3 million cars

HARRY BARBER

Introduction

This iPad booklet is addressed to local government Councillors and those standing for local government in metropolitan Melbourne in 2016.

It aims to alert all candidates to a significant and urgent problem.
Around one million more cars are coming to Melbourne.

The booklet considers three questions:

- How many cars will there be, where will they be and how much space they will occupy?
- How dependent are people on private cars?
- How many people do not rely on a car?

With a shared understanding of this information you can better discuss the issues and responses that are relevant to your communities.

Good luck!

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CHAPTER 1

Forecast: 3 million cars

There are 2.2 million cars based in Melbourne and another 800,000 are on the way.

The metropolitan forecast

We can predict that between 2011 and 2026, the total resident car fleet based in metropolitan Melbourne will rise from 2.2m to 3 million cars.

We can expect in each municipality, on average, the arrival of an additional 25,000 cars – roughly the number of cars that can fit in the Melbourne Airport carpark.

Some of the municipal residential vehicle fleets will grow by one third; some fleets will grow by more than 50%. In one municipality, the fleet will more than double in size. Some municipalities will see an increase equivalent to 'three Airport car parks': 60 – 80,000 vehicles.

This booklet provides details of these changes in each municipality.

Residential vehicle fleets

Over the next ten years:

1. Average fleet growth of 25,000 vehicles
2. Average fleet growth rate of 35%
3. Total metropolitan fleet to reach 3 million cars

The forecasts in this report are conservative.

The calculation assumes that between 2011 and 2026, the metropolitan motorisation rate will stay steady. Whereas in the ten years before 2011, the metropolitan motorisation rate rose by 6%.

If the motorisation rate rises, the forecast will be wrong and more cars will be coming to Melbourne.

The size of each municipality will not change between now and 2026. Nor will the allocation of space (to any great extent). Each municipality will have the same area of roads, the same number of car spaces near the shops, the same number of car spaces near places of work and rail stations and the same length of kerb to store vehicles on the roadway.

How will we fit another million cars into the same space?

- Can todays roads, car parks and car storage areas cope with an increase in vehicles of 35%?
- Could we afford to turn more buildings and land into roads, short-term parking and long-term storage?

These questions are challenging. The answer to both is probably 'No'.

But then what will happen? Where will we put the 'airport car park' in our municipality?

There is an easier question.

Is it time to try to do something to avoid or minimise the forecast growth in the number of cars?

The answer to that question is 'Yes'.

The world of water

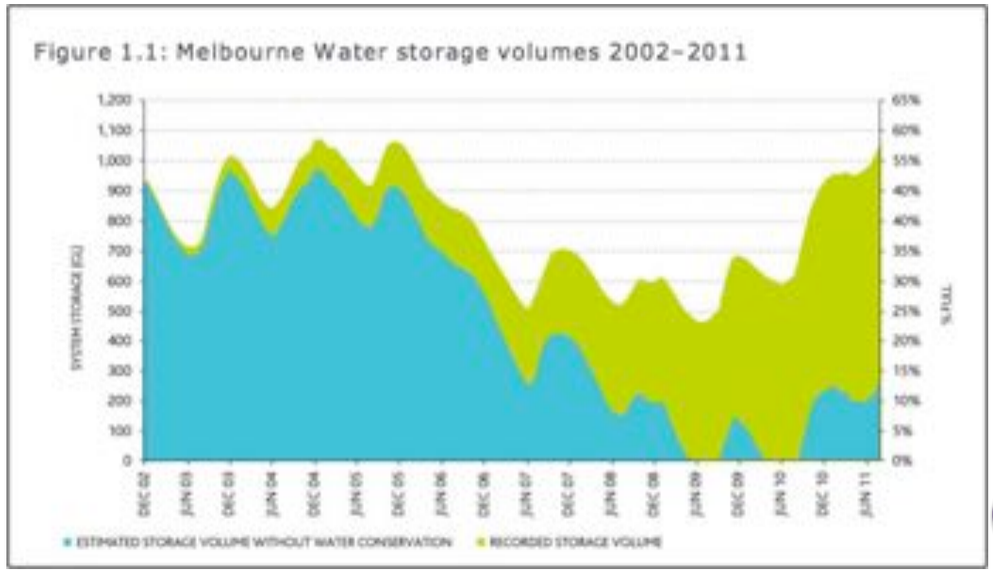
Here is a reassuring story in which we are the heroes.

