3.9 IMAP

3.9.1 Through traffic routes

Figure 27 and Appendix G show the distribution of through traffic, incoming and outgoing traffic, and local traffic in IMAP.

The analysis indicates that the primary through traffic routes in IMAP are the City Link corridors, Eastern Freeway (including Alexandra Parade / Cemetery Road / Tullamarine Freeway and St Kilda Road. Being the highest capacity radial road routes in IMAP, these roads attract a significant proportion of traffic moving across the IMAP municipalities. Hoddle Street, Ballarat Road and Dandenong Road also carry a moderate amount of through traffic.

The analysis suggests that other arterials in the IMAP carry relatively little through traffic; most traffic on Geelong Road and Dynon Road, for example, appears to be bound for local destinations.

3.9.2 Truck routes

The Victorian Integrated Transport Model (VITM) is DTPLI’s in-house strategic transport demand model. VITM is a multi-modal analytical tool which forecasts travel and can be used to look at alternate ‘current’ travel by private vehicles and public transport in response to various transport infrastructure and land use planning scenarios. Operating alongside the VITM, the Freight Movement Model (FMM) generates forecasts of freight vehicle movements throughout the metropolitan area.

Transport demand models are a systematic representation of the large and complex real-world transport system as it exists, and as it might be. Transport demand models provide an analytical framework to understand and assess the performance of the transport system under existing and future demands. VITM is used to test and assess transport policies and strategies, predict future demands on the transport network, and analyse the potential impacts of road, public transport and land-use planning projects.

Truck volumes were extracted from the Victorian Integrated Transport Model (VITM), as commercial vehicle trips were not recorded in the VISTA survey. The VITM volumes were obtained on a per-link basis, rather than as complete routes, so the distinction between through and local truck movements could not be made. Figure 28 shows the distribution of truck routes in and around IMAP as modelled in VITM. The modelling shows that the Monash (City Link) / Westgate Freeway corridors carries the overwhelming majority of trucks.

Secondary truck routes travelling through IMAP include;

- Greater than 2,000 vehicles – Alexandra Parade, Footscray Road, and St Kilda Road
- Greater than 1,000 vehicles – Hoddle Street, Ballarat Road, Geelong Road and Dandenong Road.

The modelling suggests that most other arterial roads carry only small numbers of trucks, many of which would be engaged in local deliveries. Detailed survey of truck movements are undertaken by some organisations but are very location specific and resource intensive to undertake.

Annual surveys of truck movements around the Port of Melbourne precinct have been undertaken since 2002, with a particular emphasis on measuring truck productivity at port cordon points. In late 2012, Port of Melbourne Corporation (PoMC) commissioned a Port Traffic Survey and Analysis Study\(^\text{[11]}\). The objective was to give a clearer understanding of truck and traffic movements, in and around the port, over a typical day. The survey and subsequent analysis assesses truck movements:

- into and out of Webb Dock
- between Webb Dock and the Swanson-Dynon precinct

\(^{11}\) http://www.portofmelbourne.com/publications/traffic-surveys
between the Swanson-Dynon precinct and freight and transport-related businesses located to the west of the port.

The survey was conducted over a 24 hour period on a typical weekday in September 2012. The survey utilised specialist video cameras, suitable for day and night observations, which were set up at key locations across the survey cordon area to record trucks travelling in both directions. Truck data observed at survey points across the cordon were matched with data collected at other survey locations to build an understanding of truck trips by origin and destination.

This type of detailed origin-destination study is a very localised and gives a snapshot of what is happening on specific streets given a particular survey state and time. VITM is a systematic representation of the large and complex real-world transport system as it exists, and as it might be. The VITM volumes were obtained on a per-link basis, rather than as complete routes, so the distinction between through and local truck movements could not be made and compared with the PoMC study.
### 3.9.3 Origins of through traffic

Figure 29 and figure 30 show the modelled origins of through traffic and public transport trips respectively passing through IMAP. Because municipalities with larger populations will generally produce larger trip totals, figure 31 and figure 32 show the same information expressed as the number of trips per capita originating from each local government area.

