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Surveyor-General
Land Information New Zealand
Level 7
Radio New Zealand House
155 The Terrace
WELLINGTON 6011.

sgrulesreview@linz.govt.nz

Survey and Spatial New Zealand Submission on The Review of the Rules for Cadastral Survey 2010, Stage 2 – Part 2

Who are we?

Survey and Spatial New Zealand (S+SNZ, the trading name of the New Zealand Institute of Surveyors Inc.) represents surveyors and spatial professionals. We are a stakeholder across a wide range of government policy areas and the sector including housing development, land subdivision, construction, infrastructure, spatial information and resource management. Our members are lead professionals for the preparation of Cadastral Survey Datasets following the *Rules for Cadastral Surveys 2010* published by Land Information New Zealand (LINZ).

What does our submission cover?

Our submission is composed from feedback received from members of our Cadastral Professional Stream – those members who have identified as having a specific interest in cadastral surveying. Our submission refers to numbering in the *Stage 2 – Part 2 Consultation on Proposed Changes* document published by LINZ dated 24 January 2019.

Summary

Most feedback was generally supportive of what has been proposed in the consultation document. Feedback has been summarised in the table below and specific comments where concern or non-support was raised for each section follow.

<i>Section</i>	
Section 2	Generally support
Section 3	Very strong support
Section 4	Support
Section 5	Strong support
Section 6	Support and non-support
Section 7	Strong support and strong non-support

Section 8	Support
Section 9	Support
Section 10	Support
Section 11	Support
Section 12	Support and non-support
Section 13	Support
Section 14	Support and non-support
Section 15	Support
Section 16	Support and non-support

Section 2 - Connection to a horizontal control mark or vertical control mark (revised)

Feedback generally supported the revised distances proposed under this section and commented that it was a positive outcome to see feedback received in Stage 2 Part 1 included.

There have also been strong views received, from a minority of submitters, where it is felt that LINZ should be extending the network to allow for connections to future surveys at LINZ’s cost, not the subdivider’s cost. These submitters felt additional connection requirements provide little to the land owner who is funding this work, or the Surveyor who does not use or own GNSS technology, may be excluded from undertaking this work. One submitter questioned if the Surveyor-General was aware of his duty under Section 7(2)(2) of the Cadastral Survey Act 2002 and that costs should be allocated among “other parties” not just “cadastral surveyors” and “current and future owners of land”.

In the support of this section, questions were raised about the best way to show and store long GNSS vectors into Landonline. It was suggested that to meet this requirement, the PositionZ-PP processing report could be submitted as a supporting document replacing the need for long vectors to be digitally captured and shown within a dataset.

Section 3 - Defining by survey and adopting

There was very strong support for this section and what has been proposed. Since the Rules for Cadastral Survey 2010 were introduced, there has been a lot of confusion around the terminology used and the move to clean this up is commended. As Diagram 2 on page 11 shows, this is how in practice a survey is generally undertaken, so it is an excellent common-sense approach. The ability to subdivide a parcel as shown in Diagram 3 on page 11, where the appropriate accuracy standards can be met, is also supported.

Section 4 - Accuracy standards

Feedback supports removing the 95% tests and having one standard which needs to be met.

There were many opinions about the levels of accuracy that the rules will require. Some have made the case that there appears to be too heavy a reliance on GNSS theoretical manufacturers’ specifications without thought for other technology or “the real world” practicality included in the thinking. Many expressed concern that horizontal accuracy at $0.025m+(distance \times 0.0001m)$ is too tight and would like this reduced to $0.03m+(distance \times 0.0001m)$. This would help achieve the accuracy on short and older existing work.

It was commonly felt that 0.06m for Class A and 0.30m for Class B are a “little loose”. Some felt that it was unclear as to how this may be applied in practice.

One submission posed the following:

“We would like further clarification of the implications of this rule on the accuracy tolerances for adopted boundary marks beyond the parcel being surveyed. Will the relationship between these marks no longer be subject to an accuracy test? For example, if a Class A boundary is defined by adopting between boundary points at either end of the street, and a significant misclose (150mm) exists in the block, will there no longer be considered a conflict if the parcel closes within itself better than $0.06m + (dist \times 0.00015m)$?”

Further explanation would be helpful here with guidance material.

With respect to the vertical component, feedback ranged from supportive through to feeling that it should be tighter and a $0.03m + (distance \times 0.0001m)$ applied to both horizontal and vertical. One submitter raised the following about network control marks:

“It is important that when considering connections to geodetic control marks, that mark selection decisions factor in more than just proximity.

