A faint, light blue map of Australia is visible in the background of the slide.

**Just because we do not talk
about it does not mean it has
gone away – the effect of MAUP
on urban planning statistics
regarding open space.**

Mark Daker

City of Salisbury: Analyst Urban Planning
UniSA: PhD Candidate



WHAT IS MAUP?

- The **Modifiable Areal Unit Problem (MAUP)** is a source of statistical bias,
- It influences results when point based measures (e.g. open space supply metrics) are aggregated into a region (e.g. administrative boundaries; local government area, postcode, suburb),
- The resulting summary values (e.g. open space supply) are influenced by the selection of region boundaries,
- First recognised in 1934 by G.E Gehlke and later described by Stan Openshaw in 1983, and
- “The areal units are arbitrary and subject to the whims and fancies of who is doing the aggregating”.

OPEN SPACE REPRESENTATION & IMPLEMENTATION

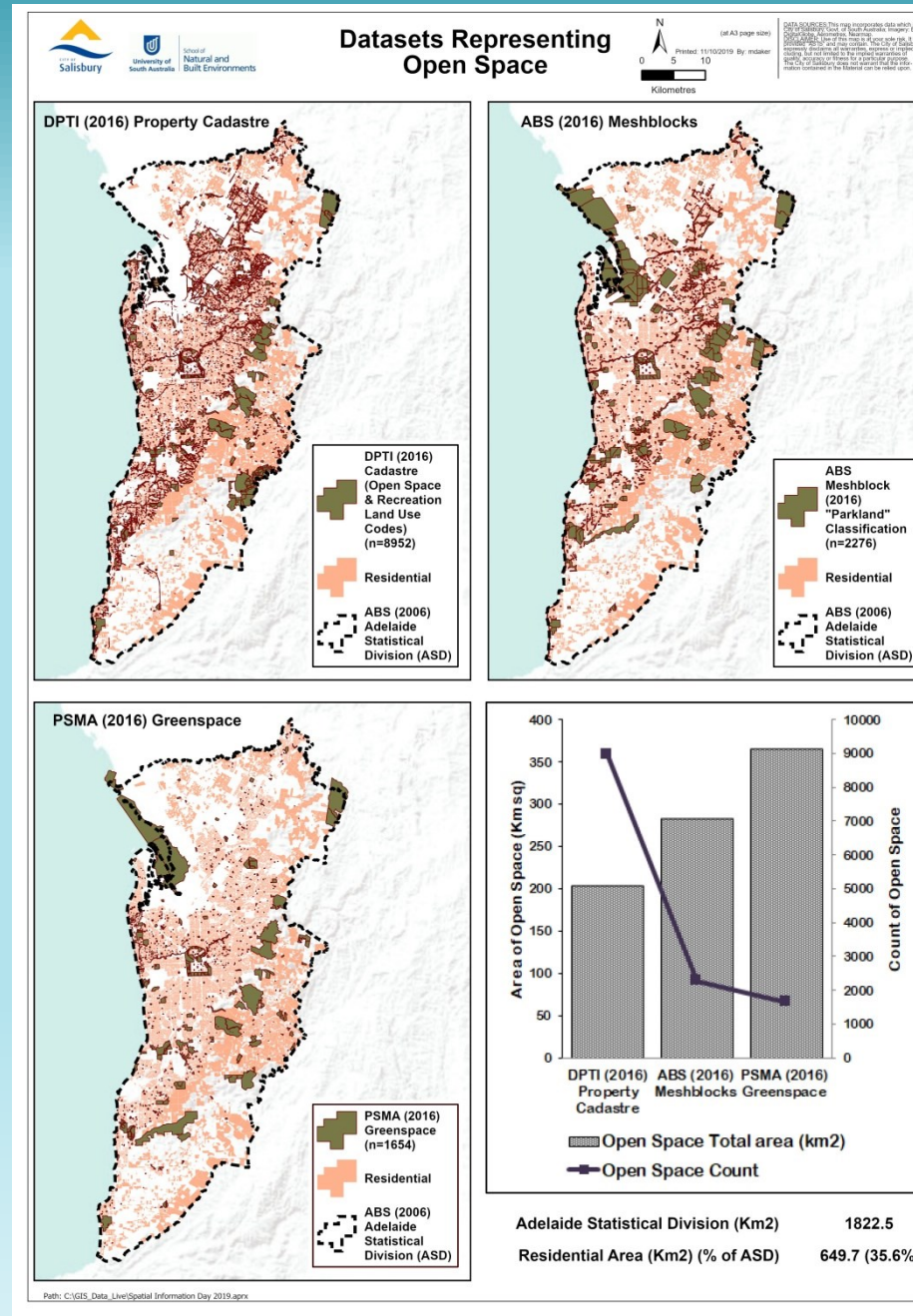
- **Selection of datasets representing open space within metropolitan Adelaide:**
 - **DPTI (2016) Property Cadastre:**
 - Extraction of 31 land use codes representing open space and recreation activities
 - **ABS (2016) Meshblocks “Parkland” classification:**
 - Smallest geographical area defined by ABS
 - Broadly reflects a defined land use (majority rule): i.e. Parkland.
 - **PSMA (2016) Greenspace**
 - A national dataset representing green spaces
- **Three administrative boundaries:**
 - Local Government Area (LGA)
 - ABS Postcode 2016 (POA)
 - ABS Suburbs 2016 (SSC)
- **Mandated 12.5% open space supply residential development >20 dwellings: Development Act 1993.**

SO WHAT?