The highest levels of through traffic originate from the neighbouring and northern municipalities including:

- Boroondara – 21,700 vpd
- Hobsons Bay – 23,200 vpd
- Moonee Valley – 15,700 vpd
- Moreland – 15,600 vpd

This is due to simple proximity effects; traffic originating from nearby municipalities is much more likely to have to travel through IMAP than that from more distant areas although there is a moderate level of through traffic from City of Monash.

Apart from the focus on the adjacent municipalities, the plots show a reasonably broad dispersal of traffic across the metropolitan area, including the western suburbs. The public transport patterns are fairly similar, with a strong focus on Moonee Valley (24,900 vpd), Boorondara (25,100 vpd) in addition to Glen Eira (22,100 vpd).
Figure 29: IMAP through traffic origins
Figure 30: IMAP through public transport origins
Figure 31: IMAP through traffic volumes per capita by origin LGA

Figure 32: IMAP through public transport trips per capita by origin LGA
3.9.4 Conclusions from the analysis

The following conclusions are drawn from the IMAP analysis:

- There are only a small number of major through traffic corridors in IMAP namely City Link, Eastern Freeway and St Kilda Road.
- Hoddle Street, Ballarat Road and Dandenong Road all do carry moderate through traffic levels of between 10 - 20% of all traffic using the road.
- Most traffic using local streets and other arterial roads in IMAP has a local destination in IMAP. In other words, what may be perceived as "through traffic" in a local precinct may in fact be largely due to residents or visitors to IMAP.
- Most through traffic originates from neighbouring municipalities including Boorondara and Hobsons Bay.
- Given the size of the IMAP area, public transport carries a significant amount of through movement in IMAP. If public transport was to play a greater role in reducing IMAP’s through vehicle traffic, it appears that a better cross-town public transport options could help to reduce trips that are presently quicker or more convenient to undertake by car.
4. Causes of through traffic

This chapter considers the factors that may contribute to the growth of through traffic in the IMAP area. Many of these factors are well-known and are generally applicable to the metropolitan region, while some are specific to particular municipalities. Factors that can influence through traffic include geography, land uses, transport options, and road capacity.

4.1 Melbourne

Melbourne is the centre of the transport network with the overwhelming majority of tram, bus and rail services either terminating or crossing and serving the municipality although capacity is increasingly a problem at peak times. There are also a number of arterial roads radiating out which attract very large volumes of through traffic including City Link and the Westgate Freeway.

The City of Melbourne is also the central municipality in IMAP with north-south and east-west journeys to pass through Melbourne from one side to the other although the majority of these are fairly long trips. There are a couple of roads where there are relatively short trips (for example Ballarat Road and Alexander Parade) to be classified as “through traffic”. However the total amount of north-south through journeys is lower than the east-west movement, and they are generally located near the periphery of the municipality rather than impacting on key activity centres.

As the dominant employment destination in Victoria, Melbourne will continue to attract a large number of daily commuters from surrounding and outer suburbs. Major off street car parks also contribute to commuters driving in addition to the limited capacity of the rail network. Proposed growth areas including the continuing expansion of Docklands as well as plans for Fishermen’s Bend, Webb Dock and E-Gate will reinforce City of Melbourne as the primary employment hub in Victoria and an international city for business.

Alongside employment growth, City of Melbourne is also expanding its residential population. A significant number of residential buildings are proposed, focused on high density apartment living. This population are generally travelling by non-car modes with parking spaces at a premium in the city.

Transport movements in Melbourne are also heavily influenced by the sporting precincts. These peak events are significant attractors of public transport and car borne trips with peaks in through traffic movements for surrounding suburbs. Melbourne also is a tourist and cultural hub with many significant exhibition and music venues as well as popular parklands which attract people from across Victoria.

