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EXECUTIVE SUMMARY

Introduction

This report discusses the outcomes of a preliminary study of Punt Road between Union Street and City Link, involving the development of a range of possible long term improvement options considering transport needs and road widening opportunities and constraints.

Existing Conditions

Punt Road between Union Street and City Link is a four lane undivided arterial road, within an approximate 20m wide road reservation and abutted by significant urban development. Punt Road crosses the Yarra River between Alexandra Avenue and City Link via Hoddle Bridge.

Punt Road, together with Hoddle Street, provides a major arterial connection to various highways and freeways, an eastern bypass of the CBD, and a key access to the CBD and nearby suburbs and attractions. Punt Road and Hoddle Street are classified as an Arterial-Highway, Preferred Traffic Route and Bus Priority Route.

Key east-west roads within the study area include High Street, Commercial Road and Toorak Road, which are Traffic Routes and Tram/Bus Priority Routes, and Alexandra Avenue which is a Preferred Traffic Route east of Punt Road.

The most notable land uses along Punt Road are two schools (near High Street and Toorak Road), the Alfred Medical Research and Education Precinct (near Commercial Road) and the Toorak Road Shopping Precinct.

The Stonnington Planning Scheme includes an approximate 20m wide public acquisition overlay (PAO) along the east side of Punt Road between Union Street and Alexandra Avenue to cater for a possible road widening.

Transport Operation and Needs

Punt Road between Union Street and Alexandra Avenue currently carries around 35,000 to 40,000 veh/day and is operating at or close to capacity in weekday and weekend peak periods. Traffic using the Toorak Road and Alexandra Avenue intersections with Punt Road experiences the highest delays.

Crash data shows that three fatal and 135 injury crashes occurred along Punt Road in the five year period between 1 January 2005 and 31 December 2009, including a high number of rear end, off path, right turn, pedestrian, cross traffic and head-on crashes. Treatments such as extra traffic lanes, fully controlled right turns, improved road alignments and a median would significantly reduce crash rates along Punt Road.

Punt Road currently carries six buses per hour in each direction in the peak periods. Punt Road and Hoddle Street form part of a possible future Inner Orbital SmartBus Route, providing a bypass of the CBD and assisting to relieve over-crowding on train and tram services to/from the CBD.

Three Tram/Bus Priority Routes cross Punt Road within the study area, being High Street, Commercial Road and Toorak Road. These roads each carry one tram route and Commercial Road also carries four bus routes. These public transport services are delayed at Punt Road due to the limited east-west capacity available and the priority given to Punt Road.

Punt Road makes an important contribution to north-south tram operation by diverting traffic away from Priority Tram Routes such as St Kilda Road and Chapel Street. Traffic modelling forecasts show increasing traffic volumes on St Kilda Road and Chapel Street, and consequential increases in traffic and tram delays, if Punt Road is not upgraded in the future.
The section of Punt Road between Union Street and City Link represents a constraint within the road network, with the sections to the north and south having a greater number of traffic lanes and able to accommodate a far greater volume of traffic.

There are no north-south routes in the vicinity of Punt Road – Hoddle Street that provide an effective alternative route. Nearby north-south routes such as St Kilda Road, Chapel Street, Williams Road and Glenferrie Road are discontinuous and/or heavily congested by traffic and/or tram operation. The Punt Road PAO provides the only opportunity for providing additional north-south capacity (at-grade) within the sub-region.

Traffic modelling shows widening Punt Road from four to six lanes would be attractive to traffic, with a 30% to 40% increase in forecast traffic volumes on Punt Road over the next thirty years.

Opportunities and Constraints

The 20m wide PAO along Punt Road provides an opportunity to widen the road. There are no PAOs along the east-west roads crossing Punt Road, except within the Punt Road PAO and on the Alexandra Avenue east approach.

Approximately 140 properties (mostly residential) are affected by the Punt Road PAO, with the vast majority of the buildings on these properties encroaching into the PAO. 22 properties within the Punt Road PAO are owned by VicRoads and 40 other properties have been paid 'loss on sale' compensation.

