



Knox Integrated Transport Plan

A Transport Vision for Knox

2015 - 2025



February 2015

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Knox Integrated Transport Plan

1. Introduction

In supporting the movement of people and goods, the transport network plays a critical part in the liveability of a city and its ability to be resilient to challenges such as population growth, an ageing population, changing urban form and facilitating access to goods and services. Transport networks enhance the health and wellbeing of the community by reducing social isolation and supporting residents to live an active lifestyle.

Knox is a significantly car dependent municipality, particularly in the southern part of the municipality, which has poor access to public transport services. Viable transport options must be provided to the Knox community to ensure that the future needs of the community can be met.

Rising fuel costs and congestion have substantial effects on the movement of people and goods, affordability of car based travel, in addition to increasing transportation costs for freight. Traditionally, people are more inclined to relocate to outer suburbs within Knox due to the availability of more affordable housing. Transport options are however generally more limited in these areas and therefore these residents are more susceptible to increases in motor vehicle costs.

In response to these challenges, the Knox Integrated Transport Plan provides a framework for both the development and management of an integrated transport network to service the future needs of the Knox community and business.

2. Background

Knox Council first developed an Integrated Transport Plan in 2004 recognising that trying to provide for continuous traffic growth is both unwarranted and unsustainable. The Integrated Transport Plan 2004 brought together key priorities from individual transport strategies.

Actions from the previous Integrated Transport Plan and improvements that have occurred include:

1. Upgrade and develop the Principal Public Transport Network and improve local public transport services
 - Advocacy for improvements to public transport has resulted in an extended span of hours for the majority of routes in Knox, SmartBus services along Stud Road and also Wellington Road, bus lanes on Stud Road and other priority treatments, including utilisation of Intelligent Transport Systems to improve reliability. Ferntree Gully Station also became a premium station.
 - Through a sustained advocacy campaign and initial investments in pre-feasibilities studies for the Rowville Rail project, Council has managed to secure Rowville Rail as a future project identified within the State Government's long term planning strategy for Melbourne and ensure that ongoing feasibility assessment of the project is continued by the State.
 - A bus service review was undertaken across Knox as part of the State Government's proposed Bus Network Plan however unfortunately few recommendations were ever implemented due to a change in State Government.

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- Accessibility improvements have been made including the provision of additional bus shelters and hard stand waiting areas to allow better access to bus services by those commuters with mobility impairments. Council currently has a matched funding agreement with State Government to implement improved access to public transport bus stops.
 - Public transport usage across the municipality has increased.
 - Zone 3 fares were eradicated and currently there exist proposals to eradicate multi zone fares as at 1st of January 2015
2. Encourage Sustainable Travel
 - Two TravelSmart behaviour change projects were undertaken within the Knox Central precinct and also the Talaskia Rd Upper Ferntree Gully area.
 - Shared paths were advocated for and provided as part of the Eastlink project.
 - A Bicycle Plan and Pedestrian Plan were prepared to direct Capital Works investment, incorporating the development of ranking criteria to inform decision making.
 - Behaviour change programs such as Walk2School, Ride2Work, and the Walking School Bus have all been supported by Council with good participation rates.
 3. Provide for the Transport needs of growth areas
 - Transport priorities have been identified and forwarded to State Government. Some road duplication projects have occurred such as Wellington Road, Kelletts Road and Stud Road.
 - Pedestrian improvements such as pedestrian signals have been installed on Wellington Road to enable pedestrians to safely cross near Westminster Road.
 - Funding has been provided jointly by Council and the State Government for construction of a shared path alongside Eastlink as part of the Corhanwarrabul Creek Trail.
 4. Provide for freight and commercial transport
 - Eastlink was constructed.
 - Council currently participates in a regional heavy vehicle investment group to prioritise funding programs which address regional freight challenges.
 5. Improve transport links to regional Victoria
 - Consultation was undertaken as part of the Eastlink project to ensure the best outcome for the Knox community.
 6. Ensure integrated planning for metropolitan transport
 - Transport priorities for Knox are now determined on criteria based on the Victorian Transport Integration Act objectives.
 - Council has developed a Draft Housing Strategy, which identifies future growth areas for housing within Knox and provides a sound foundation for future transport needs assessment across Knox.

The Integrated Transport Plan 2015 presented here, seeks to review the transport needs in Knox and identify key priorities and initiatives that will best deliver on these.

3. Knox at a Glance

Knox City Council is situated in the outer eastern suburbs approximately 25 kilometres from Melbourne's Central Business District. The municipality is bounded by the Dandenong Ranges to the east, Dandenong Creek to the north and west and Lysterfield Park and Churchill Park to the south.

As a reflection of car use becoming the more dominant and popularised form of transport from the 1950s and onwards, Knox's urban form is generally low density with wide streets that are largely designed for car based transport. Alternative sustainable transport options are non-existent or equitably provided across the municipality. In particular, public transport provision has failed to match the rate of development occurring within the southern part of the municipality.

Despite development beginning to yield an increase in medium density development along the principal public transport network, there still exists a high percentage of residential areas in Knox without sustainable transport options.

4. Demographics

Population

From the latest ABS census (2011), the median age for Knox residents is 38 years of age compared to the Victorian average of 36 years of age. Knox's largest cohort is found between the ages of 35 – 54 years. As such, there will be a large proportion of people that will be close to moving into retirement over the next 15 plus years. With an ageing population, there is a greater need to provide more sustainable and accessible transport options to ensure that older residents can still be independent even when they no longer have access to a private motor vehicle.

Between 2006 and 2011, Lysterfield has experienced the biggest increase in population, with an increase of 17% (Refer to Figure 1). Overall, Rowville has the largest number of residents within Knox.

Suburb	2006	2011	Pop Change % 2006-2011
Bayswater	10738	11240	4.67
Boronia	20446	20825	1.85
Ferntree Gully	24723	25585	3.49
Knoxfield	6519	7140	9.53
Lysterfield	5422	6550	20.80
Rowville	34411	34145	-0.77
Scoresby	5895	5891	-0.07
The Basin	4109	4229	2.92
Upper Ferntree Gully	3267	3221	-1.40
Wantirna	13978	13766	-1.52
Wantirna South	17948	17477	-2.62

Figure 1: Population Change across Knox

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Car Ownership

Households in Knox have higher car ownership rate in comparison to the average Metropolitan Melbourne household with an ownership rate of 2.01 compared to the average 1.84 (ABS 2011 Census).

Lysterfield has had the highest rates for car ownership with 2.37 vehicles per household (ABS 2011). The suburbs in Knox with high car ownership are areas where there are fewer alternative transport options including Lysterfield, Rowville, The Basin and Wantirna. Bayswater and Boronia currently have the lowest car ownership rates per household within Knox with 1.84 which is the Metropolitan Melbourne average rate. They also have the better access to public transport in Knox.

Motor vehicles 2011

	Knox (C)	Metropolitan Melbourne
No motor vehicles	4.2%	9.2%
One motor vehicle	29.5%	35.2%
Two motor vehicles	42.8%	36.8%
Three or more motor vehicles	22.1%	15.8%
Number of motor vehicles not stated	2.3%	2.9%
Total households	52,054	1,410,786

Number of vehicles per dwelling in Knox

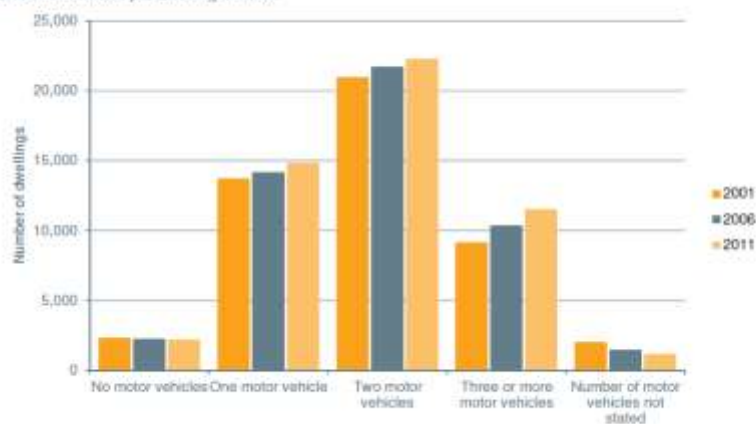


Figure 2 Motor vehicle ownership in Knox (Victorian Transport Atlas – Census Demographic and Motor Vehicle Report, 2013)

Journey to Work

Understanding trip origins and destinations is necessary when developing a transport network.

From the Census 2011 data shown in Figure 3, it can be seen that work destinations for Knox residents are generally either within Knox or in nearby eastern and south eastern municipalities (45% to Knox, Monash and Melbourne). A large percentage of these trips are undertaken by car (82%).

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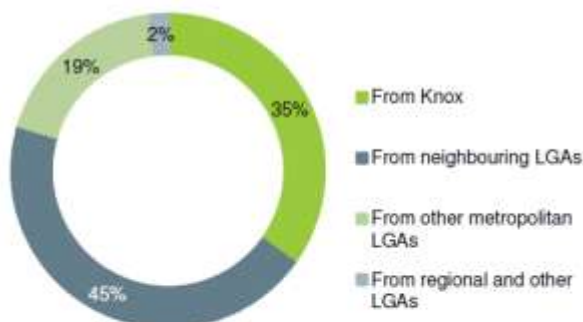
Work journeys FROM Knox¹

- 82 per cent of work journeys were by car drivers, while 9 per cent were by public transport.
- 45 per cent of work journeys were to Knox, Monash and Melbourne.
- Since 2006, journeys by public transport have increased by 1,008 to 5,905 (a 21 per cent increase).



Work journeys TO Knox²

- 87 per cent of work journeys to Knox were by car drivers, while 3 per cent were by public transport.
- 35 per cent of work journeys to Knox were generated from within Knox, and a further 45 per cent were from neighbouring LGAs.
- There were 14 per cent more public transport work journeys to the area than in 2006 (1,545 compared to 1,360).



¹ Travel is to any work destination from Knox on Census day 2011. Figures exclude people that worked from home, did not go to work, or did not state their travel.

² Travel is by any employed person in Australia whose main job location was in Knox in the week before Census day 2011.

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JOURNEYS FROM KNOX



Journey destinations - All Journeys

JOURNEYS TO KNOX

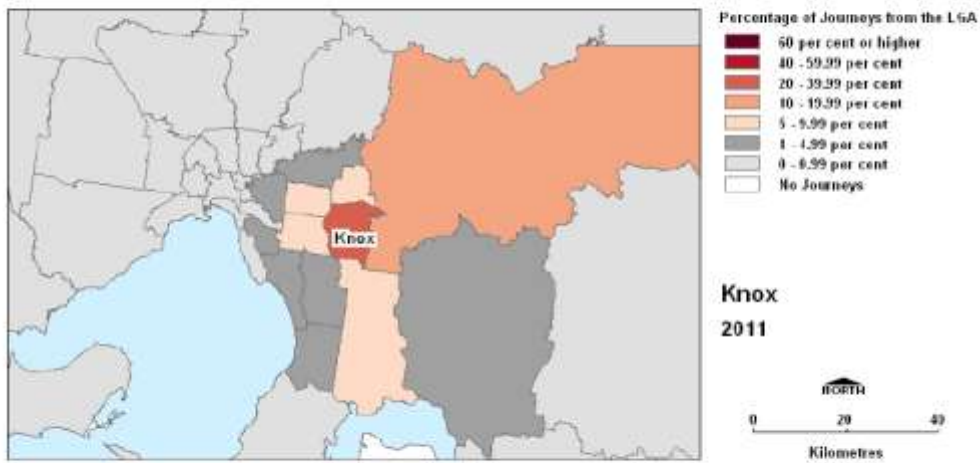


Figure 3 – Work Journeys to/from Knox (Victorian Transport Atlas, 2013)

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Population forecasts

The population in Knox is forecast to grow from 155,697 in 2014 to 184,821 by 2036. A breakdown by suburb is shown in Figure 4.

Suburb	2011	2036	% change
Bayswater	11,159	15,366	37.70
Boronia	21,543	27,114	25.86
Ferntree Gully	26,856	29,237	8.87
Knoxfield	7,057	8,941	26.70
Lysterfield	6,760	6,731	-0.43
Rowville	35,276	38,025	7.80
Scoresby	6,118	10,797	76.48
The Basin	4,522	4,315	-4.58
Upper Ferntree Gully	2,567	2,563	-0.16
Wantirna	14,285	15,969	11.79
Wantirna South	18,474	25,763	39.46

Figure 4 – Population Forecast (Population forecasts 2011 to 2036, id 2014)

NOTE: 2011 data is estimated population based on ABS data to account for those who were not in their normal place of residence when the Census was conducted.

Population growth is predicted to occur predominately in Scoresby, Wantirna South, Bayswater, Knoxfield and Boronia. These are all areas within Knox with existing access to transport services such as the Eastlink toll road or train services.

The number of people in 'older age' (65+) is forecast to almost double from 2011 to 2036, representing 19% of Knox's population in 2036. The number of people in 'early life' (0-17 years) is forecast to also increase, representing 21% of Knox's population in 2036. These forecasts are useful in determining what the drivers for transport services will be into the future. As both the young and older population generally are unable to drive a private motor vehicle, the adequate provision of sustainable transport options is critical.

5. Current Transport Network in Knox

Facts & Figures

Transport services in Knox are underpinned by extensive infrastructure. The responsibility for transport infrastructure within Knox is shared between Local Government, State Government, Federal Government and private organisations. Some of the key transport infrastructure within Knox includes:

Asset	
Local Roads	717km
VicRoads Roads	95km
Eastlink	11km
Footpaths	1,210km
Shared paths	103km
Train stations	4
Bus stops	827
PTV Bus shelters	318

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Roles and Responsibilities

Knox City Council is responsible for the planning, building and management of the local transport network. This includes local roads, footpaths, and shared paths and bike lanes on local roads.

Council acts as an interface between the key funding agents (State and Federal Government) to ensure the needs of the community are met. Council therefore also has a role to advocate for funding for key transport projects as well as policy change.

Roads

VicRoads are responsible for the general operation and maintenance of arterial roads throughout the City of Knox including:

- Bayswater Road
- Boronia Road
- Brenock Park Drive
- Burwood Highway
- Dorset Road
- Ferntree Gully Road
- Forest Road (Boronia Road to Mountain Highway)
- Glenfern Road (Brenock Park Drive to Napoleon Road)
- High Street Road
- Kelletts Road
- Lysterfield Road
- Mountain Highway
- Napoleon Road (Kelletts Road to Lysterfield Road)
- Scoresby Road
- Stud Road
- Wantirna Road
- Wellington Road

Knox City Council manages the local road network in accordance to its Road Management Plan. The Road Management Plan sets out areas of road network responsibility and defining management and maintenance practices.

Public transport

Public transport in Victoria is provided by private operators under contract to the State Government. Public Transport Victoria is therefore responsible for the planning and delivery of public transport infrastructure and services within the City of Knox.

Within Knox, the Belgrave train line travels through the northeast of the municipality, stopping at stations in Bayswater, Boronia, Ferntree Gully and Upper Ferntree Gully.

There are 15 bus routes operating in Knox, along with two SmartBus services and three Telebus services. The NightRider bus also services parts of Knox.

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While Knox does not currently have a tram service, the 'Knox Transit Link' is a bus service that connects the route 75 tram to Westfield Knox. Knox Transit Link buses operate at the same frequency and have the same hours of operation as the tram service.

