

# S U B M I S S I O N

## **Review of bus services in the cities of Hume and Moreland**

seven day service

modern operating hours

direct & legible routes

high frequency

harmonised headways

serves major trip generators

better connections

area & corridor planning

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## **Introduction**

The recently-announced area reviews of metropolitan bus services are welcome. They potentially present a 'once in a generation' opportunity to make public transport a mode of choice for the sixty per cent of Melburnians beyond walking distance of fixed rail services.

The review for Moreland and Hume is the second to be undertaken. The first was for Moonee Valley, Hobsons Bay and Maribyrnong. Many themes are common across both reviews and general recommendations are similar to those made in my first submission. A summary of the approach taken appears in Appendix One. Appendices Two and Three provide background information about Moreland and Hume. Conceptual maps of suggested route changes appear in Appendix Four.

## **Local transport issues**

The following local transport issues have been identified and drive the recommendations in this paper.

### *Route coverage*

- Some residential areas are beyond 1km from services (eg Attwood, Westmeadows, around Greenvale Reservoir, parts of Roxburgh Park and the western portion of Craigieburn).
- Significant employment areas are unserved. These include industrial areas away from Sydney Road and DFO Essendon ( refer here: <http://forums.vogue.com.au/showthread.php?t=246324> )
- There is currently only a limited and unadvertised service to Melbourne Airport despite it being a major trip generator and employment centre for local people.

### *Network design*

- Network design is uneven, with east-west linkages (in particular) under-developed. Passengers often have to travel well out of the area (eg to Bell Street or even Melbourne CBD) to make local cross-suburban trips.
- There are no direct services from Broadmeadows to suburbs south of the Ring Road east of Pascoe Vale Road (eg Hadfield) even though Broadmeadows (not Glenroy) is the principal activity centre for the region.
- Parts of Broadmeadows town centre are just beyond reasonable walking distance of the railway station. The area's low pedestrian amenity further shrinks the pedshed. A local transit system (using carefully timed suburban bus routes and/or a dedicated bus providing at least a 10 minute combined frequency) is recommended.
- There are limited feeder bus links between Fawkner and stations on the Upfield line. Fawkner also has certain geographic problems affecting its transport discussed elsewhere.
- East-west linkages from the Niddrie area to Moreland are limited. Glenbervie, Strathmore and Pascoe Vale stations all have no or limited feeder services.
- Consistent service patterns. Some bus routes have several deviations which confuse passengers. The need for each should be critically appraised with a view to simplification.

### *Operating hours, frequency and co-ordination*

- It is recommended that the operating hours of major bus routes be similar to trains. Currently one of the twenty routes in this review meets this standard (571) so upgrades to more major routes (similar to SmartBus in other suburbs) are recommended. Local routes currently vary greatly and extension of 'minimum standards' to them is supported.
- While trains in the study area run every 20 minutes during the day (30 minutes night) bus routes often do not reflect this. Hence they fail to provide efficient, repeatable connections. Most of the routes studied ran at intervals such as 25, 35 or 50 minutes instead of 20 or 40 minutes. A key recommendation is to harmonise service frequencies and co-ordinate services for better connections and faster travel. Instances where the revision of routes allows headway-harmonised services without additional buses being required present a real opportunity and should be implemented quickly.

### **Other matters**

Although this review concerns bus routes and services, several external matters impinge on bus service delivery and potential patronage. These include:

- Lack of a railway station at Campbellfield. Though the surrounding area is pedestrian-hostile and would generate little walk-on patronage from its few surrounding homes, a station at on this site would boost the utility of the Upfield line for cross-suburban trips from Broadmeadows and Greensborough via bus route 560. A link to the east would fill a major gap as passengers currently must travel south to Bell Street for many trips.
- Pedestrian access within Broadmeadows town centre. Though a hub for many bus routes and a designated 'Transit City', Broadmeadows is characterised by poor pedestrian design, amenity and access. The station is perceived as being unsafe at night and Pascoe Vale Road presents one of the most pedestrian-hostile environments anywhere in Melbourne. Improvements (in conjunction with a local town feeder bus to the station) could dramatically improve the centre's access and amenity.
- Pedestrian access to bus stops. The level of road traffic in Hume has grown to a level that bus stops (particularly those on main roads that receive fast, direct service) are difficult to reach on foot for half the passengers who must cross the road. Attention needs to be given to making every single bus stop quickly and safely accessible on foot at any time of day through measures such as traffic islands, zebra crossings and (in some cases) lights. As dozens if not hundreds of sites are involved, the emphasis should be on low cost and fast installation.
- A pedestrian, cycle and bus link between Fawkner and Reservoir. A long-term project with some environmental considerations, a narrow bus-only crossing across Merri Creek to Reservoir would fill a 'missing link' in the transport network between the Epping and Upfield lines. It would remove Fawkner's current isolation and permit more efficient and direct bus links.