A desktop cultural heritage assessment indicates that there are no sites along Punt Road listed on State or National heritage registers. Heritage overlays in the local planning schemes affect the Hoddle Bridge and 40 properties within the Punt Road PAO, including properties near Gladstone Street, Greville Street, Fawkner Street, Toorak Road, Domain Road and Alexandra Avenue.

Environmental assessments have not been undertaken as part of the study. Given the extensive urban development along Punt Road, environmental issues are not likely to be significant.

Improvement Options

Several improvement options have been investigated for Punt Road, and compared against the do nothing option. The options include major route upgrades (Options 1, 2, 3 and 4), major intersection upgrades (Options 5 and 6) and minor works (Options 7 and 8).

Capacity analysis of the do-nothing option shows extremely poor operation, with increasing queues and delays along Punt Road, its east-west cross roads and nearby parallel roads. Such an option is considered unacceptable.

The major route upgrade options comprise different reservation, lane and median widths. Building setbacks along Punt Road are minimal and there is little difference in property impacts between options that make full use of the PAO (ie. Option 1 which has a 40m wide reservation) or partial use of the PAO (ie. Options 2 and 3). Option 4 makes use of land outside the PAO and is not supported due to significant additional property impacts.

Option 1 is the preferred major route upgrade option, and comprises a six lane divided cross-section with bicycle lanes/path, widened footpaths and landscape treatments. Extra traffic lanes rather than bus lanes are provided to achieve greater transport benefits. Capacity analyses show that Option 1 provides an approximate 60% saving in average intersection delays compared to the do nothing option. The property impacts of Option 1 are very significant, with 130 properties affected (including 21 properties owned by VicRoads). Economic analysis indicates that the option would cost in the order of $450 to $500 million and have a benefit cost ratio of around 1.3.
Option 5 is limited to intersection upgrades and makes use of the PAO to provide an additional traffic lane on the Punt Road approaches to High Street, Commercial Road and Toorak Road and a major upgrade of the Punt Road/Alexandra Avenue intersection. Option 5 provides less capacity and safety benefits along Punt Road than Option 1, due to the repeated diverging and merging, discontinuous median, and ‘wiggly’ alignment along Punt Road southbound. The property impacts of Option 5 are about half of the property impacts of Option 1.

Option 6 considers the benefits of acquiring land outside the PAO on High Street and Commercial Road to further improve tram operation. The property impacts of widening these roads are not considered justified, as these roads currently only carry one tram route and delays to trams could be reduced by providing right turn bans.

Options that make no use of the PAO have also been considered. Option 7 involves a reversible lane and is not supported as it provides worse traffic operation overall. Option 8 involves various parking and right turn bans and provides capacity benefits at the High Street, Commercial Road and Toorak Road intersections with Punt Road.

**Conclusions**

The key conclusions of the study are as follows:

- Removal of the Punt Road PAO in its entirety would contribute to Punt Road being an ongoing constraint within the road network, and result in an increasing transfer of traffic to less desirable routes including public transport routes.

- The Punt Road PAO provides a very important opportunity to:
  - Reduce traffic congestion and improve safety along Punt Road and better accommodate north-south traffic demands within the sub-region.
  - Improve tram operation across the network by diverting traffic away from north-south tram routes and reducing delays on east-west tram routes crossing Punt Road.

- The do nothing option provides extremely poor operation and is not supported.

- Option 8 (parking and right turn bans within the existing road reservation) is a suitable short-term option, as it provides benefits to some intersections along Punt Road. However, it does little to improve the most congested intersection along the route (Punt Road/Alexandra Avenue) and adversely affects other parts of the transport network.

- Option 1 (six lane divided within 40m reservation) is the preferred long term option as it provides substantial travel time savings across the road and public transport network, and significant safety and cycling benefits along Punt Road.

- The Punt Road PAO should be retained in its entirety to facilitate construction of Option 1.
1. INTRODUCTION

Punt Road between Union Street and Alexandra Avenue is a four lane undivided arterial road, operating at or near capacity in peak periods and carrying around 35,000 to 40,000 veh/day. A 20m wide public acquisition overlay (PAO) exists along the east side of this section of Punt Road to cater for a possible road widening.

