

S U B M I S S I O N

Review of bus services in the Cities of Frankston and Mornington

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.

While there are themes common to all suburban service reviews (most notably service span, co-ordination, frequency, coverage and passenger information) the relative priority of each varies by area.

In Frankston service span is most important, whereas in Mornington, with its small number of routes, coverage is prime. Frequency is desirable in all areas, but particularly major trip generators and areas with high patronage potential. To accommodate these often conflicting factors, this paper favours service planning by group, where separate but co-ordinated routes together offer high frequency to a major trip generator before branching off to provide local coverage.

Demography, transport needs and service provision

Before making any recommendations the area's profile, its demographics and its bus transport needs were examined. As is mentioned in Appendix Two those for Frankston and the Mornington Peninsula were found to be quite different to other parts of Melbourne.

These factors relate to bus service provision in the following ways:

- A relatively low peak to off-peak patronage ratio on some routes, as low labour participation rates depresses peak and increases off-peak travel. As day turns to night seniors are replaced by young people.
- There is potential for weekend patronage to be higher than on weekdays especially during summer. The implication here is that service levels should be broadly similar seven days per week, subject only to the need to connect with trains.
- Because of the diversity of local trips and that some major trip generators are just outside central Frankston, the importance of providing good connections to other services is high.
- Because of Frankston's large passenger catchment area (the trip home from the station after the last bus is not necessarily a cheap taxi fare), the importance of service span is not to be underestimated. Although all routes in this review are local and would normally have a 9pm finish time, later departures on selected routes from Frankston (eg Dandenong/Carrum Downs, Cranbourne/Centro Karingal, Hastings and Rosebud/Mornington) would dramatically improve the network's utility.
- Route coverage is low and many areas are beyond reasonable walking distance from a bus route.

A summary of the approach taken (for all reviews) appears in Appendix One. Appendices Two and Three provide background information about Frankston and Mornington. A map of suggested region-wide service frequencies appears in Appendix Four.

Patronage and service opportunities

The following present patronage opportunities in the area:

- Concentrations of demographic groups inclined to high transit usage are found on both sides of the peninsula, particularly around Rosebud and Hastings. Route 788 in particular has high potential for increased local and visitor traffic along a busy corridor.
- The high proportion of residents who work locally and the existence of currently unserved light industrial areas between railway stations and residential suburbs.
- Potential to rearrange existing timetables to provide 'every-train' connections with subregional trip generators such as Mornington, Carrum Downs Shopping Centre, Monash University and Karingal Centro.
- The ability to exploit the recent fare reductions and increase leisure use of Mornington Peninsula routes by providing a better network.
- Chance to simplify local routes in established parts of Frankston and extend coverage to currently unserved areas of Mornington.
- Opportunities to provide Frankston North residents with better access to local trip generators, especially after the commencement of the Frankston-Ringwood SmartBus. The chance of success is high as Frankston North has fewer cars per household than other parts of Frankston.
- Scope for enhanced connections between Carrum Downs and its nearest stations, and also a new cross-suburban link between Seaford and Cranbourne. Currently passengers need to backtrack to Frankston and commuting times exceed 90 minutes for a 38km trip to Melbourne CBD.

Local transport issues

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

Route coverage

- The proportion of homes within 400m (or even 1km) of a bus stop in Frankston-Mornington is well below the Melbourne average. Suburbs with large populations remote from a bus route include Mt Eliza, Mt Martha, Rosebud, Carrum Downs and Sandhurst.
- The existence of employment areas such as light industrial areas with little service. To this should be added some 'Green Wedge' areas, which are nevertheless employment, recreation, shopping and even residential locations.

Network design

- Inconsistent service. Examples include unidirectional routes and deviations that confuse passengers. Buses may take a different route for certain trips or on certain days of the week. Routes should be made bidirectional where possible and the need for deviations should be critically appraised with a view to simplification.
- Some routes appear to exist without a sound rationale (eg 777). A major part of this submission has been to define a role for each route.
- Carrum Downs, in particular, lacks effective links to its nearest railway stations. Instead commuters have to backtrack to either Kananook or Frankston. This paper recommends additional or extended links to Seaford and Carrum.
- There are currently uneven intervals between train and bus departures to Hastings from Frankston. The synchronisation of train and bus timetables to provide a uniform service every 30, 40 or 60 minutes between Frankston and Hastings is recommended.

