reduction in council staff time answering basic plan queries (assumed 5% reduction in economic analysis); anecdotal evidence from New Zealand councils who have transitioned to an ePlan concurs that this has resulted in fewer general plan enquires • ePlan will give a more effective document management system for maintaining historical, current and proposed changes to the plan in one easily accessible form by multiple authors. <p>Ministry for the Environment, central government</p> <ul style="list-style-type: none"> • reduced monitoring and research costs once all plans in an ePlan

	<ul style="list-style-type: none"> • opportunity cost associated with the estimated single FTE required to make changes to current plans to meet the proposed baseline requirements of the standard and also to manage the transition to ePlan process • training costs for staff to develop new skills in using the ePlan. <p>Ministry for the Environment, central government</p> <p>One FTE over three years to research ePlanning, develop and test standards and support implementation programme.</p> <p>Plan users</p> <p>No costs</p> <p>General public</p> <p>No costs (though ratepayers ultimately fund council costs).</p> <p>Other</p> <p>Anticipate ePlan providers will absorb cost of making sure their products are compliant with the National Planning Standards to remain competitive.</p>	<ul style="list-style-type: none"> • person time savings in comparing and contrasting planning provisions on particular topics (eg, effectiveness of national instruments) <p>Plan users/general public</p> <ul style="list-style-type: none"> • improved accessibility, ease of use and 24/7 access to plan information regardless of physical location • less time spent querying the plan due to improved search functionality, including property-specific searches, if the plan is linked to the GIS map query viewer; economic analysis³³ attributes significant proportion of person time savings to use of ePlans • greater transparency of planning processes (and accountability of decision-makers) as a result of improved public access to information and decision-making processes • greater access to planning information online, combined with open source data, can support and enable different forms of community engagement on community issues • ePlan technology paired with other software may make plans more accessible for people with visual disabilities in particular.
Effectiveness and efficiency	<p>Effectiveness</p> <p>ePlans already in use provide strong evidence of significant improvements that this form of electronic plan delivery has had in improving the interaction of people with plans. Strong support for ePlans has come from regular users of plans. This approach was recommended in the research of lay plan user experiences as the most effective way to improve plan accessibility. Accordingly, this option best meets Objective 2.</p> <p>At present ePlans are limited by the resources available to</p>	<p>Efficiency</p> <p>The economic analysis clearly notes the positive cost-benefit analysis for the use of ePlans, but also recognises that while the benefits largely fall on the plan users, the costs fall directly on local authorities.</p> <p>As 80% of plans are still in a PDF format, this option will affect many councils. The economic analysis³⁴ suggested the initial transition costs would be \$3.13 million for those councils that do not already have an ePlan (though this does not also include the required FTE support).</p> <p>The efficiency of having all councils transition individually to an ePlan has</p>

³³ Castalia. 2018. *Economic Evaluation of the Introduction of the National Planning Standards*. Prepared for the Ministry for the Environment. Wellington: Ministry for the Environment.

³⁴ Castalia. 2018. *Economic Evaluation of the Introduction of the National Planning Standards*. Prepared for the Ministry for the Environment. Wellington: Ministry for the Environment.

