Residential Intensification in Tramway Corridors

Planning, Urban Design and Market Feasibility Study

Department of Planning and Community Development March 2009

SGS Economics & Planning

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Executive Summary

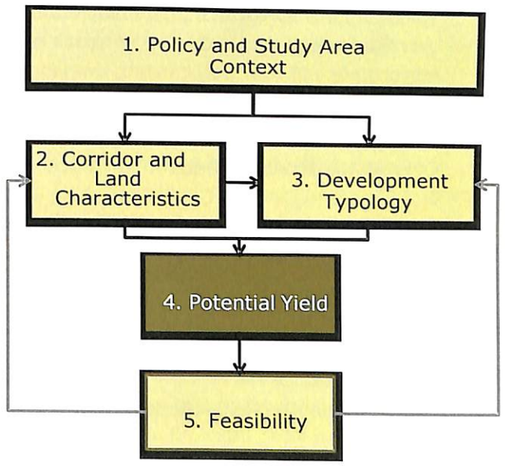
Introduction

Melbourne is often quoted as one of the world's 'great tramway cities'. While the transport role of the city's tramway network is well appreciated in policy, the profound influence the trams have had, and could have, on Melbourne's urban form is less understood. Melbourne's tram corridors also help distinguish the 'eclectic' suburbs which have gained Melbourne some prominence in regional and, indeed, international tourism markets. The application of Melbourne 2030 in the inner and middle suburbs needs to reflect this strong 'linearity' in the Region's activity centres. In principle, these corridors are highly suited to residential and employment intensification, which enables better use of existing infrastructure assets. Living in locations that are within walking distance to quality transport that provides access to urban opportunities is more sustainable in the longer term than housing developments on the city edge which are relatively isolated from jobs, services, education and other amenities, if the impacts can be managed and infrastructure and services are provided.

Levels of public transport accessibility are already strongly reflected in the existing pattern of medium and high density housing in Melbourne. However, it is clear that barriers and constraints will need to be overcome if the urban intensification potential in the tramway corridors is to be unlocked. This study tests the potential for change in two case study locations to develop an analytical method that could be applied across the broader metropolitan area.

The Analytical Method

The project process included the development, application and refinement of an analytical method to explore the capacity of tramway corridors to accommodate additional levels of residential development. The method was developed then applied to specific locations in the case study areas to test the concepts. The analytical method can be described as five main stages, as represented in the diagram.



Policy and Study Area Context

The policy and study area context set the stage for the study and inform key assumptions in the development typology and feasibility analysis. Tramway corridors are important locations, for meeting Melbourne's future housing needs, that make better use of existing infrastructure assets. Melbourne 2030 and the recent update, Melbourne@5 million, reinforce the need to accommodate a greater proportion of the population in established areas of the city, to improve housing choice, create greater accessibility and reduce transport congestion. Over the next 20 years, some 316,000 additional dwellings are anticipated to be accommodated in established urban areas.

Current planning efforts (UDP and structure planning) identify the potential locations for between 5 to 14 percent of this task.

Tram corridors have rightly been identified as taking an increased role in providing places for accommodating Melbourne's future housing needs. Further information is needed to understand the extent to which tramway corridors can contribute to the task identified in Melbourne @ 5 million. The potential to house a significant amount of new housing close to existing transport infrastructure along tramway corridors could inform a re-evaluation of the need to plan for new growth areas investigation areas outside of the existing urban growth boundary.

Tramway corridors also have a role in providing local employment opportunities and a mix of local retail and commercial services. However, the primary focus for these activities is in the identified activity centres and employment lands. There are ex-industrial sites on along tramway corridors that present opportunities for new housing. These sites are atypical and are often large sites that may also have contamination from previous uses that would need to be addressed prior to redevelopment. These sites require specific structure planning to ensure that they integrate with the surrounding locations and that the urban structure is repaired to improve pedestrian connectivity.

Not all tramway corridors are the same. The characteristics of tramway corridors, particularly the transport role and operating patterns, will have implications for amenity related land use activities. The design of new residential dwellings along tramway corridors should have regard to providing a mix of housing forms, tenures and price points including affordable housing, ensuring high amenity and safe living environments, managing potential conflicts with though traffic and tram priority, managing potential impacts on neighbourhood streets including heritage, parking, noise and overshadowing; and including environmental initiatives to improve the water and energy performance of new and existing dwellings and relieve the pressures on existing infrastructure and services.

Overall, the strategic statements of both councils are in line with those in Melbourne 2030. Moreland and Darebin Council both see a role for increasing the supply of housing in established areas, without affecting the neighbourhood character, identity and heritage values. Both councils highlight the importance of strengthening the local job-base by promoting growth of activity centres at identified nodes, serving the jobs and services needs of the local community. Integrated transport plans are in place to support this approach. Strategies exist to ensure use of existing infrastructure by locating new developments – both residential and commercial – around transport nodes; to reduce the number of car trips and increase usage of public transport; and ensure a safer environment for pedestrians and cyclists, to encourage increased use of these active modes.