## Case Study One: Public Transport to Melbourne Airport

The Melbourne Airport precinct, located in the City of Hume, is one of the municipality's largest employers and trip generator. Employment is increasing with expectations of further growth. It was chosen for review as many of its transport issues are applicable elsewhere.

Public transport is provided by various operators charging premium fares, the most well-known being the Skybus shuttle. Skybus provides a high quality service to its CBD-based tourist and commuter market, but being an express with no local stops, it is unsuitable for travel from surrounding suburbs.

Local Metcard buses to Melbourne Airport operate along routes 477, 478 and 500. One of these (500) is part of this review. Buses depart from Essendon, Broadmeadows, Moonee Ponds, Sunbury and Airport West. From Melbourne Airport buses depart from the stop pictured below:



The case study identified scope for improvement on the following:

- a. Passenger information
- b. Service levels
- c. Service consistency

## a. Passenger information

Despite the advances of the internet and online journey planners, passengers still need information at stops. The pictures above show the stop at Melbourne Airport. The yellow sign lists routes but there is no timetable. The noticeboard to the right initially showed some promise, but only country timetables were included and its condition indicates little maintenance. Airport staff generally do not know that Metcard services run, which is understandable given the low profile of these services.

Other airport route stops fared no better. 500's stop in Sunbury lacked a readable timetable when last visited. Route 479 departs at 1:15pm twice weekly from an unmarked street pole in Flinders Street. The location of this is only disclosed to purchasers of the Melbourne Public Transport Map.

Airport routes are such a secret that a private organisation (the Monash Student Association) has found it necessary to produce a guide for students: <http://www.msa.monash.edu.au/transport/>

In summary, information provision on airport services is minimal and it is most unlikely that the average local passenger (let alone a tourist) could successfully use these services. Fortunately the cost of improved information is low and its installation at all major points along these route is recommended.

## b. Service levels

Timetable surveys indicates irregular and infrequent service on all routes. Intervals between services are typically one to two hours and only on weekends is there an attempt at an hourly 'clockface' or 'memory' timetable. All services finish in the late afternoon/early evening. Unless a journey is carefully planned (via one of several unlikely suburban or country destinations) its chance of success is low.

## c. Service consistency

The previous section mentioned that the service levels offered are not conducive to a reliable service, especially amongst people making time-critical trips, for example to work or to catch a plane.

Leaving this aside, another issue is the extraordinary number of route and timetable variations, truncations, deviations and extensions that affect all three of the airport routes; no two trips appear alike. Reference to the paper timetables is essential, but some 'request stop' deviations mean that passengers only get a service if another passenger (already on the bus) happens to have requested it go your way.

The level of service described above coupled with a lack of information means that very few people use (or know about) regular public transport to get to Melbourne Airport. This is despite our good value Metcards, a market segment that would use reliable regular services and an airport located just fifteen minutes from a major suburban railway station.

A makeover of airport public transport would include better information, direct legible routes and more frequent service. With a journey length of fifteen minutes to Broadmeadows, two buses could provide a twenty minute 'Train-Link' service meeting each suburban train. Local travel from the west could be met by a service to Sydenham via Airport West (timed to meet at least every second train at Watergardens). Finally, a truncated Route 500 could continue, co-ordinated with hourly RFR trains at Sunbury. Marketing would then promote these improved services to locals and tourists.

## Case Study Two: Co-ordination of a route

To explore the practicality of some of the recommendations here, it was thought instructive to examine a single route in detail. The route chosen was 527 – a well-used east-west route serving several major trip generators in and outside Moreland.

This L-shaped route currently links two railway lines (one of them twice). Like the parallel 513 it runs along parts of Bell Street. However unlike 513 it also serves the major centres of Northland and Preston. The western part of the route passes along O'Hea Street in Coburg before heading north to serve the quiet station of Gowrie.

Possible route reforms may involve more running via Murray Road (instead of Bell Street) to serve the Pentridge development. It could also run along Gaffney Street in Coburg North to provide better service for those distant from Bell Street. Also the route could also be made purely an east-west service starting from Pascoe Vale, with the Hadfield portion being served by a purely local service between Glenroy and Coburg.