The distribution of road capacity, congestion and tolls may also influence through traffic growth. As traffic volumes on major routes such as Elliott Avenue rise, congestion on these roads may encourage diversion onto parallel routes, and also a shift to public transport, provided improvements are made to accommodate the demand. Similarly, the tolls on City Link cause some diversion of traffic onto alternative corridors.

City of Melbourne Transport Strategy is heavily focused on reducing car dependency and encouraging walking and cycling. With the continuing expansion of safe and segregated cycle routes, viable alternatives to short public transport and car trips become more attractive.

4.2 Yarra

The spatial analysis of through traffic routes showed that a large proportion of Yarra’s north-south and east-west through traffic is generated by neighbouring municipalities, more so than other IMAP Councils. In most cases, this is simply due to the proximity effect: traffic originating from nearby municipalities is much more likely to have to travel through Yarra than that from more distant areas.

The Melbourne CBD and immediate surrounds are significant trip attractors, and Yarra tends to attract through trips originating from the immediate east and northern suburbs (the City of Boorondara in particular) and bound for the central city. The majority of these through trips use the City Link corridor, Eastern Freeway and the Clifton Hill and Burnley group rail lines.
There are a couple of short journeys that pass through Yarra from one side to the other, causing even relatively short trips (along Chandler Highway and Wallan Road) to be classified as “through traffic”. However the total amount of north-south through journeys is lower than the east-west movement, and is also spread amongst more road links, thus reducing its overall impact and significance.

The continuing expansion of Melbourne has meant that residents of growth areas working in the inner city need to travel relatively long distances in their daily commute. Yarra is well served by public transport, with a dense network of train, tram and bus routes crossing and serving the municipality but with public transport often at capacity, and key tram and bus corridors competing with traffic, car use in increasingly favoured.

City of Yarra is within an easy walking and cycling distance to Melbourne CBD and has a very proactive cycle policy. There are a high number of good quality off and on road bike corridors which although can become congested during the summer months show that there people do want to use alternative modes of travel from the car.

### 4.3 Port Phillip

As with the majority of IMAP Councils the spatial analysis of through traffic routes showed that a large proportion of Port Phillips through traffic is generated by neighbouring municipalities although it tends to skirt the northern and eastern edges of the municipality.

The Melbourne CBD and immediate surrounds are significant trip attractors, and Port Phillip tends to attract through trips originating from the immediate south east and east although there are a relatively high number of trips originating from City of Yarra. The majority of these through trips use the St Kilda Road corridor, Westgate Freeway, Dandenong Road and the Sandringham rail line. Port Phillip is unusual in that there are no significant east-west or north-south corridors on local roads, only the major arterials networks already mentioned.

The City of Port Phillip is itself a significant attractor of trips especially during the evening and weekends with Luna Park, St Kilda foreshore and the Acland and Fitzroy Street precincts. Visitors travel from across Melbourne which can result in congestion on public transport and the roads outside typical peak hours especially during the summer and holiday months.

Port Phillip is relatively well served by public transport, with a good network of tram and bus routes crossing and serving the municipality and two rail stations. Port Phillip is very proactive in its encouragement of cycling and walking and given its proximity to the CBD and St Kilda Road employment precinct has the potential to encourage people to use alternative modes of transport.

### 4.4 Maribyrnong

Maribyrnong through traffic routes are predominantly east-west with only one freeway standard corridor to the south of the municipality (Westgate Freeway). The key movements are from Melbourne and the western and northern growth suburbs including the Werribee and Sunbury rail corridors.

Only Raleigh Road in the north of Maribyrnong causes relatively short through traffic trips although only a small number compared to the other key east-west corridors such as Ballarat Road. There are only a couple of roads that carry a significant amount of through traffic but these are away from key activity centres and local Council roads.

