

Adelaide Rail Freight Movement Study

Comments by Stephen Townsend

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General Comments

The paper does not appear to address safety. There have been a number of rail incidents in the 18 years that I have lived in Belair but I am not aware of any rail related injuries or fatalities. By contrast during that same time there has been numerous heavy truck incidents on the South East Freeway including numerous injuries and deaths. As there appears to be a perceived view that the existing line is dangerous and this is one of the driving issues for its relocation, some analysis of its real safety compared with road should be included.

As will be seen by some of the following comments, I perceive that some options especially those that route the railway on an alternative alignment to the north of Adelaide may have the unintended result of transferring the freight task, especially that to or from Adelaide onto road. I recommend that each of the proposed routes not only be compared with each other but also against the cost and transit time provided by road.

Specific Comments

1. Section 2 – Para 2 – “...improvements to the rail track...” – This gives the impression that the existing route is deficient or obsolete. Actual current operations show that the line performs its task well. I suggest the wording be changed to “...rail track alignment...”. The alignment of the route has not changed but there has been a continual improvement in track structure including concrete resleepering and rerailling with larger rail. While there are maintenance issues with the ballast, these are minor and can be fixed. In general the current track structure is equal to any within Australia and would be the same for any new track.

2. Section 2.1 – First Point – Claims that the maximum train length is limited to 1500m by the combined of grade and alignment. The existing maximum length is 1500m but work by ARTC is already underway lengthening passing siding to 1800m. When complete, 1800m will be able to operate. The route alignment does not restrict train lengths. The only limitation is the distance between Victoria Street Junction at Goodwood and Cross Roads where if 1800m Adelaide bound trains are delayed at the junction, Cross Road becomes blocked. This will not happen if 1800m trains are only allowed to depart Belair loop with guaranteed access across Victoria Street Junction or, in future, grade separation at Victoria Street Junction is installed. Melbourne bound trains are not affected.

3. Section 2.1 – Third Point – Claims that the lower operating speed of the current alignment requires at least one hour longer and higher operating costs than if the track was flatter and straighter. This is only true when comparing track of equal length and should be qualified as such. In fact as later pointed out in the paper, the proposed northern routes while faster are also longer and as a result the Melbourne Adelaide journey time is similar.

Operating costs are also affected by distance for while the existing route may use more fuel per km on the steeper sections, which consist only a minor proportion of the total section, the extra distance travelled on the northern route may actually require similar or more fuel overall. One must remember that regardless of the route, the trains have to climb the Mt Lofty Ranges.

Track access charges generally have a tonne/km basis so the longer the distance the higher the track charges. Likewise, maintenance charges tend to be km based as well.

4. Section 2.1 – Fifth Point – Again may only be true for tracks of similar length. While locomotives may work harder on the steeper sections of the current route, the overall wear

rates may be higher on the northern proposed routes due to the increase in length and the greater amount of work done in hauling the train over that length. In addition to the increased length, the northern options still have to haul the trains over the Mt Lofty Ranges.

5. Section 2.1 Sixth Point – This point infers that the existing track, due to its alignment and grades, has higher maintenance costs compared with straight level track. I agree that tracks with increased grades and curvature compared to straight track of a similar length do have increased costs. However track maintenance costs increase with track length and train speed. The northern proposed routes may actually have similar or greater total maintenance cost due to its increased length and higher speeds than the current shorter track with its grades and curves. In its context I consider that this statement is misleading. Please review.

6. Section 2.1 – Last Paragraph – This paragraph infers that the current track through the Hills section due to its alignment and grades contributes significantly to the low reliability of the corridor. I consider this to be incorrect as the scheduled journey times over the existing route takes into account the lower speeds of the Hills section. Further the Hills section is only a small portion of the total route and there are many other factors away from the Hills section that can affect reliability. The hills section may contribute to some unreliability but not to the extent inferred by the paragraph.

