

Gateway WA Project

Lessons Learnt & Opportunities Beyond Business-As-Usual

Presented by Matthew Oswald



Acknowledgements

- Nigel Rowe
- Jayden O'Brien
- Chris Dunne
- Andrew Bell
- Trevor Newman
- Cambell Newman
- Cynthia Aspera
- Steve Sharp
- Anthony Anastas
- Rachel Champion



Topics

- Project Overview
- Landscape Summary
- Natural Material Re-use
- Planting
- Design



Project Overview

- \$1 billion project funded by the Commonwealth and the State Government as a national priority project
- Largest infrastructure project in WA
- Create road infrastructure around the Perth Airport and the freight and industrial hubs of Kewdale and Forrestfield
- Delivered as an Alliance

Key Statistics

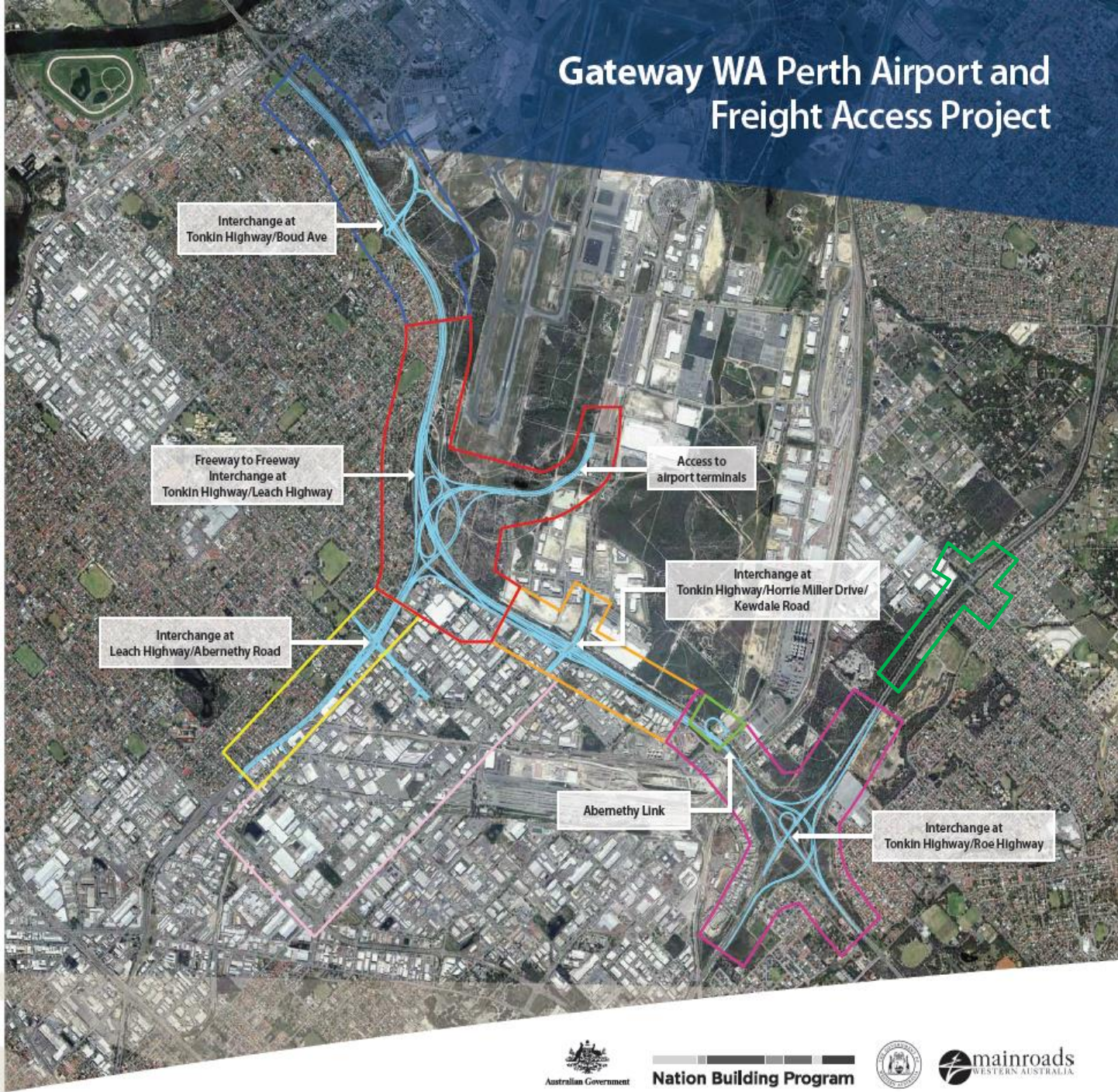
- 11 bridges
- 165 lane kilometres will be constructed
- 4,186,902 tonnes of fill
- 481,536 tonnes of asphalt
- 11.5km of noise and screen walls