The regulations should allow flexibility to consider:

- *Suitability for GNSS (closest mark may not be most suitable for GPS).*
- *Mark order (e.g. if 3rd order at 1.5km, and 5th order at 800m is 5th order really the best choice?).*
- *Mark accessibility (e.g. not requiring traffic management).”*

Some considered that proposed witnessing requirements for Class B and C are too relaxed. Most in support of tighter requirements commented that any credible surveyor should be able to achieve far better than what is proposed and it would be beneficial to the cadastre to tighten this proposed standard.

Section 5 - Water and irregular boundaries

Feedback received strongly supports development of focused guidance material by LINZ. There is caution here that any developments resulting from feedback does not result in the creation of a new law, however LINZ appears to have already addressed this in paragraph 47.

If possible, allowing a surveyor to submit an electronic file, such as a .dwg, which contains the fixes made on a water boundary, should be considered. This is a modern-day field note, similar to the old traverse book, where a surveyor recorded the right-line offset from the traverse to the boundary.

One person also raised the following:

“The rules regarding the survey of existing water boundaries are vague and misleading and open to interpretation by surveyors. In fact, many surveyors use this as a competitive advantage to not resurvey an existing water boundary when carrying out a subdivision. They state in their survey report that the stream has not moved since the original survey, based on aerial photography or other suitably vague reasons. No documentary proof is supplied or any corrected aerial photographs with suitable meta data to support the claims. A lot of the streams in the Waikato have not been surveyed since the early 1900s.

Every time I survey an old stream boundary that the previous surveyor has stated that has not moved, I have found significant movement creating erosion and accretion. It is an undisputed fact that a river stream moves over time and there can be no certainty that a stream has not moved if the previous

survey was carried out longer than about 15 years ago. However, this blatant flaunting of the rules is being ignored by LINZ and all other regulatory authorities.

The original surveys of the water boundaries mostly showed the surveys to the bank or edge of the water. It is generally assumed that the bank closest to the edge of the water flowing in the stream was fixed at the time of the survey. In accordance with Section 2 of the RMA, the definition of the river bed is the extent that the water covers at its fullest flow, without overtopping the banks.

Surveying the edge of the water flow on the day of survey does not comply with this definition but surveyors cannot wait for the day of the fullest flow. Hence the only method to ensure compliance with the definition is to survey the highest bank dividing the stream bed from the useable farm land, as the bed cannot legally extend passed this point. This interpretation was supported by the Environment Court decision W 61/2008 on 1st May 2008.

The early surveyors did not survey the water boundaries to comply with the current legislation. Allowing the adoption of water boundaries surveyed 50 to 100 years ago without re-surveying the position of the current upper bank of the river or stream is condoning non-compliance with the primary legislation and Court decisions in New Zealand.

Everybody whines about the cost of surveying water boundaries which is ridiculous given the astronomical rise in land prices in New Zealand over the past 10 years. The survey of a water boundary probably costs a quarter of the Estate Agent's fee to sell the subdivided section.

Serious consideration should be given to amending the Rules to ensure that water boundaries surveyed more than 15 years previously should be re-surveyed to comply with the current legislation. This should include any water boundary on the lot being subdivided, irrespective if the new subdivided lot intersects it or not."

The above view raises some interesting points, but one would hope that these are generally covered off by a surveyor undertaking and preparing their dataset with Good Survey Practice in mind. Overall the common theme of feedback was that guidance would be very welcome in this area.

Section 6 - The 'wet' cadastre

Again, here we have received both support and non-support for this proposal. Those members who were not in support generally believe that this is being created by the Crown to support concessions to the Crown (which private clients would not benefit from). There should be no specific rule for this, but if needed or wanted it could be dealt with similar to the current Survey-General specification similar to how Tenure Review surveys have been undertaken.

Overall the theme from most submitters was that the proposal appears reasonable.

Section 7 - Repackaging CSD Plan information

This is the area that received the most feedback and the most conflict with the proposal. It ranged from extremely supportive through to strong disagreement, especially about the preparation of the diagram of survey. We have attempted to summarise the thoughts of those members who have provided feedback, both positive and negative.

Those in support of having a digital diagram of survey generally have one massive caveat with this support - that the viewing software must be thoroughly tested and proven. There have been questions asking if LINZ would be going to back capture all existing surveys so all data could be

displayed? The support is reliant on individual surveys being viewed as that, not just a scattergun for all captured surveys in an area.

