PART 5
CONCLUSIONS

21 VIABILITY

21.1 ENVIRONMENTAL

From an environmental perspective there is little distinction between the Mount Victoria to Lithgow base case corridor option and the Newnes Plateau corridor option. The Newnes Plateau corridor option, although necessitating the removal of larger tracts of vegetated land, generally avoids many of the known environmental constraints (particularly threatened flora and fauna species, endangered ecological communities, and known heritage items). In contrast, the base case corridor option is more strongly constrained by the location of known heritage items, properties and remnant endangered ecological communities and the corridor impacts upon several such items.

The two predominant environmental issues identified are the existing native vegetation (and associated fauna) and Aboriginal heritage items, particularly for the Newnes Plateau corridor option which does not follow existing fire trails or any previously identified corridor options. An additional issue is the location of the Lithgow water supply, which can be avoided through design. The most up to date vegetation mapping was utilised (Tindall *et al.*, 2004 and Tindall *et al.*, 2006) *to* identify the quality of vegetation and the presence of endangered species. This mapping suggested a relatively degraded vegetation quality with few endangered ecological communities within the corridor (particularly in the State Forest areas and Australian Defence Force land). This is in contrast to community and stakeholder concern over the presence of Newnes Plateau shrub swamp communities and pagoda formations. It is not expected that either of these would be significantly adversely impacted by the potential road corridor identified. However, further investigations are needed to confirm this assumption.

Due to the long association of Aboriginal people within the area, it is likely that both the Newnes Plateau corridor option and base case corridor option would unearth previously unidentified Aboriginal items of heritage significance. However, both potential corridor routes were designed to avoid any known objects of heritage significance. The width of the identified Newnes Plateau corridor, and the generally restricted areas associated with Aboriginal heritage items, would allow for alteration of specific road centrelines to avoid any objects identified in further studies.

In general, it is felt that a route through the Newnes Plateau, while having some impact, would not lead to the loss of significant environmental features or values, and appropriate design would minimise impact upon existing residents, heritage items and commercial operations.

21.2 ENGINEERING

The construction of a road in the Newnes Plateau corridor is physically feasible from an engineering perspective. There is no reasonable engineering impediment to the construction of an actual road that would meet the preliminary road design criteria (Section 15).

Although the preliminary alignment contains some large cuts, some high retaining walls to contain spill batters and some long bridge structures, these features are not beyond the scale of similar features in other major road projects that have been constructed.

21.3 TRANSPORT PLANNING

The current alignment of the Great Western Highway is a constraint on transport operations and potential growth in the Central West. The poor safety record adds to the need to improve the road link.
The travel improvements offered by the corridor options have been assessed (Section 20). Broadly these comprise:

- Overall travel distance east to west between Soldiers Pinch and Marrangaroo is slightly shorter on the Newnes Plateau corridor (0.7 km) than the base case corridor (including the Great Western Highway west of Forty Bends).
- For the study area the vehicle kilometres travelled for all vehicles only varies by 3.6 per cent between the lowest vehicle kilometres travelled (do minimum) and highest vehicle kilometres travelled (Mount Victoria to Lithgow base case)
- Total vehicle kilometres travelled via the Mount Victoria to Lithgow base case corridor and the Newnes Plateau corridor does not vary greatly (approximately 1.5 per cent difference).
- Total vehicle operating time shows greater differences between the do minimum and Newnes Plateau corridor (at around 12–14 per cent improvement for high growth scenario).

The study area travel patterns comprise local movements principally associated with Lithgow and Mount Victoria and through traffic. This through traffic is not the majority of trips (about 20 per cent) but through movements make up a bigger proportion of vehicle kilometres travelled in the area.

Under either of the corridor options, there is substantial diversion to the new corridor. This is greatest for the base case corridor as it serves the Lithgow to east trips as well as the through trips. The Newnes Plateau corridor provides a bypass of Lithgow and so produces some urban area benefits. However, only the western and northern fringe areas of Lithgow are expected to divert to the Newnes Plateau corridor for trips to Mount Victoria and points east.

