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FEEDBACK::

Digitally Visualised Survey Plans (DVSP)

To: Anselm Haanen
Surveyor-General
Toitu Te Whenua/Land Information NZ
via Engagement@linz.govt.nz

This feedback is on behalf of the *Institute of Cadastral Surveying (ICS)*.

The ICS is an organisation whose membership is actively engaged in cadastral surveying.

This response represents the collective views of the ICS Executive Committee and its wider membership.

- It is based on the experience and wisdom of our members whom are passionate about the integrity and value of the survey system.
- It accounts for our understanding of the importance of historical survey information, and retaining reliable records of a cadastral survey at a point in time.
- It is also submitted in the best interests of landowners and the public - our clients.

We thank you for the opportunity to provide feedback on the **Digitally Visualised Survey Plan** proposal.

Summary Statements:

- *The ICS Membership have significant concerns about the proposal to implement DVSPs as a replacement for survey and title plans (CSD plan and Title diagram).*
- *The ICS respectfully request that LINZ provide more examples of the benefits of this proposal, and the projected costs for development and implementation, that justify its consideration.*
- *The ICS questions the mandate that LINZ has to implement such a major change to the NZ survey system - under the guise of user feedback that the current plan product is inadequate – when that feedback has not been sufficiently quantified or explained.*
- *The ICS Membership collectively value the importance of survey data that is depicted as a static plan – both historically and currently.*
- *The ICS suggests that LINZ must also consider the subsequent variety of uses of static plans by multiple agents during and after the approval process.*
- *The ICS – on behalf of our clients as landowners – objects to survey and titles fees being utilised for DVSP prototype development and implementation.*

Our feedback comments are grouped as follows:

1. **General Notes** – our initial considerations
2. **Prototype Issues and Additions** – our initial response to the viewer tool
3. **Summaries from ICS Questionnaires** – our consolidated Member responses
4. **Benefits and Challenges** – our summary of the key pros and cons
5. **Additional Comments** – our opinions on related factors
6. **ICS Member Comments** – some direct detailed comments from Members
7. **Summary**

Our key comments are stated in blue italics.

1.0 General Notes

1.1 Communication with Membership::

The ICS has communicated extensively with our membership on the DVSP proposal which we consider is an extremely significant development for the NZ Survey System.

- We devoted time at our 2024 Conference and Workshop in Dunedin on 10-August for an initial discussion on this topic;
- We have canvassed Member's early views via a series of general Survey Monkey questions mid-August;
- We reviewed the proposal documentation and viewed in the Webinar demonstration on 21-August;
- We sought further feedback from Members late October to gauge any subsequent and reflected views after a period of testing and workplace consideration;
- We have encouraged members to devote time and effort toward considering the pros and cons of the proposal, including testing the prototype with their datasets and considering how a plan viewer tool would work (or not) for them;
- We suggested Members share outputs with their client's, and professional and trade associates (lawyers; developers; contractors etc) to ascertain their tolerance for a digital replacement of survey plans; and
- We urged Members to provide their feedback directly to *engagement@linz* in addition to their feedback to the ICS (and S+SNZ if applicable).

Our membership responses represent an important cohort in the cadastral surveying sector. Members have a primary focus on cadastral surveying and regularly interact with Landonline and use other survey system products to deliver their services.

Therefore, this collective response should be afforded reasonable weighting and consideration.

1.2 Proposal Scope::

We noted that it is mainly *the proposal* that you are seeking feedback on at this time, rather than *the prototype*. However, we consider that the proposal and prototype viewer tool (albeit likely to be developed further) are not mutually exclusive, and so our feedback will cover both of these components.

We acknowledge that the prototype as presented is in its early stages of development and has been released so the survey industry can trial a new process and consider the potential of 'digital plans'.

However, we have provided initial feedback on the prototype to seed any subsequent (potential) development direction.

