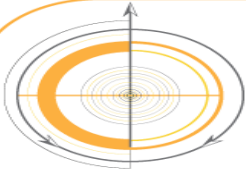


AirTrain - The Airport Railway Melbourne needs!



Rail Futures Institute – Dr Bill Russell and Graeme Macmillan

Brimbank City Council, Sunshine – 7 August 2017

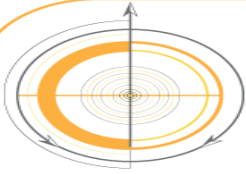


What is Rail Futures?

Rail Futures Institute is an independent non-partisan group.

It was formed to advocate cost-effective rail and intermodal solutions for public transport and freight problems based on sound commercial, economic and social reasoning.

Rail Futures members include experienced rail professionals, urban planners, engineers and economists.

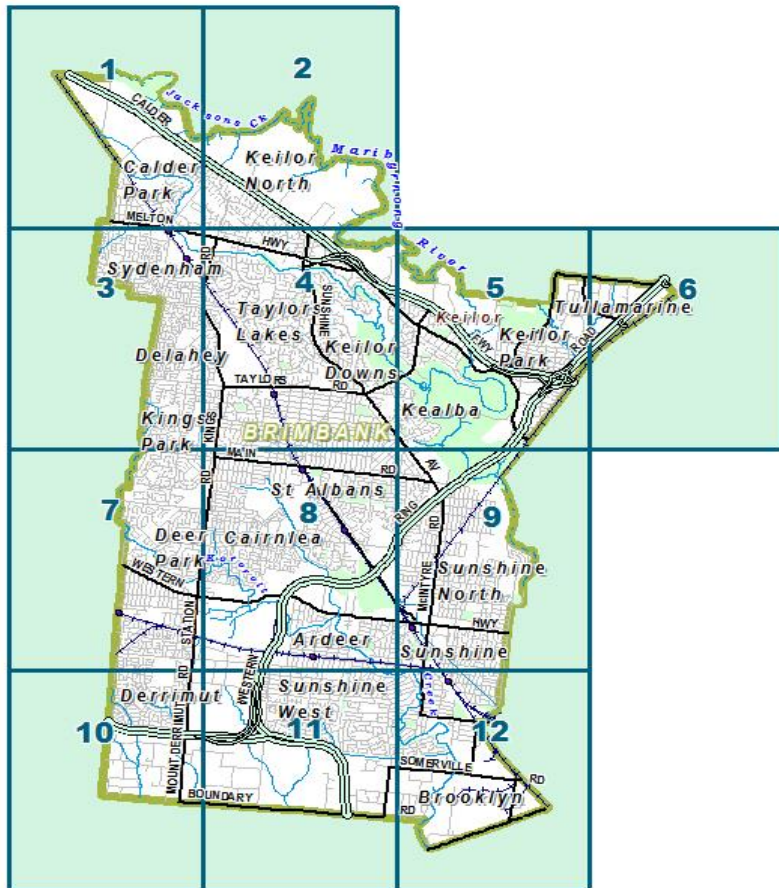


This presentation features Rail Futures Institute's proposals for **AirTrain** – a new, dedicated high quality rail corridor linking Southern Cross and Melbourne Airport via Sunshine.

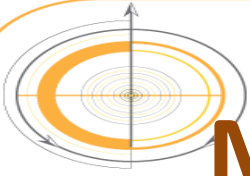
This is an integral part of our wider propositions for **InterCity** – a revamped regional rail network designed to take pressure of Melbourne's rapid growth by inducing much greater population growth in regional Victoria.

These proposals also address issues for the Ballarat rail corridor within the City of Brimbank which we touch on later.

Why better rail is vital to Brimbank.....