Operating hours, frequency and co-ordination

- The last train from Melbourne CBD arrives at Frankston Station at around 1am, but the last 'minimum hours' bus is scheduled to leave about four hours earlier. Though the area contains no SmartBus or extended hours routes, the large catchment area of Frankston makes a wide span of service in all major local corridors essential. See Appendix Five.
- While trains in the study area run every 15 or 20 minutes during the day (30 minutes night) bus routes often do not reflect this. Hence they fail to provide efficient, repeatable connections. 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.
- There is a need to plan services so that families of routes serving major trip generators can offer a high combined service frequency, preferably meeting each train.

Other matters

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

- Layout and design of local streets. The layout of some suburbs is not conducive to efficient bus routes. Even where an acceptable road grid is provided, the design of some intersections and speed limiting devices is unsuitable for buses. The lack of direct routes for buses makes the service slower and more expensive to run than it need be.
- Train service to Stony Point. Services operate on a regular 2-hour headway on weekends but at irregular times on weekdays. This makes bus co-ordination difficult and gives rise to unnecessary duplication. A review of the weekday Stony Point timetable with a view to regularising headways is recommended.
- Train services to Stony Point. A service increase from its current headway (approx 120 minutes) to a regular 60 minutes seven days a week is desirable. This could mesh with buses (running every 60 minutes) to provide a combined 30 minute service between Frankston and Hastings. In the interim, buses could either be run every other hour (to provide an hourly service) or somewhat more frequently to provide a combined 30 min service.
- Pedestrian access to bus stops. 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, with initial priority to trip generators such as Carrum Downs Shopping Centre, Karingal Centro, Monash University and Frankston Hospital.
- Improvements to passenger information are required. Specifically, passenger information modules containing timetables and maps at major trip generators and interchange points are recommended and the one that currently exists, at Frankston Station, needs to be updated. Paper timetables need to be in DL format with the route number shown at the top of the cover to allow easy display and identification in brochure racks.

Case Study: A service co-ordination opportunity at Mornington

Currently four routes (781, 784, 785 and 788) provide service between Frankston and Mornington. An intensive service operates, with five buses per hour on weekdays. This is an average 12 minute frequency, ie similar to many inner suburb tram routes. However in practice, services are 'lumpy' with gaps of up to 20 minutes and unpredictable waiting times at Frankston Station because timetables have been planned independently.

As trains operate every 15 minutes, a co-ordinated bus network would schedule buses either every 15 minutes (meeting every train), 30 minutes (every second train) or 60 minutes (every fourth train). A 15 minute service to Mornington is four buses per hour. While less than the current five per hour the maximum waiting is reduced and a connection is provided for every train. Hence the bus effectively becomes an extension of the train and the need to consult timetables is reduced.

In the case of Mornington 'every train' co-ordination could be achieved by increasing the frequency of Route 788 to 30 minutes. Augmenting this with existing hourly services on two local routes (eg 784 and 785) would provide the four buses per hour needed to provide consistent connections at Frankston. The weekend pattern (20 minute combined service) would be similar, with an option of either running one route on a 40 minute headway or two routes 80 minutes each.

Once the need for timetable co-ordination has been accepted, the other requirements for genuine co-ordination are stop co-location and passenger information. For example, if passengers at Mornington cannot wait at one stop (or at least the same corner) for all services to Frankston, many benefits of the combined high frequency service are lost. This is a major drawback of the current route structure in Mornington that this submission seeks to correct.

The logical interchange point for Mornington is the corner of Main and Barkly Streets. This requires a 300-metre extension of Route 788 to Barkly Street, possibly operating via Wilson Rd to remove the double-running via Main Street. Local Mornington routes (eg 784 & 785) could run via a longer section of Barkly Street, while the remaining service that does not need to be co-ordinated (eg 781) can retain its existing route, serving the full length of Main Street.

This study has provided a practical example where several routes can be ordered to provide a frequent combined service with connections to every train. Other corridors with similar opportunities include Frankston - Karingal (770/771), Frankston – Karingal - Langwarrin (789/790/791), Frankston – Carrum Downs – Carrum (832/833), Frankston – Seaford (779/780) and Monash University as per Appendix Four.

