Photo credit
Cover photo courtesy of Colin Hall, Mount Zero Trigonometrical Station, Grampians National Park
### Revision History

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**Report produced by:**

Surveyor-General Victoria  
Land Use Victoria  
Department of Environment, Land, Water and Planning  
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Website: www.propertyandlandtitles.vic.gov.au/surveying
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1. Cadastral Surveys Practice Directives

These practice directives concern the connection of cadastral surveys to the SCN, the preparation of survey documents by a licensed surveyor and other matters relating to cadastral surveying. The following sections detail the requirements of surveyors in fulfilling legislative obligations.


1.1 Purpose of Cadastral Surveys Practice Directives

Under the provisions of the Surveying Act 2004, two of the functions of the Surveyor-General are to ‘set and monitor standards for surveying and survey information’ and ‘monitor surveying matters affecting the Victorian cadastral system’. In accordance with these functions, Surveyor-General Victoria (SGV) issues practice directives to support licensed surveyors in the interpretation of relevant aspects of the Acts and regulations relating to surveying.

These Victorian Cadastral Surveys Practice Directives, July 2018 are effective from 27 July 2018 and replace the Surveyor-General of Victoria Practice Directives – September 2014 (Edition 3).

Comments on these practice directives, and other matters relating to cadastral surveying, are welcome from surveyors. All enquiries can be directed to:

Mr Eddie Cichocki
Manager, Cadastral Infrastructure and Standards
Level 11, 2 Lonsdale Street Melbourne, VIC 3000
Phone: (03) 9194 0282
Email: surveyor.general@delwp.vic.gov.au

1.2 Disclaimer

These practice directives offer guidance to cadastral surveyors on the interpretation of the relative legislative requirements and processes they may apply in carrying out their professional roles. They do not override a surveyor’s responsibility to exercise professional judgement. These practice directives are to be viewed and adopted in conjunction with the relevant legislation, best practice guidelines (as available) and general good practice principles and procedures.

1.3 Role of the Surveyor-General of Victoria

The Surveyor-General of Victoria is the primary government authority on cadastral surveying and maintenance of the integrity of the cadastre. The roles and responsibilities of the Surveyor-General are prescribed under a diverse range of Acts and regulations.

1.4 Compliance and Survey Audit Program

The Surveyor-General is responsible for setting and monitoring the standard of surveying in Victoria. The most visible component of this is provided by the Survey Audit Program, undertaken by SGV on surveys lodged at LUV. Through this program, the Surveyor-General gauges practitioners’ compliance with the regulations, practice directives and guidelines for best practice, and contributes to any required collective or individual rectification or adjustment processes.

Surveyor-General Victoria aims to audit every practising licensed surveyor at least once every three years. The audit process involves a field and survey document check performed by SGV survey auditors and a plan examination performed by Land Registration Services (LRS) Plan Registration Officers. SGV survey auditors use a ‘Survey Audit Checklist’ covering the abstract of field records, re-establishment, connection to the Survey Control Network (SCN), licensed surveyor’s report and elements of the field survey. LRS plan registration officers at Land Use Victoria (LUV) use an ‘Audit Plan Exam Checklist’ covering drafting standards, plan notations, easements and building boundaries.

The survey audit and plan exam checklists are available at:


The checklists are provided as an option for licensed surveyors to help maintain the quality of surveys lodged at LUV.
Non-conformance with aspects of the survey and/or documentation as indicated by items on the survey audit
and plan exam checklists will result in the registration of the associated dealing being delayed until these
issues are rectified to the satisfaction of Land Registration Services at LUV and SGV.

In addition, checklist items are categorised into serious and non-serious non-conformances, as classified in
Categories of Audit Non-Conformances (available from the web link above). An ‘unsatisfactory’ survey audit
result will occur when one or more serious non-conformances and/or 10 or more non-serious non-
conformances are identified.

Surveyors who receive two consecutive unsatisfactory survey audit results within a three-year period are
required to discuss their surveys with the Manager, Cadastral Infrastructure and Standards, SGV to review
the audit findings and identify opportunities and processes for improved performance.

If a surveyor receives three consecutive unsatisfactory audit results, the findings of the audits will normally
be forwarded to the SRBV for investigation.

A provision also exists under Section 18 of the Surveying Act 2004 for the Manager, Cadastral Infrastructure
and Standards to lodge a complaint with the SRBV in relation to any survey that returns an unsatisfactory
audit result.

2. Connection of cadastral surveys to MGA2020
and the Survey Control Network

2.1 General comments
The primary function of connecting cadastral surveys to the Map Grid of Australia 2020 (MGA2020) is to
allow the updating of the state's digital cadastre. Improved spatial accuracy will allow users of the digital
cadastre to take full advantage of improved integration of multiple datasets, augmentation with emerging
technologies and improved decision making and interoperability within and between organisations. Improving
spatial accuracy also facilitates the uptake of more advanced GIS capability across the community.

Because the Surveyor-General has statutory responsibilities to coordinate and provide access to survey and
other information relating to land in Victoria, SGV has embarked on a project to upgrade the spatial accuracy
of the digital cadastre – the Digital Cadastre Modernisation (DCM) project. The DCM project will capture and
adjust survey measurements observed as part of cadastral surveys to improve the accuracy of the digital
cadastre throughout the state.

Connection of cadastral surveys to MGA2020 can be achieved in the following ways.

a. Through the Survey Control Network of ground marks, available through SMES at

b. Using GPSnet to correct GNSS observations in real time or by post processing at

2.2 Specific requirements for connection to the Survey Control Network
On 11 October 2017, the GDA2020 was gazetted as the Recognised Value-Standard of Measurement of
Position for Australia, replacing the GDA94 as the national datum.

On 1 November 2018, authorised amendments to the Survey Co-ordination Regulations 2014 came into
effect and GDA2020 became the official datum of Victoria. The MGA2020 coordinates based on the new
datum have been derived from a rigorous national adjustment and are more aligned to the true positions of
survey marks on the ground when compared to MGA94. SMES has been updated to provide MGA2020
coordinate information for survey control marks in Victoria.

In the remainder of the practice directives, ‘MGA’ is to be taken as referring to MGA2020.

