



OPEN DAY
2022



Government of Western Australia
Department of Mines, Industry Regulation and Safety



Geoscience Data Transformation Program

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Geological Survey of Western Australia



World class,
highly
respected,
extensive
geoscientific
data set



Nearly 4 petabytes of data



Geological Survey of Western Australia



World class,
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Demand

- Desire for easier access to all geoscience data
- Utilising latest technology for improved analysis
- Increased interest in the WA's geological environment

Supply

- Limited connectivity between different GSWA data sets
- Lack a fully standardised and digitised data collection

Geoscience Data Transformation Strategy

Development

June 2019

Geoscience Data Strategy created

April 2020

Geoscience Data Strategy Framework and Costing defined

March 2021

Minister for Mines and Petroleum Bill Johnston announces 5-year plan to transform WA's geoscience data storage

October 2021

Geoscience Data Strategy Implementation Roadmap approved.

Enablement of the Geoscience Data Transformation Program (GDTP)



Geoscience Data Transformation Strategy

Intent

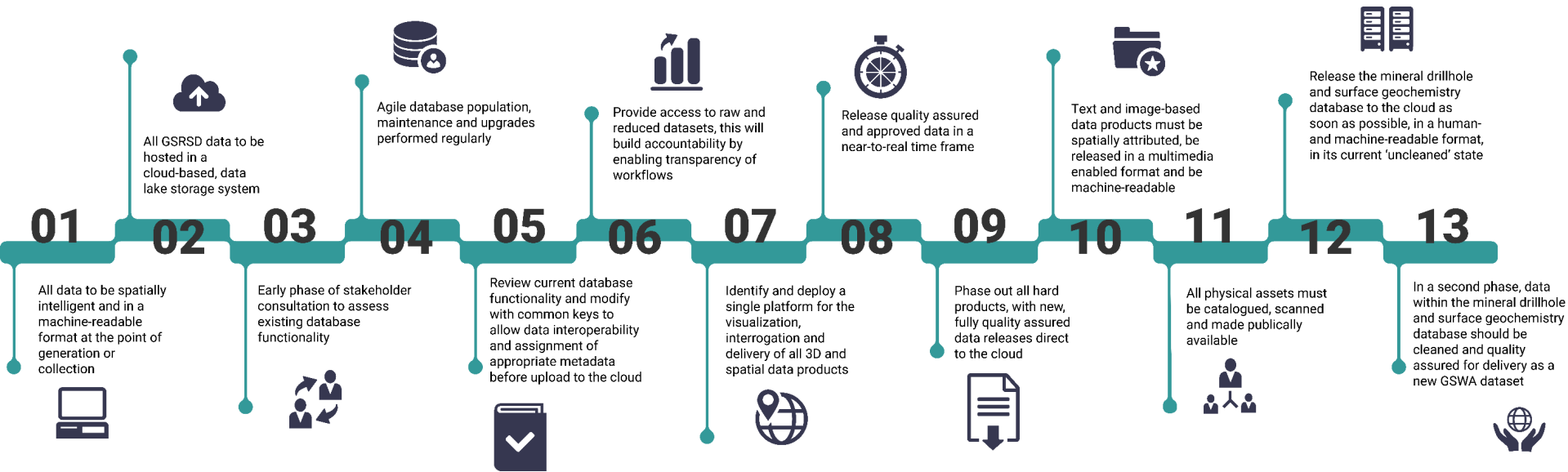
Digitally transform the entirety of the billions of dollars' worth of government and industry geoscience information into “intelligent FAIR data” and unlock it’s hidden mineral and energy resource potential



Geoscience Data Transformation Strategy

Actions

13 DIRECT ACTIONS



Geoscience Data Transformation Program

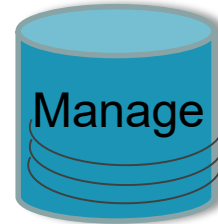
Four Foundational Elements



Industry data via the
Lodgement Portal
GSWA generated
data via an internal
entry portal



Data standardisation
and access through
common definitions,
structures and quality
standards