Those against have been very strong in their views. Reasons include: tradition and trackability of data, printing records for QA, compliance cost to learn new system, digital system may not be practical to take into the field as it is reliant on batteries, screen glare, cold, rain etc which are all reduced if using paper plans. Some feel that the loss of a “paper plan” would be a negative contribution to the cadastre, especially when there is complex definition. There were comments that the survey profession was being ‘watered down’ and extra costs over the life of the survey would be incurred by future users of the data, particularly where reconstruction of an earlier survey may be required for easy viewing in the field where all data would have been previously shown on the Survey or CSD Plan.

LINZ also received criticism for looking for a “cheap way-out of legal obligations to administer legal surveys”. There have been concerns raised about having to certify data which is unable to be viewed in hard copy. Without appropriate measures available to provide details around how the dataset has been checked, some felt uneasy about proving the level of checking should an audit be undertaken. This, along with “seeing” how a survey was undertaken, can show where the misclose is over the digital least-squares approach which can hide errors.

Comments were received that the current requirements under the RCS 2010 for the data to be displayed on the diagram of survey are not onerous, the problem and time constraints are the tools provided by LINZ to prepare this data into a clear presentable layout. It has been suggested that the mark and vector listings should not be part of the “CSD” but be attached as a “supporting document” to use the current terminology. There should also be the ability to download all the information submitted by the surveyor, diagram of survey, title plan, all supporting documents etc, as one package, instead of having to download each supporting document and the plans separately as currently required.

It is important to follow in the previous surveyors’ footsteps and you want something that instantly gives an impression of the work that has gone before. Old survey plans do this better than what is currently presented. It may be better to keep the requirement for diagram-of-survey, but create better tools within Landonline (or STEP). Better tools should allow for diagram preparation with significantly less input being required from the user. Development of a viewer which could be utilised to view data prior to download in ‘paper copy’ to see if the dataset is needed to assist with the surveyor’s definition on the current work, would be helpful and potentially help to prove that a viewer concept may be a viable alternative to more traditional Record of Survey presentation should future rule changes look to progress this.

Regarding other items raised in this section: colour was supported generally, but some concerns about printing and presenting slightly differently. There were concerns about the 3D requirement and how this may be implemented.

One comment (below) is worth of consideration:

“We would like to see the presentation “structure” of the survey specified as well, e.g. peg ties connected to the nearest witness mark, not all from one central mark on the survey. In our opinion poorly presented survey plans may cost less to prepare in the short term but cost other users more in

the future having to interpret them. Also, will occupation information be captured digitally or still require a separate diagram? We would not want to be required to submit vectors representing occupation features (vs descriptions or diagrams)”.

Overall, we cannot say our members either support or oppose this section as the feedback was so strong in both agreeing and opposing the proposals.

Section 8 - Recording existing easements/covenants to be surrendered

Generally, feedback was supportive of this proposal. Many commented that they already did this as a matter of “Good Survey Practice.” Many wanted a definition of “smart data” and what would be required to produce data in that format. Most felt that this should also be included in the Survey Report so, if needed, extra explanation could be included as to why the proposed cancellations were being undertaken. It is felt that easements and covenants being cancelled should not need to be shown on the CSD/Title plans.

Section 9 - Recording survey marks not found

All feedback could see the benefit of this proposal, but almost all made comments around searching for a mark which a previous survey showed as ‘not found’ and ‘finding’. There were concerns that with this data being recorded electronically, it could give greater authority and weight to it than it deserves. Surveyors may have searched in the incorrect place or not extensively enough or not bothered, due to using GNSS, and the mark was under a tree. It was strongly supported that the marks searched for be retained in the survey reporting component of a survey. A number of submissions suggested that there need to be options when creating the "smart data" so the surveyor can confirm if the mark was looked for and not found, found but later destroyed, found damaged, or not looked for at all etc.

Section 10 - Appellations for strata parcels

All feedback supported of this proposal. Some comments made were around the order of the appellation, for example Lot 1 (strata) instead of the proposed Strata Lot 1, but overall there was support.

Section 11 - Alternative appellations for units

All feedback supported this proposal. Comments were made about what would happen if there was an amendment to the addressing standard. Would this drive the need to amend this proposed rule, or if the Unit was further divided how would this be accommodated? We had a number of comments about extending this beyond Units. Other feedback questioned why not allow any combination of letters and numbers for secondary parcels? For example, where secondary parcel Area A is divided by a new primary parcel, why not have the ability to name the separate parts Area A1 and Areas A2? This could help make is easier for other users to follow how these parcels have been created and the rights associated with these.