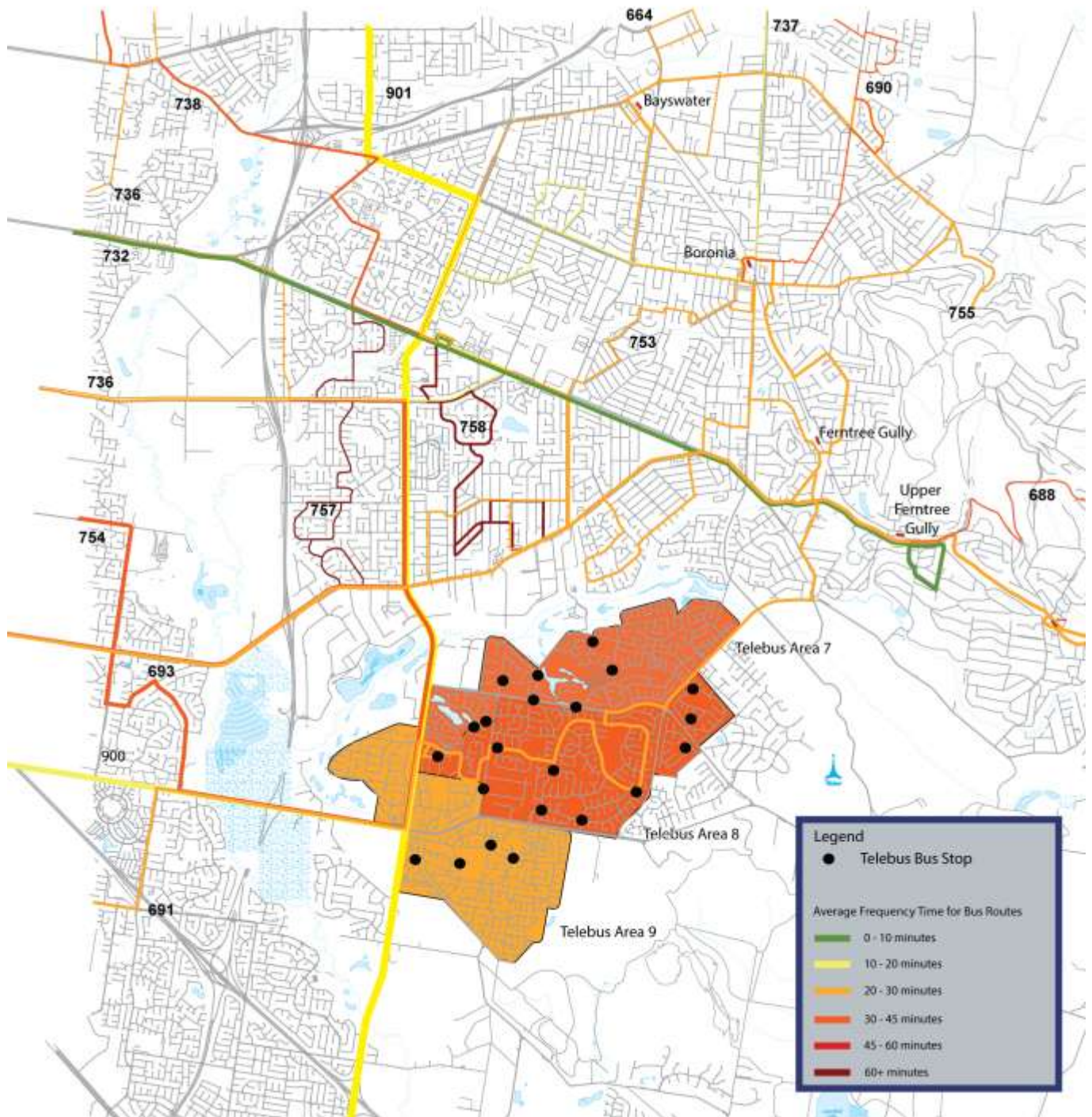
The following Maps indicate the frequency of bus services within Knox during weekday peak periods, weekday off-peak periods and Sunday periods (both peak and off-peak). During peak periods it can be seen that there is good frequency along Burwood Highway and Stud Road however there are estates with poor service frequency in excess of an hour in parts of Scoresby and Knoxfield. The Timbertop estate in Rowville has no service at all.

Bus services off-peak are basically non-existent in the Rowville/Lysterfield part of the municipality. The majority of the services shown are those which commence early in the morning in preparation for the morning peak.

Those estates with poor bus service frequency also appear to be areas with indirect, circuitous routes.

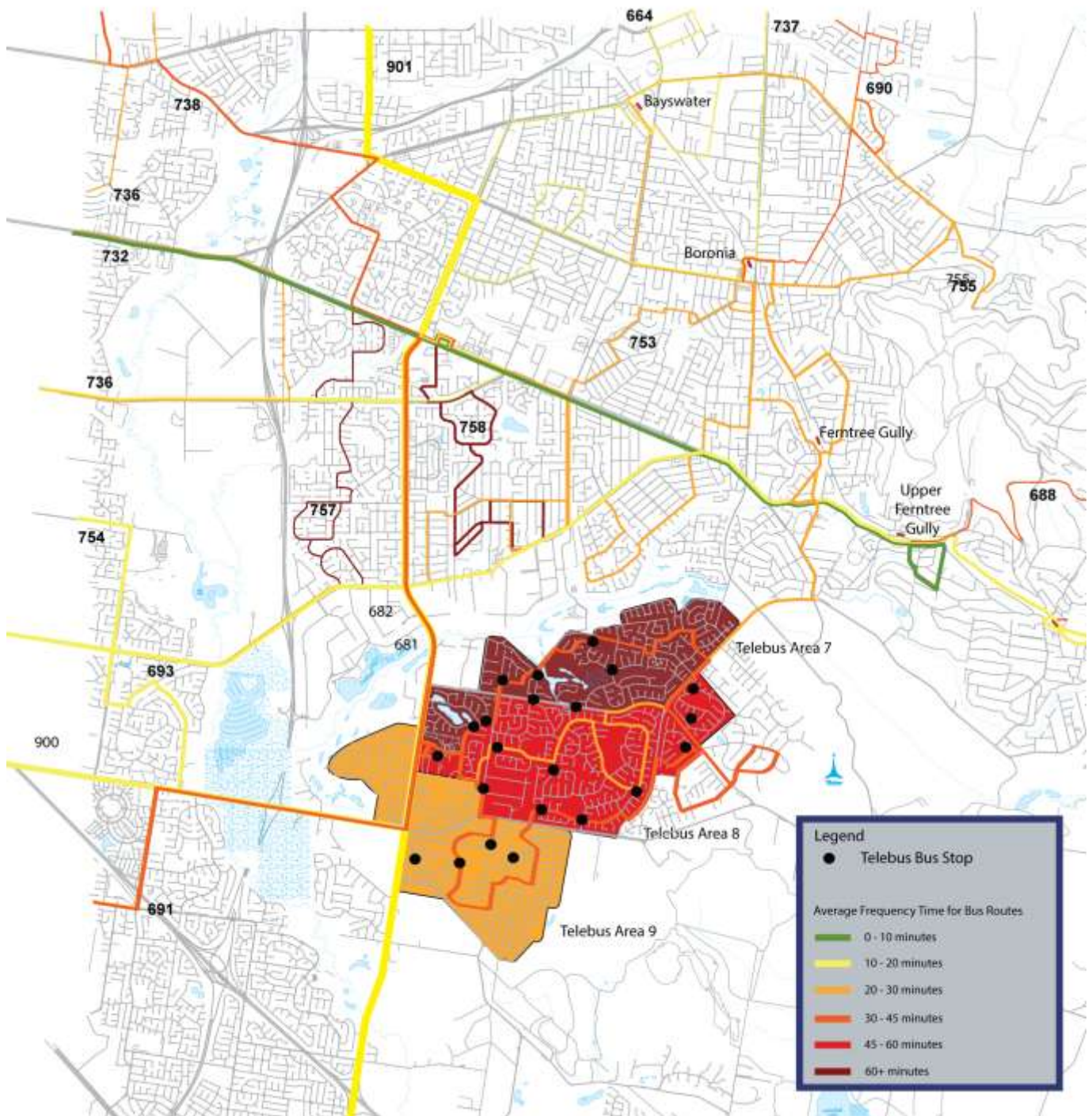
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Map 1 – Weekday Peak Period Bus Frequency in Knox (6am – 9am)



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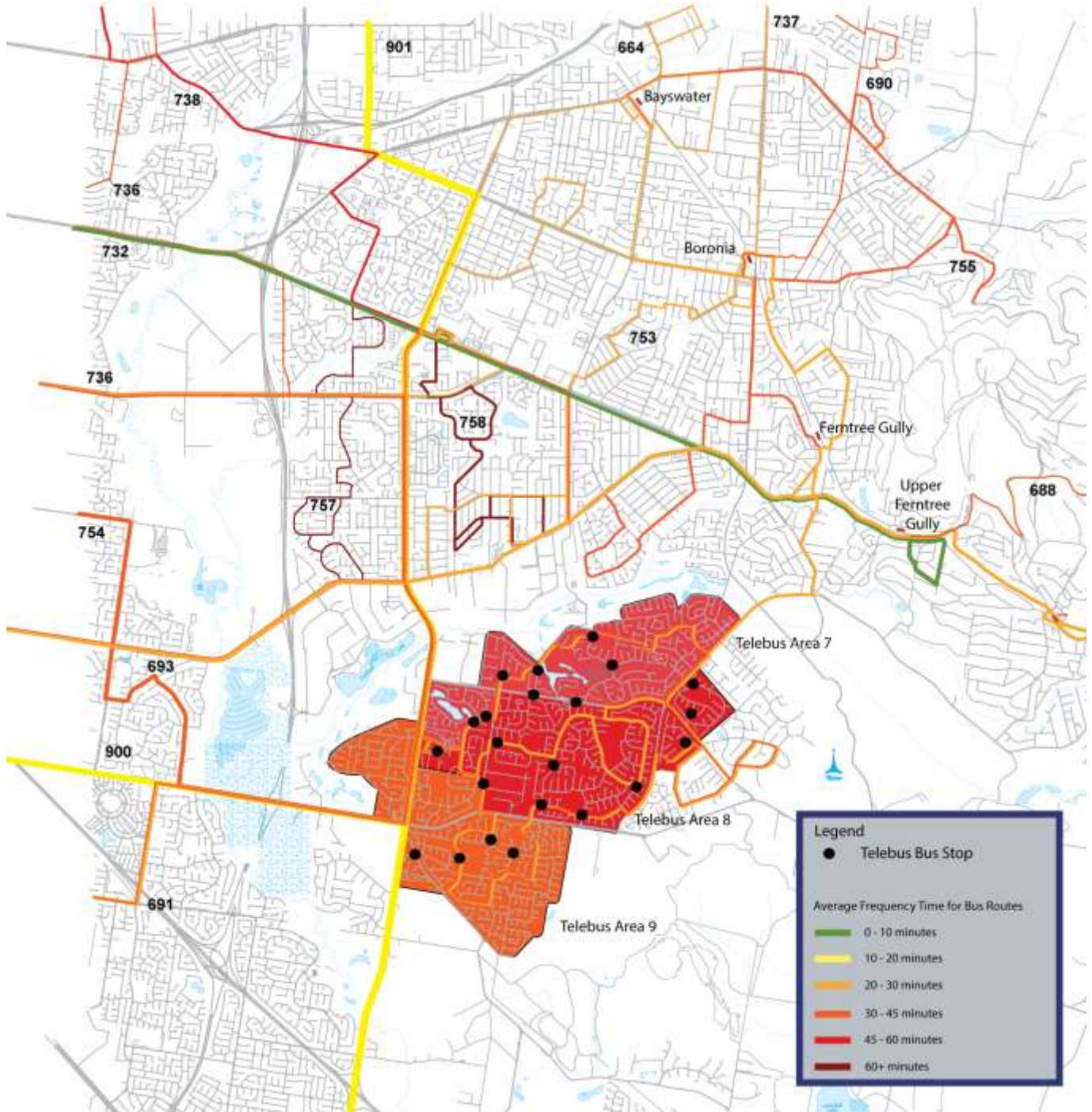
Map 2 – Weekday Peak Period Bus Frequency in Knox (4pm – 7pm)



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Map 3 - Off Peak Period Bus Frequency in Knox (9am – 4pm)

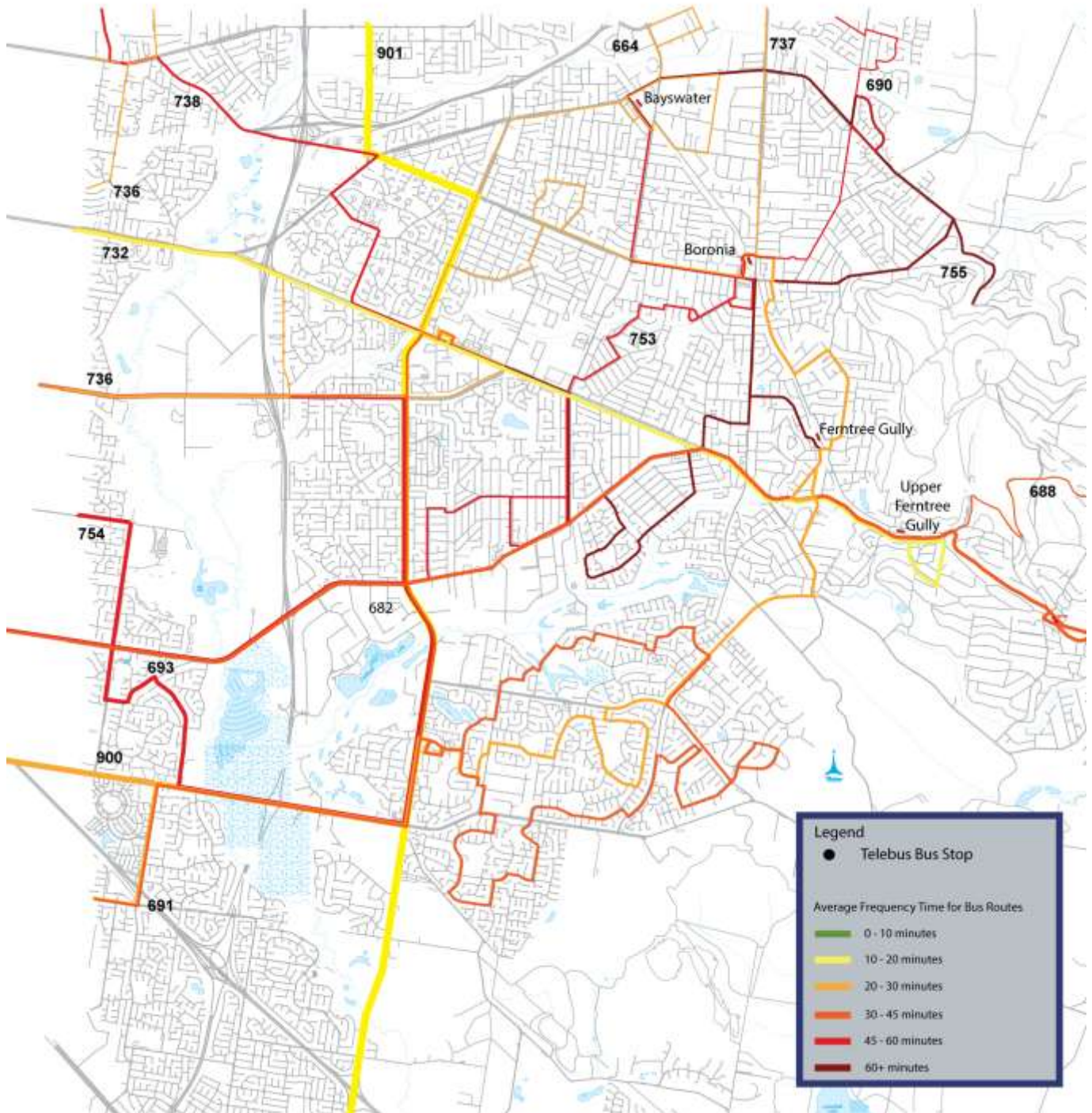
*Note: Bus Frequency is based on the available bus services during this time.
Particular routes may be based only on a few services.