In summary, this is no clear traffic operational advantage of one route over the other. Differences between the routes are small and both options have advantages over the ‘do minimum’ scenario.

22 KEY ISSUES

22.1 ENVIRONMENTAL

The key environmental issues within the study area requiring further investigation include:

- Ecological: detailed ground-truthing of flora and fauna communities within the plateau is required. This is particularly in regards to the location and extent of Newnes Plateau shrub swamp communities (EEC) and associated pagoda formation communities.
- Aboriginal heritage: the historical and current association of Aboriginal communities within the study area suggests a high probability of impacting upon currently unidentified Aboriginal items of cultural heritage significance. Corridor walk-overs and continued communication with relevant Local Aboriginal Land Councils and elders would be required.
- Water quality: the crossing of Farmers Creek (and the associated Lithgow water supply) highlights the need to ensure that through both road route selection and engineering design there is a minimal impact upon water quality.
- Private land: the proposed Newnes Plateau corridor passes through several privately owned areas, including residential, rural, and commercial properties, as well land subject to mining titles and applications and land currently owned by the Australian Defence Force. On-going consultation with the key affected stakeholders will be required. In particular there are issues associated with passing through Australian Defence Force land (eg exploded and unexploded ordinances) which will require further investigation as to the extent and potential costs of rehabilitation.

22.2 ENGINEERING

The key engineering issues within the study area requiring further investigation include:

- The preliminary engineering investigations have attempted to limit the depth of cut and height of fill to minimize the requirements for large retaining walls and long bridges. However, due to the very tight timeframe of the investigations along with the severe nature of some of the terrain traversed, the preliminary alignments still contain some deep cuts (up to 65 m in one location), some high retaining walls and several long viaducts. Further investigations into engineering design will refine the alignment leading to a reduction in the number and size of bridges and retaining walls and a refinement of the balance of cut and fill.
- The estimated cost of relocation of existing utilities is based on a rate per kilometre at this stage, in line with previous studies. Further investigations are required to identify actual utilities affected and refine the estimated cost.
- The preliminary cost estimates for the proposed works include a contingency of 70 per cent at this stage in line with current RTA strategic estimating guidelines. Additional engineering investigation will lead to greater confidence in the estimated quantities and therefore a reduction in the contingency used.

22.3 TRANSPORT PLANNING

The strategic modelling undertaken for the project was constrained by the size of the model. The local area model gave good representation of local and through traffic within the study area. The nature of the localised model was not able to take into account broader network changes.

Key transport planning issues that may require further investigation include:

- The potential for diversion of traffic from the Great Western Highway to the Bells Line of Road. The Newnes Plateau corridor attracts traffic currently travelling from the west to the Sydney region. With the Newnes Plateau corridor this traffic will be diverting through Bell and may then shift to travelling to the Sydney region via the Bells Line of Road. The Bells Line of Road and the Great Western Highway (east of Mount Victoria) are external to the model area. Thus trips to these points are fixed within the trip table and do not allow for such a diversion. The strategic nature of this study did not allow for assessment of these potential diverted trips. A much broader network model would be required to determine the potential for this kind of diversion.
- The potential to attract the full range of B-Double vehicles to the Great Western Highway corridor with the provision of a higher standard route. This would potentially inducing B-Double traffic from alternate routes across the Blue Mountains such as the Golden Highway.
- Growth rates for this study were provided by the Central West transport needs study (SKM, in preparation). The rates attract may be more relevant to through traffic and may not fully consider local growth issues. Further detailed assessment could consider differential growth rates for internal trips (within and to/from the area).

There are a number of intangible benefits associated with the provision of a longer bypass corridor with maximum grades of six per cent that have not fully been considered in this study. Such a route would be much less likely to be impacted upon by snow and ice, as are some sections along the existing Great Western Highway (Victoria Pass).

