



# STANDARDS AND DATA STRUCTURES FOR STATISTICAL GEOGRAPHY

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Australian  
Bureau of  
Statistics

# Introduction

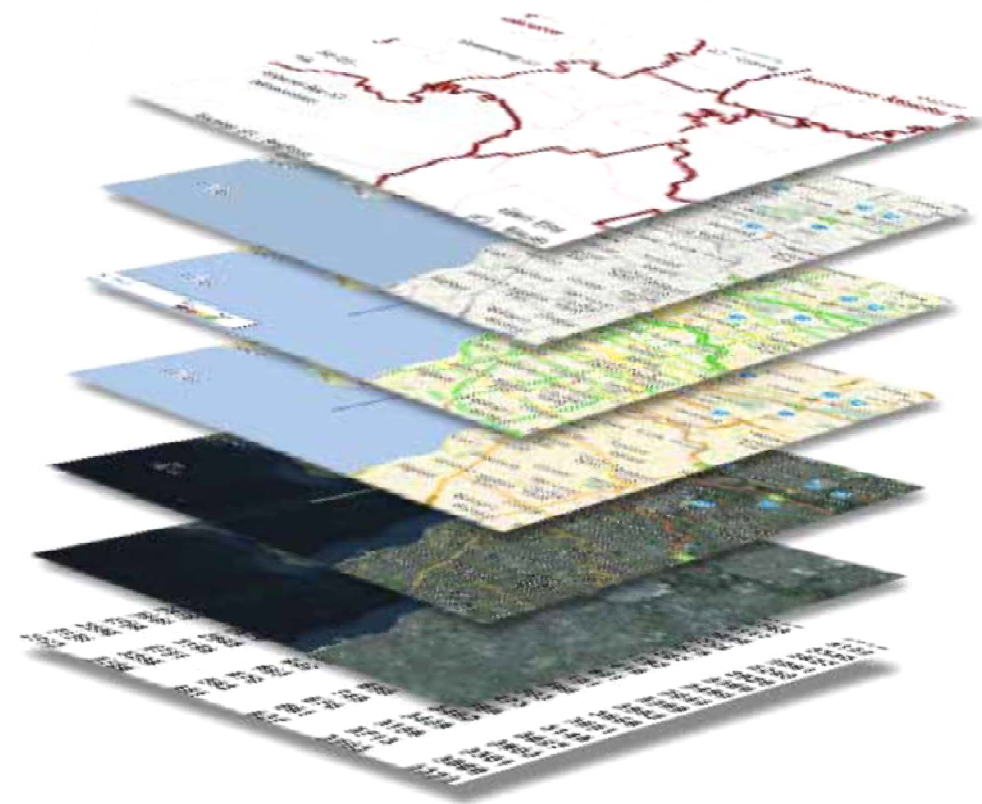
- Issues and considerations for developing a statistical geography
- Key characteristics of statistical and geographic data
- Importance of a statistical geography standard (and geocoding)
- Relevance for a Statistical and Geospatial Data Infrastructure

# Six wise men

*I keep six honest serving men,  
They taught me all I knew;  
Their names are What and Why and When  
And How and Where and Who*

- Increased demand, expectations
- Economic, social and environmental domains
- Implications for how we collect, manage, disseminate data from multiple sources
- Frameworks and standards to bring together and organise data

