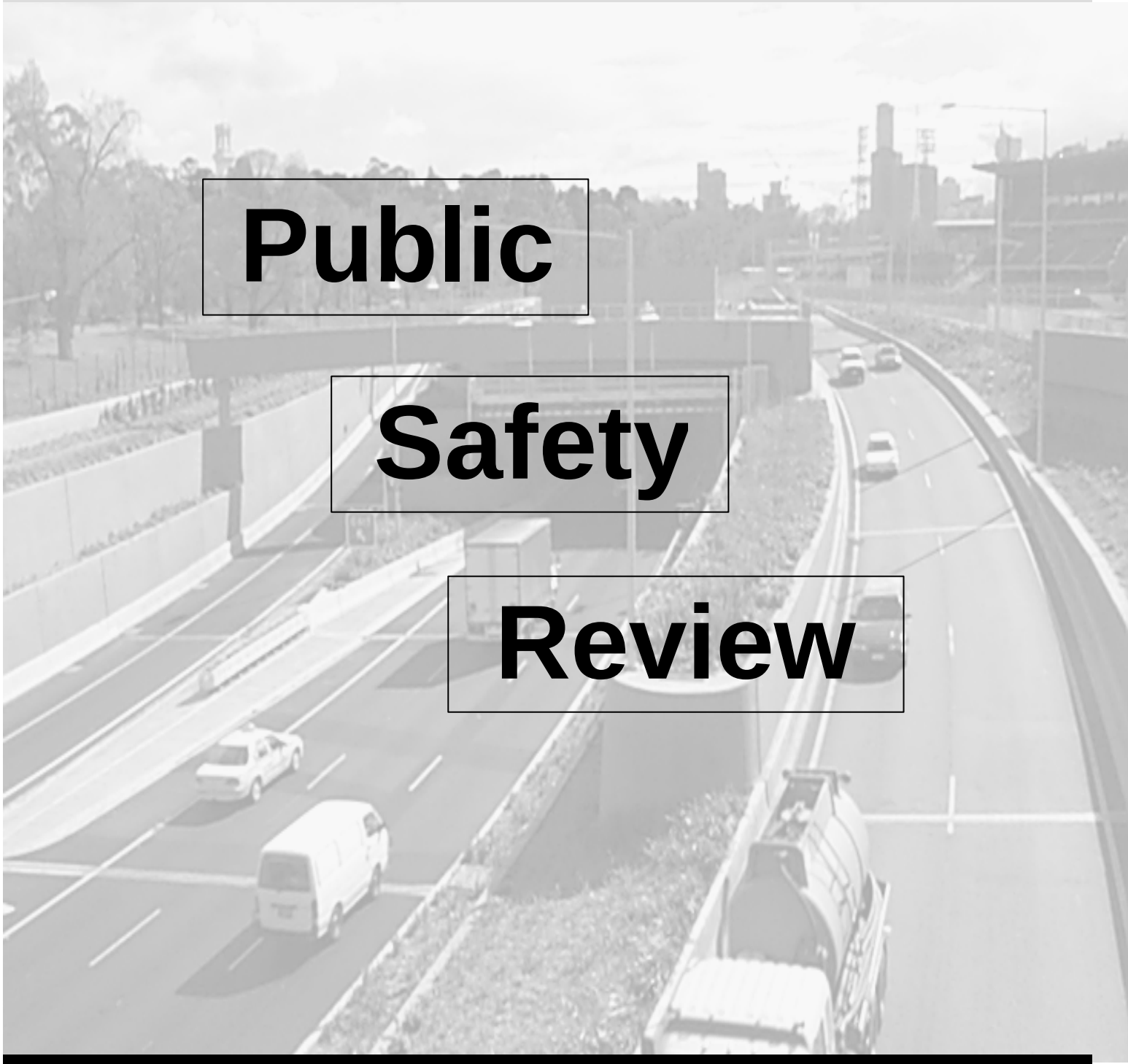
OFFICE OF THE DIRECTOR
MELBOURNE CITY LINK

DEPARTMENT OF INFRASTRUCTURE



Public Safety Review

September 2002

Victoria
The Place To Be

CONTENTS

Chapter 7 Case Studies

Glossary of Terms

Diagrams

Executive Summary

Terms of Reference

1. On 9 March 2001, the Minister for Transport, the Hon Peter Batchelor MP, announced a review of the public safety and traffic management aspects of City Link to be conducted by the Melbourne City Link Authority. The Review was completed by the Office of the Director, Melbourne City Link.

2. The task for the Review was to:

   I. Identify the current legislative and contractual requirements governing public safety.

   II. Evaluate whether these requirements adequately provide for public safety, and if appropriate, recommend:

      (a) changes to the contractual arrangements that the State should negotiate and/or changes to legislation;

      (b) the likely impact on the State of such changes.

   III. Suggest the appropriate government role, and the structure and resources that are required, in relation to public safety aspects of the Link.

   IV. Consider the consequences for traffic management likely to arise from safety incidents or from measures taken to preserve public safety and, if necessary, suggest improvements.

   The Review was also asked to advise on the government structure and resources needed for on-going management of the contractual arrangements with Transurban.

3. Two subsequent incidents were referred to the Review. In addition, recent European tunnel incidents were also referred to the Review so that the relative standard of the City Link tunnels could be assessed.

4. A reference group, comprising representatives of the Department of Infrastructure, the Department of Treasury and Finance, the Department of Premier and Cabinet, VicRoads and the Authority monitored the progress of the Review, and provided advice and guidance to the Authority.

The Contractual and Legislative Requirements Governing Public Safety

5. A complex set of contractual arrangements provide the framework under which the City Link project was constructed and will be operated for the duration of the Concession Period (about 37.75 years). The contractual arrangements include

project specific legislation (the *Melbourne City Link Act 1995*) which ratified the Concession Deed (and associated deeds).

6. City Link is also subject to the general legislation of the State, relating to health, safety, law and order, emergency services or emergencies.

7. The road transport legislation that applies to the general road system in Victoria applies to City Link, except that the Transurban Parties[1] exercise the road management powers on City Link, rather than VicRoads or local authorities.

8. The Transurban Parties are contractually required to comply with a range of detailed Technical Requirements which are set out in annexures to the contractual arrangements and, amongst other things, detail the operational and maintenance requirements for City Link, including safety requirements.

9. Traffic management and safety requirements include the prescription of traffic monitoring and control systems, fire protection systems, communications systems, mechanical ventilation systems, emergency egress tunnels and safety havens. Furthermore, the contractual arrangements impose high standards of maintenance and repair obligations on the Transurban Parties.

10. The Transurban Parties are also required to develop detailed management plans for a range of incidents (including an Emergency Management Plan and traffic diversion route plans).

11. These comprehensive traffic management and safety systems are intended to enable a rapid detection and response to all types of incidents.

12. Safety matters in the operations stage are further dealt with by the requirement that the Transurban Parties develop operations and maintenance manuals (Manuals) and operate City Link in accordance with these Manuals and the Technical Requirements. During the Concession Period, the Transurban Parties are required to update the Manuals in accordance with the Technical Requirements.

13. The Manuals contain the detailed policies and procedures covering all operating and maintenance activities. As part of the process leading to completion of construction, the Independent Reviewer has certified that the current Manuals are adequate.

Adequacy of Current Arrangements for Public Safety

14. The Review has found that the contractual arrangements in place for the construction and operation of City Link have delivered a high standard of public safety.

15. The manner in which the contractual provisions for both construction and operation deal with safety issues is discussed in detail in this Review.

16. The Review has given particular attention to the tunnels because the tunnels pose special safety issues and because Victorians, in general, are not familiar with driving in tunnels. The Review has found that safety arrangements are certainly adequate and some of the safety features of the tunnels exceed Australian and international safety standards.

[1] Refer to paragraph 1.8 and the Glossary for an explanation of the terms.

17. As a public company, Transurban's obligations with respect to its customers and the public generally are very significant. Certain breaches by the Transurban Parties of a contractual requirement relating to public safety may also be a breach of a director or officer's duty under the Corporations Act or other legislation.

18. The fact that a private company operates City Link is not considered to adversely affect public safety. The contractual and legislative arrangements provide a robust regime. Nevertheless a proactive, accountable and properly resourced monitoring capability on the part of the State is considered essential.

19. If the Transurban Parties fail to meet their obligations (in particular their safety obligations), the contractual arrangements enable the State to step in and operate the City Link. This would only occur where there has been a serious breach of the contractual arrangements that expose the public to imminent risk. In addition, the usual contractual and equitable remedies apply for breach of the contractual arrangements.

20. The State also has a limited legislative capacity to step-in and operate City Link in the event of an emergency. Though general transport legislation enables VicRoads to close roads generally, it is not clear whether VicRoads has the legal capacity to close City Link (or part of it) in the interests of public safety.

21. The Review finds that though the contractual arrangements, as supplemented by legislation, are generally adequate, the arrangements could be improved by clarifying that VicRoads has the capacity to close City Link in the interests of public safety.

22. The Review has found that plans for the diversion of traffic on and off City Link have been properly developed and integrated into VicRoads traffic diversion plans, and have operated successfully when the Burnley Tunnel was closed in February 2001.

23. The Review has identified two areas where the Technical Requirements need to be improved. The first relates to emergency management procedures, and in particular to the frequency with which the Emergency Management Plan must be reviewed and the frequency with which emergency exercises must be conducted. The Review considers that this issue can be addressed by contractual amendments, requiring the Transurban Parties to review their Emergency Management Plan every six months and to conduct an annual emergency exercise, with the requirement that at least once every three years, the emergency exercise be a simulated exercise.

24. The second relates to the frequency with which the Manuals (including the interface protocols and procedures with VicRoads) must be updated. The Review considers that this issue can be addressed by contractual amendments, requiring the Transurban Parties to conduct a program of ongoing review of the Manuals, with a complete review of the Manuals not less than once every two years.

25. The Review does not recommend major changes or additions to the contractual or legislative arrangements. Rather the Review considers that the Government's focus should be on ensuring adherence to the existing arrangements and establishing ongoing accountability for monitoring the concession in a way which minimises the risk of future complacency on the part of either the State or the Transurban Parties.

26. The Review does not recommend the establishment of a new independent regulator with respect to public safety. It considers that the combination of the contractual arrangements and the legislative regime (as clarified in accordance with paragraph 21) are sufficient to enable the State to intervene in the interests of public safety.

Roles of the State and Transurban

27. The State and the Transurban Parties have essentially different roles under the contractual arrangements. Transurban's role is to operate and maintain City Link, whereas the State's role is to monitor that Transurban meets its contractual obligations, and to intervene in the operation of the road only in extreme circumstances. The State has an interest in monitoring City Link both from a safety perspective and also as a representative of the broader public interest. At the end of the Concession Period, City Link reverts to the State, at no cost to the State, in a fully maintained condition.

28. In order to fulfil the monitoring role properly, the State needs to ensure that the following three factors apply:

- The State is able to obtain adequate information from Transurban;
- The State retains the capability to monitor the contractual arrangements; and
- Good ongoing communication between the State and Transurban is fostered.

These three factors are discussed below.

Information

29. The contractual arrangements provide that the Transurban Parties are required to provide the State with reports on particular matters, as well as any other information reasonably required by the State.

30. The Review considers that the State's powers to obtain information are adequate.

31. However, the Review considers that the State will need the contractual capacity, from time to time, to independently verify information provided to fulfil its monitoring role. This could occur by the State commissioning spot audits, after discussion with the Transurban Parties. This will involve an amendment to the contractual arrangements.

Resourcing

32. The Review has examined several options for resourcing the on-going management of the City Link arrangements. The options include Statutory Authority (Board), Statutory Office, a Unit within the Department of Infrastructure and a Unit within VicRoads.

33. The Government has considered the options, and in late 2001 passed legislation establishing the statutory position of Director Melbourne City Link to manage the City Link arrangements on behalf of the State. The position sits within the Department of Infrastructure.

Ongoing Communication

34. The Review considers that with respect to operational matters (including safety), good liaison and communication exists between the Transurban Parties, VicRoads and the emergency services.

35. On-going liaison and good communication between the Transurban Parties, VicRoads and the emergency services is vital. The Review considers it necessary to formalise the communication process at a senior level between the organisations and proposes the establishment of a co-ordination committee.

36. The role of the co-ordination committee is to provide a forum for information flow and co-ordination.

37. The co-ordination committee should be chaired by a person appointed by the Minister and comprise representatives of the State, VicRoads, the Transurban Parties (including the organisation operating and maintaining City Link) and the emergency services.

38. The co-ordination committee should be formally established under the contractual arrangements.

39. The co-ordination committee will supersede the current Project Co-ordination Group, established under the Concession Deed for the construction phase.

Case Studies

40. The Review has considered two incidents in the City Link tunnels and recent fires in European road tunnels.

41. The first concerned an incident in which radio rebroadcast cable came loose in the Domain Tunnel, affecting a number of cars. The cable was secured immediately using cable ties, and steps were subsequently taken to prevent further incidents.

42. The Review has also considered the allegation that a motorist was stuck in the Burnley Tunnel for 40 minutes before being towed out. Though the response logs of Transurban's operator indicate that a response vehicle arrived within about 10 minutes of the incident being detected, Transurban's operator does not have a record of when the motorist entered the tunnel. Accordingly it cannot be determined conclusively whether the motorist is correct. Transurban's operator has subsequently altered its operational procedures to enable it to conclusively confirm future incidents.

43. The Review has surveyed recent European road tunnel fires. The Review finds that the City Link tunnels contain safety features superior to those in older style European tunnels. Recent European experience, of road tunnel incidents escalating to become major incidents, does not provide a guide for City Link as City Link's superior safety features (particularly City Link's ventilation and sprinkler systems, emergency exits and refuges) make a comparable escalation and loss of life unlikely. Moreover, the provision for one way traffic in the City Link tunnels, instead of two-way traffic as provided for in the European tunnels, considerably reduces the likelihood of accidents.

Findings & Recommendations

Term of Reference 1

Identify the current legislative and contractual requirements governing public safety.

The Review made no findings or recommendations in relation to this term of reference.

Term of Reference 2

Evaluate whether these requirements adequately provide for public safety, and if appropriate, recommend:

- **changes to the contractual arrangements that the State should negotiate and/or changes to legislation; and**
- **the likely impact on the State of such changes.**

Findings	Recommendations
1. The Manuals will need to change over time to address changed circumstances and must be updated in accordance with the Technical Requirements. 2. Though the Technical Requirements contain some performance measures and the Concession Deed itself sets some public safety measures, the contractual arrangements do not require the Transurban Parties to review and update the Manuals over the life of the Concession. 3. Similarly, the contractual requirements do not require the VicRoads/City Link protocols and procedures (which form part of the Manuals) to be updated.	1. That for the duration of the Concession Period, the Transurban Parties be required, by amendment to the contractual arrangements, to ensure that the Manuals are subject to: (a) a program of ongoing review consistent with the conduct of a "good practice operator"; and (b) a complete review, to the standard consistent with a "good practice operator", no less than once every two years.
4. There is no contractual specification as to the frequency with which the EMP must be reviewed or the frequency with which emergency exercises must be conducted.	2. That for the duration of the Concession Period, the Transurban Parties be required, by amendment of the contractual arrangements:

	(a) to conduct an emergency exercise at least once a year (with a requirement that at least once every three years the emergency exercise be a simulated exercise) in conjunction with the emergency services and other relevant organisations; and (b) to review the Emergency Management Plan at least every 6 months via a committee comprising representatives of the emergency services, VicRoads and other relevant organisations.
5. The contractual arrangements envisage that the State's central role is to monitor the operation of City Link by the Transurban Parties and to intervene in operations only in extreme circumstances where public safety is at risk. 6. The State's monitoring role could be enhanced by the establishment of a committee (comprising representatives of the State and its agencies, Transurban and TLO) which could facilitate the flow of information and liaison.	3. That a committee be formed by amendment to the contractual arrangements to operate during the Concession Period with the following features: (a) ***Membership*** The membership should comprise senior representatives of Transurban, TLO and the State, (i.e. the agency responsible for monitoring the City Link arrangements on behalf of the State, VicRoads, Victoria Police, MF&ESB, Metropolitan Ambulance Service) and be chaired by a nominee of the Minister. (b) ***Role*** The role of the committee should be to provide an avenue for the flow of information and liaison between Transurban, the State and its agencies. The committee would not have the power to bind its parties. (c) ***Subject matter*** The committee should deal with matters relating to the operations of City Link, such as traffic integration matters, public safety, changing standards, incidents and co-ordination and consistency with the rest of the road network. It is suggested that public safety be given detailed consideration by the committee, particularly following the six monthly TLO/emergency service meetings and the annual emergency exercise.

	(d) ***Meetings*** The committee would meet at prescribed intervals, may meet more often if so determined by the Committee and would determine its own procedure and agenda. The existing committees established by the Deeds should be replaced with this Committee.
7. The State's monitoring role could be enhanced by authorising the State to conduct "spot audits".	4. That the State be given the capacity to commission "spot audits" and that the Transurban Parties be required to provide the State with access to such information, equipment and systems as the State may reasonably require in conducting the audit.
8. The combination of the contractual capacity to "step-in", the State's monitoring role, and the State's capacity to exercise emergency powers enable the State to intervene in the interests of public safety in a wide range of circumstances. 9. It is unclear whether VicRoads can close the Link (or part of it) if it is necessary to do so in the interests of public safety.	5. That the contractual arrangements be amended to clarify that VicRoads' power under the *Transport Act 1983* to close roads, applies to City Link where a closure would be in the interests of public safety.
10. City Link is safe for users. 11. Some of the safety features of the tunnels exceed Australian and international safety standards. 12. The contractual arrangements adequately provide for the updating of technology over the Concession Period. 13. The contractual arrangements, particularly the Technical Requirements, and to a lesser extent, the Manuals, prescribe a high standard of safety which satisfactorily address the safety issues posed by the confined space in the tunnels (and to a lesser extent) the confined space on the Elevated Roadway. 14. The fact that a private company operates City Link does not adversely affect public safety as the contractual and legislative arrangements provide a robust regime.	

Term of Reference 3

Suggest the appropriate government role, and the structure and resources that are required, in relation to public safety aspects of the Link.

The Review should also advise as to the government structure and resources needed for on-going management of the contractual arrangements with Transurban.

Findings
1. The role of the State in respect of public safety for City Link is to protect the public interest, essentially by monitoring the performance of the Transurban Parties.
2. The ongoing monitoring by the State of public safety is a vital element of the broader management of the contractual arrangements with the Transurban Parties.
3. The State needs to maintain the capability to manage the contractual arrangements with the Transurban Parties, and therefore a range of professional skills should continue to be made available for the task.
4. Key factors identified as necessary for ongoing management of the contractual arrangements with the Transurban Parties are: • clear accountability; • responsibility by one Minister; • access to high level skills in relevant disciplines (engineering /technical, commercial, financial and legal); and • effective policy interface between City Link and other government policy.
5. Four administrative structures were identified as options for the ongoing management of the City Link arrangements, and option 2, the establishment of a statutory office within the Department of Infrastructure, was adopted. [2]

[2] Refer to paragraphs 5.3 and 5.17 and footnote 301 for details of the legislative structure adopted.

Term of Reference 4

Consider the consequences for traffic management likely to arise from safety incidents or from measures taken to preserve public safety and, if necessary, suggest improvements.

Findings	
1.	Diversion route plans for City Link have been developed by TLO, in consultation with the emergency services and affected municipalities and integrated into VicRoads' diversion route plans, providing an integrated and co-ordinated approach to traffic diversion.
2.	The review of these plans through the Freeway Incident Management Committee[3] has proved an appropriate mechanism to review updating of incident management plans and diversion route plans.
3.	The incident management plans for the Burnley Tunnel were implemented in February 2001 and operated effectively in dealing with the closure of the Burnley Tunnel.
4.	The co-ordination between VicRoads and City Link in relation to closure of City Link and resultant traffic diversion has been effective. It is considered that the recommendations in paragraphs 4.42, 4.45 and 4.57 will assist the continuation of this co-operation.

Case Studies

Recent European Tunnel Incidents

Findings	
1.	The City Link tunnels currently provide comprehensive, state of the art tunnel safety features that contribute to a high degree of safety for motorists.
2.	A single operator promotes clarity of response in the event of an incident.
3.	Operator training, emergency response procedures, and emergency management exercises with all relevant emergency services are important in maintaining an effective response in the event of an incident.

[3] Refer to paragraph 6.7 for details of the Committee and its role.

4.	Recent tunnel fires in Europe suggest that protection from smoke and escape refuges are critical in the event of a major tunnel fire. The City Link tunnels provide emergency exits from the tunnels, to safety refuges, cross-passages and a pedestrian tunnel.
5.	The City Link tunnels provide a ventilation system designed to manage smoke in a way that protects motorists.

Burnley Tunnel Closure

	Findings
1.	The tunnel closure procedures have been reviewed by the Freeway Incident Management Committee.[4] The review showed that the controlled closure of the Burnley Tunnel, which took about one hour to implement, was carried out in an efficient and safe manner in accordance with the agreed procedures.
2.	The traffic diversion plans were also effective in allowing vehicles to bypass the closed Burnley Tunnel with the least possible disruption.
3.	As it became evident that the Burnley Tunnel was likely to be closed for a prolonged period, Transurban, TLO, the Authority and VicRoads worked together to refine the traffic diversion routes to improve traffic flow and safety wherever possible.
4.	While the prearranged plans worked well in this instance, all parties are aware of the need to keep the traffic diversion routes under review to allow for changing situations and to minimise disruption to traffic flows while maintaining public safety.
5.	No further action is considered necessary.

Dislodgement of Rebroadcast Cable

	Findings
1.	The incident was managed in accordance with standard arrangements and interim repairs were completed within two days.
2.	No one was injured by the incident.
3.	Transurban plans to install protective beams, at both tunnel entrances, to minimise the chance of tunnel overhead equipment being dislodged in the future.

[4] See previous footnote.

Response to a Vehicle Breakdown

Findings
1. An internal Transurban/TLO investigation found no evidence to support the driver's claim nor could it prove conclusively that his claim was inaccurate. The incident response logs held in the City Link control room indicate that the incident response unit arrived at the scene of the breakdown within about 10 minutes of the incident being identified.
2. Time stamped surveillance tapes covering tunnel operations are now kept by TLO, enabling verification of the operator's incident response performance.

Chapter 1

Introduction

Terms of Reference

1.1 On 9 March 2001, the Minister for Transport, the Hon Peter Batchelor MP, announced a review of the public safety and traffic management aspects of City Link to be conducted by the Melbourne City Link Authority (the Authority).[5] The terms of reference for the Review are as follows:

> "The Minister for Transport has requested that the Melbourne City Link Authority conduct a review of the public safety arrangements (including traffic management) that apply in relation to major incidents on the City Link project while Transurban is the operator of the Link.
>
> The Review is to:
>
> 1. Identify the current legislative and contractual requirements governing public safety.
>
> 2. Evaluate whether these requirements adequately provide for public safety, and if appropriate, recommend:
>
>   a. changes to the contractual arrangements that the State should negotiate and/or changes to legislation;
>
>   b. the likely impact on the State of such changes.
>
> 3. Suggest the appropriate government role, and the structure and resources that are required, in relation to public safety aspects of the Link.
>
> 4. Consider the consequences for traffic management likely to arise from safety incidents or from measures taken to preserve public safety and, if necessary, suggest improvements.
>
> The Review should also advise as to the government structure and resources needed for on-going management of the contractual arrangements with Transurban."