1.3 Key ICS Questions::

We posed some key initial questions that were put to *engagement@linz* to further clarify our understanding of the drivers for this change. The questions were:

1. *What was the catalyst or trigger for the concept to move to digitally visualised survey plans, and dispense with black & white CSD and title plans?*
2. *Who is the main driver(s) of this proposal? ie: Did the suggestion to move to DVSP come from the regulator (eg: TTW/LINZ) or the industry (eg: surveyors and lawyers)?*
3. *The reduction of effort and rework involved in manually drafting plans is stated as a reason for “going digital”. How was this ascertained, and did the reduction of effort account for a likely need to develop and produce alternate plan-type or digital outputs to satisfy client needs?*
4. *Is this proposed change a fait accompli – or is it possible that Toitu Te Whenua will abandon the development if the stakeholder push-back warrants it?*

The responses to these questions were provided and are summarised as follows:

1. The development of the tool came about because of:
 - user feedback that the current survey plan product does not meet growing expectations of land professionals, including that the plans are often difficult to interpret and use
 - that the plans are time consuming for surveyors to prepare, including repetition of work when reimporting a LandXML file into Landonline
 - the opportunity arising through the STEP modernising Landonline programme

We challenge the veracity of the “user feedback” (also see the additional commentary below in question 5).

Plans can be difficult to interpret and use if they are poorly prepared – the art of good plan draughting seems to have become a rare skill. Furthermore, the complexity of the survey data and boundary information captured often contributes to a plan that in turn is complex.

Reimporting LandXML data into Landonline to update additions or changes has never been a viable option – manual entry has been the recommended route for such changes.

2. A prototype of how a fully digital cadastral survey dataset could work emerged as the best way to engage to convey the possibilities and support the discussion. We developed the proposal and prototype as a step towards delivering on the current and future needs of the cadastre and those who rely on it. Growing demands such as interactive products and enablement for a digital 3-dimensional cadastre cannot be achieved using static plans. The aim of this initial feedback period is primarily to assess support for the proposal and to understand what would need to change before implementation could occur.

This answer indicates that (majority?) support for the proposal is needed, and that LINZ needs to identify what changes to the prototype is needed to progress.

These statements would be valid, if they aligned with other statements and language used by LINZ representatives that appear to suggest that the DVSP proposal will be progressed regardless of feedback.

We hope this perception is incorrect.

3. A digitally enabled survey and title system will provide for alternative and improved ways of finding, accessing and using cadastral survey information. We believe this proposal and prototype are steps towards delivering real benefits for surveyors, other land professionals, and all users of the cadastre. We are very keen to understand the benefits AND the challenges associated with the proposal.

We trust that the feedback summarised within this overall response – and the responses from other organisations and individuals will provide a comprehensive range of benefits and challenges you seek.

4. Ultimately the Surveyor-General will make the decision about proceeding further. For that decision he will need to understand the benefits, costs, and challenges with the proposal and

prototype. Additionally, proceeding further would require changes to the Cadastral Survey Rules requiring renewed consultation with professional bodies.

We can but trust the Surveyor-General and their Advisors to properly assess benefits, costs and challenges – for the good of the NZ survey system.

However, we are also fully aware that this whole scenario is and will be funded by our clients via the fees and charges applied to their survey and title transactions. We respectfully request that LINZ retain a prudent fiscal conscience when assessing the proposal.

A subsequent subsidiary question to *engagement@linz* was not answered:

5. *Further to your response to the ICS question 1 (“The development of the tool came about because of...user feedback...”) we would be most interested to learn more details about this “user feedback”.*

- *Was it anecdotal?*
- *Was it across the range of Users (surveyors; lawyers; conveyancers; LINZ staff; students; researchers; others)?*
- *Was it statistically significant (in terms of total users)? Ie: just a few; some; many; heaps?*
- *Did LINZ ever specifically canvas all Users on this initiative?*

The ICS acknowledges the views of LINZ as articulated in the answers to our initial questions, however we contend that the “user feedback” that suggested the plan generation tool and outputs were inadequate has been mis-interpreted by LINZ.

To the best of our recollection, we cannot recall a time when LINZ have directly asked all users if the plan generation tool and survey plan product are adequate. Before such a major development, one would have anticipated LINZ seeking some targeted feedback on the general proposal first.

1.4 Webinar Demonstration and Questions

The 21-August webinar provided an opportunity for viewers to observe a demonstration of the prototype with pre-loaded dummy datasets.

The opportunity for answering questions during this forum was limited due to the inability of the Moderator (Nick Stillwell) to see all questions posed; and the time limitations for all questions to be addressed.

Subsequently, there has not been any response from *engagement@linz* to answer the many questions posted during the webinar – such as posting a follow-up summary of the questions and answers on the LINZ website.