Specific recommendations

The following are some suggested amended and altered routes. The 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	Role	Recommendations
768	Defined as local Langwarrin service.	Retain but consider alternatives that would provide direct access to Frankston and shopping at Langwarrin such as providing coverage from a modified 778, 789 or 790.
769	-	Delete route. Incorporated in 770.
770	Defined as a Karingal local service	Route to become bidirectional between Frankston and Karingal via Ashleigh and Karingal Dr. Extend to minimum hours, connecting with every second train. Remove Orwill St deviation (this is replaced by proposed 833 along Dandenong East Rd) Provide for interchange with 789/790/791, either at the Centro Karingal interchange or by extending route to Cranbourne-Frankston Road.
771	Defined as a Karingal local service	Route to become bidirectional between Frankston and Karingal via Skye Rd, Dalpura Cct and Lucern Cr. Extend to minimum hours, connecting with every second train. Provide for interchange with 789/790/791, either at the Centro Karingal interchange or by extending route to Cranbourne-Frankston Road.
772	Redefined as Foot Street Frankston South local service.	Convert to linear bidirectional route. To operate via Foot Street, Poinciana St, Overport Rd, Humphries Rd and Rosedale Gv, with possible extension to Baxter Station. 60 minute service frequency suggested, co-timed with 773 to provide combined 30 minute weekday service.
773	Redefined as Kars Street Frankston South local service extending to Mt Eliza.	Convert to linear bidirectional route, remove Saturday variations and extend to at least Mt Eliza via Brighton St, Humphries Rd and Old Mornington Rd. To economise on buses, consider extension to Mornington area to replace either 784 or 785. 60 minute service frequency suggested, co-timed with 772 to provide combined 30 minute weekday service.
774	Redefined as local route serving southern parts of Frankston, Towerhill Shopping Centre and Monash Uni	Circular route with services in both directions (775 opposite direction). Suggested anticlockwise route as follows: :Yuille St, Towerhill Rd, Golf Links Rd, Robinsons Rd, Heatherhill Rd, Moorooduc Hwy, Cranbourne Rd.
775	Redefined as local route serving southern parts of Frankston,	Circular route with services in both directions (774 opposite direction).

Route	Role	Recommendations
	Towerhill Shopping Centre and Monash Uni.	Clockwise route reverse of 774.
776	Defined as a Pearcedale local rural service	Alter route to run via Golf Links Road (north of Robinsons Rd) in both directions. Baxter service is replaced by modified 783.
777	-	Delete route due to low patronage potential. Coverage may eventually to be provided by a future Karingal Hub – McCormicks Rd – Sandhurst – Carrum Downs local route (not discussed here).
PROPOSED 778	NEW: Defined as local service for Bunarong Park area south of Cranbourne-Frankston Road. Also a direct link from Karingal to Leawarra Station, Monash Uni and Frankston Hospital.	Frankston to Karingal via Leawarra. Route: Frankston Station – Davey St – Hastings Rd – Frankston-Flinders Rd – Heatherhill Rd – Lardner Rd – Bloom St – Hillcrest Rd - then via local streets to Ferndale Dr and Karingal interchange.
779	Redefined as a Frankston – Seaford service serving residential and industrial areas of Seaford.	Remove service from Belvedere Park (this is replaced by proposed 834) and operate service to Seaford Station instead. This provides a faster trip and links Hartnett Drive Industrial area to Seaford Station. Run hourly, but schedule in conjunction with Route 780 to provide 30 minute combined weekday service.
780	Redefined as a Frankston – Seaford local service generally operating west of the railway line.	Consider operating portion north of Seaford station via Park and Halifax streets to improve coverage. Remove Saturday deviation through Belvedere Park. Extend service to Patterson Lakes Shopping Centre if achievable without an extra bus being required. Run hourly, but schedule in conjunction with Route 779 to provide 30 minute combined weekday service.
781	Defined as the Mt Martha local service with train connections at Frankston and bus connections at Safety Beach.	Extend service south to Safety Beach to provide coverage of Hearn Rd, Esplanade, Marine Drive and the new canal housing development. Make provision for interchange with Route 788 at Safety Beach. Extend service to minimum hours. In conjunction with other Mornington routes, provide an every train connection between Frankston and Mornington.
782	Defined as Balnarring/Flinders rural service	Provide some weekend service.
783	Defined as Hastings area local service complementing Stony Point line.	Run as per current route to Baxter then Baxter and Hawkins Rd to replace withdrawn 776 service. Operate via Pembroke Drive in Somerville to increase coverage. Seek to co-time with trains and Route 782 to provide a regular service from Hastings. Provide later evening services as per Appendix Five.