The SCN is the network of survey marks in Victoria whose coordinates have been computed by SGV from a
rigorous adjustment of observational data. A survey mark that forms part of this network is known as an
‘SCN Mark’ and can be a permanent or primary cadastral mark that has either adjusted horizontal MGA
coordinates, a vertical AHD71 reduced level, or both. Only SCN marks with adjusted MGA coordinates are to
be used when there is a requirement for a cadastral survey to be brought onto MGA bearing datum.
Regulation 11 of the Surveying (Cadastral Surveys) Regulations 2015 requires a licensed surveyor making a cadastral survey to adopt and verify a datum in accordance with a previous cadastral survey or plan. The regulation also stipulates that if an abstract of field records is to be lodged with the Surveyor-General or the Registrar of Titles, the licensed surveyor must “bring the bearing datum onto the Map Grid of Australia 2020 (MGA2020) as is reasonable in the circumstances” – Regulation 11(1)(b).

Bringing the bearing datum of a survey onto MGA2020 means rotating the survey onto either datum and showing the bearings on the plan and abstract of field records relative to MGA Zone 54 or 55.

Regulation 10 of the Survey Co-ordination Regulations 2014 specifies the appropriate MGA zone to be used for cadastral surveys. The zone boundary has been established such that Parishes lie wholly within either zone 54 or 55. Figure 7.3, Part 2, Survey Practice Handbook – Victoria, which is available at www.surveyorsboard.vic.gov.au, shows the location of the zone boundary and the Parishes in its vicinity.

The Surveyor-General has decreed that all cadastral surveys commenced after 1 January 2019 for which Regulation 11(1)(b) is applicable must connect to MGA2020 where it can be practically achieved. Surveys commenced prior to 1 January 2019, including staged Plans of Subdivision, can remain on their original bearing datum.

If conventional traversing techniques are employed, then what is “reasonable in the circumstances” is generally governed by the parameters of Regulation 13 of the Survey Co-ordination Regulations 2014. The regulation requires connection to at least two coordinated survey or permanent marks that fulfil all the following requirements:

a. properly verified as to position at the time of survey
b. at least 200 metres apart
c. within 500 metres radius of the survey or a greater distance from the survey if the connection can be made by establishing no more than three instrument points from each permanent mark.

For the above purpose, a ‘coordinated survey or permanent mark’ means a SCN GDA2020 ground mark (SCN mark). In relation to item c. above, the 500-metre radius applies from the extremities of the cadastral survey.

Regulation 7(1)(c) of the Surveying (Cadastral Surveys) Regulations 2015 states that licensed surveyors must ensure all lengths are measured or determined to an accuracy of 10 millimetres + 60 parts per million (PPM). Furthermore, the Surveyor-General’s requirement for the accuracy of an MGA bearing datum determination is at least 20” of arc.

The following discussion elaborates on how surveyors can meet the above requirements as they relate to cadastral surveying. Section 2.3 provides information regarding the conditions for connection to MGA when GNSS observations are used.

2.2.1 ‘Large’ land subdivision creating 10 lots or more

If a ‘large’ land subdivision creates 10 lots or more at ground level, surveyors must do all the following:

a. connect to at least two SCN marks (or if using GNSS observations, see section 2.3 below)
b. connect to other permanent or primary cadastral marks to satisfy Regulation 11(3), Surveying (Cadastral Surveys) Regulations 2015
c. rotate the survey onto MGA bearing datum.

If no suitable SCN marks are located in the vicinity of the subdivision that satisfy the parameters of Regulation 13 of the Survey Co-ordination Regulations 2014, then coordinated marks will be established by SGV upon application to the Manager, Geodesy by email to smes.support@delwp.vic.gov.au.

2.2.2 ‘Small’ land subdivisions creating fewer than 10 lots, building subdivisions, application surveys under the Transfer of Land Act 1958, boundary plan surveys and Crown surveys

a. When there are two or more SCN marks within the parameters of Regulation 13, Survey Co-ordination Regulations 2014, surveyors must do all the following:

i. connect to at least two of those SCN marks (or if using GNSS observations, see section 2.3 below)
ii. connect to at least one other permanent or primary cadastral marks to satisfy Regulation 11(3)(a), Surveying (Cadastral Surveys) Regulations 2015

iii. rotate the survey onto MGA bearing datum.

b. If only one SCN mark exists within the parameters of Regulation 13, Survey Co-ordination Regulations 2014, surveyors must do all the following:
   i. connect to that SCN mark (or if using GNSS observations, see section 2.3 below)
   ii. connect to at least two other permanent or primary cadastral marks to satisfy Regulation 11(3)(a), Surveying (Cadastral Surveys) Regulations 2015
   iii. adopt a bearing datum in accordance with title or a previous cadastral survey or plan.

c. If no SCN marks exist within the parameters of Regulation 13, Survey Co-ordination Regulations 2014, surveyors must do both of the following:
   i. connect to at least three permanent or primary cadastral marks to satisfy Regulation 11(3)(a), Surveying (Cadastral Surveys) Regulations 2015
   ii. adopt a bearing datum in accordance with title or a previous cadastral survey or plan.

d. When the same surveyor or survey firm has completed a nearby survey within the last five years that is already connected to two SCN marks, the earlier survey can be used for MGA bearing datum without the need to re-connect to those marks. In this case surveyors must do all the following:
   i. connect to at least two PMs or PCMs from the earlier survey that are at least 200 metres apart
   ii. connect to at least one other permanent or primary cadastral mark to satisfy Regulation 11(3)(a), Surveying (Cadastral Surveys) Regulations 2015
   iii. rotate the survey onto MGA bearing datum.

For scenarios a., b., c. and d. above, surveyors are encouraged to connect to Non SCN marks and unregistered permanent marks, where they exist within the immediate vicinity of the survey.

2.3 MGA bearing connection derived by GNSS equipment

2.3.1 General

GNSS may be used to derive MGA datum and connect a cadastral survey to the SCN. GNSS can achieve centimetre-level measurement quality and is therefore well suited to deriving an MGA bearing datum, provided appropriate standards and guidelines are adopted.

Surveyors are advised to familiarise themselves with the standards and guidelines outlined in the Standard for Australian Survey Control Network, Special Publication 1 (SP1) version 2.1 published by the Intergovernmental Committee on Surveying and Mapping (ICSM). This is available and can be viewed at www.icsm.gov.au/publications. Furthermore, surveyors are to also be familiar with Section 12, Part 2 – Survey Procedures, Survey Practice Handbook – Victoria, which is available at www.surveyorsboard.vic.gov.au.