Funded by:



Proudly delivered by:

Gateway WA Perth Airport and Freight Access Project



Legend

Northern Zone

- Area 1 – Tonkin Hwy, GEH to Elson
- Area 2 – Tonkin Hwy/Leach Hwy

Western Zone

- Area 4 – Leach Hwy/Abernethy Rd
- Area 5 – Kewdale Area

Southern Zone

- Area 3 – Tonkin Hwy/Kewdale Rd/Horrie Miller Dr
- Area 6 – Tonkin Hwy/Roe Hwy
- Area 7 – Abernethy Rd Ramp Connection

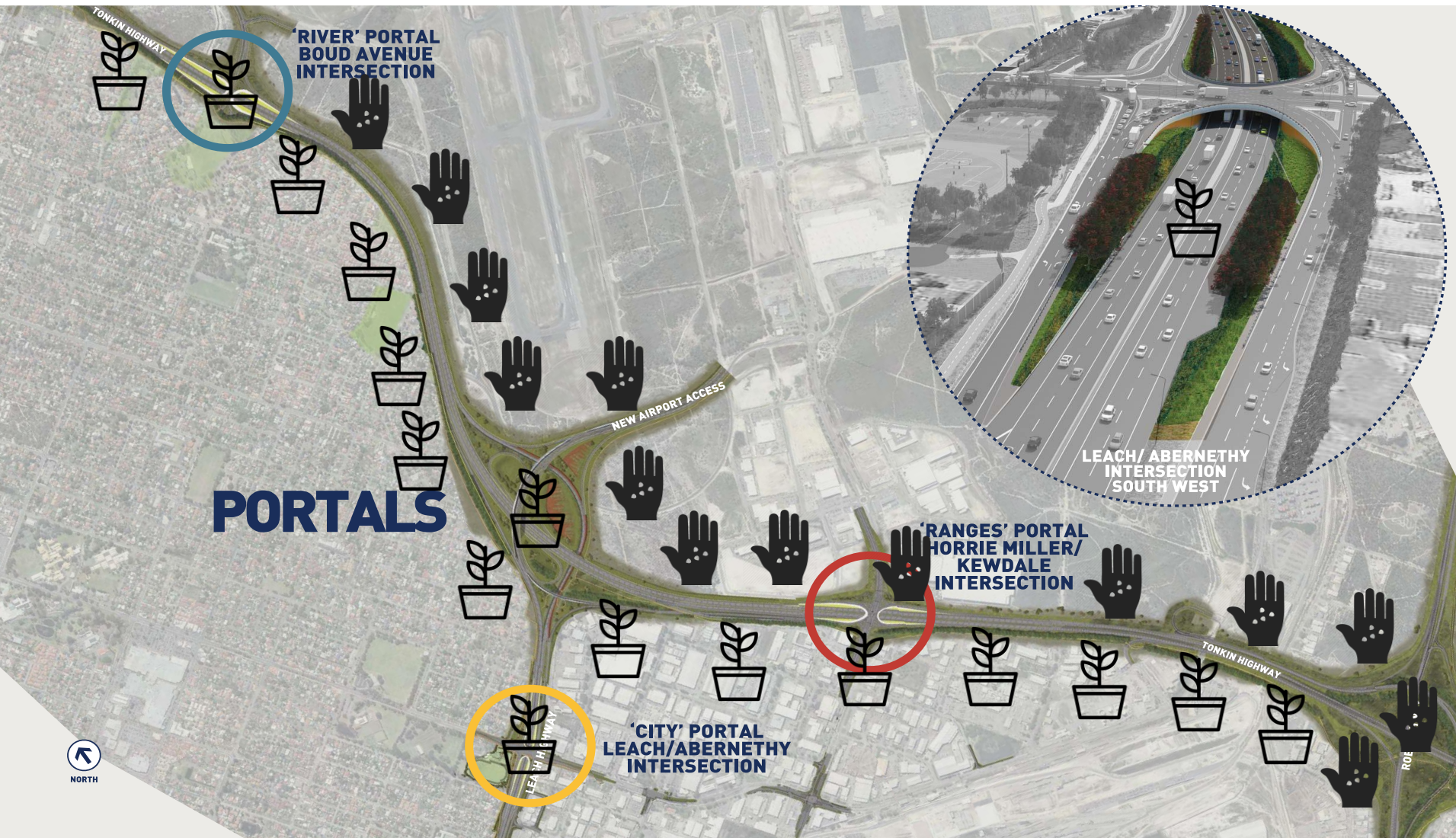
Landscaping Summary

- Largest landscaping programme to date (plant numbers) delivered by Main Roads
- Total landscape area = 123 ha
- Mulch 26,500 m³ from site 73,500m³ imported
- Plant requirement = 1,076,261 (plus 3 year maintenance infill)
- Seed requirement = 284 kg
- Reticulation install 18 ha
- Transplant 255 *Xanthorrhoea preissii*, 85 *Macrozamia riedlei* and 12 *Kingia australis*

	Endemic (Native within 10km of project area)	Swan Coastal Plain	WA Natives	Australia n Natives	Non-native	TOTAL
Plant Numbers and Percentage of Total	753,465 70 %	247,402 23 %	75,346 7 %	44 Negligible	4 Negligible	1,076,261



Landscape Summary



LANDSCAPE RIBBON - RIVER

- / *Eucalyptus rudis* - Flooded Gum
- / *Eucalyptus victrix* - Smooth-Barked Coolabah
- / *Melaleuca raphiophylla* - Swamp Paperbark
- / *Melaleuca preissiana* - Moonah

Eucalyptus rudis - Flooded Gum



Melaleuca preissiana - Moonah



Melaleuca raphiophylla - Swamp Paperbark



LANDSCAPE RIBBON - RANGES

- / *Eucalyptus marginata* - Jarrah
- / *Eucalyptus tottiana* - Coastal Blackbutt
- / *Eucalyptus torquata* - Coral Gum
- / *Eucalyptus wandoo* - Wandoo