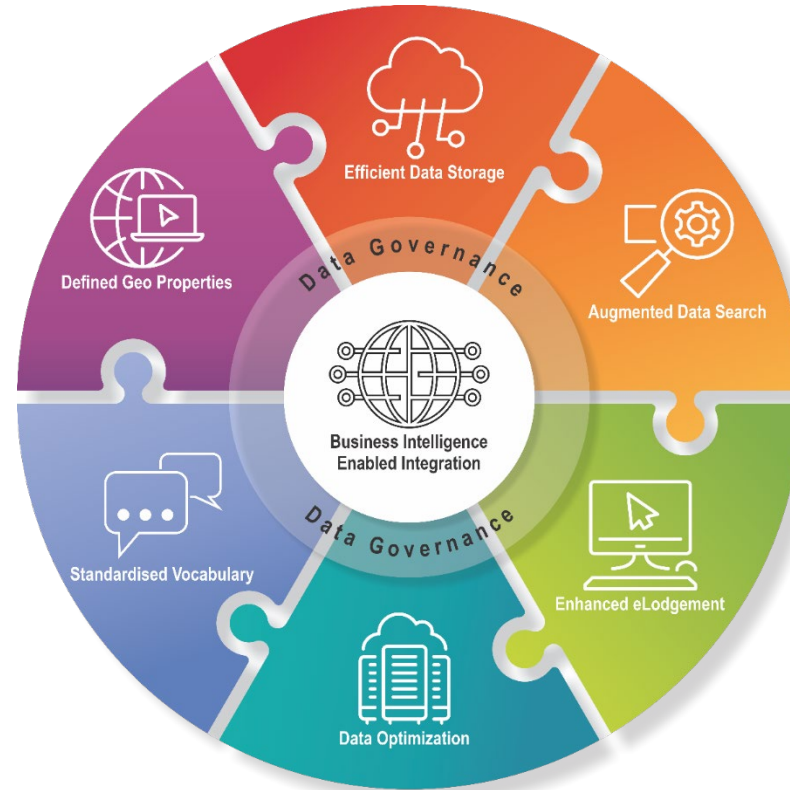
All data in a secure,
cloud based storage
system that enables
inter-relational
interrogation



Public data through
the Discovery Portal
Use sophisticated
tools and analysis to
add value to GSWA
data

Geoscience Data Transformation Program

Components



Framework

Your access



Lodgement Portal
A portal for company data and report submission. Semi-automate validation to improve data quality and process timeframe.



Discovery Portal
One stop portal to discover geoscience data.

Our service

Data Optimization to bring out hidden and orphan data and develop linkages between databases to improve **Data Integration**.



Data Maintenance Portal will consolidate, enhance and improve data standards to improve data standards and quality.



Big Data Storage to accommodate the extensive data collection.

High Performance Computer easy access to HPC for academic research and industry innovation.



Ingest | Integrate

DATA LAKE



Data Lake — one integrated data layer to bring all geoscience data into a single, unified **ontology** view.

Maintained by Data Engineers and Scientists. **Improve Data Science skillset and capability** to ensure that the new data platform will be supported long term.

Enrich | Enable



Spatial Intelligence



Smart Search



BI Reporting



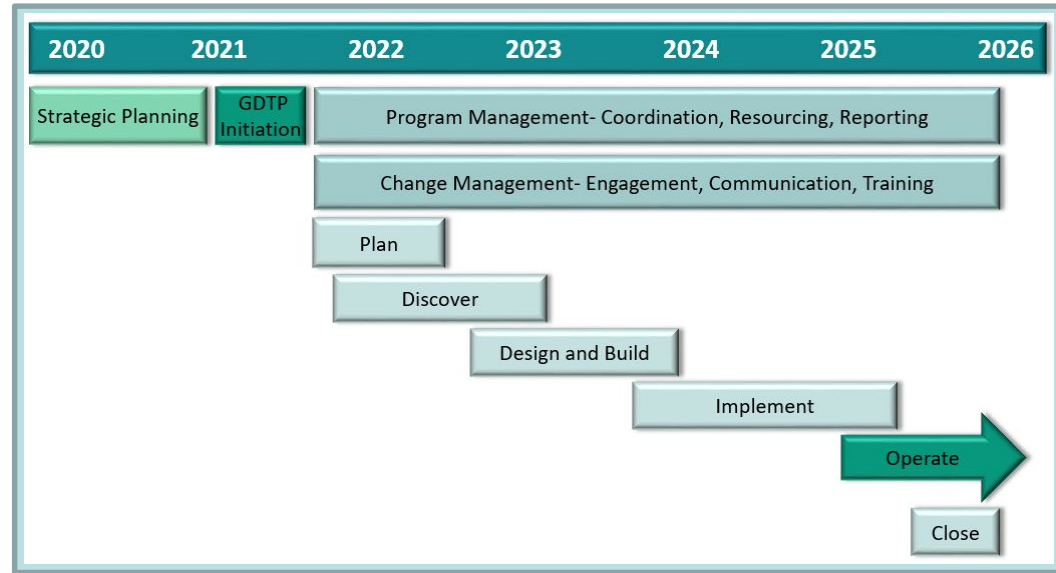
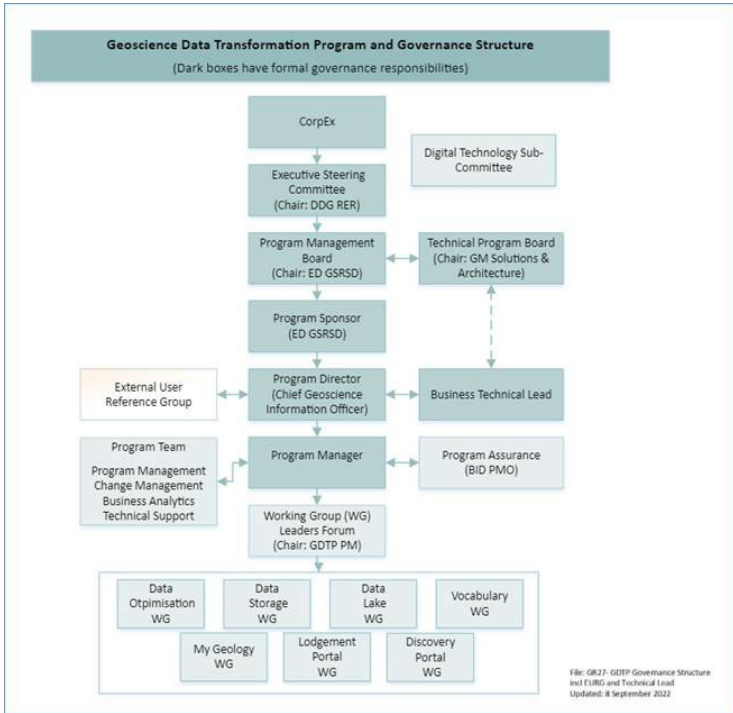
Machine Learning