The two main processes discussed are Static and RTK surveys. Generally, most surveyors utilise RTK methods of obtaining MGA bearings for a cadastral survey in Victoria.

Data Logging is an additional tool that can be used to establish MGA bearing datum. Data can be post processed to provide MGA co-ordinates and an MGA bearing. This is particularly useful where existing SCN marks are limited, far apart, difficult to traverse between or destroyed.

Geodesy SGV provides an informative Fact Sheet entitled Submitting GNSS data to SGV at www.propertyandlandtitles.vic.gov.au/surveying>Survey Marks Enquiry Service, which provides assistance to surveyors in this area. Additionally, data can be forwarded to Geoscience Australia at www.ga.gov.au/scientific-topics/positioning-navigation/geodesy/auspos for the determination of MGA co-ordinates.

Surveyors must ensure MGA bearings determined by GNSS techniques meet the 20" accuracy requirement discussed previously.
2.3.2 GNSS measurement quality and site-specific error sources

Surveyors are responsible for assessing the suitability of GNSS for use in a cadastral survey. In each case, surveyors must decide what is the appropriate GNSS equipment and measurement technique for the survey, and adopt proper verification procedures to ensure the desired level of quality has been achieved.

Under good conditions, RTK positioning techniques with modern GNSS equipment can achieve positioning uncertainties of less than a few centimetres. It is recognised that site specific GNSS error sources that limit GNSS measurement from achieving normal or expected positioning quality can often be present in cadastral survey environments. Surveyors must endeavour to minimise the influence of site specific error at all times when establishing a new survey control mark or connecting to existing marks using GNSS.

2.3.3 Maximising RTK positioning quality

While every effort may be given to minimising site specific GNSS error sources, it is not always possible to remove all sources of error when using RTK positioning techniques.

Survey control for MGA bearing in a cadastral survey

When establishing survey control to enable an MGA bearing datum to be determined, the following techniques are to be used:

a. To assist with identifying erroneous position determinations, the use of RTK positioning techniques on a survey control mark (PM or PCM) must consist of at least two independent occupations.

b. Each occupation must be of at least one minute duration. The second initialisation and occupation is to be separated by at least 20 minutes, and preferably more than 60 minutes, from the first occupation. It also must be of at least one minute duration.

c. The horizontal component of the differences between the two RTK determinations should be comparable to the expected level of agreement that would normally be obtained from the GNSS equipment and RTK positioning technique. As a minimum, the differences between two RTK determinations should not exceed 0.05 metres.

General survey marks in a cadastral survey

For other general marks located within the cadastral survey, the observation times may be reduced, but suitable checking techniques are to be employed. A second initialisation and occupation of every mark is required.

2.3.4 Verifying GNSS measurements

All MGA coordinate values derived from GNSS measurement to determine MGA bearing datum must be verified by connecting to at least one existing SCN ground mark. When connecting to SCN marks, the MGA coordinates derived for those marks must be compared with the values published in SMES. A variation in the horizontal component of the coordinate difference of up to 0.10 metres is acceptable. This difference takes into consideration the likely uncertainty in GNSS measurement and uncertainty in the published coordinates.

Where this variation exceeds 0.10 metres, the surveyor must do both the following:

a. connect to at least one other SCN ground mark to reconcile the difference

b. advise Geodesy SGV, of the discrepancy by email to smes.support@delwp.vic.gov.au

Geodesy SGV will assess and endeavour to rectify the reported anomaly and improve the published coordinate and uncertainty values.

Verification comparisons are to be reported upon in the licensed surveyor’s report.

2.3.5 Deriving bearing and ground distance from RTK positioning

Unlike bearing and distance measurements obtained using a theodolite/EDM or total station, bearings and distances derived from RTK positioning techniques are based upon relative differences of absolute positions. Since the respective positions each have an associated uncertainty, it is essential to keep in mind the way in which uncertainty propagates into GNSS-derived bearings and distances.

A surveyor must show on the abstract of field records the derived connection from the SCN mark (used for verification purposes) to one of the survey control marks (PM or PCM) in the survey. The connection shown must consist of the MGA bearing and ground distance, and the distance must be accompanied by the description ‘Ground’ on the abstract.
2.4 Cadastral surveys exempt from connection to MGA

Connection to MGA is not required for surveys supporting:

a. partial survey subdivisions that create one small lot from a significantly larger allotment (applicable primarily to a rural environment)

b. Records of having re-established a cadastral boundary pursuant to Regulation 16 of the Surveying (Cadastral Surveys) Regulations 2015.

However, where SCN marks exist within the immediate vicinity of a partial or re-establishment survey or GNSS equipment is used in the survey, surveyors are encouraged to connect to those marks and bring the survey onto MGA bearing datum.

2.5 Permanent Marks

2.5.1 Registration of new and/or unregistered Permanent Marks

In accordance with Regulations 6 and 7 of the Survey Co-ordination Regulations 2014, where new Permanent Marks (PMs) are established in a cadastral survey, or unregistered PMs are found and connected to, surveyors must do all the following:

a. obtain an allocated number for the PM using SMES

b. prepare an Original Permanent Mark Sketch Plan and lodge it with Surveyor-General Victoria using SMES within one month of the establishment or location of the mark

c. include the registration number of the permanent mark on the sketch plan and the plan and survey documents associated with the survey.

SMES should be used to determine whether a permanent mark is registered or not. If a permanent mark is not recorded in SMES, it can be accepted as being unregistered and dealt with in accordance with this section.

2.5.2 Provision of Permanent Mark information on survey documents

The Digital Cadastre Modernisation project aims to improve the spatial accuracy of the digital cadastre through the capture of surveyor’s observations and connection to the SCN. Information required from surveyors will be their observations to the SCN marks located within the survey and the provision of the PM and PCM number/s on the survey documentation.

When a permanent mark is connected to in a cadastral survey, surveyors must do all the following:

a. check that the permanent mark is registered. If the surveyor finds that the permanent mark is not registered, the surveyor must register the permanent mark in accordance with 2.5.1 above

b. show the connection to the permanent mark on the abstract of field records or RE Plan

c. include the permanent mark number on the survey documents (abstract of field records, RE Plan and licensed surveyor’s report).

2.6 Primary Cadastral Marks

2.6.1 What is a Primary Cadastral Mark?

A Primary Cadastral Mark (PCM) is a survey mark of a permanent nature that can be connected to as part of a cadastral survey to satisfy the monumentation requirements of Regulation 11(3) of the Surveying (Cadastral Surveys) Regulations 2015. To qualify as a PCM, a survey mark must be all of the following:

a. made of a durable material

b. permanent and stable in construction

c. placed so that it can be readily found and accessed

d. placed such that it does not present a hazard to the public.