	<p>develop the functionality and quality of spatial data (in a GIS) linked to the plan. There is considerable scope to keep advancing the functionality to also support other aspects of the planning process, such as online consent applications, tracking of planning processes.</p> <p>With this option, councils will have complete control over the transition process. Of significance is that ePlans need to connect into existing council IT systems (such as GIS software, online submission tools) and have the scope in future to support online consenting and fee payments.</p> <p>There is a need to manage expectations from the community that all planning-related functions will become available online immediately. ePlans will be improved incrementally. Some councils' current state of ePlanning may be further advanced than the minimum set by central government.</p> <p>Regarding Objective 1, many ePlans currently look different; reflecting the variations in plan structure and format of the original plans that were put into an ePlan format. ePlans of the future will increasingly look more similar due to the requirement of plans to adopt a standardised plan structure and format, and because there are only two or three software providers that are active in this field. The look and feel of plans will become more standardised, but this option will still provide scope for individual councils to tailor their plan for their community's needs. In this way, this option best meets the intentions of Objective 2.</p> <p>In respect of Objective 4, this option recognises that 20% of councils have already transitioned to an ePlan or are in the final stages of doing so. There are others who have recently begun the process. This option effectively targets those councils who have not yet taken steps to keep improving the quality of planning services to their community. In doing so, it will result in more equitable access to planning information across the country.</p>	<p>been raised as an issue, ie, the efficiency of individual procurement processes, as well as the individual process of updating their plans. This option has the advantage of allowing councils to make the transition to an ePlan at a time that is the most efficient for councils, which appears to be at the time the plan is comprehensively reviewed. This option supports a staggered approach, allowing councils to work with an ePlan provider and build in any local requirements for the plan. Developing an ePlan within the council provides much greater autonomy over the process, timing and cost.</p> <p>While there may be some efficiencies that can be created with councils collaborating together to jointly procure ePlans, there is still a need for councils to work individually with any ePlan platform to transition their plan to it. The majority of the costs associated with an ePlan is not the software itself, but the time of the providers to work with the council and transition the plan to the new format.</p> <p>As with option 1, some councils already transitioning to an ePlan may consider the requirement to also update their existing PDF plans (particularly the requirement to provide links to provisions within the document) will not be an efficient use of their resources. In practice, this will depend on how long the transition to an ePlan is expected to take. There are some immediate changes councils can make to the accessibility and functionality of their plans, regardless of what format they are presented in.</p>
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<p>Overall evaluation</p>	<ul style="list-style-type: none"> • Option 2 strongly meets the requirements of Objective 2 – improving the accessibility of plans. It does have the highest assessed net benefit predominantly from user time-savings from the information accessibility provided by an ePlan. • Objective 1 is also met, as local variation is still possible and councils have control of their own ePlan. • Following the transition to an ePlan, Objective 3 will also be met. • The efficiency of this option against Objective 4 (specifically the capacity and capability of councils to implement an ePlan) can be addressed with an implementation support programme that recognises the cost impacts on councils least able to afford it. Some councils have already recognised the benefits of having an ePlan for their plan users (and internal use). Other councils (particularly those with a very low rating base and typically low levels of resource consent applications) do not consider the benefits to their ratepayers outweigh the costs.
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Electronic and accessibility standard Option 3: Central portal for all ePlans