# A Statistical Spatial Framework

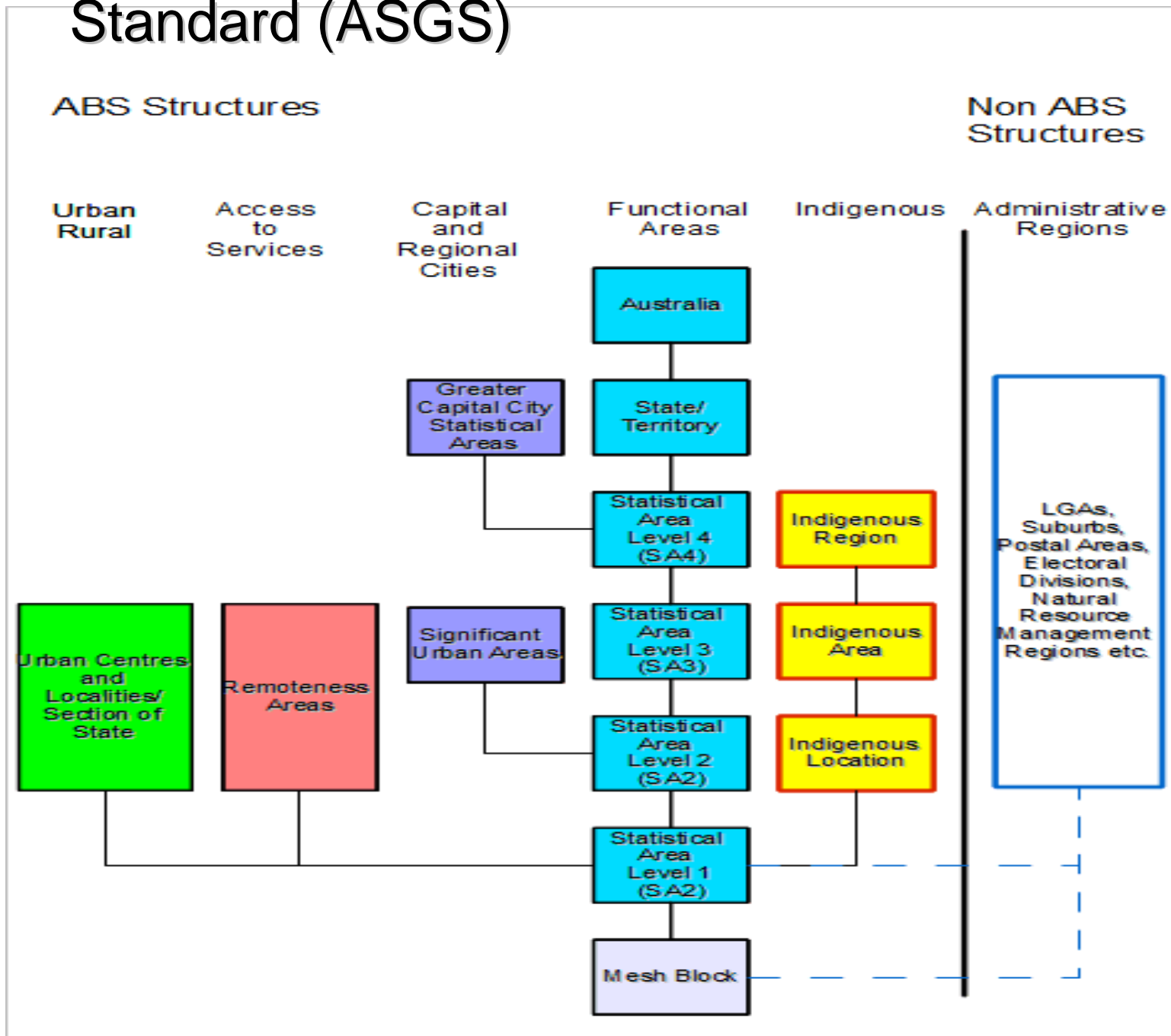


Additional statistical layers  
Topographic, Bio-physical  
and Environment  
Expanded social applications  
Role of NSO



# A new Australian Statistical Geographic Standard (ASGS)

Began in 2006  
Basis for 2011 Population Census  
ABS vs. non-ABS structures



# Principles for a new standard

- Australian Statistical Geographic Standard (ASGS)
  - optimised for a range of key statistics
  - stable over time – support time series analysis
  - Make sense on the ground (ie settlement patterns and well understood geographies)
  - Able to accurately produce statistics for key administrative areas
  - Protect confidentiality
  - Enable international comparisons (eg urban centres / rural)

# Limitations of old standard

- Australian Standard Geographic Classification (ASGC)
  - Unstable – annual revisions
  - Building block too big – based on a census field collection area.
  - Mixed unit - multiple land uses in a unit
  - Large range in population at various levels in the hierarchy – not ideal for national analysis
  - Geographical units often didn't make sense on the ground

# LGAs – Unstable over Time

Historical change in local governments across Australia

State	Councils 1910	Councils 1991	Councils 2007	Councils 2010
NSW	324	176	152	152
VIC	206	210	79	79
QLD	164	134	157	74
SA	175	122	68	70
WA	147	138	142	139*
TAS	51	46	29	29
NT	n/a	n/a	64	16