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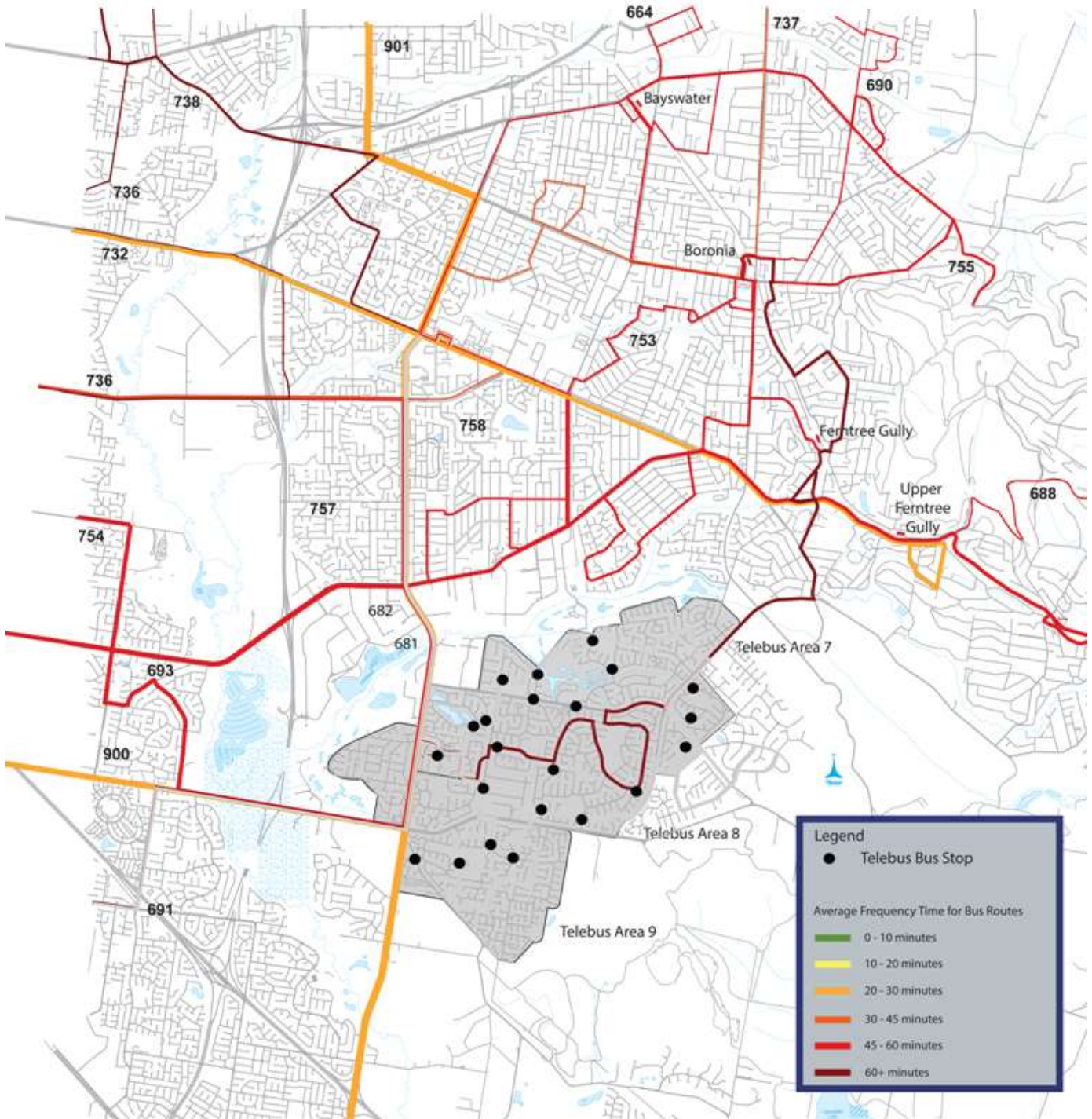
Map 4 – Weekday Evening Bus Frequency in Knox (7pm – 1am)

*Note: Bus Frequency is based on the available bus services during this time. Particular routes may be based only on a few services.



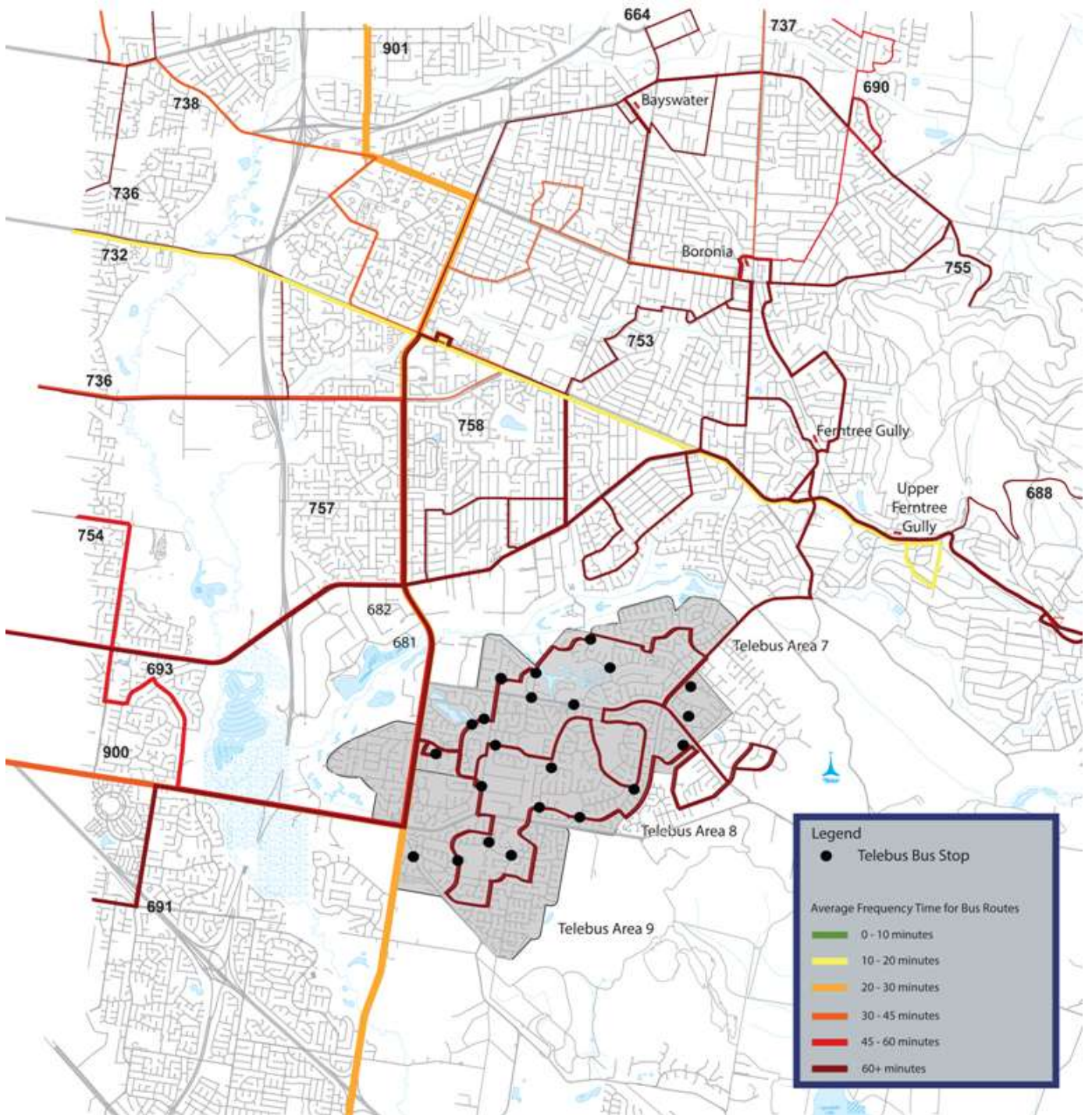
Map 5 - Typical Sunday Bus Frequency in Knox (Day)

*Note: Bus Frequency is based on the available bus services during this time. Particular routes may be based only on a few services.



Map 6 - Typical Sunday Bus Frequency in Knox (After hours)

*Note: Bus Frequency is based on the available bus services during this time. Particular routes may be based only on a few services.



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Cycling

Knox City Council has over 103km of shared paths (directly managing 89km) which connect to parks, schools, and shopping precincts. Many of the shared paths run alongside creeks providing a scenic route for both pedestrians and cyclists.

While the off-road network is quite extensive, there are still a number of gaps, particularly in the on-road network. Much of this requires facilities on arterial roads which are managed by, and therefore the responsibility of, VicRoads.

The March 2013 National Cycling Participation Survey results show that there has been a measurable decline in the number of children riding bikes over the last two years. There was a drop in riding by 2-9 year olds from 49.1 per cent to 44.4 per cent across Australia since 2011.

The results have massive ramifications for the health of Australians, especially children. Urgent action is needed at all levels of government, especially at the state and federal level, to turn the trend around quickly, especially outside inner city areas.



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Walking

Walking can improve health, strengthen social and community connections, reduce the cost of living, and contribute to safer and more liveable communities.

Regular walking can help:

- With fitness
- Increase muscle strength and endurance
- Lose weight, reduce body fat and increase muscle tone
- Reduce the risk of heart disease and stroke
- Better manage conditions like high blood pressure, high cholesterol and diabetes
- Reduce joint and muscular stiffness and pain
- Strengthen bones and improve balance

Knox has an extensive footpath network with over 1,200km of footpath within the municipality.

The provision and maintenance of footpaths is generally the responsibility of Council however footpaths may also be provided as part of private developments, road or landscape projects.



6. Policy Context

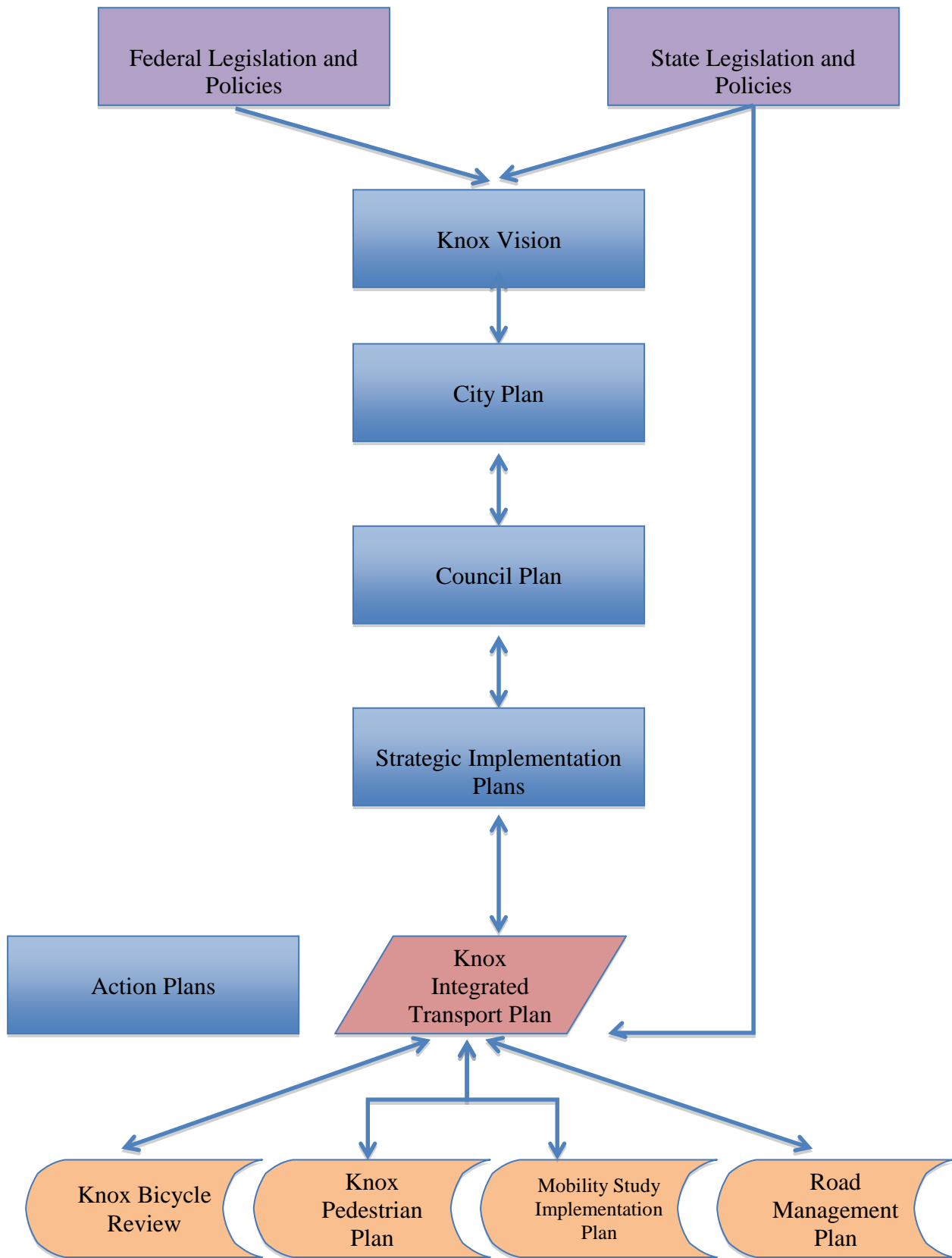


Figure 5 – Policy context in Knox

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Federal Government

The Federal Government, through the Department of Infrastructure and Regional Development, provides strategic policy advice to assist the Government to shape the framework underpinning transport in Australia.

Transport Legislation and Regulations include:

- Motor Vehicle Standards Act 1989
- Disability Discrimination Act, 1992
- Heavy Vehicle Regulation
- Australian Road Rules; and
- National Rail Safety Regulatory Reform

There are also a number of strategies which have been developed by the Department including:

- National Road Safety Strategy 2011-2020; and
- Australian National Cycling Strategy 2011-16
- Disability Standards for Accessible Public Transport 2002

There is no national walking strategy, policy or framework however.

The Federal Government provides funding for major transport infrastructure through roads programs such as Roads to Recovery, Blackspot and Strategic Regional Programs and also road and rail programs currently focusing on projects of national significance to productivity and freight movement.

State Government

Transport Integration Act 2010

The Transport Integration Act sets out a vision, objectives and principles for transport, making it clear that the transport system needs to be integrated and sustainable - in economic terms, in environmental terms and in social terms - and clearly establishing transport decision making as a triple bottom line issue.

The objectives of the Act are:

1. Social and Economic Inclusion
2. Economic Prosperity
3. Environmental Sustainability
4. Integration of Transport and Land Use
5. Efficiency, coordination and reliability
6. Safety and Health and Wellbeing

The Act requires all Victorian transport agencies to work together towards the common goal of an integrated and sustainable transport system. It also means that land use agencies are required to take account of the new Act when making decisions that impact on the transport system regardless of which political party is in power.

Knox Integrated Transport Plan

Plan Melbourne - Metropolitan Planning Strategy



Plan Melbourne is the Victorian Government's metropolitan planning strategy that guides the city's growth to 2050. It is a strategy to house, employ and move more people around the metropolitan area, and beyond.