Two subsequent incidents on City Link were referred to the Review. The first of these involved an allegation of a 40 minute delay in responding to a vehicle breakdown in the Burnley Tunnel. The second related to the radio rebroadcast cable in the Domain Tunnel becoming loose and affecting vehicles travelling through the tunnel.

[5] The Report was completed by the Office of the Director, Melbourne City Link, following the proclamation, with effect from 28 February 2002, of the repeal of the *Melbourne City Link Authority Act 1994* .

In addition, recent European tunnel incidents were also referred to the Review so that the relative standard of the City Link tunnels could be assessed.

These matters are dealt with as separate case studies in chapter 7 of this Report, together with a case study on the Burnley Tunnel closure following the fracture in the tunnel wall in February 2001.

Background to the Review

1.2 On 19 February 2001, a partial failure occurred in one wall segment of the Burnley Tunnel,[6] a section of City Link.[7] A ten-metre section of wall moved along a diagonal hinge line, so that the "toe" of the wall (where the wall joins the floor of the tunnel) moved inwards by about 30 mm. The failure was associated with a significant inflow of water.

This incident focused both public and government attention on the public safety aspects of City Link.

Soon after the failure occurred, Transurban closed the tunnel. When the tunnel re-opened, a week after the failure, the right hand lane (except for the section beyond the failure site) remained closed to enable rectification works to be undertaken. On 17 June 2001, the entire right hand lane was re-opened. Further works, to prevent any movement of the joint between the tunnel wall and floor at other locations in the tunnel, were completed in March 2002. [8]

Scope of the Review

1.3 This Review deals with public safety issues (including traffic management issues) during the operational phase of City Link.

Although the Review relates to the entire City Link, it focuses primarily on aspects of City Link, such as the Domain[9] and Burnley Tunnels and the Elevated Roadway,[10] that are different from the rest of the highway network.

1.4 The terms of reference require consideration of the public safety regime in relation to "major incidents". The term "major incident" has been interpreted to mean a failure or incident that leads, or should lead, to part of City Link being taken out of operation, with the closure having a significant effect on traffic. As some incidents, such as a motor accident or breakdown, have the potential to escalate to a "major incident", this report looks at a range of incidents. While unexpected failures pose the greatest challenges in incident management, expected disruptions to the full operation of City Link, such as planned partial or complete closure of a section (for example to undertake maintenance work), involve a commonality in procedure.

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6 Refer to paragraph 2.3 for a description of the Burnley Tunnel.
7 Refer to paragraph 2.1 for explanation of term "City Link".
8 Refer to paragraph 4.29
9 Refer to paragraph 2.3 for a description of the Domain Tunnel.
10 Refer to paragraph 2.4 for explanation of the term.

Methodology of Review

1.5 The Authority has prepared this Report with the support of its consultant lawyers, Clayton Utz and its consultant engineers, Gutteridge Haskins Davey and Ken Mathers & Associates. Consultation occurred with Transurban, Translink Operations Pty Ltd (TLO),[11] VicRoads,[12] the Independent Reviewer[13] and emergency service organisations in relation to the public safety aspects of City Link in which they have expertise.

1.6 A reference group, comprising representatives of the Department of Infrastructure, the Department of Treasury & Finance, the Department of Premier and Cabinet, VicRoads and the Authority monitored the progress of the Review, and provided advice and guidance to the Authority.

1.7 The legal arrangements for interstate[14] and overseas[15] privately operated toll roads were initially investigated for comparative purposes. However, as the contractual arrangements governing those regimes were not publicly available, the comparison has not formed part of this Review.

Terminology

1.8 The Glossary contains details of terms and abbreviations used in this Report.

For convenience, the names of the contractual parties have been abbreviated so that "Transurban" is used for CityLink Melbourne Limited (formally called Transurban City Link Limited)[16], the "Trustee" is used for Perpetual Trustee Company Limited (which is now the Responsible Entity[17]) and "Clepco" is used for City Link Extension Pty Ltd.

In addition, where it is appropriate to generalise certain matters, new terms have been used. Where the reference is to both the PS&TR[18] and the ESEP O&M Requirements[19], the term "Technical Requirements" is used; where the reference is to both the O&M Manuals[20] and the ESEP O&M Manuals,[21] the term "Manuals" is used and where the reference is to both the Concession Deed and the ESEP Deed, the term "Deeds" is used. The term "Transurban Parties" is used to refer to one or more of Transurban, Clepco and the Trustee.

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11 TLO is the operator of City Link under a contract with Transurban, refer to paragraph 2.23.
12 The Roads Corporation, a statutory authority responsible for roads, established under the *Transport Act 1983*.
13 Refer to paragraph 2.20
14 NSW: Eastern Distributor, M2, M4 and M5.
15 Canada: Highway 407.
16 Refer to paragraph 2.11.
17 Refer to paragraph 2.9.
18 This is an abbreviation of the term "Project Scope and Technical Requirements", an exhibit to the Concession Deed, which describes the scope and required specifications for the design and construction of the Link Road. It also sets out the technical requirements that Transurban must meet, and the quality management systems it must implement, for operating, maintaining and repairing the Link Road.
19 This document sets out the technical requirements that Clepco must meet, and the quality management systems it must implement, for operating and maintaining the Extension Road.
20 The Operation and Maintenance Manuals set out the policies, plans and procedures for the operation and maintenance of the Link Road, including aspects that have a direct bearing on safety and traffic management. Transurban must operate the Link Road in accordance with these manuals.
21 This is a reference to the ESEP Operation and Maintenance Manuals which set out the policies, plans and procedures for the operation and maintenance of the Extension Road. Clepco must operate the Extension Road in accordance with these manuals.

Chapter 2

Background

The Project

2.1 The Link Road and the Extension Road (together referred to as City Link) form a unique piece of Melbourne's road network. Delivered as a BOOT (Build, Own, Operate and Transfer) project, City Link is operated as an electronic toll road, built by the private sector with private sector capital, and owned and operated by the private sector under a concession granted by the State.

Whilst City Link is the only privately operated toll road in Victoria, there are a number of privately operated toll roads interstate. Privately operated toll roads in NSW[22] include the M1 Motorway (Eastern Distributor) which includes a "double deck" tunnel, the M2 Motorway (Hills Motorway), the M4 Motorway and the M5 Motorway.[23]

Description of City Link

2.2 The Link Road is some 22 kms in length and connects three of Melbourne's four radial freeways that had ended relatively close to the centre of the city before the construction of City Link (refer to page 72 for a map of City Link and the road network)). One part of the Link Road (the Southern Link) connects the Monash Freeway[24] with the West Gate Freeway; and the other part (the Western Link) connects the Tullamarine Freeway with the West Gate Freeway. The Link Road also includes the "Punt Road end" of the Exhibition Street Extension Project.[25]

2.3 The Southern Link comprises two three-lane tunnels (the Domain Tunnel and the Burnley Tunnel), a major interchange in Southbank, improvements to the Monash Freeway between Punt Road and Burnley and widening of the Monash Freeway between Burnley and west of Toorak Road.

The Domain Tunnel is a one-way tunnel that carries west bound traffic some 1.6 kms from the end of the Monash Freeway west of Punt Road to the West Gate Freeway in South Melbourne. The Burnley Tunnel is a one-way tunnel that carries east bound traffic some 3.5 kms from the West Gate Freeway in South Melbourne to the Monash Freeway in Burnley, and is at its deepest point some 65m below ground level.

These tunnels pass under major roads, the Yarra River, parkland and high-density urban development, imposing space and egress constraints.

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22 The Sydney Harbour Bridge is a government operated toll-way.

23 Three more privately owned tollways, the Cross Sydney Tunnel, the Western Sydney Orbital and the Lane Cove Tunnel are planned for Sydney.

24 The Monash Freeway was known as the South Eastern Arterial and later the South Eastern Freeway, until it was renamed in April 1999.

25 Refer to paragraphs 2.5, 2.13 and 2.16 to 2.18.

2.4 The Western Link consists of a duplication of the Tullamarine Freeway between Bulla Road and Flemington Road, and the construction of a new 5 km elevated roadway (the Elevated Roadway) between the old terminus of the Tullamarine Freeway at Flemington Road and the West Gate Freeway, crossing several kilometres of railway track and roads. The Elevated Roadway includes a major new bridge, the Bolte Bridge which spans the lower reaches of the Yarra River and the adjacent entrance with Victoria Harbour. The bridge is a concrete box-girder construction with a minimum clearance of 23m above the shipping channels.

2.5 The proposals for the Southern Link again raised the possibility of a connection between the CBD and the Southern Link. In June 1997, the State decided to proceed with this connection. The Exhibition Street Extension Project, a four-lane road stretching from Flinders Street over the Jolimont rail yards and through the sporting precinct to the Monash Freeway, was constructed in two parts - the "City end" (the Extension Road) and the "Punt Road end" (part of the Link Road).

2.6 While Transurban is responsible for City Link, VicRoads, as the principal road authority in Victoria, retains responsibility for the numerous road overpasses and roads that provide vehicular access to and egress from City Link (i.e. the Road Interchanges, refer to the Map of City Link Road Interchanges on page 74).

2.7 Sections of City Link were opened to traffic progressively. The first section (the Western Link) was opened on 15 August 1999, and the last section (the Burnley Tunnel) was opened on 22 December 2000.

Structure of Transurban

2.8 Transurban was originally a joint venture between Transfield Holdings Pty Ltd and Obayashi Corporation (of Japan). However, in March 1996, Transurban City Link Limited was floated as a public company and Transurban was listed on the Australian Stock Exchange as a stapled security, each stapled security consisting of a share in Transurban and a unit in the Transurban City Link Unit Trust (the Trust). Subsequently, City Link Extension Ltd (Clepco), a fully owned subsidiary of Transurban, was formed for the purposes of the ESEP Deed.

2.9 The Trust was originally represented by a Trustee (Perpetual Trustee Company Limited) and a Manager (City Link Management Limited). However, following the passage of the *Managed Investments Act*[26] by the Federal Government and the consequential restructuring of the Trust, Perpetual Trustee Company Limited became the Responsible Entity, performing the roles hitherto performed by both the Trustee and the Manager.

2.10 In January 2002, Transurban was restructured by the creation of three new holding entities, Transurban Holding Trust which now owns all the units in the Trust, Transurban Holdings Limited which now owns all the shares in Transurban City Link Limited, and a third company, Transurban Infrastructure Developments Limited which is intended to be the vehicle for the development of new projects.[27] In January 2002, the new Transurban entities were listed on the Australian Stock Exchange as a three-way stapled security.

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[26] Act No 62 of 1998 inserted Chapter 5C into the *Corporations Act 2001* (with other consequential amendments).

[27] This involved amendments to the Deeds, see the Melbourne City Link Fifteenth Amending Deed, the Exhibition Street Extension Fourth Amending Deed and the City Link and Extension Projects Seventh Amending Deed, gazetted in the Victorian Government Gazette No. 5202, Thursday 15 November 2001.

2.11 On 1 February 2002, Transurban City Link Limited changed its name to CityLink Melbourne Limited.

Contractual Regime

Contracts to which the State is a Party

Concession Deed and Project Scope and Technical Requirements (PS&TR)

2.12 The Concession Deed[28] and PS&TR (one of many Exhibits to the Concession Deed), which specifies the technical requirements for the Link Road, are the primary contractual documents between the State, the Trustee and Transurban. The diagram at page 74 shows the principal contractual documents relating to public safety.

2.13 Under the Concession Deed, Transurban and the Trustee are between them responsible for the design, construction and financing of the Link Road and Transurban is responsible for the operation, maintenance and repair of the Link Road.[29] They are granted a concession to design, construct, commission, operate, maintain and repair the Link Road until the end of the Concession Period [30] (approximately 37.75 years).[31] At the end of the Concession Period, City Link reverts to the State, at no cost to the State, in a fully maintained condition.[32]

The Concession Deed also requires Transurban and the Trustee to design and construct the Link Road in accordance with the PS&TR[33] and Transurban to operate the Link Road in accordance with the PS&TR.[34]

The Punt Road end of the Exhibition Street Extension Project was included as a variation to the Southern Link and thus was constructed under the Concession Deed in accordance with the PS&TR.

2.14 The PS&TR consists of two parts. The Project Scope sets out the proposal made by Transurban (as accepted by the State) in its bid for the design, construction, commissioning, operation, maintenance and hand over of the Link Road. The Technical Requirements cover the State's required specifications for the design, construction, maintenance, operation and tolling of the Link Road, including the quality management systems for operating, maintaining and repairing City Link.

2.15 Amongst other things, the PS&TR specifies a comprehensive list of requirements in relation to safety and traffic management.

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28 Agreement for the Melbourne City Link, with effect as at and from 20 October 1995, as amended.
29 Clauses 2.3(a) and (b) of the Concession Deed.
30 Clauses 2.8(a) and (b) of the Concession Deed.
31 The concession is for 37.75 years from 4 March 1996 (i.e. Financial Close), but may be extended as a result of limited "extension events" during construction or as a remedy to a "material adverse effect". The Concession Period can be reduced if the project reaches certain benchmark rates of return. The Concession Period is currently due to end in January 2034.
32 Clause 3.4 of the Concession Deed.
33 Clauses 7.5, 7.8 and 9.1 of the Concession Deed.
34 Clause 9.1 of the Concession Deed.

Exhibition Street Extension Concession Deed (ESEP Deed), ESEP O&M Requirements

2.16 The State granted Clepco a concession under the ESEP Deed[35] for the operation, maintenance and tolling of the Extension Road, for a Concession Period linked to the Concession Period for the Link Road.[36] Clepco is required to operate the Extension Road in accordance with the ESEP O&M Requirements and the ESEP O&M Manuals.[37]

2.17 The City end of the Exhibition Street Extension was constructed by the State in accordance with the ESEP Specifications and "delivered" to Clepco upon completion of construction.

2.18 The ESEP O&M Requirements set out the technical requirements for the operation and maintenance of the Extension Road, and have in most respects, requirements in relation to safety that are analogous to those in the PS&TR.

Integration and Facilitation Agreement (IFA)

2.19 The IFA[38] deals with the co-ordination of the Extension Road under the ESEP Deed and the Link Road under the Concession Deed. Although the City end of ESEP was built as a separate road and is governed by a separate legal arrangement, the IFA allows the tolling and operation of the Extension Road as if it were part of the Link Road.

Deed of Appointment for the Role of Independent Reviewer

2.20 Transurban, the Trustee and the State jointly appointed Sinclair Knight Merz Pty Ltd[39] as the Independent Reviewer to undertake an independent review of the design and construction phase of the Link Road by a process of general overview and reasonable checking. This included certifying whether each section of the Link Road has achieved Completion as defined in the Concession Deed,[40] and if the quality assurance and proof engineering requirements have been met.

The use of the Independent Reviewer leaves Transurban legally responsible to perform all aspects of its obligations, but gives the State and the public assurance that there has been a general overview of that work, including public safety aspects.

State Works Design and Construct Contract and Co-ordination Deed (State Works Deed)

2.21 The State considered that certain additional works, such as the enhancement of emergency egress, were necessary in relation to City Link. These additional works

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35 Agreement for the Exhibition Street Extension Project made on 22 April 1998 as amended.

36 The definition of "Concession Period" in clause 1.1 of the ESEP Deed provides that the Concession Period for ESEP commences on completion of ESEP and ends at the earlier of the end of the Concession Period under the Concession Deed and termination under the ESEP Deed.

37 Clause 9.1(a) of the ESEP Deed.

38 Agreement for Integrating and Facilitating the Project and the Exhibition Street Extension Project made on 22 April 1998, as amended.

39 In association with Davis Langdon Australia and Parsons Brinckerhoff.

40 Clauses 1.1 and 8.8 of the Concession Deed.

were funded by the State and constructed under the State Works Deed,[41] a deed between the State, Transurban, the Trustee and TOJV. TOJV was responsible for designing and constructing the works in accordance with the State Works Technical Brief as if the works were done under the Concession Deed.

Arrangements to which the State is not a Party

Design and Construct Contract (D&C Contract) between Transurban and Transfield-Obayashi Joint Venture (TOJV)

2.22 Transurban and the Trustee contracted TOJV to design and construct the Link Road under the D&C Contract. TOJV in turn subcontracted aspects of that contract.[42] These subcontracting arrangements do not alter Transurban's or the Trustee's liability to the State to perform their obligations under the Concession Deed.

Operating and Maintenance Agreement (O&M Agreement) and Operation and Maintenance Manuals (O&M Manuals)

2.23 The O&M Agreement[43] is an agreement between Transurban and TLO, under which Transurban (and later Clepco[44]) subcontracted most of their operational and maintenance obligations for City Link, including the preparation of the Manuals.[45]

2.24 Transurban and Clepco are required to operate City Link in accordance with the Manuals[46] which document policies and procedures regarding the operation and maintenance of City Link.[47]

41 State Works Design and Construct Contract and Co-ordination Deed, made on 19 February 1996.

42 For example, on both Southern Link and Western Link, TOJV subcontracted the supply of the electronic tolling system to Translink Systems Pty Ltd and the design and construction to Baulderstone Hornibrook Engineering Pty Ltd, which in turn subcontracted the design to Hyder Consulting (Vic) Pty Limited and CMPS and F Pty Ltd. On Southern Link, TOJV subcontracted the design to Hyder et al.

43 Operating and Maintenance Agreement, made on 30 October 1995, as amended.

44 The addition of Clepco was effected by the Operating and Maintenance Agreement Amendment Deed, made on 21 March 1999.

45 Refer to footnote 123 for subsequent changes to the O&M Agreement.

46 Clause 9.1 of the Concession Deed and clause 9.1 of the ESEP Deed.

47 These are required under the PS&TR and the ESEP O&M Requirements. Refer to Part J Clause 2.2 of the PS&TR and Part C Clause 2.1 of the ESEP O&M Requirements.

Chapter 3

Term of Reference 1

Identify the current legislative and contractual requirements governing public safety.

Contractual Regime

ESEP Deed

3.1 The provisions of the ESEP Deed dealing with public safety are largely the same as the provisions of the Concession Deed.[48] Except where the ESEP Deed is substantively different from the Concession Deed, the provisions of the ESEP Deed are not separately considered in the body of this Report but are referred to in the appropriate footnotes.

The Concession Deed

Key Public Safety Obligations

Construction

3.2 Transurban and the Trustee are required to implement a quality assurance system for the works in accordance with the PS&TR,[49] and ensure that the Proof Engineer and the Quality Assurance Auditor perform the functions required of them under the PS&TR.[50] The Independent Reviewer is required to review the quality assurance plan, and by a process of general overview and reasonable checking, advise whether the responsibilities of the Quality Assurance Auditor and the Proof Engineer have been performed in accordance with the PS&TR. [51]

Completion and Commissioning

3.3 Each section of the Link Road, including its associated traffic management elements, was subject to the process of "Completion" before that section was opened to traffic.

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48 The main exceptions are that under clause 9.1 of the ESEP Deed, Clepco must operate the Extension Road in accordance with the ESEP O&M Requirements and the ESEP O&M Manuals (rather than the PS&TR and the O&M Manuals), that these manuals must be regularly updated in accordance with the ESEP O&M Requirements (clause 9.1(b)), and that Clepco must provide the State with a copy of the ESEP O&M Manuals, which must be in a form approved by the State (clause 8.4).

49 Refer to clause 7.14 of the Concession Deed. There are no corresponding definitions in the ESEP Deed as they are not needed.

50 Refer to clause 14.3(e) and clause 1.1 (definition of "Proof Engineer" and "Quality Assurance Auditor") of the Concession Deed. There are no corresponding definitions in the ESEP Deed as they are not needed.

51 Refer to clause 6.2(b)(v) of the Concession Deed. There are no corresponding definitions in the ESEP Deed as they are not needed.

Completion is defined as the time when the works for a section have been completed (except for minor omissions or minor defects which do not adversely affect the use of the section by the public or the safety of that use[52]), Commissioning has taken place and Transurban and the Trustee have performed all their obligations under the Concession Deed that relate to that section.[53]

The Completion process requires certification by the Independent Reviewer that the works have been completed in accordance with the contractual requirements (and are safe) and that Commissioning[54] has taken place. It also requires certification by the State that the contractual requirements that relate to the relevant section (other than those certified by the Independent Reviewer) have been met.[55]

3.4 As the Extension Road was constructed by the State, there are no analogous obligations on Clepco under the ESEP Deed.

Updating Technology

3.5 Transurban is required to maintain a level of technology in its systems of operation, maintenance and repairs as would be maintained by a prudent operator of the Link Road, consistent with current good practice and standards.[56]

Operation

3.6 Transurban is required to operate the Link Road in accordance with the PS&TR and the O&M Manuals.[57]

Maintenance and Repair

3.7 The Concession Deed establishes a detailed maintenance regime for the Link Road which requires compliance with established standards, regular inspections, reporting to the State on maintenance and repairs carried out, the provision of rolling 2-year maintenance and repair budgets, and the establishment of a dedicated Maintenance and Repairs Account funded to cover periodic repair and maintenance for the forthcoming year.[58] Repairs must be done promptly to the standards set out in the PS&TR, the Design Documentation and the O&M Manuals.[59]

Reinstatement

3.8 If any part of the Link Road is damaged, Transurban and the Trustee are required to diligently pursue its repair and reinstatement.[60]

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52 However, in the case of Completion of the Burnley Tunnel, the first component of the term "Completion" is defined as the time when the works for that section have been completed, except for omissions or defects which do not adversely affect the use of the section by the public or the safety of that use. (Refer "Melbourne City Link", Fourteenth Amending Deed, made on 20 December 2000). On 29 August 2001, the Independent Reviewer advised that all the omissions and defects that were to be completed as part of the arrangements for the opening of the Burnley Tunnel in December 2000, had been completed.

53 Clause 1.1 of the Concession Deed.

54 Defined in clause 1.1 of the Concession Deed as the process of safety auditing, performance testing and checking against the technical requirements specified in the PS&TR.

55 Process described in clauses 8.6 to 8.9 of the Concession Deed.

56 Clause 14.3(f) of the Concession Deed and clause 14.3(d) of the ESEP Deed.

57 Clause 9.1 of the Concession Deed and clause 9.1 of the ESEP Deed.

58 Clauses 10 and 11 of the Concession Deed and clauses 10 and 11 of the ESEP Deed.

59 Clause 10.1 of the Concession Deed and clause 10.1 of the ESEP Deed which requires compliance in accordance with the ESEP Specification, the ESEP O&M Requirements and the ESEP O&M Manuals.

60 Clause 13.7, also refer to clause 8.12, obligation to rectify defects. Similar obligations are imposed on Clepco in clause 13.6 of the ESEP Deed.

Monitoring and Reporting

3.9 Transurban is required to inspect each section of the Link Road once a month.[61]

3.10 Transurban has numerous specified reporting obligations. Every 6 months, Transurban is required to provide the State and VicRoads with a written report of all maintenance and repairs carried out on the Link Road for the previous 6 month period,[62] including details of the procedures and materials used in the maintenance and repairs.

Transurban is required to report on any material damage, defect or disrepair in the Link Road of which it is aware and of remedial action to be taken.[63] It is also required to report on serious accidents on an incident basis.[64]

3.11 While there are no specific reporting obligations in terms of operations, Transurban and the Trustee are required to provide information that is reasonably required by the State.[65] The State also has the right to enter onto Transurban land for monitoring purposes.[66]

Closure of the Link Road

3.12 Transurban is required to keep the Link Road open for public use.[67] However, Transurban may close the Link Road (or part of it) in a number of circumstances, including where it is necessary by reason of a material risk to the health or safety of members of the public, or to comply with the Concession Deed, PS&TR or O&M Manuals.

