



# Whittlesea Integrated Transport Plan

Directions paper – Final Version

November 2023

Institute for  
*Sensible Transport*



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# Executive Summary



The City of Whittlesea has begun the process of developing our new Integrated Transport Plan. The last Plan was produced in 2014. So much has changed over the course of the decade. App based ride sourcing services (e.g. Uber), new shared micromobility options (e.g. e-scooters) and hybrid work are just some of the changes that have occurred in Whittlesea over the last decade. Yet one thing has remained the same; Whittlesea continues to have a transport system that is car dependent. Too many of us do not have safe, convenient options for walking, cycling and using public change.

## What is an Integrated Transport Plan and why do we need one?

An integrated transport plan (ITP) is produced by Council as a blueprint to guide our investment and policies related to transport. All modes of land transport are included (i.e. walking, cycling, scooter, public transport, car use, parking and freight).

An ITP is needed to help ensure our investment in the transport system helps achieve the community's ambition for a connected, liveable and sustainable future. An ITP helps us create a

community in which more people have the freedom to do more trips by foot, bicycle, public transport. This will help make the transport system work for everyone, including those that have no option but to drive.

## What's in this 'Directions Paper'?

This Directions Paper has been developed to provide the Whittlesea community with the opportunity have input in the development of the new *Integrated Transport Plan*. The Directions Paper sets out **guiding principles** and **strategic objectives** we are seeking feedback on. This Directions Paper covers the following areas:



An overview of key data relevant to the development of the future ITP is captured in the infographic below. This helps to highlight how people get around Whittlesea, as well as some important demographic and transport safety features of our community.

# Whittlesea Integrated Transport Plan

## Travelling to work

**89%** of residents travel to work by car

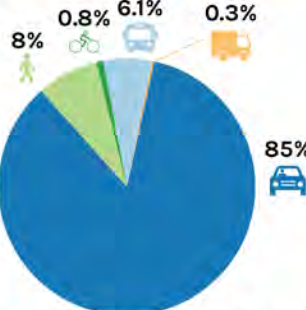


**14%** of car trips to work are 5km or less



Source: ABS Census

## Travel in general



An average walking trip is 1.1km

Source: VISTA

Men are **3.3 times** more likely to ride a bike compared to women.



Source: VISTA

## E-bike sales

**500%** increase since 2017



Source: BIA

## Where residents work



## Whittlesea is young and diverse



Median age of **35** years

**41%** of residents are born overseas

## Safety

There were **16 fatalities** and **436 serious injuries** on Whittleseas roads



The Victorian Government has a commitment to halve road fatalities by 2030 and eliminate death from Victorian roads by **2050**

**Transport** is the fastest growing source of greenhouse gas emissions in Australia

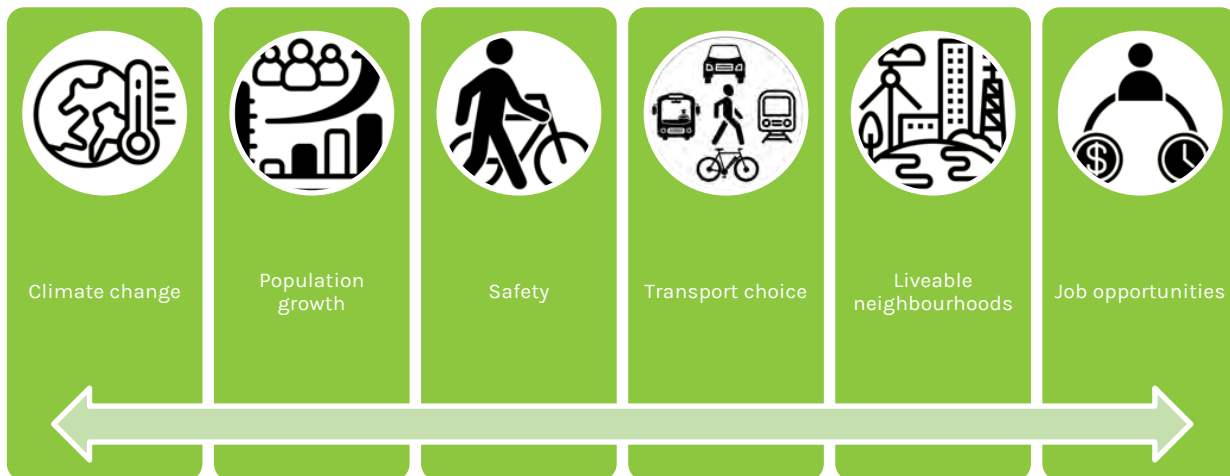


Whittlesea's population is expected to see **57%** in growth by 2041



## Tackling our transport challenges

Like many communities, Whittlesea faces a wide range of transport related challenges. These are summarised in the graphic below.



Transport is the fastest growing source of emissions and is expected to be the single largest emissions category by 2030. While electric vehicle sales are growing fast, they are still too expensive for many, and not all vehicle types are offered as a zero emission model. While this is expected to change over time, transferring our fossil fuel vehicles to zero emission will take many decades. To meet our climate emergency obligations, we need a multi-pronged approach that includes not just electric vehicles but also more walking and cycling, and a public transport system that offers faster, more frequency services.

Whittlesea's population is expected to increase 57% between now and 2041. Unless Council takes action to provide a better set of transport options, this will result in many more cars on the road, leading to congestion and frustration. This Directions Paper

outlines what Council can do to ensure people are not as dependent on their cars as they have been.

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**We need to re-think how we invest in our transport system.**

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### Why are we so car dependent?

With almost 90% of trips to work done by car, Whittlesea has some of the highest levels of car dependence in Melbourne. The reason for this can be seen in the graphic on the following page. In all cases, the car is the fastest way of getting around, and in many cases, the most convenient.

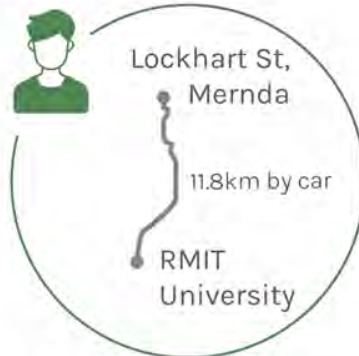
The Directions Paper, and the ITP that will follow, allows Council and the community to plan a better future, with a city accessible to everyone, regardless of their mode of transport.

Cassie, a manager, travels to work from Donnybrook



|  |        |                               |
|--|--------|-------------------------------|
|  | 29.1km | Takes 26 mins<br>Costs \$5.82 |
|  | 30.4km | Takes 83 mins<br>Cost \$0     |
|  |        | Takes 86 mins<br>Costs \$3.30 |

Daniel, a student, travels to university from Mernda



|  |        |                               |
|--|--------|-------------------------------|
|  | 11.8km | Takes 17 mins<br>Costs \$2.36 |
|  | 13km   | Takes 40 mins<br>Cost \$0     |
|  |        | Takes 68 mins<br>Costs \$1.65 |

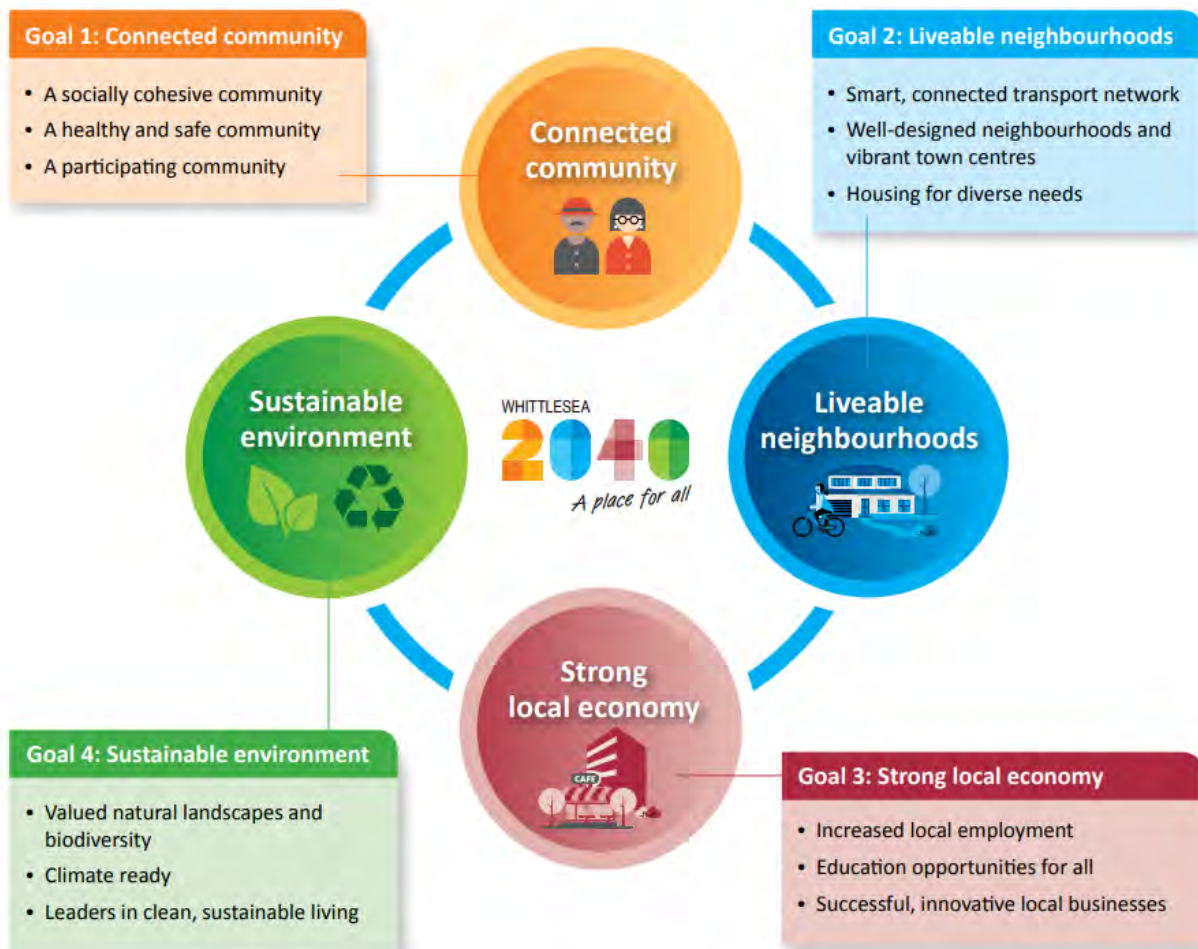
Sam travels to the shops from Mill Park



|  |       |                               |
|--|-------|-------------------------------|
|  | 5km   | Takes 10 mins<br>Costs \$1.00 |
|  | 5.6km | Takes 18 mins<br>Cost \$0     |
|  |       | Takes 29 mins<br>Costs \$3.30 |

## What are the principles underpinning a future ITP?

The ITP must work to support Council's existing strategic ambitions. The material included in this Directions Paper has been informed by the four goals in the *Whittlesea 2040 Plan*, which are highlighted in the figure below.



