



# Is a location spine the missing link for generating smarter national statistics?

A system for geographic information, without GIS...

Alexis McIntyre and Simon Costello

Locate Conference

7 April 2025

Australian Bureau of Statistics

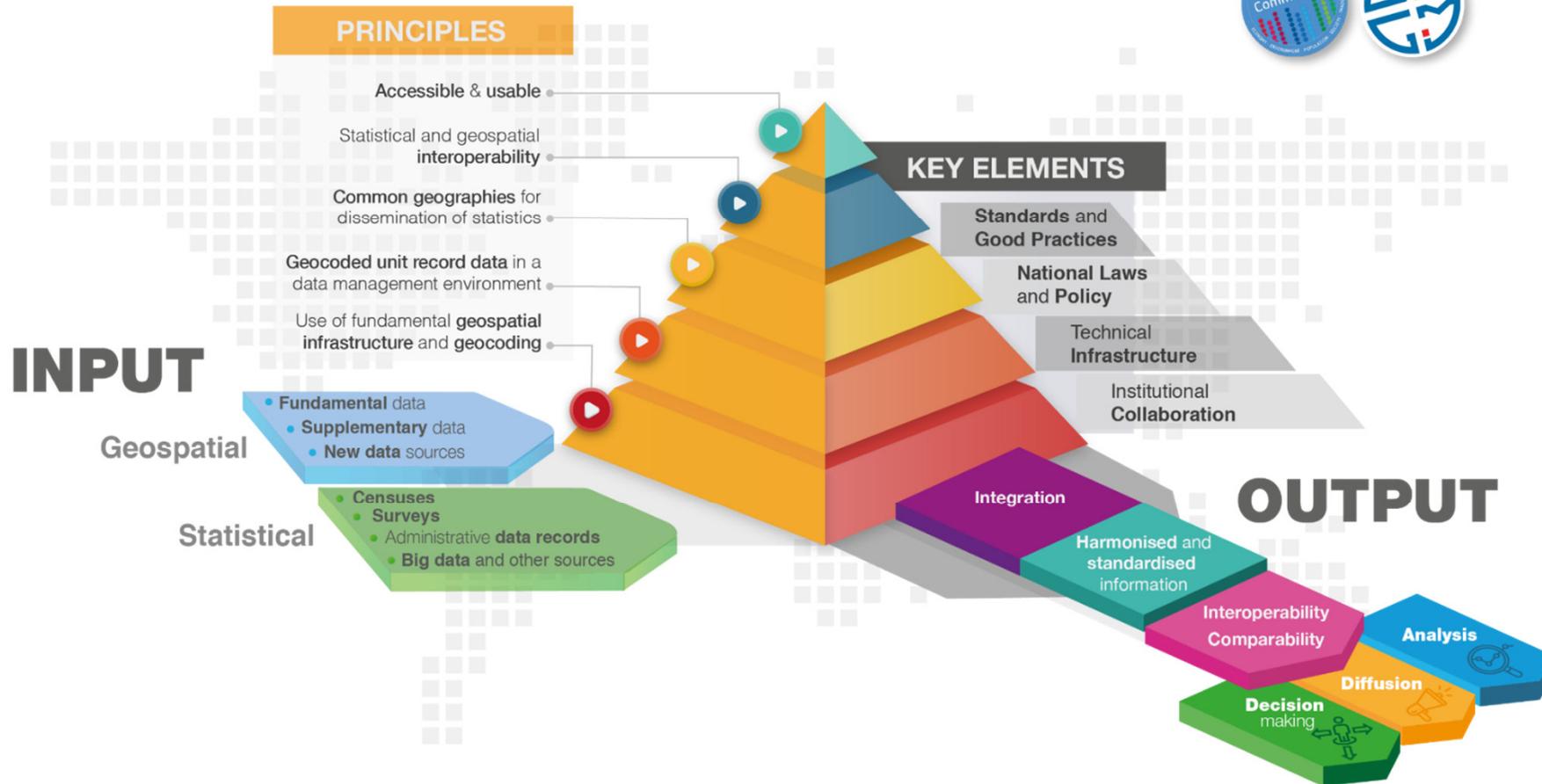
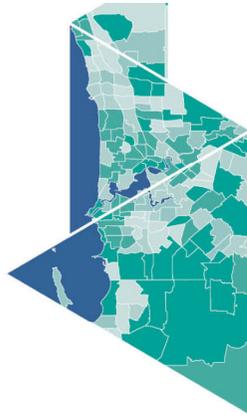
Informing Australia's important decisions

