

SUBMISSION

Review of bus services in the City of Whittlesea

seven day service

modern operating hours

direct & legible routes

high frequency

harmonised headways

serves major trip generators

better connections

area & corridor planning

Peter Parker* | **August 2007**

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.

Whittlesea is a fast-growing municipality on Melbourne's northern outskirts. The older southern part of the area is served by a rail terminus at Epping and the Route 86 tram on Plenty Road. New housing has outpaced rail infrastructure so buses are extremely important, both for local and CBD feeder travel.

Of the area bus reviews done so far, Whittlesea has the most in common with Hume with regard to its infrastructure, urban development patterns and demographics. Hence the general thrust of my recommendations will be similar to those made for Hume.

A summary of the approach taken appears in Appendix One. Appendices Two and Three provide background information about Whittlesea. 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 of this paper.

Route coverage

- Some suburban residential areas are over 1 kilometre from the nearest service – well above the DOI's 400 metre guideline. Doreen and Mernda are the most notable examples.
- Some light industrial or bulky goods zones are also remote from public transport. These land uses are a significant part of the area's retail and employment structure and require a commensurate level of public transport service.

Network design

- Because most of Whittlesea's major trip generators are located away from railway stations and tram routes, there is a need for buses to provide the 'last kilometre' of travel. These need to be well connected and meet every train.
- Network design is uneven, with east-west linkages (in particular) under-developed. Passengers often have to travel well out of the area to make cross-suburban trips, especially at night.
- Consistent service patterns. Especially in Lalor, Mill Park and Epping, some bus routes have unidirectional loop running where directions change with the time of day. This confuse passengers and makes the network less versatile. The need for each should be critically appraised with a view to simplification.
- Relationship between service levels and a route's importance. Currently there is little correlation between a route's service level and its role in the transport network. An example is the Lalor area where suburbs east of the railway line receive about double the service of those west of the line. In other cases (eg Route 556) a local deviation tacked onto a major route detracts from the latter's importance.

- A purpose for each route. Routes appear to have grown organically and their rationale for existence may have been lost or obscured by later alterations. A major part of a review should be to assign a purpose for each route so that the merit of proposed changes can be tested against the route's purpose. Suggested purposes for each route are tabulated elsewhere in this submission.

Operating hours, frequency and co-ordination

- About half of the area's seventeen bus routes operates seven days per week and just one (571) operates much after 9:00pm. It is recommended that the operating hours of major bus routes be similar to trains. Local routes currently vary greatly and the program to extend most to 'minimum standards' 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. A typical example would be a local route operating every 45 or 50 minutes where trains are every 20 minutes. 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:

- Pedestrian amenity at Epping. Epping is extremely pedestrian hostile and improvements would assist public transport patronage by making stops accessible at all times. Current poor access is due to the proliferation of roundabouts (which ensure unbroken streams of traffic), a lack of median strips and too few zebra or signalised pedestrian crossings.
- Additional station at Lalor and/or relocation of Lalor Station to improve access to Lalor Shopping Centre.
- Pedestrian access to bus stops. The level of road traffic in 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. Placing zebra crossings at entrances of roundabouts would greatly assist access in established areas, while new subdivisions should not have roundabouts on main roads at all.

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	Purpose/Role	Recommendations
520	Redefined: Local service for Doreen	<p>Alter route to serve Flaxen Hills Rd, Doreen.</p> <p>Extend span from weekday peak only to 7 day minimum hours connecting with every second train at least as far as the built up areas of Doreen.</p> <p>Operate selected trips to current terminus.</p> <p>Re-number to a more suitable route number (576 suggested).</p>
554	Same: local route	<p>Abolish route (replaced by proposed extended 559 & 570)</p> <p>If route is retained, remove confusing unidirectional running and convert to linear bidirectional route.</p>
555	Same: High St regional route and rail feeder	Headway harmonise with trains.
556	Redefined: Northland – Reservoir - Epping major route	<p>Delete sections along Rufus St, Greenbrook Dr, Derby Dr and McDonalds Rd and operate direct to Epping Plaza via Epping Station.</p> <p>Using resources saved from route straightening, provide 'every train' connection during minimum hours plus some additional later evening services.</p>
557	Same: local route	<p>Abolish route (replaced by proposed extended 559 & 570)</p> <p>If route is retained, remove circular unidirectional running and convert to linear bidirectional route.</p>
558 RESERVED FOR NEW ROUTE	Define as possible new Epping – Plenty Rd Tram local route	New route may be required to provide coverage to parts of Epping and Mill Park from which routes have been removed, eg Greenbrook Dr and Redlap Ave.
559	Redefined: local route between western part of Lalor and Bundoora via Lalor SC and Childs Rd.	<p>Remove confusing unidirectional running.</p> <p>Extend route to operate Thomastown – Lalor SC – Lalor Stn – Curtin Av – Dalton Rd – Childs Rd – Mill Park Dr – Plenty Rd</p> <p>Replaces 563 circle in Mill Park Dr and deleted Lalor 566 service. Serves western Lalor to provide new east-west link.</p>

