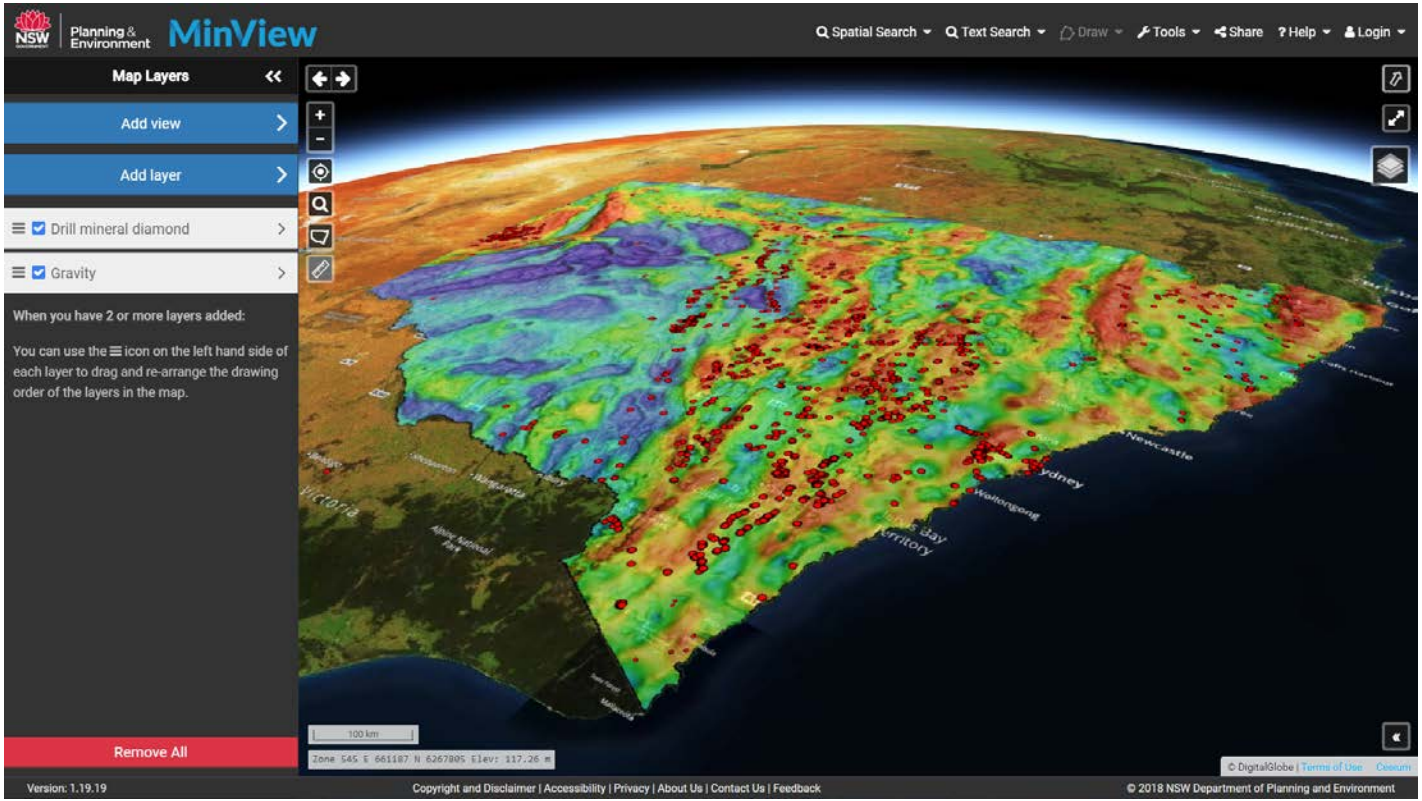
Next Generation Data Delivery

An open source solution

Ben Nicholson, Senior Geospatial Officer, Geological Survey of NSW

Mapped Out 2018

MinView



NSW GOVERNMENT

https://minview.geoscience.nsw.gov.au

Contents

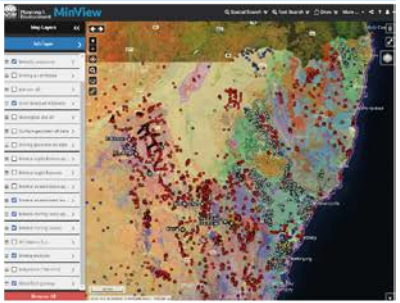
What does the Geological Survey NSW do?

