



North-South Corridor Improvements

\$100M Special Investment Program

June 2005

Proposed Projects:

North-South / East-West Integration (Tottenham Rail Bypass)	\$15M
North-South Railway Track Upgrading	\$44M
Improved Railway Clearances: Melb – Sydney - Brisbane	\$40M
Liverpool Range Grade Easing (Ardglen Tunnel) Alignment Study	\$1M

North-South / East-West Integration (Tottenham Rail Bypass)

Objective

To provide a direct railway connection between the north-south and east-west railway corridors at Tottenham, Melbourne.

Issue

Standard gauge railway freight services to and from Melbourne have historically all operated into and out of the Dynon rail terminal precinct. Given this pattern of operations, there has traditionally been little requirement for a direct connection for through trains between the east-west and north-south corridors. To the extent that services have needed to operate between the two corridors, they have used the Dynon / Tottenham area to reverse.

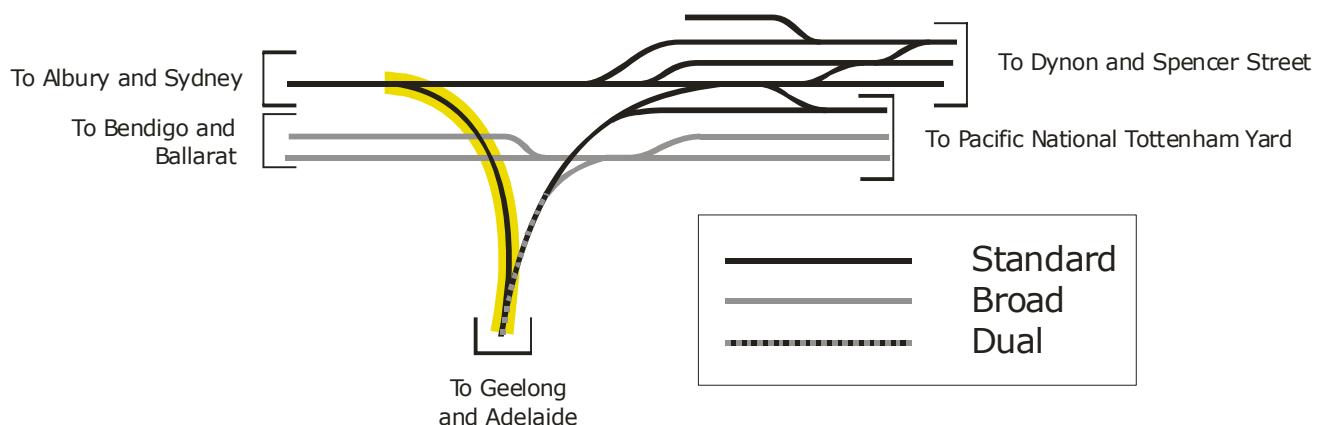
Three factors are now emerging as drivers of a need to develop a direct connection between the east-west and north-south corridors by way of the construction of a direct Brooklyn – Sunshine connection:

- Intermodal terminals are increasingly being located to the west or north of Tottenham. While Dynon will continue to play an important role as an intermodal facility, its inherent constraints to growth (being located in central Melbourne), the drift of freight generating activities away from the central city area mean that pressures will mount for terminals to be outside this precinct. Already SCT and CRT have located terminals to the east at Altona, while a terminal has been built by Austrack to the north at Somerton.
- Gauge standardization of the broad gauge network will increase the amount of traffic seeking to operate east-north and north-east on the standard gauge network. This includes grain destined for Geelong and fuel from Geelong to Albury. There is an existing direct broad gauge connection and a standard gauge connection is required if the existing functionality is to be retained.
- Miscellaneous other traffics are emerging that would benefit from a direct connection. These include grain from the NSW Riverina area which has traditionally been exported through Port Kembla and more recently Melbourne, but which could be exported through Geelong, and motor vehicles from Adelaide to Sydney and Brisbane.

Scope

- Construct the “third leg” of the triangle to directly link Brooklyn and Sunshine and therefore Eastern Victoria traffic to Western Victoria and South Australia.