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Corridor and Land Characteristics

An analysis of the corridor and land characteristics built on the local settings review to provide further details on the specific character of the corridors being assessed.

Tram 112 Corridor

The Tram 112 Corridor (in the study area) currently has 248 dwellings along it. There are two main sections of the corridor, St Georges Rd and Miller St/Gilbert Rd. St Georges Rd is a wide road with three lanes in each direction and a separated tramway and bike paths in a central median. The Network Operating Plan classifies it a primary traffic route, tramway and bike route. St Georges Rd acts as a major north south transport route for the inner north. The tram is separated from general traffic, this priority and longer distances between stops results in faster travel times. St Georges Rd has an "edge" relationship to the pattern of major activity centres along High St. The corridor is within walking distance to train stations along the Epping Line and activity centres including Preston and Northcote. The properties with a street frontage are mainly detached housing with some pockets of industrial, commercial and public uses.

St Georges Rd with high motor vehicle traffic volumes and the associated noise and air pollution presents some health and amenity implications for residential intensification. Along Miller St and Gilbert Rd the tram no longer has a dedicated tram corridor and motor vehicle traffic volumes and speeds are significantly lower. There is the potential to intensify residential development along Miller St and Gilbert Rd, focussed on neighbourhood centres at the intersection of Miller St and Gilbert Rd and Gilbert Rd and Bell St, and along the tram route itself within walking distance of tram stops. There is an emerging local activity centre at the intersection of Miller and Gilbert Sts.

Tram 96 Corridor

The Tram 96 Corridor (in the study area) currently has 213 dwellings along it. Nicholson St is classified as a tram priority route in the road Network Operating Plan. The public transport spine activates the street and two neighbourhood centres act as focal points for the local community. There is variety in the subdivision patterns, building stock and uses. However, the street experiences traffic congestion and provides limited parking and there are pockets of disused, derelict shop fronts and run down isolated industrial sites.

The two case study corridors have both seen recent development activities increasing the supply of new dwellings. However, the yield and the design solutions could be improved upon. Both of the tram services in the corridors are currently at capacity during the morning peak periods. Increases in residential uses along the corridors should be planned in line with improvements to the tram services themselves.

Land along the corridors was identified as being constrained if it had the following characteristics:

- Public uses (open space, school, community use and public transport zones);
- Heritage (only when a listed heritage item on the state register);
- Environmental constraints (environment and flooding);
- Recently developed sites;

- Strata title; and
- Abutting a preferred traffic route.

Land was identified as being an opportunity site if it had the following characteristics:

- Identified on the UDP;
- Large >1000m2; and
- Vacant Site.

The analysis of land and corridor characteristics has directly informed the development typology and the analysis of opportunities and constraints for redevelopment to determine the potential yield.

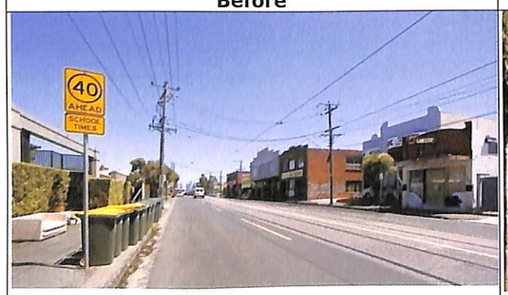
Development Typology

The development typology applies a set of urban design principles to identify a typical set of criteria that drive indicative designs. These rules define limitations and requirements to support intensification that is appropriate in terms of scale and form and reflect future market, environmental and community challenges identified in the policy review. These designs are informed on the land available for redevelopment.

The development typologies are indicative only. Clearly there are many options and potential configurations. The designs demonstrate the application of the criteria and provide a basis for estimating capacity and testing feasibility in the next stages of the method.

The development typologies apply to sites between 180 to 1000 m2 and pose the potential for a density of between 56 to 160 dwellings per hectare. The typologies also range between 3 to 8 storey's in height.

Photomontages provide powerful images of the potential change that could take place in the Nicholson St Tram 96 corridor if all of the sites in the corridor were to be taken up for redevelopment.

Before	After
	

Potential Yield

The potential yield draws on the information from the previous two stages. Three approaches are tailored to assessing the potential yield by applying the development typologies to two case study precincts in each corridor; opportunity sites and unconstrained sites.

The results are summarised in the table below. The findings show that when the range of potential dwelling densities from the development typologies are applied, the housing supply could be increased by 5 up to 15 times the current supply on Tram 112 Corridor, or from 6.8 to 19.7 times the current supply on Nicholson St. The upper figures should be considered as an absolute maximum yield as, it assumes that all unconstrained sites are redeveloped at the highest potential density. The potential yield from tramway corridors will contribute to the overall dwelling needs in Moreland and Darebin Councils over the next 20 years.