The Wyndham growth corridor is recognised as being one of the fastest growing placing increasing pressure on Maribyrnong’s transport network. Although significant residential and employment precincts are proposed (for example Werribee Employment Precinct), a large proportion of travel long distances to the CBD for work. The Central Activity Area of Footscray also has significant residential growth forecasts along with the expansion employment and retail hubs which could increase the amount of traffic and public transport movements. Regional Rail Link is under construction and is due to open in 2016. This will add capacity to the public transport network in Maribyrnong and hopefully encourage people to shift from travelling by car.
Maribyrnong is relatively well served by public transport, with a dense network of train and bus routes crossing and serving the municipality. However, some stations have a high percentage of car travel to access them as they are not conveniently located near residential areas (i.e. Tottenham).

Encouragement of cycling and walking is part of Maribyrnong’s strategy to reduce car dependence although its distance from Melbourne CBD is too great for walking (except to train stations such as Footscray and Seddon), good bike networks are slowly encouraging a modal shift to cycling.

4.5 Stonnington West

The spatial analysis of through traffic routes showed that a large proportion of Stonnington West’s through traffic is generated by neighbouring municipalities and the section of Stonnington not within the IMAP boundary. In most cases, this is simply due to the proximity effect: traffic originating from nearby municipalities is much more likely to have to travel through Stonnington West than that from more distant areas.

The Melbourne CBD and immediate surrounds are significant trip attractors, and Stonnington West tends to attract through trips originating from the immediate south east (the City of Monash and City of Stonnington in particular) and bound for the central city. The majority of these through trips use the Monash (City Link) corridor, Dandenong Road and the Dandenong rail line.

As Stonnington West is only a small section of Stonnington both east-west and north-south through traffic movements are relatively short. However due to the grid nature of the road network the total amount of through movement is also spread amongst more road links, thus reducing its overall impact and significance.

The continuing expansion of Melbourne’s south eastern growth corridor has meant that residents of growth areas working in the inner city need to travel relatively long distances in their daily commute. As the population in these areas increases, the demand for long-distance travel along radial routes such as the Monash Freeway and Dandenong Road is expected to rise, causing a corresponding increase in through traffic on these routes along Stonnington’s boundaries.

Other land use changes, such as the expansion of retail and employment hubs may also have an impact on through traffic (and indeed on incoming and outgoing traffic), as is the case with the expansion of Chadstone Shopping Centre.

The distribution of road capacity, congestion and tolls may also influence through traffic growth. As traffic volumes on major routes such as the Monash Freeway and Dandenong Road rise, congestion on these roads may encourage diversion onto parallel routes, and also a shift to public transport, provided improvements are made to accommodate the demand. Similarly, the tolls on City Link cause some diversion of traffic onto parallel routes (notably Toorak Road).

Stonnington is relatively well served by public transport, with a dense network of train, tram and bus routes crossing and serving the municipality. However, travel from the middle and outer suburbs (particularly areas distant from rail corridors) is less well-served, resulting in higher proportions of car use.

Encouragement of cycling and walking is also part of Stonnington’s strategy to reduce car dependence, although it is recognised that much of Stonnington’s through traffic travels distances beyond the range of most walkers and some cyclists (the east-west length of the municipality is about 10 kilometres).

4.6 Behavioural factors

Published car occupancy statistics indicate a steady decline in car occupancy rate in Melbourne (i.e. the number of people travelling in each vehicle). This suggests that the efficiency of people movement may also have declined, with an average occupancy slightly below 1.2 persons per vehicle (see Figure 33), and lower values during the peak periods.
4.7 Political factors

The 2013 Victorian Auditor-General’s report into road congestion\textsuperscript{12} noted that travel demand management measures in Victoria have often been “implemented in an ad hoc, uncoordinated manner, rather than as part of an integrated statewide demand management strategy”. The Victorian State Budget 2014 has provided some certainty about funding for major transport infrastructure projects; positive actions for reducing traffic congestion through co-ordinated means have been limited.

Residential growth in the Growth Areas is continuing to increase at a rapid rate and this is forecast to continue for the next 30 years. Infrastructure spending for public transport upgrades is not focused in these areas forcing people to use their car for commuting, and recreational travel. This has a significant impact on Inner Melbourne Councils as the CBD is still a significant destination for work and recreation. Traffic volumes are set to increase without significant commitment and funding to alternative modes of travel for those that live in these areas. This will increase the volume of through traffic in Inner Melbourne and potentially result in alternate rat running through local Council areas if the arterial network is congested.