This report discusses the outcomes of a preliminary study of Punt Road between Union Street and City Link to:

- Develop a range of possible long term improvement options, considering transport needs and road widening opportunities and constraints.
- Inform decision making in relation to the need to remove, retain or modify the PAO along Punt Road.

The study represents an initial phase in VicRoads’ long term planning for Punt Road. A detailed assessment of social, economic and environmental impacts would be required prior to the construction of any road widening options.
2. EXISTING CONDITIONS

2.1. Road Network

Punt Road (also known as Hoddle Highway) is approximately 3.4km in length and extends from St Kilda Road/Dandenong Road in the south to Hoddle Street/Swan Street in the north. The study covers the approximate 2.8km length section of Punt Road between Union Street and City Link, as shown in Figure 1.

Punt Road and Hoddle Street form a major north-south arterial route that:

- Connects the surrounding highway/freeway network of Princes Highway (Dandenong Road), Nepean Highway (St Kilda Road – Brighton Road), City Link, Eastern Freeway and Eastern Highway (Alexandra Parade).
- Acts as an eastern bypass of the CBD, which is located approximately 2km west of the route.
- Provides a key access to the CBD and nearby suburbs and attractions west of the route, including the MCG, Tennis Centre and Rugby/Soccer Stadium.

Punt Road intersects with various sub-arterial, collector and local roads. Key east-west roads within the study area include High Street, Commercial Road - Malvern Road, Toorak Road and Alexandra Avenue. These east-west roads provide access to/from the CBD.

The Road Management Act provides the legislative framework for the management of the road network, and defines VicRoads’ powers and responsibilities in relation to Freeways and Arterials. As shown in Figure 1, Punt Road and Hoddle Street (south of Eastern Freeway) are declared as Arterial-Highway. High Street, Commercial Road, Toorak Road and the section of Alexandra Avenue east of Punt Road are declared as Arterial-Other.

The sections of Punt Road and Hoddle Street between City Link and Eastern Freeway are part of the Principal Freight Network. Punt Road south of City Link is not part of this network.

VicRoads uses the SmartRoads approach to manage the road network and best respond to transport and land use needs. Competing interests for limited road space are managed by giving priority use to different transport modes at particular times of the day. SmartRoads Network Operating Plans classify Punt Road and its key intersecting roads as follows:

- Punt Road - Preferred Traffic Route and Bus Priority Route.
- High Street - Tram Priority Route and Traffic Route.
- Commercial Road - Tram Priority Route, Bus Priority Route and Traffic Route.
- Toorak Road - Tram Priority Route, Traffic Route west of Punt Road, and Pedestrian Priority Route east of Punt Road.
- Alexandra Avenue - Preferred Traffic Route east of Punt Road.

Bike Priority Routes across the network are yet to be finalised. Draft proposals nominate High Street, Commercial Road, Toorak Road and Alexandra Avenue as Bike Priority Routes. Punt Road is not currently nominated, with St Kilda Road and Chapel Street proposed as north-south Bike Priority Routes.
Figure 1  Locality Plan
2.2. **Abutting Land Use**

Most of the land abutting Punt Road within the study area is within a Residential Zone and contains residential development. Key exceptions are shown in Figure 2 and detailed below.

**West of Punt Road**

- Business Zone - Land between Union Street and Raleigh Street and occupied by Montefiore Home for the Aged.
- Special Use Zone - Land between High Street and Alfred Lane and occupied by Wesley College and Royal Freemasons Homes of Victoria.
- Public Use (Health and Community) Zone - Land between Alfred Lane and Commercial Road and occupied by Alfred Hospital.
- Public Use (Education) Zone - Land just north of Pasley Street North and occupied by South Yarra Primary School.

**East of Punt Road**

- Business Zone - Land immediately north and south of Toorak Road and part of the Toorak Road Shopping Precinct.

2.3. **Traffic Provisions and Controls**

Punt Road, within the study area, is an undivided road comprising four through lanes (two way). Punt Road widens to eight through lanes south of Raleigh Street and seven through lanes north of City Link.