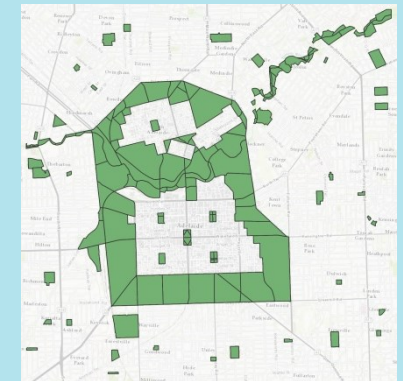
- **So how does the selection of an open space dataset and spatial unit influence the representation of open space supply?**

SPATIAL DATASETS REPRESENTING OPEN SPACE

- DPTI Property Cadastre (2016) Land use codes open space and recreation
- ABS (2016) Meshblocks "Parkland" classification
- PSMA (2016) Greenspace



DPTI Property Cadastre (2016)



ABS (2016) Meshblocks

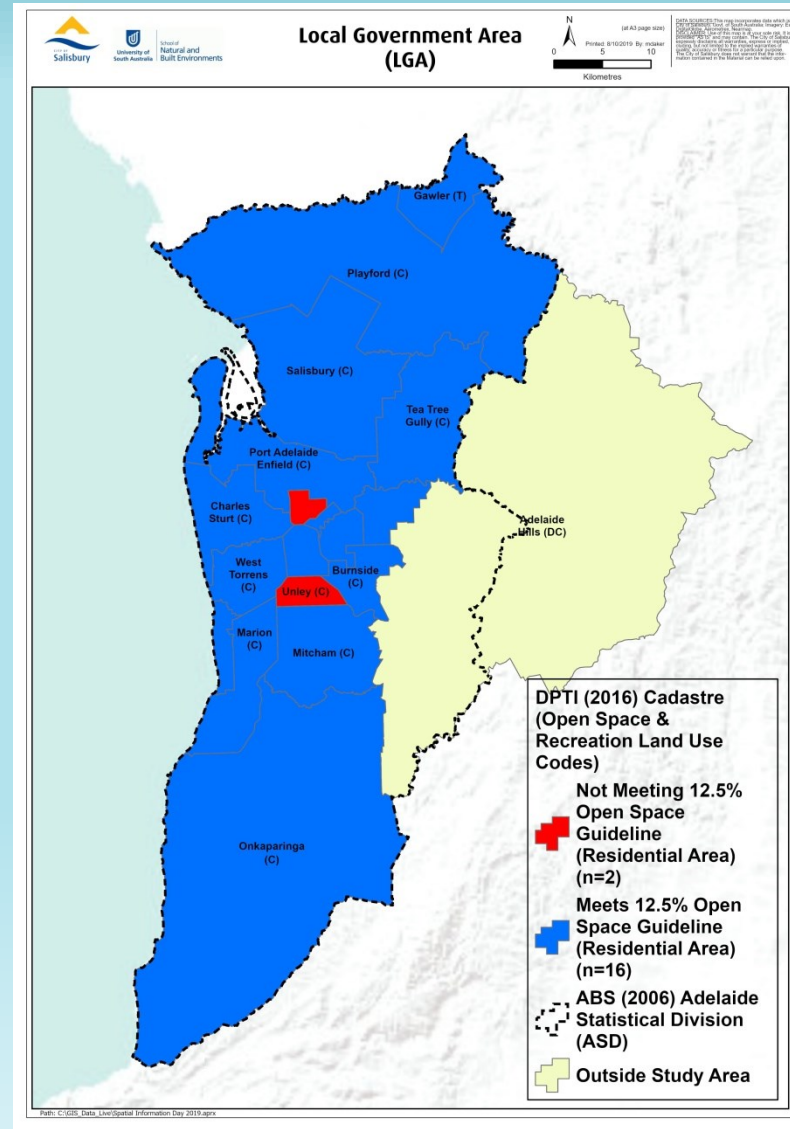


PSMA (2016) Greenspace

OPEN SPACE SUPPLY LOCAL GOV AREAS

DPTI (2016) Property Cadastre.

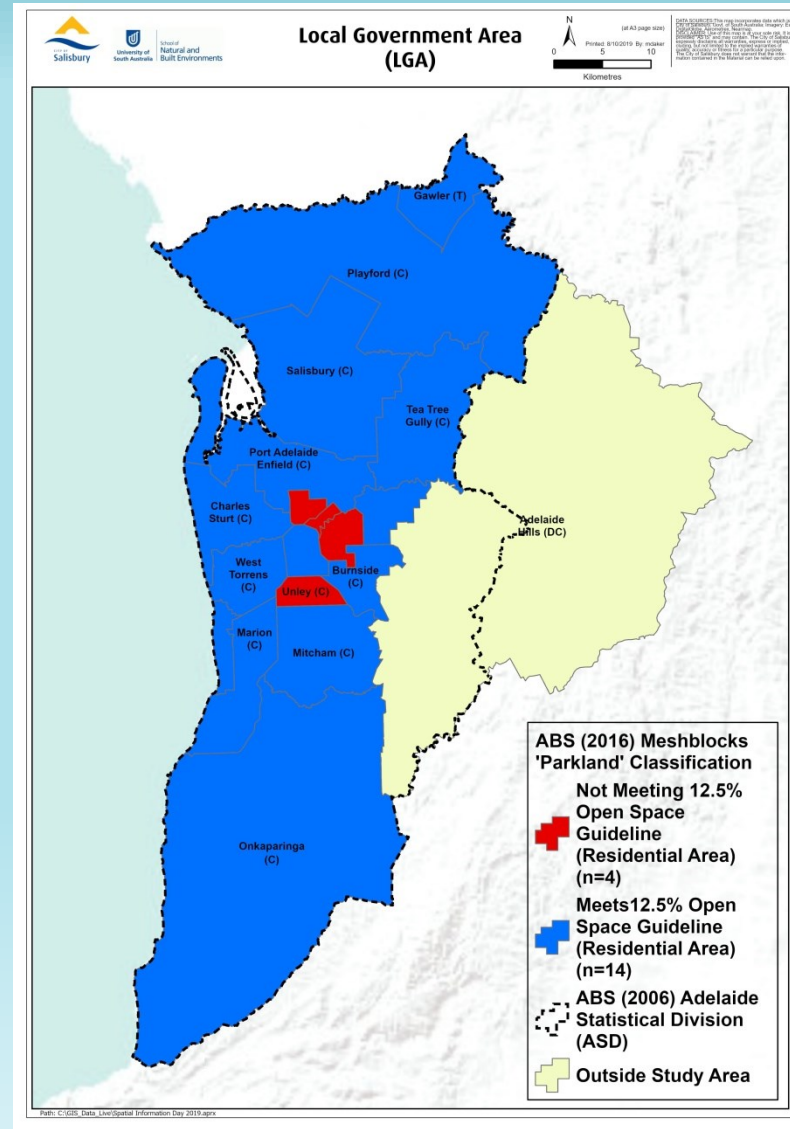
- Prospect and Unley do not meet the open space supply standard.