Route	Role	Recommendations
784	Defined as a local Mornington route	In conjunction with other Mornington routes, provide an every train connection between Frankston and Mornington. Reroute at Mornington as per case study.
785	Defined as a local Mornington route	In conjunction with other Mornington routes, provide an every train connection between Frankston and Mornington. Reroute at Mornington as per case study.
787	Defined as a local route in the Rosebud area.	<p>Straighten and simplify route.</p> <p>Operate to provide connections to every second Route 788 service (ie every 60 min weekdays, every 80 min weekends).</p>
788	Defined as the major route between Frankston and Portsea serving centres at Mornington and Rosebud.	<p>Extend to minimum hours plus evening services between Frankston and Rosebud as per Appendix Five.</p> <p>Headway harmonise and connect with every second train seven days per week (ie 30 min M-F, 40 min weekend, 60 minute evening).</p> <p>Between November and March operate a summer weekend timetable with day services every 20 minutes and evening services every 30 minutes to connect with every train.</p> <p>Remove pickup/setdown restrictions between Frankston and Mornington, but consider possibility of making it a limited stop service, subject to adequate service provision from local routes and passenger information.</p> <p>In conjunction with other Mornington routes, provide an every train connection between Frankston and Mornington.</p> <p>Include Rosebud NightRider times on timetable to encourage patronage.</p>
789	Redefined as local Frankston – Langwarrin route serving areas north of Cranbourne-Frankston Road.	<p>Delete service to Cranbourne (provided instead via enhanced 791) and provide suitable interchange on Cranbourne Rd.</p> <p>Operate service through interchange at Centro Karingal.</p> <p>Runs every 60 minutes Monday to Friday, connecting with every fourth train at Frankston. Provides frequent service in conjunction with 790 & 791.</p> <p>Examine service options to Lloyd Park area, which is currently unserved.</p>
790	Redefined as local Frankston – Langwarrin route serving areas south of Cranbourne-Frankston Road.	<p>Delete service to Cranbourne (provided instead by enhanced 791) and provide suitable interchange on Cranbourne Rd.</p> <p>Operate service through interchange at Centro Karingal.</p> <p>Run every 60 minutes Monday to Friday and every 40 minutes weekends, meeting trains at Frankston.</p> <p>Provides frequent combined service co-timed with 789 & 791.</p>

Route	Role	Recommendations
791	Redefined as the major Frankston – Cranbourne link operating long hours seven days per week.	<p>Operate service through interchange at Centro Karingal (if this does not harm train connections at Frankston and Cranbourne).</p> <p>Retain minimum hours service and add later evening service as per Appendix Five.</p> <p>Headway harmonise and connect with every second train seven days per week (ie 30 min Monday-Friday, 40 min weekend, 30 minute evening).</p> <p>Co-ordinate with 789 and 790 to provide 15 minute weekday service to Frankston and 790 to provide 20 minute weekend service to Frankston.</p>
PROPOSED 792	NEW Defined as the major east-west service through Carrum Downs and a link between Seaford Station and Cranbourne.	<p>Route covers an unserved industrial area, a major shopping centre, new housing and provides an important cross-suburban link.</p> <p>Seaford to Cranbourne via Carrum Downs SC</p> <p>Route: Seaford Station – Railway Pde – Seaford Rd – Brunel Rd – Lathams Rd – Hall Rd – Carrum Downs SC – Hall Rd – Cranbourne-Frankston Rd – Centro Cranbourne – Cranbourne</p> <p>Minimum hours service meeting every second train at Seaford and every train at Cranbourne</p>
830	Redefined – refer to 833	Replace with 833 (see below)
831	Redefined – refer to 833	Replace with 833 (see below)
832	Redefine as the central Carrum Downs service with train connections at Carrum, Kananook and Frankston.	<p>Headway harmonise and connect with every second train seven days per week.</p> <p>Extend service to minimum hours.</p> <p>Co-ordinate timetable with proposed 833 to provide 'every train' connection.</p> <p>Straighten route in Carrum Downs, as follows: As per existing route until Greenwood Dr then Currawong Dr – Carrum Downs SC – Hall Rd – McCormicks Rd – Brunnings Rd – Cadles Rd – Wedge Rd – Dandenong-Frankston Rd – Thompson Rd – McLeod Rd – Carrum Station</p>
DOI PROPOSED 833	<p>Redefine as the local Frankston North and Carrum Downs service, with train connections at Carrum and Frankston*</p> <p>(*) This is after commencement of 901 SmartBus. Until then operate service to Dandenong as per existing 830/831.</p>	<p>Headway harmonise and connect with every second train seven days per week.</p> <p>Extend service to minimum hours, with possible after-9pm departures as per Appendix Five.</p> <p>Co-ordinate timetable with extended 832 at Carrum and Frankston to provide an 'every train' connection.</p> <p>Modify route to avoid Overton Rd level crossing, improve inner Frankston and Carrum Downs coverage as follows:</p> <p>From Frankston via Dandenong Road East (to replace deleted 770 extension) then Frankston-Dandenong Rd – Forest Dr – Monterey Blvd – Excelsior Dr – Frankston-</p>