Because the Pascoe Vale option involved linking three railway lines and such a cross-suburban link was considered desirable, this was chosen for the exercise. A service frequency equal to trains was chosen for both day and night services. This meant potentially reliable connections with every train.

An examination of train timetables showed that up and down trains almost coincided at Preston. This is an advantage as a single bus can provide good connections with trains in both directions. And a good connection at Preston allows the service to form an effective shuttle for passengers travelling to Northland. Of Coburg and Pascoe Vale, Coburg was considered most important due to its mid-route location and status as a suburban centre.

As can be seen from the timetable spreadsheet (attached) some bus/train connections at Coburg are poor, particularly at night. This is not unexpected; any bus timetable with connections at three or more stations will have similar difficulties. It may be possible to improve these but likely at the expense of connections elsewhere. To some extent the impact at Coburg is mitigated by the frequent tram service that short-distance passengers may prefer over the train. Furthermore additional local routes (eg Glenroy to Coburg) or even a major route such as 513 could be optimised for Coburg and provide a very frequent combined service.

And whatever might be said about the attached timetable, it is headway harmonised so that passengers can take advantage of consistently better connections (eg taking a Broadmeadows train from the city instead of an Upfield train) and more reliable travel than is often now the case.

The exercise was successful in demonstrating the following:

1. Headway harmonised timetables contribute to faster and more reliable travel. Travellers making regular trips will not need to carry timetables due to the reliable connections and clockface timetables.
2. More direct routes can reduce travel times, especially if they permit services to be headway harmonised with the same number of buses. Even where more buses are required, this is still worthwhile since the travel time and reliability gains are great.
3. Unless the scheduler is extremely lucky (or services are very frequent) bus routes can generally not be well co-ordinated with trains at three or more stations.

## Specific recommendations

The following are some suggested amended and altered routes. The main thrust has been to provide more direct and frequent services between major centres, extend service to currently under-served areas and rationalise routes where these are considered too close. See Appendix Four for maps.

Route	Recommendations
477	<p>Truncate route to Broadmeadows Station to Airport West Shoppingtown to remove duplication with Route 59 tram. Upgrade to secondary service levels. Renumber as 497.</p> <p>(Though unlisted the following routes related to 477 fall within the study area so are commented on here:</p> <p>Route 478: Replaced with a longer Melbourne Airport - Melrose Drive – Airport West Shoppingtown – Watergardens route (suggested number 501) operating to a secondary service level. A cheaper but slower option would use the existing route 476 to form the western portion and remove this route's duplication with tram 59.</p> <p>Route 479: Abolish as service is fulfilled better by other routes proposed here)</p>
484	<p>Retain. Renumber to 500-block number – 539 suggested.</p> <p>Headway harmonise with trains at Broadmeadows and (soon) Roxburgh Park (ie increase frequency from 25 to 20 minutes).</p>
500	<p>Split into two routes.</p> <p>Route 500 Broadmeadows to Melbourne Airport to form a direct Trainlink service operating via Gladstone Park. Service every 20 minutes day, 30 minutes night.</p> <p>Route 502 Melbourne Airport to Sunbury (replaces much of current 500).</p>
501	<p>Truncate route to only operate between Moonee Ponds and Airport West Shoppingtown.</p> <p>Consider a straightening and speeding of service by removing Carnarvon Rd deviation in Strathmore and operating direct via Napier Street.</p> <p>Upgrade to secondary service level and renumber as 499.</p> <p>To bring this area closer to faster rail services and access across the northern suburbs, consider a trial of additional peak period trips between Airport West and Pascoe Vale Station. These could following the existing route southwards until Loch Cr and use route number 498.</p> <p>The Niddrie-Airport West portion could remain as part of a new route (suggested 498) linking Pascoe Vale Station, DFO Essendon Airport –</p>