OPEN SPACE SUPPLY LOCAL GOV AREAS

ABS (2016) Meshblocks “Parkland”.

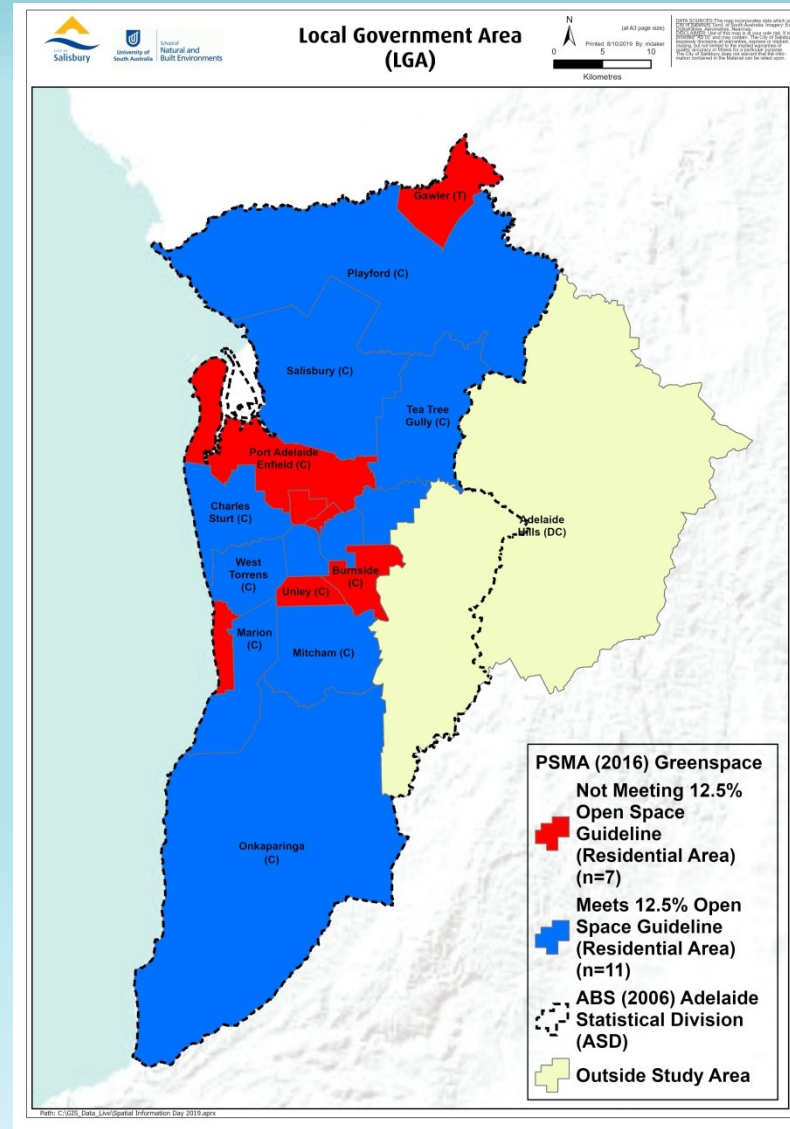
- Prospect, Unley, Walkerville and Norwood Payneham St Peters do not meet the open space supply standard.



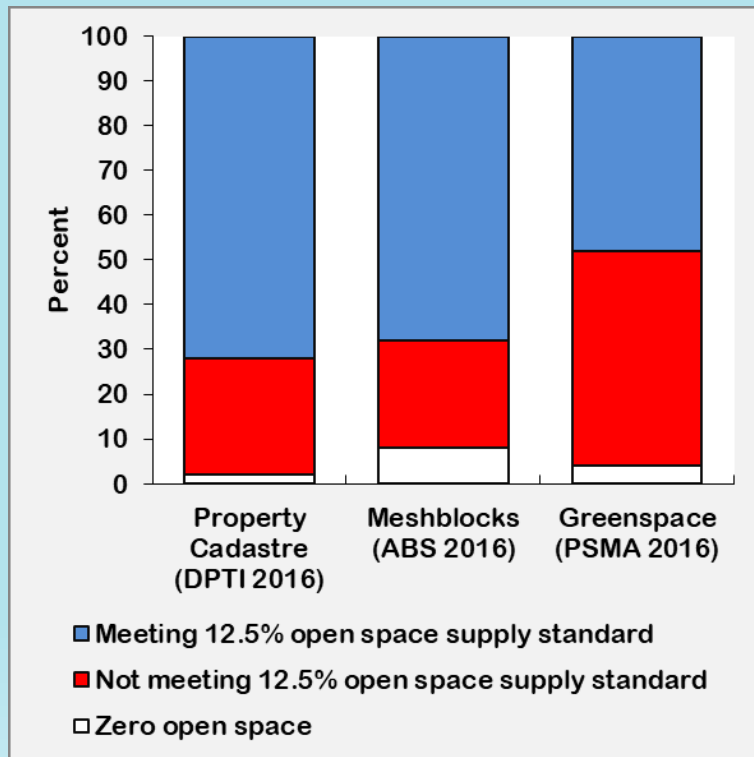
OPEN SPACE SUPPLY LOCAL GOV AREAS

PSMA (2016) Greenspace.