In addition, Transurban must take reasonable measures to prevent or restrict access to the Link Road if it is aware that there is a material risk to health or safety of members of the public[68] (that is, if it is necessary in the interests of public safety to close the Link Road or any part of it, then Transurban must do so).

Signage

3.13 Transurban is required to erect (or display), maintain and repair traffic and directional signs on the Link Road consistent with State requirements and is authorised to operate those traffic or directional signs to facilitate the efficient operation of the Link Road.[69] The State is required to erect, repair and maintain directional signs relating to the Link Road that are located off the Link Road.[70]

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61 Clause 10.3 of the Concession Deed and clause 10.3 of the ESEP Deed.
62 Clause 10.2(a) of the Concession Deed and clause 10.2(a) of the ESEP Deed.
63 Clauses 10.2(a) and (b) of the Concession Deed and clauses 10.2(a) and (b) of the ESEP Deed.
64 Clause 10.4 of the Concession Deed and clause 10.4 of the ESEP Deed.
65 Clause 17.6 of the Concession Deed and clause 17.5 of the ESEP Deed.
66 Clause 4.1 of the proforma lease, attached as Exhibit D to the Concession Deed, allows powers of entry. A similar provision is contained in the proforma lease attached to the ESEP Deed. Though the leases have not yet been granted, sections 60A and 93G of the *Melbourne City Link Act 1995* provide that the land is to be treated as if it were under a deemed lease (also refer to clause 4.8(g) of the Concession Deed and clause 4.7(g) of the ESEP Deed).
67 Clause 9.4 of the Concession Deed and clause 9.4 of the ESEP Deed.
68 Clauses 9.4(b) and 9.5 of the Concession Deed and clause 9.4(b) of the ESEP Deed.
69 Clause 9.6 of the Concession Deed and clause 9.6 of the ESEP Deed.
70 Clause 9.6(e) of the Concession Deed clause 9.6(e) of the ESEP Deed.

Operating Default and Step-In by the State

3.14 On the occurrence of an Operating Default, the State may step-in and operate City Link until the default is remedied or its consequences overcome.[71]

An Operating Default has two features. Firstly, it must be one of the defaults specified,[72] such as a failure to operate City Link in accordance with the Technical Requirements or the Manuals,[73] failure to close the Link Road where it is necessary to do so in the interests of public safety,[74] or failure to maintain and repair City Link.[75] Secondly, the failure must either materially affect the maintenance or routine operation of City Link or increase the risk of imminent death or injury to users of City Link.[76]

3.15 The State may exercise its step-in rights to operate, repair or maintain City Link if it considers in good faith that the Operating Default poses, or is likely to pose, a material risk to the public safety or material damage to a section of City Link.[77] The prescribed procedures require the State to give Transurban detailed written notice of the Operating Default, including measures to be taken to remedy the default. If the State considers in good faith that it must exercise its step-in rights as a matter of urgency, it may give verbal notice with a brief description of the issues. If reasonable steps to mitigate the Operating Default are not taken within the time allowed by the State, the State may step-in to remedy the default (and operate the Link Road).[78]

3.16 The State may recover from Transurban the costs of stepping-in,[79] but has no action for damages as a result of the default.[80] However the State takes on risk by stepping-in as it becomes liable for any loss, damage or injury suffered by third parties as a consequence of it stepping-in.[81]

3.17 The dispute resolution processes enable a party to refer to an expert a dispute as to whether an Operating Default has occurred or as to the measures to remedy that default.[82] The determination of the expert is binding on the parties.[83] If the State steps-in in circumstances where it believes that it is necessary to do so as a matter of urgency, a dispute with the Transurban Parties will not prevent or delay the State's exercise of its step-in rights.[84] On the other hand, if a "non-urgent" matter is referred to an expert, the State will only be able to step-in after a positive finding by the expert.

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71 Clause 9.11 of the Concession Deed, clause 9.11 of the ESEP Deed.
72 The definition of "Operating Default" in clause 1.1 of the Concession Deed and clause 1.1 of the ESEP Deed.
73 Clause 9.1 of the Concession Deed, clause 9.1 of the ESEP Deed.
74 Clause 9.5 of the Concession Deed requires Transurban to take reasonable measures to prevent or restrict members of the public from the project land if Transurban is aware or ought to have been aware that there is a material risk to their health and safety. This would include the requirement to close part or all of the Link Road if this were necessary in the interests of public safety. There is no equivalent provision in the ESEP Deed as it is not needed.
75 Clause 10.1 of the Concession Deed and clause 10.1 of the ESEP Deed.
76 The definition of "Operating Default" in clause 1.1 of the Concession Deed and clause 1.1 of the ESEP Deed.
77 Clause 9.11 of the Concession Deed and clause 9.11 of the ESEP Deed.
78 Clause 9.12 of the Concession Deed and clause 9.12 of the ESEP Deed.
79 Clause 1.20 of the Concession Deed and clause 1.14 of the ESEP Deed.
80 Clause 9.14 of the Concession Deed and clause 9.14 of the ESEP Deed.
81 Clause 13.2 of the Concession Deed and clause 13.2 of the ESEP Deed.
82 Clause 16 of the Concession Deed and clause 16 of the ESEP Deed specify a regime for expert determination of specified disputes, including disputes as to whether an Operating Default has occurred or a dispute as to the measures to remedy the default.
83 Clause 16 of the Concession Deed and clause 16 of the ESEP Deed.
84 Clause 9.12(j) of the Concession Deed and clause 9.12(j) of the ESEP Deed.

3.18 The contractual provisions dealing with the State's step-in rights are complex, prescribing both the circumstances when step-in rights are available and the procedure for their exercise. The limitation of the regime is that circumstances could arise which fall short of the contractual requirements, but which do pose a risk to public safety.[85]

Termination

3.19 Serious defaults can give rise to the right to terminate the concessions. The process is lengthy and complex, particularly whilst Transurban or the Trustee has any debt outstanding.[86] The time-lines make termination an inappropriate mechanism for dealing with immediate public safety issues.

Contractual and Equitable Relief

3.20 The common law remedy of damages[87] would generally be of no use in dealing with public safety breaches, in part because the State will rarely suffer damage as a result of the breach and in part because an award of damages will not of itself lead to a removal or mitigation of the public safety risk.

3.21 In some circumstances, the State may seek equitable remedies, such as an order for specific performance (requiring the performance of specified obligations such as the closure of part of the Link Road or undertaking a detailed repair program etc.) or injunctive relief (requiring the cessation of a potential or continuing breach). A limitation of these remedies is that they are discretionary – that is, even if the breach is proven, the courts may decline to grant relief. A further limitation in relation to specific performance is the requirement that the obligations to be performed must be described with sufficient precision and clarity to enable compliance. Similarly, an injunctive order will not be made if its enforcement requires continuous supervision, or if the requirements cannot be stated with sufficient precision. However, there may be circumstances where a default does not give rise to step-in rights, but is sufficient for equitable relief.

ESEP O&M Requirements

3.22 The provisions of the ESEP O&M Requirements dealing with public safety are largely the same as the provisions of the PS&TR. Except where the ESEP O&M Requirements are substantively different from the PS&TR, the provisions of the ESEP O&M Requirements are not considered separately in the body of the Report, but are referred to in the appropriate footnotes.

PS&TR and State Works Technical Requirements

General

3.23 Transurban must operate the Link Road in accordance with the PS&TR[88] which in turn requires Transurban to document policies and procedures[89], including internal

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85 Refer to paragraphs 4.61 to 4.63 for a discussion of the limitations of the step-in regime.

86 Clauses 15.3(i) and (j) of the Concession Deed, clauses 15.1(i) and (j) of the ESEP Deed and clause 4 of the Master Security Deed, being a Deed between the State, Transurban City Link Ltd, Perpetual Trustee Company (as Trustee for the Transurban City Link Unit Trust), Australia and New Zealand Banking Group and ANZ Capel Court.

87 That is, monetary compensation for loss or damage.

88 Clause 9.1 of the Concession Deed and clause 9.1 of the ESEP Deed.

89 Part J Section 2.2 of the PS&TR and Part C Section 2.1 of the ESEP O&M Requirements.

procedures and manuals (O&M Manuals) to cover all operating and maintenance activities,[90] an Emergency Management Plan (EMP),[91] and liaison with VicRoads.[92]

3.24 The control philosophy for the Link Road seeks to produce a system that continuously provides, in relation to safety, a "secure environment", rapid and effective response to traffic incidents and smooth traffic flow.[93]

Quality Assurance System and Proof Engineering

3.25 Transurban is required to comply with all requirements of relevant Australian Standards relating to quality assurance.[94]

3.26 The role of the Proof Engineer (whom Transurban is required to appoint[95]) is to conduct an independent design check and verification of those elements where public safety and overall performance are involved.[96]

3.27 The Link Road must be designed, constructed, operated and maintained so as to comply with the law, government standards and associated environmental approvals.[97]

Emergency Access and Egress

3.28 Emergency access and egress for the tunnels are detailed in both the PS&TR[98] and the State Works Deed as follows:

- Three cross passages between the two tunnels for pedestrians;
- Two stairways to the surface of the Domain Tunnel;
- A combination of stairways and three safety havens with separate ventilation systems and fire doors in the Burnley Tunnel;[99] and
- A separate emergency egress tunnel, connected to the surface that extends for 1.2km with regularly spaced access points from the Burnley Tunnel.[100]

Safety Barriers and Emergency Stopping Bays

3.29 New Jersey barriers are required between freeway carriageways to provide protection at all potentially hazardous temporary and permanent locations. In addition, concrete safety barriers must be provided in the tunnels to separate vehicular traffic and pedestrians.[101]

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90 Part J Section 2.2 of the PS&TR and Part C Section 2.1 of the ESEP O&M Requirements. Refer to paragraphs 3.45 to 3.49 for details.
91 Part J Section 2.2 of the PS&TR and Part C Section 2.1 of the ESEP O&M Requirements. Refer to paragraphs 3.50 to 3.54 for details.
92 Part J Section 2.2 of the PS&TR and Part C Section 2.1 of the ESEP O&M Requirements. Refer to paragraphs 3.37 and 3.48.
93 Part J Section 3.2 of the PS&TR.
94 Part L Section 3 of the PS&TR and Part E Section 1.1 of the ESEP O&M Requirements.
95 Part L Section 3 of the PS&TR.
96 Part L Section 3 of the PS&TR.
97 Part K Section 1.1.1 of the PS&TR and Part D Section 1.1 of the ESEP O&M Requirements.
98 Part E Section 2.9 of the PS&TR.
99 Two of the havens can each accommodate approximately 100 people and the haven at Swan Street, with access to the surface via a staircase and lift, can accommodate approximately 40 people.
100 The Emergency Egress is constructed pursuant to the State Works Deed. Refer to footnote 41.
101 Part H Section 3 and Part K Section 3.6 of the PS&TR.

Incident Management Quality Plan

3.30 The objectives of the incident management plan are to prevent or minimise loss of life or injury to persons, minimise damage to property, facilitate access and suitable working conditions for emergency services and minimise inconvenience and delays to users of City Link.[102]

This plan must include:

- A comprehensive set of procedures for the management of a diverse range of incidents;[103]
- Arrangements for access by emergency vehicles, diversion of traffic, co-ordination with other organisations, clearing obstructions and restoring normal operations as soon as possible. These procedures are reflected in the central computer control system, incident response options and checklists;
- A program for review/debrief of all significant incidents to improve operations;
- Provision for suitably trained staff;
- Performance standards for arrival at incidents;
- Minor maintenance services;
- A towing service;
- Patrol vehicles;
- Operating procedures for control signals and signs in tunnels; and
- Procedures for responding to all automatic alarms generated by the incident monitoring systems.

Central Computer Control System

3.31 A central computer control system is required to provide computer aided monitoring and control of traffic, lighting, electrical distribution, fire detection, hydraulic services, air quality monitoring equipment and ventilation systems.[104]

Control Room

3.32 The City Link control room is required to monitor the traffic operation, incident detection, electrical and mechanical systems of City Link on a continuous basis. It must be occupied 24 hours a day by trained and experienced operators, with at least two operators on duty during the day and one operator on duty at night. The control room must be sufficiently equipped to enable a direct link with VicRoads, police, fire brigade and ambulance control centres.[105]

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[102] General obligation in Part J Section 3.7, and Part K Section 6.3 of the PS&TR. Part C Section 3.5 and Part D Section 3.2 of the ESEP O&M Requirements.

[103] Including prohibited vehicles, vehicle breakdown, stationary vehicle, minor traffic accident, major traffic accident, lost load, fire in tunnel, fire on City Link, fire in control centre, fire in ancillary buildings, fire in tunnel distribution board or control cabinet, fuel or chemical spill, flood, bomb alert, tunnel evacuation, lane closure, tunnel closure, loss of power supply and emergency vehicle transit.

[104] Part J Section 3.2 of the PS&TR and Part C Section 3.2 of the ESEP O&M Requirements.

[105] Part J Section 3.2 and Part K Section 6.8 of the PS&TR. Part C Section 3.2 and Part D Section 3.4 of the ESEP O&M Requirements.

Traffic Monitoring and Control Systems

3.33 The following traffic monitoring and control systems are required:[106]

- A closed circuit television system capable of complete and continuous surveillance of the full length of City Link;

- An automated traffic incident detection system on the Link Road capable of detecting changes in traffic behaviour, including stationary vehicles in certain areas, within 5 minutes of occurrence;[107]

  When abnormal conditions are detected, appropriate alarm(s) are to be activated in the control room. As a result of the alarm(s), automatic displays of information and incident response options and checklists, based on the incident management plans, are to be initiated by the central computer control system. The operators must then use their judgement to initiate appropriate response actions. Operators respond to alarms by undertaking a number of actions including confirming the validity of the alarm by using the closed circuit television system or other means; changing traffic plans; dispatching recovery vehicles; calling contracted towing services; alerting emergency services and advising VicRoads;

- Communications systems (as detailed below); and

- An environmental monitoring system with respect to air quality in tunnels and at exhaust vents, visibility levels in tunnels and water levels in tunnel drainage systems.[108]

Fire Protection System

3.34 The following features are required in the tunnels:[109]

- An automatic heat sensing system that precisely indicates the location and intensity of the fire together with smoke detection in underground service areas;[110]

- Fire alarm indicator panels;

- Alarm switches in the fire extinguisher cupboard doors that activate when the door is opened;

- Break glass alarms;

- Access door alarms;

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106 Part E Section 2.4.5 in relation to the Domain and Burnley Tunnels, general obligations in Part I Section 3, Part J Sections 3.2, 3.3 and 3.3.1, and Part K Section 6.4 of the PS&TR. Part B Section 3, Section 3.2, 3.3 and 3.5 and Part D Section 3.3 of the ESEP O&M Requirements.

107 The traffic management facility for the Extension Road is not required to include a traffic incident detection system.

108 Part K Section 6.4.5 of the PS&TR.

109 Part E Section 2.4.4 in relation to the Domain and Burnley tunnels, general obligation in Part J Sections 3.2 and 3.5, and Part K Section 6.6 of the PS&TR. The fire protection system for the Extension Road is detailed in Part C Section 3.4 and provides that an operator may be alerted to the outbreak of fire by observation of closed circuit television system and advice from motorists. The operator confirms the validity of the fire alarm and undertakes a number of actions as necessary.

110 The fire detection alarm is transmitted automatically to the Metropolitan Fire and Emergency Services Board (MFESB) identifying which tunnel has the alarmed state. This is also displayed on fire indicator panels and made available to the City Link control room operators to enable them to execute the appropriate response including verifying or advising the existence of a fire to the fire brigade; alerting other emergency services, patrol vehicles and maintenance crews; varying traffic plans and tunnel ventilation, implementing evacuation plans; and selecting and activating the appropriate tunnel deluge zones.

- A self-contained fire telephone system with emergency handset that connects directly to the control room located at every second hydrant/hose reel cabinet;
- Fire hydrants, extinguishers and hose reel system;
- Fire deluge system; and
- Emergency exhaust ports located along the tunnel that may be opened for smoke spill in case of emergency.

Mechanical Ventilation Systems

3.35 A mechanical ventilation system that analyses and maintains the air quality and velocity is required in the tunnels only.[111] Air quality is to be maintained through the operation of a number of fans that introduce air into, and remove air from, the tunnels. Once a problem with the air quality is detected, these fans are to be adjusted automatically, or if there are abnormally high tunnel pollution levels, manual operating procedures can be used.

The following components are required:

- Ventilation system design;
- Noise and acoustic treatment;
- Fans;
- System balancing and testing;
- Environmental monitoring system; and
- Smoke exhaust system which removes smoke from the source of the fire.

Communications System

3.36 Installation and operation of a communications system including the following features is required: [112]

- A stand-alone motorist emergency telephone system linked directly to the control room;
- Variable message sign system capable of advising of conditions along the entire length of City Link;
- Two-way radio communications in patrol vehicles.

In addition, the following is required in the tunnels:[113]

- Lane use signals;
- A public address system;

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[111] Part E Section 2.4.2, Part J Section 3.4.2 and Part K Section 6.5 of the PS&TR in relation to tunnel ventilation.

[112] Part I Sections 3.1, 3.3 and 3.5, Part J Sections 3.2, 3.3.1 and 3.6, and Part K Sections 6.4.3, 6.4.4 and 6.7 of the PS&TR. The ESEP O&M Requirements only requires twoway radio communications in patrol vehicles (refer to Part C Section 3.2).

[113] Part E Section 2.4.5 of the PS&TR.

- A radio rebroadcast system that permits the operator to over-ride normal radio programs with broadcast instructions; and

- Mobile phone capability.

Liaison with VicRoads

3.37 The following is required:

- An organisational interface with VicRoads to optimise co-ordination activities;[114]

- An interface that allows information to be passed verbally between the City Link control room and the VicRoads traffic control and communications centre;[115]

- Development of interface protocols to ensure that the flow of information between the control rooms contributing to the mutual objective of effective traffic management.[116] The protocols must detail the appropriate contact points, content, circumstances, method and medium for the transfer of information;[117] and

- Pre-agreed plans and procedures to deal with appropriate and compatible Transurban/TLO and VicRoads response procedures and roles for incidents such as traffic diversion due to a major accident on a section of City Link. These include arrangements for handling motorist emergency telephone calls on City Link and the co-ordination of third party response by police, fire brigade or tow truck.[118]

Maintenance

3.38 Development of a proactive maintenance policy and plan supported by inspectors monitoring the performance of all assets, with the assistance of appropriate condition monitoring equipment is required.[119]

Two categories of maintenance are specified: routine, and replacement and refurbishment.

Operating and Maintenance Agreement (O&M Agreement)

3.39 Though Transurban is permitted to subcontract the performance of operation obligations under the Concession Deed,[120] this does not limit or affect Transurban's obligations or liability to the State under the Concession Deed. An analogous provision is contained in the ESEP Deed.[121]

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114 Part J Section 2.2 of the PS&TR and Part C Section 2.1 of the ESEP O&M Requirements.
115 Part I Section 3.9 and Part J Section 3.8 of the PS&TR. Part B Section 3.3 and Part C Section 3.6 of the ESEP O&M Requirements.
116 Part J Section 2.2 of the PS&TR and Part C Section 2.1 of the ESEP O&M Requirements.
117 Part I Section 3.9 and Part J Section 3.8 of the PS&TR. Part B Section 3.3 and Part C Section 3.6 of the ESEP O&M Requirements.
118 Part I Section 3.9 and Part J Section 3.8 of the PS&TR. Part B Section 3.3 and Part C Section 3.6 of the ESEP O&M Requirements.
119 Part J Section 4 of the PS&TR and Part C Section 4 of the ESEP O&M Requirements.
120 Clause 9.10 of the Concession Deed. Also refer to sections 11 & 12 of the *Melbourne City Link Act 1995*.
121 Clause 9.10 of the ESEP Deed. Also refer to sections 12B & 12C of the *Melbourne City Link Act 1995.*

3.40 The O&M Agreement, under which TLO was appointed as the operator of City Link,[122] passed through to TLO most of the operation and maintenance obligations of Transurban and Clepco under the Deeds.[123] While the State is not a party to the O&M Agreement, the agreement cannot be materially altered without the State's consent, which cannot be unreasonably withheld.[124]

3.41 The key public safety requirements in the O&M Agreement oblige TLO to meet certain standards including the following:

- The provision of suitably qualified, experienced and competent personnel performing in a competent and professional manner;[125]
- The performance of obligations to the standards of a "Good Practice Operator"[126] defined as an operator of an undertaking similar to that of City Link, performing its obligations with a level of skill, diligence, prudence, foresight and experience which is within the top quartile of international operators of similar undertakings;[127]
- The provision of proper and adequate training in all relevant disciplines and activities for all personnel;[128]
- The provision of a rapid and effective response to problems affecting safety on City Link and the maintenance of effective liaison procedures with the police and emergency services;[129] and
- Carrying out all emergency procedures promptly and efficiently, prompt reporting of incidents, and continuous patrols along City Link and staffing of the control room.[130]

ESEP Operation and Maintenance Manuals (ESEP O&M Manuals) and Emergency Management Plan

3.42 The ESEP O&M Manuals (including the Emergency Management Plan for ESEP) and the requirements in the ESEP Deed and the ESEP O&M Requirements in relation to those manuals are analogous to the requirements for the Link Road (except that the ESEP O&M Manuals only deal with the operation and maintenance of a short surface road). They are therefore not dealt with separately in this Report, but are referred to in the appropriate footnotes.

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122 The Operating and Maintenance Agreement Amendment Deed, made of 30 October, 1995 extends this appointment to ESEP.

123 Many of the provisions of the Operating and Maintenance Agreement that relate to customer service have been internalised within Transurban following structural changes to the relationship between Transurban and TLO. However, those provisions of the agreement relating to the operation and maintenance of the road and the traffic, including all aspects relevant to public safety, remain current and are undertaken by the original parties.

124 Clause 14.3(a)(iv) of the Concession Deed and clause 14.3(a)(iv) of the ESEP Deed.

125 Clause 2.2 of the O&M Agreement.

126 Clause 2.4 of the O&M Agreement.

127 Clause 1.1 of the O&M Agreement.

128 Clause 3.5 of the O&M Agreement.

129 Clause 5.1 of the O&M Agreement.

130 Clause 5.2 of the O&M Agreement.

Operation and Maintenance Manuals (O&M Manuals)

Legal Requirements

3.43 Transurban is required to prepare (for each section of City Link, before the opening of that section)[131] and regularly update the O&M Manuals in accordance with the PS&TR.[132]

3.44 Transurban is required to operate the Link Road in accordance with the PS&TR and the O&M Manuals.[133] The PS&TR, in turn, requires the documentation of internal policies and manuals covering all operating and maintenance activities on the Link Road to sustain long term operation of the Link Road.[134]

The State's role is limited to approval of the form, but not the content, of the O&M Manuals.[135] The Independent Reviewer was required to advise during the construction phase, by general overview and reasonable checking, whether the O&M Manuals were in accordance with the PS&TR.[136] Such advice was given in respect of each section of the Link Road before the opening of that section.