5. Actions

This chapter reviews the need for through traffic mitigation measures and suggests actions that the IMAP councils might consider to help limit the future impacts of through traffic in their municipalities.

While IMAP and its individual municipalities attract large volumes of through traffic, the analysis in this study suggests that the bulk of this traffic uses designated arterial roads. Given that these roads are designed to convey large traffic volumes and are somewhat separated from local areas, this might be considered “acceptable” through traffic with minimal direct impact on Councils.

The analysis also suggests that most of the traffic using IMAP Councils distributor roads and local streets is generated by car drivers who have an origin or destination within each municipality. While not classified as through traffic using the formal definition in this study, some of this traffic will encroach into local areas and will be perceived as unwelcome “through” traffic originating from outside the area.

In considering responses to through traffic, the recommendations will focus on “genuine” through traffic passing through the municipality from one side to another. However, some of these actions may also help to reduce the impacts of other traffic intrusion caused by internal travel.

5.1 Action Plan

Table 11 lists a range of actions that might be considered by all municipalities to reduce the impacts of through traffic. Approximate timeframes are also listed, with short term referring to actions to be taken in the next year (2013-14), medium term referring to the next three to five years, and long term referring to ongoing actions continuing beyond five years.

Actions such as these could be woven into each council’s strategies and plans, such as structure plans, integrated transport strategies and bicycle plans. This would probably be more effective than having a separate through traffic strategy, because of the varied and inclusive initiatives required to deal with through traffic effectively.
## Table 16: Suggested actions