When establishing PCMs, surveyors should endeavour to place them in locations where they are not likely to be damaged or destroyed, such as in concrete kerbs and other places away from pedestrian or vehicular traffic. Surveyors should also endeavour to establish PCMs in GNSS friendly locations, where possible.
Marks suitable for nomination as PCMs include:

a. For hard artificial surfaces (e.g. concrete, brick and stone):
   i. aluminium rivets
   ii. hardened survey nails
   iii. expanding metal dowels with a collar
   iv. drill holes at least 10mm deep with wings
   v. etches (or chisel cuts) that are prominent and well-defined with wings at least 50mm in length and not less than 3mm deep.
   
   Survey marks placed in bitumen or asphalt are not considered suitable as PCMs.

b. For natural surfaces:
   i. steel star posts or other survey marks of metal construction (e.g. rods or pipes) at least 600mm in length. Such marks should be placed with the top not less than 50mm beneath the surface.

2.6.2 Provision of PCM information on survey documents

For all PCMs connected to and established in a cadastral survey, surveyors must do all the following:

a. preserve the PCM numbers already assigned to existing PCMs connected to
b. assign numbers to all new PCMs from the series of numbers pre-allocated to them by the Surveyor-General

c. show the connections to the PCMs on the abstract of field records or RE Plan

d. include the PCM numbers on the survey documents (abstract of field records, RE Plan and licensed surveyor’s report) associated with the survey.

2.7 Recording the map projection and zone

All survey plans and abstracts of field records related to MGA are to clearly display the datum as MGA2020 and the relevant zone (54 or 55) of the map projection as notations on the north point. Other written documentation is to include similar notations as applicable.

3. Marking of lot boundaries

In accordance with the requirements of Regulation 9 of the Surveying (Cadastral Surveys) Regulations 2015, a key objective of the cadastral survey is marking the title boundaries of the parcel(s) defined in the survey. When determining the method of marking boundaries, surveyors are to perform the following:

a. Where direct marking of title boundaries is practical, boundary marks are to be placed at the perimeter corners of the land under survey. Intermediate ‘line’ pegs are also required at distances no greater than 200 metres apart on boundaries of significant length and/or when the ends of the boundaries are not inter-visible.

b. If it is impractical or inappropriate to place marks at the corners themselves, another form of marking the boundaries in the vicinity of the corners, such as offset marks, is to be implemented. This circumstance may include, but is not limited to, situations where fencing surrounding the land under survey is too high to permit access to the adjoining property; or, when the placement of such marks would not allow suitable access to facilitate construction on the subject land.
c. If, either direct or indirect marking of a corner is impractical, then the description ‘Not Marked’ must be added to the abstract of field records and the reason for the non-marking described in the licensed surveyor’s report. It is not appropriate to avoid placing marks on a boundary simply to avoid drawing a neighbour’s attention to anomalies uncovered during a cadastral survey or because the surveyor’s client has advised that they do not require the boundaries to be marked.

Appropriate action must also be taken by the surveyor to inform their client (in writing) of the possible ramifications of their re-establishment of a title boundary and particularly if the re-establishment identifies circumstances when an adjoining property or properties may be adversely affected.

It is most important that boundaries are marked to ensure there is no doubt or ambiguity on the ground regarding their identification, location or direction. Options for providing identification of boundaries and their direction include trenching, staking, stamping numbers on pegs (front and rear); or, by using a combination of these methods. In each case, the surveyor must use professional judgement about the most appropriate method of defining or indicating the direction of the boundary.

Spray paint directional markings on unpaved surfaces, although clearly visible, remain for a relatively short time and are considered unsatisfactory.

In rural environments, and where appropriate in urban areas, the preferred method of indicating boundary direction is by trenching, rock-filled trenches, or laying rock mounds.

When numbers are stamped on pegs, the numbering must be done in such a manner that the interpretation of the lot numbers cannot be ambiguous.

4. Record of having re-established a cadastral boundary

When a licensed surveyor undertakes a cadastral survey that will not be supported by an abstract of field records lodged with LUV, surveyors must lodge a Record of having re-established a cadastral boundary (RE Plan) with the Surveyor-General within 60 days of the completion of the survey, pursuant to Regulation 16 of the Surveying (Cadastral Surveys) Regulations 2015.

As specified by SPEAR, RE Plans must be prepared on an A3 layout and the plan must include the information prescribed in Schedule 4 of the regulations. Sheet 1 must be portrait layout. It is expected that the diagram will provide all of the following as a minimum:

a. the survey monumentation used as datum and the connection of the survey to it
b. the title particulars and major traversing of the survey within the road reserves
c. the PMs, PCMs and reference marks placed or located
d. the boundary marks placed.


RE Plans provide value to Victoria’s cadastral system as they alert other surveyors to a survey of a property and may contain useful cadastral information to enable future re-establishments of boundaries and alignments and for the improvement of the digital cadastre. The amount of information contained on RE Plans varies, with some only providing scant details of the survey; while others are more elaborate and presented as an abstract of field records supported by a licensed surveyor’s report. Regardless of their detail, provided they are prepared in accordance with the regulations and these practice directives, they are recorded by LUV and consequently become legal documents. It should be noted that minimal examination of RE Plans is performed by LUV prior to them being recorded.

Surveyors must be mindful that RE Plans are not a mechanism to amend title dimensions. If the survey dimensions differ to title dimensions it is expected that the differences will be clearly indicated. For example, this can be achieved by showing both Title and Survey dimensions on the affected boundaries.

Further to this, it is not appropriate for a surveyor to ‘qualify’ an RE Plan with any notation advising that the information cannot be relied upon as it has not been examined or approved by LUV. By signing the certification as required by Regulation 14(1) and Schedule 4 of the Surveying (Cadastral Surveys) Regulations 2015, the surveyor accepts full responsibility for the re-establishment survey.
LUV has determined that RE Plans are not acceptable as survey documentation in support of subdivisions. Regulation 18(1) of the Subdivision (Registrar’s Requirements) Regulations 2011 specifically requires an abstract of field records to be submitted to the Registrar when a plan of subdivision is lodged. It is not acceptable to refer to a previously lodged RE Plan as the supporting documentation for a plan of subdivision, even though that RE Plan may have been prepared as an abstract of field records and is supported by a complete licensed surveyor’s report.