In the event of any inconsistency between the PS&TR and the O&M Manuals, the PS&TR prevails.[137]

Detailed Management Plans

3.45 The O&M Manuals contain detailed management plans. The plans provide for the management of and response to a large variety of traffic incidents (such as vehicle breakdown, vehicle fires, fuel and chemical spills, traffic congestion, tunnel evacuation, reduced air quality in tunnels, emergency vehicle access, etc.) with emphasis on the tunnels, but with application for all sections of the Link Road. They also deal with the operation of all sections of the Link Road, with permutations for closure of lanes, carriageways and sections of the Link Road and traffic diversion plans.

Plans for the management of disasters, emergencies and other broader contingencies have been developed in consultation with VicRoads and the emergency service agencies. These are held as separate documents that are cross-referenced in the Manuals.[138]

Operating Procedures for Plant etc.

The O&M Manuals contain detailed operating procedures for all mechanical plant and equipment including tunnel ventilation, communications, fire detection and control and lighting systems, as well as the traffic monitoring and control equipment common to all parts of the Link Road.

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131 Clause 8.6(b) of the Concession Deed and clause 8.4 of the ESEP Deed.
132 Clause 9(1)(b) of the Concession Deed and clause 9(1)(b) of the ESEP Deed. Clepco must regularly update the ESEP O&M Manuals in accordance with the ESEP O&M Requirements.
133 Clause 9.1 of the Concession Deed and Clause 9.1 of the ESEP Deed.
134 Part J Section 2.2 of the PS&TR and Part C Clause 2.1 of the ESEP O&M Requirements.
135 Clause 8.6(b) of the Concession Deed and clause 8.4 of the ESEP Deed.
136 Clause 6.2(b)(vi) of the Concession Deed. There is no equivalent provision under the ESEP Deed.
137 Clause 1.3(d) of the Concession Deed. There is no equivalent provision under the ESEP Deed.
138 Refer to paragraph 3.50.

Preventative Maintenance

3.46 The O&M Manuals contain a strategy of preventative maintenance and inspection to address component failure during service by specific procedures for the periodic (daily, weekly, monthly, etc.) inspection, routine maintenance and periodic replacement[139] and refurbishment of assets based on the estimated service life of each component together with performance trends.

Training

3.47 The O&M Manuals contain a description of a comprehensive series of training courses and a program for their implementation. The course providers include experienced outside agencies such as the Metropolitan Fire and Emergency Services Board (MFESB), the Metropolitan Ambulance Service and the Royal Automobile Club Victoria (RACV).

VicRoads Interface

3.48 The O&M Manuals contain procedures for data exchange and co-ordination of traffic management with VicRoads for activities on the roads outside the Link Road.

Arrangements with Other Agencies

3.49 TLO has entered into agreements with several other experienced agencies, such as towage companies[140] whose activities are subject to the plans and procedures contained in the Manuals.

Emergency Management Plan (EMP)

3.50 The PS&TR requires Transurban to develop an EMP in consultation with all emergency services, VicRoads and relevant municipalities.[141] The plan is required to identify responsibilities and develop procedures and diversionary and emergency access routes.[142] The EMP is analogous to plans for the rest of the road network.

3.51 The operational arrangements defined in the EMP include the following:

- Sequence of request for emergency services;
- Controlling agency for each respective emergency;
- Contact details for TLO's control centre;
- Communications provisions;
- Location of emergency response plan (DISPLAN) communications boxes;
- Emergency vehicles access provisions;
- Provision for access against the normal traffic flow;

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139 The O&M Manuals apply relevant VicRoads specifications and take into account the remaining asset life required at "Handover" on the expiry of the Concession Period as specified in the PS&TR Part K Section 6.18.

140 Such as RACV for road surveillance and incident response, Modern Towing for heavy towing and salvage and Transfield for maintenance services.

141 Part J Section 2.2 of the PS&TR and Part C Section 2.1 of the ESEP O&M Requirements.

142 Part J Sections 2.2 and 3.7.3 and Part K Section 6.3(a) and 6.10 of the PS&TR. Part C Sections 2.1 and 3.5.4 and Part D Sections 3.2(a) and 3.5 of the ESEP O&M Requirements.

- Media liaison; and
- Recovery and re-activation arrangements.

The EMP includes a sub-plan for the evacuation of the tunnels, which was developed in conjunction with the SES.

3.52 The EMP contains a requirement for the Emergency Management Planning Committee to meet every 6 months and review operational procedures. The committee comprises representatives from TLO, Transurban, the emergency services (Victoria Police, State Traffic Co-ordinator, MFESB, SES, Metropolitan Ambulance Service), VicRoads, rail representatives and relevant municipalities.

The EMP requires that an emergency exercise be conducted every year.

3.53 As part of the Completion process, the effectiveness of the EMP was tested in a table top exercise (in relation to the Domain Tunnel) and a simulated exercise (in relation to the Burnley Tunnel), involving the MFESB, Police, SES, Ambulance, Medical Displan and VicRoads. These exercises simulated traffic accidents involving fires in the tunnels and tested the respective procedures in the Manuals and the EMP.[143]

3.54 The PS&TR requires subsequent exercises to be conducted "periodically" to provide training to personnel and add value to Transurban's incident response training plan.[144] There is also a requirement for Transurban to assist in any emergency response plan exercise that may involve any part of the Link Road.[145]

Legislation

Overview of Legislation Governing Public Safety

3.55 The key contractual arrangements (i.e. Concession Deed, the ESEP Deed and the IFA) were ratified by the *Melbourne City Link Act 1995*[146] and take effect as if each of them were part of the Act.[147] The Act provides that in the case of an inconsistency between a provision of the relevant contractual arrangement and the Act or any other statute or law of Victoria, the provision of the relevant contractual arrangement prevails, and the enactment or law is modified to the extent of that inconsistency.[148]

3.56 A critical exception to this, from a public safety viewpoint, is that laws relating to health, safety, law and order, emergency services and emergencies are preserved by clause 2.17 of the Concession Deed.[149] The effect of this provision is that though the provisions of the relevant Deed generally have priority over other Victorian law

[143] The Burnley Tunnel simulation showed that the procedures were effective, but indicated the need for some hardware changes (notably the public address system in the tunnel) and the value of some procedural changes. All of the changes have been made.
[144] Part J Section 3.7.3 of the PS&TR and Part C Section 3.5.4 of the ESEP O&M Requirements.
[145] Part K Section 6.10 of the PS&TR and Part D Section 3.5 of the ESEP O&M Requirements.
[146] The *Melbourne City Link Act 1995* was assented to on 12 December 1995 and came into operation progressively, with all provisions in force by 12 December 1996.
[147] Sections 14(1), 15A(1) and 15C(1) of the *Melbourne City Link Act 1995*.
[148] Sections 16 and 17 of the *Melbourne City Link Act 1995*.
[149] Equivalent provision in clause 2.14 of the ESEP Deed.

(common law, equity and legislation), laws relating to health, safety, law and order, emergency services and emergencies continue to operate.[150]

3.57 The key Acts governing the public safety of City Link are the *Melbourne City Link Act 1995*,[151] (which was specifically enacted to facilitate the Melbourne City Link Project), the *Transport Act 1983* and the *Road Safety Act 1986* (which deal with the entire road network) and the *Emergency Management Act 1986* (which deals with the State powers in relation to emergencies).

3.58 A range of other legislation governing public safety applies to City Link,[152] as does other general legislation in force.[153]

Operation of City Link

Declaration of the Link Road and the Extension Road

3.59 The *Transport Act 1983* provides a detailed legislative regime in relation to "declared roads". The effect of the publication of a road declaration under the *Melbourne City Link Act 1995* is that the road specified in the declaration is deemed to be:

- A "declared road" within the meaning of the *Transport Act 1983*;
- A road open to, and for the use by, the public for passage with vehicles; and
- A highway within the meaning of the *Road Safety Act 1986*.[154]

3.60 The Minister has exercised powers under the *Melbourne City Link Act 1995*[155] to make the Link Road and the Extension Road declared roads. Thus, the normal legislative regime governing declared roads and highways applies to City Link. For example, the regulation of traffic and users of City Link (for instance setting speed limits and alcohol limits), vehicle registration and traffic offences applies in relation City Link in the same way as it does in relation to the rest of the road network.

Road Operation and Management Powers Conferred on Transurban and Clepco

3.61 The Concession Deed requires the State to confer on Transurban and the Trustee, legislative powers sufficient to discharge their obligations under the Concession Deed in respect of the construction, repair, maintenance and operation of the Link Road, including traffic management.[156] The State conferred these powers on Transurban by the *Melbourne City Link Act 1995*.[157] Thus, Transurban is given certain road maintenance and operation powers that VicRoads would otherwise have

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150 There is some uncertainty as to the scope of clause 2.17. Refer to paragraphs 3.64 to 3.70.
151 Note also *Melbourne City Link (General) Regulations 1999*.
152 For example *Local Government Act 1989*, *Occupational Health and Safety Act 1985*, *Road Transport (Dangerous Goods) Act 1995*, *Environment Protection Act 1970*, *Metropolitan Fire Brigades Act 1958*, *Public Safety Preservation Act 1958*, *Impounding of Livestock Act 1994*, *Gas Safety Act 1997*, *Electricity Industry Act 1997, Electricity Safety Act 1998* and regulations made under those Acts.
153 For example *Corporations Act 2001*.
154 Sections 61(3) and 93H(3) of the *Melbourne City Link Act 1995*.
155 Section 61 in respect of the Link Road, and Section 93H in respect of the Extension Road.
156 Clause 2.18 of the Concession Deed.
157 Section 62 confers those powers on Transurban to the exclusion of VicRoads, councils and the Docklands Authority.

in respect of City Link.[158] These are detailed in Schedule 5[159] to the *Transport Act 1983.*

Road operation and management powers are the powers relating to the operation, maintenance, and traffic management of freeways, State highways or declared roads.[160] They include the power to close roads.[161] Powers of a regulatory or enforcement nature are not included.[162]

3.62 There is a similar requirement in the ESEP Deed to give legislative authority to Clepco in respect of the use, management and operation of ESEP,[163] and analogous legislative provisions apply to Clepco.[164]

3.63 Despite contrary provisions in other legislation which confer road operation and management powers on agencies (such as VicRoads, municipal councils or the Docklands Authority),[165] these agencies are precluded from exercising those powers in respect of City Link. This is subject to the State's step-in rights.[166]

3.64 An exception is the operation of clause 2.17 of the Concession Deed, which preserves the operation of "Laws relating to matters relating to health, safety…emergencies…".

3.65 Section 55 of the *Transport Act 1983* confers on VicRoads the powers in Schedule 4 of the *Transport Act 1983*. Clause 1 of Schedule 4 confers on VicRoads the power to temporarily close roads and to temporarily stop traffic from using the closed roads [167] ("the relevant law"). The effect of clause 2.17 of the Concession Deed is that if the relevant law is a law "relating to matters relating to health, safety [or….] emergencies", VicRoads can temporarily close City Link (or part of it).

3.66 The term "law" includes Victorian statutes such as the *Transport Act 1983*.[168] As a matter of construction, it should be noted that clause 2.17 requires the relevant law to have a specified nexus with health, safety or emergencies, it does not require that health, safety or emergencies be the principal subject matter of the relevant law. The *Transport Act 1983* deals with a range of matters, including the establishment of VicRoads[169] and the conferral of functions and powers on VicRoads.[170] In performing its functions VicRoads must have regard to specified objects, including "efficient and safe movement of traffic".[171] Though the focus of the *Transport Act 1983* is transport, public safety is a key element of the Act and the exercise of powers under the Act.[172]

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158 Sections 56A and 56B of the *Transport Act 1983*.

159 Transurban (and Clepco in relation to the Extension Road) are charged with the carrying out of permanent works on and permanent improvements to and maintenance of City Link; constructing, improving and maintaining local access roads to serve City Link; causing to be removed, destroyed or blocked any means of access to or from City Link; and erecting and maintaining fences, posts or other obstructions along any part of City Link or entrance, approach or means of access to City Link.

160 Section 62(2) of the *Melbourne City Link Act 1995*.

161 Contained in Schedule 4 of the *Transport Act 1983.*

162 Clause 2.18 of the Concession Deed and clause 2.15 of the ESEP Deed.

163 Clause 2.15 of the ESEP Deed.

164 Section 93I of the *Melbourne City Link Act 1995* provides that road operation and management powers are also conferred on Clepco, to the exclusion of VicRoads, councils and the Docklands Authority.

165 The *Transport Act 1983*, the *Local Government Act 1989*, the *Docklands Authority Act 1991* or the regulations under those Acts.

166 Clause 9.11 of the Concession Deed and clause 9.11 of the ESEP Deed. Refer to paragraphs3.14 and 3.15.

167 The full text of clause 1 is "To temporarily close any road or any part of a road and to temporarily stop all traffic or classes of traffic thereon".

168 Refer to the definition of "law" in clause 1.1 of the Concession Deed.

169 Refer to section 15 of the *Transport Act 1983*.

170 Refer to sections 16, 38, 39, 41 and 55 of the *Transport Act 1983.*

171 Refer to section 16(3)(c) of the *Transport Act 1983*.

172 Refer also to section 16(h) and (i) (road safety strategies), 16(1)(j) (road safety prevention practices).

It therefore follows that the relevant law would have a nexus with safety, as it must always be exercised in the context of safety.

3.67 Does this mean that the relevant law has sufficient nexus with safety and is "a law relating to matters relating to safety"? The relevant law relates to matters (i.e. traffic management) which in turn relate to safety, as all traffic management issues necessarily have a safety component. The relevant law would thus seem to satisfy the Concession Deed test. If this analysis is correct, VicRoads could temporarily close City Link in the ordinary exercise of traffic management powers. This could be considered an unusual outcome, and contrary to arrangements with Transurban, which give Transurban a concession to operate City Link, with only limited capacity by the State or its agencies to intervene in the operation of City Link.

3.68 An alternative construction is that the relevant law only has the necessary nexus with safety if the law is exercised in the interests of safety. It is strongly arguable that this construction should be preferred as it is consistent with the arrangements with Transurban.

3.69 Another argument is that the relevant law should not be characterised as a law in relation to safety as it simply relates to temporary closure of roads. On this analysis the relevant law could not be characterised as having the necessary nexus with safety as that nexus would only occur in some circumstances. The test under clause 2.17 is not whether the law is exercised for the purposes of safety, but whether it can properly be characterised as "relating to matters relating to safety".

3.70 It is therefore not clear whether VicRoads can temporarily close City Link, and if it can, it is not clear whether VicRoads can do so in the ordinary exercise of its traffic management responsibilities, or whether it can only do so in the interests of public safety.

Regulatory and Enforcement Functions

3.71 The *Transport Act 1983*[173] empowers VicRoads to carry out regulatory and enforcement functions in respect of declared roads.[174] As these powers have not been conferred on Transurban and Clepco, they are exercised by VicRoads in relation to City Link in the same way as on the rest of the road network.

Traffic Management

3.72 The *Road Safety Act 1986* regulates traffic management on roads, including highways, dealing with matters such as the registration of motor vehicles, licensing of drivers, alcohol and drug offences, and speeding and parking infringements. The Link and Extension Roads are each a highway within the meaning of the *Road Safety Act 1986*.[175] Accordingly, the provisions under the *Road Safety Act 1986* apply to City Link in the same manner, and to the same extent, as they apply to other roads.

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[173] Refer to section 16 of the *Transport Act 1983*.

[174] Such as determining load limits and advisory speed limits for a road; maximum speed limits for travel on roads under construction or repair; establishing guidelines and requirements for the issue of vehicle mass and dimension permits; providing licensing and registration procedures; developing and implementing road safety strategies, education and training programs; and developing and implementing traffic management strategies and practices.

[175] Sections 61(4)(c) and 93H(3)(c) of the *Melbourne City Link Act 1995*.

3.73 The regulatory powers of VicRoads and the enforcement powers of the police (under the *Road Safety Act 1986* and regulations[176] made under that Act) apply to City Link. For example, in the exercise of these powers, permanent speed cameras have been deployed in the Burnley and Domain Tunnels and the public has been informed of their existence by fixed signage at the entry portals. Similarly, the regime with respect to traffic control items applies to City Link.[177]

3.74 In addition, vehicles carrying dangerous goods such as explosives,[178] liquefied gases, flammable, toxic and radioactive items carried as placarded loads are prohibited absolutely from using the Burnley and Domain Tunnels.[179]

3.75 The Concession Deed and the ESEP Deed stipulate that the provisions of laws relating to traffic and motor vehicles on, and the exercise of Victorian emergency service, health and police powers in relation to, highways apply with respect to the Link and Extension Roads.[180]

3.76 Each of Transurban and Clepco respectively is conferred the power to remove parked vehicles[181] or items that appear to be abandoned.[182] The power can be exercised if the vehicle is unlawfully parked or if in Transurban's opinion (or Clepco in respect of ESEP), the vehicle is likely to cause a danger to other road users, to cause traffic congestion or which is disabled or damaged.

Emergency Powers

3.77 The *Emergency Management Act 1986* provides for the organisation of emergency management in Victoria. State emergency response and recovery plans have been prepared for the co-ordinated response to all major emergencies by all agencies having a responsible role. Emergency is widely defined and specifically includes flood, fire, explosion, road accident or any other accident. The agencies having a responsible role include the SES, Victoria Police and the MFESB. Transurban and Clepco are deemed to be government agencies in the event of a declaration of a state of disaster.[183] Such emergency plans identify, in relation to each form of emergency, the agency primarily responsible for responding to the emergency, and its role in the event of an emergency.

3.78 In the event of a declaration of a state of disaster, emergency co-ordinators may take control of City Link and Transurban and Clepco's activities would be directed and co-ordinated by the Minister whose powers include the power to:

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176 VicRoads may exercise any of its powers under the Road Safety (Road Rules) Regulations 1999 on City Link, subject to the limitations of Section 99(1) of the *Melbourne City Link Act 1995.*

177 The Road Safety (Road Rules) Regulations 1999 set out the rules relating to, among others, installation of traffic control items. In relation to safety, regulation 305 enables Transurban (and Clepco) to erect, establish, display, maintain or remove traffic control items on the Link Road (or Extension Road). In relation to major traffic control items, it is necessary to obtain the written consent of VicRoads.

178 The Dangerous Goods (Explosives) Regulations 2000 impose restrictions on the transport of certain explosives through City Link tunnels and approach roads.

179 Under s9AA of the *Road Transport (Dangerous Goods) Act 1995*, the Competent Authority (who is the Victorian WorkCover Authority), may, by notice published in the Government Gazette, prohibit the transport of goods along a specified route. Notice of prohibition of the transport by road of dangerous goods which are placarded loads on specified parts of City Link including the tunnels was published in the Victoria Government Gazette No. S 186 on Monday 20 December 1999. Notice of prohibition of the transport of specified dangerous goods (liquefied gases in bulk) on the City Link Tunnel was published in the Victoria Government Gazette No. S173 on Wednesday 22 November 2000. In addition, the Dangerous Goods (Explosive) Regulations 2000 restrict the transport of certain explosives through these tunnels and approach roads.

180 Refer clause 9.7(b) of the Concession Deed and clause 9.7(b) of the ESEP Deed.

181 Section 114A of the *Melbourne City Link Act 1995.*

182 Section 114B of the *Melbourne City Link Act 1995.*

183 Section 98 of the *Melbourne City Link Act 1995.*

- Direct Transurban or Clepco to do or refrain from doing any act, or to exercise or perform or refrain from exercising or performing any function, power, duty or responsibility. Transurban and Clepco must comply with the direction, and the direction prevails over anything to the contrary in any Act or law;

- Declare that the operation of the whole or part of an Act or subordinate instrument which prescribes functions, powers, duties and responsibilities of Transurban or Clepco, is suspended in certain circumstances; and

- Take possession and make use of any person's property, as the Minister considers necessary or desirable for responding to the disaster.[184]

3.79 Transurban and Clepco may seek compensation for the taking and using of their property.[185]

General Legislation

3.80 The *Occupational Health and Safety Act 1985* regulates matters relating to the health, safety and welfare of persons at work. In addition to dealing with the safety of employees, every employer must ensure, so far as is practicable, that persons other than employees, are not exposed to risks to their health or safety arising from the conduct of the undertaking of the employer.

3.81 The *Environmental Protection Act 1970* implements a licensing system which imposes standards of air quality on operators such as Transurban (and Clepco).

3.82 Generally, the relevant statutory authorities and utilities are given wide powers to take action in the event of a gas or electricity emergency situation.[186] Such powers would apply in respect of City Link just as they would apply in respect of any other Victorian road.

Personal Liability of Directors

3.83 Certain breaches by Transurban, TLO or Clepco of a contractual requirement relating to public safety may also be a breach of a duty of a director or officer under the *Corporations Act 2001* or other legislation.

The *Corporations Act 2001* requires company directors and officers to exercise their powers and discharge their duties with the degree of care and diligence that a reasonable person would exercise in the circumstances, in good faith, in the best interests of the corporation and for a proper purpose. A director or officer who fails to discharge these duties may be held personally liable for the breach and any loss or damage that flow from that breach.

3.84 Other legislation also imposes personal liability on directors and officers of companies in prescribed circumstances.[187] Officers are variously described but usually include persons concerned in the management of a corporation. For example, under the *Occupational Health and Safety Act 1985*, any offence against

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[184] Section 24, *Emergency Management Act 1986*.
[185] Under section 24 of the *Emergency Management Act 1986*.
[186] Refer to *Gas Safety Act 1997*, sections 89 and 90, *Electricity Industry Act Part* 3A, s47C, *Electricity Safety Act 1998*, sections122 and 123.
[187] *Environmental Protection Act 1970, Occupational Health and Safety Act 1985, Public Safety Preservation Act 1958, Gas Safety Act 1997*.

the Act that is committed by a corporation with the consent of, or is attributable to any wilful neglect on the part of an officer, is also deemed to have been committed by the officer who is liable for the offence.

Chapter

4

Term of Reference 2

Evaluate whether these requirements adequately provide for public safety, and if appropriate, recommend:

(a) changes to the contractual arrangements that the State should negotiate and/or changes to legislation; and

(b) the likely impact on the State of such changes.

Introduction and Overview

Issues

4.1 A consideration of whether the contractual and legislative arrangements for City Link adequately provide for public safety raises two main issues:

- Whether the contractual requirements, particularly the Technical Requirements, are adequate to ensure that City Link is safe both now and for the duration of the Concession Period; and
- Whether the legal differences between the operation of City Link and the rest of the road network are adverse to public safety.

These matters are dealt with separately in this chapter.

Accident Rate on City Link

4.2 Although public safety is a key consideration in the design and operation of roads throughout the State, the statistics of accidents and fatalities on the State's roads make it clear that the public still faces a measure of risk in using roads.

4.3 The relatively short operational experience of City Link does not yet allow a statistically valid comparison to be made between the accident rate on City Link and comparable freeways. Nevertheless, the data collected for the overall road network suggests the performance of City Link is good. The rate of casualty accidents[188] on urban freeways varies. The casualty accident rate for older style inner urban 4-lane freeways is 16 casualty accidents per 100 million vehicle kilometres, whereas the casualty accident rate for higher standard newer freeways is 8.7 casualty accidents per 100 million vehicle kilometres.[189] These statistics apply to standard freeways, and exclude accidents on road interchanges. The current casualty accident rate for

[188] A "casualty accident" is an accident reported by the police in which a person is killed or injured.
[189] Current accident rates provided by VicRoads for Melbourne metropolitan freeways.

