

Background

The Department of Customer Service's Spatial Service unit is capturing airborne gravity across NSW and the ACT in order to produce a state-wide NSW Gravity Model.

A Gravity Model of NSW will provide critical geoscience information to produce improved outcomes for State infrastructure projects and the management of natural hazards and earth resources.

Existing NSW gravity datasets are out of date, incomplete and inconsistent. Much of the dataset includes a combination of land-based, satellite and airborne gravity data collected across several decades.

Many of these datasets predate Global Navigation Satellite Systems (GNSS) positioning and are of low-quality spatial accuracy.

Due to data collection difficulties above water as well as mountainous and forested areas there are large regions of the State where gravity data is low in quality and distribution, or non-existent.

The proposed NSW gravity model would provide consistent high-quality, high-density data (two kilometre spacing) across the whole state, including 50 kilometres off the NSW coastline.

Q&A

What is the NSW Gravity Model project?

The NSW Gravity Model project will capture airborne gravity across NSW to produce more accurate geophysical and geodetic data sets across the State.

High-quality, high-density gravity data will deliver more accurate and consistent height determination from Global Navigation Satellite Systems (GNSS) positioning (including Global Positioning Systems, GPS) across all of NSW and will also be used to support productive and effective land management and technological innovation. The high-quality gravity data will help to deliver more accurate and consistent height determination from GNSS positioning (including GPS) across all of NSW.

Data from gravity surveys is used alongside other geophysical datasets to help a variety of sectors. Having a highly accurate gravity dataset will also positively impact and improve:

- Exploration and management of groundwater stores
- Earthquake hazard detection
- Inform land use decision making
- Bushfire and natural disaster recovery efforts

- Large infrastructure projects
- Property, construction, agriculture, mining & surveying
- Flood mapping
- Future resource investment opportunities, potentially aiding regional jobs and economic growth across NSW
- It will also reduce levelling survey expenditure across all three tiers of government.

Why is the NSW Government developing a new Gravity Model?

Current NSW gravity datasets are incomplete, inconsistent, and inaccurate.

A Gravity Model for NSW will provide critical geoscience information which will produce improved outcomes for infrastructure projects in NSW as well as better management of natural hazards and earth resources.