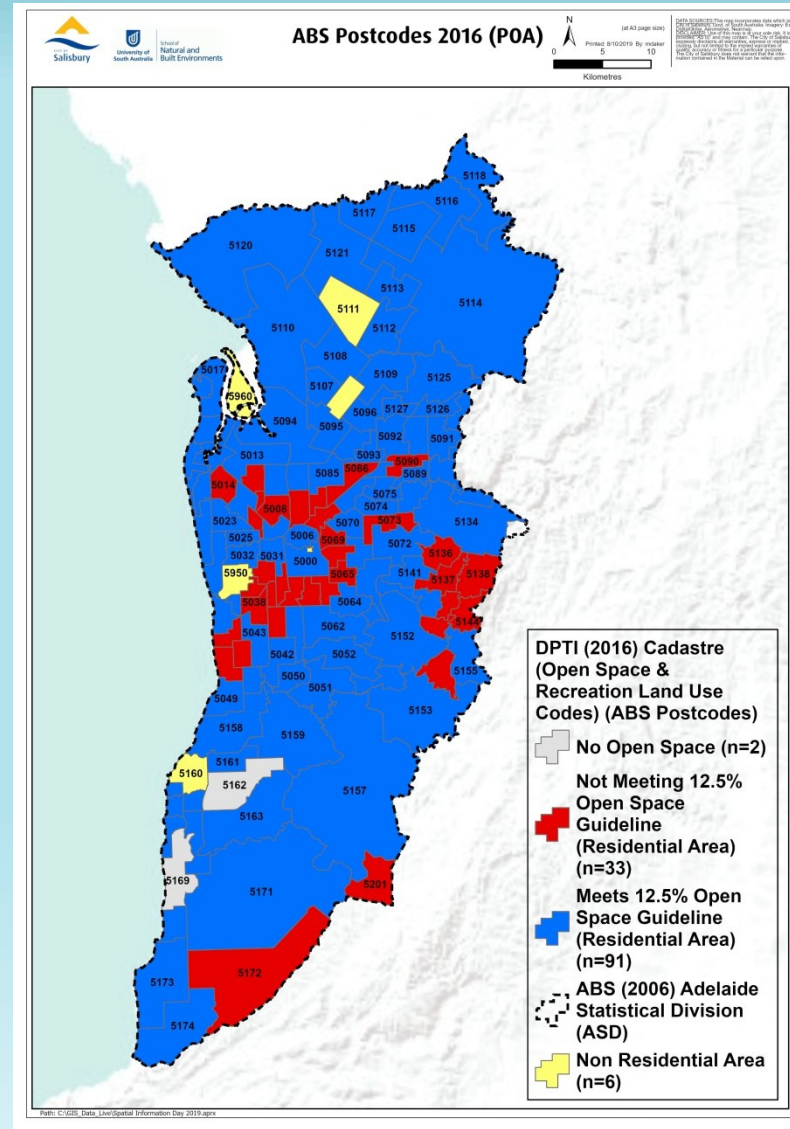
- Gawler, Port Adelaide, Enfield, Prospect, Walkerville, Burnside, Unley and Holdfast Bay do not meet the open space supply standard.