## Vision

*Whittlesea's transport system supports the community to live connected, sustainable and healthy lives.*

## Guiding principles

The *Directions Paper* offers the following guiding principles to inform Council's work as it begins the process of developing their ITP:

- Activity centres are vibrant and people-focused, allowing everyone to participate fully in our community and economy.
- Public transport offers a viable transport option with fast, frequent, and accessible trains, trams and buses.
- Public transport hubs are connected with safe and convenient walking and cycling networks.
- Walking and cycling are the first choice for short trips, supported by safe, connected, and well-designed networks.
- Implementation of a Safe Systems approach will ensure our road network is designed so that everyone can travel safely across Whittlesea. Fatalities and lifelong injuries are no longer acceptable on our streets. We are committed to Vision Zero for transport safety.
- Creating better choices: Transport choice is available for everyone, so that for every trip, people can choose the best mode for them and the community.
- Demand for car use is reduced to support Council's vision and objectives.
- We commit to Net Zero emissions in our transport network, including a transition towards zero emission vehicles and increasing sustainable mobility.

## Strategic objectives

Strategic objectives are designed to help us measure our progress towards achieving our future vision. The following strategic objectives are proposed for the new ITP:

### Reduce motor vehicle travel

To reduce motor vehicle travel for the following trip purposes by 2040:

- Journey to work: to reduce average trip distance by 25% by 2040.
- Social/recreational: to reduce average trip distance by 20% by 2040.
- Shopping: to reduce average trip distance by 25% by 2040
- Decrease motor vehicle mode share from 82% to 73% by 2040.

### Increase active transport mode share

The following objectives focus on boosting levels of walking and cycling in Whittlesea:

- Walking to make up 13.5% of all trips by 2040, up from 9.5% in 2021
- Cycling to make up 1.75% of all trips by 2040, from 0.81% in 2021.

### A safe transport system

To reduce fatalities on Whittlesea roads by 30% by 2030 and eliminate fatalities by 2050, consistent with Victorian government targets.

### A low emissions transport network

To reduce emissions by 7% by 2040,<sup>1</sup> and achieve net zero emissions by 2050.

### Improve public transport accessibility

To increase the percentage of the population that have access to high quality public transport from 51% to above 80% by 2040.

### Increase job and residential density

To double the number of jobs per working age population from 0.65 to 1.30 by 2040.

To increase residential employment density from 2,850 people per km<sup>2</sup> to over 5,000 people per km<sup>2</sup> by 2040.

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<sup>1</sup> Assuming 50% EV fleet composition being powered on 100% renewable electricity.

### **Liveable neighbourhoods**

Increase the percentage of people who have access to shops and services within a short distance<sup>2</sup> of their home from 5% to 75% by 2040.

### **Electrical Vehicle (EV) adoption**

To increase the number of EVs in the community to 15% by 2030 (from 0.1% in 2021) and in excess of 50% by 2040.

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<sup>2</sup> 10 minutes by foot, bicycle or public transport.

PT>  
Dysons  
Route To  
357 Thomastown  
Hail Bus Here

# 1. Introduction

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with  
is easy  
PP



This project has been commissioned by the City of Whittlesea (Council) to provide important background and directions for the development of a new Integrated Transport Plan (ITP). Figure 1 illustrates the two components of this project. This report presents the *Directions Paper*, focused on providing Council with a platform upon which to embark on the development of its new, in-house developed ITP.

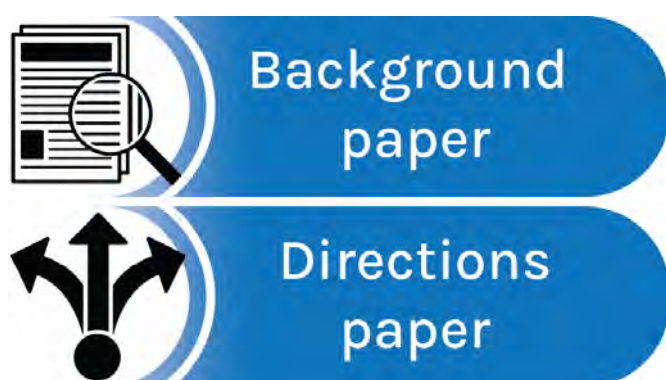


Figure 1 Two project components

## 1.1 What is an integrated transport plan?

An ITP provides the strategic blueprint to guide Council in transport infrastructure, policy and investment decisions. Two decades is the typical horizon for a local government ITP, with reviews every five years. An ITP covers all modes of land transport, and often have a focus on increasing the sustainability of the transport system, while also seeking to support social connectedness and economic prosperity.

### 1.1.1 What will the ITP need to cover?

The future *Integrated Transport Plan*, which will be developed in house by Council, will need to cover the following areas, and has therefore acted as a guide for the development of this Background Report:

- All modes of land transport, including walking, cycling, scooter, public transport, car use, parking and freight. The integration of active and public

transport, as well as more effective management of car use will be crucial to Council's success.

- Relationship between land use and mobility patterns (e.g. transit oriented development).
- Sustainability and emissions reduction.
- The need to create more vibrant townships and a reduction in short car trips.
- Road safety.
- Gender equality issues.
- Behaviour change focused on more sustainable transport choices.
- Strengthening economic outcomes.
- Transport technology and emerging transport options.

## 1.2 Guiding principles

In 2018, the Council adopted the *Whittlesea 2040* vision to guide its efforts and collaborations with the community and stakeholders. Whittlesea 2040 outlines four objectives:

- Connected communities
- Liveable neighbourhoods
- Strong local economy
- Sustainable environment.

These principles have a strong overlap with transport, and there is considerable capacity for the future Integrated Transport Plan to support the principles set out in Whittlesea 2040. The Liveable Neighbourhoods Strategy is a parent document to the future ITP. All the Level 2 Strategies have two overarching directions around 'Place-based Planning and 'Equity'.

## 1.3 What does this report cover?

This Directions Paper offers Council strategic guidance to assist in the development of their new ITP. This Directions Paper builds on the completed *Background Paper* by drawing out the key themes of relevance to Council. The Directions Paper will provide coverage across the key areas shown in Figure 2.



Figure 2 Directions paper - overview

## 1.4 Why do we need an integrated transport plan?

A sustainable, reliable and safe transport system is critical to Whittlesea's success as a community. Good transport options help people participate fully in the community; to get to work, visit friends and family, and to shop etc. A future focused ITP will help to ensure we are able to accommodate a growing population by maximising our use of efficient transport options. This will include a growing use of emerging transport technologies such as e-scooters, e-bikes and car share.

An Integrated Transport Plan creates the framework and direction to align transport investment and policy decisions with Council's aspirations. How do we want our children and grandchildren to get around?

How would we like our town centres to look and feel 20 years from now? How do we make decisions on what modes of transport have priority in different contexts? A well implemented ITP ensures *'we are all pulling in the same direction'* to get the outcomes we want, to create a Whittlesea that is:

- Connected
- Liveable
- Sustainable
- Economically prosperous.

As one of the most car dependent communities in Greater Melbourne, it's difficult to overstate the magnitude of the challenge Whittlesea faces. Creating more walkable neighbourhoods, a cohesive cycling network, and integrated public transport can only be achieved through the creation of a coordinated approach to transport planning. An ITP provides the strategic blueprint to guide transport investment, policy and advocacy actions.

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**A Whittlesea with a more diversified set of transport options means we'll be better able to accommodate the population growth expected by 2041.**

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Figure 3 provides a snapshot of key transport facts of relevance to the future ITP.

# Whittlesea Integrated Transport Plan

## Travelling to work

**89%** of residents travel to work **by car**



**14%** of car trips to work are **5km or less**



Source: ABS Census

## Travel in general



Source: VISTA

Men are **3.3 times** more likely to ride a bike compared to women.



Source: VISTA

## E-bike sales

**500%** increase since 2017



Source: BIA

## Where residents work



## Whittlesea is young and diverse



Median age of **35** years

**41%** of residents are born overseas

## Safety

There were **16 fatalities** and **436 serious injuries** on Whittleseas roads

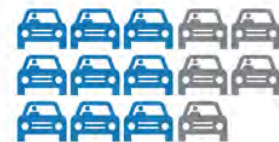


The Victorian Government has a commitment to halve road fatalities by 2030 and eliminate death from Victorian roads by **2050**

**Transport** is the fastest growing source of greenhouse gas emissions in Australia



Whittlesea's population is expected to see **57%** in growth by 2041



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www.instituteforsensibletransport.com.au

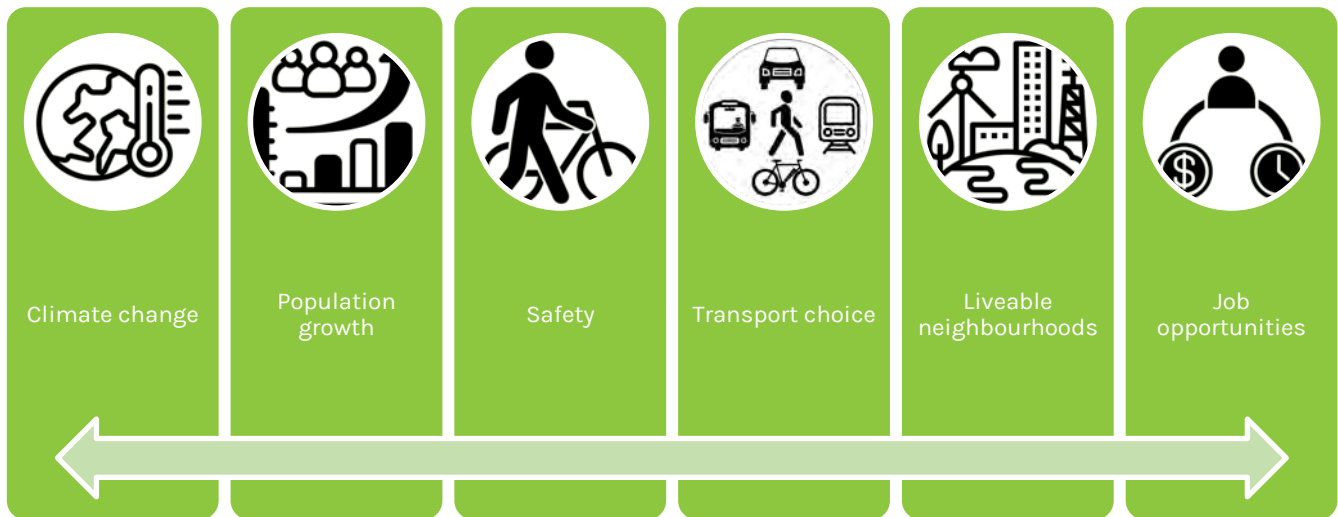


Figure 3 A snapshot of key transport facts in Whittlesea  
Source: ABS, City of Whittlesea and ID unless otherwise noted

## 2. Ongoing and emerging challenges



Whittlesea faces a number of ongoing and emerging challenges related to transport and land use planning. This section focuses on the issues related to transport, accessibility, sustainability, gender considerations, and projected population growth. Figure 4 captures a summary of the key challenges related to transport in Whittlesea, both now and in the future.