The ICS considers that the lack of LINZ providing follow-up answers to questions posed is bad form, and a loss of opportunity by LINZ to respectfully address the issues raised by webinar participants at that time.

Although some questions were partially answered over the closing stages of the webinar, many others were left unaddressed.

We can only interpret from this that LINZ is not serious about engaging with the industry on this change. This is particularly disappointing when over 450 people took the time to live-view the webinar.

2.0 Prototype Issues and Additions

2.1 Acknowledged Issues::

The proposal details published on the web link identified the following “known issues”:

- Add the ability for a surveyor to create annotations against a node/line/parcel/survey to allow the capture of information (such as Vesting/Part 4A of the Conservation Act/Marginal Strip

Width annotations) inside survey capture, and flow this information into the CSD and Survey Plan viewer tool.

- Release a version of the tool that can work offline (for example without an internet connection at the time of viewing the survey).
- Improve the label placement functionality so that when a non-primary parcel completely covers a primary parcel, both of their parcel labels are visible.
- Improve the depiction of water and irregular boundaries so the location is clear and unambiguous.
- Ensure title allocations are lining up with the correct parcel when generating a survey data report (PDF output) from the CSD package.

The ICS agrees that all of these issues must be resolved before a move to DVSPs.

We can only trust that LINZ commits to addressing these issues as well as considering others that are identified as the tool is developed further that have merit.

2.2 Suggested Additions::

After this brief period to trial the prototype, many of our members have had an opportunity to assess the DVSP application.

And with some consideration of the real-life integration of the DVSP tool into a survey business workflow - as a tool to generate outputs to replace survey and title plans – we have identified the following additions that would enhance the current prototype, and go some way to making the tool workable:

Significant support (by >50% of members) for:

- Ability to distort components (lines and text)
- Ability to add/embed user-added symbols and lines
- Scalable PDF plots and printing
- Using colours and different line types to differentiate between surveyed (measured) observations; adopted or calculated vectors, and boundary dimensions
- Enhance filtering ability of layers and information to enable specific data to be displayed
- Export options to CAD (DWG etc)

Reasonable support (by >30% of members) for:

- Setting a scale on the viewer (and embedding a scale bar stamp)
- Add the PDF(s) selected by the user to the Zip file 'datapack'

A subsequent request for suggestions about additional functionality and/or additional tool capability included the following popular items:

- Provide for an ability to incorporate spatially referenced data eg: such as occupation information
- Allowing for variable viewer backgrounds eg: aerial images
- Spatially link easement parcels with the schedule information – click on the parcel to open the relevant schedule information
- Ability to assign colours to easement schedule rows that then highlight those parcels on the viewer

We anticipate that this initial feedback opportunity from the wider sector will have resulted in other additions and enhancement suggestions.

We would expect that LINZ will seek additional comments from all users on the planned and proposed changes as part of the development process if this DVSP proposal is progressed.

We also anticipate that developing a workable and useable viewer system that incorporates all the suggested features will be limited by funding and development time. Therefore, there needs to be a considered priority to any suggested change – rather than limit to tool to match a limited budget.

3.0 Summaries from ICS Questionnaires

3.1 Initial Questions::

We asked our Members a series of initial questions via a Survey Monkey Questionnaire. The questions were intended to flush out initial views on the concept of DVSPs in a working environment.

We recorded a pleasing response percentage – over 50% of our practicing Licensed Cadastral Surveyors and non-practicing membership cohort. The key outcomes were:

- 81% of respondents had read the engagement email and documents, and had a “play” with the working prototype;
- 77% of respondents viewed the LINZ webinar on 21-Aug;
- 23% of respondents are initially totally opposed to the loss of survey and title plans as part of the official survey record, with another 50% having considerable concerns about plans being phased out. *That is a clear majority (73%) of ICS Membership having at least “considerable concerns” on this development.*
- 63% of respondents had not – at that early stage – communicated with their clients or other professional contacts (solicitors; architects; contractors etc) on this matter;
- 69% of respondents were not certain that the DVSP viewer as a product would be more user-friendly;
- 65% of respondents indicated that DVSPs would not reduce the overall effort in a survey workflow process (requiring alternate “plans” to be prepared);
- Over 50% of respondents would prefer future LINZ development of Landonline – given that it is funded by survey and title fees charged to our clients – be prioritised for:
 - Enhancing the current plan generation component of Landonline
 - Imaging further unimaged or reimaging poorly imaged records (plans)
 - Enhancing other parts of the Landonline application
- With regard to a subsequent requirement to review the survey and title fees in conjunction with a rules change to accommodate this development, the majority (88%) thought that any fee charged to extract data should be free – or a token amount (\$1-\$3) as a small income stream

