Integrated Land Use and Transport Planning in Sydney

Presented by Ben Hendriks
• History of development and land use planning in Sydney
• Key growth challenges for metropolitan planning in Sydney
• Does Sydney have the planning capacity to grow without investment in new development corridors?
• Theoretical process for planning along Anzac Parade Corridor with potential extension of light rail
History of development and land use planning in Sydney
EVOLUTION OF STRATEGIC PLANNING IN SYDNEY

PRIME CBD AND GROWTH OF SECONDARY CENTRES

County of Cumberland Plan (1951)

Map Source: Cumberland County Council (1951)
THE EMERGENCE OF THE POLYCENTRIC CORRIDOR CITY

Sydney Region Outline Plan (1968)

Copenhagen ‘Finger Plan’ (1947)

Map Source: State Planning Authority of NSW (1968)
THE REINFORCEMENT OF THE POLYCENTRIC "CITY OF CITIES"

City of Cities – A Plan for Sydney’s Future (2005)

Map Source: Department of Planning (2005)
EVOLUTION OF STRATEGIC PLANNING IN SYDNEY

THE 21ST CENTURY POLYCENTRIC CORRIDOR CITY

A Plan for Growing Sydney (2014)

Map Source: Department of Planning and Environment (2014)
HISTORICALLY, MOST OF SYDNEY'S URBAN GROWTH OCCURRED ALONG RAILWAY LINES
Integrated Transport and Land Use Planning in Sydney

Map Source: Department of Planning (2005)
Integrated Transport and Land Use Planning in Sydney

Map Source: Department of Planning (2005)
Integrated Transport and Land Use Planning in Sydney

Map Source: Department of Planning (2005)
Key growth challenges for metropolitan planning in Sydney
Sydney's growth in population between 2011–2036 alone, is forecast to be the size of the entire 2011 population of the Brisbane metropolitan area.
PROJECTED POPULATION GROWTH

An extra 2M people between 2011 and 2036

Data Sources: ABS, BTS and DP&E
PROJECTED EMPLOYMENT GROWTH

An extra 900K between 2011 and 2036

2011
2.2M Jobs
+41%

2036
3.1M Jobs

DATA SOURCES: ABS, BTS and DP&E
Both population and population growth in Sydney’s west is exceeding the east...

Data Source: BTS projections (2014)
However, jobs in the east will continue to outnumber the number of jobs in the west, creating a population–jobs imbalance and creating a significant west–east transport task, further burdening an already overstretched transport network.
Most railway lines are already above 100% passenger loading.

Data Source: BTS (2015) – AM peak average passenger loadings at Central
### Issues Facing the Growth of Sydney

**Transport Reaching Capacity**

The road network is also struggling to cope, with decreasing travel speeds.

**Sydney’s Slowest Roads**

**AM Peak**
- Princes Highway (Arncliffe to St Peters) — 10.2km/h
- O’Riordan St (from Alexandria to Mascot) — 11.7km/h
- Cleveland St (from Darlington to Moore Park) — 15.3km/h
- Alison Rd (Randwick to Moore Park) — 16.5km/h
- Milperra Rd/Canterbury Rd (from Liverpool to Newtown) — 17.8km/h

**PM Peak**
- Princes Highway (from St Peters to Arncliffe) — 14.1km/h
- Pacific Highway (from Roseville to Pymble) — 14.2km/h
- Milperra Rd/Canterbury Rd (from Newtown to Liverpool) — 15.6km/h
- Lane Cove Rd (from Ryde to North Ryde) — 16.9km/h
- Epping Rd (from Lane Cove to Carlingford) — 17.1km/h

Source: RMS Roads Report (1 June to 31 August, 2015)

Data Source: RMS Roads Report via the Daily Telegraph
ISSUES FACING THE GROWTH OF SYDNEY

Limited Transport Accessibility

SNAMUTS shows that much of Sydney is “without minimum service”, with the average score is 13.2 – rating in the “poor” category.

Data Source: SNAMUTS
Even without the population growth Sydney is experiencing, more dwellings are required due to reducing household sizes.

Data Source: Australian Institute of Family Statistics
WHAT DOES ALL THIS MEAN?

• The west is growing in population faster than the east but jobs in the west are not keeping up.
• To resolve this, either:
  – West–east transport links need to have capacity improvements; and/or
  – More jobs need to be located in Sydney’s west, which would also reduce commute times for people in Sydney’s west.
• Strategic plans help to ensure an orderly and coordinated development of Sydney, including the provision of the infrastructure necessary to sustain the population growth.
• Public transport is a vital component to this growth, as it helps to unlock development capacity through more intensive land uses, such as with transit-oriented developments.
Does Sydney have the planning capacity to grow without investment in new development corridors?
CAN SYDNEY’S INFRASTRUCTURE COPE?