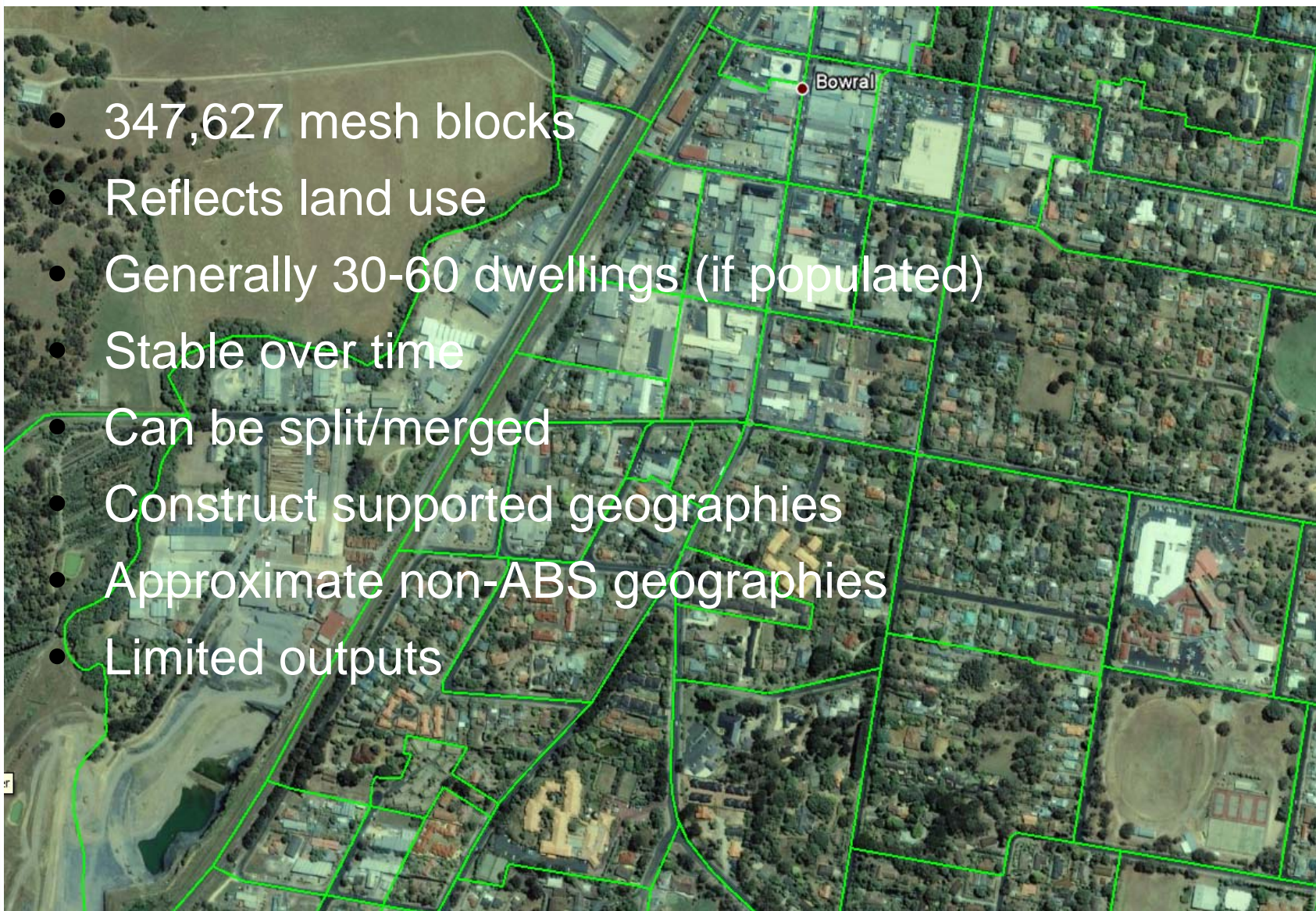




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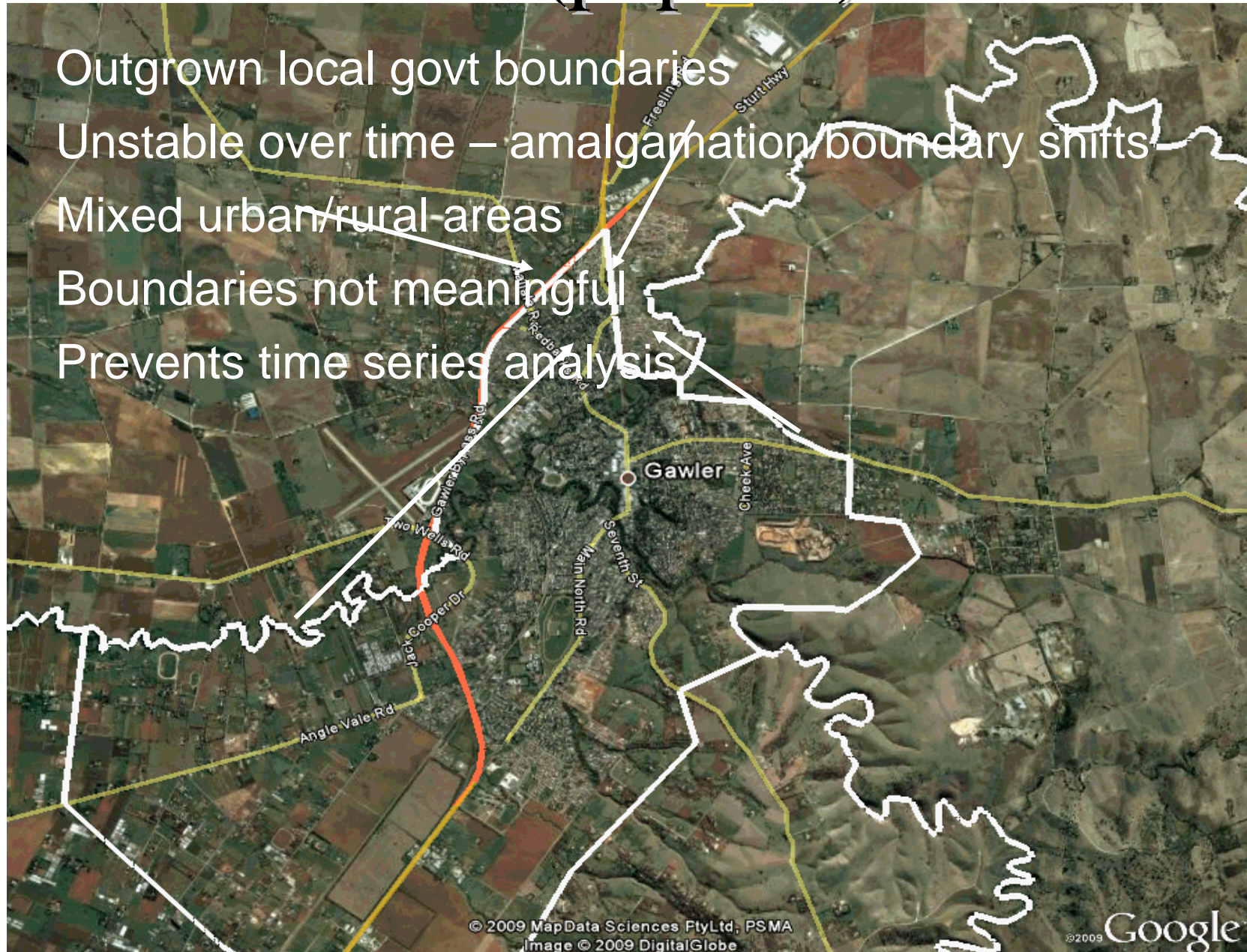
# Mesh Blocks

- 347,627 mesh blocks
- Reflects land use
- Generally 30-60 dwellings (if populated)
- Stable over time
- Can be split/merged
- Construct supported geographies
- Approximate non-ABS geographies
- Limited outputs