**Figure 4 Key challenges related to transport and the Whittlesea ITP**

Source: Institute for Sensible Transport

## 2.1 Climate change

Transport is the second largest and fastest growing source of carbon emissions. By 2030, it is projected that transport will be the single largest source of emissions in Australia. Electric vehicles, when charged with renewable energy, will reduce emissions, but this will not occur in the timeframe required to meet national emission reduction targets. Walking, cycling and public transport offer low emission transport options that are affordable, in addition to limiting the contribution to congestion. The *Background Paper* offered a more in-depth assessment of transport emissions in Whittlesea.

## 2.2 Population growth and associated traffic issues

Whittlesea’s population is expected to increase by 57% by 2041. The dominance of car travel, even for short trips, exacerbates traffic congestion and parking issues. Should Whittlesea develop towards 2041 with the same high level of car use, congestion will rise significantly, and there are major limits to the degree that additional road capacity will be able to mitigate this. The approach recommended to Council to address this current

and emerging issue is to use the ITP to achieve a more sustainable transport system, with greater opportunity for walking, cycling and public transport. By ‘do more with less’, the community can grow without diminishing the quality of life in Whittlesea.

## 2.3 Safety

Safety is a critical issue for Council and the community. Road traffic injuries are at unacceptably high levels and the Victorian government has committed to halving fatalities by 2030 and eliminate them entirely from the road network by 2050. To meet state government and community expectations for safer streets, the ITP will need to include a wide range of actions that reduce both the probability and severity of crashes in Whittlesea. This must include a focus on vulnerable road users, such as pedestrians and cyclists, as well as children and older adults.

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**the Victorian government has committed to halving fatalities by 2030 and eliminate them entirely from the road network by 2050.**

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### 2.3.1 Safety standard of active transport infrastructure

As highlighted in the Background Report, the cycling environment limits people’s willingness to ride a bike. Several major roads in Whittlesea are marked as having bicycle infrastructure, but are often not sufficient for the type of road in which they are on.

## 2.4 Transport choice

Mobility is important for everyone in Whittlesea. Whether you are young, old, disabled, or low-income, everyone has the right to convenient and safe transport options. Figure 5 indicates current challenges in terms of travel time, distance, and cost in Whittlesea (it is worth mentioning that the cost is the running cost). It shows that the car is always the fastest way to travel for the three typical trips illustrated.

Many trips in Whittlesea are short, and most of these short trips are by car. These are the trips most convertible to sustainable transport. The new ITP serves as an opportunity to create a transport system that provides people with the freedom to choose the mode of transport that suits their needs. By providing a convenient set of transport options, as well as travel behaviour change programs, more people will have the opportunity to get around sustainably. The built environment is also crucial to accessibility and transport choice. By increasing density, especially around high quality public transport, people will be able to enjoy a greater mix of transport options.

Census shows that 4 in 5 people that use public transport in Whittlesea arrive in a mode other than a private car (e.g. walk, cycle etc.).

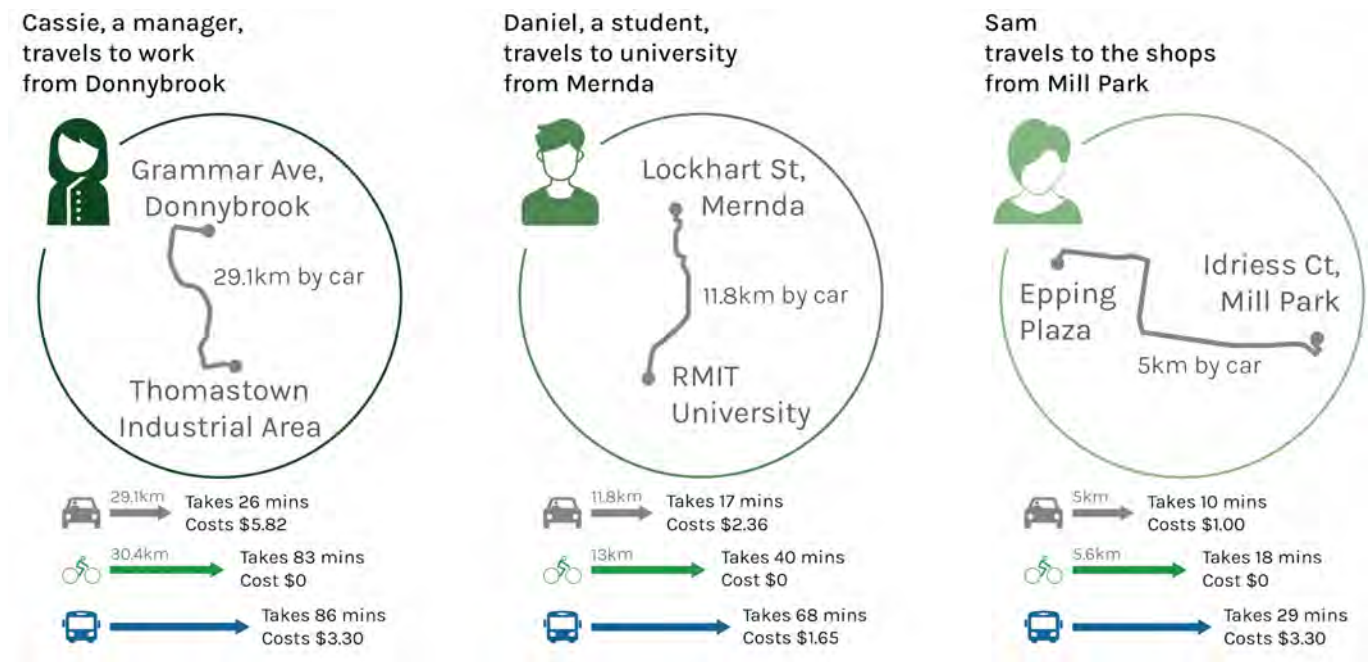


Figure 5 Transport choice in Whittlesea

Source: Institute for Sensible Transport and Google Maps

## 2.5 Liveable neighbourhoods

Creating neighbourhoods that prioritise people orientated places boosts Whittlesea's liveability. The new ITP is an opportunity to accelerate the inclusion of higher density development, a diversity of destinations close to people's homes, and the integration of active transport infrastructure. Improving first and last mile options, including micromobility options (such as e-bike and e-scooter) will help increase the catchment of public transport and provide flexible, short to medium distance transport options. Street designs that make walking and cycling safe and attractive, including prioritised crossing points and dedicated lanes for cycling will make it easier to get around, regardless of age or vehicle ownership status. Improved shade will reduce the negative impact of higher temperatures. Higher levels of greenspace will reduce the heat island effect.

Creating people oriented, vibrant town centres and employment precincts will help locals and visitors support commerce in the region and attract investment.

## 2.6 Job opportunities

The Background Paper found that Whittlesea has a deficit of jobs relative to population. People are dependent on travelling outside Whittlesea for work. Some 75% of residents commute outside the municipality for work, resulting in longer trip distances and economic benefits flowing out of the community. Providing sustainable transport options to employment centres is vital for improving Whittlesea's liveability. The goal is to create more local jobs, reduce dependence on external work destinations, and enhance overall quality of life in these neighbourhoods.

### 3. Vision and strategic objectives



This section proposes a vision and set of strategic objectives. We begin by identifying how the different components of the future ITP are structured to achieve the overall vision, which is intended to be at the heart of the ITP.

### 3.1 Understanding the key components of the future ITP

Figure 6 presents one option Council may wish to consider for the overall structure of their ITP. This helps to provide a conceptual map of the vision, guiding principles and strategic objectives sit together. The actions are designed to support the strategic objectives, and the strategic objectives help achieve the principles and vision.



**Figure 6 Option for future ITP overall structure**

Source: Institute for Sensible Transport

### 3.2 Alignment with Council’s existing strategic direction

As highlighted with the Background Report, the ITP must work to support Council’s existing strategic ambitions. The material included in this Directions Paper has been informed by the four goals in the *Whittlesea 2040 Plan*, which are highlighted in Figure 7.



**Figure 7 Whittlesea 2040 goals**

Source: Whittlesea 2040 a place for all

### 3.2.1 A connected Whittlesea

The ITP can enhance community connectivity, making it easier for people of all backgrounds to participate in local activities and events. It can also cater to diverse support service needs, facilitating access for a wider range of people and addressing emerging challenges.

### 3.2.2 A liveable Whittlesea

Council's land-use planning and transport system can have a powerful impact on enhancing the liveability of Whittlesea. The new ITP can help to ensure that existing and new residential areas hold the design elements that support liveability (e.g. shade, greenspace).

### 3.2.3 A strong local economy

The implementation of the ITP can help to strengthen the local economy by creating places that have higher levels of desirability and a people first focus. Creating more local job opportunities will help to lower the transport task and keep more money within the local economy. Investments in transport infrastructure can focus on ensuring a return for the community.

### 3.2.4 A sustainable Whittlesea

As transport is one of the largest, and fastest growing sources of emissions, the ITP provides considerable opportunity to help the community lower their transport emissions. As highlighted in the Background Report, there are several approaches Council will need to take to achieve a more sustainable transport system. This includes assisting the community to transition to electric vehicles, consolidating development around high quality transport options and building a cohesive, comprehensive network of bike lanes/paths as well as footpath network. Transport infrastructure connects us to our diverse natural environments in a way that supports and protects these spaces. Our transport environment will be sustainable, including a net zero transport system by 2050.