3.2 Secondary Questions::

A second Survey Monkey questionnaire was distributed to in mid-October. This questionnaire focused on extracting more detailed opinions on the matter, recognising that Members would have had more time to reflect and trial and discuss the DVSP concepts with their work colleagues and professional contacts.

The key outcomes from this second round of questions – after further reflection - were:

- There was an increase in the number of respondents were against the proposal;
- 72% of respondents still have at least “considerable concerns” on this development – steady compared to the initial survey;
- More respondents had had time to canvas the views of their clients and other consultants. Nearly 20% of the client/consultant cohort have concerns at the loss of title plans in particular, with another 20% expecting surveyors will “fill the gap” with an alternate plan for their needs;
- Only 2 respondents reported their clients or consultants were generally supportive of the concept of DVSPs

It would be fair to conclude that a clear majority of ICS Membership have a high-level of apprehension on the concept and development of DVSPs.

(We only had 1 respondent who considered that DVSPs is a concept that has merit and that they trust LINZ has the survey systems best interests at heart.)

The ICS concerns are likely to have been borne from a range of factors including:

- The tentative link that LINZ has made between ‘poor’ plan generation functionality and negative user-feedback as the catalyst to move away from survey and title plans;*
- The lack of comprehensive canvassing and analysis of user’s views on plan generation;*
- The apparent narrow concept that LINZ has on the wider purposes and uses of survey and title plans beyond their own regulatory needs;*
- The consultation process whereby feedback has been requested even though LINZ appears to have already pre-determined the outcome.*

4.0 Benefits and Challenges

The Surveyor-General requested responses to include the benefits and challenges or risks associated with using DVSPs.

We have extracted and summarised the following items from ICS Member feedback received – in no particular order of importance or priority:

Benefits::	Risks and Challenges::
<ul style="list-style-type: none"> • A DVSP product will be more user-friendly 	<ul style="list-style-type: none"> • Not all users are the same, nor do all users utilise survey data the same way. Depending on the individual and the context of their usage, some will embrace and accept a DVSP viewing option; others will grow to accept it; and still others will struggle to see any benefit in the tool (and so conclude that that development has degraded the survey system and the legacy of ~150 years of survey information recorded on plans.) • There will be some users (landowners and clients) who are not computer literate and/or do not have access to the internet who will be disadvantaged by DVSPs.
<ul style="list-style-type: none"> • No requirement to undertake plan generation as part of a survey dataset preparation – and so reduce effort and rework compared to manually drafted plans 	<ul style="list-style-type: none"> • A requirement for a surveyor to prepare a similar “survey” and/or “title” plan to suit LCS; workplace; client needs will become an additional task. • Many surveyors use printed survey and title plans to validate/QA their dataset prior to lodgement. For those that want to continue this tactile checking system, an alternative plan generation output will need to be developed to suit that need. This will absorb additional time and negate any savings accrued
<ul style="list-style-type: none"> • Reduction on data storage and archiving/retrieval of survey and title plans (from the date of implementation) 	
<ul style="list-style-type: none"> • A dataset without plans will (should) reduce the plan processing time – and cost 	<ul style="list-style-type: none"> • Full cost recovery to run the survey system – including Landonline and the department – is required. It is most unlikely that any savings created by this proposal will flow through to our clients’ fees, as any savings will be absorbed to either repay the development cost or fund future development ideas.
<ul style="list-style-type: none"> • ‘DVSPs will improve the survey system’ (LINZ) 	<ul style="list-style-type: none"> • This development represents yet another significant change to the survey industry that will have to (and will again) cope with the impact and costs of such a change – including in the areas of training; software; and work process development.
	<ul style="list-style-type: none"> • Plans have always been the definitive record of a boundary definition and of survey measurements. Without plans, this established concept will need to be revisited.