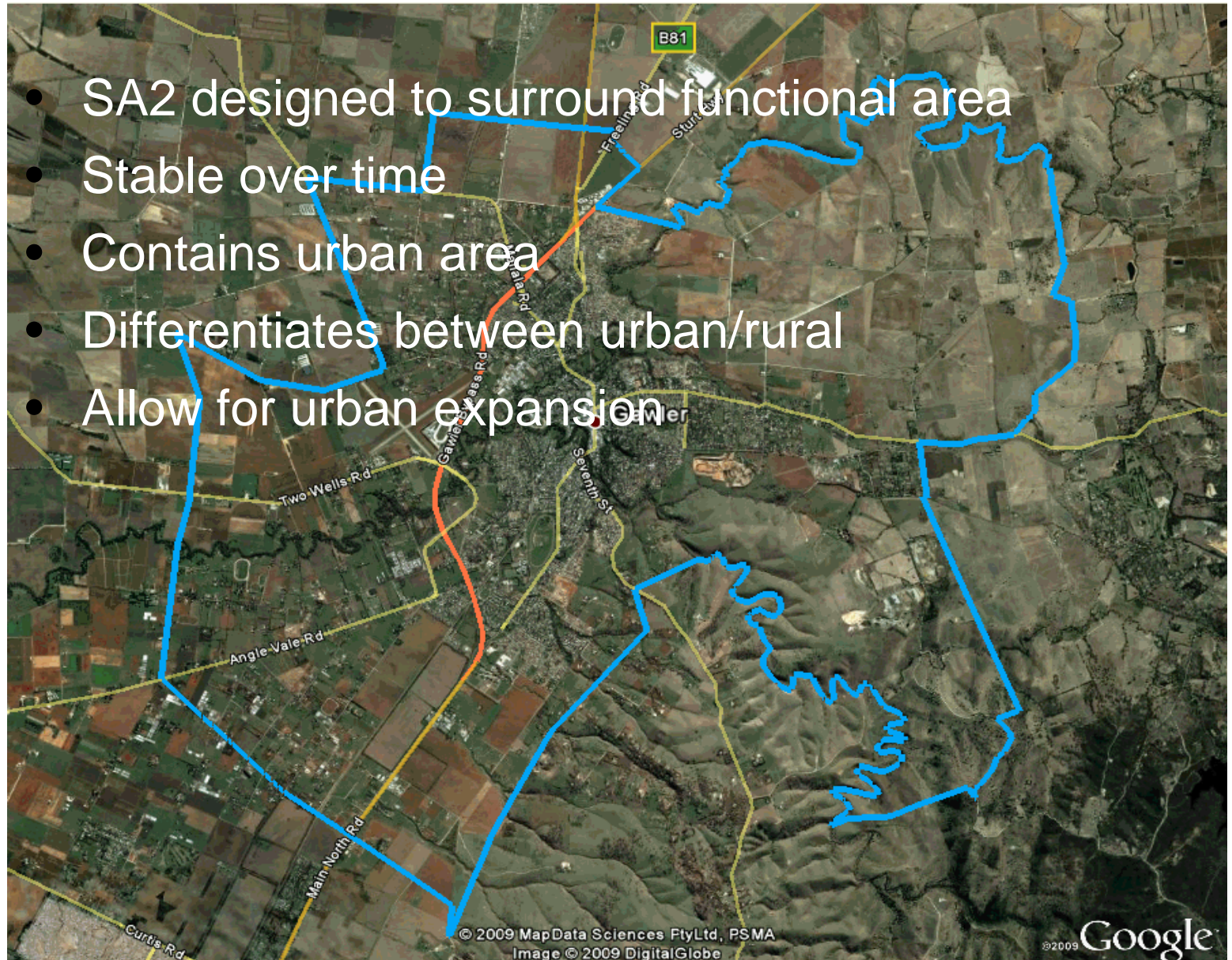
# Local Gov Boundaries - Gawler South Australia (pop. 19,768 in 2006)

Outgrown local govt boundaries  
Unstable over time – amalgamation/boundary shifts  
Mixed urban/rural areas  
Boundaries not meaningful  
Prevents time series analysis



# Functional Boundaries – Gawler South Australia

- SA2 designed to surround functional area
- Stable over time
- Contains urban area
- Differentiates between urban/rural
- Allow for urban expansion