An example of an RE Plan is available at:


5. Licensed Surveyor’s Report

The licensed surveyor’s report is a formal declaration made in accordance with Regulation 15 of the Surveying (Cadastral Surveys) Regulations 2015 and must be prepared to accompany any plan or application lodged with the Surveyor-General or the Registrar of Titles.

5.1 Title and requirements

The report is to be titled Licensed Surveyor’s Report.

A clear and concise report is an important element of every cadastral survey and should be comprehensive to assist in justifying the re-establishment and its acceptability. The report and abstract should support each other, being consistent and compatible. If the licensed surveyor’s report is deemed inadequate or incomplete by the Surveyor-General or the Registrar of Titles, the surveyor will be required to submit an appropriate report prior to registration.

Specific information regarding the requirements of the Registrar of Titles can be found at


5.2 Format of report

The licensed surveyor’s report template available at www.propertyandlandtitles.vic.gov.au/surveying/advice-and-guidelines-for-surveyors/victorian-cadastral-surveys-practice-directives can be used as a guide to the heading descriptions and what is required in the report. Other headings may be inserted as required; however, the report is to address each of the issues outlined in the template.

5.3 SPEAR requirements

The survey company/firm/organisation details or logo must be positioned so that the requirements of SPEAR Technical Note 4, available at www.spear.land.vic.gov.au/spear/pages/applicants/how-do-i-set-up-my-plan-templates.shtml, are accommodated. This is to allow the insertion of the digital signature. Please note: a blank space of 90mm x 20mm must be allocated in the bottom right hand corner of each sheet as shown below.

Company information and page numbering can be included in the footer of the first and subsequent sheets, but it must continue to satisfy the above requirement.
5.4 Traditional and non-traditional surveying equipment

The licensed surveyor must specify the calibration details of EDM equipment in the report.

Regulation 6(2) of the Surveying (Cadastral Surveys) Regulations 2015 requires a licensed surveyor to retain full records of EDM comparisons. These records must be made available to the Surveyor-General for inspection, when requested by the Surveyor-General.

The Surveyor-General requires a summary of calibration details to be included in the licensed surveyor’s report that forms part of the cadastral survey documentation lodged with LUV, including all the following:

a. make and model of instrument
b. serial number
c. EDM calibration baseline site
d. date of calibration.

It is acknowledged that not all surveys are performed using traditional techniques. With current and emerging technology being used to capture, interrogate, interpret and display the data; the licensed surveyor must fully describe the equipment used, the observation techniques, methods of validating and obtaining redundancies of measurements, any other field checking technique and the method of analysing the results. The locations within the survey that non-traditional methods of measurement were employed must also be clear on the abstract of field records and fully detailed in the licensed surveyor’s report.

5.5 Crown descriptions

Care should be taken to ensure correct Crown descriptions are included on all plan and survey documents. This includes the Crown allotment, Crown portion, Section, Township, Parish and County, as appropriate, with the details validated against the relevant records plans. Close attention should also be given to whether a Special (Local) Description is current and applies to the land. A full listing of the current Special Descriptions is available at:


The list has been prepared for Crown surveys, but applies equally to surveys of freehold land that lie within the relevant Parish and local area. The Parish code and County is not required for Plans of Subdivision. Similarly, the Parish code is not required for freehold abstract of field records but the County is required.

5.6 Other inclusions

When clarity of description can be gained by including images, such as the Record Plan or LASSI, these should be inserted with an appropriate descriptor under the relevant heading. This extends to sketches and diagrams.

6. Abstracts of field records

6.1 General advice

6.1.1 The purpose for preparing an abstract of field records

a. Maintenance of, and availability to, the public record.
b. Providing documentary evidence of conditions in the field that supports the method of re-establishment and justification.
c. Providing sufficient additional or redundant information to enable confirmation of the measurements recorded.
d. Providing a record of site conditions. The existence of traverse lines and positions of instrument points is a clear indication of site conditions such as topography and the existence of buildings, foliage or other obstacles.
6.1.2 Life of a survey and abstract of field records

a. a) The ‘currency conditions’ set out below describe the circumstances when a survey and abstract of field records will be regarded as valid by Land Use Victoria and further survey and/or documentation will not be required. These conditions include all the following:

i. no substantial changes to occupational features since the date of the original survey

ii. the greater majority of original survey control marks remain and are readily accessible

iii. no additional land is included in the plan

iv. the original title pegs/marks as placed remain, or have been replaced

v. the survey was undertaken no more than two years prior to lodgement of the current plan, i.e. the date of survey in the Certification by Surveyor is no more than two years prior to the date of lodgement of the current plan. This period is known as the ‘life of a survey’.

b. The life of a survey may be extended to a maximum of five years if the licensed surveyor’s report includes discussion on the currency of the survey and attests to conditions i, ii, iii and iv above.

c. If an abstract of field records is edited as part of meeting the ‘currency conditions’, for example to describe minor changes to occupational features or survey marks that have been destroyed since the date of survey, the updated abstract of field records must bear the following notation in the ‘Amendments’ text box:

<table>
<thead>
<tr>
<th>AMENDMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>This abstract of field records correctly represents the occupation and features existing on [insert date], and the survey has been brought up to date.</td>
</tr>
</tbody>
</table>

d. When occupation has substantially changed, or works have removed most of the survey marks (in the period between the completion of the survey/marking and the lodgement of the plan), surveyors must update the abstract of field records and discuss in the licensed surveyor’s report the alterations made prior to lodgement.

This process may involve the following:

i. when the abstract of field records and accompanying plan has not been lodged, surveyors must amend the original abstract of field records and discuss the alterations made in the licensed surveyor’s report; and

ii. when the current plan relies on an abstract of field records already lodged with LUV, a new (‘additional’) abstract of field records is to be prepared.

e. If the survey was completed more than five years prior to lodgement of the current plan, a new abstract of field records is to be prepared showing the current occupation features, survey control marks and boundary marks.