During the Millennium Drought, the decision was made and widely endorsed that it was time to try to do something to avoid or minimise water use.

Over the ten year period of the drought, water use went down from 240 to 140 litres per person per day. It is perhaps hard to remember the changes we all learned to make, but all those small changes added up to something significant.

The outcome of the story is shown in the chart below. The blue area of the chart shows how much water would have been in the dams if use had not changed. The dams would have been empty in 2009.

The top line of the yellow green area shows the actual water in the dams. The area under the line shows the water we saved.



About

If we look at the water story in a mirror, we can see the world of transport. This time our heroes are faced with a flood. A forecast flood. They have time to act. What will they do?

How can they reduce the level of the flood?

I am afraid we have to leave the second story there, as the ending has not yet been written.

Looking ahead

This booklet does not list or suggest the steps your Council might take. There are many ways that the flood of cars can be reduced or avoided altogether. From the list, appropriate responses would have to be chosen to suit your circumstances and tailored to fit your priorities.

You might be tempted to wait and hope the State and Commonwealth Governments address the problem. Councils certainly need their help. But there is no reason to wait for them.

Councils have shown that they can inform, influence, and shape how people think and act.

Councils have unambiguous powers as:

- Road managers
- Parking and storage managers
- Planning authorities

Your first response might be that your Council is already using its influence in these ways – and that would be correct.

What the forecast tells us is that the current level of effort and achievement has, so far, not been enough to avoid the coming flood.

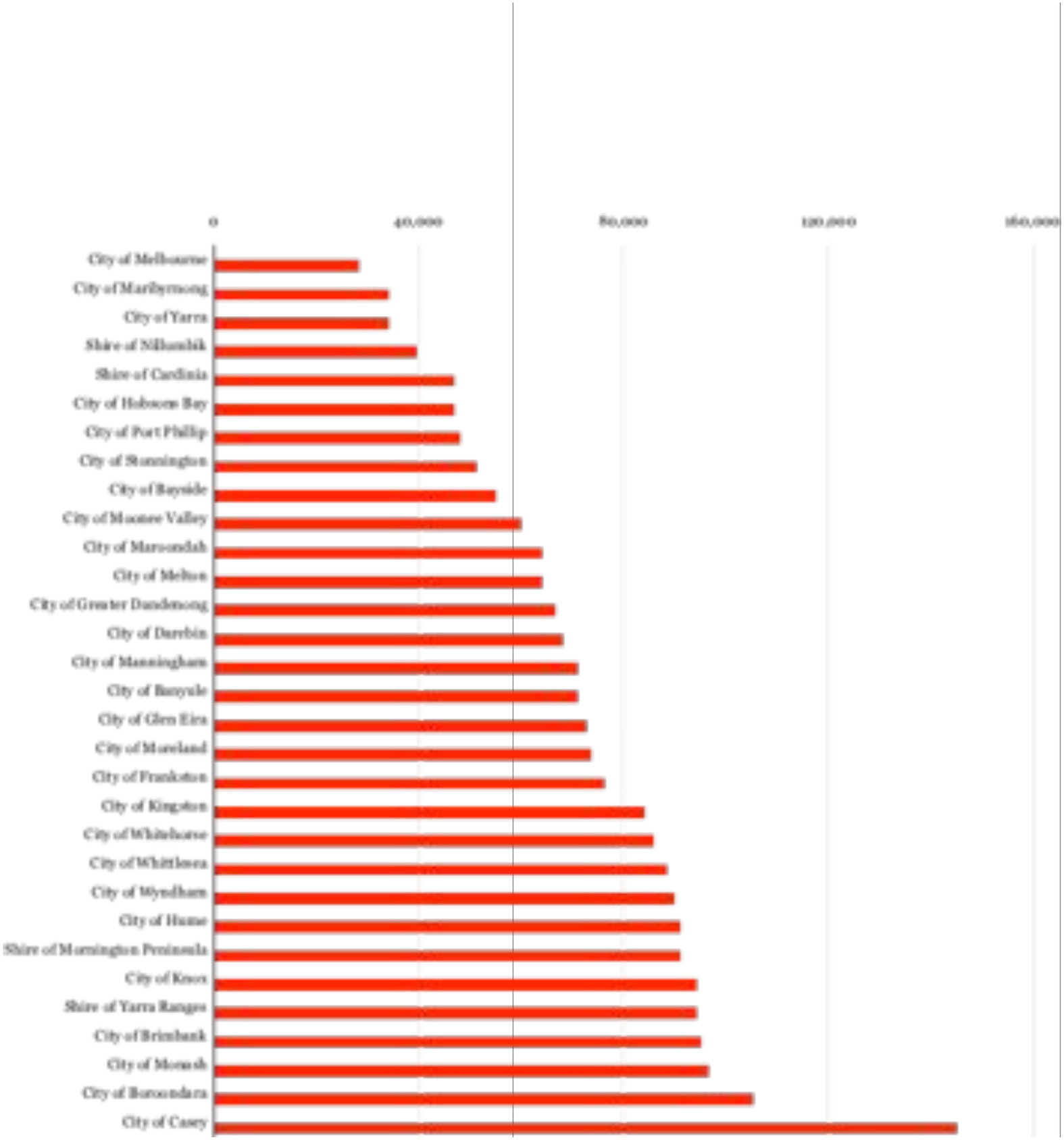
The rest of the booklet introduces three measures that will enable you to:

- Track ‘flood levels’ in your area,
- Inform public debate
- Set strategy
- Monitor performance

CHAPTER 2

Measure 1: The resident vehicle fleet

The resident vehicle fleet is the number of cars based in a municipality – the ‘car population’.



Size of the 2011 vehicle fleets

The red chart shows the relative size of the residential vehicle fleets in each municipality in 2011.

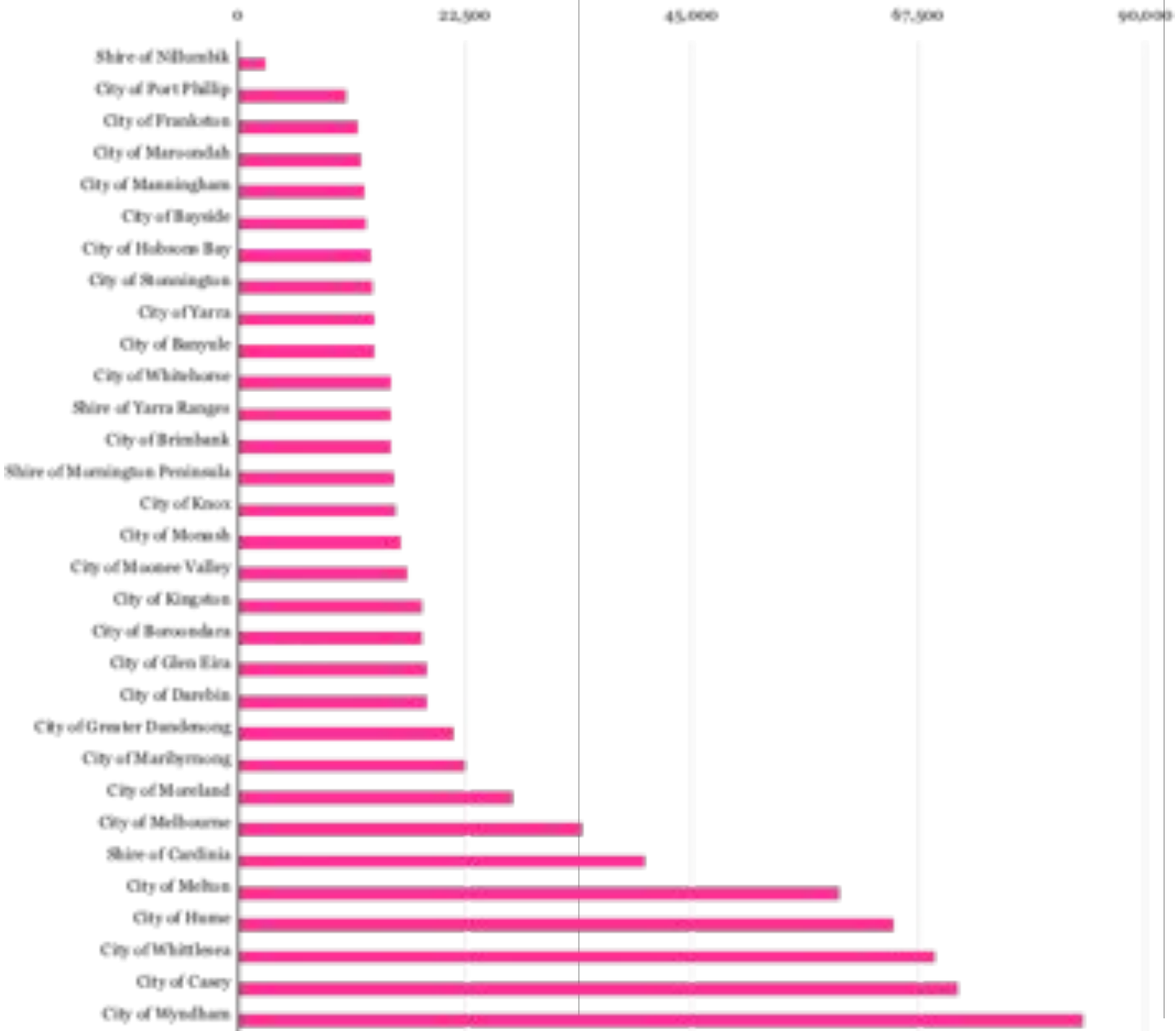
The small fleets (less than 50,000 vehicles) tend to be in municipalities closer to the centre, while the larger fleets are in outer municipalities.

Two of the small fleets in 2011 were in the Shires of Nillumbik and Cardinia.

Nine municipalities had fleets larger than 90,000 vehicles. Most of these were outer municipalities.

The City of Boroondara is not an outer municipality but in 2011 it had the second largest fleet in the metropolitan area.

These fleets are very likely to keep growing.



Growth in the resident vehicle fleets

The pink chart shows the number of vehicles that will be added to the resident vehicle fleets between 2011 and 2026.*

The growth in the resident car fleets is calculated by comparing the motorisation rate (discussed in the next chapter) and the forecast change in population.