Route	Role	Recommendations
		Dandenong Rd – Ballarto Rd – Lyrebird Dr – Hall Rd – Cadles Rd – Wedge Rd - Dandenong-Frankston Rd – Thompson Rd – McLeod Rd – Carrum Station
834 PROPOSED	NEW Defined as Belvedere Park and western Carrum Downs local service, serving a major centre at Carrum Downs and the train at Seaford.	Seaford to Carrum Downs SC via Belvedere Park. Replaces current 779/780 in Belvedere Park and extends coverage to Seaford shopping strip, Seaford Safeway and unserved parts of Carrum Downs. Route: Railway Pde - Seaford Station – Station Street – Nepean Hwy – Seaford Rd – Brunel Rd – Maple St (optional) - Austin Rd – Henry Cr – Seaford Rd - Dandenong-Frankston Rd - O'Gradys Rd – Lyrebird Dr – Currawong Dr – Carrum Downs SC
835 PROPOSED	NEW Defined as local route for eastern Carrum Downs and Skye	Seaford to Carrum Downs SC via Skye. Route: Railway Pde - Seaford Station – Station Street – Nepean Hwy – Seaford Rd – Ballarto Rd – McCormacks Rd – Hall Rd – Carrum Downs SC
DOI PROPOSED SMARTBUS 901	NEW Defined as high-frequency cross-suburban link between Frankston, Dandenong and Ringwood.	Operate to train operating hours. 15/20/30 min service harmonised with trains.

Other routes not proposed

The following do not form part of this submission but may be required in the future:

- Carrum Station – Thompson Rd – Merinda Park - Thompson Parkway SC: A cross-suburban link similar to the proposed 792, though currently with little development in between.
- A service from Karingal to Carrum Station via McCormicks Rd to pass Sandhurst.
- Sandhurst Estate: The design of this estate is not conducive to efficient public transport and current patronage potential is low. A small Park & Ride offering bicycle stowage near one of the above routes is suggested.
- A cross-peninsula service such as was tried on a limited scale several years ago.

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 Frankston and Mornington. 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.

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 Frankston South might run between Frankston Station and Mornington.

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 30 minute routes to provide an even 15 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 30 or 60 minutes this provides consistent connections that are not possible with a mix of 25, 40 and 70 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
<p>Primary</p>	<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 min (20 weekends) Night: 30 min</p> <p>Services designed to match train frequency.</p>
<p>Secondary</p>	<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: 15-20 min Day: 30 min (40 weekends) Night: 30 or 60 min</p> <p>Consistent connections with every train or every second train.</p> <p>Headway harmonised.</p>
<p>Tertiary</p>	<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 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 Frankston and Mornington

The municipalities of Frankston and Mornington form a wide arch along the eastern edge of Port Phillip Bay. They have long been considered popular holiday destinations, but with the suburbanisation of Frankston and greater motorisation, tourist activity has shifted around the Peninsula to Rosebud and Portsea.

The demographics of suburbs vary widely. The Mornington Peninsula has the highest average age of anywhere in the state. Families are dominant in other areas, with the area having a higher than average proportion of single parents. Household incomes are equally diverse. Frankston North, Rosebud West and Hastings are some of Melbourne's lowest income areas, while Sorrento, Mount Eliza and Frankston South are amongst its highest.

Key trip generators and regional centres are Frankston, Karingal Shopping Centre, Monash University, Frankston Hospital, Mornington, Rosebud and Hastings. Unlike the northern and south-eastern suburbs there is little manufacturing. Instead most employment is in services such as trades, retail, education, health and recreation.