6.2 Land Registry Services requirements

6.2.1 Requirement for an abstract of field records

a. All plans of subdivision lodged with Land Use Victoria must be supported by an abstract of field records of the survey undertaken, except when the subdivision is one of the following:

i. is based on a recent survey of the property by the same surveyor or surveying firm (i.e. a survey contained in a prior plan or application undertaken no more than five years prior to lodgement of the current plan)

ii. does not create any new boundaries

iii. is prepared under section 32, Subdivision Act 1988 re-subdividing multi-storey buildings that only create new boundaries fully contained within the existing building.
b. For *Transfer of Land Act 1958* application surveys, LUV requires the abstract of field records to be based on a survey completed no more than two years prior to the lodgement of the application. However, if it is known to the surveyor that changes have occurred to occupation along boundaries subject to the application, the abstract of field records must be updated to record those changes.

c. If LUV determines that a survey is inadequate, the surveyor will be required to provide appropriate survey documentation prior to registration.

### 6.2.2 Subdivision of ‘Super-Lots’ and subsequent stages of an ‘estate type’ Master Plan

a. If the ‘currency conditions’ are not met, a new abstract of field records and licensed surveyor’s report must be lodged with LUV at the time the plan is lodged.

b. A new abstract of field records is not required to support a plan for the subdivision of either a Super-Lot or subsequent stage of a Master Plan for an ‘estate type’ subdivision, provided all the following apply:
   i. the survey requirements for estate subdivisions as outlined in Appendix B have been met
   ii. the new plan is endorsed by either:
      – the same surveyor (from the same company) that attained council certification of the originating Super-Lot plan or stage in a Master Plan; or
      – a different surveyor from the same company as the originating surveyor. In this circumstance the subsequent surveyor must include all the following in their licensed surveyor’s report:
         1. confirmation that they are satisfied with the original re-establishment
         2. confirmation that they have marked the subject parcel(s) on site
         3. reference to the originating plan.
   iii. The certifying surveyor advises that a ‘supplementary’ abstract of field records will be lodged at LUV following the completion of works.

c. A new abstract of field records and licensed surveyor’s report is required to support a plan that subdivides a Super-Lot or a subsequent stage of an ‘estate type’ Master Plan if the surveyor endorsing the new plan represents a different company from the company which attained council certification of the original plan that set out the Super-Lot or subsequent stage.

See Appendix B for further information regarding LUV guidelines, supplementary abstract of field records and licensed surveyor’s reports for ‘estate’ subdivisions.

### 6.3 Format of the abstract of field records

#### 6.3.1 If conventional traversing techniques have been employed

If surveys are carried out using conventional traversing techniques, the abstract of field records to be lodged is to take the format of the ‘traditional’ abstract of field records. The abstract is to show all traverse lines, chainages, radiations, offsets, fence and mark descriptions etc. as described in the Surveying (Cadastral Surveys) Regulations 2015 and these practice directives.

An example of a *traditional* abstract of field records is available at:


#### 6.3.2 If non-conventional measurement techniques have been employed

Due to advancements in technology (e.g. reflector-less total stations, GNSS and laser scanning), an increasing number of situations will occur where traditional chainage/offset and traversing methods are not used to complete a cadastral survey. When non-conventional measurement techniques are used, the format of the ‘alternative’ abstract is to be adopted.

An example of an *alternative* abstract of field records is available at:

The ‘alternative’ abstract is to clearly show or state:

a. the measurement technology used to complete the survey
b. the survey datum and survey(s) of origin
c. where GNSS was used, the bearings rotated onto MGA bearing datum
d. ground or site distances at mean elevation. Spheroid or grid distances are not to be shown on cadastral plans or abstracts of field records
e. the measurements that have been derived by means other than direct measurement (i.e. distinguish between derived and direct measurements)
f. features (other than traverses) as described in the Surveying (Cadastral Surveys) Regulations 2015 and these practice directives
g. any conventional traversing performed shown in the usual manner.

6.3.3 Postponement of placement of marks and/or lodgement of supplementary abstract of field records

a. If the placement of marks has been postponed in accordance with Regulation 11(4) of the Surveying (Cadastral Surveys) Regulations 2015 and PMs or PCMs have been placed in the process of construction or final marking of any subdivision, a supplementary abstract of field records is to be forwarded to LUV within 45 days after construction is completed.
b. If a supplementary abstract of field records is required, it is to show:
   i. connections to at least three permanent or primary cadastral marks from the original survey or a subsequent survey (i.e. supplementary abstract) that can be linked to the original survey
   ii. mark numbers for the PMs and PCMs established or located and references to other physical indicators (streets, occupation, sheet references, etc.) from the original abstract
   iii. observed or derived connections between the established PMs and PCMs.

An example of a supplementary abstract of field records is available at:


7. EDM calibration

Adherence to measurement standards for boundary-related surveys is important in maintaining the integrity of Victoria’s cadastre and property boundary system, which supports land administration and registration.

Measurements are subject to errors inherent in surveying instruments and techniques. Observing ‘best practice’ surveying methods will minimise uncertainty that may be introduced to measurements. Also, instruments and equipment must be systematically tested for errors (calibrated) and standardised (compared to the national standard).

The Surveying (Cadastral Surveys) Regulations 2015 set minimum standards for surveying title boundaries, including calibration and standardisation of survey instruments and equipment.

7.1 Meeting EDM standards requirements

Regulation 6(1), Surveying (Cadastral Surveys) Regulations 2015 requires a licensed surveyor to:

a. use survey equipment that has been compared to a standard of measurement
b. ensure both the process and basis of comparison (with the standard) are adequate to obtain the accuracy required by the regulations.

The Surveyor-General requires surveyors using EDM devices to compare their instruments to a certified, calibrated EDM baseline test range at intervals not exceeding 12 months. Surveyors must exercise professional judgement to determine if more frequent comparisons are needed.
The Surveyor-General provides EDM calibration baselines across Victoria for surveyors to comply with instrument calibration and standardisation requirements. The six EDM calibration baselines in Victoria are located at Bendigo, Braeside, Cowwarr, Geelong, Hamilton, and Mitcham. To assist surveyors to meet the regulations, the following information is freely available to download online:

a. **EDM Calibration Handbook**
b. **EDM Calibration Booking Sheet**
c. **‘Baseline’ EDM Calibration Software**
d. **Baseline booking facility** (available through SMES) and **baseline location information**.

To find go to:  

### 8. Precision of dimensions on plans of cadastral surveys and abstracts of field records

Every adopted length, bearing and area shown on an abstract of field records or a plan prepared from a cadastral survey shall be shown in accordance with the following table, which replaces Table 7.1, Part 2, *Survey Practice Handbook – Victoria*. An exception to the table exists for adopted lengths and traverse bearings on an abstract of field records, which may be shown to a greater precision if it is necessary for the purposes of the survey. For example, if the rotation from to MGA from a cadastral datum is computed to 5° of arc, then the adopted bearings can be shown to that precision, where appropriate, on the abstract of field records.