## 3.3 Vision

The vision, developed in consultation with Council is proposed as follows:

*Whittlesea's transport system supports the community to live connected, sustainable and healthy lives.*

The future ITP development will be an action item arising from Council's *Liveable Neighbourhoods Strategy* and therefore the documents are linked. The future ITP will more clearly articulate the connection between the two documents.

## 3.4 Strategic objectives

The following offers a set of strategic objectives intended to guide Council as it embarks on the developed of their new ITP. These objectives allow Council to monitor and evaluate their progress towards meeting their overall, long term vision. They have been informed by the strategic position Council has articulated in endorsed policies. This includes climate change, safety, accessibility, health, economic development and gender impact. They are based on what is considered achievable, relative to other LGAs with land use and transport networks that are considered more favourable to sustainable transport use.

The enable Council to track their progress, the strategic objectives have been developed consistent with the SMART concept in which objectives are:

- Specific
- Measurable
- Achievable
- Relevant
- Time-bound.

### 3.4.1 To reduce people's dependence on motor vehicle travel

To reduce motor vehicle travel for the following trip purposes by 2040:

- Journey to work: to reduce average trip distance by 25% by 2040.
- Social/recreational: to reduce average trip distance by 20% by 2040.
- Shopping: to reduce average trip distance by 25% by 2040.
- Decrease motor vehicle mode share from 82% to 73% by 2040.

### **3.4.2 Increase active transport mode share**

The following objectives focus on boosting levels of walking and cycling in Whittlesea:

- Walking to make up 13.5% of all trips by 2040, up from 9.5% in 2021.
- Cycling to make up 1.75% of all trips by 2040, from 0.81% in 2021.

### **3.4.3 A safe transport system**

To reduce fatalities on Whittlesea roads by 30% by 2030 and eliminate fatalities by 2050, consistent with Victorian government targets.

### **3.4.4 A low emissions transport network**

To reduce emissions by 7% by 2040,<sup>3</sup> and achieve net zero emissions by 2050.

### **3.4.5 Improve public transport accessibility**

To increase the percentage of the population that have access to high quality public transport from 51% to above 80% by 2040.

### **3.4.6 Increase job and residential density**

To double the number of jobs per working age population from 0.65 to 1.30 by 2040.

To increase residential employment density from 2,850 people per km<sup>2</sup> to over 5,000 people per km<sup>2</sup> by 2040.

### **3.4.7 Liveable neighbourhoods**

Increase the percentage of people who have access to shops and services within a short distance<sup>4</sup> of their home from 5% to 75% by 2040.

### **3.4.8 Electrical Vehicle (EV) adoption**

To increase the number of EVs in the community to 15% by 2030 (from 0.1% in 2021) and in excess of 50% by 2040.

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<sup>3</sup> Assuming 50% EV fleet composition being powered on 100% renewable electricity.

<sup>4</sup> 10 minutes by foot, bicycle or public transport.

## 4. Guiding principles



**A set of guiding principles for the ITP help to align transport investment and policy with Whittlesea's wider strategic objectives identified in Section 1.2. These help to support Council's work in achieving the long term vision for the ITP. By incorporating these principles, the ITP becomes a cohesive part of the broader policy framework, reinforcing the Council's strategic vision and enhancing the plan's effectiveness in addressing community needs.**

The *Directions Paper* offers the following guiding principles to inform Council's work as it begins the process of developing their ITP:

- Activity centres are vibrant and people-focused, allowing everyone to participate fully in our community and economy.
- Public transport offers a viable transport option with fast, frequent, and accessible trains, trams and buses.
- Public transport hubs are connected with safe and convenient walking and cycling networks.
- Walking and cycling are the first choice for short trips, supported by safe, connected, and well-designed networks.
- Implementation of a Safe Systems approach will ensure our road network is designed so that everyone can travel safely across Whittlesea. Fatalities and lifelong injuries are no longer acceptable on our streets. We are committed to Vision Zero for transport safety.
- Creating better choices: Transport choice is available for everyone, so that for every trip, people can choose the best mode for them and the community.
- Demand for car use is reduced to support Council's vision and objectives.
- We commit to Net Zero emissions in our transport network, including a transition towards zero emission vehicles and increasing sustainable mobility.

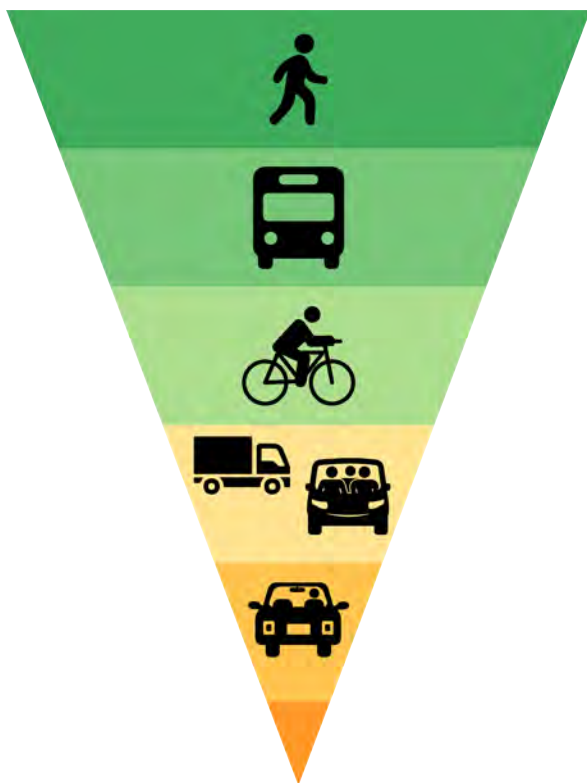
## 5. Mode hierarchy



**In this section, we introduce the concept of the transport mode hierarchy. Mode hierarchies offer guidance in situations in which there is competition for limited road space in Whittlesea.**

The space on Whittlesea’s road network is limited and there is strong competition for scarce space. To assist Council in making consistent, transparent decisions that work to support our vision and principles, two transport mode hierarchies have been developed: one for within the *urban growth boundary and town centres* and another for *regional roads*. This is in recognition of Whittlesea’s diverse character which includes both urban and regional settings.

Our mode hierarchy, which we will use to allocate space within the *urban growth boundary and town centres* is shown in Figure 8.

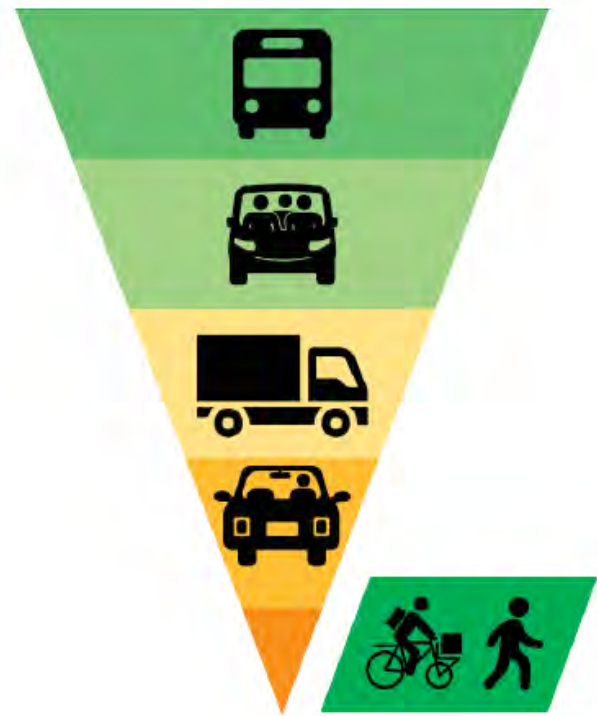


**Figure 8 Mode Hierarchy - Town Centres**

Source: Institute for Sensible Transport

While the mode hierarchy within our townships prioritise sustainable mobility, our regional roads have a different role in the transport system. Motorised transport will continue to be the priority in road space allocation decisions in these areas.

The mode hierarchy for regional roads is shown in Figure 9.



**Figure 9 Mode Hierarchy - Regional Roads**

Source: Institute for Sensible Transport

In practical terms, these road hierarchies will assist Council in determining how space is allocated between modes in situations in which there is insufficient space to cater to very mode of transport. For the regional road hierarchy, having people on bicycles and foot at the bottom does not mean they will go un-catered for. While motor vehicles may have priority on the main carriageway on these regional roads, providing a safe, separated pathway for active modes will be a priority of the ITP.

---

**While motor vehicles may have priority on the main carriageway on these regional roads, providing a safe, separated pathway for active modes will be a priority of the ITP.**

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## 6. Scenarios



In this section, we have introduced four scenarios envisioning Whittlesea in 2040. Each scenario has different transport and land use approaches. These scenarios will help Council choose an approach for the development of their ITP that best aligns with Whittlesea’s strategic goals.

## 6.1 Scenarios – in brief

The four scenarios help Council understand how changes to land use and transport investment influence strategic outcomes:

- **Business as usual:** historical transport and land use/development practices continue.
- **Incremental change:** minor improvements to density and slight increases in active transport options.
- **Moderate change:** stronger increases in density, especially around existing rail and in greenfield estates, coupled with growing investment in active travel.
- **Sustainable change:** concentrating new development in existing areas around rail. Development in growth areas is focused on more compact, liveable neighbourhoods. Larger increases in active travel and additions to the public transport network capitalise on more compact land use.

## 6.2 Our approach

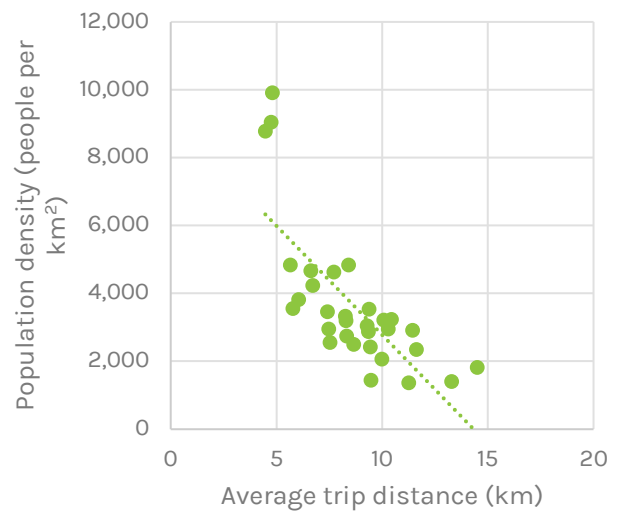
The scenarios use *density* as a proxy for the built form of an area. This recognises that areas with higher residential density, which also provide a diversity of transport options, have lower dependence on motor vehicles. Trip distances are shorter in denser areas. This allows people to walk, cycle and use public transport for a greater proportion of their journeys. However, density alone is insufficient to achieve significant changes in travel patterns. As such, complementary actions have been included. These include increased job density, greater investment in active transport,

expansion of public transport, and development of liveable neighbourhoods.