The seven outcomes of the Strategy are:

- 1. Delivering jobs and investment:** Create a city structure that drives productivity, supports investment through certainty and creates more jobs.
- 2. Housing choice and affordability:** Provide a diversity of housing in defined locations that cater for different households and are close to jobs and services.
- 3. A more connected Melbourne:** Provide an integrated transport system connecting people to jobs and services and goods to market.
- 4. Liveable communities and neighbourhoods:** Create healthy and active neighbourhoods and maintain Melbourne's identity as one of the world's most liveable cities.
- 5. Environment and energy:** Protect our natural assets and better plan our water, energy and waste management to create a sustainable city.
- 6. A state of cities:** Maximise the growth potential of Victoria by developing a state of cities which delivers choice, opportunity and global competitiveness.
- 7. Implementation:** Delivering better governance: Achieve clear results through better governance, planning, regulation and funding options.

Network Development Plan - Metropolitan Rail 2012



Public Transport Victoria has undertaken an examination of the metropolitan rail network and determined what improvements are needed to meet the needs of the city in the short, medium and long term.

The Plan has four stages over 20 years:

1. Overcome existing network constraints
2. Introduce a metro-style train system
3. Extend the network into growth areas and areas without good access to rail
4. Prepare for further growth

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Pedestrian Access Strategy 2010

The Victorian Government's Pedestrian Access Strategy sets out the vision for more pedestrian-friendly transport systems in Victoria. The aim of the strategy is to encourage more Victorians to walk, especially for short trips.

Arrive Alive 2008-2017

Arrive Alive is the Victorian Government's 10 year road safety strategy. It's designed to keep Victoria at the forefront of Australian and international efforts to reduce road trauma, to deliver further major improvements to the road transport system, and to improve safety for all Victorian road users.

Victorian Freight and Logistics Plan

Victoria – The Freight State (the Plan) outlines the Victorian Government's long-term strategy to improve freight efficiency, grow productivity and better connect Victorian businesses with their markets, whether local, national or international.

Cycling into the Future 2013-23



The Victorian Government's cycling strategy, Cycling into the Future 2013-23, recognises the important role that cycling plays in our state – as part of the transport system, as an enjoyable recreation activity, a healthy form of exercise and a tourism drawcard.

Principal Bicycle Network

The Principal Bicycle Network (PBN) is a network of existing and proposed bicycle routes that provide access to major destinations in the Melbourne metropolitan area. The primary purpose of the PBN is to guide State Government investment in bicycle facilities that support cycling for transport.

In addition to identifying a new PBN, VicRoads, in partnership with all local Councils, has identified those routes on the PBN that should be elevated to a higher order priority and included on the SmartRoads, Road Use Hierarchy maps. These routes are called Bicycle Priority Routes (Figure 6).

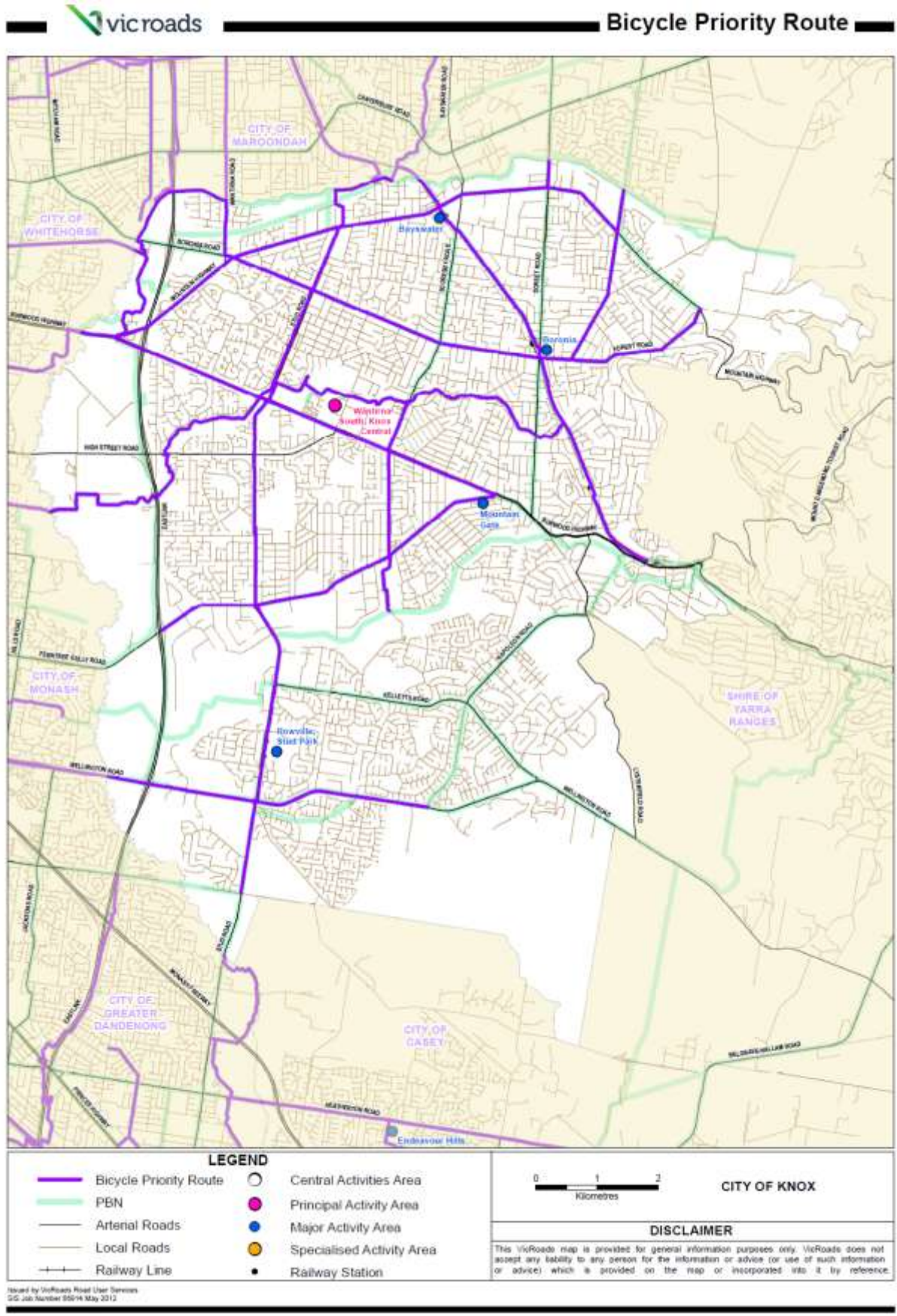


Figure 6 –Bicycle Priority Routes (VicRoads, 2014)

SmartRoads: A Network Operating Plan for Melbourne

SmartRoads is an approach that manages competing interests for limited road space by giving priority use of the road to different transport modes at particular times of the day.

SmartRoads ensures that decisions about the operation of the road network support land use and transport planning and better consider the effects on the surrounding community, Melbourne's key activity centres and the environment.

A planning framework has been developed consisting of the road use hierarchy; the road use hierarchy by time of day and the operating gaps. The road hierarchy identified the relative priority of each transport mode on each route and at each intersection, taking into account factors such as types of places the route traverses and any future growth or changes in these places. The road hierarchy for Knox is shown in Figure 7.

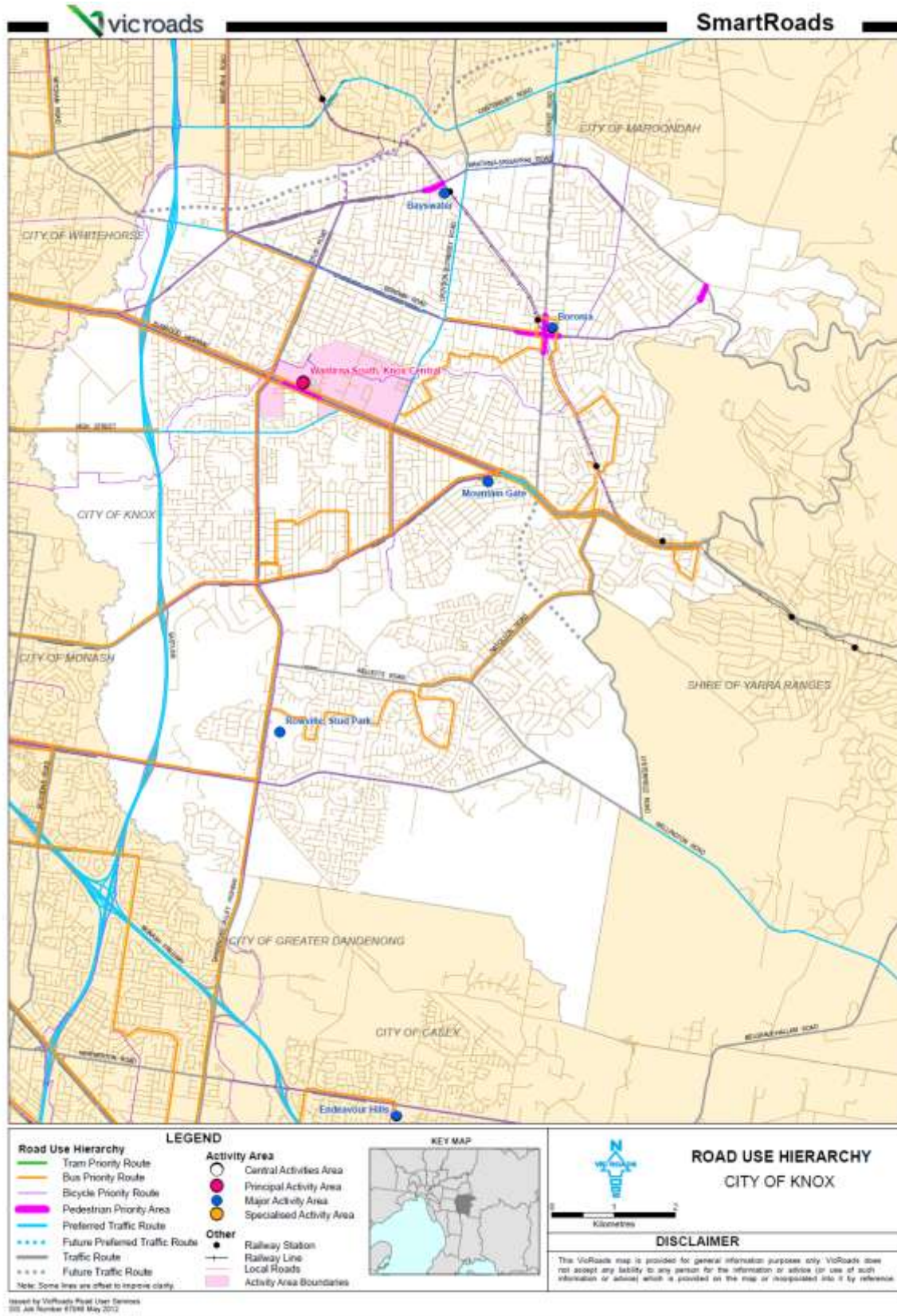


Figure 7 – Road Use Hierarchy (VicRoads)

Knox Integrated Transport Plan

Knox City Council

Vision

Knox's Vision provides a picture of the future City that will deliver the lifestyle, jobs and industry, health and wellbeing desired by members of the Knox community.

Transport is a key component in the Knox Vision and as such is referenced throughout. The transport aspirations for Knox, as highlighted in the Knox Vision, are broken up into five key areas:

1. Healthy, Connected Communities
A range of high quality, affordable and accessible transport options promote activity and involvement in community life for all members of the community.
2. Prosperous, Advancing Economy
Appropriate services and infrastructure – including public transport options – make doing business in Knox attractive.
3. Vibrant and Sustainable Built and Natural Environments
Cycling, walking and public transport connections are readily available, safe and reliable.
4. Culturally Rich and Active Communities
Transport infrastructure encourages physical activity and connection.
5. Democratic and Engaged Communities
Council advocates strongly for the Knox community on key issues.

Knox City Plan 2013-2017

Aspirations for the future City as identified within the Knox City Plan are detailed within the five key areas identified above.

A specific objective under the Theme *Vibrant and Sustainable Built and Natural Environments* is that *infrastructure networks provide transport choice, affordability and connectivity.*

Transport strategies identified within the Plan include:

- Increase walking and cycling networks that encourage physical activity and provide viable transport choices.
- Improve accessible public transport services and infrastructure so that public transport is a realistic transport choice for the Knox community.
- Develop an integrated transport network that provides transport choice to community members and businesses (including freight) in Knox.
- Significantly improved integrated and sustainable transport systems and infrastructure are provided to improve opportunity, choice and access for all.

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Knox Pedestrian Plan 2005

The vision of the Pedestrian Plan is to enhance the walkability of Knox. Ten target 'hotspot' areas were selected for specific recommended improvements.

The Pedestrian Plan identifies the main characteristics of a walkable environment as:

- Interesting and attractive environments,
- Supporting infrastructure eg. signage and seating,
- Continuous links between major destinations,
- Overlooked streets from shops and residential properties,
- Frequent opportunities to meet, sit and rest, and
- Improved safety by lighting and footpath maintenance.

Knox Bicycle Plan Review 2008

The Knox Bicycle Plan vision is that the Knox City Council will, through well planned bicycle networks and programs, increase the use of bicycles for commuting and recreation in a safe, convenient and sustainable manner for residents and visitors.

Road Management Plan 2010

The Road Management Plan defines road related infrastructure that falls under Council's jurisdiction and defines management and maintenance practices. Service levels within the Plan identify intervention levels which determine whether or when repair or risk remediation works are to be carried out, or the frequency of proactive inspections.

Specific Asset Management Plans, such as the Road Asset Management Plan and Footpath and Shared Path Asset Management Plan, define Council's operational and strategic techniques for managing different elements in the transport network.

Knox Mobility Study 2011

The Knox Mobility Study investigated the accessibility of the footpath and shared path network for people using mobility equipment. Consultation was undertaken with users of mobility equipment to examine how the path network could be improved to make it easier, safer and more comfortable for people using mobility equipment to move around and access services and facilities.

7. Key Issues

There are a number of key issues facing the Knox community both now and into the future. These issues are likely to impact on travel and transport decisions. The Knox Integrated Transport Plan needs to have regard to these issues and provide a sustainable planning approach.

Fuel prices

Increased fuel prices are already having a significant and socially detrimental impact on society and will continue to do so as fuel prices continue to rise. The individuals and groups who are disproportionately disadvantaged by the increasing price of fuel include vulnerable people such as those with a low income or on welfare or people with a disability. These effects are amplified by the geographic context of Knox and the reliance on private vehicle to support travel.

The increasing price of fuel increases the financial pressure experienced by the community. This makes it harder for people to 'make ends meet'. Businesses will also suffer as a result of increasing fuel prices with the cost of transporting goods and providing services also likely to increase to cover fuel costs.

Changing population demographics

Demographic analysis of Knox indicates that the population of two key cohorts are likely to proportionally increase, namely older persons and young families. Older people use transport services for a variety of reasons such as to access healthcare services, shopping, social activities, employment or to maintain connections to family. Transport is critical for older people's overall wellbeing.

As the population of Knox shifts and the proportion of both older and younger persons increases, there will be an increasing number of residents reliant on alternative modes of transport to the motor vehicle for their continued independence and their social wellbeing. Without alternative transport options, young residents will be overly reliant on the support of their family and friends to provide access to goods and services, while older residents may seek to hold on to their drivers licence and vehicles for longer to ensure their independence remains.

Those residents without a driver's licence or access to a private car may become socially isolated in our community if there are not other transport options available. Public and community transport play a critical role in supporting these residents, particularly the frail or those unable to walk long distances. The community transport sector potentially fills a void in meeting the needs of our ageing population, however at present this capacity and cost outstrip supply and a more holistic approach is necessary to meet the future needs of our active ageing.

Obesity

Obesity levels in Australia are rising. 62.8% of adults were either overweight or obese in 2011-12, up from 56% in 1995 and 8% of children aged 5-18 were obese in 2011-12,

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and a further 18% were overweight (Australian National Preventive Health Agency 2013, State of preventive health report, ANPHA, Canberra).