Public transport comprises suburban electric trains to Melbourne, a 2-hourly diesel train to Stony Point and buses elsewhere. Because of its huge catchment area (40 or 50 kilometres in some directions) Frankston station is one of Melbourne's largest and busiest suburban transport hubs.

Frankston Station is the hub of a suburban bus network operating entirely in Fare Zone 2. All but a couple of routes are to or from Frankston CBD; there are no cross-suburban, cross-peninsula or orbital services. Long-distance travel is provided to Rosebud and Portsea via Route 788. This route charged its own fares until these were integrated in March 2007. The opportunity this has for improved service planning in the Mornington area are discussed elsewhere.

Frankston and Mornington have several characteristics that make it different to other areas reviewed so far. As these (should) influence service planning, they are listed below:

- A very high aged population percentage and above-average unemployment (which combine to produce a low labour force participation rate)
- A significant youth population
- Sparse route coverage with many areas 1km or more from the nearest stop
- High service-sector employment (decentralised and often outside regular 'business hours')
- Significant seasonal tourist travel and employment, particularly in areas away from rail
- A very large catchment area around Frankston Station
- A long narrow coastal corridor that ensures wide spacing between services due to low population densities, and thus a need to use public transport for diverse local trips

The implications that points have on network design are discussed elsewhere.

Appendix Three: Key trip generators in and near Frankston and Mornington

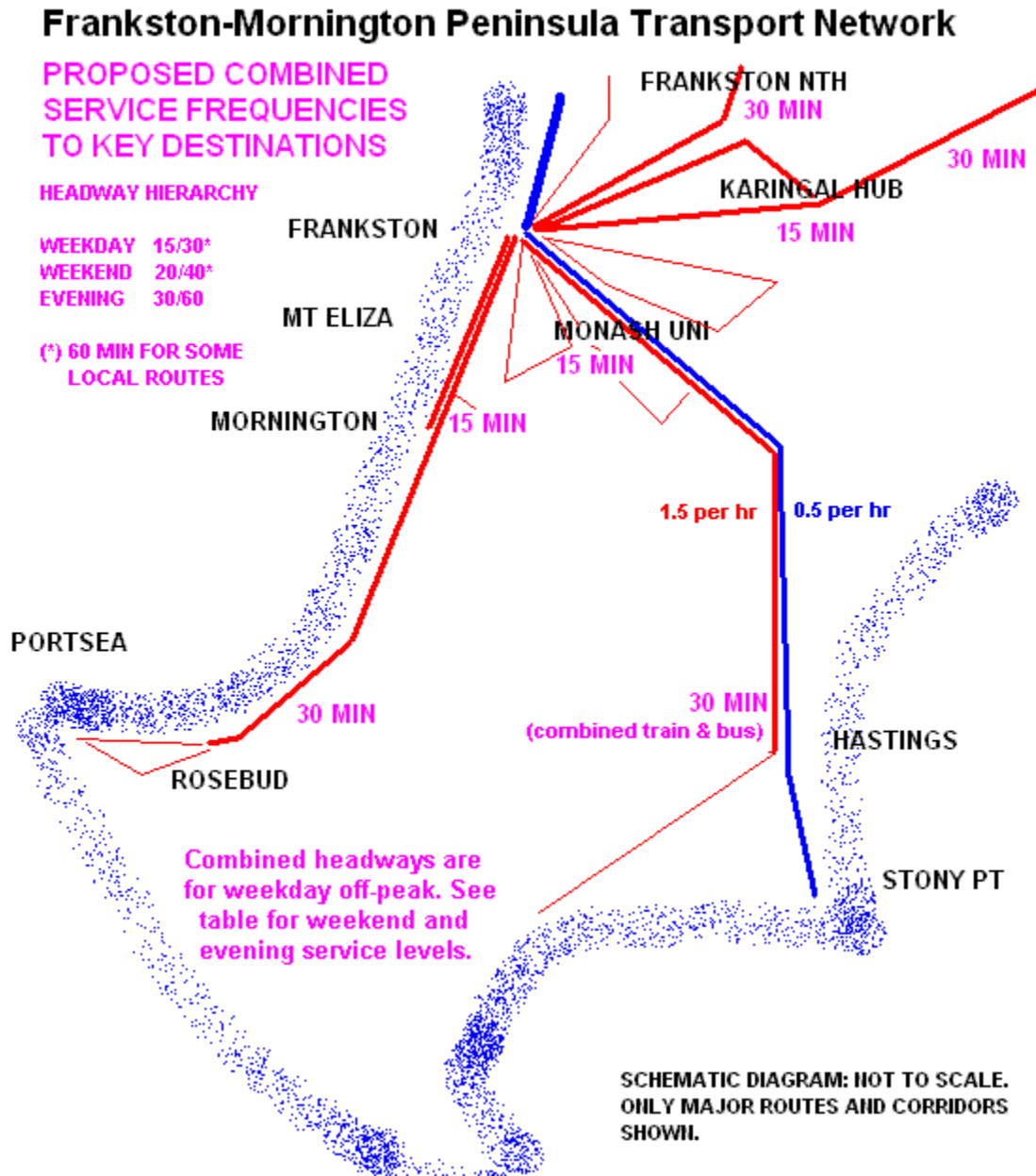
The following are key trip generators and transport nodes within and adjoining the review area. Ticks show current services.