Other metropolitan Melbourne LGAs have been used as *benchmarks* to inform the scenario development. This helps to ensure that the density and mode share relationships and forecasts are in line with trends observed in other Melbourne LGAs.

### 6.2.1 Why density?

There is a strong observed relationship among Melbourne LGAs between *population density* and *average trip distance*. This holds true across all six trip purposes within VISTA.<sup>5</sup> Figure 10 provides an illustration of the relationship between population density and average trip distance across Melbourne’s LGAs. This demonstrates that as population density increases, trip distance reduces.



**Figure 10 Relationship between density and average distance of social or recreational trips**

Note: Each dot represents a Melbourne LGA

Source: Adapted from DTP VISTA

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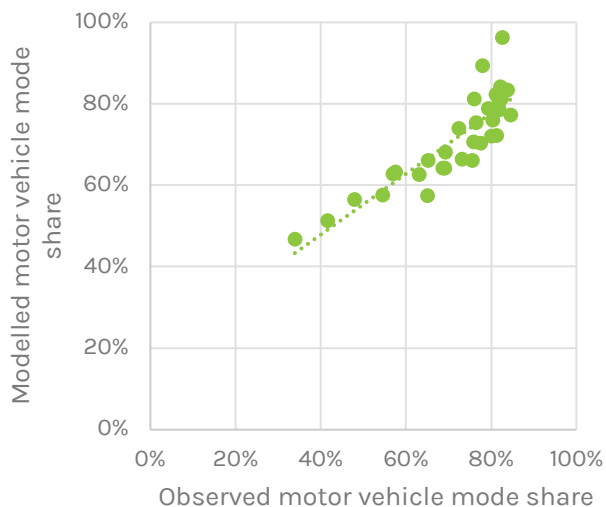
**as population density increases, trip distance reduces.**

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As an exercise in validation, we have compared the modelled motor vehicle mode share with the observed (actual) motor vehicle mode share. This

<sup>5</sup> Victorian Integrated Survey of Travel and Activity.

presents a strong correlation, as identified in Figure 11.



**Figure 11 Modelled and observed motor vehicle mode share**

Note: Each dot represents a Melbourne LGA  
 Source: Adapted from DTP VISTA

## As trip distances become shorter, car use reduces.

There is also a strong relationship between trip distance and the number of trips people make.

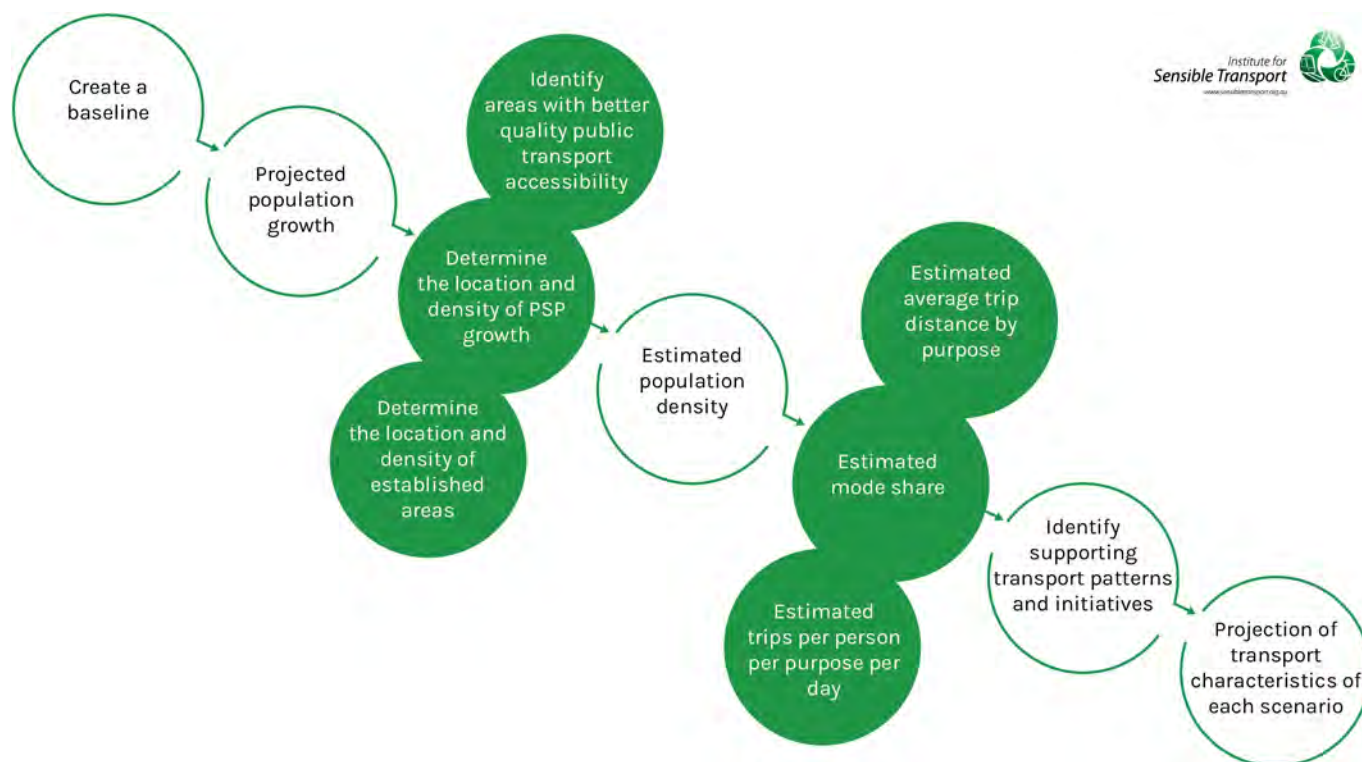
Specifically, as trip distance decreases, people make more trips. This is not just important from a sustainable transport perspective. Providing the conditions conducive to more trips allows people to engage more fully with their community, building social connectedness.

The strong relationships observed above allow us to estimate how changes in density can influence the number of trip, the trip distance (and how this varies by purpose) and the modes used. Figure 12 provides a summary of the relationship observed from an analysis of Melbourne LGAs. Figure 13 provides a summary of the steps used in the development of the four scenarios.



**Figure 12 Relationship between density, trip distance, frequency and mode share**

Source: Institute for Sensible Transport



**Figure 13 Projection of transport characteristics of scenarios**

Source: Institute for Sensible Transport

## 6.3 Factors included in the scenarios

To compare the four scenarios, metrics were developed based on Whittlesea’s strategic objectives. These included:

- Jobs in Whittlesea per Whittlesea resident who is employed
- Residential density (population weighted density, people per km<sup>2</sup>)
- Investment in active transport network (\$ per head of population, per year)
- Public transport accessibility and quality - any service is within 400m of a bus or tram stop, or

800m from a railway station. Higher quality is when the nearby services are 37 services per day or higher, which equates to a service every 20 - 25 minutes.

- Liveable neighbourhoods: Population living within a walkable or cyclable distance from daily goods and services.
- EV adoption: The percentage of vehicles in the fleet that are battery electric.
- Car parking: Parking requirements within the Planning Scheme and how on street parking is managed.

An overview of the assumptions in each scenario is shown in Table 1. The target year used in each scenario is 2040.

**Table 1 Summary of 2040 scenarios**

| Metric  | Current (2021)   | Business as usual  | Incremental change  | Moderate change   | Sustainable change  |
|---|--|--|---|---|---|
| Job per worker  | 0.65   | 0.65   | 0.8   | 1   | 1.5   |
| Residential density (people per km <sup>2</sup> )                               | 2,850  | 3,450  | 3,800   | 4,400   | 5,300   |
| Investment in active transport network (per capita)                             | \$5  | \$5  | \$15  | \$25  | \$50  |
| Public transport accessibility and quality (any service/higher quality service) | 83%/51%  | 83%/51%  | 90%/60%   | 90%/75%   | 95%/85%   |
| Proportion of population residing in liveable neighbourhoods                    | 4.76%  | 10%  | 25%   | 50%   | 75%   |
| EV adoption   | 0.13%  | 25%  | 35%   | 50%   | 70%   |
| Car parking (off-street/on-street)  | Car parking requirement as 52.06<br>Kerbside spaces prioritise for car parking | Car parking requirement as 52.06<br>Kerbside spaces prioritise for car parking | Parking overlay: removing minimums in activity centres<br>Kerbside space along high traffic routes is prioritised for active travel | Parking overlay: removing all minimums<br>Kerbside space along high traffic routes and in activity centres is prioritised for active travel | Parking overlay: implement maximums<br>Kerbside space is prioritised for active transport as the default except in residential streets with 30km/h limits |
| Speed limit   | 50km/h default on residential streets and 40km/h in some activity centres      | 50km/h default on residential streets and 40km/h in some activity centres      | 40km/h default on residential streets and in activity centres.  | 30km/h default on residential streets and in activity centres.  | 30km/h default on residential streets and in activity centres.  |

Source: DTP and Institute for Sensible Transport

## 6.4 Results

The series of figures in this section presents the estimated outcomes across each of the four scenarios, in terms of:

- Trip distance
- Trips per person
- Kilometres travelled per day and how this varies for each mode of transport. This is expressed as a cumulative total, as well as on a per person basis.
- Mode share (the percentage of trips done by each main mode of transport).

### 6.4.1 Summary of key findings

The scenarios offer a diverse set of transport directions, with each allowing Council to understand what might be expected from different approaches to land use and transport investment decisions. Key findings are distilled in the points below:

- Average trip distance reduces gradually for each trip purpose, with the *baseline* scenario having the highest average trip distance and *sustainable change* having the shortest. The trip purpose with the largest reduction in trip distance is the journey to work, owing to more local job opportunities in the *sustainable change* scenario.
- Number of trips per person increases on a spectrum from the *baseline* scenario through to *sustainable change*. This is due to the impact of more compact development on trip distance.
- Substantial growth in kilometres travelled by car is expected in the *business as usual* scenario; an extra 3 million kilometres per day can be expected to be travelled by car on roads in Whittlesea by 2040 under *business as usual*. This is the same distance as travelling between the earth and moon eight times.
- Implementation of the *sustainable change* scenario will still result in more car travel than 2021 levels by 2040 (due to population growth), but will avoid 1.5 million vehicle kilometres, per day.
- More people have the freedom to choose active and sustainable modes of travel at each

increment along the spectrum from *business as usual* through to *sustainable change*.