Route	Purpose/Role	Recommendations
		Minimum hours and headway harmonise to every second train.
560	Same: Major cross-suburban link between Broadmeadows, Keon Park and Greensborough.	<p>Reroute along Settlement Rd between High St and Dalton St Thomastown to better serve major retail development and light industry.</p> <p>Increase service frequency and operating hours to equal trains.</p>
562	Same: Plenty Road tram feeder and north-south link.	<p>Headway harmonise to connect with every second or third tram.</p> <p>Extend finishing times beyond 9pm 'minimum hours' limit.</p>
563	Redefined: local route between Epping and Plenty Rd tram.	<p>Replace Greensborough portion of route with 571. Delete wasteful duplication with Plenty Rd tram.</p> <p>563 becomes a local route providing service to Epping. Replaces portions of 564, 571 and 572.</p> <p>Extend to minimum hours and headway harmonise services to connect with every second train. If possible stagger departures at Epping with 564.</p>
564	Same: Local route between Epping and Plenty Rd tram.	<p>564 remains a local route providing service to Epping. Replaces altered portions of 563, 571 and 572.</p> <p>Extend to minimum hours and headway harmonise. If possible stagger departures at Epping with 563.</p>
566	Redefined: Major cross-suburban link between Epping Plaza and Greensborough along Childs Rd via Mill Park Stables.	<p>Commence service from Epping instead of Lalor.</p> <p>Lalor eastern connection is provided by modified 559.</p> <p>Headway harmonise with every train or every second train and extend finishing time to connect with final up trains (ie after 11pm).</p>
570	Redefined: Local route and east-west connection across Lalor/Thomastown.	<p>Alter to operate in both directions along Betula Ave and Botanica Blvd to replace 572.</p> <p>Extend west of Epping line to provide local east-west link for Lalor and Thomastown. The route could either be extended southwards (to link with Mahoney's Rd industrial area) or westwards to retain coverage of Victoria Dr, Lalor.</p> <p>Extend to minimum standards and headway harmonise with every second train.</p>

Route	Purpose/Role	Recommendations
571	Redefined: Major cross-suburban link between Northern Hospital/Epping Plaza and Greensborough.	<p>Extend to Greensborough along current Route 563.</p> <p>Service levels similar to current Trainlink (between Epping and Plenty Rd) and meeting every second train for Plenty Rd to Greensborough portion.</p> <p>Loop in route abolished. Deleted portions receive service from altered 563, 564 and 572.</p>
571A	Redefined: Major cross-suburban link between Epping Station and Roxburgh Park & Greenvale Village Shopping Centre.	<p>Renumber as 573 to remove confusion with 571.</p> <p>Extend route to Greenvale Village.</p> <p>Headway harmonise with every train or every second train and extend finishing time to connect with final up trains (ie after 11pm).</p> <p>Plan as future primary route with connections to every train.</p>
572	Redefined: Major north-south link between Plenty Rd, Mill Park Stables, Mill Park Leisure Centre, Plenty Town Centre and South Morang.	<p>Extend to at least Plenty Rd, South Morang.</p> <p>Straighten route through Mill Park to reduce journey times as follows: Plenty Rd – McKimmies Rd – Morang Dr – Civic Dr – The Lakes Blvd.</p> <p>Headway harmonise with every second or third tram. Extend finishing times beyond 9pm 'minimum hours' time for local routes.</p> <p>Deleted sections are replaced by 563, 564 & 570.</p>
575	Same: Local route	
577	Same: Local route	<p>Extend to at least Plenty Rd South Morang.</p> <p>Headway harmonise with trains at Epping 7 days per week (eg 40 min frequency on weekends)</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 Whittlesea. 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 the eastern part of Lalor might run from Lalor Shopping Centre to Plenty Road.

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
Primary	<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>
Secondary	<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>
Tertiary	<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 Whittlesea

Whittlesea is a rapidly growing area about 20 kilometres north of Melbourne. It comprises a mix of rail-served working-class suburbs such as Thomastown and Lalor to the south and west and new housing estates around South Morang.

Trains once ran to Whittlesea township but these were withdrawn before it started to become a major growth corridor. Fixed rail public transport now serves Whittlesea's southern edge only, with trains departing from Epping. Trams serve Plenty Road as far north as Bundoora with several extensions being made in recent decades.

The area's major shopping facilities are located at Epping Plaza, Mill Park, Plenty Road and Lalor with a number of smaller local centres. Higher educational facilities are grouped along Plenty Road, just outside the municipality. Epping and South Morang have been nominated as major activity centres in the area.

As common with suburbs developed since the 1960s, there is limited coincidence between the area's major trip generators and its public transport network. Shopping centres at Epping and Lalor, for example, are just beyond walking distance from their nearest railway stations, while the Northern Hospital is even more remote. Similarly Mill Park Stables is too distant from Plenty Road for it to provide a strong terminus for a slightly extended Route 86 tram.

Whittlesea's urban form is representative of the time its suburbs were built. Thomastown and Lalor have a reasonably permeable (though sometimes indirect) grid for pedestrians. It is not particularly legible, and bus access between Lalor Shopping Centre and areas west of High Street is limited. Some of Whittlesea's newer areas (such as Epping North) also have similar issues with street layouts that do not always allow efficient routing.

Appendix Three: Key trip generators in and near Whittlesea

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

	Train	Tram	Trainlink bus	Min hours bus (9pm finish Mon - Sun)	Limited bus (<9pm finish)
Epping Plaza	< 1km		✓	✓	
Latrobe University		✓		✓	
Lalor SC	< 1km (line passes)			✓	
Mill Park Stables				✓	
Northern Hospital				✓	
Plenty Valley Town Centre			✓	✓	
RMIT Bundoora		✓		✓	

(*) Access from south only.

Major trip generators in Whittlesea have 7-day public transport access from at least some directions until the early evening. Service frequencies are however limited on weekends and evenings and just one of the twenty bus routes in the review area (571) operates much after 9:00pm or links with every train.

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

The following maps provide a visual guide to the major changes recommended above.

Map 1 Lalor/Thomastown

Map 2 Mill Park

Map 3 Epping/South Morang

(attached jpg files)