Route	Recommendations
	<p>Niddrie/59 tram - Airport West (via existing 501) and Airport West Shoppingtown. Apart from bringing public transport to a currently unserved destination, the Pascoe Vale link should dramatically improve access across the northern suburbs for residents of Niddrie, Strathmore, Essendon, and Airport West.</p>
513	<p>Upgrade to primary route.</p> <p>Truncated to commence at Coburg or Pascoe Vale Station (instead of Glenroy) and terminate at Heidelberg (Burgundy Street) for improved reliability and better train connections.</p> <p>Hadfield coverage to be provided by a new service (535) between Broadmeadows and Coburg as follows: Broadmeadows Station – Camp Rd – Widford St – Melbourne St – Wheatsheaf Rd then current 513 route.</p> <p>If timetable allows sufficient slack time at Pascoe Vale, investigate extending route across Gaffney St level crossing to Loch Cr to allow interchange with existing Route 501 (proposed 499).</p>
527	<p>Upgrade to primary route.</p> <p>Truncated to commence at Pascoe Vale Station (instead of Gowrie) for improved reliability and more direct train connections.</p> <p>Hadfield portion to be served by new route 537 Glenroy – Coburg: Glenroy Station – Nelson St – Melbourne Ave – Hilton Street – East Street then current 527 route.</p> <p>If timetable allows sufficient slack time at Pascoe Vale, explore practicality of extending route across Gaffney St level crossing to Loch Cr to allow interchange with existing Route 501 (proposed 499).</p>
530	<p>Retain. Upgrade to secondary route.</p> <p>Examine opportunities to use route to link Fawkner with Merlynston and Gowrie stations on the Upfield line.</p>
531	<p>Retain. Upgrade to secondary route.</p> <p>Extend to Coolaroo Station to provide a direct link with Upfield line when station opens in 2010.</p>
532	<p>Retain.</p> <p>Upgrade to primary route (particularly portion between Broadmeadows and Upfield).</p>

Route	Recommendations
533	<p>Retain. Upgrade to secondary route.</p> <p>Consider extending southern end to Roxburgh Park to cover area currently served by northern part of Route 541.</p>
534	<p>Retain. Upgrade to secondary route.</p> <p>Standardise route by removing service variations near Merlynston Station.</p> <p>If locally preferred, originate service from Broadmeadows rather than Glenroy – the proposed 535 could then commence from Glenroy like the 513 route it replaces.</p>
536	<p>Retain. Upgrade to secondary route.</p> <p>Modify to start from Broadmeadows instead of Glenroy: Broadmeadows Station – Camp Rd – Widford St – Daley St – Evell St* – May St – then current 536 route.</p> <p>(* Evell St deviation to become full-time with Route 537 providing an alternative service in Hilton Street.</p>
538	<p>Retain as secondary route.</p> <p>Remove deviation via Holberry, Graham and Walsh Streets (Broadmeadows) in favour of direct running via Camp Rd. (this area to be served by new 535 and 536 routes at Widford St).</p> <p>Simplify route in Campbellfield residential area. Extend via Mason Street and Barry Rd to increase coverage and connection with Upfield Station.</p> <p>Extend route to Coolaroo Station to provide an 'every train' link in conjunction with Route 531 when station opens in 2010.</p>
540	<p>Retain as secondary route.</p> <p>Consider improving coverage in north-eastern corner of Dallas by operating via King and/or Dallas Dr then Lismore St to reconnect with Blair St.</p>
541	<p>Retain. Upgrade to secondary route.</p> <p>Extend to Roxburgh Park Station when opens.</p> <p>Consider straightening if this allows 25 minute service to be reduced to a harmonised clockface 20 minutes. For example, consider direct running to Roxburgh Park Station along Somerton Road instead of via Bridgewater Road. Service to areas north of Somerton Road could be provided by an extended 533 from Craigieburn.</p>
542	<p>Retain. Upgrade to secondary route.</p>

Route	Recommendations
	<p>Existing weekday headways upgraded to an even 20 minutes. Examine scope for route simplification to allow this without extra buses.</p> <p>Existing 35 minute Saturday headways lengthened to 40 minutes to provide a consistent train connection.</p>
544	Retain. Upgrade to primary route.
560	Retain. Upgrade to primary route to provide key northern link.
571	<p>Retain as primary route between Epping Hospital and South Morang connected with trains at Epping Station.</p> <p>(Campbellfield portion to be included in proposed Route 573)</p>
571A	<p>Renumbered to 573 to avoid confusion with 571.</p> <p>Route extended to operate between Epping Station and Greenvale Village Shopping via Roxburgh Park. Primary service to provide key northern link.</p>

## Conclusion

Described is an approach with suggested changes that would go a long way to improving public transport service quality and thus patronage in the cities of Moreland and Hume. It advocates an integrated network of frequent routes between major trip generators and timetables that mesh with trains. Special attention has been paid in responding to modern travel patterns, such as freer trading hours, the growth of trip generators away from the fixed rail network and local suburban as well as CBD travel.

## **Appendix One: A general approach to bus route planning**

This submission supports a key performance indicator for public transport service provision along the lines of the following:

- 80 percent of residents are within fifteen minutes walk of a public transport service that operates at least every fifteen minutes seven days per week.