7. Section 4.1 – Table 1 – Option 1 – This option requires grade separation of ARTC and TransAdelaide tracks at Goodwood and Torrens Junctions. I suggest that these requirements be included in the option criteria to be considered.

8. Section 4.1 – Table 1 – Option 1 – I suggest that the study consider what effect this option would have on TransAdelaide Belair passenger operations.

9. Section 4.1 – Table 1 – Option 4 – I suggest further requirements of the tunnel be investigated such as:

- i. Size of bore to suit double stacking,
- ii. Whether single or double track is required considering future traffic growth and the length of the 15km tunnel restricting passing opportunities if a single line tunnel was to be used,
- iii. Whether diesel or electric traction is required,
- iv. Ventilation requirements,
- v. Safety requirements,
- vi. Maintenance issues.

10. Table 2 – The transit time savings do not appear to make sense. For example: the base case Melbourne to Perth transit time is 57 hours. Option 3 Northern Bypass is claimed to be 54.8 hours, a saving of 2.2 hours. The paper does not specify how this reduction is obtained so one must assume that the saving is entirely due to the change of route.

The distance of the existing route between Murray Bridge and Two Wells is claimed to be 141km. Allowing an average speed of 35km/hr though this is probably conservative given the higher speeds possible north of Adelaide, the transit time would be approx. 4 hours.

The distance between the same two places according to Option 3 is 154kms. The average speed across the Nullabor is 70km/hr. The average speed across Option 3 is likely to be similar so with an average speed of 70km/hr, the transit time is approx. 2.2 hours. The transit time saving is approx. 1.8 hours, not 2.2 hours as claimed.

To achieve a transit time of 1.8 hours, the average speed would be approx. 85km/hr, which is faster than that forecast for the Melbourne to Sydney route after its upgrade and with a majority proportion of double track. On single line as proposed for Option 3, this average speed is highly unlikely.

Please clarify how the time savings are to be achieved.

11. Section 4.3.2 – 2nd Para – Last Sentence – This statement is only true when comparing tracks of similar lengths – refer comment 3.

12. Section 4.3.2 – 3rd Para – 2nd Sentence – This sentence claims that the existing line through the Hills is densely populated. Depends on definition but I would suggest that the housing is actually low density residential as almost all housing is single dwellings on individual blocks. Further, when the total distance through the Hills is considered, only a minority of the length (mainly Belair to the City) is low density residential. The majority is within rural areas.

13. Section 4.3.4 – Northern Bypass Options 2 & 3 – 2nd Para states that upgrades to the Murray River Bridge will be required in order to accept double stacking. In theory this is possible but may be difficult to achieve in practice. Double stacking will require the removal of the internal bracing within the truss spans in order to achieve the required clearance. This will require the installation of external bracing, which will substantially affect the bridge appearance. This visual change together with possible historical issues with the bridge may create strong resistance from local residents.

An improvement to the options would be to reroute the railway to the east of Murray Bridge and cross the Murray River upstream on a new alignment that would join up to the Appamurra Line at a point north of Monarto South. This would further reduce transit time and allow for double stacking but at an increased cost for the bridge, land acquisition and lengthened sections of new track.

14. Section 4.3.4 – Northern Bypass Options 2 & 3 – 5th Para – These options call for the closure of the existing route. If the existing route is closed, what is the potential for loss of freight task by rail from Adelaide. While the percentage value of the task may alter over time, in general Adelaide freight task appears to accounts for approx. 50% of the total rail task. Any loss of Adelaide traffic could result in significant alteration to the rail freight task and the financial viability of the railway.