OPEN SPACE SUPPLY POSTCODES

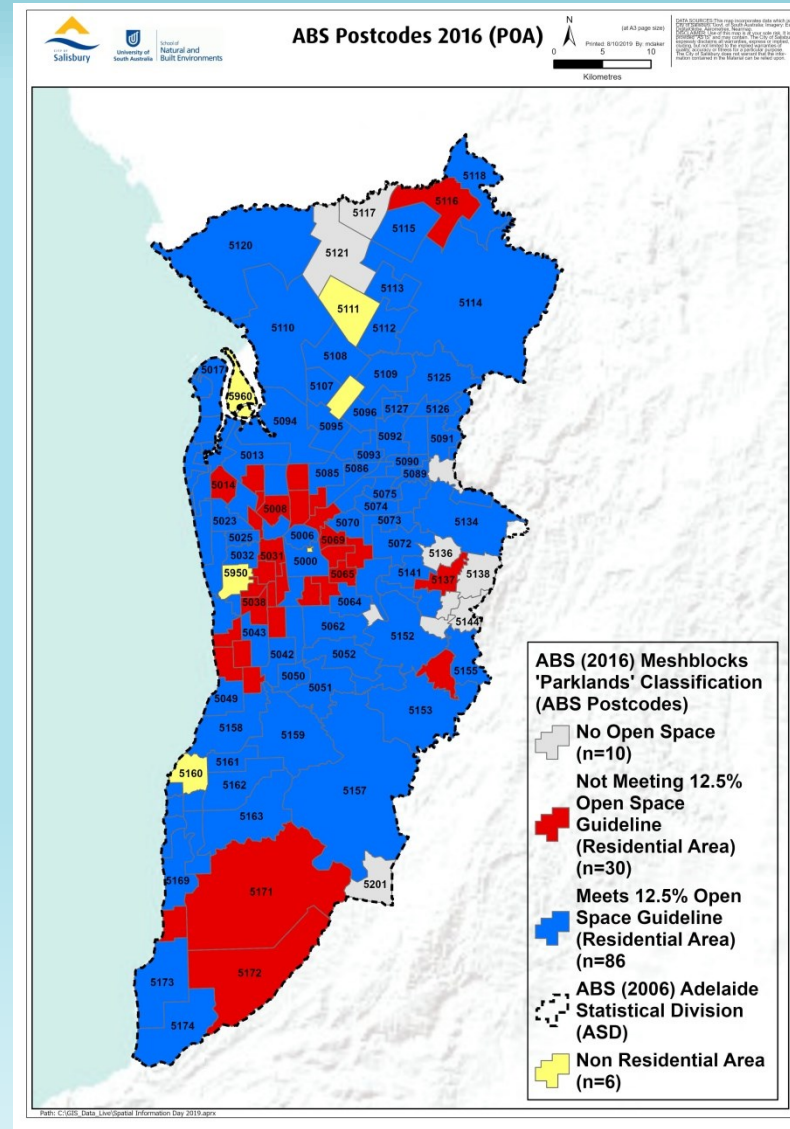
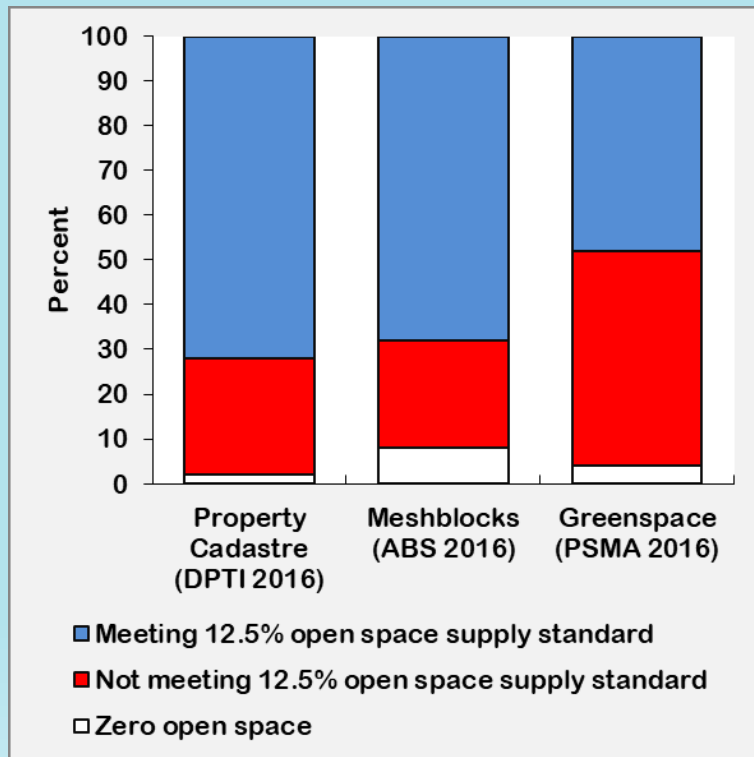


SLIDE 8



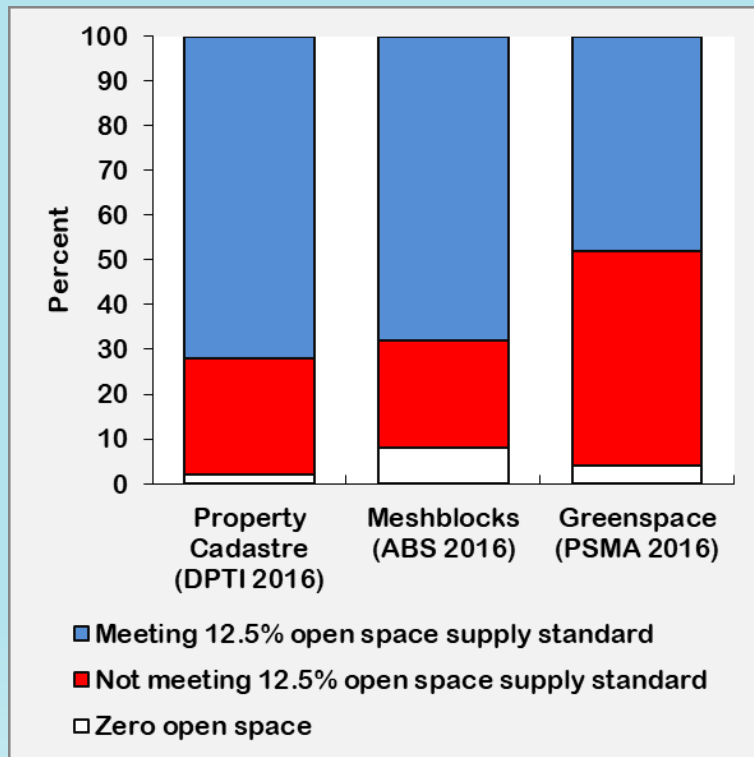
DPTI Property Cadastre.