<p>Centralised online custom-built system owned and maintained by central government supporting all council ePlans to a level 5 (while providing scope for future modifications). Plan data could either be controlled by central government, or councils have individual log-ins to the system and continue to manage their own data.</p> <p>Users access relevant plans via a central portal. Mandatory use by all councils.</p>	<p>Costs</p> <p>Councils</p> <ul style="list-style-type: none"> • for those with ePlans or other plan management software, cost of abandoning pre-existing ICT systems, cancelling existing software licensing and maintenance contracts with vendors; new costs associated with starting the process again in a centralised system; costs can be mitigated by longer lead-in time to allow contracts to realise their agreed value and expire • having all planning information on one platform may impact on the perceived ‘ownership’ of the plan by local authorities • potential for significant liaison with the central provider to share and potentially reformat other council data (ie, spatial data displayed on GIS). <p>Ministry for the Environment, central government</p> <ul style="list-style-type: none"> • substantive costs of developing, maintaining and administering the centralised system; equivalent centralised systems in other jurisdictions have been multi-million dollar projects (L Moncrieff, Ministry for the Environment, pers. comm., 9 June 2016) • represents significant role shift for the Ministry from a policy agency to one that also has a focus on operational activities; the Ministry has limited capability and no capacity to fund this new role within 	<p>Benefits</p> <p>In addition to the benefits set out in option 2:</p> <p>Councils</p> <p>Creates even greater opportunities to reduce duplication of effort on certain topics.</p> <p>Ministry for the Environment, central government</p> <p>Easier to compare and contrast planning provisions and for best practice to be identified and shared.</p> <p>Plan users/general public</p> <ul style="list-style-type: none"> • easier to compare and contrast planning provisions • in time, search queries may become smarter enabling queries across all plans in order to find potential locations to carry out particular activities.
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	<p>existing baseline</p> <ul style="list-style-type: none"> role change and financial responsibility for the system will lead to greater control and influence generally over production of plans; this may create a tension with the current RMA philosophy, which devolves plan-making responsibility to local authorities. <p>Plan users</p> <p>No cost</p> <p>General public</p> <p>No direct cost (but funded by taxpayers)</p>	
<p>Effectiveness and efficiency</p>	<p>Effectiveness</p> <p>As with option 2, this option will result in all plans being transitioned to an online, fully interactive website.</p> <p>This option is likely to be the most effective at achieving Objective 2 because all plans will be centrally located and the public will have comprehensive access to all plans.</p> <p>A centralised system has the potential to combine datasets from all local authorities and support plan queries that go across multiple plans. However, this will also impose significant costs on councils to not only transition their plan to a centralised system but make sure the quality of the data underlying the plan (particularly spatial data) is good enough to support nationwide comparisons and plan queries.</p> <p>The proposed option has the capability of being highly effective in some aspects of Objective 1 and 3 by ensuring that all plans are standardised to a high degree, but it also has some limitations. In particular, it may reduce the ability for a local flavour to plans and therefore a sense of ownership of the plan by the local community. If the RMA had not completely devolved plan-making to councils and plans were instead approved by the government (ie, similar to how plans are developed and approved in the various Australian states), then a centralised system could better meet Objectives 1 and 3. However, this is where New Zealand is different from its Australian counterparts and there is a risk that a centralised system could undermine the sense of ownership by</p>	<p>Efficiency</p> <p>There likely to be efficiency gains for this option in terms of one procurement process, but these could be offset by the extensive coordination required between central and local government during the actual transition process.</p> <p>Central government will need to significantly increase resourcing dedicated to the project to ensure the successful completion of a complex IT project. The time, costs and maintenance of the option are considered to be extensive based on other jurisdictions that have undergone a similar process (\$30 million in NSW and Victoria) (L Moncrieff, Ministry for the Environment, pers. comm., 9 June 2016). This is still considerably greater than the \$3.13 million (plus FTE costs) that is the assumed cost for local authorities in Option 2.</p> <p>As with Option 2, there are new costs for the planning system, however this option could result in councils that have already invested in their own ePlan having to put in further FTE support in order to move to a centralised system, creating inefficiencies for those councils that were proactive in improving the quality of their planning services.</p>

	<p>communities of their plans.</p> <p>A centralised system could be too restrictive to help support future advances in ePlanning that will rely on access to other council software, such as submission tools, customer databases, consent processing systems, and payment tools.</p> <p>While this option appears to shift the financial burden of developing an ePlan to central government, this isn't entirely true. Councils would still be required to provide FTE support through that process, and continue to have expertise in the council to support their plan via a centralised system.</p> <p>There will be high development costs and more time associated with a centralised system, in part due to the current variation in plans.</p>	
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Overall evaluation	<p>While this option is the most effective in achieving Objective 2 (accessibility and usability of plans), there are notable limitations on how effective it is against particular elements of Objectives 1, 3 and 4. One of the most important issues is whether Objective 1 is met by a centralised system for ePlans. It is considered that this option is likely to take away too much local decision-making, autonomy and control.</p> <p>Objective 3 may also not be met as there may be delays if multiple plans need to be updated at once. This may result in longer implementation timeframes and delays to good practice being implemented.</p> <p>The feasibility of this option is reduced given central government's lack of capacity and capability in this area at present, and the fact that this option would create a significant new role for central government. Objective 4 is not well met by this option.</p> <p>The most compelling reason why this option is not favoured is due to the efficiency of the option. This option is expected to cost significantly more than Option 2. The risks associated with a nationwide IT project of this nature, at a time when plans are still so varied, are very high.</p>
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Mapping standard Option 1: Do nothing