# Availability of Statistics

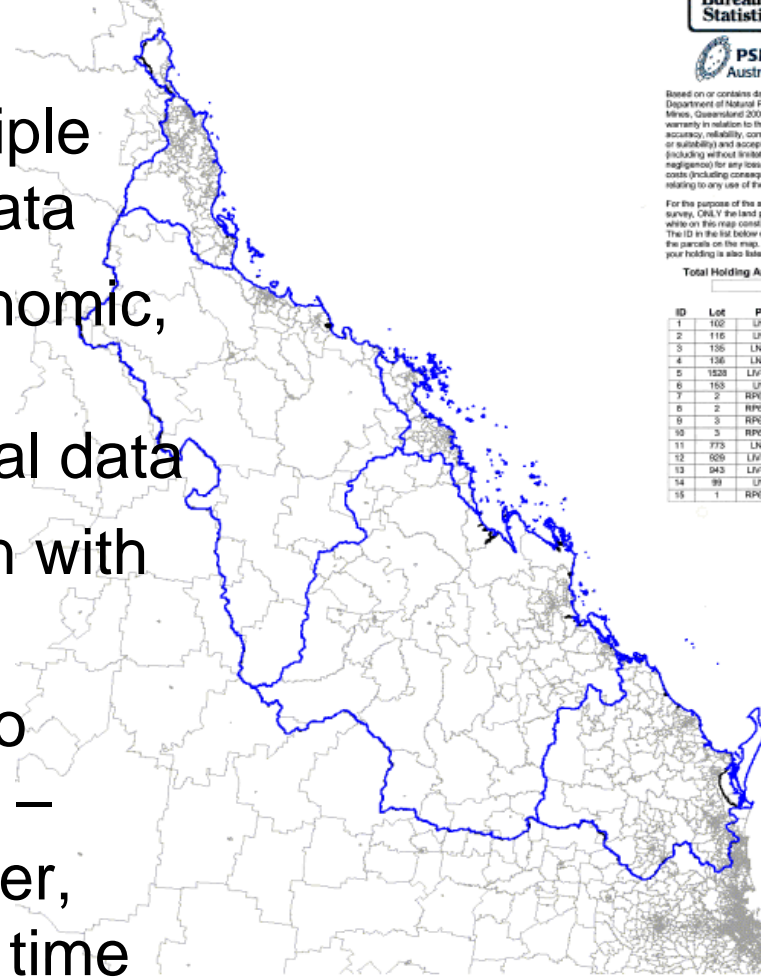
	Population	Statistics Available
SA4	> 100,000	Labour force Aggregations of other stats
SA3	20,000 – 130,000	Aggregations of data at SA2 and below (small regions)
SA2	3,000 – 25,000	Census, ERP, <u>health, building approvals, tourism, Ag. Census</u>
SA1 – (Census Output Unit)	Approx 400	Census data, SEIFA
MB	<u>0 and about 70</u>	Population, Dwelling counts

# Availability of statistics for different levels of geography

	Population	Statistics Available
Capital City / rest of state	> Hundreds of thousands	Household survey data CPI
Significant urban areas	> 10,000	ERP Census
UCL / section of state	Localities 200 - 999 Urban Centres > 1000	Census
Remoteness		Census Health (AIHW)

# Land Account - Pilot

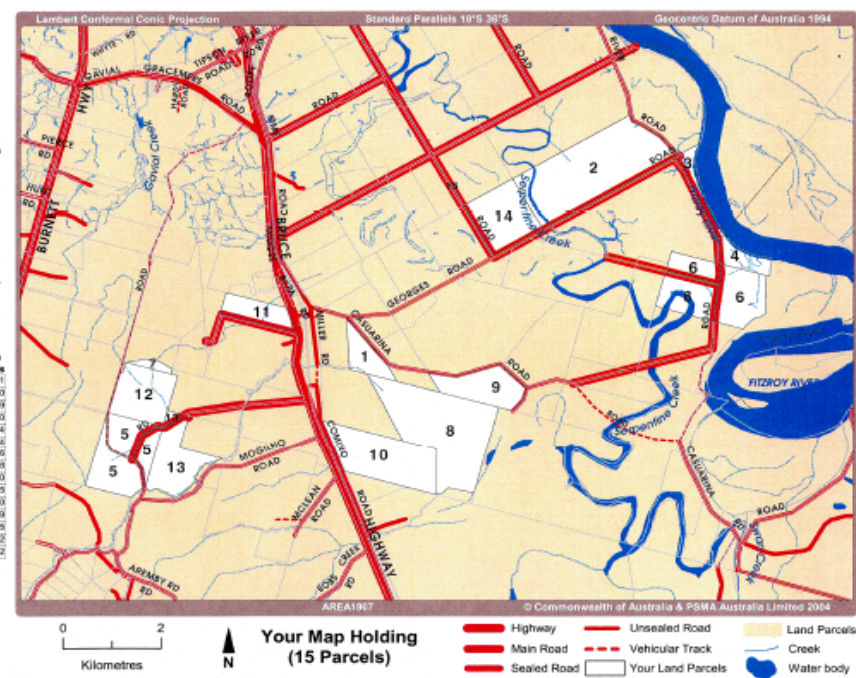
- Built on SA1s (3005 in GBR)
- Integrates multiple sources of data
- Overlay economic, social and environmental data
- Collaboration with states, etc
- Adds value to existing data – landuse, cover, change over time