In 1981, London had the same population as is forecasted for Sydney in 2041. This map shows the London Tube network in the 1980s and illustrates how extensive a public transport network is required for a population of 6.6M. Will Sydney’s public transport network in 2041 be able to meet the task?
Actual dwelling completions are falling far short of BTS forecasts in most council areas. Only 5 councils in the Sydney metropolitan area are meeting/exceeding projections.

There has not been a single year in the past decade where BTS forecasts have been met.

Red line source/methodology: Sum of BTS 2036 OPD for Sydney LGAs – BTS 2011 OPD / 25 for annual growth required
Blue line source/methodology: Sum of Draft Subregional strategies' 2004–31 LGA population targets / 27 for annual growth
Green line source/methodology: Sum of Sydney LGAs' net dwelling completions per financial year
HOW WILL SYDNEY’S GROWTH BE MANAGED?

The levels of strategic and statutory planning

**Strategic Plans**
- State Plan
- Metropolitan/Regional Plans
- District Plans
- Council (City) Plans
- Precinct Master Plans

**Statutory Documents**
- EP&AA
- SEPPs
- LEPs
- DCPs

*DCPs are not statutory documents, but supplement LEPs with more detailed development controls.*
WHERE CAN THE GROWTH OCCUR?

Growth Centres

NORTH WEST GROWTH CENTRE
- 70,000 new dwellings
- 200,000 new residents

SOUTH WEST GROWTH CENTRE
- 110,000 new dwellings
- 300,000 new residents

Source: Department of Planning & Environment

Integrated Transport and Land Use Planning in Sydney
WHERE CAN THE GROWTH OCCUR?

The Metro Strategy’s Priority Precincts

Source: Department of Planning & Environment
## DO IDENTIFIED GROWTH AREAS ACTUALLY HAVE CAPACITY TO GROW?

**Top 20 Non-Greenfield Growth Travel Zones (2011–36)**

<table>
<thead>
<tr>
<th>TZ</th>
<th>TZ Name</th>
<th>Dwellings Growth</th>
<th>Capacity Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2606</td>
<td>Westfield_Hurstville Station_North</td>
<td>4038</td>
<td>High</td>
</tr>
<tr>
<td>1552</td>
<td>Macquarie Park_Wicks Rd and Epping Rd</td>
<td>3177</td>
<td>No</td>
</tr>
<tr>
<td>1543</td>
<td>Macquarie Park_Lachlan Av and PeachTree Rd</td>
<td>2754</td>
<td>No</td>
</tr>
<tr>
<td>1541</td>
<td>Morling College</td>
<td>2736</td>
<td>No</td>
</tr>
<tr>
<td>285</td>
<td>Rosebery_Stedman St and Spring St</td>
<td>2375</td>
<td>No</td>
</tr>
<tr>
<td>286</td>
<td>Rosebury_Dalmeny Ave and Kimberley Grove</td>
<td>2346</td>
<td>No</td>
</tr>
<tr>
<td>276</td>
<td>Hpm Industries</td>
<td>2268</td>
<td>No</td>
</tr>
<tr>
<td>1806</td>
<td>Zenith Centre_Chatswood Station_West</td>
<td>2233</td>
<td>High</td>
</tr>
<tr>
<td>1575</td>
<td>Coorabell Hospital</td>
<td>2231</td>
<td>High</td>
</tr>
<tr>
<td>260</td>
<td>Erskineville</td>
<td>2104</td>
<td>No</td>
</tr>
<tr>
<td>1106</td>
<td>Carlingford Station</td>
<td>2007</td>
<td>Medium</td>
</tr>
<tr>
<td>4979</td>
<td>Penrith CBD_Penrith Station_South</td>
<td>1997</td>
<td>No</td>
</tr>
<tr>
<td>219</td>
<td>Redfern Oval</td>
<td>1964</td>
<td>Medium</td>
</tr>
<tr>
<td>279</td>
<td>Green Square Station_North</td>
<td>1777</td>
<td>No</td>
</tr>
<tr>
<td>904</td>
<td>Ashfield Station_South</td>
<td>1709</td>
<td>Medium</td>
</tr>
<tr>
<td>411</td>
<td>Mascot_Qantas HO_Mascot Station</td>
<td>1699</td>
<td>No</td>
</tr>
<tr>
<td>720</td>
<td>North Strathfield Station_East</td>
<td>1664</td>
<td>Medium</td>
</tr>
<tr>
<td>2702</td>
<td>Wolli Creek Station</td>
<td>1658</td>
<td>No</td>
</tr>
<tr>
<td>158</td>
<td>Broadway Shopping Centre_Glebe_Mountain St and Small St</td>
<td>1643</td>
<td>High</td>
</tr>
<tr>
<td>215</td>
<td>Redfern Station</td>
<td>1535</td>
<td>No</td>
</tr>
<tr>
<td>233</td>
<td>Broadway Shopping Centre_Glebe_Glebe St and Cowper St</td>
<td>1515</td>
<td>High</td>
</tr>
</tbody>
</table>
DO IDENTIFIED GROWTH AREAS ACTUALLY HAVE CAPACITY TO GROW?