Benefits::	Risks and Challenges::
	<ul style="list-style-type: none"> The understanding of survey data is very difficult without a spatial picture – such as a plan. A digital viewer may present an alternative but needs to incorporate the aspects that a ‘paper plan’ can deliver (including distorted diagrams; zoomed areas; additional text and lines etc).
	<ul style="list-style-type: none"> The costs to develop DVSPs to a workable standard; and then the costs associated with amending the regulations and rules to enable DVSPs to become part of a survey dataset; and also, the costs for LINZ to change its internal process will all be borne by our clients within the fees that they are charged to maintain LINZ and the survey system. These costs will not be insignificant.
	<ul style="list-style-type: none"> Large and complex datasets may struggle to be easily interpreted with a DVSP viewer tool limited to one-screen
	<ul style="list-style-type: none"> Existing datasets (pre-implementation) and plans will not be able to be viewed by the DVSP tool
<ul style="list-style-type: none"> An opportunity to include other Rules updates will be available 	<ul style="list-style-type: none"> Updates to CSR2021 and transition arrangements are required
	<ul style="list-style-type: none"> Viewer would not cope with Unit Titles, Strata, and Cross Lease plan graphics
<ul style="list-style-type: none"> The current plan generation tool need not be sustained or maintained 	<ul style="list-style-type: none"> Developing and then maintaining a viewer tool ‘in-house’ by LINZ in perpetuity will be an on-going risk

The ICS have maintained an open mind on this development. We are not opposed to change if it can be demonstrated that it will improve the survey system – including maintaining the integrity of the data that populates Landonline from source information.

We can identify more risks and challenges than benefits – and assuming that some of those challenges can be dispelled – it is more than probable that the challenges will still outweigh the benefits in terms of increased risk and cost.

The LINZ summary of the feedback following this consultation needs to address all industry concerns.

5.0 Additional Comments

5.1 Is this change really required?::

Our membership clearly questions why this is change required.

What was really wrong with plan generation?

Does Landonline really need to be 100% digital?

Does NZ and LINZ really need to have a “world class property system”? Why not compromise with a ‘Tesla property system’ rather than create a ‘Lamborghini property system’?

LINZ have not clearly articulated the advantages, nor have they accounted for the industry and end-user uses of survey and title plans.

LINZ - at the very least - need to do more homework on this. This would include canvassing the User requirements - rather than developing a process to suit their regulatory needs or governmental desires to be 100% digital. If that means exploring the current plan generation process and functionality and looking at that first - then that must be the starting point. And if there is then a mandate to move away from survey and title plans then ensure that the users and stakeholders are presented with a viable alternative that meets their requirements and expectations.

In addition, if a concurrent phase in period operated for approximately 3-years that would allow software developers time to introduce data viewers and allow the market and users to adapt.

This proposal seems similar to the mid 2000's when LINZ suggested that there was no longer a need to always ground mark boundaries - some of the flow on consequences from this suggestion were not fully understood or considered by LINZ at that time. Fortunately, that idea was not pursued.

We do not believe that LINZ have sufficiently consulted with the wider users of the survey data and that the DVSP concept will reinforce the thought process that boundaries in NZ are coordinated, and not based on vectors, and that downloaded xml linework is all that is required to define property rights.

5.2 A fait-accompli?::

It has been stated that the Surveyor-General will make the final decision on the progression of this development – or not.

However, from the language and tone of the engagement documents; the webinar presentations; the subsequent direct communications with the ICS and the STEP Working Group; and through statements made at the S+SNZ Conference – it is clear that the DVSP development is well advanced in LINZ's thinking, and we get the feeling that the DVSP progression will happen regardless of the views and learned opinions of Surveyors and Lawyers as key stakeholders, and the interests of Territorial Local Authorities and our landowner Clients as end-users or recipients of a plan output.

Although we are willing to provide detailed and considered feedback, there is a level of frustration that our expert opinions will be paid lip-service as the concept is progressed regardless.

5.3 Cost-Benefit analysis::

LINZ must have undertaken an initial cost-benefit analysis – at least in general terms – as a part of a fiscal test to initiate the prototype development at least.

We accept that a detailed cost-benefit analysis would be complex if completed thoroughly, as there will be advantages and disadvantages on the regulatory side (LINZ); in the commercial sector (private surveyors); as well as in the local body (TLA) arena.