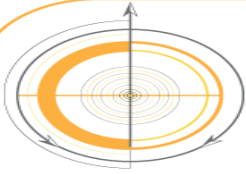
- Moving people and freight to rail transport overcomes road chaos (...less road rage!)
- Enables denser population development around transport nodes
- Links businesses, people and regions..
- Environmental benefits



Melbourne's Airport Railway

Critical Requirements

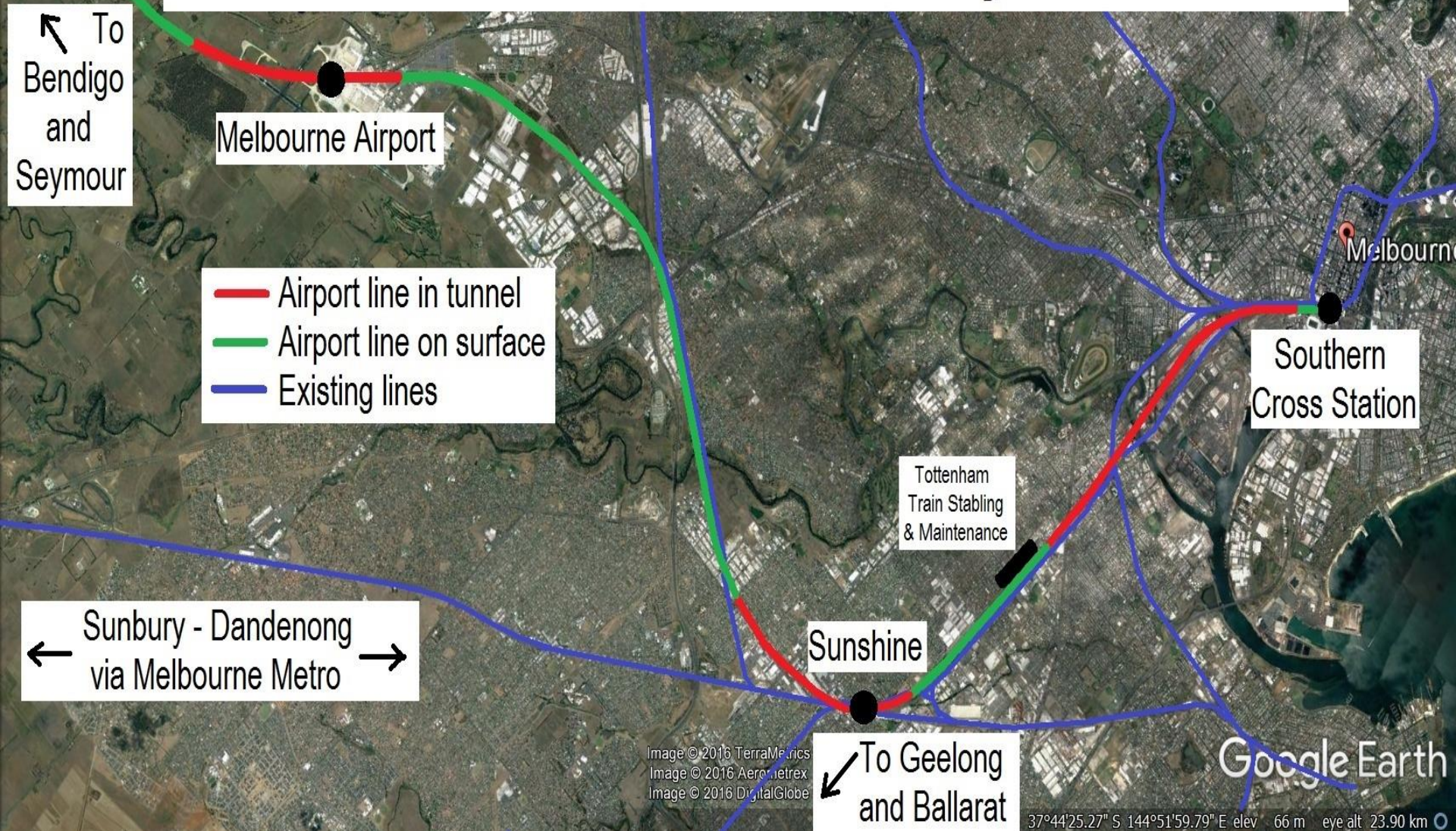
- Competitive transit time – target 15 mins
- High capacity – future proofed for growth
- High frequency – 10 minutes maximum
- High reliability – 95% within ± 2 minutes
- Complete rail network connectivity
- Maximised asset utilisation
- Dedicated high performance rolling stock