Given widespread 20 minute running of trains in the study area, a fifteen minute target requires more than just bus reform. However achieving a looser twenty minute frequency target is much easier and could be an aim of this review.

As well as good frequency and operating hours, bus routes must be direct and serve major trip generators. This is both for the benefit of passengers (in reduced travel time) and the Department (in operating economies). From our current network (which includes many circuitous routes) it may be possible to extract an 'efficiency dividend' which can be used to provide more frequent services for more hours of the day over more days of the week.

Other planning principles include the desirability of providing access to nearby railway stations and regional shopping centres. Ideally routes should have trip generators at either end so that it can attract patronage in both directions. For example, a local route serving Gladstone Park Shopping Centre might run between Broadmeadows Station and Airport West Shoppingtown.

Except to augment capacity on major corridors or provide short-distance travel in suburban activity centres, route duplications should generally be kept to a minimum. However where they exist there are major opportunities to exploit overlaps to provide a more frequent combined service.

An example would be staggering the timing of two 40 minute routes to provide an even 20 minute service over the combined section. If the combined section is near a railway station, this would result in buses meeting every train, thus strengthening their 'rail feeder' function. If connections are poor, this can be overcome by bringing all services forward or back by ten minutes or so.

Headway harmonisation has similar benefits. If all buses in the area are either every 20 or 40 minutes this provides consistent connections that are not possible with a mix of 25, 40 and 60 minute services (which exists at the moment). Any excessive dwell time could be modified by shortening or lengthening the bus route.

Harmonised headways are no cure; unless all services are frequent some connections may be poor. However this would be a lower risk for connections with major routes (due to their frequency) and at least it would be consistent. In addition there is the possibility of remedy if the connection is deemed important enough. Opportunities for bus to bus connections potentially exist at any point where two routes intersect, but are greatest at railway stations and near major shopping centres.

The following steps are advocated:

1. Identify key regional trip generators, interchanges and corridors
2. Identify the community's transport needs and undeveloped patronage opportunities.
3. Assess the strengths and weaknesses of the current network in relation to needs.
4. Design a network of 'primary' routes between major nodes, providing fast and frequent links from early morning to late at night.
5. Design a local network of well-connected 'secondary' routes catering for trips outside the primary network
6. Examine means to provide superior service. Possibilities include exploiting overlapping routes (ie timing two less frequent routes to provide a more frequent combined service), introducing a harmonised headway hierarchy, designing and exploiting connection opportunities, making routes more direct and extending service to a nearby interchange.

The role of various routes is shown in the table below:

Route type	Role	Days & Span	Frequency
<b>Primary</b>	<p>Links key railway stations, major activity centres, regional shopping centres and large education campuses.</p> <p>Also a feeder for major suburban areas remote from railway stations.</p> <p>Fast and direct along main roads.</p>	<p>Early morning until midnight seven days per week.</p> <p>NightRider services may overlap some primary routes, providing later services.</p>	<p>Peak: 10 or 15 min Day: 15 or 20 min Night: 20 or 30 min</p> <p>Services are train frequency or better at all times.</p> <p>Due to the frequency of existing routes and the importance of Footscray, Sunshine and Highpoint as destinations in their own right, services may run more frequently than trains even if not headway harmonised.</p>
<b>Secondary</b>	<p>Links residential suburbs to local railway stations and shopping areas.</p> <p>As direct as possible between and within suburbs.</p>	<p>Early morning until 9pm seven days per week.</p>	<p>Peak: 20 min Day: 20 (or 40) min Night: 30 or 60 min</p> <p>Consistent connections with every train or every second train.</p> <p>Headway harmonised.</p>
<b>Tertiary</b>	<p>Serve localities or destinations that are poorly served by primary and secondary routes.</p> <p>Circular, loop and/or unidirectional routes allowed.</p>	<p>Five or six days per week.</p> <p>Normally between morning and afternoon peak periods only</p>	<p>Every 40, 60 or 120 minutes.</p> <p>Between 2 and 10 services per day.</p> <p>Connections with selected trains only.</p>

## **Appendix Two: Historical, social and transport overview of Hume and Moreland**

The municipalities of Moreland and Hume form a wedge extending from almost the Melbourne CBD boundary to new housing estates on Melbourne's northern fringe.

Suburbs range from the older industrial and residential 'tram suburbs' of Brunswick and Coburg to the newer growing residential estates that have outrun the electrified rail network since the 1970s.