Within Knox, 55.5% of adults were overweight or obese in 2011 (compared with the state average of 49.8%), up from 49.4% in 2008 (Victorian Population Health Survey, 2011).

A contributing factor impacting on obesity is the lack of physical activity. Physical activity protects against heart disease and stroke, as well high blood pressure and high blood cholesterol. It helps reduce the chance of getting some cancers, helps prevent type 2 diabetes, helps to control weight and promotes weight loss. It guards against osteoporosis, reduces the risk of falls and improves cognitive function in older people, and helps prevent vascular dementia. It improves mood, aids sleep and relieves the symptoms of depression and anxiety. Physical activity makes you fitter and able to tackle more in your daily life.

One of the easiest ways to get the recommended 30 or more minutes of exercise each day is to look at how we travel on a daily basis. For short trips, walking, cycling and the act of using physical activity to access public transport can all assist in achieving this.

Residents and workers in Knox should therefore be encouraged and supported to use active modes of transport whether it is in travelling to work, school or to the local shops, to improve their health and wellbeing. To achieve such an outcome, it is necessary to forge closer relationships with the community and identify within the constantly changing communication landscape the best techniques for both reaching our communities and allowing them to reach each other on our behalf.

Greenhouse Gas Emissions

Greenhouse gas emissions from transport come primarily from fossil fuels combusted in vehicles. The transport sector accounts for 16% of Australia's greenhouse gas emissions. Light vehicles account for the largest share—10% of Australia's total emissions (as seen in Figure 8).

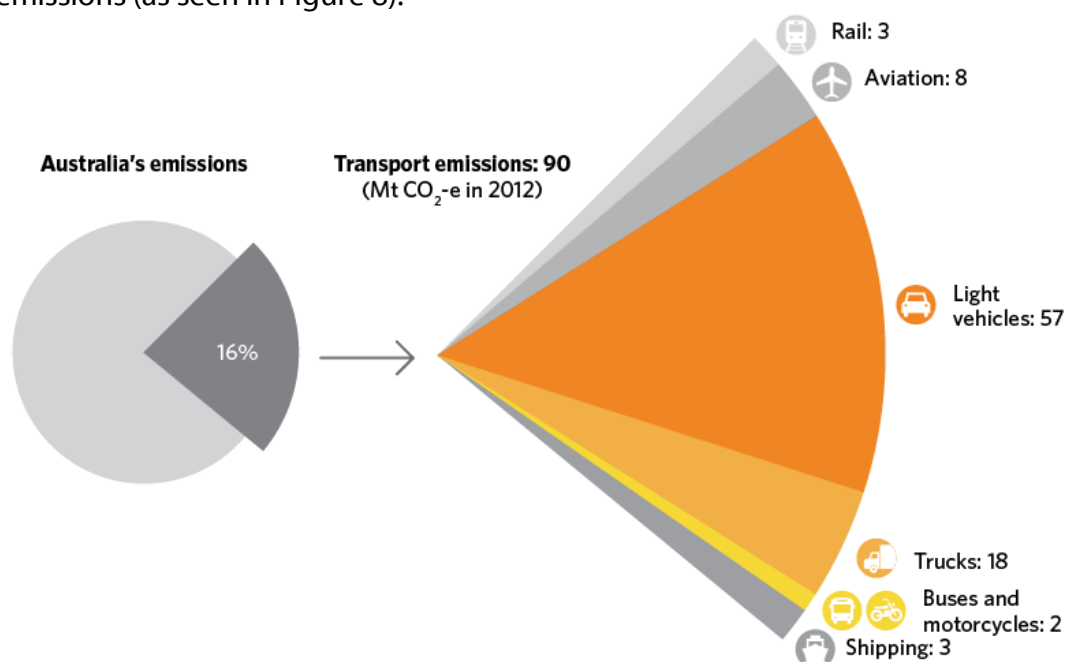


Figure 8 - Transport Emissions by mode, 2012 (Department of Environment, 2014)

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Transport emissions can be reduced by:

- increased efficiency of motorised vehicles and thereby reducing the amount of fuel required,
- reduced emissions intensity of fuels ie by switching to lower emission fuels such as electricity, natural gas and sustainable biofuels, or
- more efficient demand management ie. changing the way people and freight are moved.

Road congestion

The economic, social, and environmental costs of congestion have been calculated at more than \$3 billion a year, which is expected to rise to \$6.1 billion by 2020 (Bureau of Transport & Regional Economics, 2014). Experience from around the world demonstrates that is not possible to simply 'build' our way out of congestion and that the benefits of new, high-cost infrastructure projects may be transitory ie. expanding or building a road will only attract more vehicles than before.

As traffic grows VicRoads has also begun to give priority to trams, buses and even bicycles on some roads as a way of moving more people without widening roads to fit more vehicles.

As the urban form changes and development in Knox grows, parking demand management will become critical to ensure the road network continues to operate efficiently and parking is shared equitably. This will be particularly important around activity centres and other attractors such as schools.

Managing congestion within Knox requires more direct dialogue with the community about the tools available to collectively manage travel behaviour into the future. Infrastructure solutions alone will not address the growth and development challenges we collectively face. Good planning, behavioural change programs and community partnerships will all contribute to meeting the collective community need for sustainable transport solutions within both Knox and the wider region.



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Road Safety

Recorded casualty accidents (as shown in Figure 9) within Knox over the last 5 years have shown an overall decline in incidents over this period. Pedestrian accidents increased between 2008/9 and 2010/11 from 22 to 28 but have since dropped back to 23 accidents in the year 2012/13. Cyclists were involved in fewer accidents in 2012/13 with 15 casualty accidents, compared with 23 in 2008/9, however the overall figure remains comparable with the five year average.

Year	2008/9	2009/10	2010/11	2011/12	2012/13
Casualty Accidents	306	327	288	292	269
Pedestrian accidents	22	27	28	22	23
Bicycle accidents	23	12	28	11	15

Figure 9 – Casualty Accidents in Knox (VicRoads, 2014)

Safety of motorists as well as cyclists and pedestrians is becoming more critical in transport planning and decision making. There is an onus on Council to continue to make our roads safer for all users. Lack of planning for sustainable transport users, such as if there is no separate bicycle facility along a road, or an intersection is too difficult to cross for pedestrians will likely result in the community opting for the private vehicle even for short trips, which in turn has the adverse effect of reducing the safety for these same users.

Promoting safety requires a collaborative partnership between the Council, its community and key user groups who collectively contribute to providing a safer environment within Knox.

Technology

The advent of technology is changing the way we receive and transmit information, make payments, communicate in real time and have a wealth of data at our disposal.

Technology has enabled the capacity and efficiency of the road and rail networks to be improved through things such as traffic signal sequencing, rail signalling upgrades, freeway ramp metering (managed motorways) and the provision of priority for public transport users.

Technology is also being used to improve vehicle safety through in-car deployment safety devices, vehicle structure safety improvements, new road handling systems and electronic systems for driver monitoring. Technology has enabled communication between vehicles across the transport network, to track vehicles in real time and to pay for a transport trip online.

As advances in technology continue it is expected that there will be complementary benefits for transport. Perhaps the greatest opportunity by which technology will support transport users into the future sits within the realm of social mobility and personal mobility. Data from the US and UK indicates that the next generation of car drivers are delaying both their application for a drivers licence and the purchase of a car, preferring instead to either use public transport or participate in the sharing economy where common resources are pooled and utilised to both minimise costs and maximise utility.

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This creates greater opportunity for maintaining social dialogue whilst commuting. The sharing economy is also playing out at a wider scale whereby taxi journeys, ride sharing and car sharing are becoming commonplace methods of facilitating journeys without the need for car ownership.

Land use integration

The location and design of transport infrastructure should help to maximise transport choice and manage travel demand by minimising the need for, and distance of, travel. Planning for new infrastructure should be integrated into land use strategies that will influence housing and employment locations, densities etc.

Similarly, planning for new public transport services, or new transport infrastructure, should be closely aligned with land use planning. In particular transport connections should be made to support access to transport interchanges and activity centres. In Plan Melbourne, the concept of 20 minute neighbourhoods is introduced as a strategy objective which encourages future communities to live locally – a concept which relies on adequate provision of jobs, commercial, leisure and community services which meet the needs of those local to an area.

Knox has recently developed a Draft Housing Plan, which identifies key growth and infill areas to support higher density development. Typically, these areas align strongly with both existing and future principal public transport corridors. Good planning dictates the need for getting the land use planning right in the first instance while simultaneously building capacity to support future public transport infrastructure and services.

Successful integration will therefore require the development and maintenance of positive partnerships at both State and Federal Government level to facilitate future provision of transport services which serve both Knox and the broader regional needs of Melbourne's East.

Community connections

Our Knox community is constantly looking to better embed social connections at a local level. The connections we make and the bonds we forge in and around the places where we live, work and play help to build strength, goodwill and resilience within our communities.

Car dominant cultures are strongly challenged by this construct as door to door movements by private vehicle inherently bypass the potential for interactions we may experience on the way to being somewhere else. Enhancing both awareness and uptake of sustainable transport options can provide a strong platform from which community cohesion is realised.

This concept is strongly reinforced in Plan Melbourne, which articulates the desire to create a twenty minutes neighbourhood where local living can be fostered and embedded within our local communities.

8. Developing key directions for the Integrated Transport Plan

In framing this Integrated Transport Plan, it was necessary to review the context within which Council operates, incorporating analysis of the Knox environment, community expectations, our interactions with delivery partners and both the policy and operating context at a State and Federal Government level.

Delivery context

The Key Issues identified in the previous section capture some of the key societal challenges which impact on how we plan and implement and manage our transport systems. These provide a valuable basis from which to assess future direction for Council in developing a transport strategy, however they only represent a part of what is a challenging delivery framework for Council.

Council has direct responsibility for

- Planning, delivery and maintenance responsibility for our local transport network, including road, bicycle/ shared path and footpath networks.
- Operational responsibility for management of the above networks, addressing access, safety and localised congestion challenges.
- Aligning the strategic land use context within Knox with planning for transport network connectivity.
- Joint responsibility for management of the network at key interfaces between the local transport network and neighbouring networks such as the State road network, public transport infrastructure and neighbouring municipalities.
- Administering transport provisions for new large developments within Knox through the Statutory Planning process
- Policy, planning, implementation and management of parking issues on the local network, Council owned car parks and in some cases operational responsibility for car parks owned by others.
- Driving behavioural change programs in the community, utilising guidance and tools developed by both State and Federal Government

Council participates in partnership arrangements, both directly and indirectly with key agencies to

- Identify and deliver enhancements to the strategic road network
- Identify and deliver enhancements to the Principal Bicycle Network
- Plan and advocate for strategic public transport infrastructure
- Implement enhancements to existing public transport services
- Improve safety on strategic network routes (road, bicycle and public transport)
- Provide input into key planning and policy documents delivered by others.

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Policy and Planning context

Council has direct responsibility in developing its own policies and plans relating to both transport and planning matters, however is limited when policy and plans are developed by others. In such cases, input is often provided without any guarantee that it is adopted in the finalised policy or plan.

In recent years, the transport sector at both State and Federal level has been reluctant to commit to a common policy platform or funding mechanism and as a result, we have seen considerable changes in prioritised plans and initiatives which strategically guide the growth and planning direction, often exacerbated at times of Government change.

At a Federal level, we have experienced the Federal Government previously commit funding, via Infrastructure Australia' National Infrastructure Plan to signature public transport projects such as \$365 million towards the Gold Coast Rapid Transit (light rail) and \$715 million towards Brisbane's Cross River rail project, however a change in Government has seen this position change whereby the Cross River project was pulled and re-badged, losing funding allocations in the process. Current Federal Government transport initiatives a focused return to rail network expansions and the provision of freight infrastructure, noting only minimal direct funding towards public transport.

At a State Government level, we have seen new iterations of strategic planning documents for Melbourne (Melbourne 2030 and the current Plan Melbourne) resulting from changes in Government. An outcome of this has been a constant shifting of priority initiatives and no clear mechanism for a developing and committing to longer term infrastructure plan across either Melbourne or Victoria. At a finer grained level of detail, Council has provided input on the development of both bus and rail network strategies for Melbourne, only to see each document either remain incomplete or play a subservient role to the higher order planning strategies.

Framing Council's strategic direction

In recognition of the ever-changing external political environment and associated policy positions of both State and Federal Government, Council sought to identify a common strategic framework in which to develop and identify key initiatives within the Integrated Transport Plan.

In 2010, the State Government introduced legislation – The Transport Integration Act – the stated purpose for which “is to provide a framework for the provision of an integrated and sustainable transport system in Victoria.”

The Transport Integration Act, 2010 articulates a series of higher order Transport System objectives which the Act purports to deliver against including:

- Social and Economic Inclusion
- Economic Prosperity
- Environmental Sustainability
- Integration of Transport and Land Use
- Efficiency, coordination and reliability
- Safety, Health and Wellbeing

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In reviewing the intent and application of the Act, it was apparent that there was strong alignment between these objectives and those articulated both in Council's vision and Council Plan as well as demonstrating strong alignment with the previous iteration of Knox's Integrated Transport Plan. It was therefore considered prudent to frame the objectives of this plan to strongly align with those of the Act itself.

There exists a twofold benefit in closely aligning Council's overarching strategic transport objectives with those articulated in the Transport Integration Act, 2010. Firstly, by focusing on the outcome, rather than the process, it provides greater opportunity for Council to plan, design, implement and manage a stronger and more resilient transport system. This is possible regardless of whether it is achieved directly as a result of Council led initiatives, that is, local transport networks or when delivered by others (ie strategic network elements).

Secondly, the alignment of Council's transport objectives with those articulated within the Transport Integration Act provides Council with a solid planning basis from which to assess future initiatives be they delivered directly by Council or through development proposals of others.

9. Community Consultation

To ensure that sufficient information for both qualitative and quantitative data was gathered, a two part consultation process was undertaken.

Quantitative

A short questionnaire was distributed to 18,000 households around the municipality. Questionnaires were also available at local festivals with both residents and visitors to Knox encouraged to complete them.

The questionnaire considered travel behaviour patterns, mode use, mode ownership, barriers to sustainable forms of transport and perspectives on the quality of existing infrastructure. Respondents were also encouraged to provide further comments with regards to their vision for transport in Knox.

The survey was available on-line for those who would prefer to complete it that way.

In total, approximately 750 responses were received. A summary of the findings is found in Appendix A.

Qualitative

To further explore the questionnaire results, three focus groups were undertaken with representatives from the youth, multicultural community and the general public.

The focus groups undertook three activities. To provide consistency, each focus group was conducted in the same manner. Main topics discussed included:

- Community perception and relationship with public transport
- Greater in depth discussion on barriers to public and/or active transport
- Priorities for funding transport projects with a limited budget.

Key issues identified through the consultation:

- Connectivity of bike paths, footpaths and public transport services
- Frequency and coverage of public transport services (not competitive with the car)
- Safety concerns at public transport interchanges and on bike paths at night and also as a pedestrian crossing main roads
- Basic, easy to understand public transport information needed (on how to use the system)
- Signage for pedestrians and cyclists at public transport stops and along the bike paths
- More funding for public transport services required

Specific projects noted during the consultation were:

- Rowville Rail
- Tram to Knox
- Dorset Road extension
- Express buses on freeways
- Bike hire in Knox
- Wayfinding signage both as a pedestrian and cyclist

10. Transport Vision for Knox

The Transport Integration Act 2010 provides a framework with six transport system objectives which Victorian transport agencies must have regard to when making decisions. This framework provides a well-grounded basis for articulating transport aspirations for Knox.