Tottenham Bypass

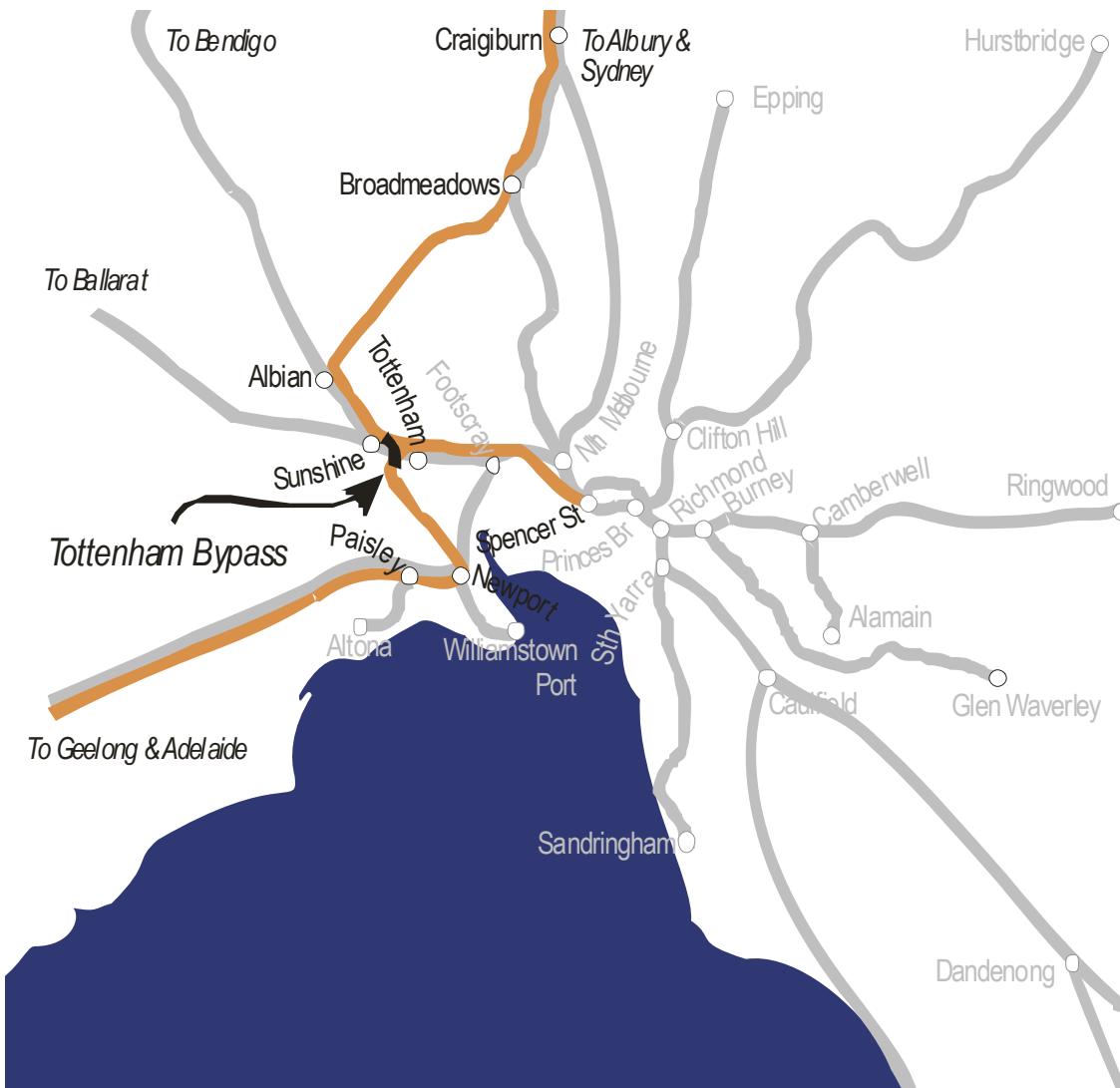


Benefit

- Transit time savings of around 30 minutes for through trains.

Cost

- \$15 million.



North-South Railway Track Upgrading

Objective

To increase railway track performance and reduce long-term costs on the north-south corridor between Melbourne, Sydney and Brisbane.