Collects and manages geological, geophysical, geochemical and geospatial data:

to inform the government, resource industry and the community about the state's geology, and mineral, coal, petroleum and renewable energy resources

to facilitate the safe and sustainable development and management of NSW mineral and energy resources for the benefit of all NSW citizens

Geological mapping	Mineral systems studies	Landuse assessment	Information management



NSW GOVERNMENT

Researchers

Teachers

Explorers

Building Infrastructure

Route planning

Energy production

Water resources

Food resources

Mineral resources

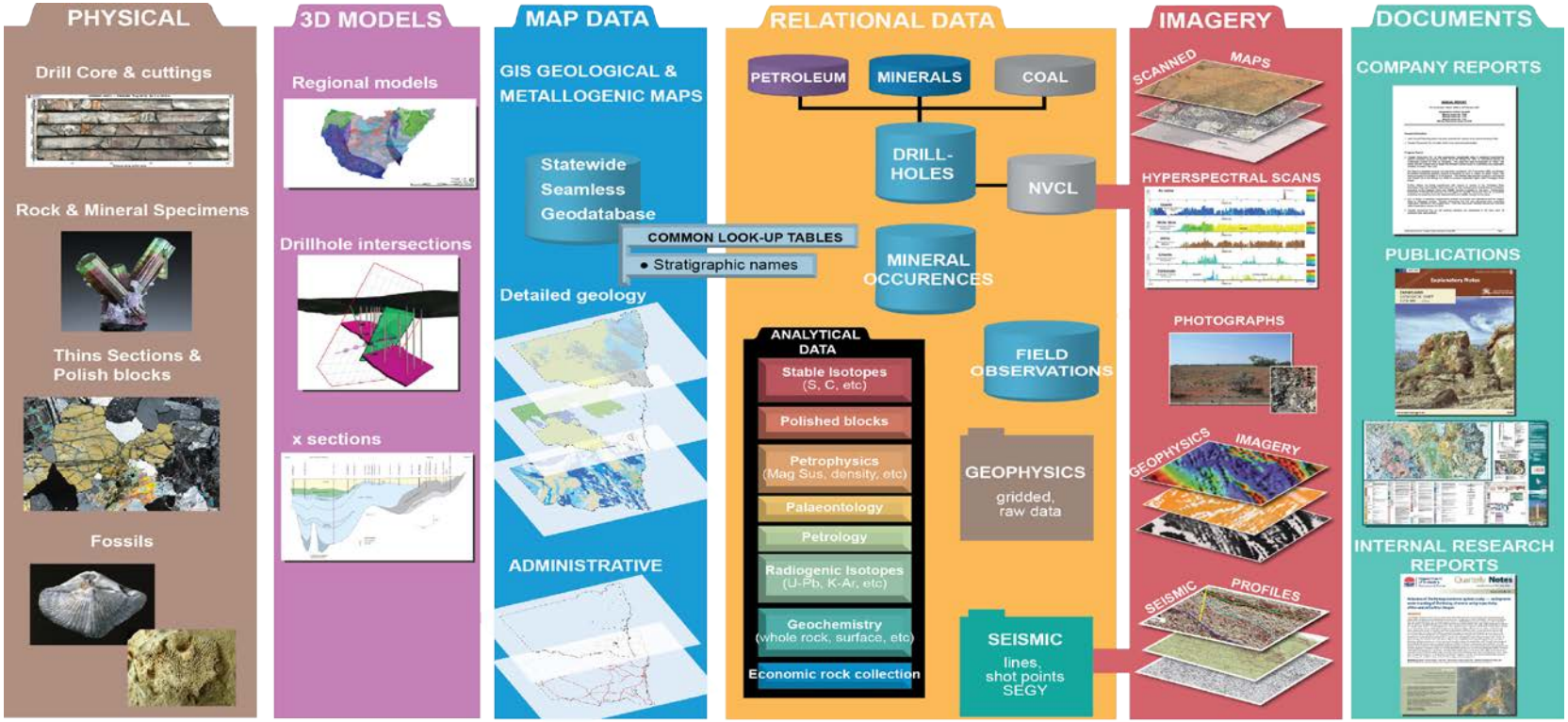
Customers

Anyone who needs authoritative geoscientific information for commercial, government, research or private purposes

The datasets, surveys, reports and maps have applications to:

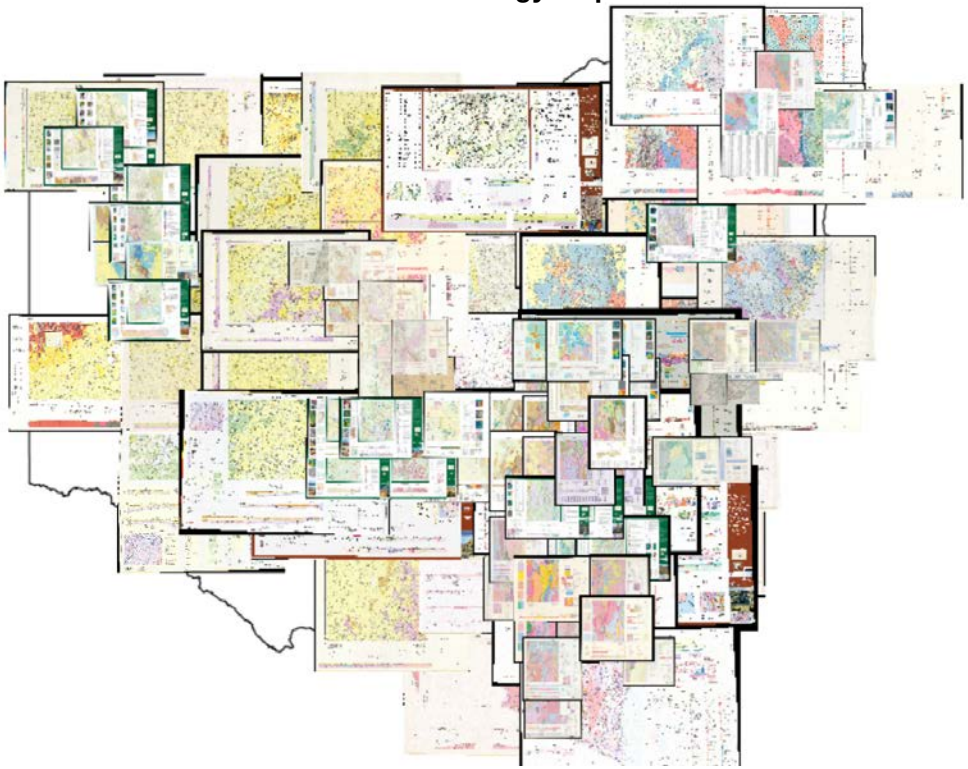
- Identify minerals, energy sources, construction materials & water resources
- Engineering projects for building infrastructure or
- Planning and assessing land use and environmental management

Data products



Key Drivers: Changed formats

NSW Statewide Geology Map

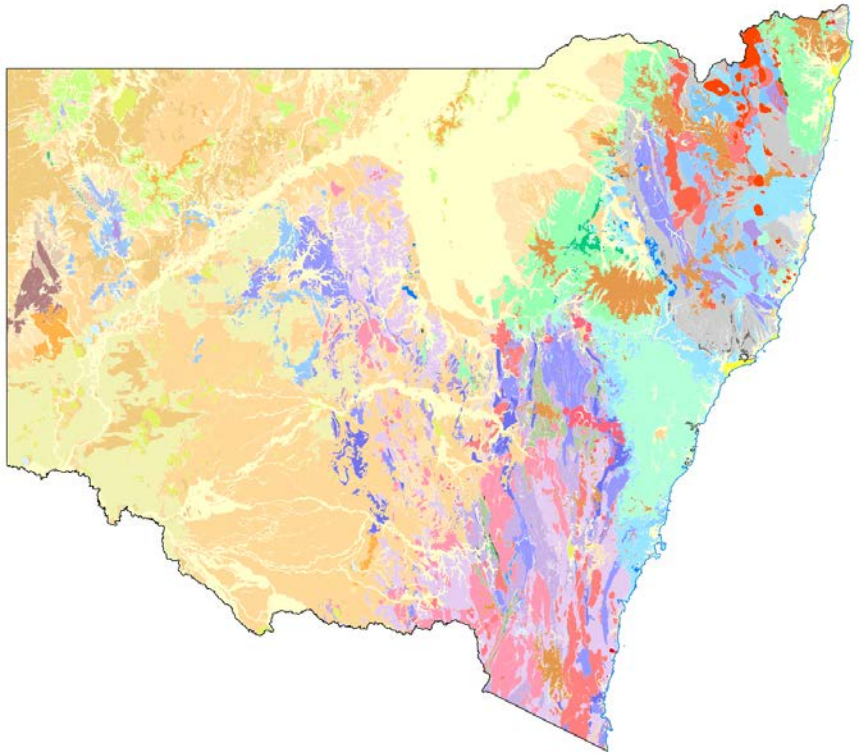


- Detailed geology
- Sheets to seamless
- Multi scaled
- Currency
- Consistent data model
- Interactive enriched attribution
- Harmonising stratigraphic names
- Statewide symbolisation
- Dynamic time slices

