

# Surveying Alert



## Datum adjustments, CSR clarifications, Plan Forms

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### Datum adjustments

The department is now regularly adding new permanent survey marks (PSMs) with datum quality coordinates to our state-wide geodetic adjustment. A key driver is the increasing number of departmental observations campaigns as we move towards a new datum by 2020. We are also seeing growth in the number of geodetic measurements contributed by external surveyors from major mapping and engineering projects as well as from cadastral surveys of 10 lots or more and in Large Scale Land Development Areas. Guidelines for the submission of such data are available in the latest version of the specification for *Completion of Permanent Survey Mark Plans* (See [Surveying Alert 18](#)).

In order to make this higher density of datum PSMs available for other surveys as quickly as possible, the Survey Control Data Base will now be updated on a monthly basis. Those updates will also flow through to the Queensland Globe and to the Survey Control Register download file available via QSpatial.

The department has also recently changed the acronym used to label the state-wide datum adjustment from “QEHA” to “ANJ”. The new acronym is based on the first letters of the three components of the adjustment:

- “A” for APREF – The Department’s adjustment is now constrained by Geoscience Australia’s weekly solution for the GDA94 coordinates of Continuously Operating Reference Stations (CORS) that contribute to the definition and monitoring of the Asia-Pacific Reference Frame (APREF);
- “N” for NGCA – our adjustment also contains results from Geoscience Australia’s processing of the National GNSS Campaign Archive;
- “J” for Jurisdictional – The geodetic observations across Queensland that the department processes and contributes (along with other jurisdictions) to the national adjustment for the maintenance of GDA94 and ultimately for the definition of the modernised data set, GDA 2020.

The monthly adjustments of ANJ are also being labelled by the year and month of the adjustment. For example, the version of ANJ that was adjusted in April 2016 is labelled “ANJ 16.4”.

It should be noted that the ANJ adjustment data set is now so well defined that the changes in the GDA94 coordinates, from one adjustment to the next, are typically very small, with 95% of marks changing by less than the stated positional uncertainty for that mark. Even with such small changes, the department decided to add them as new records to the Survey Control Data Base to clearly document each time new adjustments are undertaken, which is important for purposes such as legal traceability of position.

Surveyors are also reminded that they have a responsibility to ensure that all information on a cadastral plan is correct at the time of signing and that includes a requirement to show the most current coordinates of datum PSMs.

Therefore, for cadastral surveys and other surveys connecting to datum, surveyors are encouraged to regularly check the Survey Control Register to ensure that they have the most up to date information about datum PSMs in their area of interest. Given the increased regularity of these changes, surveyors should also pay attention to metadata when documenting the source of coordinates supplied to clients and other parties.

## **CSR – clarification of connection to datum; compiling water boundaries**

### Clarification of connection to datum

Where a survey is connected to datum under CSR 3.28.1, coordinates are determined for the marks from which the connections are made. Under CSR 3.28.3 guidance is provided that the 2 marks connected, for which coordinates are determined, are within the survey itself.

However, the situation may arise where connection is via datum PSMs and one or both of the datum PSMs are also within the survey. This makes the need for additionally determining coordinates on marks near/beside the datum PSM/s redundant.

To further clarify this – where any of the datum marks used for connection to datum are within the survey itself (i.e. could be used as a reference mark to reinstate any corner of the subject land), then coordinates do not need to be determined for a corresponding mark within the survey. The datum PSMs must be shown in the coordinates table in accordance with CSR 3.14.

### Compiling water boundaries

Relevant lengths (i.e. part or whole length) of a water boundary may be compiled under various sections of the SMI Act. The specific requirements to be met are laid out in s.65, s.79 (for FNPOS for tidal boundary), s.85 (for SNPOS for tidal boundary), s.107 (for FNPOS for non-tidal watercourse boundary), and s112 (for SNPOS for non-tidal watercourse boundary).

The use of remotely sensed data (such as imagery) can be used to survey water boundaries in accordance with CSR 3.38. Remotely sensed data may also be a source from which the relevant length of unsurveyed water boundaries can be compiled where the specific requirements for compilation have been met. The translation of these various sections of the SMI Act and CSR for compiling the relevant length of water boundaries from remotely sensed data can be expressed as:

- Where the water boundary has been previously surveyed, remotely sensed data cannot be used to compile a water boundary, but can be used to survey the boundary.
- Where the water boundary has not been previously surveyed, remotely sensed data can be used to compile a water boundary only if the boundary is to remain unsurveyed.

### SE Qld seminar presentations

For those who were unable to attend one of the SE Qld seminars in April that provided information on GNSS for cadastral surveying, connection to datum and changes to the RTDPP, three of the PowerPoint presentations are available for [Connection to datum](#), [CSR key changes](#) and [Estimating PU](#).

## **Plan Forms**

The plan administration sheet was formerly the back of a Form 21, or Form 38 (for eSurvey plans), but is now completed on a Form 21B, or 38B respectively. The RTDPP does not specifically state that a Form 21B or 38B needs to be sheet 2 on all multi-sheet plans, however, the intention is that Form 21B or 38B is always to be sheet 2, and should be numbered as such. A new version of both Forms is soon to be released with the sheet number as part of the proforma.