Presented at the FIG Working Week 2025,  
6-10 April 2025 in Brisbane, Australia





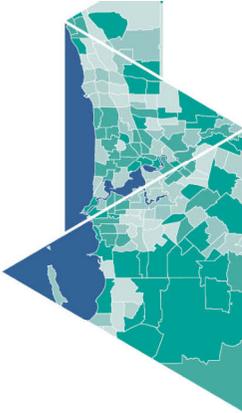
# Global Geospatial Statistical Framework





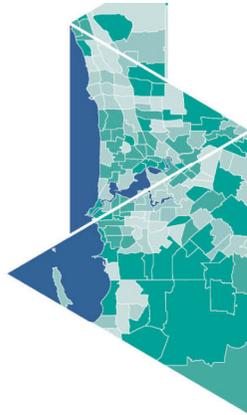
## Key Points

- The Australian Bureau of Statistics generates Australia's official national statistics, many of which are place-based.
- These official national statistics underpin place-based reporting or decision-making.
- Crucial for effective government, business strategies and community development.
- A 'location spine' links different objects across different geographies, without GIS.
- Further development work driven by Australia's Data & Digital Ministers National Data Sharing Work Program, government policy delivery, and data integration programs.





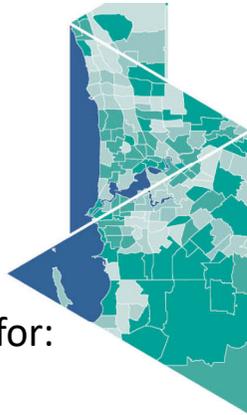
# What are spines?



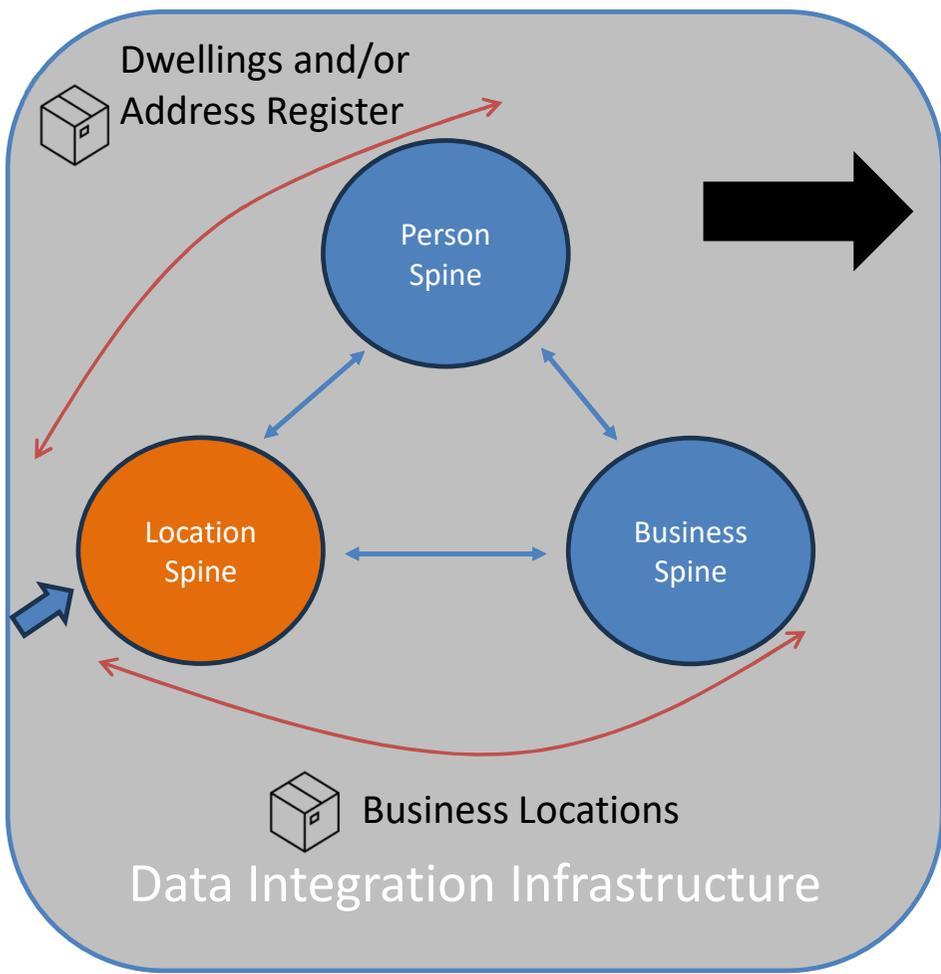
- A **spine** captures the **relationships between defined identifiers** allowing **data linkage**
- Typically contains key identifying information (about individuals, entities, or locations) allowing different datasets to be connected while keeping the main body of data separate
- Improves privacy and security, and ensures confidentiality requirements for administrative data can be met
- A **location spine** supports linking two or more datasets, based on some characteristic of geography.
- Geography units that may be relevant to a location spine:
  - An address, dwelling or land parcel
  - A point on, above or below the Earth's surface, e.g. GPS coordinates or a smart meter
  - A grid, e.g. for satellite imagery
  - Distance from somewhere, e.g. along a road or a stream
  - Part of a 'coverage', e.g. a catchment, a suburb, an electorate, or statistical geography