- The VIF 2008 forecasts suggest that Moreland needs to accommodate an additional 15,400 dwellings. Tram 96 corridor could contribute to between 9 to 27 percent of the total future needs.
- The VIF 2008 forecasts suggest that Darebin needs to accommodate an additional 12,718 dwellings. Tram 112 corridor could contribute to between 10 to 30 percent of the total future needs.

Of course, there are other tram corridors, rail corridors, bus corridors and activity centres in these LGAs that will also contribute to the overall supply need.

Feasibility

The feasibility of residential intensification in tramway corridors was tested. A residual land value analysis tests the financial viability of the development concepts proposed for the case study corridors from the perspective of a developer. The testing is applied to each of the development typologies for generic sites along the case study corridors; therefore, the analysis is indicative rather than definitive. The analysis highlights the issues, risks and likely return on investment.

Under the base case assumptions, four of the seven development typologies appear financially feasible. Using current rates, the financial costs for the developments for three of the typologies outweigh the revenues. The results are sensitive to changes in the assumptions. Improving the development equation for higher density housing projects in established urban areas requires an understanding of the various income, cost and risk considerations involved in various stages of the development process.

These results imply that there are opportunities for innovations that could work to move the five, six and storey developments into the feasibility range through a mix of reduced construction costs and increased sales revenues. The financial feasibility analysis assesses the viability at the current point in time. So, even though the findings show that some of the typologies are not currently feasible, it is realistic to assume that they may become feasible over the next five to ten years.

The question of feasibility is an important one from a market perspective. However, a broader understanding of the societal wide costs and benefits of intensification in tramway corridors, in comparison to an alternative housing supply scenario, would provide a more comprehensive picture of the case for intensification.

Summary of Findings– Housing Potential

Case Study Location	Effected Land Area	Existing Dwellings		Gross Density		Gross New Dwellings		Net Density		Net New Dwellings		Potential Increase in Housing Supply (ratio of existing dwellings to potential dwellings)	
			Gross Density	Lower (dw/ha)	Upper (dw/ha)	Lower (dw/ha)	Upper (dw/ha)	Lower (dw/ha)	Upper (dw/ha)	Lower (dw/ha)	Upper (dw/ha)		
	Ha	No.	dw/ha									Lower	Upper
Tram 112 Corridor													
Precincts													
Miller and Gilbert	3.59	34	9.5		42.0		151		*32*		**115**		**3.4**
Normanby Ave	1.24	15	12.1		34.0		42		*24*		**30**		**2.0**
Precincts TOTAL		49									**145**		**3.0**
Corridor													
- Excluding Constrained Sites	25	248	9.9	60	160	1,500	4,000	*50*	*150*	**1,252**	**3,752**	**5.0**	**15.1**
Density (dw/ha)													
- Opportunity Sites	5.8	0	0.0	60	160	348	928	*60*	*160*	**348**	**928**		
Tram 96 Corridor													
Precincts													
South of Victoria St	1.57	16	10.2		70.0		110		*60*		**94**		**5.9**
North of Miller St	3.02	11	3.6		22.0		66		*12*		**36**		**3.3**
Precincts TOTAL		27									**131**		**4.8**
Corridor													
- Excluding Constrained Sites	27.6	213	7.7	60	160	1,656	4,416	*52*	*152*	**1,443**	**4,203**	**6.8**	**19.7**
Net Density (dw/ha)													
- Opportunity Sites	5.1	0	0.0	60	160	306	816	*60*	*160*	**306**	**816**		

Source: SGS Economics and Planning

Application to Metropolitan Melbourne

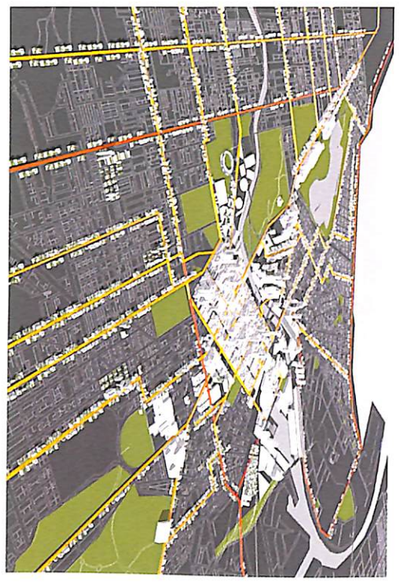
The analytical method presented in this report, could be applied to other transport corridors across metropolitan Melbourne. This analysis would provide a clearer understanding of the potential contribution of corridor development in the overall housing task in established urban areas. There are some 27 main tram routes and some 30 secondary routes across metropolitan Melbourne. The analysis suggests that the housing supply could be increased by three to six times current levels under a realistic scenario. Applying the maximum dwelling densities, the supply could be increased by up to 19 times more than existing housing in these corridors.