- / *Eucalyptus decipiens* - Mini Tuart
- / *Eucalyptus erthrocorys* - Illyarrie

Eucalyptus marginata - Jarrah



Eucalyptus wandoo - Wandoo



Eucalyptus tottiana - Coastal Blackbutt



Eucalyptus torquata - Coral Gum



LANDSCAPE RIBBON - CITY

- / *Banksia prionotes* - Acorn Banksia
- / *Banksia menziesii* - Firewood Banksia
- / *Melaleuca viminalis* - Weeping Bottlebrush

Banksia prionotes - Acorn Banksia



Banksia menziesii - Firewood Banksia



Melaleuca viminalis - Weeping Bottlebrush



LANDSCAPE RIBBON - WHOLE OF CORRIDOR


- / *Eucalyptus gomphocephala* - Tuart

Eucalyptus gomphocephala - Tuart





Natural Material Re-use

- Topsoil Management
 - Degraded Soils
 - Mulch
 - Acid Sulphate Soils
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Topsoil Management

- Is the most important factor for landscape success or failure
- Development of Topsoil Classifications Mapping which forms part of Topsoil and Mulch Management Plan
- Conserved Topsoil-Very Good to Pristine
- Identification & Protection of Topsoil Stockpile Sites – very limited space
- Quantities:
 - Conserved topsoil – approx. ~17,000m³
 - Degraded Topsoil Screening ~83,000m³



Revegetation Success



Degraded Soils



- Degraded topsoil or subsoils screened (83,000m³)
- Overburden pile (15% of total original volume) separated – recyclable material such as concrete, limestone rock, plastics and metals collected
- 2% Remaining overburden sent to land fill.
- 83 % Remaining soils from screening tested for conformance to MRWA specification & re-used for embankment fill