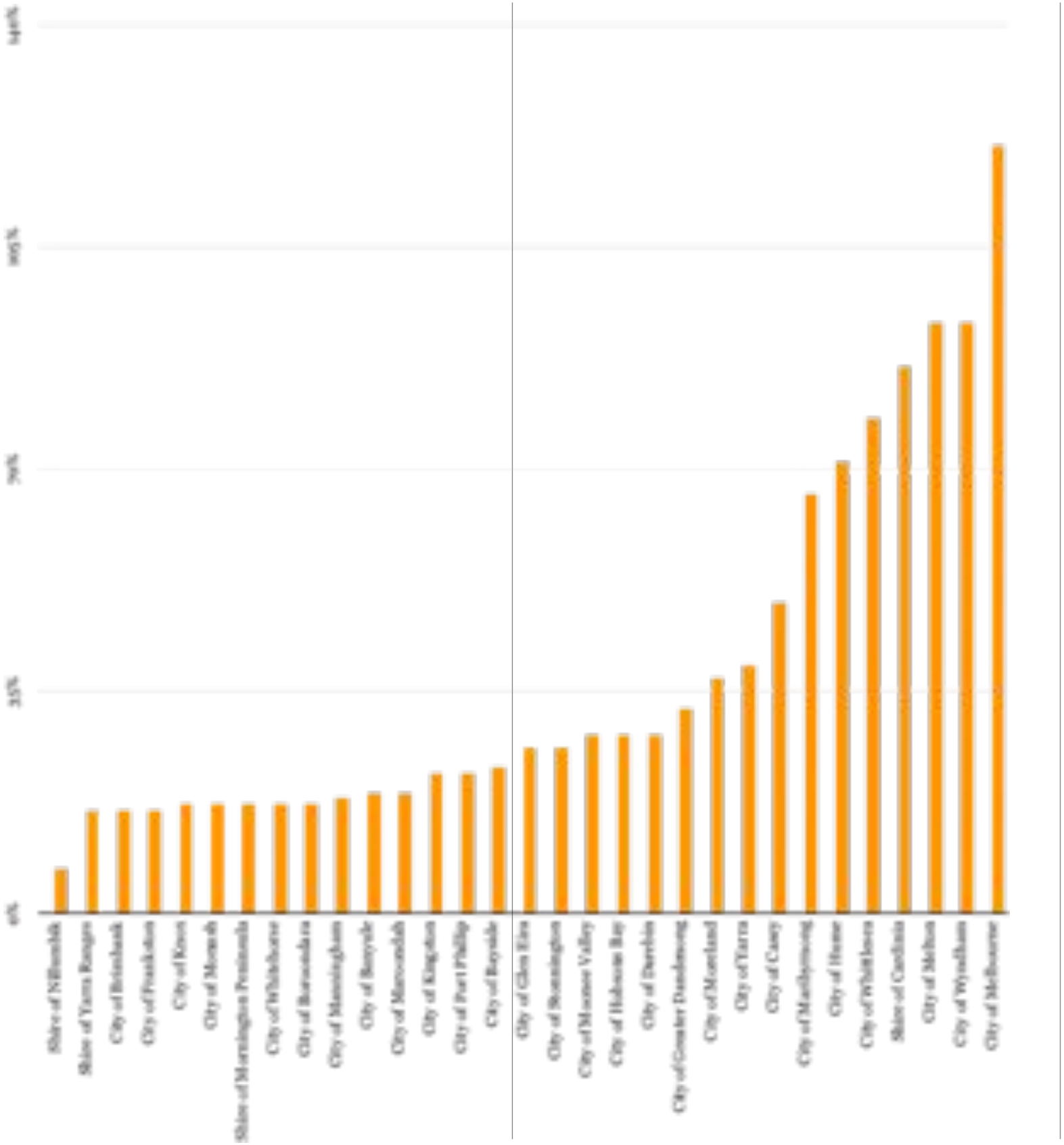
Resident vehicle fleets will increase by at least 10,000 - 20,000 vehicles (except in the Shire of Nillumbik).

In ten municipalities it is likely that the fleet will increase by more than that – including the City of Melbourne.

The Cities of Melton, Hume, Whittlesea, Casey and Wyndham will see an increase of at least 60,000 vehicles.

These forecasts assume that the motorisation rate stays steady.