OPEN SPACE SUPPLY POSTCODES

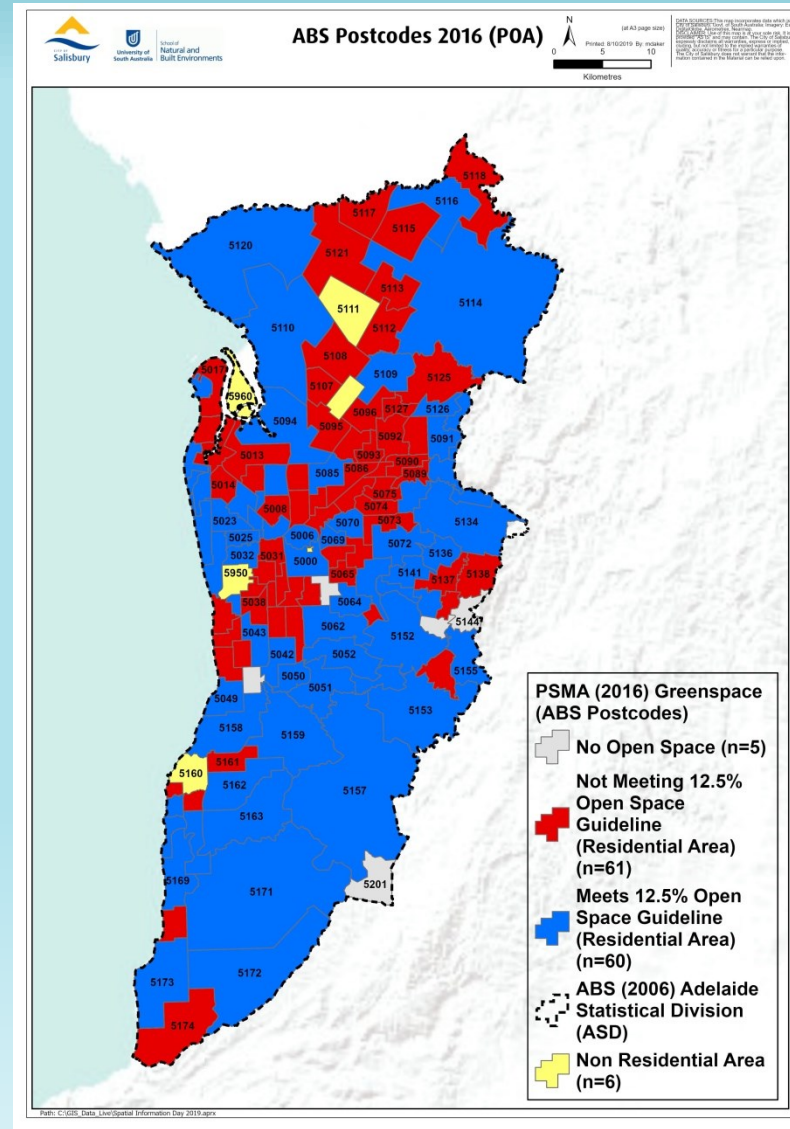


ABS Meshblocks
“Parkland”.

OPEN SPACE SUPPLY POSTCODES

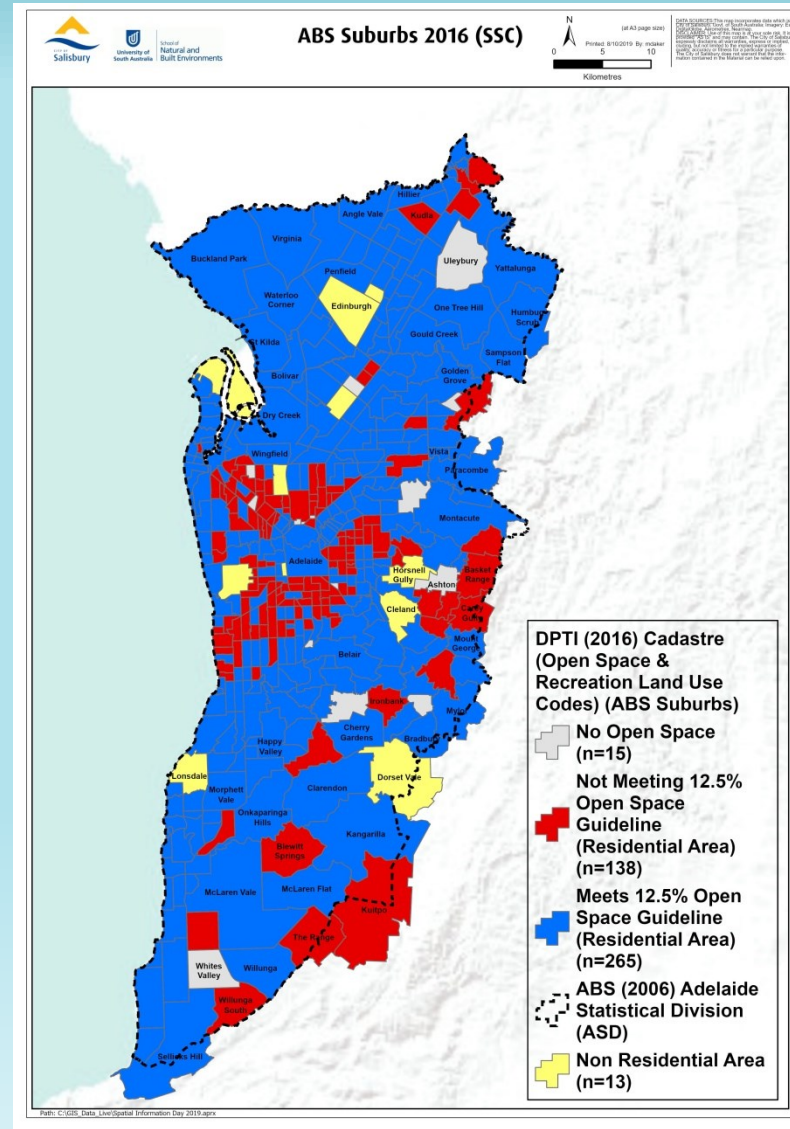
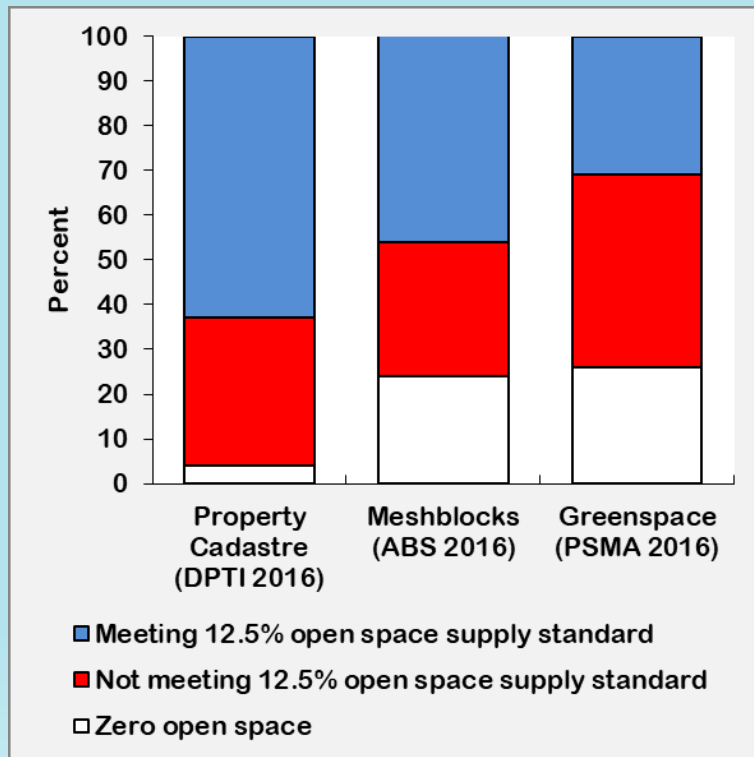