City Link (which includes accidents on road interchanges, in the tunnels, and on the viaducts) at 9 casualty accidents per 100 million vehicle kilometres[190] compares very favourably with the casualty accident rate on the rest of the State urban freeway network.

Methodology

4.4 The evaluation of the first issue, the adequacy of the contractual requirements, proceeds in two parts. The first part is an examination of a comprehensive (but not exhaustive) range of incidents and an assessment of whether the contractual arrangements adequately address those incidents – in short, to assess whether City Link is safe for users. The incidents considered are: motor vehicle accident or breakdown; fire, explosion, chemical spill or other emergency; and a failure in a structure.[191] Though particular kinds of incidents are dealt with separately, some public safety issues and responses will apply to a number of kinds of incidents.

The second part involves a consideration of whether the contractual regime is sufficiently robust to continue to deliver a safe regime for the duration of the Concession Period. The issue is twofold - whether the obligation to deliver the safety standards are in documents that are contractually enforceable by the State, and whether those enforceable contractual arrangements are sufficiently robust to ensure that operating standards, procedures and equipment are reviewed and updated throughout the Concession Period.

4.5 The analysis of the second issue, the differences between the City Link legal regime and the legal regime governing other roads, focuses on the fact that City Link is operated by a private company, not a State agency. It considers whether the contractual mechanisms, the legislative mechanisms and the extra legal mechanisms that encourage compliance, together with the powers of the State to intervene in the event of a significant breach by the Transurban Parties, are adequate from a public safety perspective.

Safety Features of City Link

Motor Vehicle Accident or Breakdown

Operation of the Traffic Management and Safety Systems

4.6 The principal difference between an accident or breakdown on a VicRoads freeway and a similar incident on City Link, is that the confined space in the tunnels (and to some extent the Elevated Roadway) increases the possibility that an ordinary incident may escalate. This difference is addressed by the Technical Requirements which require the installation, operation, maintenance and repair of a range of incident detection and communication systems, and the development of comprehensive incident management plans, as outlined below.

4.7 The automated incident detection system enables monitoring of City Link on a continuous basis and a rapid response to incidents.[192] The capacity of the systems to

[190] As reported by TLO.
[191] Refer to paragraphs 4.6 to 4.30.
[192] Refer to paragraphs 3.31 to 3.33.

provide a rapid response to incidents is a key safety feature of City Link. This feature is enhanced by the fact that there are a range of methods by which the City Link control room can be notified of an incident: automated incident detection system, operator monitoring of the closed circuit television or in response to calls by patrol vehicles equipped by 2 way radios or motorists using the emergency telephone system or mobile phones.[193]

4.8 The response to incidents is determined by the detailed incident management plans and response procedures (contained in the Manuals[194]) that are analogous to VicRoads response plans and procedures.

The actual response to an incident is frequently analogous to that on the rest of the road network. For example, in the case of a major motor vehicle accident, the EMP[195] would operate. Similarly, as with the rest of the road network, if the situation amounts to a State emergency, the provisions of the *Emergency Management Act 1986* would apply to enable emergency co-ordinators to take control of City Link.[196]

4.9 The response to an incident in the tunnels will sometimes be different from the response on the rest of the road network. For example, where a lane is blocked by a stationary car (due to a breakdown or incident), the lane use signals can be used to close a lane (or the entire tunnel) within minutes of detection of an incident, effectively isolating a vehicle and reducing the possibility of the incident compounding.[197]

4.10 Where there are changed traffic conditions (such as a lane closure), the variable message sign system, the public address system and the radio rebroadcast system can be used to communicate information to motorists.[198] In addition, the control room will arrange for the dispatch of a tow vehicle,[199] removing the blocking vehicle expeditiously. Moreover, the capacity to rapidly close the entire tunnel prevents the entry of further traffic and reduces the likelihood of an incident compounding.

4.11 In the unlikely event that the appropriate response involves evacuation of one of the tunnels, the communication systems required by the PS&TR[200] can be used in conjunction with emergency egress tunnels[201] to enable passengers to exit to the surface or reach the safety havens.

Reliability of the Traffic Management and Safety Systems

4.12 Although the possibility of a failure in the components that make up the traffic management and safety systems cannot be ruled out absolutely, the construction standards imposed in the design and construction of City Link, and the ongoing repair, maintenance and monitoring regime, combine to deliver adequate safety standards.

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193 Refer to paragraph 3.36 for details.
194 Refer to paragraphs 3.30, 3.37, 3.45, 3.50 and 3.51.
195 Analogous to the EMP developed for the rest of the road network, defining the responsibilities of the emergency service organisations, VicRoads and Transurban/TLO and procedures for dealing with the emergency.
196 Refer to paragraphs 3.77 and 3.78.
197 Refer to paragraph 3.36 for details.
198 Refer to paragraph 3.36 for details.
199 Refer to paragraphs 3.30 and 3.49.
200 Refer to paragraph 3.36 for details.
201 Refer to paragraph 3.28.

Construction Standards and Completion

4.13 The construction standards contained in the PS&TR, and the PS&TR requirement to comply with relevant Australian and international standards, quality assurance and proof engineering,[202] are important safety measures. Their value is enhanced by the Independent Reviewer's certification (as part of the Completion process) that the construction standards have been met. Moreover, the designers and technical advisers for City Link included international experts who commented favourably on the standards being applied to City Link.[203]

4.14 The Completion process provides significant safety protection. The Independent Reviewer (as part of the Completion process for each section of the Link Road) has certified both compliance with the contractual requirements[204] (including the PS&TR) and that CityLink was safe for traffic.[205]

4.15 An additional level of safety has been provided by an independent safety audit, commissioned by Transurban. The Independent Reviewer has advised that the additional audit has been properly carried out.

Repair, Maintenance and Monitoring Obligations

4.16 As noted above, the Transurban Parties are required to comply with a rigorous monitoring, maintenance and repair regime,[206] including preventative maintenance[207] and the State is able to monitor the performance of the Transurban Parties.[208]

This stringent maintenance, repair and monitoring regime provides a strong framework for ensuring protection against possible failure.

Operating Procedures and Personnel

4.17 The State has reason to have confidence that the Manuals[209] and the EMP[210] are both comprehensive in coverage and set appropriate procedures from a public safety perspective.[211] Not only have Transurban advised that the O&M Manuals (and the EMP) have been separately audited and reviewed by consultants, Ove Arup and Partners, but the Independent Reviewer, by a process of general overview and reasonable checking, has found the O&M Manuals to be of a high standard.[212]

In conducting this Review the Authority's consultant engineers assessed the Manuals and concluded that they contained no apparent gaps and set appropriate standards of operation. As part of this Review the emergency services were consulted and endorsed the EMP.

4.18 The Technical Requirements set comprehensive standards as to the expertise and training of operational personnel and the Manuals contain detailed training

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202 Refer to paragraph 3.25 for details of requirements.
203 International experts included US based Parsons Brinckerhoff.
204 Other than minor omissions or minor defects that do not adversely affect the safe use of that section. Refer to paragraph 3.3.
205 Refer to paragraph 3.3 for details.
206 Refer to paragraph 3.7.
207 Refer to paragraph 3.46
208 Refer to paragraphs 3.10 and 3.11.
209 Refer to paragraphs 3.42 to 3.49.
210 Refer to paragraphs 3.50 to 3.54.
211 Refer to paragraphs 3.30 and 3.45 for details.
212 In discussion with the Authority's consultants as part of this Review.

programs,[213] thereby minimising operator error. Operator error is further minimised by a high level of automation[214] and the requirement that the City Link control room be staffed by at least two operators during the day.[215]

4.19 The Review found that TLO has very experienced staff[216] and a commitment to on-going staff development and training. Moreover, to ensure the continued standard of the Manuals, TLO has implemented a quality management system with third party accreditation and a strong culture of continuous improvement. Six monthly meetings are held with the emergency services and comprehensive debriefing with all relevant parties occurs after major incidents.

Interface Procedures and Protocols

4.20 Interface procedures and protocols have been developed to deal with incidents requiring co-ordination with VicRoads, for example where the incident occurs on one of the Road Interchanges (i.e where City Link intersects with VicRoads roads), or where the response to the incident involves diversion of traffic to or from a VicRoads road.

4.21 The Review considers the interface issues are being managed effectively – the direct link between the City Link control room and the police, fire brigade, ambulance and VicRoads control centres, is in place and detailed interface protocols have been developed, including pre-agreed plans and procedures which incorporate appropriate and compatible City Link and VicRoads response procedures for incidents.[217]

The Review has found that the effectiveness of the management of the VicRoads/City Link interface has been enhanced by good working relationships and effective communication between the Transurban Parties, VicRoads and the emergency service organisations.

Fire, Explosion, Chemical Spill or Other Emergency[218]

4.22 While there is no indication that fires, explosions, chemical spills or other emergencies are more likely to occur on City Link than on the general road network, the distinguishing feature of the tunnel environment and to some extent the Elevated Roadway (that is, the confined space and in the tunnels the fact that smoke and fumes cannot dissipate into the general atmosphere or air above the road), increases the possibility that if vehicles are trapped in the tunnels or on the Elevated Roadway, the scale of the incident may be more serious.

4.23 The traffic management and safety features outlined in paragraphs 4.6 to 4.21 would apply equally to fires, explosions, chemical spills or other emergencies. The detailed incident management plans and the EMP include responses to these incidents. There are also a number of fire detection and protection features in the tunnels that militate against the escalation of a fire.[219]

Moreover, the tunnels are equipped with sophisticated mechanical ventilation systems that are designed to reduce the potential for fire having a serious impact on

[213] Refer to paragraphs 3.30, 3.41 and 3.47.
[214] Refer to paragraphs 3.31 and 3.33 for details.
[215] Refer to paragraph 3.32. In fact, there are three operators during the day and two at night in the Control Room.
[216] Recruited from organisations such as the Australian Military Services, Victoria Police, MFESB, RACV and the SES.
[217] Refer to paragraph 3.37.
[218] Bomb alert, flood, loss of power supply, etc.
[219] Refer to paragraph 3.34.

visibility and air quality by removing polluted and/or smoke-filled air from the tunnels.[220]

4.24 The likelihood of a large scale fire, explosion or chemical spill has been diminished by the prohibition of placarded loads carrying prescribed quantities of dangerous goods and hazardous substances from using the tunnels.[221]

Failure of a Structure

4.25 The structures have met the PS&TR requirements of compliance with the relevant Australian and international standards, quality assurance and proof engineering and have been subject to a general overview and reasonable checking by the Independent Reviewer.[222] Moreover, the strict maintenance, repair and monitoring regime (particularly the requirement to inspect each section of City Link at least once a month) should facilitate detection and enable timely remedial action to be taken.[223] The likelihood of a sudden collapse of a structure is therefore extremely remote.

4.26 There has been some speculation that a failure in a tunnel wall could lead to a collapse of the tunnel structure and flooding of the tunnels, or that without a physical collapse, the seepage of water could lead to flooding of the tunnels.

4.27 The likelihood of such a failure is extremely remote given the form of construction and the ground and water pressures acting on the tunnel structure. Should a crack occur in the tunnel, the water pressure would be rapidly released, thus removing the risk of destabilising movement. The water in-flow from such an incident would be well within the capacity of the tunnel drainage and pumping systems.

4.28 Moreover, the expert opinion obtained by TOJV (following the partial failure in a wall segment of the Burnley Tunnel on 19 February 2001) indicated not only that a future failure was unlikely, but opined that in the unlikely event of a future failure, there was an extremely low probability that the future failure would be worse than the failure on 19 February.[224]

4.29 Further works, enhancing the security of the connection between the Burnley tunnel wall and floor were undertaken by TOJV and completed in March 2002. The works following an extensive review of the tunnel structure by TOJV and its expert consultants. Quality processes, including design certification and proof engineering by expert consultants, were implemented and reviewed by the Independent Reviewer before the enhancement works commenced.

4.30 In the unlikely event that a failure did occur, the traffic management and safety features outlined in clauses 4.6 to 4.21 would apply and detailed incident management plans, developed in respect of such an incident, would be implemented,[225] including the closure of City Link or any part of it if it is necessary in the interests of public safety to do so.[226]

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[220] Refer to paragraph 3.35.
[221] Refer to paragraph 3.74.
[222] Refer to paragraphs 4.13 to 4.14
[223] Refer paragraphs 3.7, 3.9 and 3.38.
[224] Letter from Transurban to the Melbourne City Link Authority, dated 23 February 2001, attaching experts' reports. Transurban subsequently released the letter as an attachment to a Stock Exchange release in March 2001.
[225] Refer to paragraph 3.30.
[226] Refer to paragraph 3.12.

Conclusion

4.31 The Review concludes that City Link is at least as safe as other similar roads in the general road network. The requirements during the construction phase - the requirement to build in accordance with Australian and international standards; the use of quality assurance systems and independent proof engineering; and the involvement of the Independent Reviewer throughout the construction phase (and in particular certification, as part of the Completion process for each section, that the section was safe for vehicular traffic) – set standards that are at least equal to other roads.

4.32 In addition, the City Link arrangements require comprehensive traffic management and safety systems that enable the rapid detection of and response to incidents. The systems minimise the risk of escalation of an incident, particularly in the confined space in the tunnels and to some extent on the Elevated Roadway. Significantly, the arrangements require Transurban to update its level of technology consistent with good practice and current standards.[227] The Review found that the public safety and traffic management systems in the tunnels are equivalent to, or better than, those in the Sydney Harbour Tunnel or the Northbridge Tunnel in Perth. Features such as the emergency egress tunnel, the deluge system and smoke extraction system are in excess of what is required in tunnels overseas.

4.33 The efficacy of the traffic management and safety systems derives from the combination of sophisticated safety equipment and technology (with additional features in the tunnels and to a lesser extent on the Elevated Roadway) and effective incident management plans (both for incidents on City Link and protocols and procedures for dealing with the VicRoads/City Link interface) operated by skilled and trained personnel.

Legal Analysis of Safety Features

Traffic Management and Safety Systems

4.34 The traffic management and safety systems are described comprehensively but not prescriptively in the Technical Requirements.[228] The Transurban Parties are required to operate City Link in accordance with the Technical Requirements.[229]

Many features are described by performance measures – such as the requirement for a closed circuit television capable of continuous monitoring of the entire City Link or the requirement for an automated traffic detection system capable of detecting changes in traffic behaviour within 5 minutes of occurrence.[230] As the traffic management and safety equipment and technology need to be adequate for the duration of the Concession Period, description by performance measures is preferred, as it is flexible enough to provide appropriate standards as technology changes over the Concession Period. Though prescriptive standards have the advantage of defining precisely what is required and how it is to be delivered, they may not allow for the inevitable changes over the Concession Period.

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[227] Refer to paragraph 3.5
[228] Refer to paragraphs 3.23 to 3.38.
[229] Refer to paragraph 3.6.
[230] Refer to paragraph 3.33.

4.35 Other provisions describe the required features generally - such as the requirement for computer aided control of traffic, a fire detection system, or air quality monitoring and ventilation systems.[231]

The lack of specific standards does not pose difficulties, as the Transurban Parties are required to update their systems to the standards that would be maintained by a prudent operator, consistent with good practice and standards, as technology changes during the Concession Period.[232]

4.36 The definition of equipment and technology either by a generic description or by prescribing performance standards, combined with an overarching duty to update technology consistent with good practice and standards, imposes contractual requirements sufficient for the duration of the Concession Period.

Repair, Maintenance and Monitoring

4.37 The Deeds outline a clear repair, maintenance, monitoring and reporting regime[233] that must conform to the standards set in the Technical Requirements, the Design Documentation and the Manuals. The regime so prescribed is sufficiently flexible to accommodate changes over the Concession Period, as it requires the development of a proactive plan focused on both routine maintenance and replacement/refurbishment, with features such as inspections and appropriate monitoring equipment. The details of the program, addressing the life cycle of particular components, are contained in the Manuals to which the State is not a party. This is appropriate as it allows the program to address the changing components over the Concession Period. This does not weaken the State's position as the key requirements are contained in the Technical Requirements.

Operational Policies and Procedures

4.38 Operating policies and procedures, dealing with the management of incidents, have been incorporated into the current Manuals.[234] The State is not a party to the Manuals. Though the Transurban Parties are required to update the Manuals regularly in accordance with the Technical Requirements,[235] the Technical Requirements are largely static in this area – for example they do not require that the Manuals be reviewed at prescribed intervals, nor for the Manuals to meet detailed performance standards. There are however, general provisions that require safety to be an integral part of the operations. For example, the Transurban Parties are required to develop "polices and procedures to sustain the long-term operation" of City Link,[236] including the development of an incident management policy whose objectives include preventing or minimising loss of life or injury.[237] Moreover, they are required to implement a control system that provides "a secure environment" on City Link.[238] This means that the timing and content of updates to the Manuals must be consistent with public safety.

4.39 In addition, the State can obtain some comfort from the O&M Agreement that the timing and content of updates of the Manuals will be consistent with public safety.

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231 Refer to paragraphs 3.33 to 3.35.
232 Refer to paragraph 3.5.
233 Refer to paragraphs 3.7 to 3.9.
234 Refer to paragraphs 3.45, 0, 3.47 and 3.49.
235 Refer to paragraph 3.43, particularly footnote 134.
236 Refer to paragraph 3.44.
237 Refer to paragraph 3.30.
238 Refer to paragraph 3.24, particularly Part J, Section 3.2 of the PS&TR.

The O&M Agreement[239] which appoints TLO as the operator of City Link, requires TLO to prepare and update the Manuals. Importantly, the O&M Agreement requires TLO to be a "good practice operator" – to perform its obligations to the level of skill, diligence, prudence, foresight and experience that is within the top quartile of international operators of similar undertakings.[240] This obligation would include an obligation to update the Manuals to a standard that properly addresses public safety. Though the State is not a party to the O&M Agreement, and thus cannot enforce the agreement, as the agreement may not be materially changed without the State's consent,[241] it can require the "good practice operator" regime to remain part of the Agreement.

4.40 Furthermore, the State can gain some assurance that the current "good practice operator" standards will continue to apply, as there are other mechanisms that encourage good practices. The operation of City Link to date has indicated a commitment to public safety. Moreover, the Transurban Parties have commercial reasons to ensure that TLO (or any other operator) meets the standards of a "good practice operator" as their commercial success is linked to public confidence in the safe operation of City Link.

4.41 The current practices indicate a commitment by the Transurban Parties to review the Manuals frequently to ensure that public safety considerations are taken into account. However, the Manuals must remain operationally sound for the duration of the Concession Period. The possible changes during the Concession Period make it preferable for the Transurban Parties to have a direct contractual obligation to the State to ensure that the Manuals are reviewed and updated sufficiently often and to the appropriate standards.

4.42 The Review makes the following recommendation:

Recommendation:

That for the duration of the Concession Period, the Transurban Parties be required, by amendment to the contractual arrangements, to ensure that the Manuals are subject to:

- a program of ongoing review consistent with the conduct of a "good practice operator"; and
- a complete review, to the standard consistent with a "good practice operator", no less than once every two years.

EMP and Emergency Exercises

4.43 As noted earlier, the Technical Requirements require the development of an EMP, the conduct of a major exercise to validate the plan and the periodic conduct of subsequent exercises as a training mechanism.[242]

However, the updating mechanism is not perfect - the contractual requirement is to update the EMP regularly in accordance with the Technical Requirements,[243] but the

[239] Refer to paragraph 3.40.
[240] Refer to paragraph 3.41 for standards imposed on TLO under the O&M Agreement.
[241] Refer to paragraph 3.40, and particularly footnote 123.
[242] Refer to paragraphs 3.50 to 3.54.

Technical Requirements do not specify the frequency with which the EMP must be updated or the frequency of exercises. The practice currently adopted and incorporated into the EMP by the Transurban Parties address the gap - they have implemented the practice of conducting an emergency exercise once a year (some exercises being simulated and some table-top), and reviewing the EMP twice a year, via a committee comprising representatives of the emergency services, VicRoads and other relevant parties.[244]

4.44 As current practices meet adequate safety standards it seems that the gap could best be addressed by requiring the Transurban Parties by contractual amendment, to continue their current practices.

4.45 The Review makes the following recommendation:

Recommendation:

That for the duration of the Concession Period, the Transurban Parties be required, by amendment of the contractual arrangements:

- to conduct an emergency exercise at least once a year (with the requirement that at least once every three years the emergency exercise be a simulated exercise) in conjunction with the emergency services and other relevant organisations; and
- to review the EMP at least every 6 months via a committee comprising representatives of the emergency services, VicRoads and other relevant organisations.

VicRoads Interface

4.46 The Technical Requirements require the City Link control room to have a direct link with, and an interface capable of providing information to, the VicRoads traffic control and communications centre throughout the Concession Period.[245] Moreover, the Transurban Parties are required to maintain in their systems of operation a level of technology that would be maintained by a prudent operator of the Link, consistent with current good practice and standards.[246] These provisions are adequate as they require the technology implemented by the Transurban Parties to operate consistently with that of VicRoads over the entire Concession Period.

4.47 The Manuals contain protocols and procedures relating to the interface between City Link and VicRoads.[247] These documents need to be dynamic, continuously refined and altered jointly with VicRoads to meet changed circumstances. The Deeds' requirement that the Transurban Parties regularly update the Manuals in accordance with the Technical Requirements is of little assistance, as the Technical Requirements are silent as to the timing or frequency of the review or update of the Manuals.

4.48 The absence of detail on the standards and frequency of reviews/updates of the protocols and procedures discloses a gap. This gap will, in part, be filled by

[243] Refer to paragraph 3.43.
[244] Refer to paragraph 3.52.
[245] Refer to paragraph 3.37.
[246] Refer to paragraph 3.5.
[247] Refer to paragraph 3.48.

VicRoads who will be involved in the review of the procedures and protocols, and can influence the timing and content of changes. However, a contractual requirement, for the Transurban Parties (in conjunction with VicRoads) to ensure that the interface procedures and protocols are reviewed and updated sufficiently often and to the appropriate standards would strengthen the contractual arrangements. This issue is covered by the recommendation (in paragraph 4.42) dealing with the review of the Manuals. Furthermore the recommendation to establish a liaison committee (in paragraph 4.57) will assist in the development of the interface protocols and procedures.

4.49 A more serious concern is that over time, personnel in TLO and VicRoads will change, possibly reducing or eliminating the current informal communication and liaison. Moreover, over time complacency can set in. The recommendation relating to the conduct of emergency exercise and review of the EMP (in paragraph 4.44) and the recommendation to establish a liaison committee (in paragraph 4.57) will address these issues.

Other Legal Issues

General

4.50 It is important to note that much of the legal regime governing City Link applies to City Link in the same way as it does to the rest of the road network[248] (e.g. traffic regulation, dealing with matters such as registration of vehicles, licensing of drivers, alcohol and drug offences, speeding and parking infringements, speed limits and licensing requirements). The legislative regime under the *Transport Act 1983* governing highways and declared roads applies to City Link in the same way as it does to the rest of the road network.[249] The regulatory and enforcement regime under the *Transport Act 1983* and the traffic regime under the *Road Safety Act 1986*[250] apply to City Link in the same way as they do to the rest of the road network.[251] The road operation and management powers under the *Transport Act 1983* exercised by the Transurban Parties (and Clepco) are the same powers as those exercised by VicRoads, and are exercised subject to the same conditions and restrictions.[252]

4.51 The essential feature of the contractual and legislative regime is that subject to a narrow range of exceptions,[253] private companies (Transurban and Clepco) exercise the road management powers to the exclusion of VicRoads and other government agencies. This is to be contrasted with the State's direct control of the rest of the freeway network through VicRoads.