- Just over 80% of trips will be made by car under *business as usual* in 2040, lowering to 73% following the implementation of *sustainable change*.

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## The sustainable change scenario results in more trips per person, but less car use than the other scenarios.

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As trip distances reduce, the number of trips people make increases – this has social and economic benefit. People are able to be more engaged in their community.

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**Implementation of the *sustainable change* scenario will still result in more car travel than 2021 levels by 2040 (due to population growth), but will avoid 1.5 million vehicle kilometres, per day.**

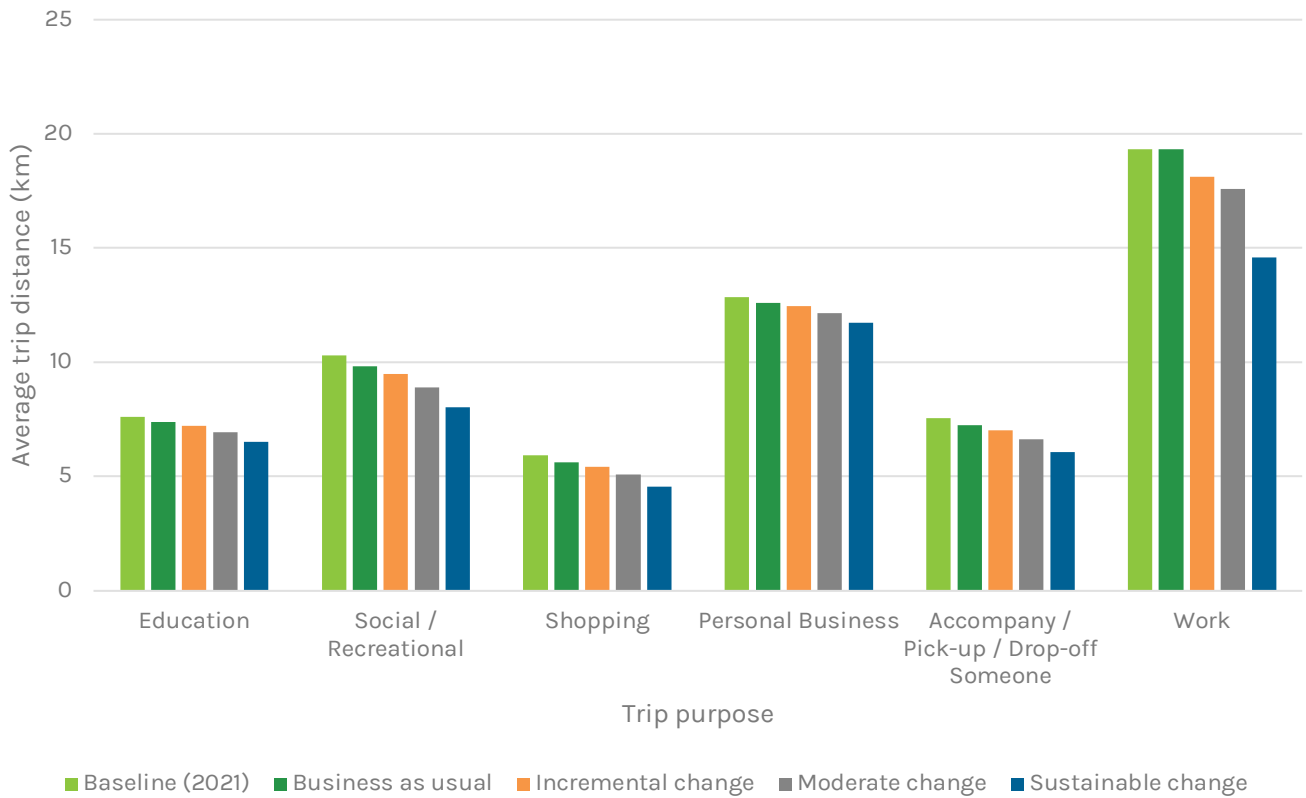
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If Whittlesea implemented the *sustainable change* scenario, residents in 2040 would enjoy:

- Greater levels of social and economic connection and participation
- Greater choice in employment
- More transport choice
- Travel fewer kilometres per day.

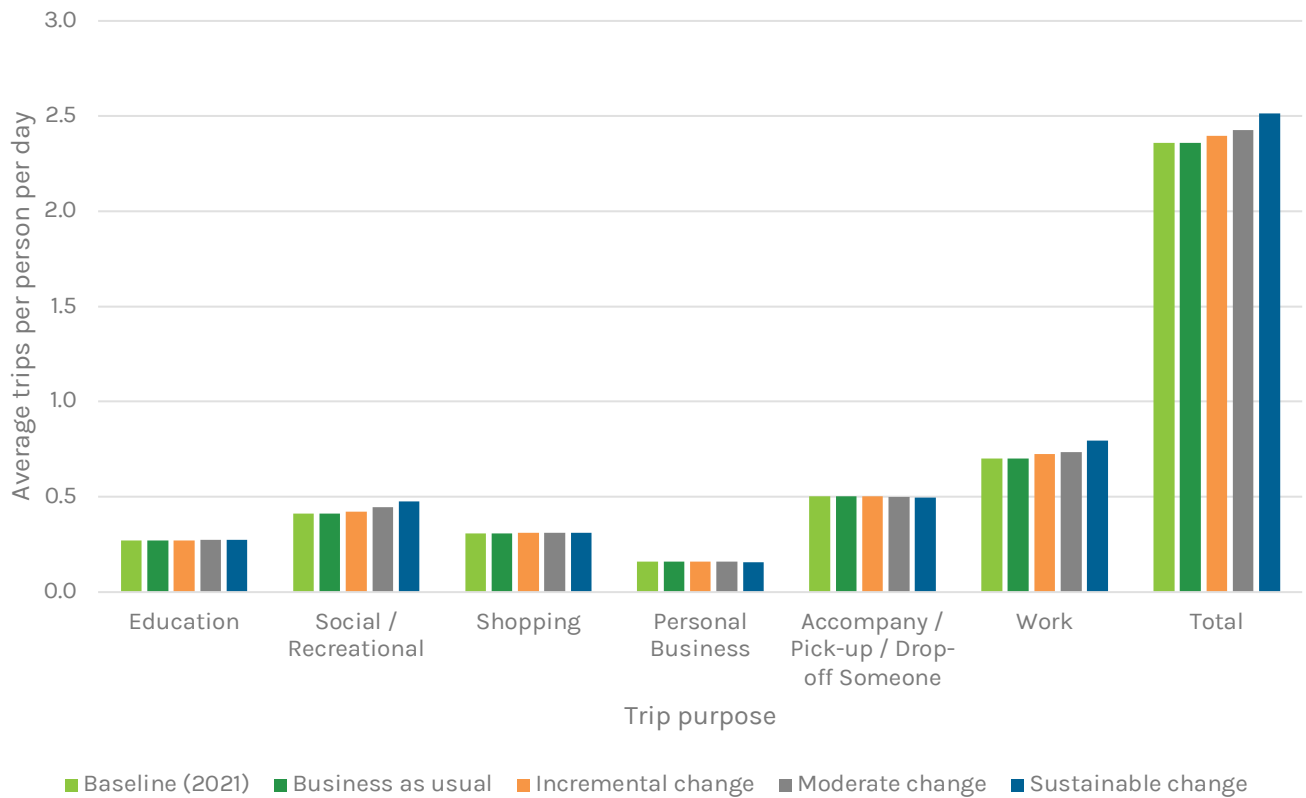
Figure 14 through to Figure 20 illustrates the estimated results across the four scenarios compared to baseline data.

We observed a reduction in the average trip distance in different scenarios (Figure 14) which resulted in an increase in trip numbers (Figure 15) particularly for social trips. This increase in trip number serves as a meaningful indicator of enhanced accessibility and improved social connectedness.



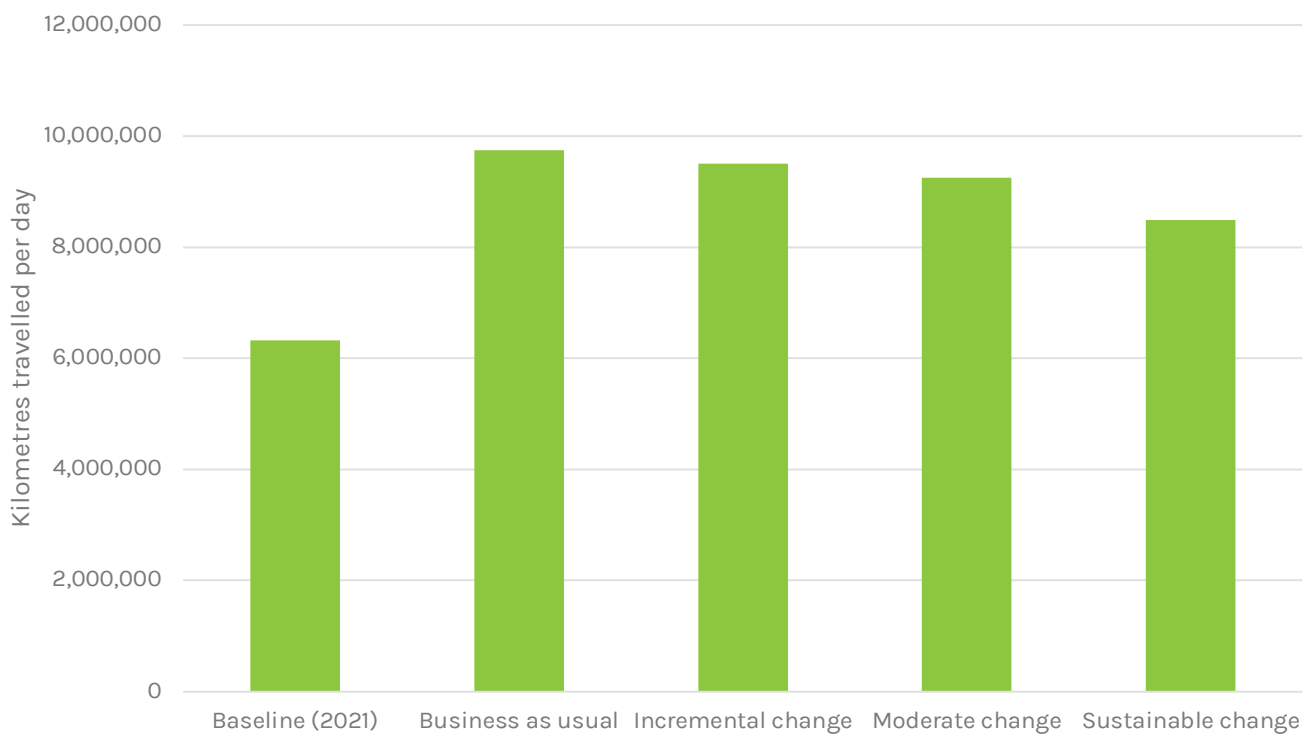
**Figure 14 Estimated average trip distance per trip purpose, per scenario**