	Costs	Benefits
Do nothing, ie, current situation regarding variation in approaches to visual representation of spatial data in plans	<p>Councils</p> <p>Continued costs to all councils determining zoning mapping feature and overlay designs.</p> <p>Ministry for the Environment, central government</p> <p>No cost</p>	<p>Councils</p> <p>Have total control of how maps are displayed.</p> <p>Ministry for the Environment, central government</p> <p>No development or maintenance costs would be incurred. Resources reprioritised elsewhere.</p>

would remain.	<p>Plan users</p> <p>Inefficiencies and current costs continue for users of multiple plans determining how locally specific mapping features interact with one another. Often borne in form of consultant fees due to time spent interrogating plan.</p> <p>General public</p> <p>Minimal costs to general public as they are likely to interact with only one plan.</p>	<p>Plan users</p> <p>Plan users don't have to learn what the new mapping features represent.</p> <p>General public</p> <p>Still have input into how maps are displayed.</p>
Effectiveness and efficiency	<p>Effectiveness</p> <p>Missed opportunity to create meaningful standardisation on an aspect of plans that plan users tend to interact with first (ie, the planning maps).</p>	<p>Efficiency</p> <p>Changing the zone framework without introducing complementary mapping standards would lead to additional costs and time for councils to develop zone colours for the new zone framework. Would create unnecessary duplication and variation would continue.</p>
Overall evaluation	<p>This option is considered to be the least appropriate approach. It does not achieve any of the planning standards objectives because it:</p> <ul style="list-style-type: none"> • would not avoid duplication of effort and therefore help to reduce resource requirements • would not make plans easier to understand • inhibits focus on local outcomes. 	

Mapping standard Option 2: Mandatory standardised approach to mapping

	Costs	Benefits
<p>Mandatory use of standardised colour palette for zone framework, symbology for commonly used map features.</p> <p>Principles adopted for how to approach mapping of other key features not set out in the mapping standard.</p>	<p>Councils</p> <p>Modifications to computer systems/GIS/ePlan as a result of zones changing.</p> <p>Ministry for the Environment, central government</p> <ul style="list-style-type: none"> • research costs to understand current status quo and extent of variation • development costs producing, consulting and testing the mapping standards • possible costs of legal challenge or supporting court on use of 	<p>Councils</p> <ul style="list-style-type: none"> • time and resource savings determining what colours and symbols they should use in their plan • more aligned plans, creating opportunities to share resources (including GIS platforms) between councils more easily • easier to develop better design principles in creating additional symbology after incorporating the new zone frameworks colour palette. <p>Ministry for the Environment, central government</p> <p>Easier to compare plans</p>

	<p>zone colours.</p> <p>Plan users Requiring authorities and other agencies that access designation powers will be expected to update/digitise designations to feed into council updates of GIS based planning maps.</p> <p>General public</p> <ul style="list-style-type: none"> • one-off cost of people time to become familiar with the new standardised colours and symbols • less ability to influence the names and types of zones included in the local plan. 	<p>Plan users and general public</p> <p>Improved user experience due to common mapping features.</p>
Effectiveness and efficiency	<p>Effectiveness</p> <p>This option allows for better consistency throughout all plans but still allows for local variation for specific overlays and mapping features that certain councils consider important.</p>	<p>Efficiency</p> <p>Implementation of the mapping standards is at little cost, as even basic GIS software is able to incorporate the specified requirements with little additional cost or time. For those map features that are not covered by the Mapping standards, councils will need to check how the work in relation to the proposed standards and make some adjustments as necessary.</p>
Overall evaluation	<p>This option is considered to be the most appropriate approach to achieve the relevant objectives because it:</p> <ul style="list-style-type: none"> • avoids duplication of effort • only standardises commonly used map features • plans will be easier to understand • assists in creating for shorter timeframes in developing maps • requires less resource to develop maps • allows for more focus on local outcomes • level of resource intensity needed to implement the standards is minor • councils and central government have the capacity and capability to implement the standards. 	