I can perceive that the introduction of a new northern bypass route direct to Two Wells could have a number of possible outcomes. Some of these are:

- i) Most existing trains between Adelaide and Melbourne comprise both Adelaide and Perth freight with transfer of Adelaide freight and build up of Perth freight occurring in Adelaide at the existing terminals. This situation may continue, in which case, the through to Perth transit savings will remain unrealized but costs to operators will increase due to increased track access costs.
- ii) Operators may operate two trains, one for each of Adelaide or Perth destinations, instead of one. In the short to medium future until sufficient tonnage is generated to justify individual trains, the increased operation costs of two trains instead of one make this option unlikely.
- iii) New more efficient terminals may be built at Two Wells to allow the transfer of Adelaide freight and build up of Perth freight more quickly, efficiently and to reduce train-running distance. If this were to happen, it is likely that the poor economics of short rail haul between Two Wells and Adelaide and the operation of two terminals, one at Two Wells and the other within Adelaide will see all Adelaide freight being road hauled between Adelaide and Two Wells. Road congestion and increased community costs and inconvenience will result.
- iv) While the rail transit time remains similar, the movement of freight terminals to Two Wells could result in increased overall transit time between Adelaide and Melbourne once the origin to terminal and rail times are included. This may make rail uncompetitive against road on the basis of transit time. The uncompetitive position of a Two Wells terminal due to increased transit time has a high risk of freight being diverted to road.
- v) An alternative to Two Wells that may be considered for freight between Adelaide and Melbourne is the establishment of a transfer terminal at Murray Bridge or Taillem Bend. Road freight direct to these locations may save significant time, possibly 2 hours or more, in Adelaide Melbourne transit time. The down side is

that significantly increased heavy vehicle traffic on the South East Freeway and particularly through Adelaide will result in significant social costs and community opposition.

- vi) It may be possible that after considering the above possibility with its additional costs and delays required by transfer, freight forwarders may consider that the best option is to leave their freight on road and send it directly to their destination. This could result in significant loss of rail freight task.

These aspects should be investigated and included in the Options analysis.

15. Section 4.3.4 Northern Bypass Options – This option requires the closure of the existing line to through freight. How likely is this? Please comment.

I perceive that some operators especially those operating Melbourne Adelaide services, will demand the retention of the existing route as it may provide the lowest cost option. Current access pricing is based upon a flag fall plus a tonne km rate. Being shorter than the northern options, the tonne km cost will be less.

There is also the possibility of capital cost recovery. Track access costs may be greater for the northern options should the Australian Government require a return on capital investment. The existing routes capital cost is basically written off due to its age and hence may not attract any requirement for return on capital. I suggest that this possibility be reviewed when determining the economic viability of each option.

Transit times are also similar so there is no significant saving of time to operators.

For the Melbourne Adelaide freight task, what commercial advantages for rail operators or track owners has the northern options compared to the existing. Please elaborate.

16. Section 4.3.5 Southern Bypass Option 4 – Further details of the tunneling requirements should be included to understand the option and the determination of cost estimates better.

These details may include:

- i) Requirement for double stacking.
- ii) What diameter bore is required?
- iii) Is single or double track being considered?
- iv) The ability of diesels to operate through the tunnel and what ventilation or other safety requirements are necessary?
- v) What issues are there with mixed freight and passenger traffic?
- vi) If single line, will passing loops be required in the tunnels in order to meet future traffic growth?

17. Section 4.3.5 Southern Bypass Option 4 – This option will require the upgrade of the Murray River bridge to achieve its potential. This should be included in this and other projects that require double stack freight traffic to pass over it.

18. Section 4.3.5 Southern Bypass Option 4 – The study states that the Adelaide portal of one tunnel is near Cross Roads. Is the Cross Road level crossing eliminated by the tunnel or is an additional grade separation required?

19. Section 4.3.5 Southern Bypass Option 4 – The amount of material excavated from the tunnel will be extensive. Where will the material from the tunnel go? How will it be transported and at what social cost?

20. Section 4.3.6 Northern Bypass and Retention of Existing Route – This provides the optimum for train operators in that both Adelaide and Perth have a direct route should operators choose to run separate trains but is financially deficient for the track owner who will have approximately 3 times the existing track length to maintain for the same total tonnage carried and only a marginally increase in revenue from track access charges. The affect on the track financial viability should be considered?