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<th>Action</th>
<th>Responsibility</th>
<th>Timeframe</th>
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| Local activity centres (these could include Neighbourhood, Major or Principal Activity Centres for examples) | • Prioritise local activities over through traffic in each activity centre (e.g. enforcement of 40 km/h speed limits, priority for public transport, cycling and walking).  
• Extend 40km/h speed zones through all activity centres.  
• Individual municipalities should work with VicRoads to refine network operating plans for activity centres and implement the changes identified by the plans. This should include developing a program of works required to implement their SmartRoads Network Operating Plans which require a clear timeline and responsibilities.  
• Develop a SmartRoads NOP for IMAP in conjunction with VicRoads  
• Advocate that priority should be given to pedestrians and public transport and safe cycle corridors where there is sufficient road space.  
• Ongoing discussions are required with traders to discuss on street parking. An analysis of turnover is required to assess demand. Signage to off street parking areas should be reviewed to ensure adequate information is available to encourage their use.  
• IMAP along with the municipalities should investigate the economic impact of parking v's public transport and walking in local activity centres  
• Municipalities should share the results of studies which identify where measures have been successful and where they need to be adapted.                                                                                                                                                                                                 | • Councils  
• Councils  
• Councils  
• IMAP  
• IMAP  
• Councils  
• IMAP  
• Councils / IMAP                                                                 | Short to medium term |
| Land use                                                            | • Monitor and contribute to the Metropolitan Planning Strategy when it is released, and assess the potential consequences of further metropolitan population growth.  
• Consider how land use changes can influence travel demand and ensure that land uses are managed to avoid or minimise the effects of traffic on adjacent areas within each municipality.  
• Consider developing policies on car free housing or restricting parking at high density residential developments where good public transport, walking and cycling networks exist.  
• Establish working groups to develop corridor approach to managing through traffic. These should involve municipalities outside IMAP as well as transport agencies (i.e. VicRoads and PTV)  
• Liaise with DTPLI to and Growth Areas Authority to share information about the impact of through traffic growth on IMAP by continued expansion of Melbourne without supporting infrastructure.                                                                                                                                                                                                 | • Councils / IMAP  
• Councils  
• Councils  
• IMAP  
• IMAP                                                                 | Short term |
<p>| Local Arterials                                                     | • Identify preferred routes north-south and east-west corridors and facilitate efficient access to these routes while discouraging access to other routes that serve activity centres, local precincts and/or are used by trams.                                                                                                                                                                                                 | • Councils                                                                 | Medium term                   |</p>
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| Road pricing                  | • Become informed about road pricing strategies and how implementation of road pricing could affect IMAP and individual municipalities.  
• With this knowledge, advocate for strategies that will help to address through traffic. Hypothetical examples might include: an inner-Melbourne congestion charge, tolls on existing roads, broader network-wide charges.  
• This should only be considered with a significantly upgrade public transport system. The extent of any pricing scheme will need to be determined. | • IMAP          | Long term         |
| Public transport              | • Advocate for improved public transport capacity – both increase in service frequency and new corridors in particular Melbourne Metro and rail corridor improvements to growth areas  
• Work with VicRoads and PTV to increase priority for and access to on road public transport services where not segregated.  
• Proactively promote public transport to residents, commuters and visitors to IMAP (i.e. IMAP Map)  
• Councils should develop maps that show the level of PT accessibility in their municipality and seek information from PTV on public transport patronage levels. This can then be used alongside future population / land use developments information to advocate for improvements to local public transport services  
• Assess the impact of developments by identifying the Level of Public Transport Service required for each development. | • IMAP          | Ongoing           |
|                              |                                                                                                                                                                                                     | • IMAP          | Medium to long term|
| Freight vehicles              | • Assess the major freight destinations in IMAP and develop a strategy for influencing the routes, frequency and timing of freight vehicle trips  
• Undertake study which investigates last km freight trips | • IMAP          | Medium term       |
|                              |                                                                                                                                                                                                     | • IMAP          |                    |
| Local area traffic management | • Keep local area traffic management measures under constant review for their effectiveness in protecting the subject areas from the impacts of through traffic in general whilst also facilitating ease of local access by all modes of transport.  
• Share information about which measures have been (un) successful and collectively identify ways to trial measures in different areas | • Councils      | Short to medium term|
<p>|                              |                                                                                                                                                                                                     | • IMAP          |                    |</p>
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| Cycling and Walking         | • Distribute the IMAP Map to key destinations in IMAP municipalities and make available to residents  
• Establish working groups to develop, seek funding for and implement new and improved bicycle and walking corridors  
• Define key bicycle corridors through SmartRoads Network Operational Plans and develop a program of works to see their implementation | • Councils  
• IMAP  
• IMAP | Short term - ongoing |
| Behaviour change            | • IMAP should develop and support well thought-out and co-ordinated campaigns to manage travel demand and encourage greater mode share for public transport, walking and cycling – particularly for commuting and school trips.  
  - The development of travel plans should be encouraged for schools as part of the curriculum to encourage children to be healthy and learn about road safety  
  - The development of travel plans should be encouraged for employers to link into the corporate sustainability policies  
• Establish carpooling schemes for key employment hubs  
• Distribute IMAP and other transport maps promoting alternative transport options to the car  
• Encourage the use of electric cars and Car Share.  
• Advocate for Park and Ride outside IMAP so that all Councils achieve the benefits.  
• Focus should be on encouraging waking and cycling to train stations – TravelSmart campaign | • IMAP  
• Councils  
• Councils  
• Councils  
• IMAP  
• Councils / IMAP | Short term - ongoing |
| Community engagement        | • Undertake continued community engagement about transport and traffic issues in general and through traffic in particular, to develop a deeper understanding of and more effective response to community perceptions about the issue in IMAP. | • Councils | Short to medium term |
| Infrastructure Investments  | • Establish a policy position on key infrastructure improvements IMAP will support in terms of priorities required to reduce through traffic growth for example Melbourne Metro and regional Rail Link. | • IMAP | Medium term |
| IMAP Policies               | • IMAP municipalities should seek support from their relevant Councils to recognise IMAP and integrate IMAP policies into Council strategies to ensure policy continuity | • Councils | Ongoing |