# Spines for data integration



Admin data →



Official national statistics for:

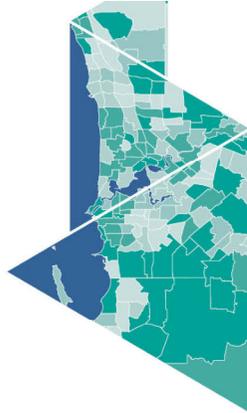
- Housing Availability and Affordability
- Insurance Affordability
- Census and Population
- National Accounts
- Land and Agriculture Statistics
- Entrenched Disadvantage

- Australian Statistical Geography Standard
- Addressing Standard
- Global Grid Standard

- Regional Data Hub
- Digital Atlas



# Our thoughts on a Location Spine



A standardised set of relationships between location units



A replacement for capturing high quality location information at point of data entry



A method for integrating data collected using different geographies



Would not include all integrated geospatial data



Enables maintenance of confidentiality



Would not consist of only concordances/correspondences



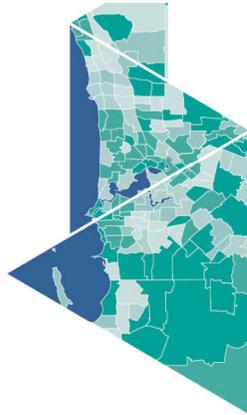
Complementary to the people and business spines



Going to fix all of the issues with the integration of administrative data using location



## A location spine...



**... will enable location-based links  
to be made between  
economic, social and environmental data  
to more easily allow for  
place-based integration and  
analysis of information**



# What's next?

**NSW Point**  
A solution to all-of-government address management

Home Product Information Sample Forms Support News

### All-of-government Addressing

NSW citizens provide their addresses to government agencies on a daily basis. Whether applying for a driver's licence, requesting a birth certificate or booking into hospital, an address is one of the primary pieces of information required on most government forms.

Whole of Government Addressing has been developed by Spatial Services to improve customer experience when dealing with the government by offering high quality, real time address validation, reporting and analytics. NSW Point and NSW Point Bulk Address Validation deliver authoritative source of truth information.