For this Integrated Transport Plan, each Transport Integration Act objective has been replicated below with themes and actions, as identified through the consultation process, to achieve desired outcomes.

Objective 1 - Social and Economic Inclusion

The transport network is accessible to all people who wish to use it.

There are many people in our community who have limited access to transport such as:

- People who cannot drive as they are too young or have relinquished driving with age,
- People with limited mobility due to illness or disability,
- People who choose not to, or cannot afford to, own a car,
- People who are geographically isolated from public transport services.

Rising fuel prices and an ageing population will be key issues in Knox into the future. Providing access to alternative transport options to the private car will be imperative to enable everyone to participate in their community and to reduce the likelihood of social isolation.

The availability of information on how to use different forms of transport is also important in being able to successfully influence people's transport choices. For example being able to understand public transport timetables and how to reach particular destinations on the shared path network were both raised as concerns through the consultation for this Plan.

This may be overcome by having public transport timetables and cycling maps readily available in multiple languages and formats, running sessions on how to buy and use a Myki card or providing wayfinding and service information to public transport or shared path users while they are in transit.

Council initiatives to address these challenges will focus on three key themes:

Enhance access to sustainable transport services and infrastructure – this requires activity on two distinct fronts – enhancing both the road, pedestrian and bicycle networks that fall directly within Council's management jurisdiction and reducing impediments to accessing and utilizing these networks for the benefit of all users. In addition, Council has an obligation to maintain fruitful partnerships with external service providers who assist in delivering the strategic transport networks and services within our community.

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Promote community awareness of movement and accessibility – this acknowledges that there exist some ingrained impediments which prevent communities from utilising sustainable transport options. These may be real or perceived and may vary depending on the community segment being analysed. It is Council’s role to proactively work with the community in capturing behavioural insights and identifying and addressing specific transport needs of the community, working in partnership with them and third party providers to understand transport choice and decision making.

Enhance access to meet the needs of people using mobility equipment – this recognizes the critical role that public transport provides in meeting the needs of those who don’t have access to or are not in a position to use a private vehicle due to their life situation. Meeting the needs of these particular community segments is critical if we are to continue to strive towards an inclusive community.

THEME: Enhance access to sustainable transport services and infrastructure.

- 1.1 Advocate for improved public transport services and infrastructure such as Rowville Rail, Knox Tram, improved bus services and grade separation of rail lines.
- 1.2 Continue to extend the footpath and shared path networks.
- 1.3 Review the current Knox Pedestrian Plan and develop a new Walking Plan.
- 1.4 Review the current Knox Bicycle Plan and develop a new Cycling Plan.
- 1.5 Advocate for the upgrade of bus stops including shelters, hardstand waiting areas and footpath connections.

THEME: Promote community awareness of movement and accessibility.

- 1.6 Promote community awareness of sustainable transport options.
- 1.7 Develop education programs for safety and accessibility to schools, businesses etc.
- 1.8 Explore technology enhancements to better provide transport information to the Knox community.
- 1.9 Develop partnerships with local businesses to support access to work/job opportunities.

THEME: Enhance access to meet the needs of people using mobility equipment.

- 1.10 Continue to advocate Public Transport Victoria to roll out upgrades to bus stop infrastructure to support access and mobility needs.
- 1.11 Advocate and provide for the needs of people using mobility equipment.
- 1.12 Develop mobility guidelines for use by Planning/Engineering/Building Departments.
- 1.13 Continue to rollout Mobility Plan priority measures.
- 1.14 Retrofit existing infrastructure to comply with needs of people using mobility equipment as defined by Australian Standards.

Figure 10 overleaf articulates a public transport vision for Knox, identify requisite bus frequencies, key network links and priority public transport infrastructure needs to service Knox into the future.

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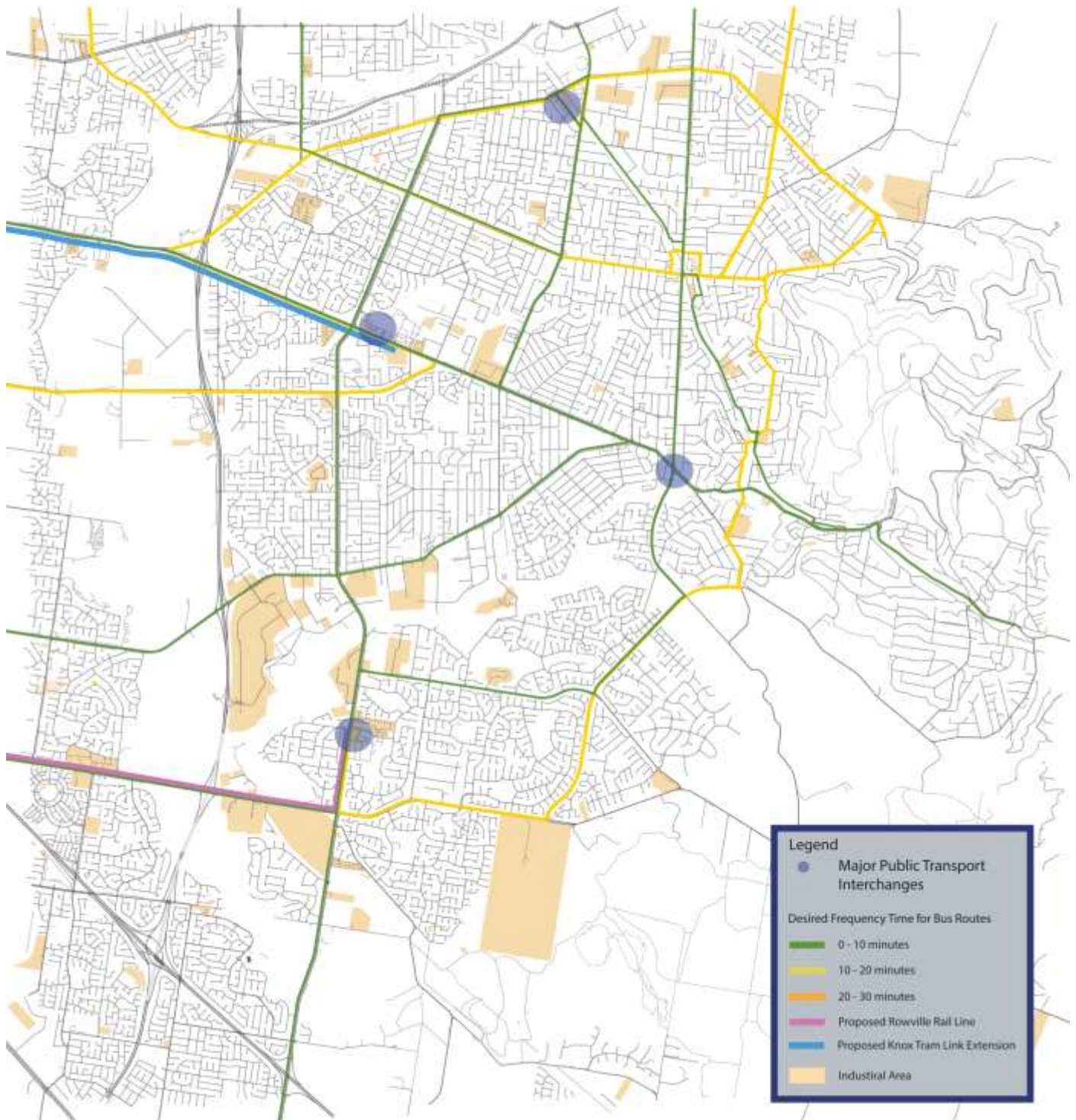


Figure 10 –Public Transport Vision for Knox

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Objective 2 - Economic Prosperity

The transport network enables efficient and effective access for people and goods.

Knox is strategically well positioned in Melbourne's Outer East and is an established centre for manufacturing. It is a major economic force in the region with a gross regional product of \$7.619 billion/year. Knox also provides jobs for an estimated 55,807 people.

Goods are transported both within Knox and to other areas solely on the road network. Delays on the road network can therefore have significant impacts on the efficiency of business operations. Fuel prices are also likely to increase and have a costly impact on businesses. Additional time spent sitting in traffic due to congestion on the road network must be addressed to ensure delays are reduced as much as possible.

Knox provides employment to many residents from both within Knox and surrounding municipalities. Good access to work places is therefore necessary. Public transport networks need to provide good coverage through industrial estates and there must be adequate footpaths and cycling infrastructure. As many Knox residents also work in Knox, this provides an opportunity for these short trips to work to be undertaken using sustainable transport modes.

Council has a role to play in supporting access to businesses through the provision of local road networks, improvements to the arterial road network for freight vehicles, provision of footpaths, shared paths and advocating for public transport services. The integration of transport and land-use planning will become a more important issue into the future with residents seeking opportunities to live, work and recreate locally.

Council initiatives to address these challenges will focus on two key themes:

Enhance transport options to support access to economic growth areas – this requires Council to work closely with the business sector and State Government to support improved access to activity centres, key employment precincts, industrial estates and businesses through the provision of priority public transport corridors to and within Knox, development of the freight network within Knox, management of localised congestion issues and the ongoing provision of transport options to service key development sites, including employment precincts, industrial areas and activity centres. Council also has an important planning role to ensure that there is strong alignment between the transport and land-use framework for the municipality.

Knox has a strong reputation in its advocacy role for priority public transport corridors, including Rowville Rail and the light rail extension from Vermont South along Burwood Highway. These high profile projects continue to represent the backbone of future economic success in the region. Council will continue to advocate for these routes as priority initiatives both on behalf of the Knox community and collaboratively as part of the Eastern Transport Coalition, who advocate for sustainable transport improvements on behalf of 1 million residents of Melbourne's East.

In the interim, bus services continue to represent the core of the public transport offer within Knox. There is stronger desire for extended hours of operation for buses within Knox, bringing weekend services into line with weekday services, a greater frequency of service offering across the network and improved connections between key economic

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attractors such as activity centres, neighbourhood shopping precincts and employment clusters, including industrial areas.

Identify key gaps in the transport network which facilitate movement of people and goods – this necessitates maintaining good relationships with State Government and businesses to address gaps and concerns in the road network.

THEME: Enhance transport options to support access to economic growth areas.

- 2.1 Advocate for the development of a regional freight network strategy to align with hypothecated funding from the heavy goods vehicle charging and investment scheme.
- 2.2 Advocate for freight improvements across the network.
- 2.3 Advocate for improved bus services to and within key economic growth areas, including activity centres and industrial estates.
- 2.4 Partner with the State Government to identify and pilot innovative public/flexible transport services to key employment precincts in Knox.
- 2.5 Support Knox workplaces to become health promoting workplaces through the Healthy Together Workplace Achievement Program.
- 2.6 Develop guidelines to support the planning of mixed use developments and access to activity centres.

THEME: Identify key gaps in the transport network which facilitate movement of people and goods

- 2.7 Develop a freight hierarchy for the Knox road network.
- 2.8 Seek funding for freight network enhancements through the Eastern Heavy Vehicle Investment group.
- 2.9 Investigate grant options/ road improvement funding opportunities across Knox.
- 2.10 Support the delivery of sustainable arterial road infrastructure through ongoing partnership with VicRoads.

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Objective 3 - Environmental Sustainability

The transport network protects the natural environment by reducing transport related emissions and adapting for the challenges of climate change.

Transport emissions contribute to air pollution and therefore affect the health of the environment. Transport emissions from light vehicles (cars) account for 10% of Australia's greenhouse gas emissions.

Transport emissions from cars can be reduced either by reducing the number of trips taken using non-sustainable modes, increasing the use of low carbon transport modes such as walking and cycling or through improvements to vehicle technologies.

Encouraging residents to change their travel behaviour to more sustainable modes such as walking, cycling, public transport or carpooling will assist in reducing transport related emissions while also reducing the impacts residents may experience due to rising fuel prices and the cost of running a private motor vehicle.

The road network caters for cyclists, buses, taxis, and freight in addition to private motor vehicles. Each mode competes for the available road space. As buses have the capability of carrying significantly more passengers than the private motor car, encouraging the use of public transport will reduce the number of cars on the road and also transport related emissions. By making bus trips competitive with private car travel through priority on the road, patronage will increase.

Council initiatives to address these challenges will focus on four key themes:

Employ behavioural change programs to inform, guide and influence user behaviour – by developing a plan to focus on changing travel behaviour we can determine how to utilise Council's finite infrastructure resources, giving focus to our key community partners such as schools, health precincts, employment generators and community groups. Behavioural change can be delivered via a number of different means, including targeted marketing, direct engagement, visual cues such as signage, wayfinding and community partnerships.

Enhance the natural environment – this requires Council to work with State Government and developers to build on the transport assets of the municipality such as pedestrian and cyclist infrastructure, providing linkages between the community and our key natural spaces including creek corridors, bush boulevards and open space environs.

Consider the Triple Bottom Line – a triple bottom line assessment of transport project priorities for the municipality ensures that those infrastructure projects with the greatest return on investment in terms of social, environmental and economic criteria are supported by Council.

In developing a transport hierarchy for Knox, Council seeks to ensure that the needs of the following key users are met in priority order: pedestrians, cyclists, public transport users, taxis, freight, multiple occupant private vehicles and single occupant private vehicles.

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Practical decisions in adhering to this framework require consideration of the time of day, location specific challenges to be addressed and community needs within a local context.

Explore 'user valued' mechanisms – transport assets are of different value to different people, often at different times. Those who catch public transport for example value the use of bus lanes as they receive a benefit by the buses not being late. Parking is also becoming a more highly valued asset, particularly around activity centres. Value mechanisms enable prioritisation across the various residents, customers, commuter and worker needs.

THEME: Employ behavioural change programs to inform, guide and influence user behaviour.

- 3.1 Develop an advocacy and Educational Programs Plan for Knox.
- 3.2 Implement key program initiatives to encourage active and sustainable travel behaviour at schools and early years services.
- 3.3 Advocate for bicycle wayfinding across the shared path network.
- 3.4 Develop a Green Travel Plan policy and accompanying planning framework for sustainably managing movement in and around high trip generating sites within Knox.

THEME: Enhance the natural environment.

- 3.5 Provide pedestrian and cycle infrastructure as part of road projects wherever practicable.
- 3.6 Ensure transport connectivity between residential areas.

THEME: Consider the Triple Bottom Line.

- 3.7 Advocate for transport projects that deliver triple bottom line benefits.
- 3.8 Undertake a feasibility investigation of the extension of the route 75 tram to Knox including a triple bottom line assessment.

THEME: Explore 'user valued' mechanisms.

- 3.9 Develop a Parking Policy that considers parking at activity centres, shopping precincts and other major attractors.
- 3.10 Advocate for bus priority on key routes.

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Objective 4 - Integration of Transport & Land Use

The transport network maximises access to homes, employment, services and recreation and reduces the need for private motor vehicle travel.

Land use and transport are interrelated and one should not be considered without the other. Land development can influence travel choices. If inadequate public transport services, footpaths or cycling infrastructure is provided then residents or workers are more likely to choose to travel by car.

Likewise the transport network should not be developed without considering where the demand is (ie. where people are living and/or working).

The Knox@50 consultation, undertaken in 2012, found a desire for residents to 'Live Locally'. Residents wish to live, work, play and learn locally and be a self-sufficient community. This aligns strongly with the 20 minute neighbourhood concept as articulated in Plan Melbourne.

In order to ensure good access to homes, places of employment, shops and recreation facilities, there must be realistic transport choices. If the infrastructure or services are not available or it is not competitive with the private motor vehicle, residents will simply be reliant on the car to meet their travel needs. Buses in particular can play an important role in this due to their flexibility in route and distance covered.

