



How does transport economics need to change for city shaping projects?





What is the role of economic appraisal?

- *Compare costs and benefits*
- *Estimate Benefit Cost Ratio*

Traditional

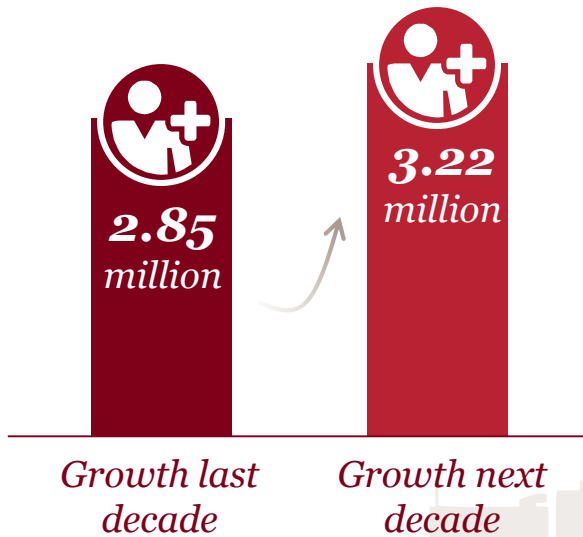
- *Explain and quantify the 'status quo'*
- *Estimate expected changes to make city shaping decisions*
- *Understand benefits/KPIs*
- *Underpin governance for benefits realisation*

Increasing interdependence within Business Cases

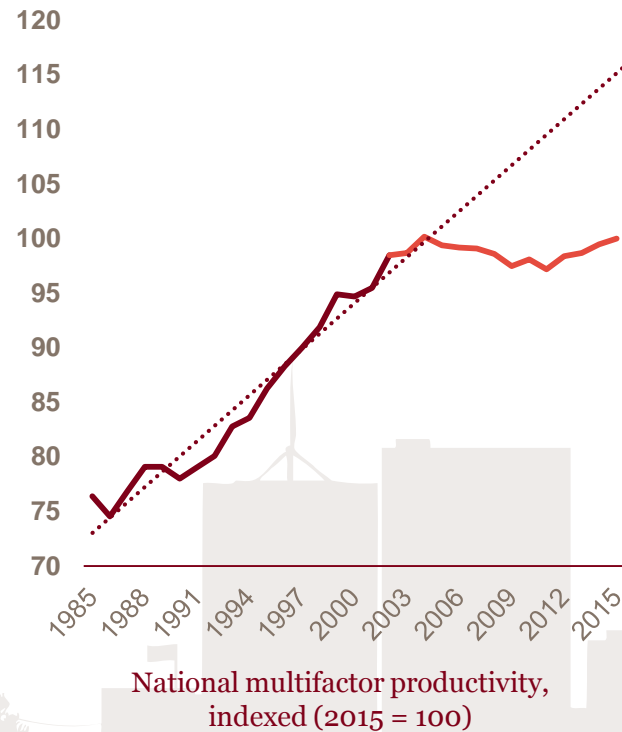


The challenges for our cities...