Section 12 - Reinstatement Surveys

Feedback received here was mixed. Generally, simplifying the requirements was supported, but most believed that a plan and survey report were still required. Many were concerned that it appears to be very Christchurch-centric around the Building Location Certificates and many local authorities around the country did not require these or had different terminology. It was suggested that this term should not be used.

Many members wanted to ensure that old peg no record was prevented, but at the same time were mindful that the requirements to submit a dataset, be that SO or LT, for a reinstatement survey needed to be cost palatable to their clients. One comment hits the nail-on-the-head:

“Common practice still seems to be to do anything but place official marks to avoid lodging a re-def-survey. The additional costs involved in lodging redefinition or monumentation plans comes from having to undertake checks and balances that information recorded is absolutely correct and having to ensure information that really isn’t that important is correct. When I’m checking calculations for a set-out or redefinition survey it is the definition, vectors and miscloses that I am interested in. If the adoption source or number isn’t quite right I know what the surveyor meant and because it doesn’t go any further I’m not going to get a requisition for it. This is where the balance still isn’t quite right and it is hard to achieve the right balance. Not sure if it could be done but I think there would be benefit in lodging a field record with LINZ to inform work has been done but someone within LINZ brings it into the cadastre for the good of the cadastre. Where there is a bit of slop around then maybe the surveyor needs to record an explanation of the definition and then a more full dataset where there is conflict?”

Comments were received around conflict being recorded on an SO plan - the inability to upgrade title and suggested the use of an LT plan in these cases. Other submissions suggested that in the same situation it was better to have an SO plan than ‘peg no record.’

Concern was raised about paragraph 110 in that there should be connections to a reference mark so that it was possible to establish definition of a boundary point marked by a reinstatement survey.

Section 13 - Defining ‘Source of adoptions’

Feedback was very clear that surveyors want to have a Rule stating that adoptions must come from the original plan which first measured the line, unless this line has been remeasured and altered the later survey. Many comments referred to the source of adoptions helping to identify and confirm errors made through historic adoptions.

Section 14 - Good Survey Practice

Feedback was mixed on this proposal to not include “Good Survey Practice” (GSP) in the proposed Rules. Those who agreed believed that as it was not something which could easily be measured it would be hard to make a Rule on and enforce. Others believed that LINZ should include GSP, as prior Survey Regulations had. This is because they are concerned about “suspect practices” creeping into some surveys. Comments have been received that if GSP is not included then they would like to see Surveyor-General’s Guidelines which have been reviewed and endorsed by Professional Bodies working in the cadastral space.

Section 15 - Hierarchy of evidence

Feedback was supportive of the proposal to leave this out of the Rules. Submitters felt that it was covered by Common Law. It was noted that it would be good to see this appear in the Surveyor-General’s Guidelines as a reminder to surveyors.

Section 16 - Other matters

16.1 3D CSDs

Feedback agrees that this needs to wait until STEP is further developed to see what Rules may be needed.

16.2 Arc Boundaries

Feedback varied from allowing new arc boundaries to only allowing existing arc boundaries to be retained. Most feel that arc boundaries are not commonly used in new work so they will slowly be phased out without the need to remove them from the rules.

16.3 Right-lining irregular boundaries

Feedback showed that current Rules and the dispensation process, where needed, is working.

16.4 Occupation

Feedback agrees with this. One submission also suggested the following:

“(Occupation diagrams are) only really used by surveyors therefore it should assist surveyors looking for marks as much as possible. May be simpler to not have a separate occupation diagram but include more occupation detail on the survey diagram. One location to search out information, similar to old metric survey plans?”

16.5 Boundaries of large parcels

The current provisions to allow boundaries to be accepted in certain cases should remain. To require these boundaries to be surveyed to current accuracy standards would significantly increase survey costs for very little benefit to either the landowner or the cadastre.

16.6 Water body centreline boundaries

Agreement that existing centreline boundaries should be retained as irregular lines. There are some concerns around creating new boundaries of this type especially outside of Canterbury.

16.7 Marginal strips

General agreement with this proposal.

16.8 Surveyor’s certification

No feedback was received so we assume that all are happy with no changes being proposed.

We wish to thank LINZ for the opportunity to provide feedback on behalf of our Members and look forward to the next round of consultation proposed. Meanwhile, please address any enquiries about this submission to the Chair of the Cadastral Stream: cadastral@surveyspatialnz.org.



Rebecca Strang
President



Matt Ryder
Chair (and on behalf) of the Cadastral Stream