Council has an important role to ensure that developers include high quality pedestrian and cycling infrastructure as part of their developments. Alternative transport choices to the private motor vehicle can be encouraged and improved through Statutory Planning controls. However, supporting tools such as the Knox Planning Scheme must also reflect the ambitions of the Knox Community as stated within its visions and strategies to provide better support for decision making processes.

Council initiatives to address these challenges will focus on two key themes:

Support the management of growth and development around activity centres and key development areas – Council has an important role to play in developing an appropriate policy and planning framework for future development in the municipality.

Improve statutory planning tools to align sustainable transport provisions with new developments within Knox. This theme recognises that the Knox Planning Scheme represents the most powerful tool we have to achieve sustainable transport objectives within our built environment and seeks stronger alignment between our transport and mobility plans and strategies and the Planning Scheme which frames the delivery of these outcomes.

THEME: Support the management of growth and development around activity centres and key development areas.

- 4.1 Develop policy and planning framework guidelines.
- 4.2 Undertake a transport and access study for activity centres and key development areas in Knox to better inform the development of Localised Structure Plans and land use growth
- 4.3 Encourage development along key Public Transport Corridors to utilise existing sustainable transport services and infrastructure

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- 4.4 Review existing traffic and transport guidelines for subdivisions.
- 4.5 Ensure pedestrian and cycling permeability in the retrofitting of development sites.
- 4.6 Encourage businesses to develop travel plans.

THEME: Improve statutory planning tools to align sustainable transport provisions with new developments within Knox.

- 4.7 Revise the Knox Planning Scheme to better reflect Knox's transport objectives
- 4.8 Develop and integrate key transport network maps within the Municipal Strategic Statement to improve decision making processes
- 4.9 Investigate options to incorporate walkability urban design requirements for new developments.
- 4.10 Develop a Green Travel Plan policy to incorporate within the Knox Planning Scheme
- 4.11 Align and incorporate mobility access guidelines for new private developments within the Knox Planning Scheme
- 4.12 Develop precinct parking plans to inform the development of Parking Overlay Schedules across the municipality.

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Objective 5 - Efficiency, Coordination and Reliability

The transport network optimises the efficiency and reliability of all modes of transport.

Many Knox transport trips involve the road network, whether that be by car, bus, bike or crossing the road as a pedestrian or cyclist. Freight is also carried throughout Knox on the road network. Road congestion therefore can have a significant impact on transport efficiency and reliability in Knox. This is only going to become more of an issue into the future.

Road improvements which can significantly improve travel times for bus services include bus priority such as bus lanes, queue jump lanes and specific bus signals.

Pedestrians and cyclists can also be delayed by congestion when needing to cross a road. Priority can be given at key crossing points to ensure wait times are minimal.

Frequency and coordination between transport modes is critical, particularly for public transport journeys. If public transport is to be a viable alternative to the private motor vehicle for Knox residents, then the service must be able to compete with the car in terms of journey time.

Indirect routes can also cause delays. These time delays can influence a person's choice in transport mode.

Council's role is integral in providing and advocating for improvements to the transport network which improves efficiencies for different transport modes.

Council initiatives to address these challenges will focus on four key themes:

Advocate for connected, frequent and reliable public transport – this requires Council to work with State Government to improve public transport services within the municipality.

Ensure the VicRoads Road Hierarchy is used when considering projects on arterial roads – extensive work has been undertaken by VicRoads, in consultation with Council, in the development of a Road Use Hierarchy for the municipality within the SmartRoads framework. This hierarchy should assist to inform the basis of any transport project planning decisions.

Build on relationships with neighbouring municipalities, state bodies and organisations to improve transport outcomes for Knox – by combining with neighbouring Councils in our advocacy efforts, the message is likely to be heard much louder.

Seek efficiencies in the road network – improvements to traffic flow and priorities can be achieved through liaising with VicRoads.

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THEME: Advocate for connected, frequent and reliable public transport.

- 5.1 Advocate for improvements to train signalling.
- 5.2 Advocate for multi-modal corridor planning along strategic road networks within Knox.
- 5.3 Advocate for improved bus service frequency during peak times to public transport interchanges.
- 5.4 Advocate for 5 minute maximum connections between public transport services in off peak periods.
- 5.5 Develop a public transport priority network for Knox and advocate for improvements based on this plan.
- 5.6 Develop a public transport map showing current frequency of services and optimal frequency of services for Knox.
- 5.7 Advocate for feeder bus services and arterial/priority services.
- 5.8 Advocate for utilisation of GPS system on buses to provide users with real time information on services and the ability for buses to communicate with traffic signals.
- 5.9 Identify key constraints to inform planning of key bus routes.

THEME: Ensure the VicRoads Road Hierarchy is used when considering projects on arterial roads.

- 5.10 Advocate for VicRoads network fit analysis to be undertaken on all major projects.
- 5.11 Provide infrastructure to give public transport, cyclists and pedestrians priority where appropriate.

THEME: Build on relationships with neighbouring municipalities, state bodies and organisations to improve transport outcomes for Knox.

- 5.12 Coordinate with neighbouring municipalities to improve transport connections.
- 5.13 Assist in the development of bicycle and pedestrian wayfinding design guidelines through coordination with neighbouring municipalities and major stakeholders.
- 5.14 Build relationships with key industry and state bodies/organisations.

THEME: Seek efficiencies in the road network.

- 5.15 Advocate to VicRoads for improvements to traffic signalling to reduce delays experienced by motorists both on the arterial road network and from residential estates.
- 5.16 Advocate to VicRoads for longer pedestrian cross times at signalised intersections where particular needs are identified. Advocate for single staged crossings to be standard across Knox.

Knox Integrated Transport Plan

Objective 6 - Safety and Health and Wellbeing

The transport network is safe and promotes forms of transport that support health and wellbeing.

Safety, both perceived and actual, is one of the main barriers to the use of sustainable transport. If people do not feel safe walking along a footpath at night or riding their bike through a busy intersection, then many (who have other transport options) will just choose not to do it.

Crashes or near misses on the road network can also cause drivers to believe a road is unsafe (whether that is or isn't the case).

With concerns for health and wellbeing, there is a need to promote and support the use of active transport particularly for short trips such as to school or the local shops. If the infrastructure is not available (ie. footpaths, shared paths, bike lanes etc) however, encouraging residents to change their travel behaviour is more difficult.

Council initiatives to address these challenges will focus on two key themes:

Enhance safety across the transport network – this requires Council to investigate and address both perceived and actual safety concerns within the community. Some of these relate to road safety issues such as casualty accident blackspots or speeding while others relate to safety on the shared path network or at public transport interchanges.

Support the health and wellbeing of Knox residents and workers – Council can play an important role in supporting the health and wellbeing of its residents and workers through leading and assisting community initiatives which increase the overall health and wellbeing of our community.

THEME: Enhance safety across the transport network.
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- 6.1 Advocate for safe pedestrian and cycle access across arterial roads.
- 6.2 Review the Knox on-road bicycle network and casualty accident records to identify locations which may be suitable for coloured surface treatments.
- 6.3 Investigate the location and cost of lighting on shared paths throughout Knox.
- 6.4 Investigate options to reduce excessive speeding on local roads.
- 6.5 Promote liveable streets to improve passive street surveillance.
- 6.6 Identify priority initiatives to enhance road safety.
- 6.7 Undertake maintenance and serviceability audits of footpath and shared paths (particularly around schools, business parks, commercial areas).
- 6.8 Advocate for safety/surveillance/lighting at public transport interchanges.
- 6.9 Coordinate with Local Laws and the Police to encourage good driver behaviour.
- 6.10 Identify and promote safe routes to schools.

Knox Integrated Transport Plan

THEME: Support the health and wellbeing of Knox residents and workers.

- 6.11 Support initiatives focusing on improving the health and wellbeing of Knox residents and workers such as the Healthy Together Knox Initiative and the Safe and Active Schools Program.

11. Action Plan

The following Action Plan collates the actions identified throughout this Plan and specifies responsibilities, priority, timeframes and an estimate of cost.

While some actions are able to be accommodated within existing resources, others will require additional funding or expertise. It should also be recognised that many of the actions require advocacy for projects outside of Council's jurisdiction.

For the purpose of this Plan and the actions listed, high priority is defined as 1-2 years, medium priority 3-5 years and low priority 6 years and beyond.

Knox Integrated Transport Plan

NEW INITIATIVES – HIGH PRIORITY (1 – 2 years)

Action Number	Action	Integrated Transport Plan Theme	Transport Integration Act Reference	City Plan Objective	Responsibility	Supporting teams	Priority & Timeframe	Cost
1.3	Review the current Knox Pedestrian Plan and develop a new Walking Plan.	Enhance access to sustainable transport services and infrastructure	Social and Economic Inclusion	5.2	Transport & Traffic	Healthy Together Knox*	High	\$60,000
1.4	Review the current Knox Bicycle Plan and develop a new Cycling Plan.	Enhance access to sustainable transport services and infrastructure	Social and Economic Inclusion	5.2	Transport & Traffic	Healthy Together Knox*	High	\$60,000
3.8	Undertake a feasibility investigation of the extension of the route 75 tram to Knox including a triple bottom line assessment.	Consider the triple bottom line	Environmental Sustainability	3.3	Transport & Traffic	City Futures	High	\$100,000
4.9	Develop and integrate key transport network maps within the Municipal Strategic Statement to improve decision making processes.	Improve statutory planning tools to align sustainable transport provisions with new developments within Knox	Integration of Transport and Land Use	3.1	Transport & Traffic	City Futures	High	To be funded within existing budgets (\$5,000)
4.12	Align and incorporate mobility access guidelines for new private developments within the Knox Planning Scheme.	Improve statutory planning tools to align sustainable transport provisions with new developments within Knox	Integration of Transport and Land Use	3.1	Transport & Traffic	Access & Equity, City Futures	High	To be funded within existing budgets (\$5,000)
5.6	Develop a public transport map showing current frequency of services and optimal frequency of services for Knox.	Advocate for connected, frequent and reliable public transport.	Efficiency, Coordination and Reliability	3.3	Transport & Traffic		High	To be funded within existing budgets (\$1,000)
6.7	Undertake maintenance and serviceability audits of footpath and shared paths (particularly around schools, business parks, commercial areas).	Enhance safety across the transport network	Safety and Health and Wellbeing	3.3	Asset Strategy	Transport & Traffic	High	\$15,000 every 4 years for shared paths \$50,000 every 4 years for footpaths

Knox Integrated Transport Plan

Action Number	Action	Integrated Transport Plan Theme	Transport Integration Act Reference	City Plan Objective	Responsibility	Supporting teams	Priority & Timeframe	Cost
3.9	Develop a Parking Policy that considers parking at activity centres, shopping precincts and other major attractors.	Explore 'user valued' mechanisms	Environmental Sustainability	3.1	Transport & Traffic	City Futures	High	\$40,000
4.2	Undertake a transport and access study for activity centres and key development areas in Knox to better inform the development of localised Structure Plans and land use growth	Support the management of growth and development around activity centres and key development areas	Integration of Transport and Land Use	2.2	Transport & Traffic		High	\$50,000

Knox Integrated Transport Plan

NEW INITIATIVES – MEDIUM PRIORITY (3 – 5 years)

Action Number	Action	Integrated Transport Plan Theme	Transport Integration Act Reference	City Plan Objective	Responsibility	Supporting teams	Priority & Timeframe	Cost
1.7	Develop education programs for safety and accessibility to schools, businesses etc.	Promote community awareness of movement and accessibility	Social and Economic Inclusion	1.2	Transport & Traffic	Access & Equity, Local Laws	Medium	\$10,000
2.1	Advocate for the development of a regional freight network strategy to align with hypothecated funding from the heavy goods vehicle charging and investment scheme.	Enhance transport options to support access to economic growth areas.	Economic Prosperity	2.1	Transport & Traffic		Medium	To be funded within existing budgets (\$500/yr)
2.2	Advocate for freight improvements across the network.	Enhance transport options to support access to economic growth areas.	Economic Prosperity	2.1	Transport & Traffic		Medium	To be funded within existing budgets (\$500/yr)
2.6	Develop guidelines to support the planning of mixed use developments and access to activity centres.	Enhance transport options to support access to economic growth areas.	Economic Prosperity	2.2	Planning	Transport & Traffic	Medium	To be funded within existing budgets (\$1,000)
3.1	Develop a travel behaviour change plan for the City of Knox.	Employ behavioural change programs to inform, guide and influence user behaviour.	Environmental Sustainability	3.1	Transport & Traffic	Healthy Together Knox*	Medium	\$40,000

Knox Integrated Transport Plan

Action Number	Action	Integrated Transport Plan Theme	Transport Integration Act Reference	City Plan Objective	Responsibility	Supporting teams	Priority & Timeframe	Cost
3.2	Implement key program initiatives to encourage active and sustainable travel behaviour at schools and early years services.	Employ behavioural change programs to inform, guide and influence user behaviour.	Environmental Sustainability	5.1	Transport & Traffic	Healthy Together Knox*	Medium	\$10,000
3.4	Develop a Green Travel Plan policy and accompanying planning framework for sustainably managing movement in and around high trip generator sites within Knox.	Employ behavioural change programs to inform, guide and influence user behaviour.	Environmental Sustainability	3.1	Transport & Traffic	Healthy Together Knox*	Medium	\$20,000
4.1	Develop policy and planning framework guidelines.	Support the management of growth and development around activity centres and key development areas.	Integration of Transport and Land Use	5.3	Planning	Transport & Traffic	Medium	\$10,000
4.11	Develop a Green Travel Plan policy to incorporate within the Knox Planning Scheme	Improve statutory planning tools to align sustainable transport provisions with new developments within Knox.	Integration of Transport and Land Use	3.1	Transport & Traffic	Planning	Medium	To be funded within existing budgets (\$2,000)
4.13	Develop precinct parking plans to inform the development of Parking Overlay Schedules across the municipality.	Improve statutory planning tools to align sustainable transport provisions with new developments within Knox.	Integration of Transport and Land Use	3.1	Transport & Traffic	Planning	Medium	\$25,000 per precinct
5.5	Develop a public transport priority network for Knox and advocate for improvements based on this plan.	Advocate for connected, frequent and reliable public transport.	Efficiency, Coordination and Reliability	3.3	Transport & Traffic		Medium	\$20,000

Knox Integrated Transport Plan

Action Number	Action	Integrated Transport Plan Theme	Transport Integration Act Reference	City Plan Objective	Responsibility	Supporting teams	Priority & Timeframe	Cost
5.13	Assist in the development of bicycle and pedestrian wayfinding design guidelines through coordination with neighbouring municipalities and major stakeholders.	Build on relationships with neighbouring municipalities, state bodies and organisations to improve transport outcomes for Knox.	Efficiency, Coordination and Reliability	4.2	Transport & Traffic		Medium	To be funded within existing budgets (\$1,000/yr)
6.2	Review the Knox on-road bicycle network and casualty accident records to identify locations which may be suitable for coloured surface treatments.	Enhance safety across the transport network.	Safety and Health and Wellbeing	3.1	Transport & Traffic		Medium	To be funded within existing budgets (\$500)
6.6	Identify priority initiatives to enhance road safety.	Enhance safety across the transport network.	Safety and Health and Wellbeing	1.2	Transport & Traffic	Community Safety	Medium	To be funded within existing budgets (\$2,000/yr)
6.10	Identify and promote safe routes to schools.	Enhance safety across the transport network.	Safety and Health and Wellbeing	1.1	Transport & Traffic	Healthy Together Knox*	Medium	\$50,000

NEW INITIATIVES – LOW PRIORITY (Beyond 5 years)