Monitoring by the State

4.52 The contractual arrangements grant the Transurban Parties a concession to operate City Link and the State the right to receive information about the operation of City Link.[254] Moreover, the State clearly has a role, in the public interest, to ensure that the Transurban Parties meet their contractual obligations and public safety continues

[248] Refer to paragraphs 3.59 to 3.60.
[249] Refer to paragraph 3.59
[250] Refer to paragraphs 3.72 to 3.76.
[251] For example, speed cameras.
[252] Refer to paragraphs 3.61 and 3.62.
[253] Refer to paragraphs 3.63 and 3.77.
[254] Refer to paragraphs 2.13, 3.10 and 3.11.

to be important. The central tool at the State's disposal is monitoring the performance of the Transurban Parties.

4.53 The State needs to receive appropriate information to enable it to perform its monitoring role. Though the Transurban Parties are required to provide detailed reports on a range of matters,[255] there are few prescribed reports relating to public safety. For example, although the Transurban Parties are obliged to report on repairs and maintenance regularly and on serious accidents and material disrepair or damage and remedial action on an incident basis,[256] the Deeds do not require reporting on a range of operational matters (such as response times, numbers of incidents, outages, or the provision of updates to the Manuals). This is not a contractual weakness – if the State reasonably requires information relating to City Link, the Transurban Parties are required to provide that information.[257]

4.54 The receipt of reports alone is not always sufficient. Often a proper understanding of the issues is only obtained through discussion. During the construction phase, the Project Co-ordination Group (PCG), a contractually mandated committee, with representatives of both the State and Transurban, provided a useful mechanism for discussion and the exchange of information. That committee's role is contractually limited to the construction phase. The Link Integration Committee, another contractually mandated committee, only deals with traffic management issues at the VicRoads/City Link interface and does not therefore cover the full gamut of public safety issues.

During the Concession Period a range of operational issues which have a public safety component are likely to arise (e.g. consistency of technology and operating procedures between VicRoads and City Link, on-going management of VicRoads-City Link traffic interchanges and interfaces, traffic diversion to and from City Link etc). It would be useful to have a committee, similar to the PCG, to operate during the operations phase of City Link to provide an on-going forum, at senior level, for liaison on operational issues. This will enable early identification of issues and thus facilitate the State's performance of its information gathering and monitoring role.

4.55 Significantly, the contractual arrangements make it clear that there will be on-going involvement of VicRoads and the emergency services in City Link public safety issues.[258] The committee could thus provide a forum for the flow of information between VicRoads, the emergency services, Transurban, TLO and the State, facilitating the review of EMP and procedures and protocols for the operation of the VicRoads/City Link interface. It would also assist in maintaining on-going relationships between the organisations.

4.56 There may be circumstances where the receipt of information and informed discussion is insufficient, as this does not enable the State to verify that the information provided is correct. For example, the State may want to verify that key components will continue to perform adequately by investigating the components rather than relying solely on maintenance and repair records provided by the Transurban Parties. It is considered that this objective can be met if the State is given the power to commission "spot audits" of equipment and systems. It is not considered necessary to institute a comprehensive or annual audit regime as the objective can be met by conducting "spot audits" without the cost of a full audit.

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[255] For example, detailed financial reporting is required by clause 17 of the Concession Deed and clause 17 of the ESEP Deed.

[256] Refer to paragraphs 3.9 and 3.10

[257] Refer paragraph 3.11.

[258] Refer paragraphs 3.32, 3.37 and 3.48 to 3.53.

4.57 The Review makes the following recommendations:

Recommendations:

1. That a committee be formed by amendment to the contractual arrangements to operate during the Concession Period with the following features:

   (a) ***Membership*** The membership should comprise senior representatives of Transurban, TLO and the State, (i.e. the agency responsible for monitoring the City Link arrangements on behalf of the State, VicRoads, Victoria Police, MF&ESB, Metropolitan Ambulance Service) and be chaired by a nominee of the Minister.

   (b) ***Role*** The role of the Committee should be to provide an avenue for the flow of information and liaison between Transurban, the State and its agencies. The Committee would not have the power to bind its parties.

   (c) ***Subject matter*** The Committee should deal with matters relating to the operations of City Link, such as traffic integration matters, public safety, changing standards, incidents and co-ordination and consistency with the rest of the road network. It is suggested that public safety be given detailed consideration by the Committee, particularly following the six monthly TLO/emergency service meetings and the annual emergency exercise.

   (d) ***Meetings*** The Committee would meet at prescribed intervals, may meet more often if so determined by the Committee and would determine its own procedure and agenda.

   The existing committees established by the Deeds should be replaced with this Committee.

2. That the State be given the capacity to commission "spot audits" and that the Transurban Parties be required to provide the State with access to such information, equipment and systems as the State may reasonably require in conducting the audit.

Contractual Remedies

Step-in

4.58 The central aspect of the State's monitoring role is to ensure compliance with the contractual arrangements.

4.59 Should monitoring prove inadequate, the State can in certain circumstances, step-in and operate City Link.[259] There are 3 kinds of circumstances where public safety could be at risk: where the Link Road should be closed; where City Link has not been properly maintained and repaired; or where operating procedures are deficient. Each

[259] Refer to paragraphs 3.14 to 3.17.

of these circumstances can give rise to an Operating Default if the default increases the risk of imminent death or injury to users of City Link.[260]

In each of these cases, the State can exercise its step-in rights if the Operating Default *poses or is likely to pose* a risk to public safety. This means that the State can step-in *before the risk crystallises*. In the case of an urgent matter – for example the need to close part of the Link Road where the risk is immediate and serious - the State can, by brief telephone conversation, give the Transurban Parties notice to close the relevant section *before the risk crystallises,* and require immediate closure. Closure can be effected quickly – in the case of the tunnels, it can be effected in 5 minutes.[261] A failure by the Transurban Parties to respond promptly would enable the State to step-in and close the relevant section.

4.60 The strength of the step-in regime is that it enables rapid intervention in urgent circumstances *before the risk crystallises*. If the State believes that it is necessary to step-in as a matter of urgency, it could do so pending resolution of any dispute as to whether an Operating Default has occurred or as to the measures to remedy that default.[262]

4.61 The limitation of the regime is that, being a contractual regime, the State's rights are circumscribed by contract, both as to the defaults covered and the procedure to be followed. Some circumstances that raise public safety concerns may not give rise to State step-in rights. For example if the default did not relate to maintenance and routine operation of City Link, but did pose a risk of death or injury, step in rights would only be available if the default increased the risk of *imminent* death or injury. Similarly, the requirement to give Transurban an opportunity to remedy the default can cause an undesirable delay in dealing with a public safety issue, with potentially adverse effects on public safety.

4.62 In some circumstances it will not be clear whether the step-in regime is available to the State. For example, where an Operating Default occurs over a period of time – typically a failure to maintain and repair or a decline in operating standards – there may be debate as to whether the default has become serious enough to meet the requirements for step-in under the Deeds. Similarly there may be debate as to whether the prescribed procedure has been properly followed so as to trigger the State's right to step-in. This uncertainty could hinder the State's capacity to use the step-in regime to respond promptly and effectively to some public safety issues.

4.63 It is arguable that as risk transfers on the exercise of step-in rights,[263] the State would be loath to step-in. A decision as to whether to step-in is a matter for the State to determine at the time in the context of particular circumstances– from a contractual point of view it is useful that step-in rights exist.

Equitable Remedies

4.64 The remedies of specific performance and injunction have limited application.[264] Orders of specific performance, being discretionary and subject to the requirement that the remedial actions be clearly specified, will not be available for all contractual breaches. Remedies for some contractual breaches will be readily specifiable (e.g. close a section of City Link). Others, such as developing operating procedures, will

[260] Refer to paragraph 3.14.
[261] Refer to paragraph 6.11.
[262] Refer to paragraphs 3.14 to 3.17.
[263] Refer to paragraph 3.16.
[264] Refer to paragraph 3.21.

not be capable of precise description, as the adequacy of the standards is a matter of professional judgement that is not capable of clear reduction to writing.

Exercise of Legislative Powers

4.65 In the event of an emergency the State can exercise emergency powers under the *Emergency Management Act 1986* to take over City Link for the duration of the emergency.[265] These powers only apply when the Premier declares a "state of disaster" due to an emergency which constitutes, or is likely to constitute, a significant or widespread danger to life or property.[266]

4.66 Where the incident is less than an emergency sufficient to trigger the exercise of powers under the *Emergency Management Act 1986*, but is such as to require the closure of City Link (or part of it) in the interest of public safety, VicRoads may be able to exercise its power, under the *Transport Act 1983*, to close City Link (or a part of it).[267] However, it is not clear whether VicRoads has the power to close City Link (or part of it), and if it does, whether VicRoads can only exercise that power in certain circumstances. It is desirable for the legal regime to be clear on this matter, and accordingly it is recommended that the contractual arrangements be amended to put this matter beyond doubt.

4.67 The existence of such a power is a significant public protection as it enables the State's road agency to intervene in the interests of public safety, if in its expert opinion, it is necessary to do so. This would be particularly valuable given that the State's contractual rights to step-in and operate City Link are limited by the Concession Deed.[268]

4.68 The Review makes the following recommendation:

> *Recommendation:*
>
> That the contractual arrangements be amended to clarify that VicRoads' power under the *Transport Act 1983* to close roads, applies to City Link where a closure would be in the interests of public safety.

Other Factors

4.69 It is possible that commercial pressure to maximise profits could lead to a reduction of expenditure on maintenance and operation, with a concurrent drop in standards. This possibility needs to be balanced by the countervailing commercial incentive to maintain a safe performance in all aspects and operation of City Link so as to attract and maintain patronage. The directors of the Transurban Parties are likely to be cognisant of their duties as directors (and the scope for personal liability for beach of some of those duties) and careful to ensure that those duties are adhered to and public safety given priority.

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[265] Refer to paragraphs 3.77 to 3.79.
[266] Refer to section 23 and 24 of the *Emergency Management Act 1986*.
[267] Refer to paragraphs 3.56 and 3.64 to 3.69.
[268] Refer to paragraphs 4.58 to 4.63.

4.70 The contractual arrangements are for more than 30 years, requiring the Transurban Parties to have an on-going relationship with the State. This gives the State a capacity to influence the Transurban Parties.

Conclusion

4.71 The Review considers that legislative or contractual changes to the existing arrangements should only be recommended if the current arrangements are inadequate or unclear.

4.72 The State has the capacity to influence the Transurban Parties, through its monitoring role, its commercial relationship with the Transurban Parties and its role as a representative of the public interest. The commercial pressures on the Transurban Parties could operate to give safety a high priority, or the pressures to cut costs could lead to a reduction in standards. To date, the performance of the Transurban Parties in relation to public safety provides no grounds for concern.

4.73 In addition, the State has the capacity, in certain circumstances, to step-in and operate City Link in the interests of public safety, or to seek equitable relief. This is enhanced by the State's residual legislative capacity to intervene in limited circumstances under the *Emergency Management Act 1986*. The combination of these rights gives the State the right to intervene in a wide range of circumstances. The Review considers that there may be some circumstances where the combination of these rights is insufficient, but that the gap should be filled by making it clear that VicRoads may close City Link (or part of it) if it is necessary to do so in the interests of public safety (as recommended in paragraph 4.68).

4.74 The Review considers that the contractual and legislative regime properly places the State in a monitoring role. The monitoring role should be strengthened and provision made for the State (through its agency) to take an operational role only in extreme circumstances.

Impact of Proposals on the State

4.75 The recommendations regarding the conduct of emergency exercises and the review of the EMP and the Manuals (including the protocols and procedures for the interface with VicRoads) require amendment of the contractual arrangements. These changes will have to be negotiated with the Transurban Parties. They do not involve any shift of risk to the State.

4.76 The recommendation, that a committee be formed to function during the operational phase, will involve contractual changes. The State will need to negotiate those changes with Transurban.

This recommendation does not involve a change in the role of the State or Transurban – it provides a mechanism that will assist the State in performing its monitoring role. The recommendation is unlikely to involve any shift in risk to the State as the proposed committee would not bind the parties to the Deeds or require them to take any particular action. This would leave the Transurban Parties free to operate City Link and the State to monitor that operation in accordance with the contractual and legislative regime.

4.77 The recommendation, that the State have the capacity to commission "spot audits" involves the State obtaining more information. This could subject the State to criticism for failing to obtain particular information, or for obtaining information, but not acting on it. To some extent, given the public expectation that the State act in the public interest with respect to safety and the information already provided to the State, these criticisms could be made even without the audit power.

The capacity to commission "spot audits" is unlikely to involve a shift of risk to the State. In contrast, a full auditing power could lead to a risk shift - for example if a public safety risk which was not identified by the State crystallised and caused significant injury, it could be argued that the State was liable for the injury. Such an outcome would be inconsistent with the nature of the contractual arrangements which impose on the Transurban Parties (not the State) the duty to ensure that public safety standards are met.

The implementation of the recommendation to commission spot audits involves a change to the contractual arrangements and will need to be negotiated with the Transurban Parties.

4.78 The implementation of the recommendation to clarify that VicRoads has the legislative power to close City Link (or part of it) where a closure would be in the interests of public safety would involve an amendment to the contractual arrangements and would need to be negotiated with the Transurban Parties.

4.79 It is expected that this reserve power would be exercised rarely (if at all). The exercise of the power may, in certain circumstances, be an act of prevention[269] by the State or its agency. The power would need to be exercised with care as acts of prevention may trigger the material adverse effect regime in the Concession Deed.[270] Should a successful material adverse effects claim be brought, the Transurban Parties will be entitled to compensation as a result of the act of prevention.

4.80 Though the Review considers that the implementation of the recommendation would be a clarification of VicRoads' legislative powers, it may be that the implementation of the recommendation would constitute a change of law. It possible that, as a change of law, the implementation of the recommendation could give rise to a shift of risk to the State or its agencies - that is it could render VicRoads, rather than Transurban, legally responsible to close the City Link in certain circumstances. This risk would be ameliorated by the fact that VicRoads would be able to close City Link only in limited circumstances.

[269] Refer to clause 1.1 of the Concession Deed which defines an act of prevention as "as act of prevention….. of the State or a Victorian Government Agency which prevents , hinders or disrupts the Company or the Trustee in the implementation of the Project…". The implementation of the Project includes keeping City Link open to vehicles and imposing tolls on those vehicles.

[270] Refer to clauses 2.9 to 2.11 and item 1 of the Appendix of the Concession Deed.

Findings

4.81 The Review makes the following findings:

1. City Link is safe for users.

2. The contractual arrangements, particularly the Technical Requirements, and to a lesser extent, the Manuals, prescribe a high standard of safety which satisfactorily address the safety issues posed by the confined space in the tunnels (and to a lesser extent) the confined space on the Elevated Roadway).

3. Some of the safety features of the tunnels exceed Australian and international safety standards.

4. The contractual arrangements adequately provide for the updating of technology over the Concession Period.

5. The Manuals will need to change over time to address changed circumstances and must be updated in accordance with the Technical Requirements.

6. Though the Technical Requirements contain some performance measures and the Concession Deed itself sets some public safety measures, the contractual arrangements do not require the Transurban Parties to review and update the Manuals over the life of the Concession.

7. Similarly, the contractual requirements do not require the VicRoads/City Link protocols and procedures (which form part of the Manuals) to be updated.

8. There is no contractual specification as to the frequency with which the EMP must be reviewed or the frequency with which emergency exercises must be conducted.

9. The contractual arrangements envisage that the State's central role is to monitor the operation of City Link by the Transurban Parties and to intervene in operations only in extreme circumstances where public safety is at risk.

10. The State's monitoring role could be enhanced by the establishment of a committee (comprising representatives of the State and its agencies, Transurban and TLO) which could facilitate the flow of information and liaison.

11. The State's monitoring role could be enhanced by authorising the State to conduct "spot audits".

12. The combination of the contractual capacity to "step-in", the State's monitoring role, and the State's capacity to exercise emergency powers enable the State to intervene in the interests of public safety in a wide range of circumstances.

13. It is unclear whether VicRoads can close the Link (or part of it) if it is necessary to do so in the interests of public safety.

14. The fact that a private company operates City Link does not adversely affect public safety as the contractual and legislative arrangements provide a robust regime.

Chapter

5

Term of Reference 3

Suggest the appropriate government role, and the structure and resources that are required, in relation to public safety aspects of the Link.

The Review should also advise as to the government structure and resources needed for on-going management of the contractual arrangements with Transurban.

Introduction

5.1 In order to advise on the structure and resources required for the State to fulfil its functions in relation to public safety and more broadly for the administration and management of the contractual arrangements with the Transurban Parties, the Review :

- Outlines the State's ongoing public safety requirements;
- Describes the scope of tasks needed to be performed by the State in relation to the contractual arrangements; and
- Recommends a set of factors for Government consideration in determining the appropriate structure for ongoing management.

5.2 Four models for the management of the contractual arrangements with the Transurban Parties, including public safety functions, are discussed. This information was provided to Government in its consideration of future State management arrangements for City Link.

5.3 Subsequently, the Government passed the *Melbourne City Link (Further Amendments) Act 2001* that established the position of Director, Melbourne City Link and imposed a number of statutory functions on that position. The new position of Director, Melbourne City Link came into operation on 1 January 2002.[271]

Context

5.4 The contractual arrangements have set in place a complex commercial and legal relationship between the State and the Transurban Parties which will last for about

[271] Refer to paragraph 5.17 and footnote 301.

37.75 years.[272] As such, it will affect a large percentage of the State's households and businesses on a daily basis. Moreover, Transurban is one of the top 100 publicly listed companies listed in Australia, with an expected annual revenue in excess of $200 million. The contractual arrangements are complex, with a potential for significant financial implications and risk shift in the operation of City Link and its interface with the metropolitan road network.

5.5 The State will need to ensure that the performance obligations of the Transurban Parties under the contractual arrangements are being met. The State is also the ultimate recipient of the infrastructure at the end of the Concession Period, and thus the maintenance and structural integrity of all civil engineering elements will be an important issue during the entire life of the Concession.

5.6 From the State's perspective, the relationship with the Transurban Parties is dynamic and involves the management of a broad number of diverse policy issues, including transport, tolling and customer issues. The management of the Concession is therefore more complex than that required for the management of a State major urban freeway.

Ongoing State Safety Role

5.7 Effective monitoring of the maintenance of all aspects of the safety regimes is the key ongoing role for the State. To achieve this the State will need to allocate appropriate resources and determine workable administrative structures. In addition the State needs to continue to manage, in liaison with the Transurban Parties/TLO, Road Interchanges and the VicRoads/City Link interface.[273]

5.8 The State needs to monitor the performance by the Transurban Parties of their obligations with respect to public safety, including:

- Compliance with the Technical Requirements in relation to safety and traffic management;[274]
- Operational performance in accordance with the Technical Requirements and Manuals,[275] including regular updating of the Manuals;[276]
- Implementation of technology for operation consistent with that of VicRoads over the entire Concession Period;[277]
- Updating technology in its system of operation, maintenance and repairs;[278]
- Reporting to the State on maintenance and repairs carried out, serious accidents, and material damage to City Link;[279]
- Maintaining and prompt carrying out of repairs to the standards set out in the Technical Requirements, the Design Documentation and the Manuals;[280]

[272] Refer to paragraph 2.13, particularly footnote 31.
[273] Refer to paragraphs 3.37 and 3.48.
[274] Refer to paragraphs 3.6, 3.7, 3.9 to 3.11, 3.23, 3.30 to 3.36 and 3.38.
[275] Refer to paragraphs 3.44 and paragraphs 3.45 to 3.49 for details of the Manuals.
[276] Refer to paragraph 3.43.
[277] Refer to paragraphs 3.37 and 4.46.
[278] Refer to paragraph 3.5.
[279] Refer to paragraph 3.10.

- The management of traffic incidents and emergencies;[281]

- Maintenance of communication with VicRoads on interface protocols and procedures for traffic incidents[282] and emergency management;[283] and

- Compliance with environmental requirements and the law generally.[284]

Wider Ongoing State Tasks to be Performed

5.9 Below are described a number of the key management tasks in addition to the safety role, to be performed by the State. The list is not exhaustive but is indicative of the breadth of work required over the Concession Period.

Commercial and Legal

5.10 Commercial and legal issues are identified below.

- **Management of Ongoing Commercial Issues** – The State or the Transurban Parties are likely to seek to change aspects of the agreements over the Concession Period. Hence, commercial issues will arise and will need to be negotiated and documented;

- **Government Directed Benefits**[285] **and Compensable Enhancements**[286] – The contractual arrangements with the Transurban Parties provide some opportunities for the State to reap commercial benefits from certain State actions which improve the revenue of the Transurban Parties. These will need to be identified and negotiated with the Transurban Parties;

- **Negotiating any Material Adverse Effect Claims**[287] – The contractual arrangements provide the Transurban Parties with rights of redress in certain circumstances. The implications for the State can be significant in terms of financial or risk exposure. These will need to be negotiated and managed;

- **Disputes under the Contractual Arrangements** – Management will be required to resolve any contractual disputes that may arise, including litigation;

- **Amendments to the Contractual Arrangements** – From time to time, amendments to the contractual arrangements (i.e. the Deeds) will be required as a result of commercial negotiations or other policy or legislative changes. These will need to be negotiated and documented;

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280 Refer to paragraphs 3.7, 3.38 and 3.46.
281 Refer to paragraphs 3.6, 3.23, 3.30, 3.45 and 3.50 to 3.54.
282 Refer to paragraphs 3.37 and 3.48.
283 Refer to paragraph 3.50.
284 Refer to paragraphs 3.80 to 3.82.
285 Refer to clause 1.1 of the Concession Deed and clause 1.1 of the ESEP Deed for the definition. It covers certain changes, implemented to address a Material Adverse Effects claim by the Transurban Parties and benefit the Transurban Parties.
286 Refer to clause 1.1 of the Concession Deed and clause 1.1 of the ESEP Deed for the definition. It covers changes to the transport network (by the State) that provide a benefit to the Transurban Parties.
287 Refer to clause 2.6(g) of the Concession Deed and clause 2.6(f) of the ESEP Deed for the definition. Also refer to clauses 2.9 to 2.12 and clause 16 of the Concession Deed and clauses 2.9 to 2.12 and clause 16 of the ESEP Deed.

- **Legislative Changes** – Changes to the *Melbourne City Link Act 1995* or other State legislation affecting the Transurban Parties will arise or be necessary as a result of government policy changes or to ratify other possible agreements with the Transurban Parties; and

- **Monitoring of Transurban Ownership Issues** – The contractual arrangements require the Transurban Parties to obtain State approval for substantial changes to ownership or control of the Transurban Parties.[288]

Financial

5.11 Financial issues are identified below.

- **Concession Note Matters**[289] – The State will receive Concession Notes every six months to a value of $95.6 million per annum for approximately 28 years of the Concession Period, and less thereafter. These are cashable providing certain financial criteria are met. They may have substantial budgetary impact and require accounting and GST management;

- **Transurban Insurance Matters** – The Transurban Parties are required to maintain various insurances, including some for protection of the State in certain circumstances.[290] The State needs to be assured that these are in place;

- **Traffic Model and Financial Model**[291] – Transurban is required to provide the Traffic Model and Financial Model, updated to include actual data, by 30 September each year. The State should audit the material received; and

- **Audit of Traffic Volumes** – A check on actual traffic volumes on behalf of the State needs to be undertaken. [292]

Tolling

5.12 Tolling issues are identified below.

- **Monitoring Developments of the Tolling System** – Further developments of the tolling system are expected and the State will need to monitor these developments to protect contractual and community interests;

- **Monitoring Tolling Escalation** – The Transurban Parties can escalate tolls quarterly[293] and reduce tolls with the approval of the State.[294] These need to be verified to ensure the Transurban Parties are tolling in accordance with the contractual arrangements; and

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288 Refer to clause 14.5 of the Concession Deed and clause 14.5 of the ESEP Deed.

