

GDA2020 Transformation Project

The vast majority of Department of Transport and Main Roads (TMR) Geospatial and Survey data is currently stored and used in the Geocentric Datum of Australia 1994 (GDA94) datum which was adopted as Australia's national geodetic datum in January 2000.

Since then, however, two important things have happened. Australia has moved about 1.8 metres northeast (about 7cm a year), effectively moving the location of mapped features and their associated GDA94 coordinates.

At the same time, positioning technology has improved considerably. To allow for the complexity of the change, Australia has modernised and updated the datum to create GDA2020. This new continent-fixed datum brings the coordinates of Australia's mapped features back into line with Global Navigation Satellite Systems (GNSS) in 2020.

Precise positioning is increasingly important for engineering, construction, survey and design as it requires the collection, management and alignment of precise spatial information.

The coordinates of features such as roads, bridges and property boundaries on most of our maps and surveys are currently based on GDA94.

The TMR GDA2020 Transformation Project is focused on the adoption and transition to the new national datum for Australia, GDA2020 a robust, accurate, and capable datum more closely aligned to Global Navigation Satellite Systems (GNSS).

Know your datum – Datum matters

TMR's systems and data will be transformed to support GDA2020 by 1 December 2021. Following this GDA2020 will be considered our standard datum for managing our infrastructure and systems.

However, as TMR will continue to support GDA94, this means knowing your datum is crucial.



Consider this, survey to locate underground services and the following detailed design was completed using GDA94. However, an onsite operator, who works across multiple projects, was not aware of the datum being used. They then used coordinates using GDA2020 as the base datum.

In this instance, if the operator was boring holes, they would be about 1.8 metres away from the were they should be working. Not only does this mean work would have to be re-done it also significantly increases the risk of hitting essential underground services or causing damage.

Datum matters – know your datum.

Why is this update important?

The main benefit of adopting GDA2020 for TMR is that it will bring our latitude and longitude coordinates into better alignment with global satellite positioning systems allowing TMR to continue to seamlessly transfer spatial data accurately within and between organisations.

Location or positioning information has always been important for the mapping, surveying and construction community, but our society has also become more technologically reliant on increasingly precise location information.

Our reliance on location information is vast and includes everything from business (construction, agriculture, insurance), safety services (police, emergency services, landscape mapping), modernising our transport and tourism industry (navigation via Global Navigation Satellite System (GNSS) enabled maps), automated vehicles, telecommunications and even the entertainment you consume.



How to get involved

While the impacts of moving to GDA2020 should be minimal, it will change the capture and use of TMR GIS and Survey systems, equipment or data.

However, TMR wants to work with industry to identify any potential impacts of this transformation and need to support multiple datums during the transition.

If you have any concerns about potential impacts to your business please reach out to your TMR contact or email the project team at GDA2020@tmr.qld.gov.au.



Did you know a datum is the system that allows the location of latitudes and longitudes (and heights) to be identified on the surface of the Earth? There are many different datums used across the world today and each one is given a unique name to ensure they are easily identified.

For more information

To find out more about TMR's transition to GDA2020 contact the project team via email at GDA2020@tmr.qld.gov.au.

To find out more about Australia's transition to GDA2020 visit the Intergovernmental Committee on Surveying and Mapping ([ICSM website](#)) and watch their quick video about [Modernising Australia Datum](#) developed by Small Island Studio.