	Elec Train	Diesel Train	Min hours bus (9pm finish Mon - Sun)	Limited bus (<9pm finish)	Proposed combined service frequency from Frankston (weekday/week-end/night)
Carrum Downs SC				✓	15/20/60
Cranbourne			✓		30/40/60
Dandenong				✓	15/20/30
Frankston CBD	✓	✓	✓	✓	-
Hastings		✓	✓		30/40/60
Karingal Hub SC				✓	15/20/30
Lakeview SC			✓		30/40/60
Monash Uni		✓	✓		15/20/30
Mornington				✓	15/20/30
Rosebud				✓	30/40/60

All trip generators in Frankston and Mornington have limited public transport access from all or some directions, with the Melbourne - Frankston train providing the only reasonably frequent service.

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: Suggested service frequencies



Appendix Five: Beyond minimum hours

Though only a minority of Melbourne homes are within walking distance of a suburban railway station, most of the rest are still within five kilometres. This is about 1 hour's walk or a ten dollar taxi fare. In this context it might be possible to defend the fact that even the upgraded 'minimum standards' buses finish three to four hours before the trains.

The situation is different in Frankston/Mornington for the following reasons:

- The suburban rail network covers only the north-western edge of the study area, leaving the remainder with no service
- There are suburban-density areas more than 25 kilometres from Frankston CBD (or a \$35 fare)
- The area has a socio-economic and demographic profile likely to use night services
- There is already proven night patronage in the area, as demonstrated by the popular Rosebud NightRider bus and evening train usage.

The proposed SmartBus to Dandenong and Ringwood will improve after 9pm coverage, but again only to a small proportion of Frankston. Local routes must therefore fill the gap with later finishing times.

After-9pm services are not without precedent in regional areas with similar socio-economic characteristics to the Mornington Peninsula. Examples include Moe, Morwell and parts of Geelong, which are further from Melbourne but already get the night service levels recommended here.

The most important additional service from Frankston would be one departing around 11:30pm, or about two hours after 'minimum standards' services finish. This is because the buses forming this service could feed the last city-bound train, which leaves at 11:04pm. A 1:20am bus would connect with the last train (Sun-Thur), while two other departures would boost service to hourly.

A possible night bus timetable, connecting with trains in both directions, appears below:

Buses arrive Frankston	Train departs Frankston	Train arrives Frankston	Buses depart Frankston	Notes
10:05pm	10:10pm	10:24pm	10:29pm	
10:59pm	11:04pm	11:24pm	11:29pm	Bus arrival advanced to connect with last up train
12:25am	-	12:24am	12:29am	Bus arrival delayed to shorten bus-bus connection
1:15am	-	1:14am	1:19am	Bus arrival delayed to shorten bus-bus connection

Routes (or portions of routes) recommended for this enhanced-minimum service include

- 791 Frankston – Karingal – Cranbourne (Note need to connect with Cranbourne up trains)
- 788 Frankston – Mornington – Rosebud
- 830/1 Frankston – Dandenong (in advance of 901 SmartBus introduction on this route)
- 833 Frankston – Carrum Downs - Carrum (following SmartBus introduction on Dandenong route)
- 783 Frankston - Hastings

Friday and Saturday late night services have not been considered, but a Route 788 to Rosebud departing Frankston at 2:11am could connect with the final train and replace or supplement the 12:30am Rosebud NightRider from the city.

Appendix Six: Concept maps of proposed routes

Two maps showing suggested networks in Frankston and Seaford/Carrum Downs are attached.

Map One: Frankston

Map Two: Carrum Downs/Seaford

(jpg format)