Machine to Machine

Geoscience Data Transformation Program

Governance & Timeline



Geoscience Data Transformation Program

External User Reference Group (EURG)



Geoscience Data Transformation Program

How to find out more

Email

GDTP@dmirs.wa.gov.au

Website

[Data Transformation \(dmp.wa.gov.au\)](https://dmp.wa.gov.au)

Data Use Survey

Available through the Slido App under “Polls”

The screenshot shows the official website of the Geoscience Data Transformation Program. The header includes the Government of Western Australia logo and navigation links. The main content area features a large banner with the program's name and a background image of geological data. Below the banner, there is a section titled 'Intention' which describes the program's goal to transform geoscientific data into a more accessible and usable format. This is followed by a section on 'Objectives' listing several key goals, such as creating a unified framework, increasing connectivity, and improving user self-service capabilities. The 'Data framework' section includes a diagram illustrating the four foundational elements of the data framework: Capture, Connect, Manage, and Analyse. Each element is represented by a colored icon and a brief description of its role in the data transformation process.

Geoscience Data Transformation Program

Intention

The Geological Survey of Western Australia (GSWA) manages an extensive, comprehensive, multi-billion-dollar collection of geoscientific data, holding around four petabytes of data (the equivalent of a 38km line of 1GB flash drives placed end-to-end).

The collection is highly regarded and valued by many people from the resources industry, academia, other government agencies, and the general public. GSWA's ability to meet the increasing demand for easier access to our data has been restricted by the limited connectivity between different data sets, and the lack of a fully standardized and digitized data collection. In January 2021 the [Geoscience Data Transformation Strategy](#) was published, setting out the intention to transform, rationalise and modernise the geoscience data collection.

The Geoscience Data Transformation Program (GDTP) has been established to manage the development and implementation of a new data management framework that will: "Digitally transform the wealth of Western Australia's world class geoscience data to unlock its hidden mineral and energy resources potential, through the introduction of sophisticated data storage, access, management and integration systems and technology."

Objectives

To increase accessibility and usability of all data for all users, and in particular, assist industry to maximise the untapped potential of WA's yet to be discovered natural resources, the GDTP will deliver a range of technical, operational and strategic improvements to create the most advanced geoscience 'Smartest data' set in Australia.

This will be done by:

- Creating a unified, simplified, standardised framework that accommodates and manages all geoscience data requirements
- Increasing connectivity between different data sets to improve data integration and sharing
- Utilising modern data structure and storage management arrangements that allow flexible, adaptive responses to changing technology, future demands and new opportunities
- Improving user self-service capabilities by introducing easy to use data judgement and retrieval online platforms
- Aligning the data framework with the State Government's ICT Cloud Policy, increasing geoscience data usage for and between all users
- Enhancing the translation of data into valuable information, knowledge discovery and business development and innovation opportunities

Data framework

There are four foundational elements to the data framework, as shown here -

The diagram shows a flow from Capture to Connect to Manage to Analyse. Each step is represented by a colored icon and a brief description of its role in the data transformation process.

- Capture**: Industry data via a standardised format. GSWA generated data via an internal data portal.
- Connect**: Data access and integration through common standards and quality standards.
- Manage**: All data in a secure, cloud-based storage system that enables different data sets to be managed and quality standards.
- Analyse**: All data through a Geoscience Data Transformation Program (GDTP) that enables data to be used to unlock WA's data.