The criteria for selecting priority precincts and segments that could be applied to tramway corridors in other parts of the study area and other parts of Melbourne would include locations that:

- build on existing strip retail precincts that are serviced by tram corridors to key destinations;
- offer attractive public transport options for travel to major destinations;
- are not along preferred traffic routes as identified in VicRoads Network Operating Plans;
- provide good access to public open space and recreation areas;

Additional analysis could be undertaken to assess the potential for strategic bus based corridors to support additional land use intensification focussed near public transport.

The image provides an indication of the potential corridors that could be further investigated across inner Melbourne.



Source: City of Melbourne

Recommendations - Strategies to Improve the Development Equation

The design studies provided the basic quantum of floorspace by land use type. These figures were tested in the feasibility analysis, using residual land value techniques and sensitivity testing. It is clear from the feasibility studies that using current rates, the financial costs for the developments described outweigh the revenues for some of the identified design scenarios.

Clearly, there remain barriers and constraints to the industry taking up the identified opportunities. This section further addresses the barriers and constraints, with a view to specifying some corrective strategies.

Improving the development equation for higher density housing projects in established urban areas requires an understanding of the various income, cost and risk considerations involved in various stages of the development process. Based on research and experience, a number of topics appear worthy of review, as follows:

- Lack of market evidence in unproven or emerging housing market areas;
- Lack of 'large' sites to accommodate developments of scale;
- Uncertainty over obtaining development approvals and within a reasonable timeframe; and
- Other cost side considerations, such as mandatory parking codes.

This review has identified some opportunities to be more proactive. Possible actions include:

- Designate target centres and transport corridors for higher density development, and establish clear and unambiguous planning systems to achieve that end;
- Remove third party appeal rights for complying developments in the target zones;
- Deliver or support private sector delivery of demonstration projects in the target zones, to provide market evidence;
- Prohibit subdivision or development of large scale sites in the target intensification areas unless a minimum density and built form outcome in achieved (this may require a compensation scheme for existing landholders);
- Promote site assembly in the target areas, including enactment of private sector compulsorily acquisition powers in target intensification areas, subject to meeting defined criteria; and
- Modify parking codes to utilise maximum parking rates, as opposed to minimum rates, in the target areas and through options that provide precinct car parking at off-site locations on separate land titles or leased from local councils or private developers. This will enable developers to respond to market needs.

Other considerations are no doubt worthy of testing. The above list provides a preliminary list of possible actions that should be subject to more detailed evaluation.

Recommendations - Implementation Approaches

A number of implementation issues were identified through the process of this analysis. The following issues need to form components of the implementation of increasing intensification in tram corridors. The recommendations emerging from the analysis are described below.

- Residential intensification strategies should be integrated with strategies to improve the management and operation of the transport network;
- Identify priority precincts for implementation based on agreed criteria;
- Ensure criteria for setting design limits and requirements are reviewed based on merit;
- Apply as of right planning controls to tramway corridors;
- Investigate the potential role of minimum dwelling density controls to ensure optimal use of land in the corridors;
- Investigate appropriate car parking provision levels and the role of precinct parking;
- Investigate the role of site consolidation in increasing housing supply and the likely outcomes;
- Undertake infrastructure planning based on the residential potential identified in tramway corridors;
- Investigate the potential for requiring Affordable Housing in the redevelopment of tram corridors;
- Work with the local Communities to increase awareness of metropolitan planning issues and the role of corridors in increasing housing supply; and
- Establish clear environmental performance standards to reduce the energy and water demand of the housing stock.

Recommendations - Suggested Further Research

This study has developed an analytical method to explore capacity in tramway corridors. The process of undertaking the study has also identified areas of potential research that would support the implementation of Melbourne @ 5 million and the identified need to increase Melbourne's housing growth in established urban areas. These areas of further research would enhance the understanding of the role of tramway corridors in accommodating Melbourne's future housing needs. They are:

- Develop a clear typology of tramway corridors that link transport role with land use characteristics to inform future strategies;
- Consider expanding the area of analysis for tram corridors, where appropriate;
- Consider residential intensification in other locations with good transport accessibility. The findings suggest that tramway corridors will be one of a suite of locations in established urban areas that could supply Melbourne's future housing needs. A more comprehensive assessment of lands in and around activity centres, rail corridors, tram corridors and bus corridors is required to clearly define areas of potential future change and areas of stability;
- Review metropolitan housing policy settings, based on the capacity of tramway corridors and other established area locations, to accommodate future housing;

- Understanding the broader economic value of development in corridors compared to Greenfield development; and
- Work with the construction industry to review practices.