Hurstville – 4,038 additional dwellings identified, but most sites constrained.
DO IDENTIFIED GROWTH AREAS ACTUALLY HAVE CAPACITY TO GROW?

Chatswood – 2233 additional dwellings identified, but almost entire TZ constrained

KEY TO CONSTRAINTS
- Commercial Core (B3) Zone
- Open Space (RE1/RE2) Zone
- Infrastructure (SP2) Zone or School
- Heritage Item or Area
- Strata Title

Integrated Transport and Land Use Planning in Sydney
WHERE ARE WE HEADING?

• There is a planning capacity problem in Sydney which is constraining housing supply
• This impacts on affordability and the economy
• There are large tracts of land available but these are poorly served by public transport
• As such, investment in public transport is vital to Sydney’s growth and will unlock areas such as Camellia or Anzac Parade Corridor
Theoretical process for development of corridor strategy for Anzac Parade extension of light rail
LAND USE ASSESSMENT PROCESS

- Constraints Analysis
- Identification of Opportunity Sites
- Market Analysis
- Take-up Analysis
- Land Use Opportunities Output
LAND USE ASSESSMENT PROCESS
Modelling of three scenarios

<table>
<thead>
<tr>
<th>SCENARIOS WITHOUT LIGHT RAIL</th>
<th>SCENARIO WITH LIGHT RAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXISTING</strong></td>
<td><strong>BASE CASE</strong></td>
</tr>
<tr>
<td>2016</td>
<td>2041</td>
</tr>
<tr>
<td>Current existing GFA</td>
<td>Maximum permissible GFA using 2016 FSRs</td>
</tr>
</tbody>
</table>

**INTERVENTION**
2041
With increased FSRs from light rail uplift

Difference reveals the additional capacity unlocked by light rail
Identification of constrained sites through a ‘sieve’ mapping process:

- Heritage
- Flooding
- Strata
- Developed sites
- Environmental
- Special use sites
LAND USE ASSESSMENT PROCESS

Identification of Opportunity Sites

CLOSE TO TRANSPORT
LARGER LOTS
CONSOLIDATED OWNERSHIP

GOVERNMENT-OWNED SITES
NOT CONSTRAINED
VACANT OR LOW DENSITY
LAND USE ASSESSMENT PROCESS

Example: Bankstown

Source: Department of Planning & Environment
LAND USE ASSESSMENT PROCESS

Example: Bankstown – Constraints

Source: Department of Planning & Environment
LAND USE ASSESSMENT PROCESS

Example: Bankstown – Existing Planning

Source: Department of Planning & Environment
LAND USE ASSESSMENT PROCESS

Market analysis

Residential/commercial supply
- Research pipeline supply based on properties that are approved, under construction and proposed

Property value growth
- Historical growth of property values
- Extrapolation of property value growths based on trends and project-induced uplift

Property turnover and redevelopment speed
- Historical analysis of select property transactions to understand historical turnover rates and profile by redevelopment speed by property type
- Based on case studies and earlier analyses, model potential demand and rate of supply take-up
**LAND USE ASSESSMENT PROCESS**

**Take-up rates**

Take-up rates based on lot size and ownership are applied on capacity figures to calculate likely actual development:

<table>
<thead>
<tr>
<th>GOVERNMENT AND/OR INSTITUTIONAL OWNERSHIP</th>
<th>CONSOLIDATED OWNERSHIP AND/OR LARGE LOTS</th>
<th>FRAGMENTED OWNERSHIP AND/OR SMALL LOTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>High take-up rate</td>
<td>Medium take-up rate</td>
<td>Low take-up rate</td>
</tr>
</tbody>
</table>

- Government/Institutional: 100%
- Consolidated Ownership and/or Large Lots: 50%
- Fragmented Ownership and/or Small Lots: 25%
LAND USE ASSESSMENT PROCESS

Anzac Parade Extension – Preliminary Analysis

KEY

- Study area
- LEP Special Use zones
- LEP Recreation zones
- Proposed route
- Educational facility
- Major shopping
- Hospital
- Sports facility
- Cemetery
- Racecourse
- Golf course
- Airport
- Swimming pool
- Port

INVESTIGATION AREA

Sydney Airport

NOT TO BE REPRODUCED WITHOUT THE PRIOR CONSENT OF MECON PTE LTD
HOW IS THE CORRIDOR STRATEGY USED?

• To inform broader planning strategies on metropolitan growth
• To input into value sharing analysis
• To input into demand modelling
• To develop statutory planning controls