Source: DTP and Institute for Sensible Transport



**Figure 15 Average trips per person per day per scenario**

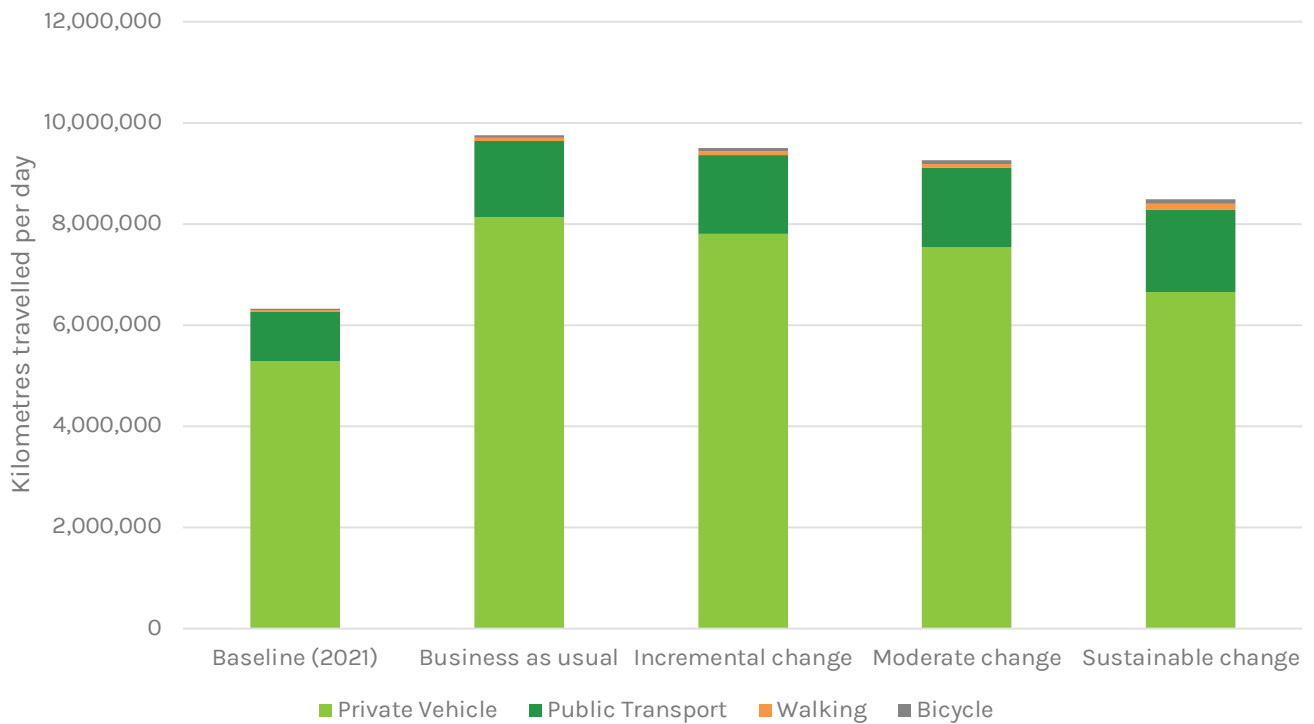
Source: DTP and Institute for Sensible Transport



**Figure 16 Kilometre travelled per day per scenario**

Source: DTP and Institute for Sensible Transport

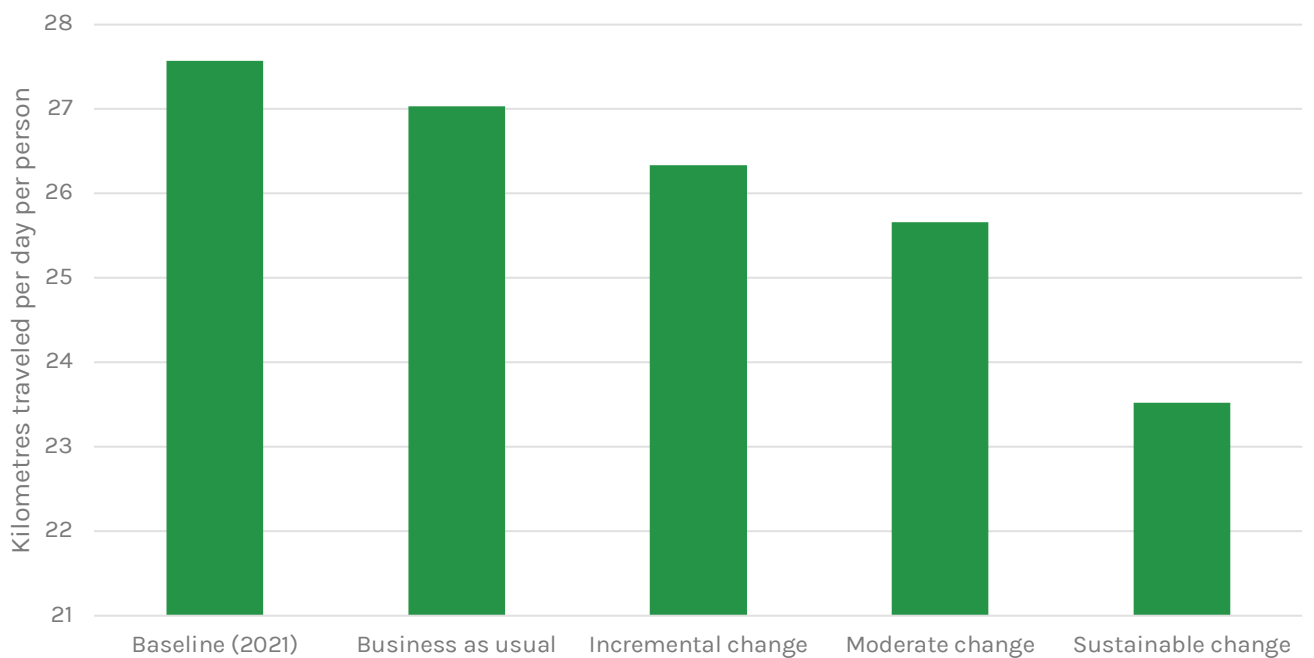
Figure 17 illustrates how the forecast kilometres travelled per day varies for each mode, within each scenario. It is important to note that if the *business as usual* scenario is applied, Whittlesea will have an extra 3 million vehicle kilometres travelled by car, which will worsen congestion levels and reduce liveability.



**Figure 17 Kilometres travelled per day per mode for each scenario**

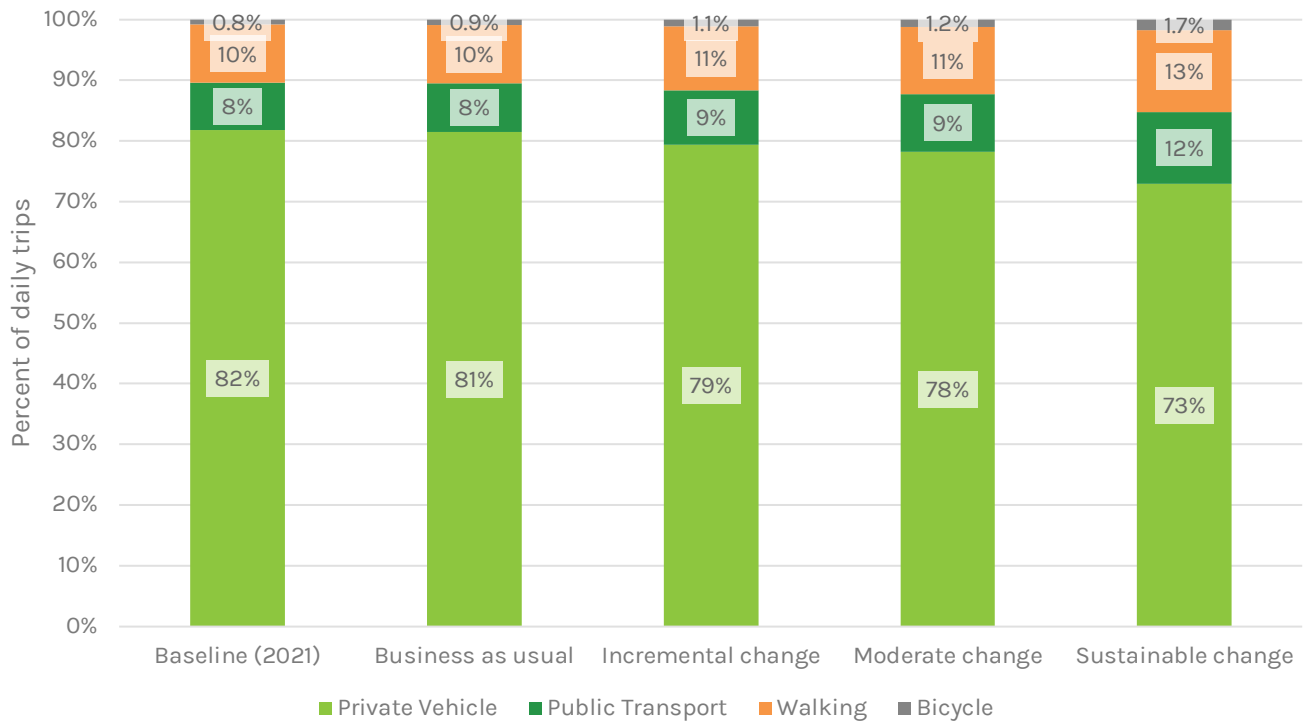
Source: DTP and Institute for Sensible Transport

Figure 18 represents kilometre travelled per person per day for each scenario. There is a significant reduction in daily kilometres travelled per person in the *sustainable change* scenario (23.5 km) in comparison to *business as usual* scenario (27 km). Figure 19 shows how people travel each day in different scenarios. In the *sustainable change* scenario, we expect a 4% increase in using public transport, a 9% decrease in using cars, and a 4% increase in walking compared to the *business as usual* scenario. Cycling is estimated to double, in terms of mode share, under the *sustainable change* scenario.