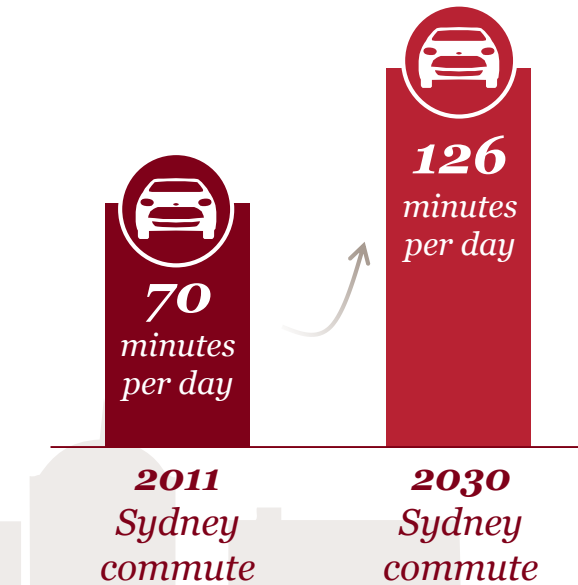
1. Growing urban population



2. Flat-lining productivity growth



3. Increasing travel times





Current and future transport appraisals

Current Australian transport appraisals

Traditional transport benefits

Travel time savings

Vehicle operating costs

Externalities and mode-specific impacts

Environmental externalities

De-crowding benefits

Productivity and urban renewal benefits

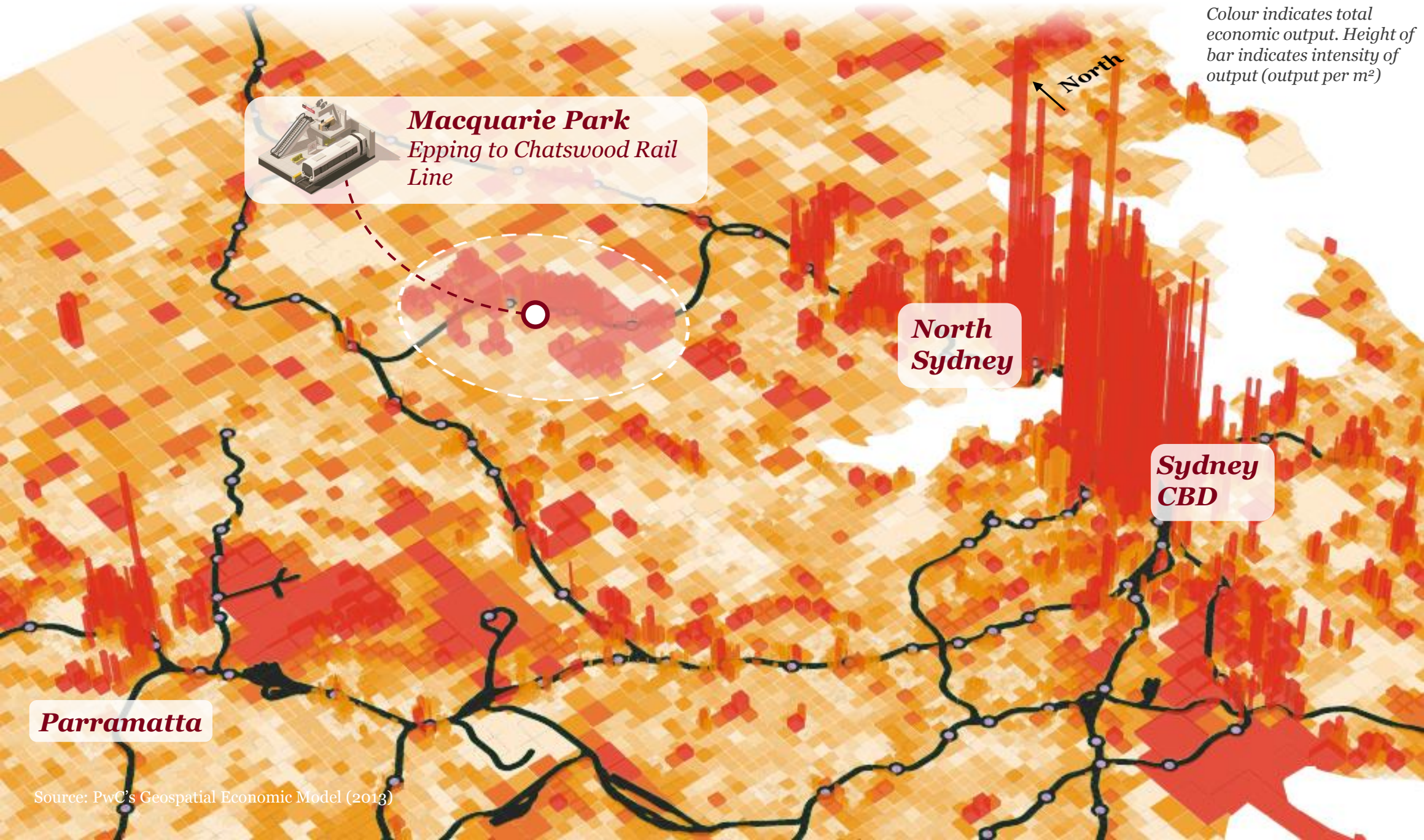
- Wider Economic Benefits e.g. agglomeration.
- Land value uplift
- Infrastructure savings