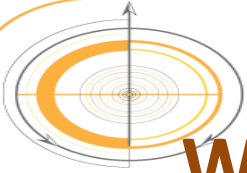


AirTrain – *key features*

- A new airport railway from Southern Cross to Melbourne Airport via Sunshine
- Fully segregated from busy suburban lines
- Tunnelled exit from Southern Cross and Airport
- Uses existing rail corridors
- Fast, frequent City - Airport shuttle service
- Bendigo, Shepparton and Albury trains run via the Airport to Southern Cross
- All regional cities and suburban stations have access to the Airport with a maximum of one change

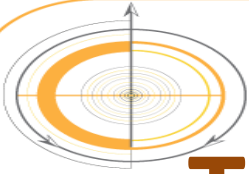
Southern Cross to Melbourne Airport by *AirTrain* via Sunshine in 15 minutes every 10 minutes





Why a Sunshine route for *AirTrain* ?

- It's all about network connectivity! But also:
- Combined tunnelled and surface route requires minimal property acquisition
- Uses existing rail corridor from West Footscray to Sunshine
- Provides train maintenance and stabling facilities on existing rail land at Tottenham
- Sunshine station can accommodate sub-surface platforms for the Airport and regional lines on existing railway land
- Railway land at Sunshine provides major development and value capture opportunities
- Uses existing rail corridor via parts of North Sunshine, East Keilor and Airport West



Total Network Connectivity

Melbourne Airport

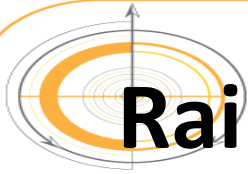
Southern Cross in 15 minutes, every 10 minutes
Kyneton, Bendigo, Echuca, Swan Hill
Seymour, Shepparton, Wodonga, Albury

Sunshine

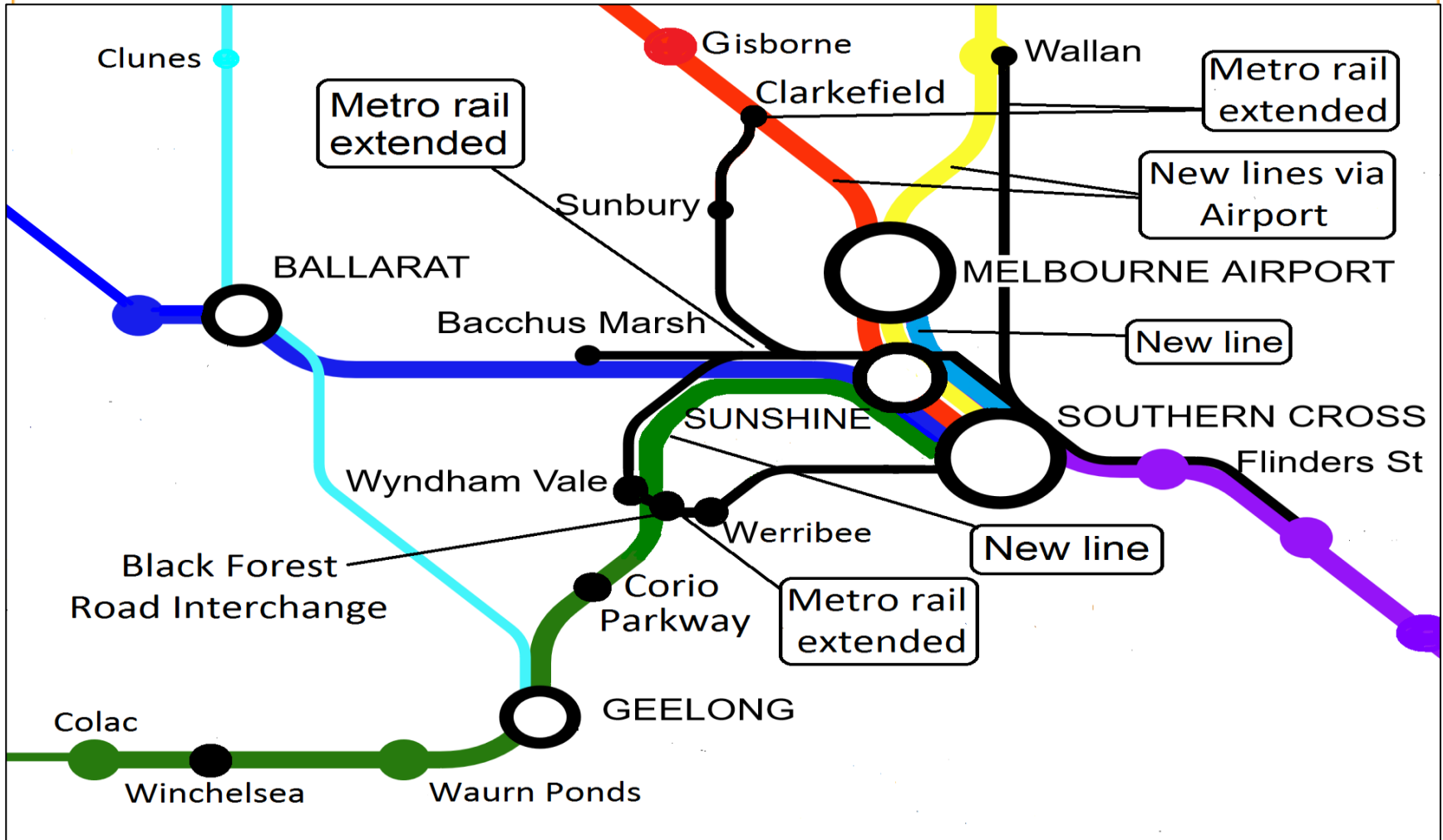
Caulfield, Dandenong, Pakenham, Cranbourne (via MM)
Sunbury, Footscray, Arden, Parkville, Domain (via MM)
Wyndham Vale, Geelong, Colac, Warrnambool
Ballarat, Maryborough, Ararat, Horsham