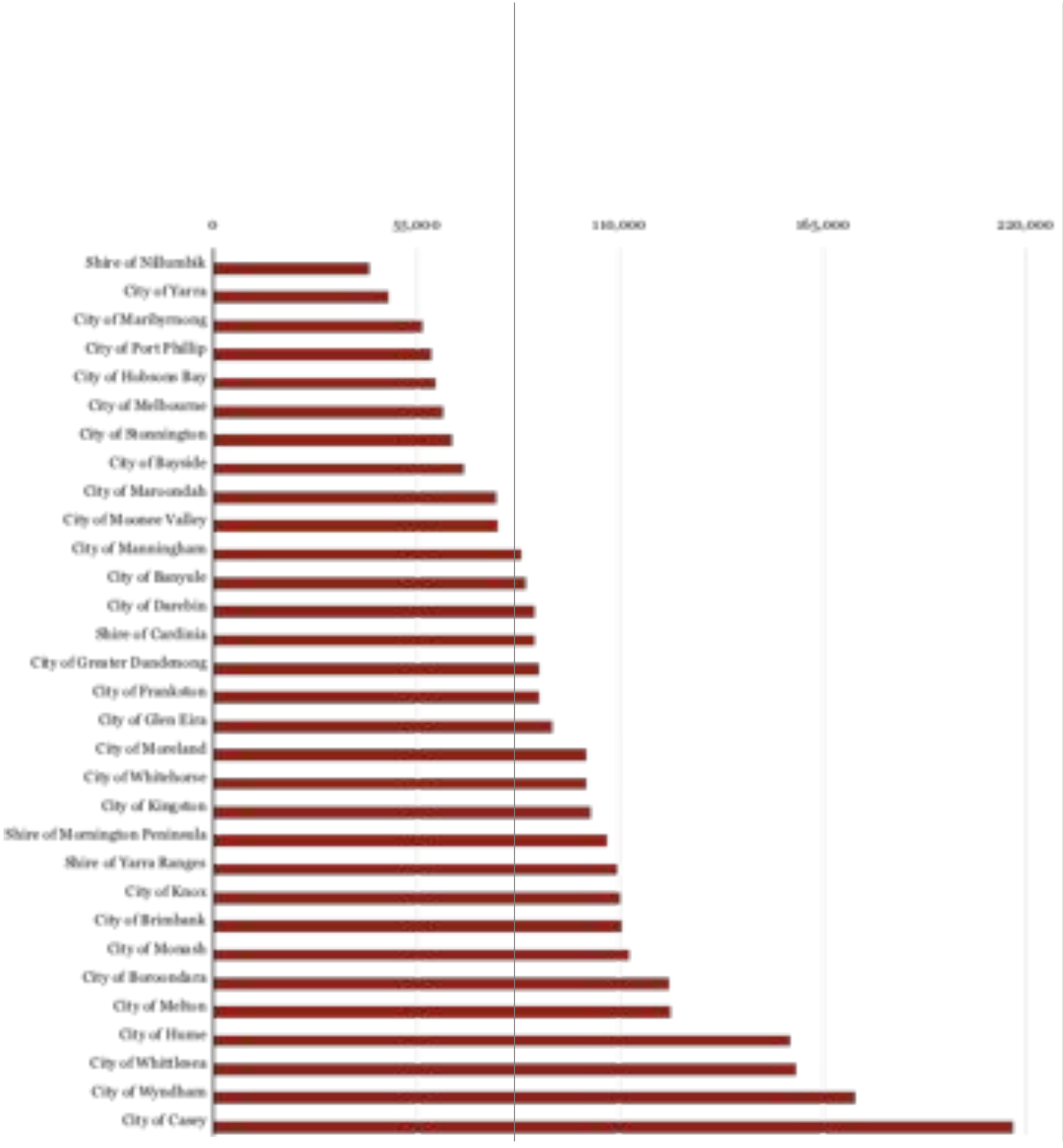
* (The assumptions behind the forecast are described in 'Under the bonnet'. The forecast for the City of Greater Dandenong is to 2024.)



Proportional increase in the resident vehicle fleets

The orange chart shows the proportionate increase in the residential vehicle fleet in each municipality.

In twelve municipalities the fleet will grow by less than 20%. The Cities of Whittlesea, Cardinia, Melton, Wyndham and Melbourne will see an increase greater than 80%.



The 2026 vehicle fleets

The brown chart shows the estimated size of the resident vehicle fleets in 2026.

The forecast suggests that only the Shire of Nillumbik and the City of Yarra will have fleets smaller than 50,000 vehicles.

Fourteen municipalities will have fleets greater than 100,000 vehicles. In the City of Casey the fleet will be greater than 200,000 vehicles.

Space occupied by the resident vehicle fleets

The impact of a large fleet will be lower in a large municipality.