SLIDE 10



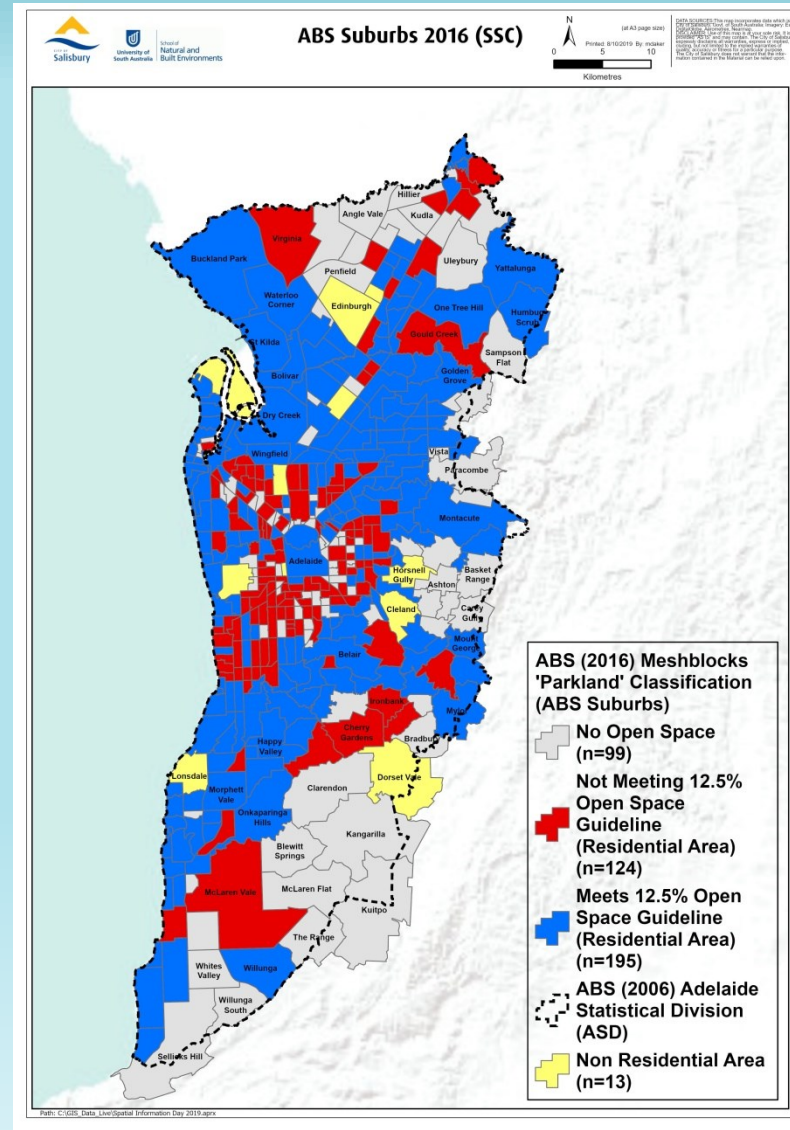
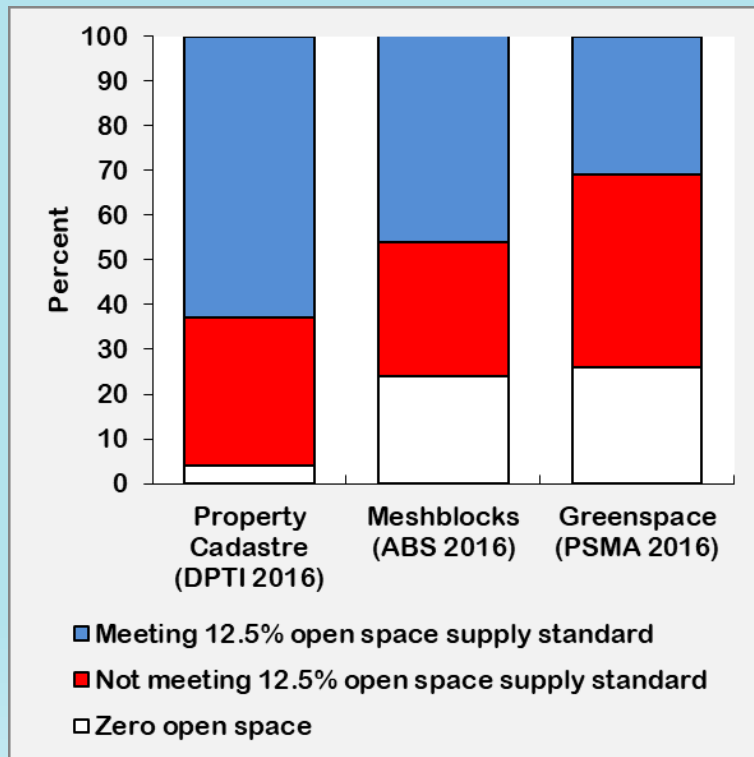
PSMA (2016)
Greenspace.