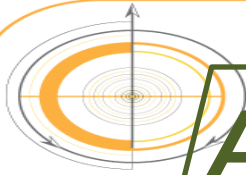
Southern Cross

Warragul, Traralgon, Sale, Bairnsdale
Williamstown, Altona, Werribee
Essendon, Craigieburn, Upfield
Sandringham, Frankston
Glen Waverley, Ringwood, Lilydale, Belgrave
Mernda, Hurstbridge



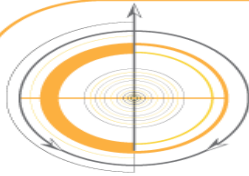
Rail Futures *AirTrain* proposal – an integral part of *InterCity* rail network



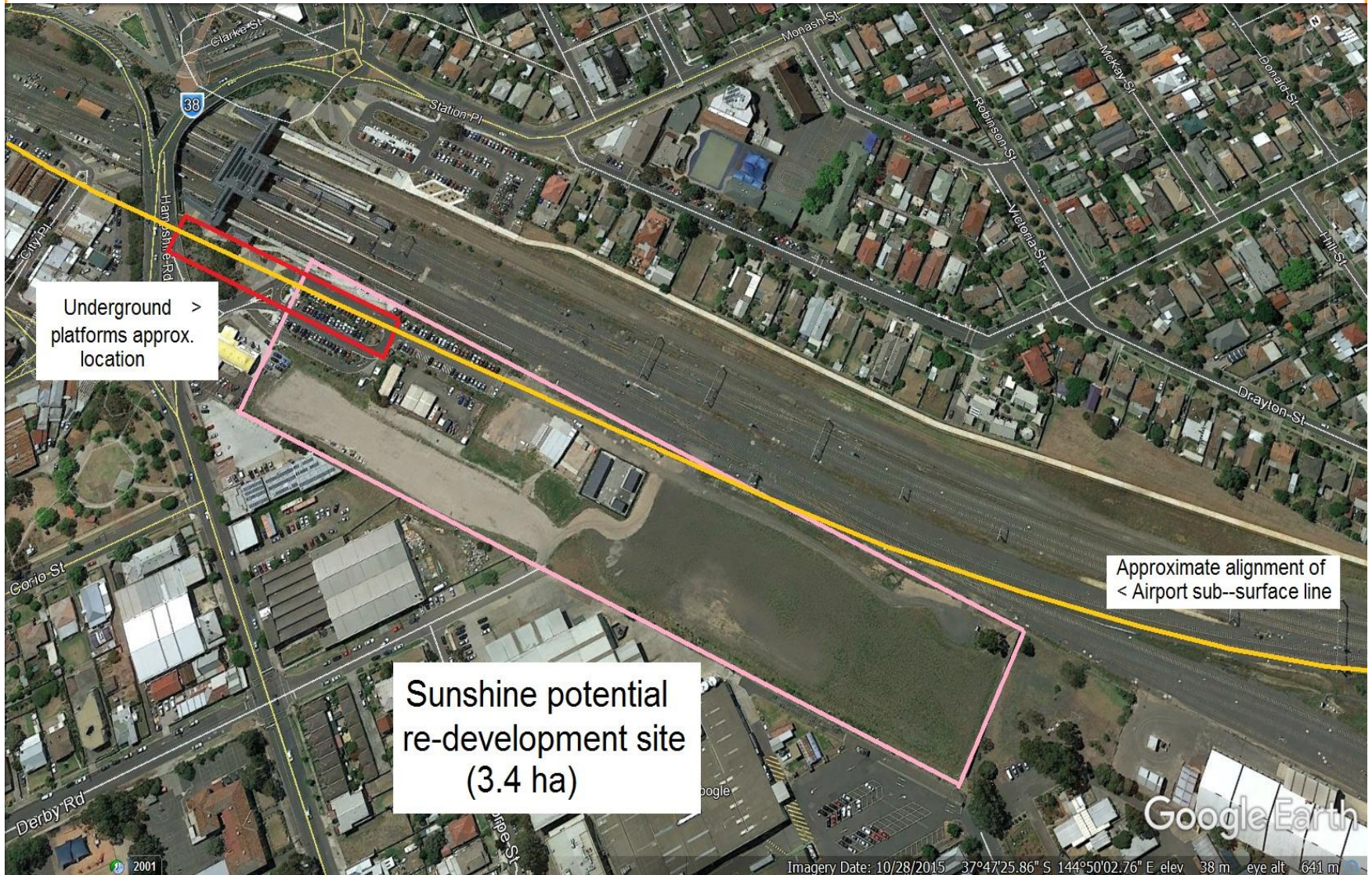


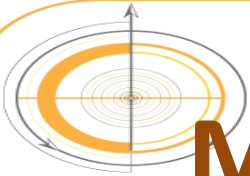
AirTrain – ***major infrastructure***

- Track and signalling for 160 km/h operation @ 3 min headways
- Dedicated airport platforms at Southern Cross
- Tunnelled exit from SX to West Footscray (no surface capacity left)
- Uses existing rail corridor West Footscray to Sunshine
- Train stabling and maintenance facilities at Tottenham
- Sub-surface platforms at Sunshine for interchange
- Tunnelled corridor to North Sunshine
- Uses protected rail reservation from North Sunshine to Airport
- Tunnelled approach to main terminal and underground station
- North-west connection to Bendigo line at Clarkefield and north-east connection to Shepparton and Albury lines at Wallan via OMR



Sunshine Station precinct

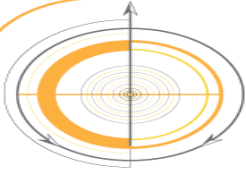




Melbourne Airport Railway

feasible timelines

- Business Case – 18-24 months (complete 2020) - includes:
 - Route options assessment and selection
 - Infrastructure preliminary design, investigation
 - Constructability and cost assessment
 - Patronage and revenue assessment
 - Value capture opportunities
 - Preliminary environmental assessment
 - Funding, packaging and procurement options assessment
 - Economic evaluation
- Detailed Planning and Approvals Phase – 36-48 months (complete 2023-24)
- Construction and Implementation Phase - 48-60 months (complete 2028)