NSW Point is the recommended address validation solution endorsed by the NSW Government [Digital Design System](#)



### NSW Point Address Validation and Location Web Services

NSW Point offers a range of address and location web services designed to be embedded into government online forms and applications. Benefits include improved service delivery with ease of data entry by reduced key strokes, a seamless data entry experience across agencies and access to a verified national address repository. Being able to locate NSW citizens will improve efficiency for emergency services, installation of utilities, reduce fraudulent activity and enable revenue to be collected.

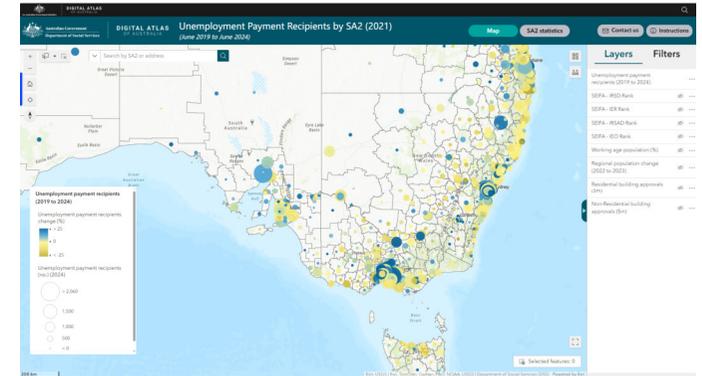
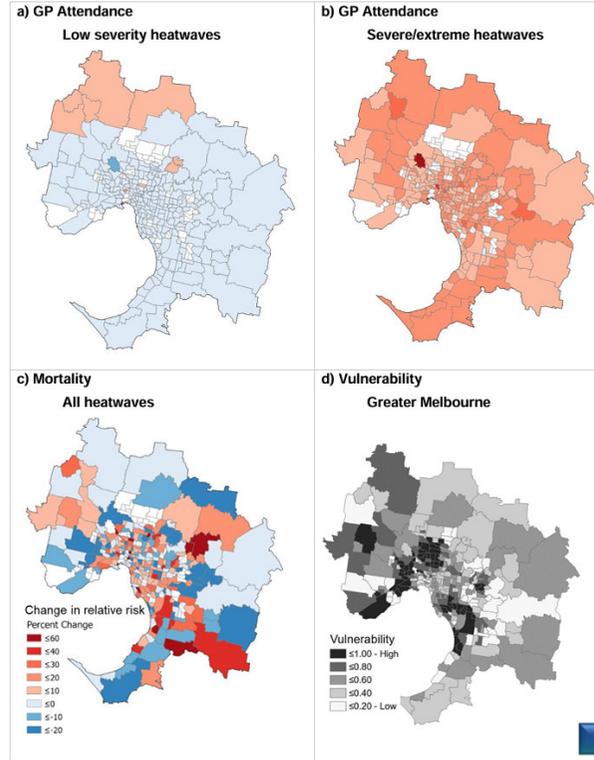
NSW Point includes options for the validation of physical and postal addresses and can return the available geographical and administrative information that is associated with an address location.

#### Key features -

- Real time address validation
- Comprehensive national address datasets with live updates
- Utilises machine learning for predictive address suggestions
- Geocoded address data enables spatial analysis

For the latest news and information please see our [News](#) page.

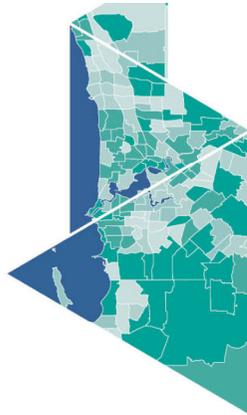
[Learn More](#)



**LATER:** Build the business case; fund it; design, build and operate

**NOW:** Engage: states and territories, Australian Government, research, business  
Report back to Data & Digital Ministers in August

**NEXT:** Build the use cases – starting with ABS data supporting government policy





Location Infrastructure Branch | Statistical Infrastructure Division

**Australian Bureau of Statistics**

[geography@abs.gov.au](mailto:geography@abs.gov.au)

**Australian Bureau of Statistics**

Informing Australia's important decisions