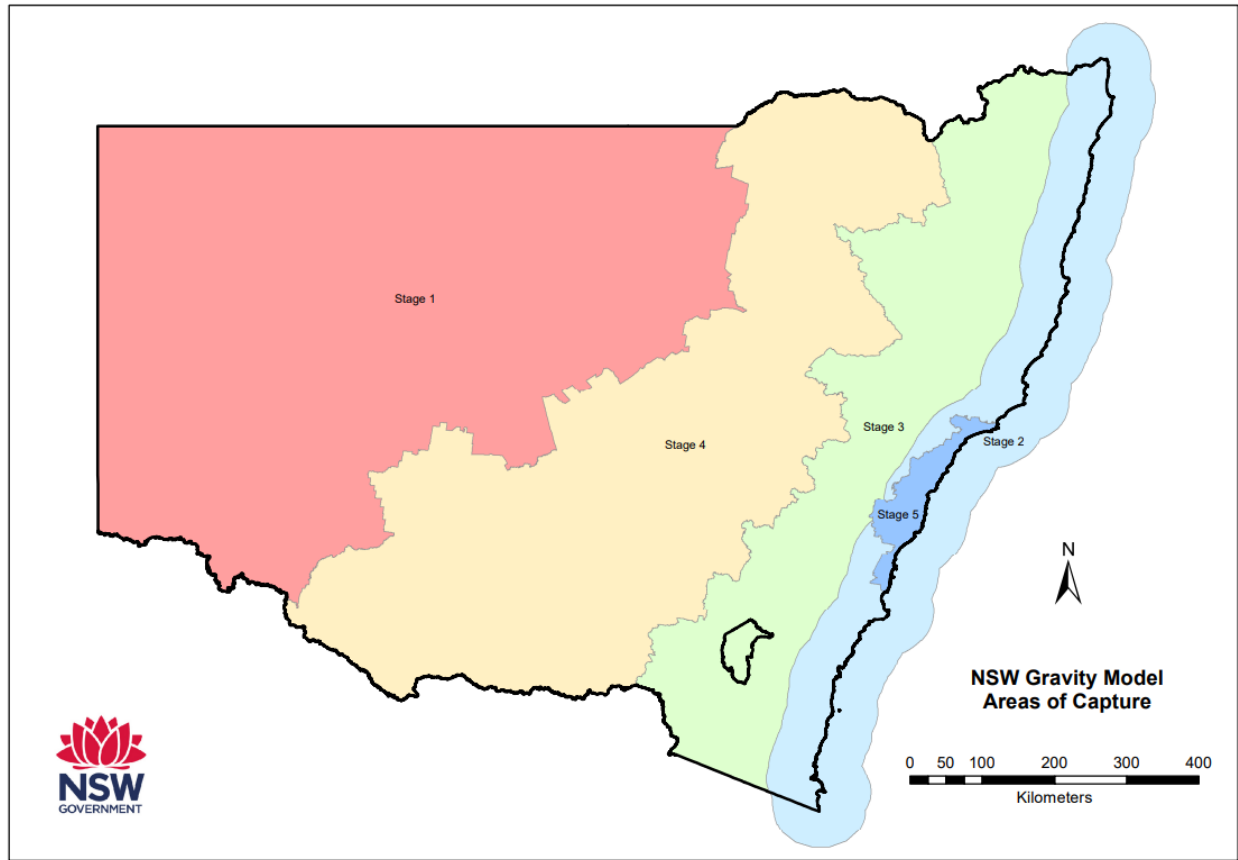
The NSW Gravity Model will cover the entirety of NSW and will deliver more accurate and consistent gravity data.

The improved dataset will deliver resource investment opportunities, aiding regional jobs and economic growth across NSW.

How will the NSW Gravity Model be made?

The NSW Gravity Model project will be captured in five stages from June 2022 and will be completed by December 2023.

Aircraft equipped with airborne gravity sensors will fly lines in two-kilometre spacings across NSW in five separate stages measuring small variations in the earth's natural gravitational force.



Where can users see the Gravity Model?

The NSW Gravity Model project is expected to be completed by December 2023.

The gravity data will be freely available through the NSW Government's open data platforms and licensed for public use.

The data will also be included in the national geoscience database and data portals managed by Geoscience Australia.

Will the planes cause excess noise or environmental damage?

The aircraft will fly in public airspace at a proposed altitude of 160 metres above the ground, increasing to 310 metres in built-up areas.

The gravity measuring sensor is passive and does not emit any signals, or impact people, animals, or infrastructure.

Can people opt out of the Gravity Model?

A whole of NSW data capture is required for the project to deliver on all the benefits for NSW including the provision for a future national reference surface for height based entirely on measurements of gravity.

The aircraft will only fly each line once and is equipped with a sensor that only measures gravity data and is not capable of capturing images of property, infrastructure, or individual people.

How will people's privacy be protected?

The aircraft will only be equipped with a sensor that measures gravity data and is not capable of capturing images of property, infrastructure, or individual people.

Won't this model cause more resources to be mined and cause damage to the environment?

Developing the NSW Gravity Model is a non-invasive, non-destructive remote sensing method that has already been used for decades throughout both Australia and globally.

Gravity data will help the NSW Government to better manage resources such as ground-water reservoirs.

The NSW Gravity Models benefits go far beyond the State's resources sector, forming part of the NSW Digital Twin and Live NSW project.

Who will have access to this Gravity Model data?

The gravity data will be freely available through the NSW Government's open data platforms and licensed for public use.

The data will also be included in the national geoscience database and data portals managed by Geoscience Australia.