Future Australian transport appraisals



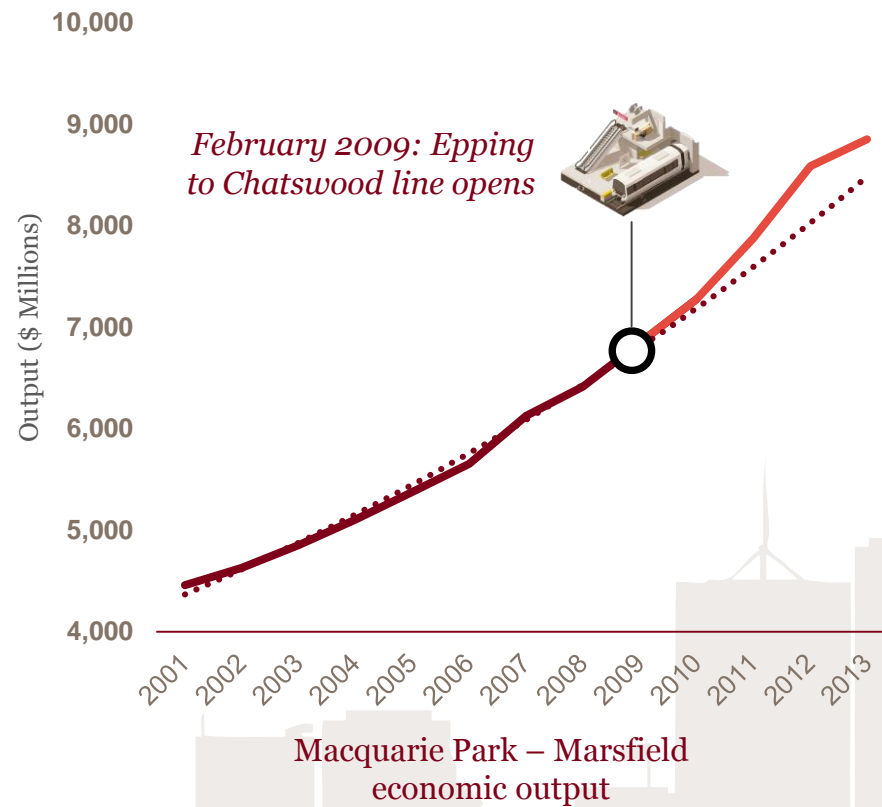
Transport infrastructure and productivity benefits

Accessibility → Density → Productivity



Macquarie Park

The Epping to Chatswood rail line

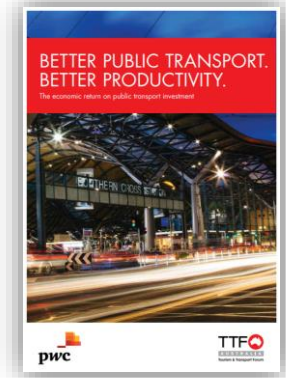


5.3% to 6.7%

Economic growth rate before and after construction completed on the rail line

\$1.02b - \$1.49b

Additional economic benefits in Macquarie Park-Marsfield attributable to the rail line in 2009-2013



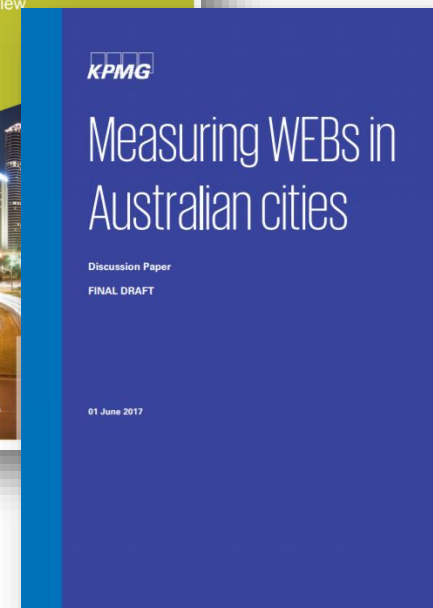
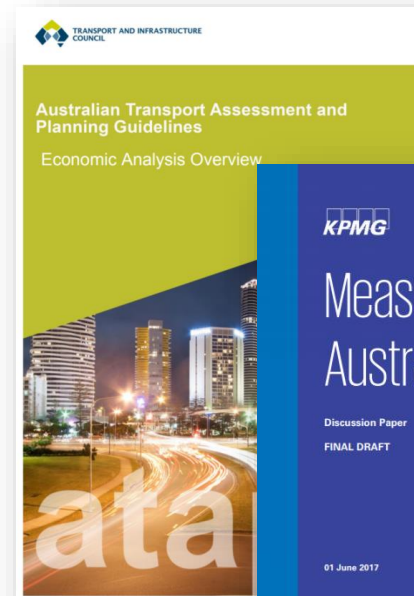