NSW GOVERNMENT

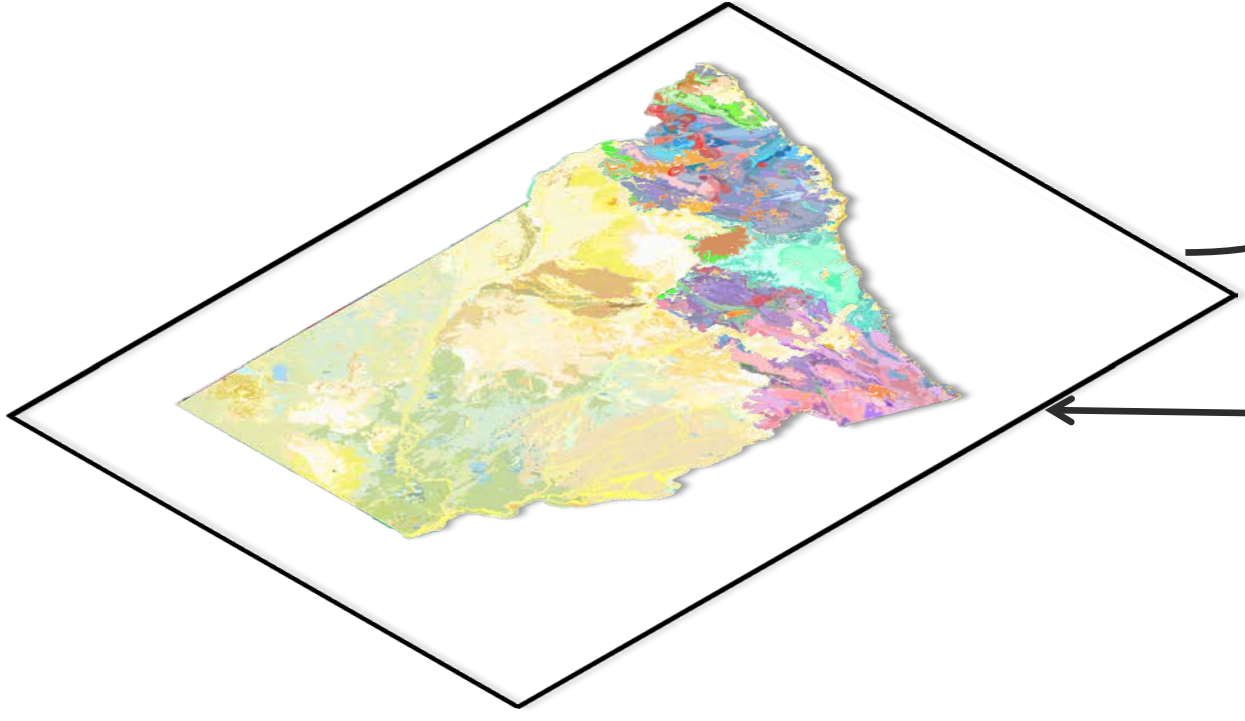
Key Drivers:
Change in delivery

NSW Statewide Geology Map



- Detailed geology
- Sheets to seamless
- Multi scaled
- Currency
- Consistent data model
- Interactive enriched attribution
- Harmonising stratigraphic names
- Statewide symbolisation
- Dynamic time slices

NSW GOVERNMENT



Unconsolidated cover

Recent depositional
Geology <1km depth

Consolidated cover

Basins

(e.g. Sydney Basin)

Solid
Basement Geology

Key Drivers: Technology upgrade

Enterprise approach delivery platform

- Reduce risk aging technology
- Rationalise infrastructure
- Reduce multiple interfaces
- Interoperability
- Mobile ready
- User Account management
- Improve user experience