**Figure 18 Kilometres travelled per day per person for each scenario**

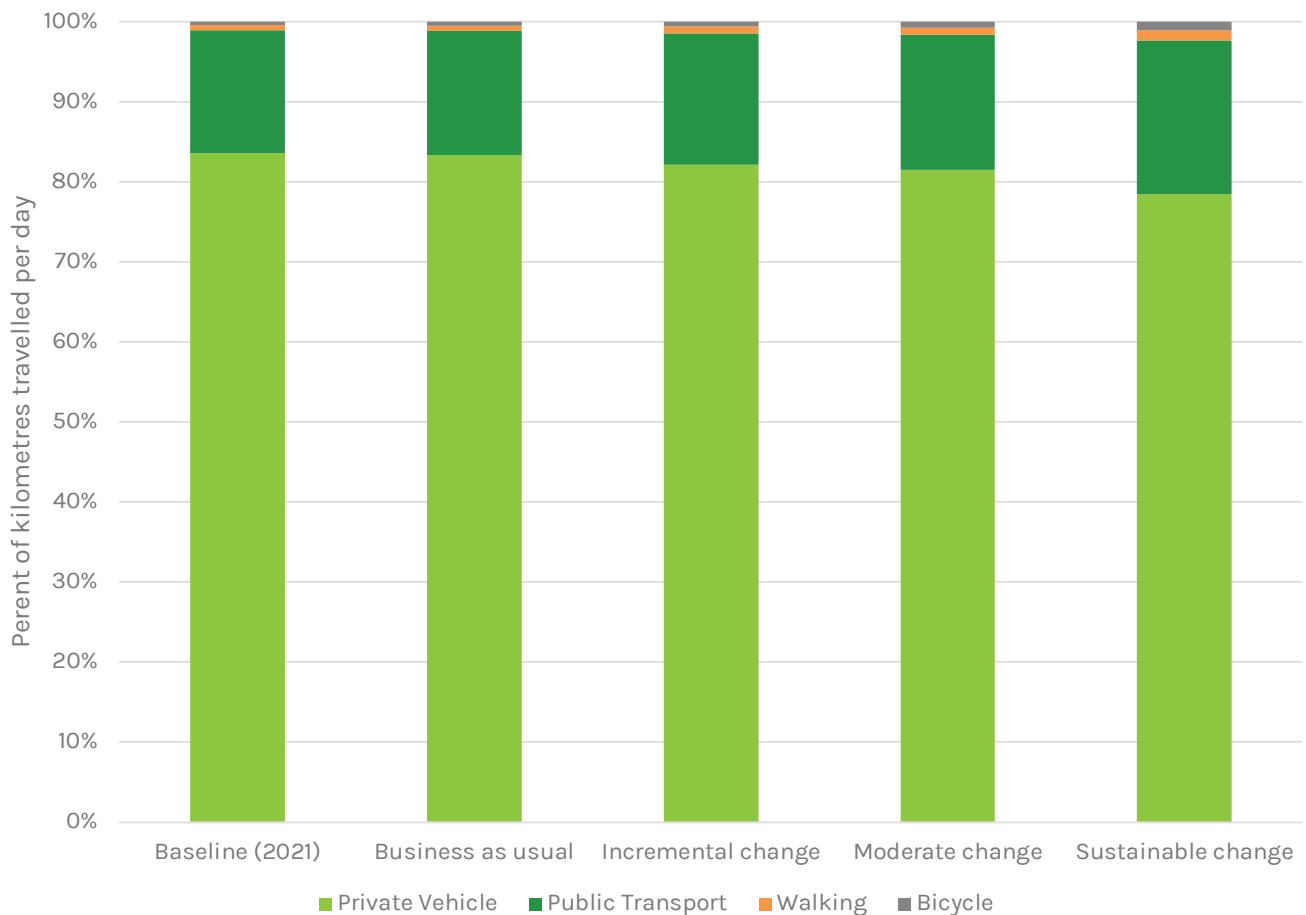
Source: DTP and Institute for Sensible Transport



**Figure 19 Daily trips modes share for each scenario**

Source: DTP and Institute for Sensible Transport

Figure 20 represents an estimate of the percentage of kilometres travelled by different modes across the different scenarios. This illustrates that under the *sustainable change* scenario, there is a moderate decrease in the proportion of kilometres travelled by car, and an increase in sustainable modes.



**Figure 20 Percentage of kilometres travelled per day by mode for each scenario**

Source: DTP and Institute for Sensible Transport

## 6.5 Benchmarking with other Melbourne LGA

This section provides a comparative analysis of various LGAs within the Melbourne region. This offers a useful benchmarking, to ensure the projections included in the scenarios are comparable with what has been experienced in other LGAs. These are shown in Table 2. Population density is the defining variable. Hume is chosen as an LGA that closely resembles the current population characteristics of Whittlesea. Boroondara is representative of the *business as usual* scenario, Darebin reflects the *incremental change* scenario, and Merri-Bek corresponds to the *moderate change* scenario. In the context of the *sustainable change* scenario, the most comparable

LGAs are Maribyrnong and Moonee Valley. Notably, Stonnington and Yarra stand out as the two LGAs with the highest population density in Melbourne.

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**The sustainable change scenario gives Whittlesea the best chance of achieving the established strategic objectives committed to by Council (e.g. Council Plan).**

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**Table 2 Benchmarking with other Melbourne LGA**

| LGA                             | Density | Trip distance (km)    |      | Daily travel per person |              | Mode share      |                  |         |         |
|---------------------------------|---------|-----------------------|------|-------------------------|--------------|-----------------|------------------|---------|---------|
|                                 |         | Social / Recreational | Work | Trips                   | Km travelled | Private Vehicle | Public Transport | Walking | Bicycle |
| Whittlesea - 2021               | 2,850   | 10.3                  | 19.3 | 2.4                     | 27.6         | 82%             | 8%               | 10%     | 1%      |
| Hume                            | 3,057   | 9.3                   | 20.3 | 2.4                     | 27.1         | 82%             | 7%               | 11%     | 0%      |
| Whittlesea - Business as usual  | 3,450   | 9.8                   | 19.3 | 2.4                     | 27.0         | 81%             | 8%               | 10%     | 1%      |
| Whittlesea - Incremental change | 3,800   | 9.5                   | 18.1 | 2.4                     | 26.3         | 79%             | 9%               | 11%     | 1%      |
| Darebin                         | 3,815   | 6.1                   | 11.3 | 3.1                     | 21.2         | 63%             | 13%              | 20%     | 4%      |
| Merri-bek                       | 4,677   | 6.6                   | 11.2 | 3.1                     | 23.0         | 57%             | 14%              | 23%     | 7%      |
| Whittlesea - Moderate change    | 4,400   | 8.9                   | 17.6 | 2.4                     | 25.7         | 78%             | 9%               | 11%     | 1%      |
| Moonee Valley                   | 4,842   | 8.4                   | 10.1 | 3.0                     | 22.3         | 69%             | 11%              | 18%     | 2%      |
| Maribyrnong                     | 4,843   | 5.7                   | 10.9 | 3.0                     | 22.0         | 58%             | 16%              | 23%     | 4%      |
| Whittlesea - Sustainable change | 5,300   | 8.0                   | 14.6 | 2.5                     | 23.5         | 73%             | 12%              | 13%     | 2%      |
| Boroondara                      | 3,554   | 5.8                   | 9.8  | 3.5                     | 23.2         | 65%             | 11%              | 22%     | 2%      |
| Stonnington                     | 9,049   | 4.7                   | 9.8  | 3.8                     | 23.5         | 54%             | 15%              | 27%     | 3%      |
| Yarra                           | 9,911   | 4.8                   | 6.4  | 3.7                     | 19.8         | 42%             | 17%              | 34%     | 7%      |

Source: DTP and Institute for Sensible Transport

## 7. Development and implementation of ITP



This section offers a suggested outline of the main sections Council may wish to consider in the development of their ITP.

## 7.1 Target audience

There are several intended audiences the future ITP should be targeted towards, as highlighted in Figure 21.



Figure 21 Key target audiences

## 7.2 Table of contents

The following offers a suggested outline of the key areas of focus Council may wish to consider as it embarks on the development of their ITP. This has been developed with the key target audiences in mind identified in Figure 21.

1. Introduction
  - 1.1 what is an Integrated Transport Plan (ITP)?
  - 1.2 Why do we need an Integrated Transport Plan?
  - 1.3 Why business as usual is no longer an option.
  - 1.4 What Council are going to do.
  - 1.5 How the ITP will work for Whittlesea.
2. What the community told us (to be completed following Council community consultation program).
3. Big issues facing Whittlesea - summary of key issues and how the ITP seeks to address them.

4. Strategic direction and policy alignment
  - 4.1 Key themes
5. Visions and guiding principles
  - 5.1 Vision
  - 5.2 Guiding principles
  - 5.3 Mode hierarchy
6. How we get around, now and in the future
  - 7.1 How we travel today
  - 7.2 Transport scenarios
7. What we are going to do, our major moves
8. What we are not going to do (and why)
9. Implementation

## 7.3 Multi Criteria Analysis (MCA) framework

This section offers a *Multi Criteria Analysis* (MCA) framework for Council to consider. The MCA framework will help Council to prioritise different actions. The MCA framework can serve to compare different actions based on the following criteria:

- Safety: The MCA evaluate the potential of actions to improve safety such as implementing 30 km/h speed limit zones and enhancing lighting. Some of the metrics are:
  - Increase in 30km/h streets
  - Increases in active transport infrastructure that provides protection from motor vehicles
  - Reduction in number of crashes
  - Reduction in number of serious and fatal injuries
- Sustainability: The MCA assess how well each action contributes to sustainability, for instance reducing car use and emission. Some of the metrics are:
  - Reduction in car travel distance
  - Decrease in emission.
  - Increase in active transport mode share

- Urban vibrancy: assessment of actions' ability to contribute to place-making outcomes through transport and street design.
- Number of jobs per resident
- Integrated transport: the MCA would consider the degree of integration of different modes of transport such as connection between cycling and public transport.
- Walkability: actions would be evaluated based on improving walkability and impact on pedestrian experience. This would include not just the walking environment but also the other factors influencing walkability, such as the diversity of destinations within a walkable distance.
- Zero emission: the framework would quantify the impact of actions on carbon emission.
- Better public transport: the effectiveness of actions to enhance public transport services will be considered. It could include better coordination between bus services and more frequent services to key destinations.

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