Punt Road crosses the Yarra River between Alexandra Avenue and City Link via Hoddle Bridge.

Punt Road includes the following traffic controls within the study area:

- Signalised intersections – High Street, Moubray Street-Greville Street, Commercial Road, Toorak Road, Domain Road and Alexandra Avenue.
- Pedestrian signals – north of Pasley Street North.
- Speed zone – generally 60km/hr, with school speed zones (40km/hr) near Wesley College and South Yarra Primary School.
- Clearways – both sides in both the AM and PM weekday peak periods.

There are no bicycle lanes/paths along Punt Road and footpaths are narrow in some locations.

The existing traffic lane provisions at the intersections along Punt Road are shown in Figure 3.
Figure 2  Punt Road Land Use
Figure 3  Existing Intersection Lanes
2.4. Public Transport Network

Existing bus and tram routes along and crossing Punt Road within the study area are described below and shown in Figure 4.

- Punt Road – Bus Routes 246 and 605 (north of Alexandra Avenue only).
- High Street – Tram Route 6.
- Commercial Road – Bus Routes 216, 219, 220 and 980 (Night Rider) and Tram Route 72.
- Toorak Road – Tram Route 8.
- Alexandra Avenue – Bus Route 605 (east of Punt Road only).

Each of the above bus routes (except Night Rider 980) provide between two and six services per hour in each direction in the peak periods.

Each of the above tram routes provide between six and eight services per hour in each direction in the peak periods.

Considering the above, Commercial Road is the most significant public transport route carrying thirteen services per hour in each direction in the peak periods.

Punt Road is not a significant public transport route, carrying six buses per hour (Route 246) in each direction in the peak periods.

There is no bus priority along any of the above bus routes.

Tram/traffic separation exists on the western Commercial Road approach to Punt Road. However, trams share the traffic lane on the eastern Commercial Road approach and both approaches on High Street and Toorak Road. Peak period right turn bans exist on the Toorak Road approaches to Punt Road to improve traffic and tram operation.
3. TRAFFIC OPERATION

3.1. Traffic Patterns

Traffic volume and travel time data shows that the peak direction of travel along Punt Road, within the study area, is northbound in the AM peak and southbound in the PM peak. The peak direction of travel on the east-west roads crossing Punt Road is westbound in the AM peak and eastbound in the PM peak. The peak directions of flow are consistent with travel to and from the CBD.

Traffic modelling and select link analysis shows the following:

- Around 55% of traffic on Punt Road, within the study area, uses the full length of this section of Punt Road.
- Around 20% of traffic on Punt Road, within the study area, uses Punt Road - Hoddle Street to travel between the southern end of Punt Road and Eastern Freeway or other roads further north.
- Majority of traffic on Punt Road – Hoddle Street has origins or destinations close to the corridor.
- Through traffic on Punt Road - Hoddle Street makes use of St Kilda Road (Nepean Highway) and Barkley Street at the southern end of the corridor, and Eastern Freeway, Heidelberg Road and High Street at the northern end.

3.2. Existing Traffic Volumes

Punt Road currently carries around 35,000 to 40,000 veh/day within the study area.

There has been little change in daily traffic volumes on Punt Road over the last ten years, due to Punt Road operating at or close to capacity for many years and there being very little spare capacity available to accommodate additional traffic volumes.

The approximate/assumed traffic volumes at the signalised intersections along Punt Road, based on SCATS data in October 2009 and site inspections, are shown in Figure 5. The traffic volume data highlights the following:

- Punt Road carries the highest traffic volumes, followed by Alexandra Avenue and then Toorak Road.
- The turn volumes at the intersections on Punt Road are generally low to moderate, except as follows:
  - Punt Road/Alexandra Avenue intersection experiences very high turn volumes between the north and east.
  - High Street east approach experiences a fairly high right turn demand in the AM peak.
  - Punt Road north approach to Toorak Road experiences a fairly high right turn demand in the AM peak.
Figure 5  2009 Traffic Volumes (Peak Hours)