NSW GOVERNMENT

Project Aims: MinView

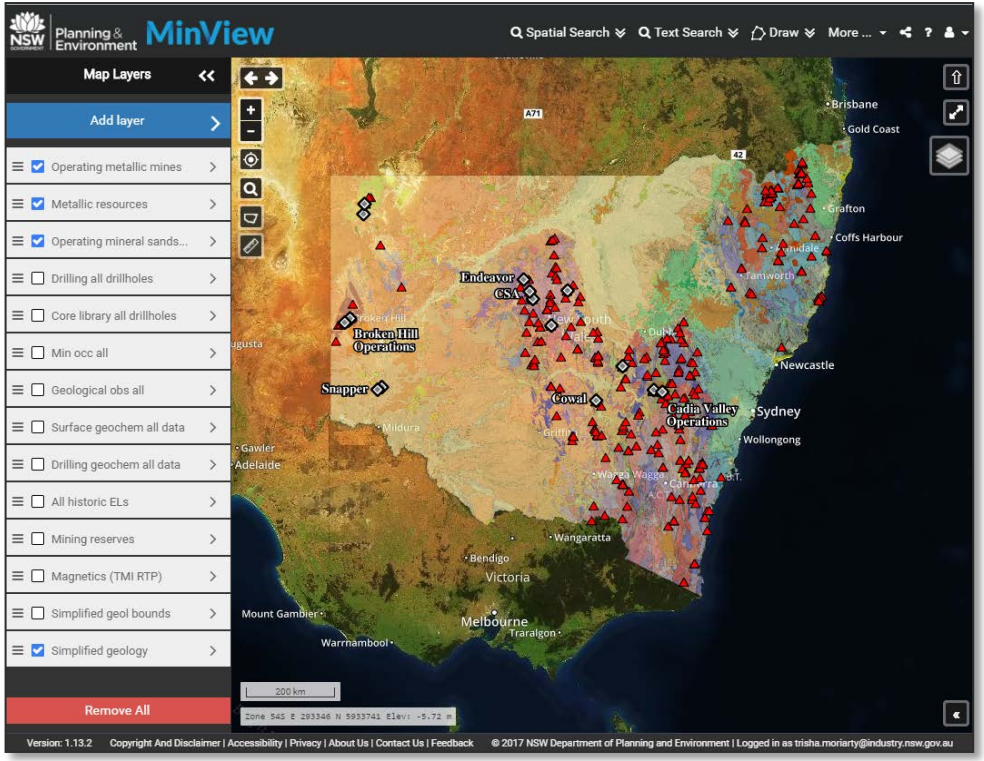
"Easy public access to all validated non-confidential geoscientific and supportive reference data stored by the GSNSW from a single interface"