BETTER THAN B.A.U

- Gateway the 1st project in WA in which the use of topsoil/subsoils with high organic content >1% allowed
- reduced import material requirement
- reduced landfill by not spoiling
- net saving ~ \$200k (pessimistic model)

Mulch

- 26,500 m³ from site & 73,500m³ imported
- Mixing of site won materials – Topsoil, Mulch & Compost
- Improved methodology for application
- Development of supply specification

Fines % too high = Excessive nutrient load
= Difficult to spread
= high weed development



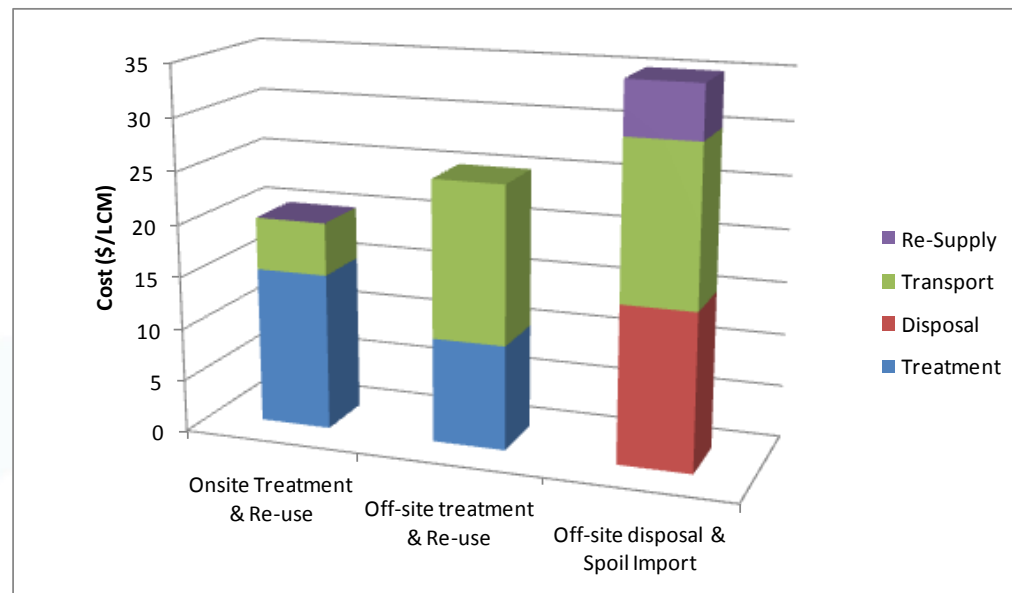
Acid Sulphate Soils



- Sources = Bath structures, Drainage and Services
- Volume treated = 17,000m³

- Lot 500 facility 1st construction project to be provided with a licence to undertake treatment of ASS
- Remediated soils used as embankment fill or incorporated into landscape materials

- cost effective-Saving \$425k
- (↑ environment; ↑ economic)



Planting

Pot Size	Total
Cells	419,884
Forestry Tubes	650,197
5 litre	471
18 litre	3,671
45 litre	1,873
100 litre	140
200 litre	25
Total	1,076,261



Flora Diversity & Display

- Increase in species diversity:
 - Great Northern Highway Upgrade – 62 species
 - Forrest Highway- 118 species
 - Gateway WA- 221 species
- Design intent greater than batter stability
- Flora display all year round
- Definitive landscape banding



Verticordia monadelph



Conospermum triplinervium

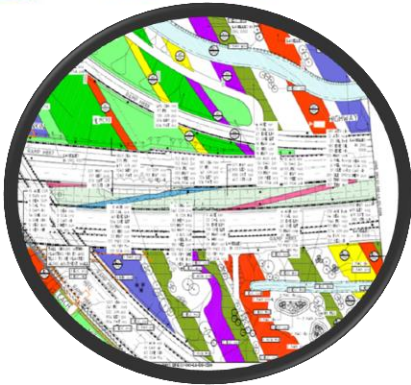


Dwarf Banksia Species



Isopogon latifolius

Design



- Level of intricacy
- Consideration of embankment materials
- Investigation of maximum GWL & drainage design
- Ground truthing- remanent vegetation
- Interaction with services & roadside furniture
- Planting widths



Questions?