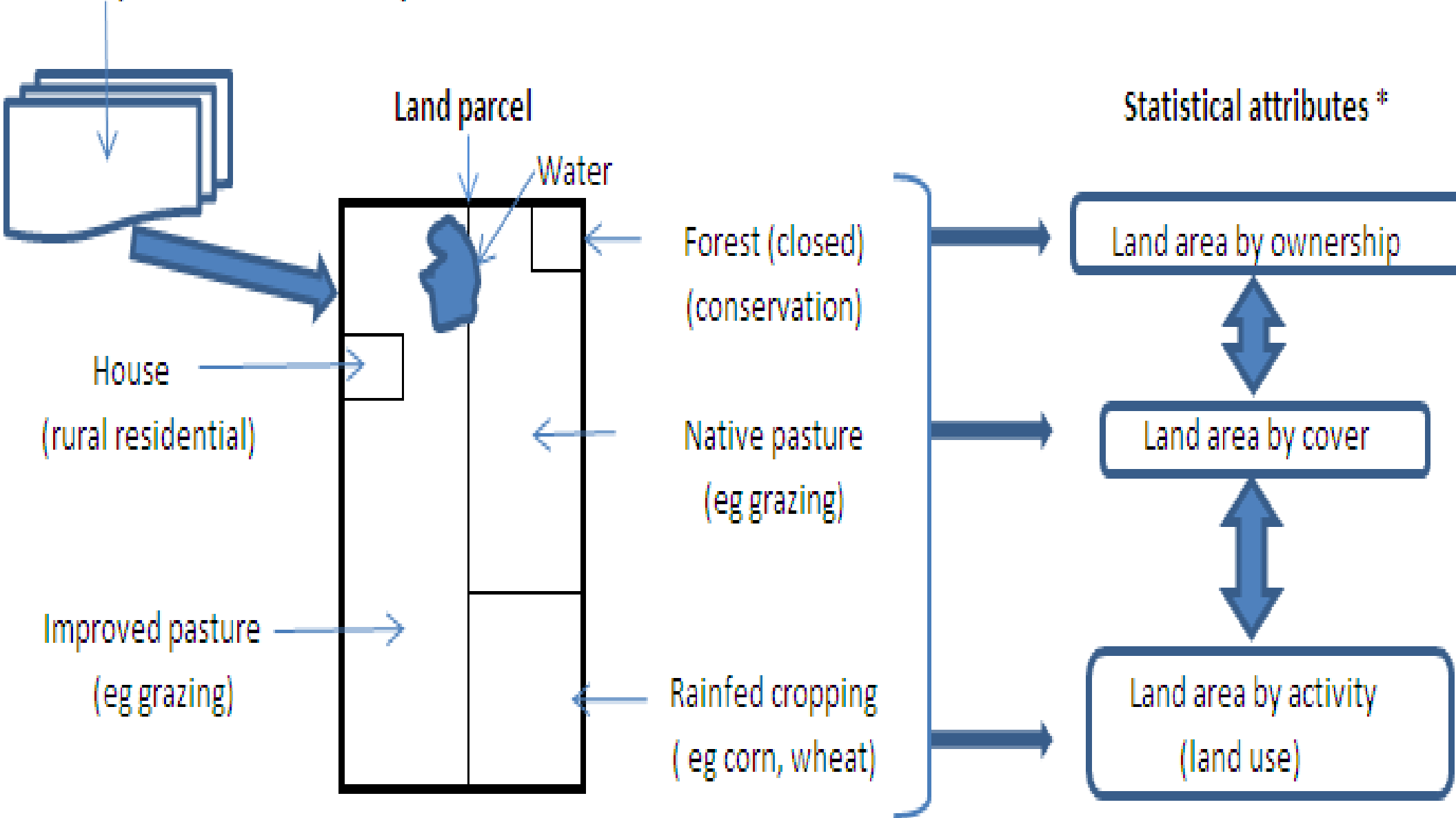
Based on or contains data provided by the Department of Natural Resources and Mines, Queensland 2009 which gives no warranty in relation to the data (including accuracy, reliability, completeness or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data.