Key functions

1. **Visualise data**
   Discover and understand context

2. **Interrogate data**
   Simple queries

3. **Deliver data**
   Rapid delivery and self service



https://minview.geoscience.nsw.gov.au

NSW GOVERNMENT

Design Target: Standards based

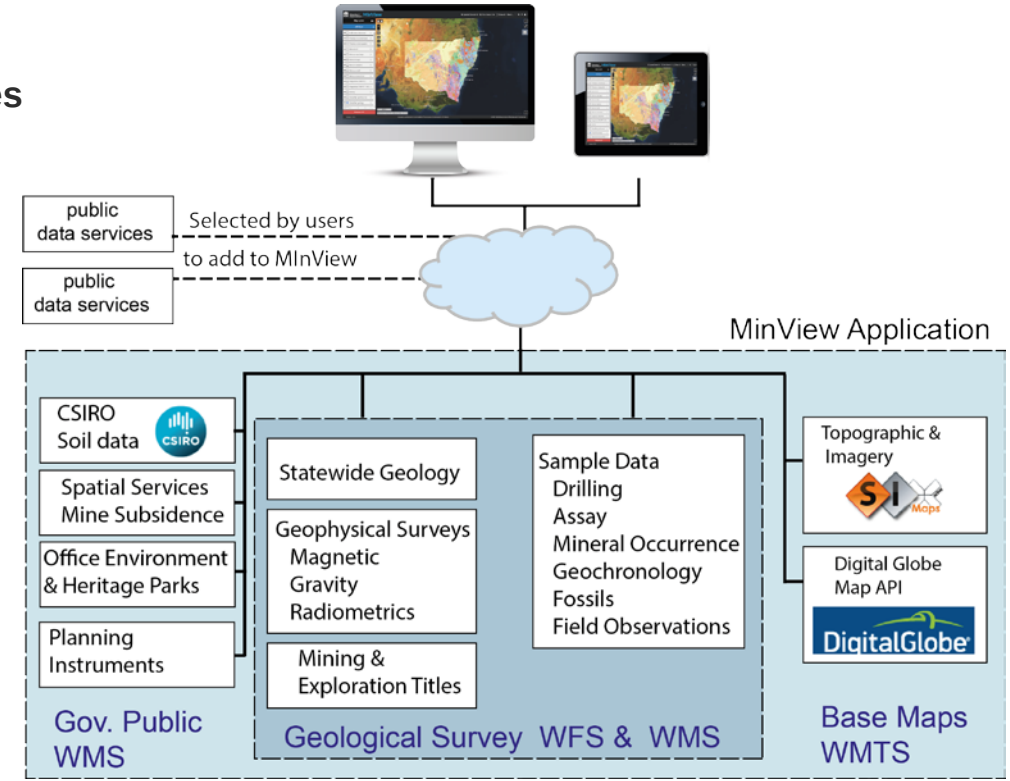
Solution designed to use data services

- Web map services (WMS)
- Web feature services (WFS)
- Web map tile services (WMTS)

Direct from custodial agency

Geoscience Data standards

- GeoSciML* & EarthResourceML
- Vocabularies, mapping to internal data models



Design Target : Interoperability

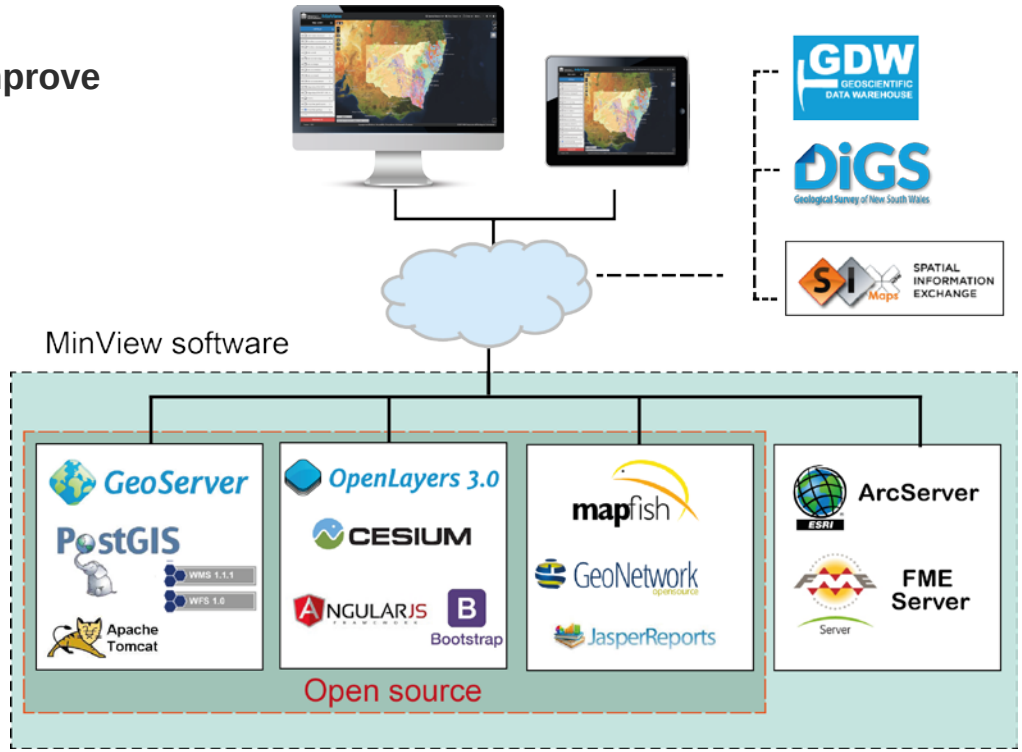
Modular: Flexibility to upgrade and improve

MinView uses

- Open Layers 3 + CesiumJS
- GeoServer + PostGIS
- GeoNetwork
- ArcServer*, FME Server*