The general notes on lengths, bearings and areas contained in Section 7.7, Part 2, *Survey Practice Handbook – Victoria*, are still applicable.

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Unit/s to be used</th>
<th>Precision</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Length</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 500 metres</td>
<td>Metre</td>
<td>Correct to the nearest 0.01 metre, except where circumstances require greater precision, then correct to the nearest 0.005 metre.</td>
</tr>
<tr>
<td>500 metres and up to 5000 metres</td>
<td>Metre</td>
<td>Correct to the nearest 0.01 metre</td>
</tr>
<tr>
<td>Over 5000 metres</td>
<td>Metre</td>
<td>Correct to the nearest 0.1 metre</td>
</tr>
<tr>
<td><strong>Bearings of Lengths</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 30 metres</td>
<td>Degrees (°) and minutes (’) of arc</td>
<td>Correct to the nearest minute of arc</td>
</tr>
<tr>
<td>Over 30 metres</td>
<td>Degrees, minutes and seconds (”) of arc</td>
<td>Correct to the nearest 10 seconds of arc</td>
</tr>
<tr>
<td><strong>Area</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 100 square metres</td>
<td>Square metre</td>
<td>Correct to the nearest 0.1 square metre</td>
</tr>
<tr>
<td>100 square metres and less than 1 ha</td>
<td>Square metre</td>
<td>Correct to the nearest square metre</td>
</tr>
<tr>
<td>1 hectare and up to 10000 hectares</td>
<td>Hectare</td>
<td>Correct to four significant figures (e.g. 1.234 ha)</td>
</tr>
<tr>
<td>Over 10000 hectares</td>
<td>Square kilometre</td>
<td>Correct to four significant figures (e.g. 1.234 km²)</td>
</tr>
</tbody>
</table>
9. General advice

9.1 Surveyor-General consent to Crown land boundary determinations

A traditional role of the Surveyor-General, set out in Section 42 of the Surveying Act 2004, is the formal determination of government road alignments and/or Crown land boundaries. The Surveyor-General’s consent is primarily sought when insufficient land exists to maintain widths of government roads; when differences exist within parcels such that title dimensions cannot be maintained to adjoining Crown land; or, when parcel boundaries are defined by a relationship to a water feature such as a river, lake or the sea.

Surveyors are advised to seek consent to the position of the alignments of government roads and other Crown land boundaries prior to plans being lodged with LUV for registration. The Surveyor-General will not provide consent without receiving a formal request from the surveyor accompanied by supporting documentary evidence such as a worksheet or abstract of field records, licensed surveyor’s report and photos of the Crown land boundaries. The provision of consent involves a process similar to processing applications under the Transfer of Land Act 1958, and requires a similar amount of time to complete.

9.2 State border determinations

The Surveyor-General is responsible for advising on the position of state borders. Surveyors who determine land boundaries that form part of the state border must present the results of their survey to the respective Surveyors-General for agreement. Surveyor-General Victoria should be contacted in the preliminary stages of performing such a survey to identify the procedure, type of survey evidence and the format of the plan to be presented for agreement by the Surveyors-General.

Specific advice on the determination of the state border between New South Wales and Victoria along the Murray River is provided in the publication NSW-VIC Border Determination available at:


9.3 Consideration of the width of roads

From time to time, surveyors adopt alignments without consideration to, or awareness of, the impact of their decisions on the land within the road ‘reserve’. It appears this situation arises when surveyors fail to survey an area of sufficient extent or measure the widths of roads.

The Road Management Act 2004 and associated administrative processes highlight the need for surveyors to measure, record and give due consideration to occupation across and along streets and roads throughout Victoria when determining street and road alignments.

Sections 7.4, 7.8 and 7.9, Part 2, Survey Practice Handbook – Victoria refer to the requirements to measure and record aspects relating to road widths.
Appendix A: Survey documents required when lodging a plan of subdivision or consolidation

The practice of permitting some plans of subdivision and consolidation to be submitted without survey (i.e. not supported by an abstract of field records) has been updated following consultation with the surveying profession. The licensed surveyors consulted agree that plans lodged at LUV accompanied by complete and thorough survey documentation enhance the cadastre’s integrity and provide greater assurance that the Registrar issues ‘good title’.

It is important to note that Regulation 18 of the Subdivision (Registrar’s Requirements) Regulations 2011 requires licensed surveyors to provide a licensed surveyor’s report and abstract of field records when a plan is lodged. There is no legislative authority that permits the lodgement and registration of plans without a current survey.

Because of this decision, from 1 July 2016 all plans signed by a licensed surveyor must be supported by an abstract of field records unless one of the exemptions below applies.

Exemptions to providing an abstract of field records
Plans that satisfy the exemptions detailed below must still be lodged with an extensive licensed surveyor’s report prepared in accordance with these practice directives.

- Plans based on a recent survey of the property by the same surveyor or surveying firm (i.e. a survey contained in a prior plan or application).
- Plans of subdivision that do not create any new boundaries.
- Plans prepared under Section 32 of the Subdivision Act 1988 re-subdividing multi-storey buildings that only create new boundaries fully contained within the existing building.
- Plans of consolidation prepared from titles that have a clear common mathematical origin and there is no change to title dimensions. In this case, the licensed surveyor will still need to provide justification within the surveyor’s report of how the titles fit together.

Please note: LUV may request survey at any time.

Partial surveys
Partial surveys that typically create one or more small lots from a significantly larger allotment (applicable primarily to rural properties) will be accepted, provided that:

- the lot(s) subject to the partial survey are fully surveyed and
- only one balance lot remains, which is not subject to full survey.

All new boundaries of the lot(s) subject to the partial survey must be shown on the abstract of field records, together with sufficient information to adequately re-establish the title boundaries in which the new boundaries intersect.

Non-survey guidelines for plans lodged under Section 32, Subdivision Act 1988
An ‘addendum’ abstract of field records and licensed surveyor’s report will normally be required to support Section 32 plans, especially when a new survey was required to compute or mark new boundaries at ground level.