For the purpose of the accompanying survey, Click V (the land parcels coloured white on this map) constitute 'your holding'. The ID in the list below corresponds to the parcels on the map. The total area of your holding is also listed below.

Total Holding Area (Hectares) 2008			
ID	Lot	Plan	Area in hectares
1	102	LN182	59.1
2	116	LN185	371.0
3	135	LN1887	36.9
4	136	LN1887	49.0
5	133	LN4542	163.4
6	153	LN556	247.2
7	2	RP004068	13.6
8	2	RP005062	341.8
9	3	RP001356	112.0
10	3	RP001296	210.2
11	773	LN2713	67.0
12	629	LN40239	129.9
13	943	LN40239	131.5
14	99	LN185	143.2
15	1	RP001170	2



Land owner (business or household)



\* eg land value, industry, employment, income, production etc

### 2006 Census Data

- Location
- Topic
- Product Type

### 2006 Census Data

- Location
- Topic
- Product Type

### 2006 Census Help Links

- What is the best way to visit to Census?
- Which location do I select?
- 2006 Census Help

Current Selections: Hobart (C) - Inner (Statistical Local Area) - Tas

Select a location using one of the following selection methods:

- Search**
- Address Search
- States & Cities
- Browse
- Map

Search for a place name or postal area within Australia.  
 HINT: Enter at least three characters.

Hobart  [Location Search Tips](#)

Your search has returned 16 results.

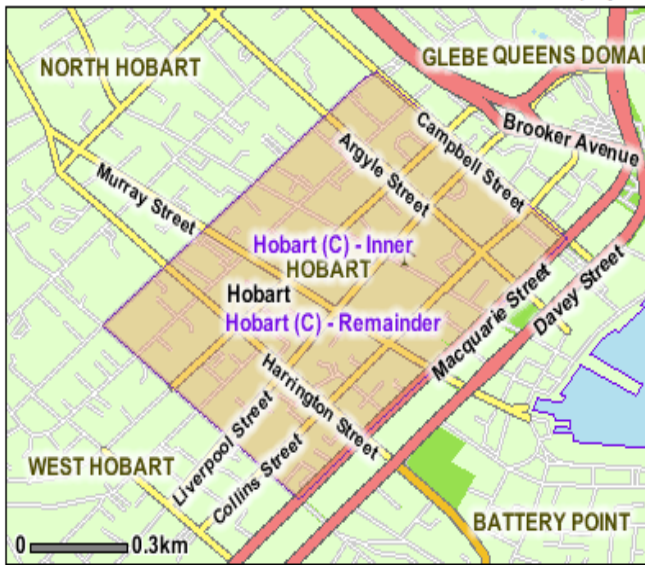
Select a location and then click 'View QuickStats'.

[Which location do I select?](#)

- Hobart (C) - Inner (Statistical Local Area) - Tas.**
- Hobart (C) - Remainder (Statistical Local Area) - Tas.
- Hobart (State Suburb) - Tas.
- Hobart (Urban Centre/Locality) - Tas.
- Hobart Undefined (Local Government Area)
- Hobart Undefined (Statistical Subdivision)
- Hobartville (State Suburb) - NSW
- North Hobart (State Suburb) - Tas.
- South Hobart (State Suburb) - Tas.
- West Hobart (State Suburb) - Tas.

Map is not clickable

Display map





# A Spatial Statistical Framework

- Challenges and opportunities for a statistical geography e.g. statistical units, geocoding and better use of administrative data
- Add value to evolving local, national & global spatial data infrastructures (i.e. better return on investment)
- Increase access, use & (ultimately) value of statistical information for effective decision making
- Statistical geography standard provides framework to link statistical and geographic data in a structured manner
- Adoption of sound information management policies & governance (includes collection, management and outputs)
- Must support integration of economic, social, environmental information for assessing and monitoring our well-being and progress