OPEN SPACE SUPPLY SUBURBS



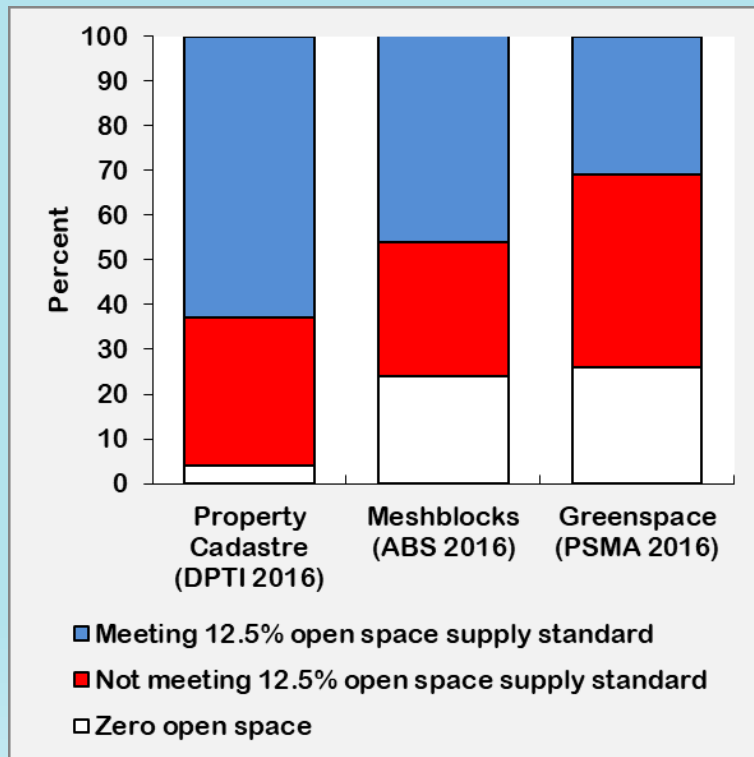
DPTI (2016) Property Cadastre.

OPEN SPACE SUPPLY SUBURBS

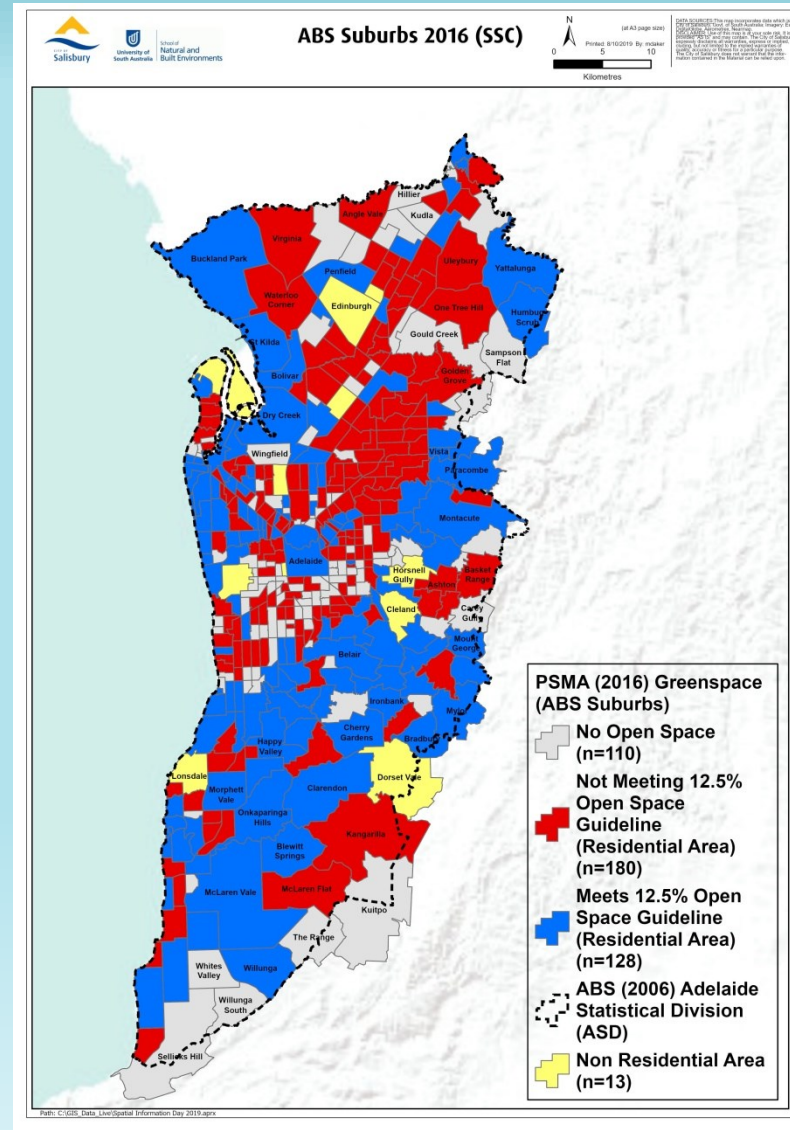


ABS (2016) Meshblocks “Parkland”.

OPEN SPACE SUPPLY SUBURBS



SLIDE 13



**PSMA (2016)
Greenspace.**

CONCLUSION

- **Highlights the importance of appropriate data selection**
- **Influence of MAUP on data representation**
- **MAUP has not gone away; need to report it as source of bias in research and strategic urban planning documentation.**

Thank you for listening

Questions?

This research was supported by an Australian Government Research Training Program (RTP) Scholarship

DATA SOURCES

- ABS 2016, *South Australia Mesh Blocks ASGS Ed 2016 digital boundaries in ESRI shapefile format* Australian Bureau of Statistics, Canberra (ACT), Retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/1270.0.55.001July%202016?OpenDocument>
- DPTI 2016, *Digital cadastre boundaries (DCDB) South Australia*, Department of Planning Transport and Infrastructure: Land Services Group, Adelaide (SA)
- PSMA 2016, *Greenspace*, P.A. Ltd, Canberra (ACT), Retrieved from <<https://aurin.org.au/>>