289 Refer to clauses 1.1 and 3.3(d) and Schedule 4 of the Concession Deed. No Concession Notes are payable under the ESEP Deed.

290 Refer to clauses 13.4 to 13.6 of the Concession Deed, clauses 13.3 to 13.5 of the ESEP Deed and clause 9 of the Master Security Deed which imposes controls on the use that the Transurban Parties can make of insurance proceeds.

291 Refer to clause 17.4 of the Concession Deed and clause 17.3 of the ESEP Deed.

292 Refer to clauses 17.4 and 17.5 of the Concession Deed and clauses 17.4 to 17.5 of the ESEP Deed.

293 Refer to clause 9.2(d) and clauses 2, 3, 4 and 5 of Schedule 3 of the Concession Deed; clause 9.2(d) and clauses 2, 3, 4 and 5 of Schedule 3 of the ESEP Deed and clause 10.7 and clauses 2, 3, 4 and 5 of Schedule 4 of the IFA.

294 Refer to clauses 4(d), 5.3(b), 6.4(b) of Schedule 3 of the Concession Deed and clause 4(d), 5.3(b), 6.4(b) of Schedule 3 of the ESEP Deed.

- **Development of New Tolling Technologies** – Transurban is required to keep the Tolling System up-to-date[295] and to obtain the approval of the State prior to making any material change to the Tolling System.[296] The State will need to monitor technological developments and ensure the Transurban Parties' compliance with these obligations.

Engineering

5.13 Engineering issues are identified below.

- **Construction Matters** – The rectification of defects or damage (including a range of minor omissions and minor defects identified at Completion of sections of the Link[297]) must be undertaken to meet the lifetime requirements set out in the Concession Deed.[298] The State needs to be satisfied that the design and quality of any construction work is in accordance with the requirements;

- **Traffic Operations** – Interface issues between City Link and the connecting roads need to be managed to ensure consistent and balanced operation;[299]

- **Hydro-geology Monitoring** – Operation of the tunnels requires the ongoing management of a dynamic groundwater management system which will ultimately be inherited by the State. Issues such as water quality and management of any surface settlement require State overview;

- **Tunnel Operations** – Tunnels present a different driving environment. Given the increasing development of road tunnels, it is vital to ensure that the standards of operation and safety systems are maintained at the highest standards;

- **Road Operations** – City Link now forms a strategic new element of the State's urban road network. Uniformity of standards across the road network is essential and will need to be monitored; and

- **Road Maintenance** – The contractual arrangements set out intervention levels to ensure that a proper standard of road maintenance is achieved.[300] In addition to obvious issues such as road safety, it is important that the State can verify that maintenance levels are adequate to ensure the physical life of the road.

5.14 The tasks above demonstrate the need for a role broader than the monitoring principally identified for public safety. These wider tasks reflect the significance of the State's commercial relationship with the Transurban Parties. The skills required include legal, commercial, financial, engineering and broad policy advice across a range of diverse matters including public safety, tolling, transport policy and customer relations.

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295 Refer to clause 14.3(f) of the Concession Deed and clause 14.3(d) of the ESEP Deed.
296 Refer to clause 9.2(f) of the Concession Deed and clause 9.2(f) of the ESEP Deed.
297 Refer to paragraph 3.3 for a description of the Completion process.
298 Refer to clauses 7.8 and 8.12 of the Concession Deed. There are no analogous provisions in the ESEP Deed.
299 Refer for example to paragraph 3.37.
300 Refer to paragraphs 3.7, 3.10, 3.38 and 3.46.

Factors for Administration of the City Link Arrangements

5.15 In its consideration of an appropriate administrative structure, the Review considered that the selected structure should:

- ensure clear accountability for the ongoing management of the contractual arrangements;
- report to one Minister on all aspects of the management of the Concession
- ensure access to, and co-ordination of, high level skills in commercial, legal, financial and technical disciplines on an ongoing basis; and
- ensure appropriate ongoing interface with broader Departmental issues.

Models for the Management of the Contractual Arrangements

5.16 Based on the factors identified above, the following four models were put forward for Government consideration. Positive and negative factors associated with each model and resourcing requirements are outlined.

5.17 Option 2 (below) was adopted by the passage of legislation establishing the statutory position of Director, Melbourne City Link and imposing a range of statutory functions on the Director. The position sits within the Department of Infrastructure.[301]

Option 1 – Statutory Authority (Board)

5.18 This option involves the retention of the Melbourne City Link Authority, with some modification of its statutory responsibilities to cover the operational phase.[302]

5.19 This option would ensure clear accountability for the ongoing management of the contractual arrangements and reporting to one Minister on all aspects of the management of the Concession.

5.20 The Review considered that if this option were selected, the Authority should be resourced by the Department of Infrastructure and report to the Minister for Transport. This would enable broader transport and operational interface issues to be addressed.

5.21 The retention of a statutory authority would provide a source of independent advice to Government and facilitate the retention of corporate memory.

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[301] See section 4 of the *Melbourne City Link (Further Amendment) Act 2001 No. 78/01,* which inserted sections 6A and 6B in the *Melbourne City Link Act 1995*. The *Melbourne City Link (Further Amendment) Act 2001* received Royal Assent on 27 November 2001.

[302] The powers and functions of the Authority deal primarily with the bid/evaluation and construction phases of the City Link Project. See in particular sections 19 and 20 of the *Melbourne City Link Authority Act 1994*. That Act was repealed by section 38 of the Melbourne City Link (Miscellaneous Amendments) Act2000, which came into force on 28 February 2002.

5.22 The Authority would require continued support of staff with skills in commercial, legal, financial and technical disciplines.

5.23 Under this option, VicRoads would retain an ongoing interface with Transurban/TLO regarding traffic operations but need to advise of any changes to the road network as these may have commercial implications. Consequently, this option would involve close liaison between VicRoads and the Authority.

5.24 This option is however the most resource intensive as extra costs are associated with an independent Board.

Option 2 – Statutory Office within the Department of Infrastructure

5.25 This option involves the establishment of a senior statutory office, fully accountable for City Link, reporting, through the Secretary of the Department of Infrastructure, to the Minister for Transport.

5.26 This option would ensure clear accountability for the ongoing management of the contractual arrangements and reporting to one Minister (through the Secretary of the Department of Infrastructure) on all aspects of the management of the Concession.

5.27 The location of the position within the Department of Infrastructure would facilitate attention to wider transport implications arising from City Link.

5.28 The statutory office would provide a source of independent advice to Government and facilitate the retention of corporate memory.

5.29 The position would need to be supported by staff with skills in commercial, legal, financial and technical disciplines.

5.30 Under this option, VicRoads would retain an ongoing interface with Transurban/TLO regarding traffic operations but need to advise of any changes to the road network as these may have commercial implications. Consequently, this option would involve close liaison between VicRoads and the statutory office holder.

5.31 A statutory office is more cost effective than a statutory authority as it eliminates costs associated with an independent Board.

Option 3 – Establishment of a Unit within a Division of the Department of Infrastructure

5.32 This option would provide for a team with a full range of skills to manage the State's interests for the Concession Period and report to the Secretary of the Department of Infrastructure.

5.33 This option would ensure clear accountability for the ongoing management of the contractual arrangements and reporting to one Minister (through the Secretary of the Department of Infrastructure) on all aspects of the management of the Concession.

5.34 The location of the position within the Department of Infrastructure would facilitate attention to wider transport implications arising from City Link.

5.35 Under this option, VicRoads would retain an ongoing interface with Transurban/TLO regarding traffic operations but need to advise of any changes to the road network as these may have commercial implications. Consequently, this option would involve close liaison between VicRoads and the statutory office holder.

5.36 Without a statutory responsibility (provided for with either Option 1 or 2), the ability of the unit to maintain a single focus on City Link would be reduced.

Option 4 – Establishment of a new Unit within VicRoads

5.37 This option would involve amendment to the *Transport Act 1983* to extend VicRoads functions and powers.

5.38 Through the CEO, VicRoads, this unit would report to the Minister for Transport.

5.39 This option would ensure clear accountability for the ongoing management of the contractual arrangements and reporting to one Minister (through the Secretary of the Department of Infrastructure) on all aspects of the management of the Concession.

5.40 This option would maximise operational interface issues.

5.41 However, VicRoads would need to acquire a different set of commercial/legal/financial skills and expand its policy purview, to include, for example, tolling and customer service issues.

5.42 This option is assessed to be in the same order of the cost of Option 3.

5.43 The Review makes the following findings:

Findings

1. The role of the State in respect of public safety for City Link is to protect the public interest, essentially by monitoring the performance of the Transurban Parties.

2. The ongoing monitoring by the State of public safety is a vital element of the broader management of the contractual arrangements with the Transurban Parties.

3. The State needs to maintain the capability to manage the contractual arrangements with the Transurban Parties, and therefore a range of professional skills should continue to be made available for the task.

4. Key factors identified as necessary for ongoing management of the contractual arrangements with the Transurban Parties are-

   - clear accountability;
   - responsibility by one Minister;
   - access to high level skills in relevant disciplines (engineering/technical, commercial, financial and legal); and

- effective policy interface between City Link and other government policy.

5. Four administrative structures were identified as options for the ongoing management of the City Link arrangements and option 2, the establishment of a statutory office within the Department of Infrastructure, was adopted.[303]

[303] Refer to paragraphs 5.3 and 5.17 and footnote 301 for details of the legislative structure adopted.

Chapter

6

Term of Reference 4

Consider the consequences for traffic management likely to arise from safety incidents or from measures taken to preserve public safety and, if necessary, suggest improvements.

Overview

6.1 A closure of part of City Link (whether in response to an incident or as a planned closure for maintenance and repair) will lead to traffic diversion over the road network operated by VicRoads and municipal councils. This term of reference considers the traffic management issues involved in such a diversion, the processes for the development, implementation and review of plans dealing with diversion, the interface issues between VicRoads and the Transurban Parties/TLO, and particular issues associated with closure of the tunnels.

Preparation, Review and Implementation of Diversion Route Plans

Preparation of Diversion Route Plans

6.2 As part of its obligations under the Deeds and the Technical Requirements, the Transurban Parties (through TLO[304]) developed incident management plans defining the processes to be undertaken when an incident requiring closure occurs on City Link.[305] The plan, incorporated as part of the O&M Manuals,[306] includes diversion route plans, which identify a predetermined diversion route or routes and the implementation process.

6.3 The TLO/Transurban diversion route plans were developed in consultation with the emergency services and municipal councils. Detailed traffic management plans, identifying individual traffic management measures, have been included in some of the Transurban/TLO diversion route plans.

6.4 VicRoads has a set of diversion route plans covering the freeway network, developed in consultation with the emergency services and municipal councils, which identify diversion routes and define the implementation process. The City Link diversion route plans were incorporated into VicRoads diversion route plans, leading to an integrated response to diversions across the entire freeway network.

[304] Refer to paragraph 3.40.
[305] Refer to paragraphs 3.30 and 3.37.
[306] Refer to paragraph 3.45.

Implementation of Diversion Route Plans

6.5 Aspects of the incident management plan and diversion route plan that involve work on City Link are initiated by the City Link control room and managed within the central computer control system, which takes the operator through the steps to be undertaken.

6.6 The plans developed for City Link are comparable to the plans for the remainder of the urban freeway system. However, TLO has the ability to respond more quickly to emergency incidents in the tunnels because of the automatic incident detection system.

Review of Diversion Route Plans

6.7 The diversion route plans dealing with City Link, like other diversion route plans, are subject to on-going review. The Freeway Incident Management Committee, which meets quarterly and has representatives of VicRoads, the emergency services and Transurban/TLO, is a forum for sharing information concerning incidents on the urban freeway network, including the review of incidents and consideration of changes to incident management plans and diversion route plans. For example, at the meeting of the Freeway Incident Management Committee after the closure of the Burnley Tunnel following the partial wall arch failure, the diversion route plan for the Burnley Tunnel was discussed in light of the actual operation of the diversion route plan. The diversion route plan was considered adequate for short-term closures and no changes were made.

Tunnel Closure Procedures

6.8 The physical features of the Burnley and Domain Tunnels and the sophisticated equipment forming part of the traffic management and safety systems in the tunnels, make it likely that tunnel closures for routine maintenance will occur more frequently than closures on the remainder of the freeway system. However, these routine closures can be planned in advance and managed according to clearly established plans designed to minimise safety risks and traffic impact.

6.9 TLO has developed three separate procedures for a full closure of the Burnley or Domain Tunnels depending on the time frame within which the closure is to occur.

Emergency Closure

6.10 Emergency closure is implemented if, in the opinion of the operator, the tunnel needs to be closed immediately in order to preserve public safety (for example, in the event of a major incident, such as a fire in the tunnel). This would involve activation of the electronic message signs leading to, and within, the tunnel and placement of a temporary barrier (probably a service vehicle) across the tunnel entrance.

6.11 It is anticipated that a closure of this type would be in place within five minutes of being initiated. Traffic would be diverted away from the tunnel and the agreed VicRoads diversion route plans implemented as quickly as possible.

6.12 To date, there has been no need to close the tunnel using this process.

Controlled Closure

6.13 Controlled closure is initiated when there is a need to close the tunnel as soon as possible, but not as an emergency operation. This provides for a more controlled traffic response, both on and off City Link.

6.14 This procedure was used for the first time on the day of the partial wall arch failure in the Burnley Tunnel. It took just over an hour to complete the closure.

Planned Closure

6.15 This is the most common type of closure and is necessary to allow routine maintenance activities to be undertaken. Generally there will be at least five days between the decision to close the tunnel and implementation of the decision. This enables detailed information to be provided to users of City Link to allow them to make alternative travel arrangements. Closures are generally arranged at night or over weekends to minimise traffic disruption. A number of such closures have occurred.

Co-ordination Issues

6.16 City Link forms a small but vital component of the Melbourne metropolitan road system. Along the full length of City Link there are 17 Road Interchanges where traffic can move between City Link and surrounding roads. In addition there are numerous road, railway and pedestrian overpasses.

6.17 It is easy to prescribe "lines" that delineate the boundaries between the physical assets that are the responsibility of Transurban and those of VicRoads. However, the need to facilitate the free flow of traffic between the two components of the road system requires close co-operation, communication and co-ordination between TLO (Transurban) and VicRoads in planning and day to day operations.

6.18 All parties acknowledge that, to date, the level of co-operation in relation to traffic management issues has been excellent. Traffic management and emergency management plans have been developed by TLO in consultation with the appropriate emergency services and these plans are subject to review.[307] On the occasions that closure of a section of City Link has been implemented, the closure was undertaken without incident and in accordance with the plans. The challenge is to ensure that the current co-operative arrangements are maintained for the duration of the Concession Period. This issue is addressed in the recommendations earlier in this Review, that the current practice of conducting annual emergency exercises and a 6 monthly review of the EMP (both of which require contact between the TLO, VicRoads and the emergency services[308]) be continued, and a contractually mandated committee be formed for the operation phase of City Link. These measures, by formalising contacts, will assist in the maintenance of current working relationships.

[307] Refer to paragraphs 3.52 and 3.54. However the review mechanism is not perfect – refer to paragraphs 4.47 and 4.48.
[308] Refer to paragraphs 4.44 and 4.57.

Findings

6.19 The Review makes the following findings:

1. Diversion route plans for City Link have been developed by TLO, in consultation with the emergency services and affected municipalities and integrated into VicRoads diversion route plans, providing an integrated and co-ordinated approach to traffic diversion.

2. The review of these plans through the Freeway Incident Management Committee has proved an appropriate mechanism to review updating of incident management plans and diversion route plans.

3. The incident management plans for the Burnley Tunnel were implemented in February 2001 and operated effectively in dealing with the closure of the Burnley Tunnel.

4. The co-ordination between VicRoads and City Link in relation to closure of City Link and resultant traffic diversion has been effective. It is considered that the recommendations in paragraphs 4.42, 4.45 and 4.57 will assist the continuation of this co-operation.

Chapter 7

Case Studies

Recent European Tunnel Incidents

Background

7.1 In recent years a number of fires have occurred in European tunnels, resulting in substantial loss of life, severe damage, and extended periods of tunnel closure. [309] The purpose of this review is to compare the circumstances of recent European road tunnel fires in the context of their operation, practices and safety features so that the relative standard of the City Link tunnels can be assessed.

Incidents

Mont Blanc Tunnel Incident

7.2 The Mont Blanc Tunnel is a 36 year old two-lane, two-way tunnel running 12 kilometres through the Alps, between Italy and France.

7.3 On 24 March 1999, an accident involving a truck loaded with flour and margarine resulted in a major fire, generating extreme heat and thick smoke. It is understood that the truck was travelling through the tunnel when the fire took hold of the cargo. Though no other vehicles were involved in the initiation of the fire, the nature of the cargo allowed the fire to develop quickly, rapidly spreading to engulf nearby stationary vehicles. Ultimately, 39 people died.

7.4 At the time of the Mont Blanc tunnel incident, the tunnel was under separate operational responsibility at each of the Italian and French ends. Each party was responsible for managing the normal operation, including ventilation, of their respective sections. Although there were protocols for emergency management, emergency exercises had not been held for some time. The lack of co-ordination between the operators contributed to the escalation of the fire.[310]

7.5 The tunnel has been repaired and upgraded at a cost of $265 million dollars, with significant new works, including additional safety refuges and improved fire prevention-suppression systems. Significantly, the tunnel has been placed under the management of a single operator. The tunnel was reopened to passenger traffic in March 2002, with strict requirements governing the distance between vehicles as they travel through the tunnel.

[309] The most serious incident was a ski-train rail incident at the Austrian ski resort of Kaprun that involved the death of 159 people.

[310] In particular, one of the operators used the transverse ventilation system as an exhaust and the other used it to deliver fresh air.

Tauern Tunnel Incident

7.6 The 25 year old Tauern Tunnel in Austria is a 6.4 kilometre tunnel carrying two-way traffic. On 29 May 2000, a truck travelling in the tunnel, loaded with paint, collided with oncoming cars.[311] It is believed that ruptured fuel tanks were a factor in the resulting fire, which escalated rapidly and was characterised by thick smoke and intense heat. Twelve people died in this incident, and twenty-three cars and trucks were destroyed.

Gleinalm Tunnel Incident

7.7 The Gleinalm tunnel in Austria is an 8 kilometre two-way tunnel. In August 2001, a car collided with another travelling in the opposite direction. The collision sparked a fire that was confined to the two cars involved and was extinguished by fire officers. Five people, the occupants of one of the cars involved in the collision, died.

St Gotthard Tunnel Incident

7.8 The 16.9km St Gotthard tunnel in Switzerland, which carries two-way traffic, is the world's second longest tunnel. It had been regarded as one of the safer tunnels due to its modern safety systems. On 24 October 2001, a swerving truck entered the tunnel, glanced off the side of the tunnel and came to rest in the opposing traffic lane where it and a truck, loaded with tyres, collided. The incident escalated when spilt fuel ignited with the tyres and generated thick volumes of dense smoke that in turn led to a rapid drop in visibility, and the entrapment and suffocation of people. Eleven people died.

7.9 The tunnel utilised an effective transverse ventilation system[312] and it is understood that the relevant alarm systems functioned properly at the time of the incident. The generation of thick volumes of smoke before the emergency services reached the site was the major factor contributing to the deaths in the tunnel.

Comments

7.10 Whilst vehicle fires in tunnels are relatively rare, most arise as a result of mechanical or electrical problems with the vehicle[313] and are usually quickly extinguished. A feature of one of the more serious incidents discussed above is the involvement of a truck carrying flammable goods, the ignition of a fire and its escalation before management procedures are implemented to contain it.

7.11 The risk of fire in the City Link tunnels involving large quantities of flammable material is reduced by the absolute prohibition against vehicles carrying certain dangerous goods (including flammable material) as placarded loads from using the City Link tunnels.[314] Moreover, the risk of a fire involving flammable material escalating before management procedures are implemented to contain it is reduced by the safety and

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311 At the time of the incident, road works were in progress and traffic was diverted round the work site by localised traffic signals. The truck failed to stop at the traffic signal and collided with oncoming traffic. This traffic procedure is not used in the City Link tunnels.

312 A transverse ventilation system is used in two-way tunnels. The system has inlets/outlets on both sides of the tunnel, allowing for the introduction of fresh air and the extraction of contaminated air. This is to be contrasted with longitudinal ventilation systems, used in one way tunnels, in which air flows along the tunnel, in the direction of the traffic.

313 e.g. overheated brakes.

314 Refer to paragraph 3.74.

traffic systems installed in the tunnels,[315] the proximity of emergency response crews,[316] operational procedures used (particularly those included in the EMP) and annual emergency exercises undertaken by Transurban/TLO in conjunction with VicRoads and the emergency services.[317]

7.12 In light of the number of recent tunnel incidents, but particularly the St Gotthard tunnel fire (given the tunnel's incorporation of recent technology and the operator's utilisation of modern management methods), the Authority wrote to both the Independent Reviewer and Transurban regarding the safety aspects of the City Link tunnels. The responses (from both Transurban and the Independent Reviewer) highlighted the differences between the St Gotthard Tunnel and the City Link tunnels including:

- the one-way traffic flow in the City Link tunnels compared with the two-way traffic operation in the St Gotthard tunnel;
- the separate smoke extraction system in the City Link tunnels which the St Gotthard tunnel does not have; and
- the different characteristics of the transverse ventilation system in the St Gotthard tunnel compared to the longitudinal system in the City Link tunnels. The longitudinal system has the capability of reducing back layering of toxic smoke that can help protect motorists who may be trapped behind a fire.

7.13 Both Transurban and the Independent Reviewer considered that the City Link tunnels did not warrant further safety related measures.

7.14 The responses (from both Transurban and the Independent Reviewer) confirmed that the City Link tunnels, with their extensive safety related systems are at the forefront of tunnel safety. The Independent Reviewer did however opine that world's best practice in relation to tunnel safety systems and operational procedures is continually evolving in response to changing circumstances, and that Transurban/TLO should ensure that the City Link systems are updated in accordance with the latest developments in tunnel safety. The Independent Reviewer's opinion is consistent with the City Link contractual arrangements that require Transurban to update technology on an ongoing basis[318] and to update operating standards and procedures (contained in the Manuals) on a regular basis.[319]

7.15 There are a number of other important differences between the European tunnels and the City Link tunnels that make the escalation of life threatening fires in the City Link tunnels unlikely. These are dealt with below.

7.16 A single operator, responsible for all aspects of tunnel management operates City Link. This avoids the risk of miscommunication associated with joint management.

7.17 The investigations into the Mont Blanc Tunnel fire highlighted the importance of providing separately ventilated refuge areas for motorists to escape from the smoke.

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315 Refer to paragraphs 3.31(central computer control system), 3.32 to 3.33 (monitoring traffic and incident detection), 3.34 (fire protection systems), 3.35 (mechanical ventilation), 3.36 (communication systems).