11 Risk of acting/not acting if there is uncertain or insufficient information about the subject matter of the standard

An assessment of the risks of acting or not acting if there is uncertainty or insufficient information is usually undertaken for each reasonably practicable option in a regular section 32 report. However, as established in Part 1 of this evaluation report, the National Planning Standards (planning standards, standards) require evaluation following a slightly different methodology. As the options outlined above are essentially variations of one another, the risks of acting or not acting if there is uncertainty or insufficient information are considered to be the same. Therefore, they are addressed collectively here.

It is considered that there is certain and sufficient information on which to base the proposed standards as:

- a survey of plan accessibility and functionality of all councils was carried out in January 2017 (last updated February 2018), along with workshops and interviews; this provides good evidence base on how likely Councils are able to comply with the proposed options
- an extensive amount of research has been undertaken in the development of the National Planning Standards, including specific research into the use of ePlans, mapping symbols and the similarities and differences in the range of zone colours in district plans
- the proposed standards are the result of extensive consultation and revision of an initial option identified by research as being most suitable; multiple channels were used to obtain feedback from many different stakeholders including online, email, at workshops and one-on-one meetings to ensure the development process was inclusive, capturing as many viewpoints as possible
- the Electronic Functionality and Mapping Standard returned a benefit-cost ratio (BCR) of 1.74
- Resource Management Act 1991 requires this as part of first set.

There are some risks associated with the requirement to transition to ePlans. For option 2, the risks relate to the varied capability and capacity of councils to transition to an ePlan. Councils more likely to be successful in transitioning to an ePlan typically have someone who champions the benefits of an ePlan and there is broader organisational awareness of the need to move towards greater use of technology to improve a wide range of council services. Even if financial support is made available to transition to an ePlan, councils will need to ensure that the organisational context is supportive of the transition. The risk can be mitigated by clearly signalled transition timeframes and aligning the development of an ePlan with a larger review of the plan and implementation support.

There may also be constraints in the software supply marketplace if vendors have to support multiple requests for an ePlan within a short period (ie, 12 months under the default timeframes of the Act for mandatory standards). This risk can be mitigated by a longer implementation period, which supports councils to make the transition in a staged manner, allowing vendors to upscale their operations accordingly.

However, as noted in the discussion on risks, some councils already transitioning to an ePlan may consider the requirement to update their existing PDF plans (particularly the requirement to provide links to provisions within the document) will not be an efficient use of their resources. In practice, this will depend on how long the transition to an ePlan is expected to take. The changes are designed to improve 'baseline' accessibility and functionality standards and impacts are contained to a few councils.

12 Conclusion/summary of rationale for the preferred proposals

This evaluation has been undertaken in accordance with section 32 of the Resource Management Act 1991 (RMA) in order to identify the need, benefits and costs and the appropriateness of the proposal having regard to its effectiveness and efficiency relative to other means in achieving the purpose of the RMA. The evaluation demonstrates that this proposal is the most appropriate option for the following reasons:

- These two standards provide substantive benefit by making plans more deeply aligned and easier to use.
 - Electronic functionality and accessibility across all plans have a substantive benefit for improving plan usability.
 - Developing plans to a higher level ePlan with the Electronic functionality and accessibility standard will ensure improved navigation of locating provisions and related links.
- **Electronic functionality and accessibility standards are practical and feasible**
 - Economic evaluation determined that the benefits are greater than the costs required for developing and maintaining an ePlan.
- **Mapping standards help reduce unnecessary complexity in plans**
 - A national standard for zone colours and commonly used symbols reduces the requirements for plan users interpreting mapping features.
 - A prescribed mapping standard removes unnecessary local variation in plans.
- **Mapping standards improve plan-making baseline performance**
 - Reduces resource and timeframes allowing councils to focus more on local outcomes.
 - Local input is not required for the standards.
 - Implementation resources of the standards for councils is minor.