Connects to

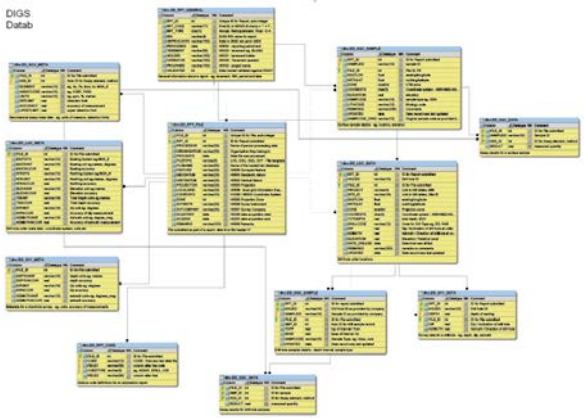
- DIGS Document mgnt system
- GDW Geoscientific data warehouse
- SiX Topographic base data

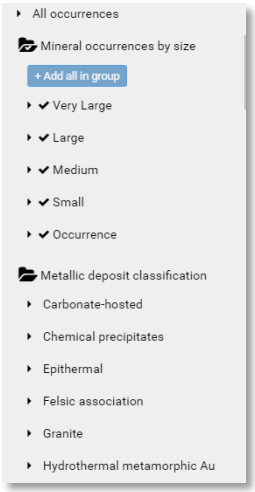


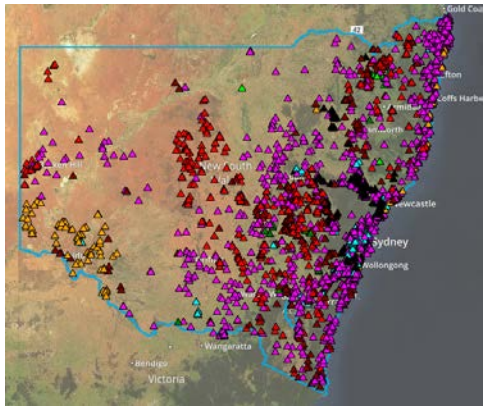
Insights: Don't under estimate data work

Data management structure to information delivery

- Balance complexity with over simplification
- Storage models to data services may need to be denormalised (flattened) to a single layer
- Vocabularies - Industry specific lexicons







Insights: Software and system support

Enterprise vs Ecosystem approach

- Following an upgrade regime that may be non-linear
- Modules updates are not synchronised
- Hybrid architecture – necessary integration – unique knowledge required

Implementation

- Design specifications provided at procurement outset
- Agile or rapid development
- Technical debt

Support models

- Vendor specific
- Extra resources for support

NSW GOVERNMENT

Insights: Stakeholder engagement

Know your users

- Include geoscientists on team
- Involve your users at all stages
- Cultivate advisors
- Develop real use cases
- Create realistic profile
- Employ them as testers (UAT)

Manage expectations

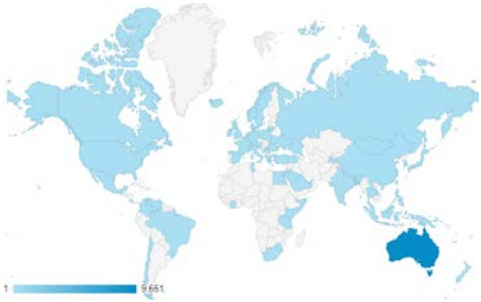
- Be careful of the oversell
- Educate management via exposure
  e.g. Sprint showcases
- Cultivate advocates

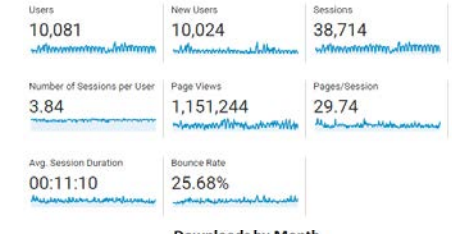
NSW GOVERNMENT

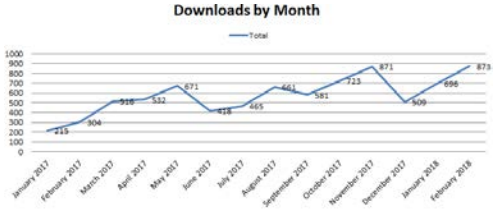
Project Success

- Robust fit for purpose
- Low ongoing licencing costs
- Configuration over code changes
- Stakeholder usage is increasing
- User satisfaction, positive feedback
- Peer recognition – Victorian Asia Pacific Spatial Award for Technical Excellence & nominated for NSW Premiers Award

”The data quality is excellent, and frankly it is well designed and a great site overall. The amount of information available is staggering. Compliments to all involved.”







Ben Nicholson

https://minview.geoscience.nsw.gov.au

minview.info@planning.nsw.gov.au

NSW GOVERNMENT