316 By contrast with the City Link tunnels, all the European tunnels discussed above are outside metropolitan areas.

317 Refer to paragraphs 3.30 (incident management plan), 3.45 (detailed management plans), 3.50 to 3.54 (emergency management plans and exercises). See also discussion in paragraphs 4.22 to 4.24.

318 Refer to paragraph 3.5.

319 Refer to paragraph 3.43. Note also the discussion in paragraphs 4.37 to 4.42 and the recommendation to strengthen the contractual obligation to review the Manuals.

The City Link tunnels provide an extensive arrangement of emergency exits including the pedestrian emergency egress tunnel, other refuges and cross passages.[320]

7.18 Sprinkler systems have generally not been installed in European road tunnels. However, since the recent European road tunnel fires, there has been increased interest in their possible installation. Such systems, which allow large volumes of water to be drenched over the site of a fire, restricting the fire's capacity to escalate rapidly, have been incorporated into the City Link tunnels.[321]

7.19 It is clear however, that public safety requires constant vigilance. In the case of City Link public safety is given on-going attention through emergency exercises (held once a year) and the Emergency Management Planning Committee meetings (held twice a year). [322] Those meetings review operational procedures, plan emergency exercises, and confirm that ongoing training and familiarity sessions for operators and emergency services personnel is occurring in a structured and comprehensive way.

Findings

7.20 The Review makes the following findings:

1. The City Link tunnels currently provide comprehensive, state of the art tunnel safety features that contribute to a high degree of safety for motorists.

2. A single operator promotes clarity of response in the event of an incident.

3. Operator training, emergency response procedures, and emergency management exercises with all relevant emergency services are important in maintaining an effective response in the event of an incident.

4. Recent tunnel fires in Europe suggest that protection from smoke and escape refuges are critical in the event of a major tunnel fire. The City Link tunnels provide emergency exits from the tunnels, to safety refuges, cross-passages and a pedestrian tunnel.

5. The City Link tunnels provide a ventilation system designed to manage smoke in a way that protects motorists.

Burnley Tunnel Closure

7.21 On 19 February 2001, a leak was detected in the Burnley Tunnel. A number of special traffic management arrangements were initiated after TLO/Transurban became aware of the leak.

In summary the following procedures were implemented:

[320] Refer to paragraph 3.28 for details.
[321] Refer to paragraph 3.34.
[322] Refer to paragraphs 3.50 to 3.54 regarding the City Link EMP. Note also the discussion in paragraphs 4.43 to 4.45 and the recommendation to strengthen the contractual obligations regarding emergency management.

- In line with standard agreed procedures, a right hand lane closure was implemented by using the tunnel's electronic traffic management facilities in order to allow a maintenance crew to investigate the situation, and to protect the safety of the crew and tunnel users;

- A physical lane closure using bollards was then installed to better define the closed lane;

- A meeting took place between officers from Transurban, TLO and VicRoads to review the situation;

- Transurban decided that a full closure of the tunnel was required in order to assess more thoroughly the extent of the problem;

- A "controlled full closure" of the Burnley Tunnel was implemented in accordance with predetermined incident management and diversion route plans.[323] This involved co-ordinated action by TLO and VicRoads;[324] and

- Additional traffic management arrangements were introduced at the Batman Avenue/Swan Street intersection, the Power Street exit ramp and on the Monash Freeway to facilitate the movement of traffic.

Findings

7.22 The Review makes the following findings:

1. The tunnel closure procedures have been reviewed by the Freeway Incident Management Committee.[325] The review showed that the controlled closure of the Burnley Tunnel, which took about one hour to implement, was carried out in an efficient and safe manner in accordance with the agreed procedures.

2. The traffic diversion plans were also effective in allowing vehicles to bypass the closed Burnley Tunnel with the least possible disruption.

3. As it became evident that the Burnley Tunnel was likely to be closed for a prolonged period, Transurban, TLO, the Authority and VicRoads worked together to refine the traffic diversion routes to improve traffic flow and safety wherever possible.

4. While the prearranged plans worked well in this instance, all parties are aware of the need to keep the traffic diversion routes under review to allow for changing situations and to minimise disruption to traffic flows while maintaining public safety.

5. No further action is considered necessary.

[323] The development of diversion route plans is discussed in paragraphs 6.2 and 6.3.
[324] Refer paragraphs 6.4 and 6.5.
[325] Refer to paragraph 6.7 for details of the Committee and its role.

Dislodgement of Rebroadcast Cable

Background

7.23 A radio-rebroadcast cable has been installed in each of the Domain and Burnley Tunnels to allow uninterrupted radio reception in vehicles travelling through the tunnels. The cable also has a safety function in allowing the control room operator to override radio signals and provide a safety message to motorists in the tunnels via their car radios.

7.24 The cable is not carried in the trays provided for other cables – for technical reasons it must be isolated from other electrical cables and large metallic objects. The cables are therefore fixed to the ceiling of the tunnels by single-purpose brackets.

7.25 On 3 April 2001, a section of the radio-rebroadcast cable in the Domain Tunnel came loose. A number of vehicles travelling through the tunnel were affected, with two vehicles suffering damage.

Issues

7.26 The reason for the cable coming loose was not immediately obvious.

7.27 Within 2 days of the incident, the full length of the cable in the Domain and Burnley Tunnels was secured to other tunnel fixtures using cable ties. This involved overnight partial tunnel closures, using established procedures, resulting in minimal disruption to the public.

7.28 The rebroadcast function was not interrupted by this incident although reception was significantly degraded at the eastern end of the tunnel. This reception problem was soon rectified.

7.29 Investigations by TLO have indicated that the radio communications cable was dragged down when a vehicle carrying over-height materials snagged the cable. Transurban has developed design details for a protective beam, to be installed at the entrances to the tunnels to help prevent overhead tunnel equipment from being damaged.

Findings

7.30 The Review makes the following findings:

1. The incident was managed in accordance with standard arrangements and interim repairs were completed within two days.

2. No one was injured by the incident.

3. Transurban plans to install protective beams, at both tunnel entrances, to minimise the chance of tunnel overhead equipment being dislodged in the future.

Response to a Vehicle Breakdown in the Burnley Tunnel

Background

7.31 On the evening of Tuesday 13 March 2001, a vehicle travelling on the City Link was involved in an accident that apparently resulted in a puncture of its fuel tank. Unaware of the damage, the driver continued his journey, stopping in the Burnley Tunnel when he became aware of the damage and potential danger due to leaking petrol.

7.32 The driver of the vehicle claimed that he was stranded in the tunnel for at least 40 minutes before an incident response unit arrived and towed his vehicle out of the tunnel.

Findings

7.33 The Review makes the following findings:

1. An internal Transurban/TLO investigation found no evidence to support the driver's claim nor could it prove conclusively that his claim was inaccurate. The incident response logs held in the City Link control room indicate that the incident response unit arrived at the scene of the breakdown within about 10 minutes of the incident being identified.

2. Time stamped surveillance tapes covering tunnel operations are now kept by TLO, enabling verification of the operator's incident response performance.

Glossary of Terms

Authority: The Melbourne City Link Authority established under the *Melbourne City Link Authority Act 1994*. That Act was repealed by the *Melbourne City Link (Miscellaneous Amendments) Act 2002*, with effect from 28 February 2002.

Bolte Bridge: The bridge, forming part of the *Elevated Road,* which spans the lower reaches of the Yarra River and the adjacent entrance to Victoria Harbour.

Burnley Tunnel: The tunnel, forming part of *Southern Link,* which carries east bound traffic some 3.5 kms from the West Gate Freeway in South Melbourne to the Monash Freeway in Burnley.

CBD: This is a reference to Melbourne's Central Business District.

City Link: This is a reference to both the *Link Road* and the *Extension Road*.

Clepco: This is a reference to City Link Extension Pty Ltd (a fully owned subsidiary of *Transurban*) which has the concession to operate and maintain the *Extension Road*.

Commissioning: This is the process of safety auditing, performance testing and checking against the *Technical Requirements* of all road design and traffic engineering elements; operating, mechanical, electrical and electronic systems; computer software and hardware; and plant and equipment which form part of the works.

Completion: Completion of a section of the *Link Road* occurs when all of the following matters have occurred:

- the *Independent Reviewer* has certified that the works on that section of the *Link Road* have been completed in accordance with the contractual requirements, except for minor omissions or minor defects that do not adversely affect the safe use of the section by the public for the continuous passage of vehicles;
- commissioning has taken place; and
- the State has certified that the contractual requirements not covered by the Independent *Reviewer* certification have been met.

Concession Deed: This is the primary contractual document between the State, *Transurban* and the *Trustee* which grants *Transurban* and the *Trustee* a concession to design, construct, commission the *Link Road*, and *Transurban* the right to operate, maintain and toll the *Link Road* for the concession period.

Concession Period: This is the period during which the *Transurban Parties* have a concession to design, construct, commission, operate, maintain and toll City Link. The concession is for 37.75 years from 4 March 1996 (i.e. Financial Close). The *Concession Period* may be extended as a result of limited "extension events" during construction or as a remedy to a "Material Adverse Effect" or reduced if the project reaches certain benchmark rates of return. The *Concession Period* currently ends on 4 January 2034.

D&C Contract: This is a reference to the Design and Construct Contract, which is the contract between *Transurban, the Trustee* and *TOJV*, under which *Transurban* and the *Trustee* contracted *TOJV* to design and construct the *Link Road*.

Design Documentation: The material prepared by *Transurban* providing details of the design for the Link Road and reviewed by the *Independent Reviewer* to determine whether it complies with the *PS&TR*.

Deeds: This is a reference to both the *Concession Deed* and the *ESEP Deed*.

Domain Tunnel: The tunnel, forming part of *Southern Link*, which carries west bound traffic some 1.6 kms from the end of the Monash Freeway west of Punt Road to West Gate Freeway in South Melbourne.

Elevated Roadway: A 5 km length of the *Western Link* between Flemington Road and the West Gate Freeway that is raised above ground level. It passes over railway lines and includes the *Bolte Bridge* over the Yarra River.

EMP: This is a reference to the Emergency Management Plan that sets out the operational arrangements to be activated in the event of certain emergencies. It was prepared by *TLO* (for *Transurban*) in consultation with relevant emergency service agencies. The plan forms part of the State wide emergency response procedures.

Extension Road: The Extension Road is the "City End" of the *Exhibition Street Extension Project.*

ESEP: This is a reference to the Exhibition Street Extension Project which is the project for the design, construction, operation, maintenance and repair of the four-lane road stretching from Flinders Street over the Jolimont rail yards and through the sporting precinct, to the Monash Freeway. It was constructed in two parts, the "City end" (the *Extension Road*) and the "Punt Road end" (part of the *Link Road*). The *Extension Road* is operated, maintained and repaired under the *ESEP Deed*. The Punt Road end was incorporated under the *Concession Deed* as part of the *Link Road.*

ESEP Deed: This is a reference to the Exhibition Street Extension Concession Deed which is the principal contractual document between *Clepco* and the State that grants *Clepco* a concession to operate and maintain the *Extension Road*.

ESEP O&M Manuals: This is a reference to the Operation and Maintenance Manuals which set out the policies, plans and procedures for the operation and maintenance of the *Extension Road*. *Clepco* must operate the *Extension Road* in accordance with these manuals.

ESEP O&M Requirements: Set out the technical requirements that Clepco must meet, and the quality management systems it must implement, for operating and maintaining the *Extension Road*.

ESEP Specifications: These are the specifications for the design and construction of the *Extension Road*.

IFA: This is a reference to the Integration and Facilitation Agreement which details the co-ordination of the *Extension Road* under the *ESEP Deed* and the *Link Road* under the *Concession Deed*.

Independent Reviewer: *Transurban*, the *Trustee* and the State jointly appointed Sinclair Knight Merz Pty Ltd (in association with Parsons Brinckerhoff and Davis Langdon Australia) as the Independent Reviewer to review the design and construction phase of the *Link Road* by a process of general overview and reasonable checking.

Link Integration Committee: This committee is formed under clause 2.4(g) of the *Concession Deed* as a means by which the State, *Transurban* and the *Trustee* can raise and discuss, on an informal basis, issues concerning the treatment of *City Link* in the context of Victoria's transport infrastructure and, in particular, issues arising in relation to the treatment of the road connecting the *Southern Link* to the *Western Link*. Members comprise one nominee from the State, *VicRoads*, *Transurban* and the *Trustee*.

Link Road: The *Link Road* connects three of Melbourne's four radial freeways. It consists of three parts: (i) the *Southern Link*; (ii) the *Western Link*; and (iii) the "Punt Road End" of the *Exhibition Street Extension Project*.

Manuals: Refers to both the *O&M Manuals* and the *ESEP O&M Manuals*.

MAS: This is a reference to the Metropolitan Ambulance Service established under the *Ambulance Services Act 1986*.

Master Security Deed: This is the Deed between the State, *Transurban*, the Trustee Company, Australian and New Zealand Banking Group and ANZ Capel Court that imposes controls on Transurban's financial arrangements and takes precedence over the *Concession Deed*, the *ESEP Deed* and the *IFA Deed*.

MFESB: This is a reference to the Metropolitan Fire and Emergency Services Board established under the *Metropolitan Fire Brigades Act 1958*.

O&M Agreement: This is a reference to the Operating and Maintenance Agreement which is the contract between *Transurban* and *TLO* under which *TLO* assumes the contractual responsibility for the overall operation and ongoing maintenance of *City Link*, including the electronic tolling and traffic management systems. Transurban is responsible under the *Concession Deed* and the *ESEP Deed* for the operation and ongoing maintenance of *City Link.*

O&M Manuals: This is a reference to the Operation and Maintenance Manuals which set out the policies, plans and procedures for the operation and maintenance of the *Link Road*, including aspects that have a direct bearing on safety and traffic management. *Transurban* must operate the *Link Road* in accordance with these manuals.

PCG: This is a reference to the Project Co-ordinating Group (PCG) which is an informal group, established under clause 7.18 of the *Concession Deed*, comprising representatives from the State, *Transurban* and the *Trustees* to discuss all matters relating to the works comprising *the Link Road*.

Proof Engineer: The person appointed by the *Transurban Parties* in accordance with the *PS&TR* to undertake proof engineering tasks in relation to the *Link Road*.

PS&TR: This is a reference to the Project Scope and Technical Requirements, an exhibit to the *Concession Deed,* which describe the scope and required specifications for the design and construction of the *Link Road*. It also sets out the

Technical Requirements that *Transurban* must meet, and the quality management systems it must implement, for operating, maintaining and repairing the *Link Road*.

Quality Assurance Auditor: The person appointed by the *Transurban Parties* in accordance with the *PS&TR* to audit quality assurance in relation to the *Link Road*.

Responsible Entity: This is a reference to Perpetual Trustee Company Limited.

Road Interchanges: The numerous road overpasses and roads that provide vehicular access and egress to *City Link*.

SES: This is a reference to the State Emergency Service, established under the *Victoria State Emergency Services Act 1987*.

Southern Link: The part of the *Link Road* connecting the Monash Freeway with the West Gate Freeway, including the *Burnley* and *Domain Tunnels*.

State Works Deed: This is the contract between the State, *Transurban*, the *Trustee* and *TOJV* which sets out the requirements for works (additional to those under the *Concession Deed* and the *ESEP Deed*) funded by the State.

State Works Technical Brief: This is part of the *State Works Deed* and sets out the State's technical requirements.

Technical Requirements: This refers to both the *PS&TR* and the *ESEP O&M Requirements*.

TLO: This is a reference to Translink Operations Pty Ltd, the operator of *City Link* appointed by *Transurban* under the *O&M Agreement*.

TOJV: This is a reference to Transfield-Obayashi Joint Venture, the contractor who designed and constructed the *Link Road* under the *Design and Construct Contract*.

Transurban: This is a reference to CityLink Melbourne Limited (formally called Transurban City Link Limited).

The Transurban Parties: This is a reference to one or more of *Transurban*, the *Trustee*, and *Clepco*.

Trust: This is a reference to Transurban City Link Unit Trust.

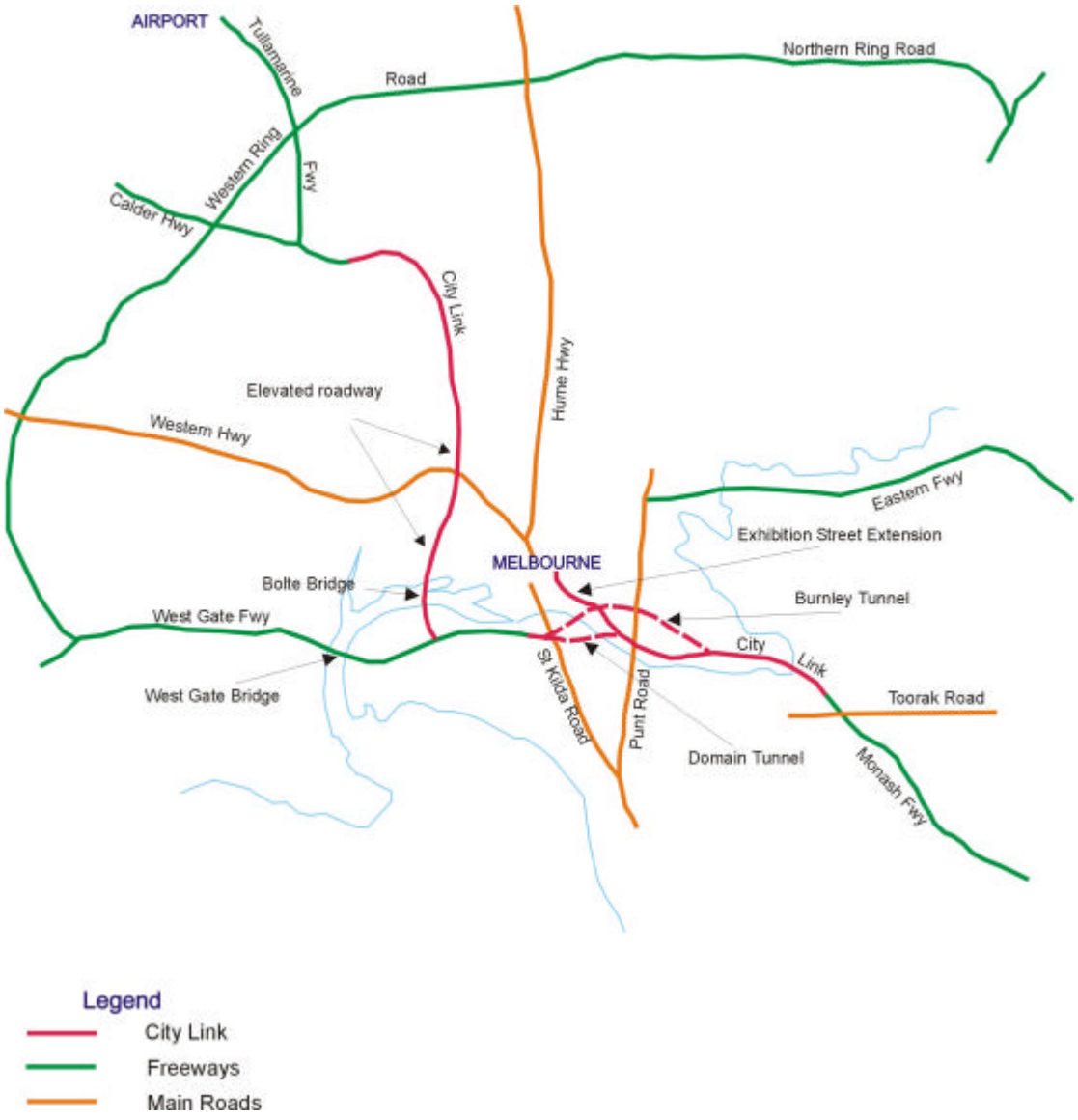
Trustee: This is a reference to Perpetual Trustee Company Limited, which is the *Responsible Entity* for the Transurban City Link Unit Trust.

VicRoads: This is a reference to the Roads Corporation, the body established under the *Transport Act 1983* to maintain, upgrade, vary and extend the State's declared road network.

Western Link: The part of the Link Road connecting the Tullamarine Freeway with the West Gate Freeway, including the *Elevated Roadway*.

Diagrams

Map of City Link and the Road Network



Map of City Link Road Interchanges

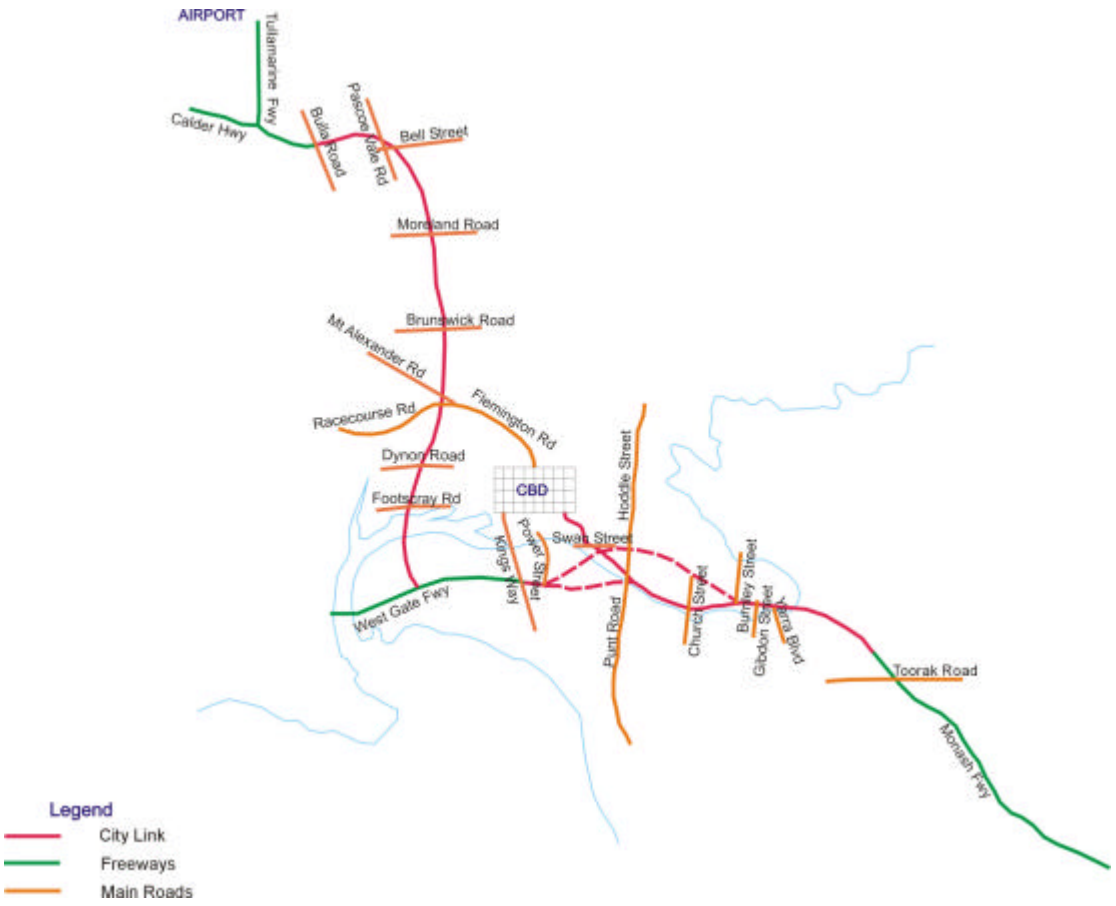


Diagram of Contractual Arrangements