Without a reasonable level of analysis, any cost-benefit model will be flawed and may present a biased outcome. For example, demonstrating savings in one area (eg: regulatory) whilst creating additional costs in another sector (eg: private surveyors).

As it is, our clients funding has already been used to road test a product, which neither ourselves, our clients, or the industry has asked for, and which has tenuous (if any) long term benefit to any user (perhaps other than LINZ itself).

As key stakeholders we consider that we should have an opportunity to consider and assess the LINZ cost-benefit analysis – or at least be assured that it has been wide ranging and takes into account the pros and cons that are external to LINZ.

5.4 Insurance Issues::

There may be an insurance issue with this change.

Digital plans will clearly have a significant impact on the usability and interpretation of the plans by Surveyors, our clients and future users. How can we ensure our clients have clearly understood and approved the data prepared and presented by the DVSP viewer?

Survey consultants have a legal duty of care and liability to the future landowner. Our conditions of engagement do not protect against this, as our conditions and associated liability limitation clauses

only apply to our client (either owner at time of work and/or developer/builder). If plans – or digital data - are not reasonably easy to interpret there is a liability that needs to be managed.

5.5 Agnostic tool is essential::

We have concerns that being tied to a LINZ-developed, browser-based json interpreter means that everything LINZ does henceforth will need to be reverse compatible, or else the usability of the data will be compromised in future.

5.6 Accounting for non-digital users::

There will be clients that don't have internet access or email and that struggle with PDFs and digital data. When clients come into the office to discuss a plan they like to sit around a paper copy - not look at a screen.

And in terms of functionality in the field, an on-line or off-line system will rely on connectivity to be maintained to access data (say off a phone or tablet). Although the reach of connectivity is continually improving across NZ, there are still many rural locations where cellular access is poor or not available. (And this of course presumes that access to, and reading digital data from a device is preferable and possible in a wet and windy or bright and dusty work environments – when often these conditions are not conducive compared to a printed paper plan.

These may be legacy issues, or a less common occurrences, however they are factors that should be assessed.

5.7 Digital capture of historic records?::

If digital is the best way forward, LINZ should consider back-capturing all old (pre-Landonline) plans so that we only working with digital data and not a mixture of the two?

And related to this aspect, it will be many years – if ever – that surveyors will cease to search and utilise survey plans from “2024” and before. We currently search Landonline plans; pre-300,000 series plans; and other survey plan records (Deeds plans; Transfer Plans; and Record Maps etc). Surveyors will still require tools and printers to access and view and print this information as required – so it is of little benefit to reduce this component of a survey by dispensing with survey and title plans as we currently know them.

6.0 Member Comments

The following comments were submitted to the ICS as part of our canvassing of membership opinion.

We consider that these reflect the general views of many cadastral surveyors across the country – and the views will not be limited to ICS members only. Our informal communications with many other ‘non-ICS’ surveyors support this view.

6.1 The proposal isn't smart enough::

To enable clarity and surety of information captured by a surveyor, on - say a disturbed mark, points should be able to have attributes associated with them that allow rich data such as diagrams and descriptions to be included with a mark. So that when data is extracted, the information is automatically passed on too.

Important attributes will include occupation and location information, and finder diagrams of PRM's.

6.2 Occupation information must always remain a critical component of a survey dataset::

I am reasonably comfortable with the idea of DVSPs in principle, subject to the general concerns being addressed.

However, one thing that worried me from the webinar was a Deputy S-G's comment that occupation information is not very important and could be left out of the dataset - not even as a supporting diagram.

In my view anything that is part of the hierarchy of evidence should continue to be captured and included in the dataset one way or another. The occupation information comes through time and time again as evidence to be gathered and analysed to help arrive at a robust boundary definition (RCS -Rule 6).

6.3 Pre-Landonline black and white plans were efficient and workable::

I think the best survey plans in terms of cost and richness of data were produced around 20 years ago when we could produce DWGs from 12d which were then tidied up by draftspersons.

The new proposal will be cheaper to prepare but with every Landonline improvement we seem to be producing a less usable product.

6.4 Track record is poor::

I have some real concerns about this – particularly given LINZ's track record of Landonline development increasing fees without really returning cost or time savings – and the continued lack of emphasis during dataset processing on survey definition.