Unlike the more sought-after eastern suburbs (which grew more steadily and are more uniform), development has been in fits and spurts. Some estates are sandwiched in isolated pockets between freeways and railways. Their residents now want better public transport, but they have been short-changed by developers and governments who made no allowance for efficient service provision on these estates.

Moreland has de-industrialised and become more sought-after by CBD workers. Hume industrialised since WWII and is one of the nation's major transport, logistics and manufacturing hubs with close proximity to air, road and rail termini.

Hume's established areas are largely working-class in suburbs such as Dallas and Fawkner. In tandem with its industrialisation, it has had high population inflows from Europe, and more recently, the Middle East. Further north, first homebuyers dominate the still developing suburbs of Craigieburn and Roxburgh Park.

Moreland generally has a pedestrian-friendly urban form, with a dense network of trains, trams, and, during the day, buses. Its major commercial strip is along the tram-served Sydney Road. While the Upfield railway is peripheral, it is still close enough to Sydney Road to provide a rapid transport option.

Hume developed when the car was in the ascendency and its patchy development reflects this. Where there is a station there are often no major shops, and where there are major shops there is not always a station. Craigieburn and Roxburgh Park was planned before rail electrification so the potential of this to shape development was missed; street directories show a proposed Craigieburn town centre remote from the station. Unlike the grids of Moreland, street layouts are often hostile to pedestrians, reducing foot access to transit and local services.

Both municipalities have good north-south transport services, mostly rail-based. East-west bus linkages are extensive (on weekdays) south of Bell Street but limited north of it. For example there is no eastern link at all for Upfield line residents north of Coburg. Part of this is geographic (due to Merri Creek and discontinuous roads) but the rest can be mitigated by the service improvements discussed elsewhere.

Electric trains typically run every 20 minutes on the Upfield and Broadmeadows lines, with the latter soon to be extended to Roxburgh Park and Craigieburn. Bell Street is the approximate northern border of trams in the area.

Important bus interchanges are Glenroy, Broadmeadows and Coburg, with occasional services to Melbourne Airport. Moreland buses typically run east-west, connecting numerous tram and trains. In Hume buses are typically either north-south, along the Broadmeadows-Craigieburn line (where stations are quite widely spaced and housing is often away from the railway) and east-west, particularly between the Broadmeadows and Upfield lines.

### Appendix Three: Key trip generators in and near Moreland and Hume

The following are key trip generators and transport nodes within and adjoining the review area.