Action Number	Action	Integrated Transport Plan Theme	Transport Integration Act Reference	City Plan Objective	Responsibility	Supporting teams	Priority & Timeframe	Cost
1.8	Explore technology enhancements to better provide transport information to the Knox community.	Promote community awareness of movement and accessibility.	Social and Economic Inclusion	3.1	Transport & Traffic		Low	To be funded within existing budgets (\$1,000)
2.7	Develop a freight hierarchy for the Knox road network.	Identify key gaps in the transport network which facilitate movement of people and goods.	Economic Prosperity	2.1	Transport & Traffic		Low	\$10,000

Knox Integrated Transport Plan

Action Number	Action	Integrated Transport Plan Theme	Transport Integration Act Reference	City Plan Objective	Responsibility	Supporting teams	Priority & Timeframe	Cost
2.8	Seek funding for freight network enhancements through the Eastern Heavy Vehicle Investment group.	Identify key gaps in the transport network which facilitate movement of people and goods.	Economic Prosperity	2.1	Transport & Traffic		Low	To be funded within existing budgets (\$500/yr)
4.6	Encourage businesses to develop travel plans.	Support the management of growth and development around activity centres and key development areas.	Integration of Transport and Land Use	5.1	Transport & Traffic	Planning, Healthy Together Knox*	Low	Limited support through existing budgets (\$5,000)
4.10	Investigate options to incorporate walkability urban design requirements for new developments.	Improve statutory planning tools to align sustainable transport provisions with new developments within Knox.	Integration of Transport and Land Use	3.1	Transport & Traffic	Planning	Low	To be funded within existing budgets (\$2,000)
5.9	Identify key constraints to inform planning of key bus routes.	Advocate for connected, frequent and reliable public transport.	Efficiency, Coordination and Reliability	3.3	Transport & Traffic		Low	To be funded within existing budgets (\$2,000)
6.3	Investigate the location and cost of lighting on shared paths throughout Knox.	Enhance safety across the transport network.	Safety and Health and Wellbeing	3.1	Transport & Traffic		Low	\$20,000
6.4	Investigate options to reduce excessive speeding on local roads.	Enhance safety across the transport network.	Safety and Health and Wellbeing	1.2	Transport & Traffic	Community Safety	Low	To be funded within existing budgets (\$2,000)
6.5	Promote liveable streets to improve passive street surveillance.	Enhance safety across the transport network.	Safety and Health and Wellbeing	1.2	Landscape	Transport & Traffic	Low	To be funded within existing budgets (\$1,000/yr)
6.9	Coordinate with Local Laws and the Police to encourage good driver behaviour.	Enhance safety across the transport network.	Safety and Health and Wellbeing	1.2	Community Safety	Transport & Traffic	Low	To be funded within existing budgets (\$1,000/yr)

Knox Integrated Transport Plan

EXISTING INITIATIVES

Action Number	Action	Integrated Transport Plan Theme	Transport Integration Act Reference	City Plan Objective	Responsibility	Supporting teams	Priority & Timeframe	Cost
1.1	Advocate for improved public transport services and infrastructure such as Rowville Rail, Knox Tram, improved bus services and grade separation of rail lines.	Enhance access to sustainable transport services and infrastructure.	Social and Economic Inclusion	3.3	Transport & Traffic		High	Currently funded within existing budgets (\$10,000/yr)
1.2	Continue to extend the footpath and shared path networks.	Enhance access to sustainable transport services and infrastructure.	Social and Economic Inclusion	3.3	Transport & Traffic	Capital Works, Project Delivery	High	Currently funded as part of the Capital Works Program
1.5	Advocate for the upgrade of bus stops including shelters, hardstand waiting areas and footpath connections.	Enhance access to sustainable transport services and infrastructure.	Social and Economic Inclusion	3.3	Transport & Traffic		High	Currently funded within existing budgets (\$2,000/yr)
1.6	Promote community awareness of sustainable transport options.	Promote community awareness of movement and accessibility.	Social and Economic Inclusion	5.1	Transport & Traffic	Healthy Together Knox*	Low	\$2,000/yr for materials
1.9	Develop partnerships with local businesses to support access to work/job opportunities.	Promote community awareness of movement and accessibility.	Social and Economic Inclusion	2.2	Economic Development	Transport & Traffic	Low	Limited support through existing budgets (\$1,000/yr)
1.10	Continue to advocate Public Transport Victoria to roll out upgrades to bus stop infrastructure to support access and mobility needs.	Enhance access to meet the needs of people using mobility equipment.	Social and Economic Inclusion	3.1	Transport & Traffic	Access & Equity	High	Currently funded within existing budgets (\$1,000/yr)
1.11	Advocate and provide for the needs of people using mobility equipment.	Enhance access to meet the needs of people using mobility equipment.	Social and Economic Inclusion	3.1	Transport & Traffic	Access & Equity	High	Currently funded within existing budgets (\$150,000 annual program)
1.12	Develop mobility guidelines for use by Planning/Engineering/Building Departments.	Enhance access to meet the needs of people using mobility equipment.	Social and Economic Inclusion	3.1	Transport & Traffic	Access & Equity	Medium	Currently funded within existing budgets (\$15,000)

Knox Integrated Transport Plan

Action Number	Action	Integrated Transport Plan Theme	Transport Integration Act Reference	City Plan Objective	Responsibility	Supporting teams	Priority & Timeframe	Cost
1.13	Continue to rollout Mobility Plan priority measures.	Enhance access to meet the needs of people using mobility equipment.	Social and Economic Inclusion	3.1	Transport & Traffic	Access & Equity	High	Currently funded within existing budgets (\$150,000 annual program)
1.14	Retrofit existing infrastructure to comply with needs of people using mobility equipment as defined by Australian Standards.	Enhance access to meet the needs of people using mobility equipment.	Social and Economic Inclusion	3.1	Construction Facilities	Access & Equity	High	Currently funded within existing budgets (\$100,000 annual program)
2.3	Advocate for improved bus services to and within key economic growth areas, including activity centres and industrial estates.	Enhance transport options to support access to economic growth areas.	Economic Prosperity	2.1	Transport & Traffic		High	Currently funded within existing budgets (\$1,000/yr)
2.4	Partner with the State Government to identify and pilot innovative transport services to key employment precincts in Knox.	Enhance transport options to support access to economic growth areas.	Economic Prosperity	2.1	Transport & Traffic		Low	Currently funded within existing budgets (\$5,000)
2.5	Support Knox workplaces to become health promoting workplaces through the Healthy Together Workplace Achievement Program*.	Enhance transport options to support access to economic growth areas.	Economic Prosperity	1.1	Healthy Together Knox*	Transport & Traffic	Medium	Currently funded within existing budgets (\$2,000)
2.9	Investigate grant options/ road improvement funding opportunities across Knox.	Identify key gaps in the transport network which facilitate movement of people and goods.	Economic Prosperity	2.2	Transport & Traffic		Medium	Currently funded within existing budgets (\$1,000)
2.10	Support the delivery of sustainable arterial road infrastructure through ongoing partnership with VicRoads.	Identify key gaps in the transport network which facilitate movement of people and goods.	Economic Prosperity	3.1	Transport & Traffic		Medium	Currently funded within existing budgets (\$2,000/yr)

Knox Integrated Transport Plan

Action Number	Action	Integrated Transport Plan Theme	Transport Integration Act Reference	City Plan Objective	Responsibility	Supporting teams	Priority & Timeframe	Cost
3.3	Advocate for bicycle wayfinding across the shared path network.	Employ behavioural change programs to inform, guide and influence user behaviour.	Environmental Sustainability	4.2	Transport & Traffic		Medium	Currently funded within existing budgets (\$500/yr)
3.5	Provide pedestrian and cycle infrastructure as part of road projects wherever practicable.	Enhance the natural environment.	Environmental Sustainability	3.3	Transport & Traffic		High	Currently funded within existing budgets (\$ varies by project)
3.6	Ensure transport connectivity between residential areas.	Enhance the natural environment.	Environmental Sustainability	3.3	Transport & Traffic	Planning	Medium	Currently funded within existing budgets (\$500/yr)
3.7	Advocate for transport projects that deliver triple bottom line benefits.	Consider the triple bottom line.	Environmental Sustainability	3.1	Transport & Traffic		High	Currently funded within existing budgets (\$500/yr)
3.10	Advocate for bus priority on key routes	Explore 'user valued' mechanisms.	Environmental Sustainability	3.1	Transport & Traffic		High	Currently funded within existing budgets (\$500/yr)
4.3	Encourage development along key Public Transport Corridors to utilise existing sustainable transport services and infrastructure	Support the management of growth and development around activity centres and key development areas.	Integration of Transport and Land Use	3.1	Transport & Traffic	Planning	Medium	Currently funded through Council's adoption of the Housing Plan
4.4	Review existing traffic and transport guidelines for subdivisions.	Support the management of growth and development around activity centres and key development areas.	Integration of Transport and Land Use	2.2	Transport & Traffic	Planning	Medium	Currently funded within existing budgets (\$1,000)

Knox Integrated Transport Plan

Action Number	Action	Integrated Transport Plan Theme	Transport Integration Act Reference	City Plan Objective	Responsibility	Supporting teams	Priority & Timeframe	Cost
4.5	Ensure pedestrian and cycling permeability in the retrofitting of development sites.	Support the management of growth and development around activity centres and key development areas.	Integration of Transport and Land Use	3.3	Transport & Traffic	Planning	Medium	Currently funded within existing budgets (\$500/yr)
4.7	Revise the Knox Planning Scheme to better reflect Knox's transport objectives	Improve statutory planning tools to align sustainable transport provisions with new developments within Knox.	Integration of Transport and Land Use	3.1	Transport & Traffic	Planning	High	Currently funded within existing budgets (\$1,000)
5.1	Advocate for improvements to train signalling.	Advocate for connected, frequent and reliable public transport.	Efficiency, Coordination and Reliability	3.3	Transport & Traffic		Low	Currently funded within existing budgets (\$500/yr)
5.2	Advocate for multi-modal corridor planning along strategic road networks within Knox.	Advocate for connected, frequent and reliable public transport.	Efficiency, Coordination and Reliability	3.1	Transport & Traffic		Medium	Currently funded within existing budgets (\$500/yr)
5.3	Advocate for improved bus service frequency during peak times to public transport interchanges.	Advocate for connected, frequent and reliable public transport.	Efficiency, Coordination and Reliability	3.3	Transport & Traffic		High	Currently funded within existing budgets (\$500/yr)
5.4	Advocate for 5 minute maximum connections between public transport services in off peak periods.	Advocate for connected, frequent and reliable public transport.	Efficiency, Coordination and Reliability	3.3	Transport & Traffic		Medium	Currently funded within existing budgets (\$500/yr)
5.7	Advocate for feeder bus services and arterial/priority services.	Advocate for connected, frequent and reliable public transport.	Efficiency, Coordination and Reliability	3.3	Transport & Traffic		High	Currently funded within existing budgets (\$500/yr)
5.8	Advocate for utilisation of GPS system on buses to provide users with real time information on services and the ability for buses to communicate with traffic signals.	Advocate for connected, frequent and reliable public transport.	Efficiency, Coordination and Reliability	3.3	Transport & Traffic		Low	Currently funded within existing budgets (\$500/yr)

Knox Integrated Transport Plan

5.10	Advocate for VicRoads network fit analysis to be undertaken on all major projects.	Ensure the VicRoads Road Hierarchy is used when considering projects on arterial roads	Efficiency, Coordination and Reliability	3.1	Transport & Traffic		High	Currently funded within existing budgets (\$500/yr)
5.11	Provide infrastructure to give public transport, cyclists and pedestrians priority where appropriate.	Ensure the VicRoads Road Hierarchy is used when considering projects on arterial roads.	Efficiency, Coordination and Reliability	3.1	Transport & Traffic		High	Funded as opportunities arise
5.12	Coordinate with neighbouring municipalities to improve transport connections.	Build on relationships with neighbouring municipalities, state bodies and organisations to improve transport outcomes for Knox.	Efficiency, Coordination and Reliability	3.3	Transport & Traffic		Medium	Currently funded within existing budgets (\$500/yr)
5.14	Build relationships with key industry and state bodies/organisations.	Build on relationships with neighbouring municipalities, state bodies and organisations to improve transport outcomes for Knox.	Efficiency, Coordination and Reliability	5.3	Transport & Traffic		High	Currently funded within existing budgets (\$500/yr)
5.15	Advocate to VicRoads for improvements to traffic signalling to reduce delays experienced by motorists both on the arterial road network and from residential estates.	Seek efficiencies in the road network.	Efficiency, Coordination and Reliability	3.3	Transport & Traffic		Medium	Currently funded within existing budgets (\$500/yr)

Knox Integrated Transport Plan

Action Number	Action	Integrated Transport Plan Theme	Transport Integration Act Reference	City Plan Objective	Responsibility	Supporting teams	Priority & Timeframe	Cost
5.16	Advocate to VicRoads for longer pedestrian cross times at signalised intersections where particular needs are identified. Advocate for single staged crossings to be standard across Knox.	Seek efficiencies in the road network.	Efficiency, Coordination and Reliability	3.3	Transport & Traffic		High	Currently funded within existing budgets (\$500/yr)
6.1	Advocate for safe pedestrian and cycle access across arterial roads.	Enhance safety across the transport network.	Safety and Health and Wellbeing	3.1	Transport & Traffic		High	Currently funded within existing budgets (\$500/yr)
6.8	Advocate for safety/surveillance/lighting at public transport interchanges.	Enhance safety across the transport network	Safety and Health and Wellbeing	1.2	Community Safety	Transport & Traffic	Low	Currently funded within existing budgets (\$500/yr)
6.11	Support initiatives focusing on improving the health and wellbeing of Knox residents and workers such as the Healthy Together Knox initiative and the Safe & Active Schools Program.	Support the health and wellbeing of Knox residents and workers	Safety and Health and Wellbeing	1.1	Healthy Together Knox*	Transport & Traffic	Medium	Currently funded within existing budgets (\$10,000/yr))

***Healthy Together Knox dependent on funding continuing beyond 2015**

Appendix A – Consultation

Survey Findings - Transport needs in Knox

Cycling

- Need safe parking storage at major transport interchanges
- Better signage on paths
- Connected bike paths to major destinations
- Provide easy routes for beginners
- Shared paths should be provided on all arterial roads
- Provide lighting on shared paths

Pedestrian

- Repair uneven paths
- Lighting on paths
- Reduce overhanging trees/shrubs onto footpaths

Tram

- Knox tram
- Bring back Tram conductors
- All trams to be low floor and accessible

Train

- Station upgrade required:
 - Cleaner stations
 - More lighting
 - Provide vending machines
 - Increase parking facilities (Park and Ride)
 - More attendants
- Longer operating times (overnight)
- More frequent
- More express trains (eg. Belgrave to Ringwood then express to city)
- Build orbital train lines
- Rowville Rail

General Public Transport comments

- More frequent
- Longer services
- Better connection/integration
- Need easier ticket purchasing (on the spot with money)
- Reduce travel times
- More lighting at stops

Knox Integrated Transport Plan

Roads

- Upgrade of Stud and High Street Road
- Bike and bus to share road space especially along Stud Road
- Provide electrical vehicle charge up points
- Dorset Road extension

Bus

- Improved bus routes between residential areas and major destinations
- Increase bus services overnight
- Reliable services

Info Distribution

- Produce brochure with transport options in Knox
- Provide hard copy versions of online information
- Need info on:
 - Ticket purchasing
 - Knowing which service is an accessible bus/tram
- Timetables to be available via bus driver

Key statistics from the Questionnaire

- 26.8% of respondents travel within Knox to work and 55.6% travel to outside of Knox.
- 53% of respondents shop locally in Knox.
- 58% of respondents use a private motor vehicle daily.
- Only 7% of respondents cycle daily.
- 44% of respondents walk almost daily as a form of transport.
- 17% of respondents use public transport almost daily.