23 CONCLUDING STATEMENT

A thorough strategic review was undertaken of the Newnes Plateau area. Based on the assessment of a significant number of environmental constraints, a corridor through the Newnes Plateau study area was identified and compared with the Mount Victoria to Lithgow base case option. This corridor provided a more direct connection from Marrangaroo to Newnes Junction, through to Bell and Soldiers Pinch. Whilst there are some issues in relation to environmental constraints that may require further investigation, there were no specific issues that entirely ruled out the provision of the proposed corridor.

A feasible engineering route was able to be determined through the corridor that met the key design criteria for the route. There were no significant engineering issues that could not be resolved.

The relatively direct nature of the proposed route meant that on the grounds of transport planning the route would attract reasonable levels of traffic diversion from the existing Great Western Highway, both for through traffic and also for some local trips. There are advantages in both corridor options considered (i.e. the Mount Victoria to Lithgow base case and the Newnes Plateau) with the Newnes Plateau corridor option providing diversion from the existing Great Western Highway over a greater length. The Newnes Plateau corridor option also offers a bypass of Lithgow with better connections to the Bells Line of Road. The Mount Victoria to Lithgow base case corridor offers somewhat greater diversion levels from the existing Great Western Highway but over a significantly shorter distance. The Mount Victoria to Lithgow base case also offers benefits for traffic travelling to or from Lithgow that would utilise this corridor.

Finally, the issue of total affordability must be considered. The Mount Victoria to Lithgow base case corridor has been estimated to cost approximately $480m with the steep and moderate grade options for the Newnes Plateau corridor estimated to cost approximately $780 and $900m respectively (60 per cent and 85 per cent greater cost respectively).

It is considered that the Newnes Plateau corridor option provides sufficient social and environmental advantages to make it worthy of further consideration at this stage, in the overall Mount Victoria to Lithgow study area, subject to further consultation with the community.

GLOSSARY OF TERMS

Abbreviation	Description
ABS	Australian Bureau of Statistics
AHD	Australian height datum
ADF	Australian Defence Force
AHIMS	Aboriginal Heritage Information Management System
BC	Mount Victoria to Lithgow base case
BLOR	Bells Line of Road
CP	Contributions plans
CANRI	Community access to natural resource information
DA	Development application
DECC	Department of Environment and Climate Change
DET	Department of Education and Training
DGR	Director General's requirement
DLG	Department of Local Government
DoL	Department of Lands
DoP	Department of Planning
DPI	Department of Primary Industries
DPI Fisheries	Department of Primary Industries – Fisheries
DWE	Department of Water and Energy
DEWHA	Department of the Environment, Water, Heritage and the Arts
EB	Eastbound
EEC	Endangered Ecological Community
EnCEP	Environmental constraint evaluation program
EIS	Environmental impact statement
GA	Geoscience Australia
GFA	Gross floor area
GWH	Great Western Highway
GWHNPTM	Great Western Highway Newnes Plateau transport model
ILUA	Indigenous land use agreements
JTW	Journey to work
LC	Local councils
LEP	Local environmental plan
MR	Main road
MV2L	Mount Victoria to Lithgow
MVKT	Million vehicle kilometres travelled

Abbreviation	Description
MSB	Mines Subsidence Board
NB	Northbound
NPC	Newnes Plateau corridor
NPWS	NSW National Parks and Wildlife Service
NSWALC	NSW Aboriginal Land Council
NTT	Native Title Tribunal
PEI	Preliminary environmental investigation
RTA	Roads and Traffic Authority
SB	Southbound
SEPP	State environmental planning policy
SH	State highway
SKM	Sinclair Knight Merz
SSS	State significant site
SSTM	Sydney strategic transport model
SWC	Sydney Water Corporation
TIA	Traffic impact assessment
TDC	Transport Data Centre
TMAP	Transport management and accessibility plan
VCR	Volume to capacity ratio
VKT	Vehicle kilometres travelled
VOC	Vehicle operating cost
VOT	Vehicle operating time
vpd	Vehicles per day
vph	Vehicles per hour
VPA	Voluntary planning agreements
WB	Westbound

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