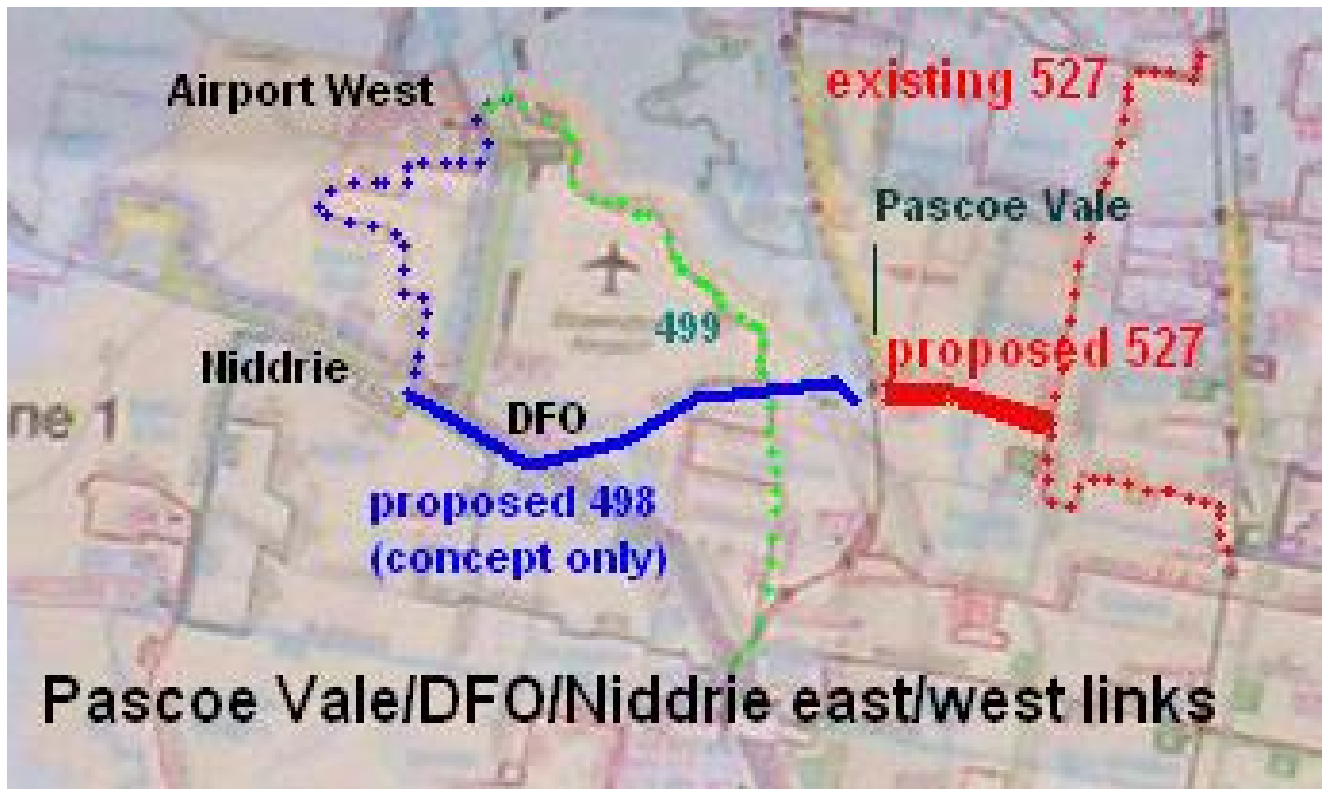
	Train	Tram*	Min hours bus (9pm finish Mon - Sun)	Limited bus (<9pm finish)	Occasional bus	No service
Broadmeadows SC	✓		✓	✓		
Melbourne Airport					✓	
Airport West Shopping Town (Moonee Valley)		✓		✓		
Gladstone Park SC				✓		
Craigieburn Plaza SC	✓					
Roxburgh Park SC	✓		✓	✓		
Campbellfield Plaza	line passes			✓		
Coburg/Sydney Road	✓	✓	✓	✓		
Glenroy SC	✓		✓	✓		
DFO Essendon						✓
Ford Motor Coy	✓		✓	✓		
Sydney Rd industrial area				✓		
Epping Plaza/Northern Hospital (Whittlesea)	✓		also Trainlink bus			
Latrobe Uni (Banyule)			✓			
Northland SC (Darebin)			✓			