However, plans may be accepted without an abstract of field records if:

a. the original survey was carried out by the same surveyor or survey company within the last five years, and no additional land has been included in the plan
b. the new boundaries can be derived from existing information on the plan or abstract of field records without the need for further survey
c. the new boundaries are defined by, attached to, or contained within original buildings, and are not required to be marked at ground level.

In cases where it is doubtful if a plan will be accepted without an abstract of field records, surveyors should contact LUV for advice. It is possible that an ‘addendum’ licensed surveyor’s report could be required, which on its own may adequately satisfy the requirements of Land Victoria.

Where an ‘addendum’ abstract of field records and licensed surveyor’s report are supplied, they should:

a. satisfy the Surveying (Cadastral Surveys) Regulations 2015

b. re-establish the datum of the original survey – partial surveys may be accepted

c. retain the bearing datum of the original plan/folio if that datum is not MGA, i.e. the original plan/folio was not based on a survey that included a connection to marks with MGA coordinates.

If a connection to MGA is observed in the new survey, an appropriate notation should be shown on the addendum abstract of field records describing the relationship to MGA datum.
Appendix B: LUV guidelines for estate subdivisions

LUV, in conjunction with CSV, has developed guidelines for licensed surveyors undertaking Estate Subdivisions (i.e. Section 37 stage plans, super-lot and large balance-lot style subdivisions). The aim of the guidelines is to:

- address deficiencies in survey documentation lodged for subsequent stages of an estate subdivision
- remove the need for a re-survey of the balance land of an estate once the original survey has reached 5 years of age
- place priority on the timely provision of supplementary abstracts of field records that will become the key survey information underpinning the estate’s cadastre into the future.

This will be achieved by:

- the inclusion of more detailed information within licensed surveyor’s reports
- the provision of ‘Plan Linking Diagrams’
- the lodgement of supplementary abstracts of field records on a stage-by-stage basis.

Subject to the ‘currency conditions’ of a survey being met, LUV may accept enhanced survey information for estate-type subdivisions provided that:

- the location of the subject lot/stage is identified within the estate
- the survey link to the original survey is clearly defined
- the abutting supplementary abstracts of field records, where applicable, have been accepted by LUV and identified in the documentation.

This process will only apply to the same surveyor and survey company that attained council certification of the original plan or to a different surveyor from the same company as the originating surveyor.

A licensed surveyor may also at any time deem a new abstract of field records necessary to support a plan of subdivision of a super-lot or stage within an estate. In such cases the survey would need to be performed and documented in accordance with the current regulations and directives for cadastral surveys.

Supplementary abstract of field records

Supplementary abstracts of field records are to be completed on a stage-by-stage basis following the completion of works in accordance with Regulation 11(5) of the Surveying (Cadastral Surveys) Regulations 2015, and must be forwarded to LUV for processing. They will be stored with the survey information for the associated plan of subdivision once accepted by LUV Victoria.

Supplementary abstracts of field records must show connections to at least three marks from the original survey or a subsequent survey that can be linked to the original survey.

An example of a supplementary abstract of field records is available at:


Licensed surveyor’s report

Licensed surveyor’s reports for stages of an estate subdivision must provide information that:

a. Identifies the location of the subject stage within the estate
b. Identifies the survey link between the original survey of the site and the survey of the subject stage
c. Identifies the location of abutting supplementary abstracts of field records that have been completed and accepted by LUV.
Depending on the particular circumstance of a stage, the licensed surveyor’s report may be accompanied by ‘Plan Linking Diagrams’ to show the location of the stage in relation to the overall estate and/or the identification of abutting stages where supplementary abstracts of field records have been accepted by LUV.

**Examples of licensed surveyor's reports**

The following links are provided for examples of the information that is to be supplied with licensed surveyor’s reports that accompany plans of subdivision for stages of an estate;

**Example 1** – to be used for the first stage or super-lot subdivision within an estate. Only an enhanced licensed surveyor’s report is required in this instance.

**Example 2** – to be used where there are adjoining stages within an estate. An enhanced licensed surveyor’s report and Plan Linking Diagrams 1 and 2 are to be supplied.

**Example 3** – to be used for a stage remote from other stages within the estate. An enhanced licensed surveyor’s report and Plan Linking Diagram 1 are to be supplied.

All examples are available at:

### Appendix C: Abbreviations used in this report

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHD71</td>
<td>Australian Height Datum</td>
</tr>
<tr>
<td>CSV</td>
<td>Consulting Surveyors Victoria</td>
</tr>
<tr>
<td>DCM</td>
<td>Digital Cadastre Modernisation</td>
</tr>
<tr>
<td>DELWP</td>
<td>Department of Environment, Land, Water and Planning</td>
</tr>
<tr>
<td>EDM</td>
<td>Electronic Distance Measurement</td>
</tr>
<tr>
<td>GDA94</td>
<td>Geocentric Datum of Australia 1994</td>
</tr>
<tr>
<td>GDA2020</td>
<td>Geocentric Datum of Australia 2020</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographic Information System</td>
</tr>
<tr>
<td>GNSS</td>
<td>Global Navigation Satellite System</td>
</tr>
<tr>
<td>ICSM</td>
<td>Intergovernmental Committee on Surveying and Mapping</td>
</tr>
<tr>
<td>LASSI</td>
<td>Land and Survey Spatial Information</td>
</tr>
<tr>
<td>LRS</td>
<td>Land Registry Services</td>
</tr>
<tr>
<td>LUV</td>
<td>Land Use Victoria</td>
</tr>
<tr>
<td>MGA94</td>
<td>Map Grid of Australia 1994</td>
</tr>
<tr>
<td>MGA2020</td>
<td>Map Grid of Australia 2020</td>
</tr>
<tr>
<td>SGV</td>
<td>Surveyor-General Victoria</td>
</tr>
<tr>
<td>PCM</td>
<td>Primary Cadastral Mark</td>
</tr>
<tr>
<td>PM</td>
<td>Permanent Mark</td>
</tr>
<tr>
<td>RTK</td>
<td>Real Time Kinematic</td>
</tr>
<tr>
<td>SCN</td>
<td>Survey Control Network</td>
</tr>
<tr>
<td>SMES</td>
<td>Survey Marks Enquiry Service</td>
</tr>
<tr>
<td>SPEAR</td>
<td>Surveying and Planning through Electronic Applications and Referrals</td>
</tr>
<tr>
<td>SRBV</td>
<td>Surveyors Registration Board of Victoria</td>
</tr>
</tbody>
</table>