Wider Economic Benefits

Separately considered → Key part of appraisal

Costs and Benefits (Present Value \$M)	7% Discount rate
Costs	3,570
Benefits excluding wider economic benefits (WEBs)	4,642
Benefit Cost Ratio (BCR)	1.3
Net Present Value (NPV)	1,072
BCR including WEBs	1.6
NPV including WEBs	3,700

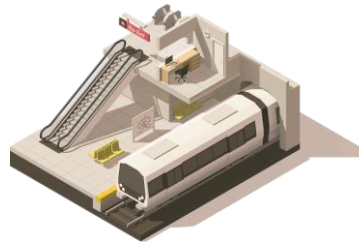
	7% Discount Rate
Present value of capital costs (P50)	\$6.7bn
Present value of operation and maintenance costs	\$0.6bn
Present value of conventional benefits	\$7.9bn
Present value of WEBs	\$3.1bn
Present value of total benefits	\$11.0bn
Net Present Value (excl WEBs)	\$0.6bn
Net Present Value (incl WEBs)	\$3.7bn
Benefit cost ratio (excl WEBs)	1.1
Benefit cost ratio (incl WEBs)	1.5





Land value uplift in practice

Land values can increase beyond just the monetisation of increased accessibility



Existing land use with transport constraints

New transport infrastructure improves accessibility

Improved **accessibility** is monetised in higher land values

Unlocking **capacity** of the land to achieve best use by:

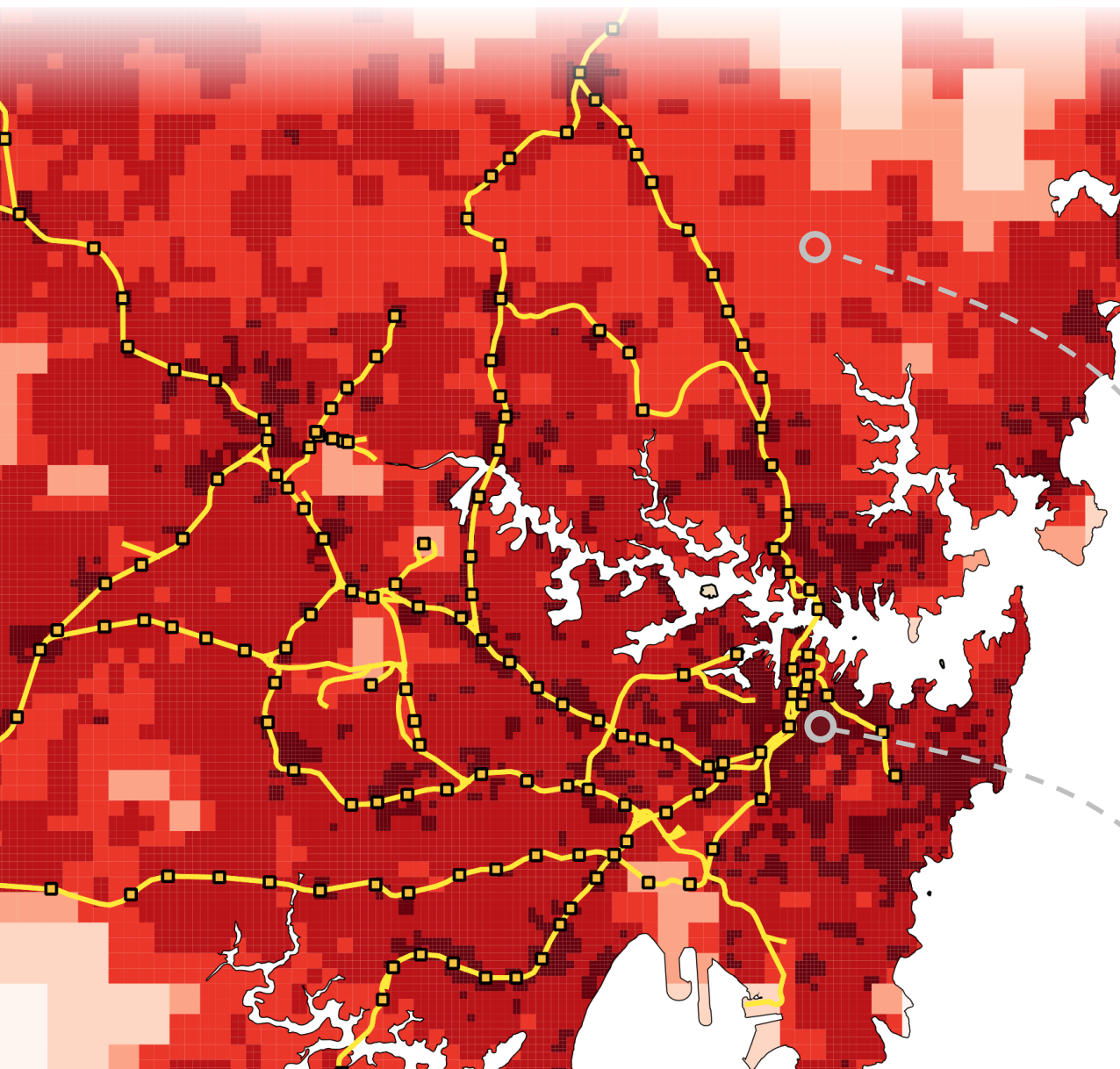
- Rezoning
- Increase floor space ratio

Captured through **travel time savings**

Captured through **urban renewal benefits**

Shaping urban form with transport planning

Accessibility → Population and Employment Density



St Ives
1,094 people per km²



Potts Point
13,298 people per km²

Source: PwC's Geospatial Economic Model (2017) and ABS Census (2011)



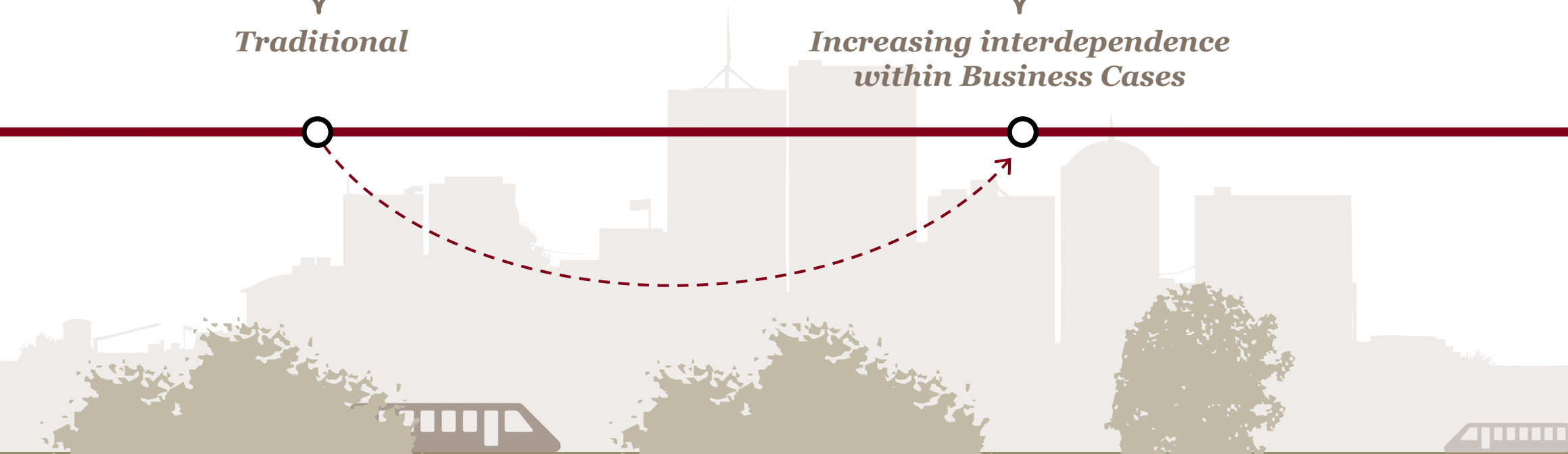
Where to from here?

- *Compare costs and benefits*
- *Estimate Benefit Cost Ratio*

Traditional

- *Explain and quantify the 'status quo'*
- *Estimate expected changes to make city shaping decisions*
- *Understand benefits/KPIs*
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Increasing interdependence within Business Cases





Thank you

Further queries, please contact

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