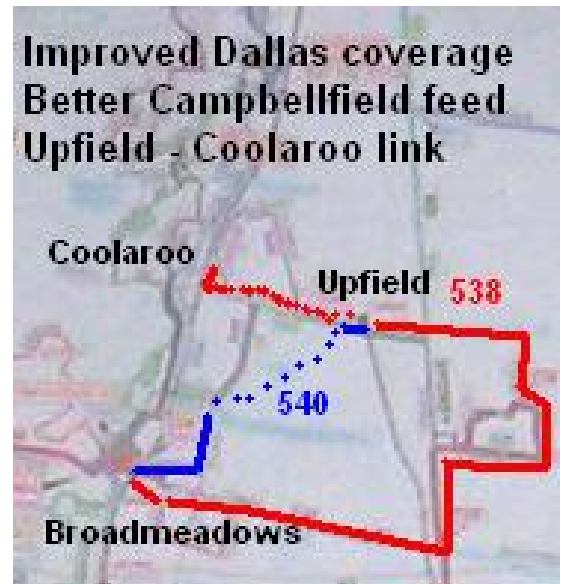
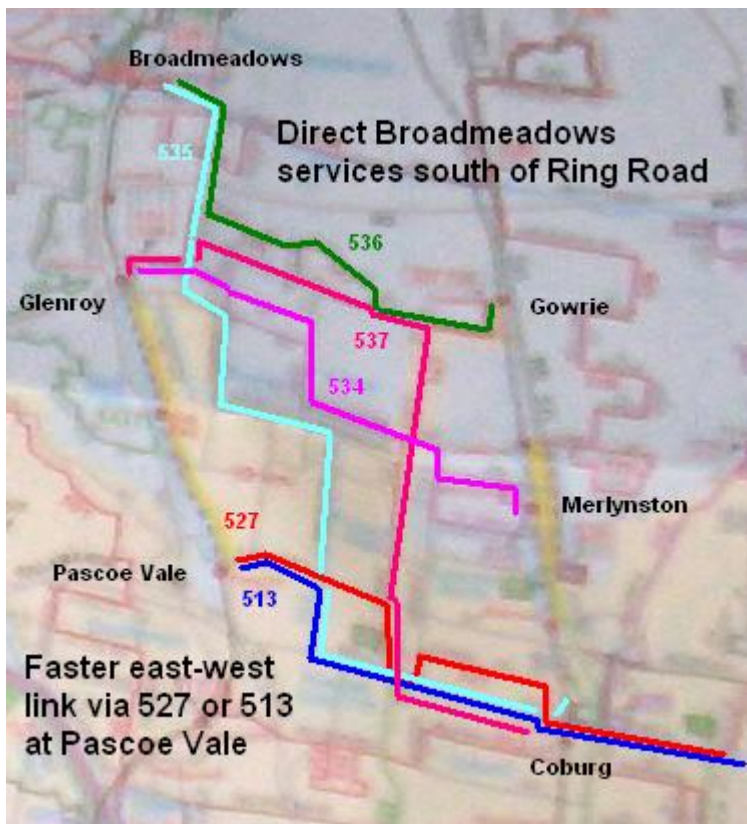
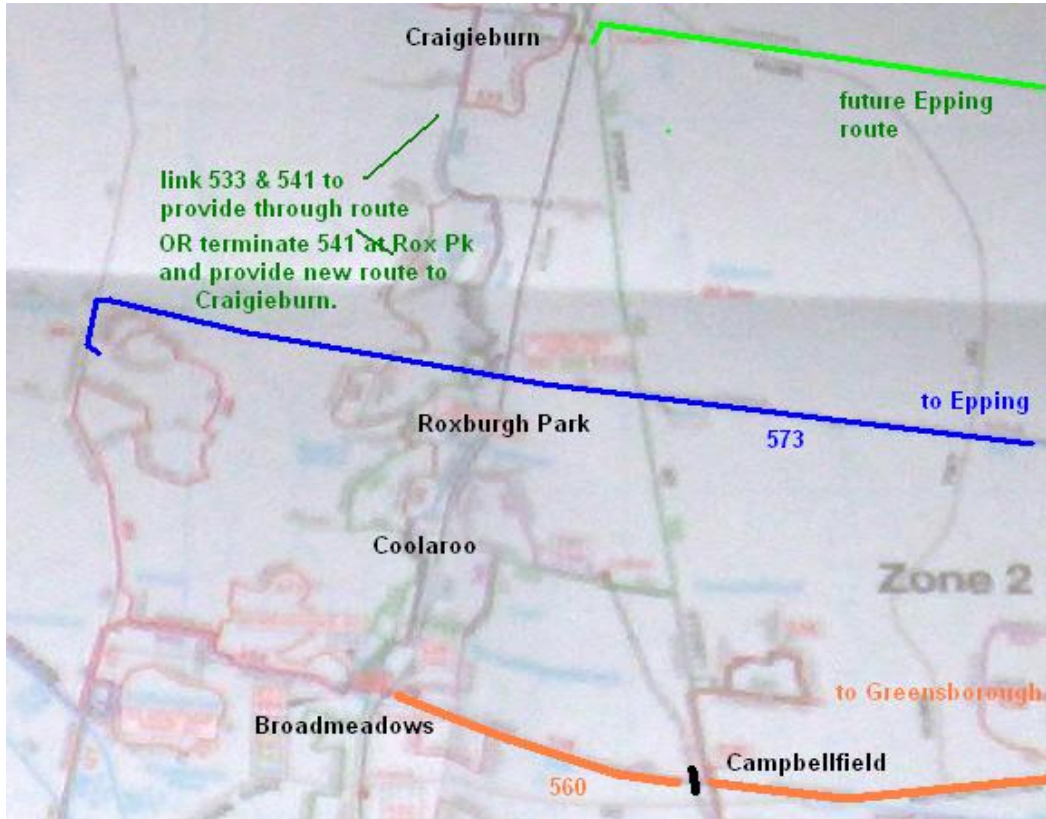
(\*) Access from south only.

All trip generators in Moreland/Hume have limited public transport access from all or most directions, with Melbourne Airport the most conspicuous example. Just one of the twenty bus routes in the review area (571) operates much after 9:00pm or links with every train. However planned improvements will soon see rail electrification at Roxburgh Park and Craigieburn and 'minimum hours' buses will extend hourly services until 9pm to most areas.

Improving transport to the above centres should be a major part of the review. In particular, they should be served by efficient 7-day routes from several directions. Though it is neither necessary nor desirable for there to be direct services from each centre to all others, travel between them should still be possible and practical from early morning to late at night, ideally requiring no more than one transfer.

Appendix Four – Maps of suggested changes and concepts – selected areas





Base map: Metlink Melbourne Public Transport Map 2006