Issue

Track on the Melbourne – Sydney – Brisbane corridor is predominantly timber sleepered, secured with traditional “dogspikes” and laid on poor quality ballast. While ARTC has a program to progressively improve track quality, it is based on delivering acceptable track performance within sustainable funding levels.

Scope

- Installation of 300,000 concrete sleepers (200 km) with an emphasis on the NSW North Coast.

Benefit

Track upgrading would:

- Reduce ARTC’s long-term costs, which enable track access charges being held down.
- Create a more reliable infrastructure, benefiting operators by reducing the frequency and severity of speed restrictions and incidents.
- Improve ride quality, thereby reducing operator costs and minimising in-transit damage to freight.
- Expand the potential for targeted increases in train operating characteristics (speed and axle load).
- Improve environmental performance and sustainability (reduced noise, improved fuel consumption).

Cost

- \$44 million.

Improved Railway Clearances: Melb – Sydney - Brisbane

Objective

Improve railway clearances to permit 10' 6" containers to be carried on standard deck-height wagons.

Issue

The Melbourne-Sydney-Brisbane rail corridor has the most restricted vertical and lateral clearances of any interstate rail corridor. Current allowable clearance above top of rail is 4050 mm, permitting only standard containers on standard deck-height wagons.

There is an increasing logistics market trend towards higher volume 3200 mm (10'6") high containers in lieu of 2895 mm (9'6") and 2400 mm (8'0") containers. 3200 mm containers are currently transported by utilising specialised rail well wagons that are expensive to manufacture, heavy, have large end overhangs and are in short supply. These well wagons are predominantly used West of Parkes, for double stacking of containers to a height of 5900 mm above rail.

It has been determined that the optimum container operating height on the North/South Corridor is 4250 mm, which will allow 3200 mm containers to be transported by rail on standard deck-height flat wagons. The 4250 mm height limit is presently governed by the electric overhead wiring system in the Sydney Metropolitan Network.

ARTC and its customers consider there is a strong basis to increase clearances from the current 4050mm to a corridor standard of 4250 mm on the Melbourne-Sydney-Brisbane rail corridor. This will permit easy rail transit of all current container sizes.

Scope

Investigations into the infrastructure modifications required to accommodate the proposed operation of 4250 mm high container traffic on the Melbourne-Sydney-Brisbane rail corridor have indicated substantial alterations to infrastructure are required, particularly to tunnels and bridges over the rail line.

Works in tunnels involves lowering the track and creating a stable slab track, rather than cutting into tunnel linings. Bridge works require a mixture of track lowering, bridge raising and associated road works. Some steel bridges with trusses over the track will require modifications to the trusses, and this is complicated due to heritage orders on a number of these bridges.

Benefit

4250 mm clearance will allow rail to target significant market segments, specifically low density freight, using larger profile containers. It will allow rail to significantly increase its competitiveness against road in these markets on the east coast corridor.

Cost

- Melbourne-Sydney - \$15M
- Sydney-Brisbane - \$25M
- Total - \$40M



Liverpool Range Grade Easing (Ardglen Tunnel) Alignment Study

Objective

Increase the viability of development of coal deposits in the Boggabri area by eliminating the steep gradients currently encountered in crossing the Liverpool Range by rail in the vicinity of Ardglen.

Issue

The existing rail line from the Boggabri / Gunnadah coal deposits encounters 1 in 40 grades in the ascent of the Liverpool Range. This currently requires train operators to assist the train over the gradient through the use of “bank engines”, adding cost and time. The slow ascent and the requirement for the bank engines to return to the foot of the grade also imposes capacity constraints on the line.

Various proposals have been floated over at least the last 50 years to provide an alternative route that would significantly reduce gradients, ideally to the current ruling gradient elsewhere along the corridor. The proposals generally involve deviations in the order of 15 km to 20 km and some tunnelling.

Past analysis has suggested that a tunnel will become viable once coal volumes approach 10 to 15 million tonnes per annum.

Scope

Undertake an alignment study to determine the optimum alignment, construction cost and operating cost benefits.

Benefit

Verify the rail traffic volume level at which a tunnel becomes a viable project, and provide a firm alignment for further development on a timetable to meet coal growth forecasts.

Cost

- \$1 m