6.6 A cadastral survey is a snapshot in time...::

... and as such is a fixed or static record of that data or boundary or definition at that time.

The proposal seems to revolve around the office environment, and I am concerned more about the effects of the proposal on field work.

I don't care how good you are with technology, having to scroll through multiple surveys in the field using imaging software is always going to be more difficult than using hardcopy plans, particularly in adverse weather conditions.

And for many years going forward (if DVSPs are introduced) surveyors will still have to continue to manage historical (pre-"2025" survey datasets and plans) as well as DVSP data with their survey work. And there will come a time when you will require legacy software (and indeed legacy hardware) to be able to access historic digital data. If you don't retain that software or hardware, the data becomes inaccessible.

6.6 Business workflow will be impacted::

As much as there may be some merit in "going all digital" (which seems to be the main LINZ driver for this) – I am struggling to be convinced.

LINZ are also overlooking the impact on survey workflow for each business. Like any change of this nature, there will need to be many changes to offices systems; technology; processing; training; reporting; archiving etc etc. And this all comes at a significant cost to the company that is forced to accommodate such changes. It's all very well for LINZ to impose these changes onto the industry, but it is the companies that will have to wear the impacts of the costs to comply or deal with it.

6.7 What was the trigger?::

I too wonder about the trigger to develop the concept. Has there been dissatisfaction expressed by surveyors and lawyers with CSDs?

I think LINZ has invested so much time and money in this venture that it is a foregone conclusion.

6.8 A comparison test::

I have been trialling the working prototype.

I created a sample of a dataset of one of my clients that I've been working on – a four-lot rural subdivision with a number of easements and covenants. With the Title sheets my plans created by current plan generation process are composed of 3x Title sheet pages. To read everything using the DVSP prototype necessitated the creation of 10x sheets and they are all separate PDF files that then need to be combined by external software. This is clumsy. Plus, there is the Title data report. Whereas with the current Title Diagram plan, all this information is in one file.

Many clients will expect some sort of “title plan” as we have always known, so we will likely have to prepare something from the viewer as the source data (rather than compiling something in-house). How is this efficient?

6.9 Repeated effort to create a DVSP::

My concerns include that while we can produce a cheaper CSD the future users of the data are being penalised every time they want to see the data spatially as an individual CSD. We currently have one user creating an image that can be viewed hundreds or thousands of times. Going forward every time someone wants to view that individual CSD and how it was captured by the LCS, they have to create diagrams ensuring they have not missed any critical information that may affect their new definition. This process will be repeated by everyone. I struggle to see how LINZ sees this as efficient in cost and in time but most importantly the integrity of the cadastre. Especially if not all the evidence is gathered and interpreted and displayed correctly.

6.10 No cost benefit::

There is no cost benefit as the small surveyors cost (equivalent to ~1-3% of surveyor fee) of preparing the digital plan layouts would be far outweighed by others users added costs - and that endures with all subsequent users of DVSP ‘data’.

6.11 Other items::

- *How will DVSPs work with issue of a RT with diagram? I expect in some cases necessary information may not be depicted. Will LINZ be working on this?*
- *Preparing plans (in plan generation) is only a small cost in relation to the overall cost of a survey. So, what sort of savings are really at play here?*

6.12 Cost-Benefit Analysis::

We need to see, understand, test, and challenge the cost-benefit analysis of this proposal.

The candid comments above are an example of some of the views ‘from the coal-face’ of those whom:

- *conceive the data;*
- *search the data;*
- *interpret the data;*
- *capture the data;*
- *record the data;*
- *manipulate the data;*
- *depict the data;*
- *explain the data; and*
- *store their data.*

The Institute of Cadastral Surveying expects that the Surveyor-General and LINZ will seriously consider the tenor of the myriad of comments within this feedback – and within all feedback received – through a lens of “what is in the best interests of the survey system”.

And that this consideration takes into account:

- *the fact that cadastral surveyors are the main creators of the data that populates the survey record – and totally understand the impacts of losing a valuable component of that data (the static plan);*
- *the complexity of survey information;*
- *the value of historical survey records (plans, field information, deeds and title records); and*
- *the multitude of users and uses of the survey data – both digital and hard-copy.*

End.