Subsequent and related works

- Southern Cross station major upgrade
- Tottenham Yard rail facilities development
- Sunshine station precinct development
- Melbourne Airport to Clarkefield link (Bendigo line connection)
- Melbourne Airport to Wallan link via OMR (North-eastern connection)
- Bendigo line upgrading
- Seymour/Shepparton lines upgrading
- Sunbury – Clarkefield electrification
- Clarkefield interchange
- Craigieburn – Wallan electrification
- Wallan interchange

The Ballarat Line

Three railways in one corridor – three functions

- **The suburban railway:**

Southern Cross to Melton and (?) Bacchus Marsh

Brimbank >>>>>>>>> Melton >>>>>>>> Moorabool

- **The regional commuter railway:**

Southern Cross to Ballan, Ballarat and Wendouree

Moorabool >>>>>>>> Ballarat

- **The extended regional railway:**

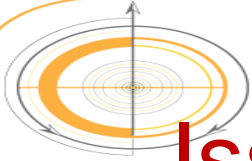
Ballarat to Beaufort and Ararat

Pyrenees >>>>>>> Ararat

with extension to Maryborough and potentially to Horsham and Hamilton

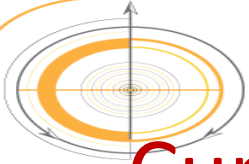
The Ballarat Line Task

- Currently approximately 4m passengers per annum
- More than tripled since Regional Fast Rail launched in 2006
- Forecast growth (passenger boardings):
 - 2016 to 2021 – approximately 120% (more than double)
 - 2016 to 2026 – approximately 250% (3.5 times)
 - 2016 to 2031 – approximately 400% (5 times)
- About three-quarters of this growth will come from the suburban railway (Ardeer to Melton and Bacchus Marsh)
- Nonetheless, Ballan and Ballarat patronage is forecast to grow by over 150% (2½ times now) from 2016 to 2031.
- Excludes counter-peak travel demand
- Driven by population growth and road congestion.



Issues for Deer Park, Melton and Bacchus Marsh rail users

- Massive residential growth ongoing in Melbourne's west
- Excessive crowding on peak services
- Too many services run late
- Service frequency inadequate AM peak (from Melton)
- Service frequency inadequate at weekends
- A new station at Toolern likely to open in 2019
- No Wi-Fi on board
- Lack of parking for regular travellers
- Feeder bus services inadequate



Current Ballarat line upgrade project

For \$518 million, by 2019, this will:

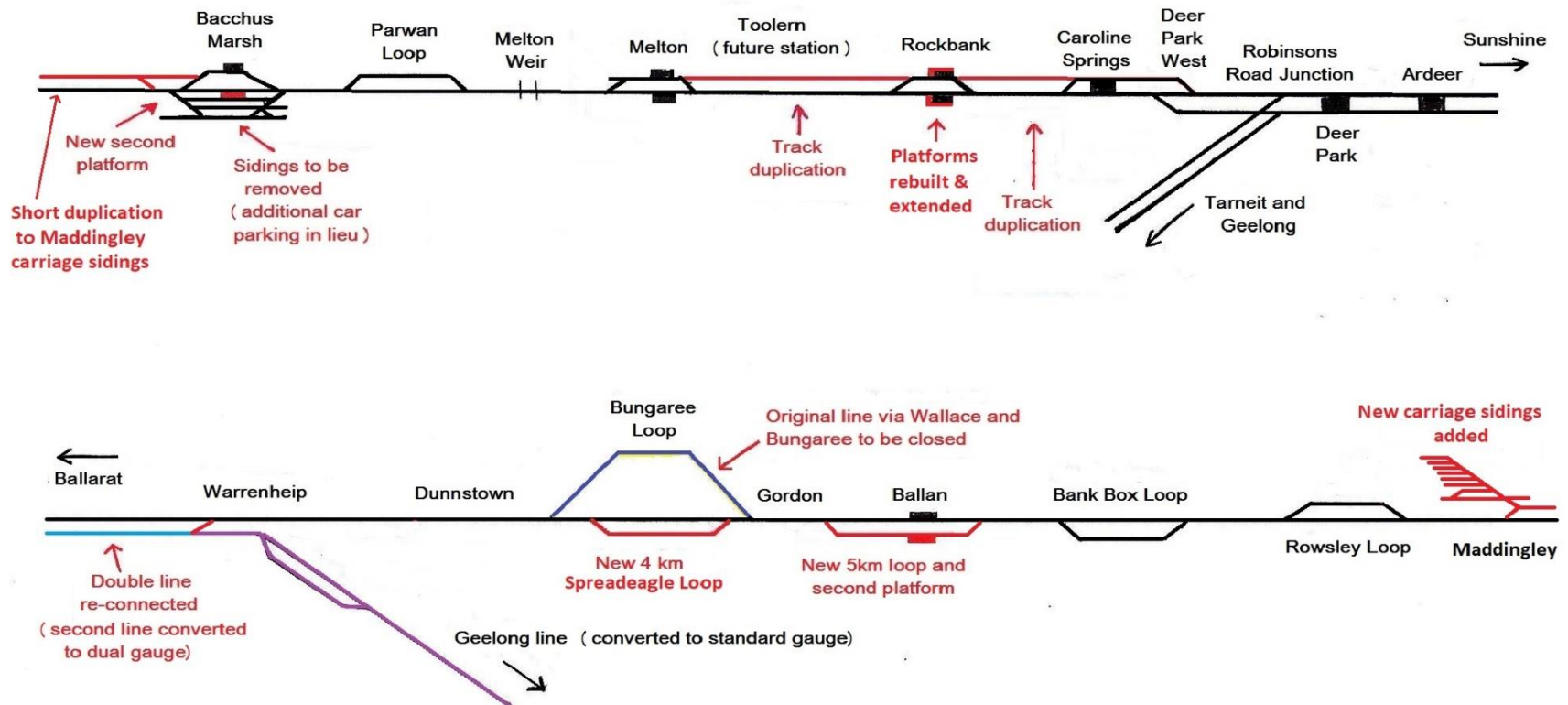
- Duplicate the line from Caroline Springs to Melton
- Provide a second platform at Bacchus Marsh
- Expand commuter parking at Bacchus Marsh
- Move train stabling Bacchus Marsh to Maddingley
- Provide a new 5km crossing loop through Ballan
- Provide a second platform at Ballan
- Close the old line through Wallace and Bungaree
- Provide a 4km Spreadeagle crossing loop
- Re-use the second track Warrenheip to Ballarat East

Current Ballarat line upgrade project

Ballarat line schematic diagram

Stage 1 works

(showing changes announced in
the 2016 and 2017 State Budgets)



Current Ballarat line upgrade project

What will it achieve?

- Improved reliability resulting from fewer single line delays
- Improved trip times from fewer single line delays
- Improved trip times by eliminating old Bungaree Loop
- Capacity to run additional trains outside of peak periods (Regional Rail Link lines already fully utilised at peak periods between Southern Cross and Sunshine)
- Supports 40 minute off-peak frequency to Ballarat
- Supports 20 minute off-peak frequency to Bacchus Marsh
- Provides additional parking at Bacchus Marsh
- Removes 5 level crossings Wallace and Bungaree

The Peak Period Dilemma

If Regional Rail Link lines are full, what can be done?

- No more peak period trains can run until Melbourne Metro provides suburban inner capacity for Melton electrification and takes all Melton and Bacchus Marsh trains off the RRL lines.

But that is at least 7 years away (maybe more). In the meantime, longer trains have to operate. We propose:

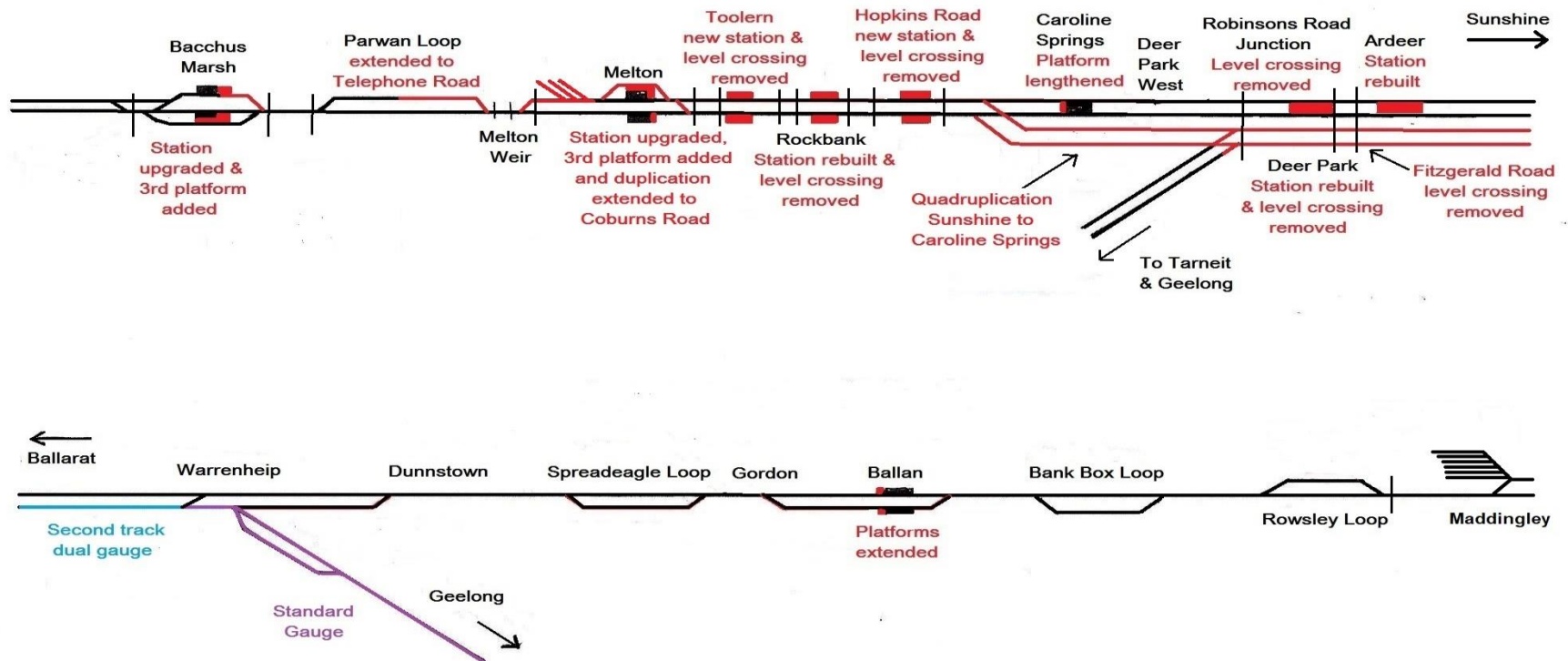
- Operation of longer trains – initially 7 cars instead of 6 cars
- Move to 8-car VLocity trains – 40% more seats than 6 cars
- Interim Southern Cross to Wyndham Vale and Melton electrification using RRL lines - limited service using 9-car electric trains stabled and maintained at Wyndham Vale
- Full electric service to Melton concurrent with Melbourne Metro opening using 10-car high capacity trains

Melton / Bacchus Marsh electrification

Ballarat line schematic diagram

Proposed Stage 2 works

(To support Sunshine to Melton/Bacchus Marsh/Maddingley
electrification and operation of longer trains to Ballarat)



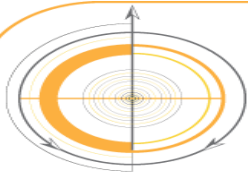
Melton electrification benefits

- Frequent service via Sunshine and new Melbourne Metro corridor using high capacity 10-car electric trains
- Rail junctions improved at Sunshine and Deer Park West
- Track quadruplication Sunshine to Caroline Springs
- Level crossings removed at Fitzgerald Road, Station Road and Robinsons Road

but many challenges will remain

- Ballarat trains having to interface with Metro trains between Caroline Springs and Melton/Bacchus Marsh
- Single line delays still likely beyond Melton
- Station car parks full at an early hour – e.g. Deer Park, Melton

..... requiring further rail infrastructure investment (but that's for another day)



InterCity – an express track to Victoria's future

AirTrain – fast airport connections statewide

Questions and Discussion

Read the full *InterCity* report

www.railfutures.org.au