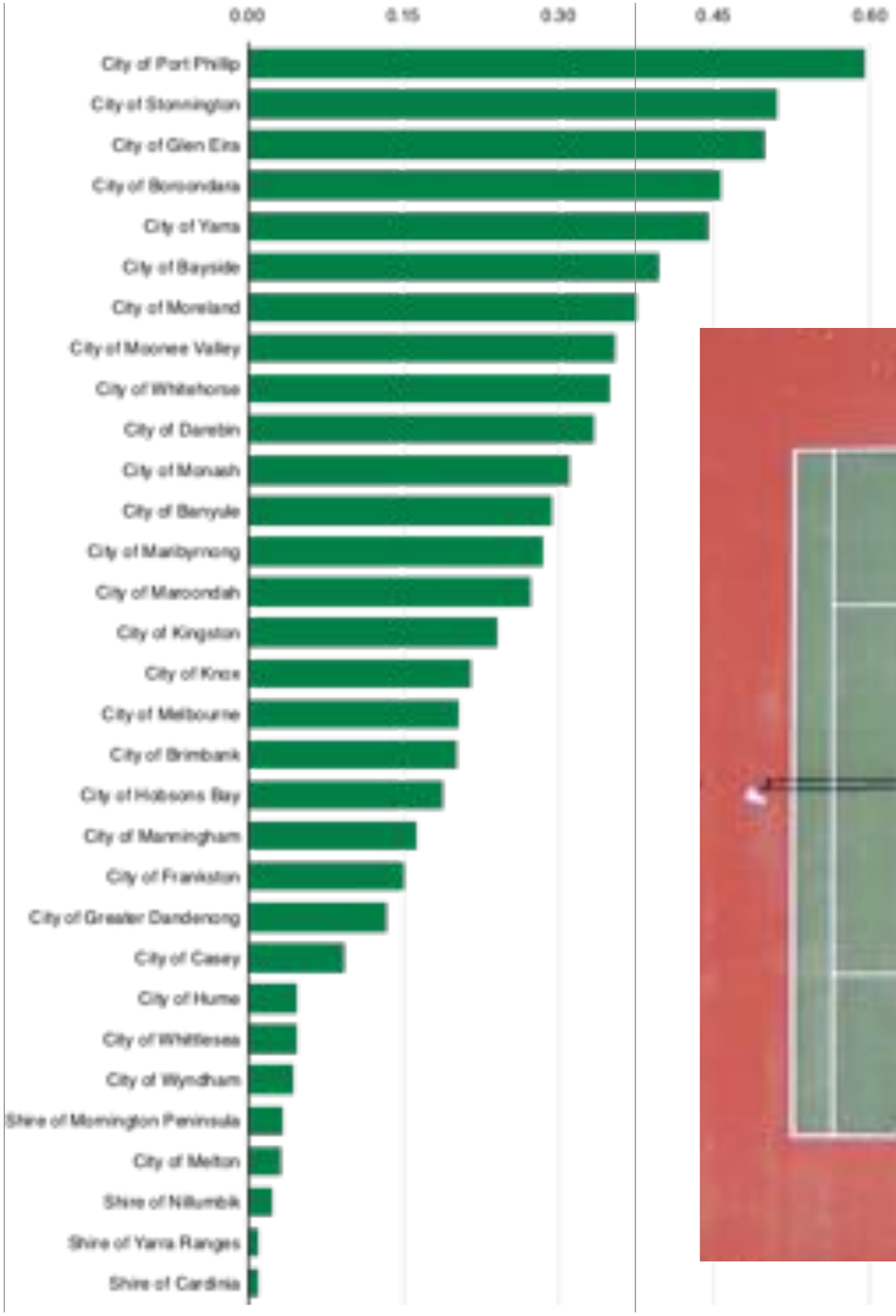
The largest municipality, the Shire of Yarra Ranges, is more than 100 times larger than the smallest, the City of Port Phillip. However the resident vehicle fleet in the outer municipality is only twice as large.

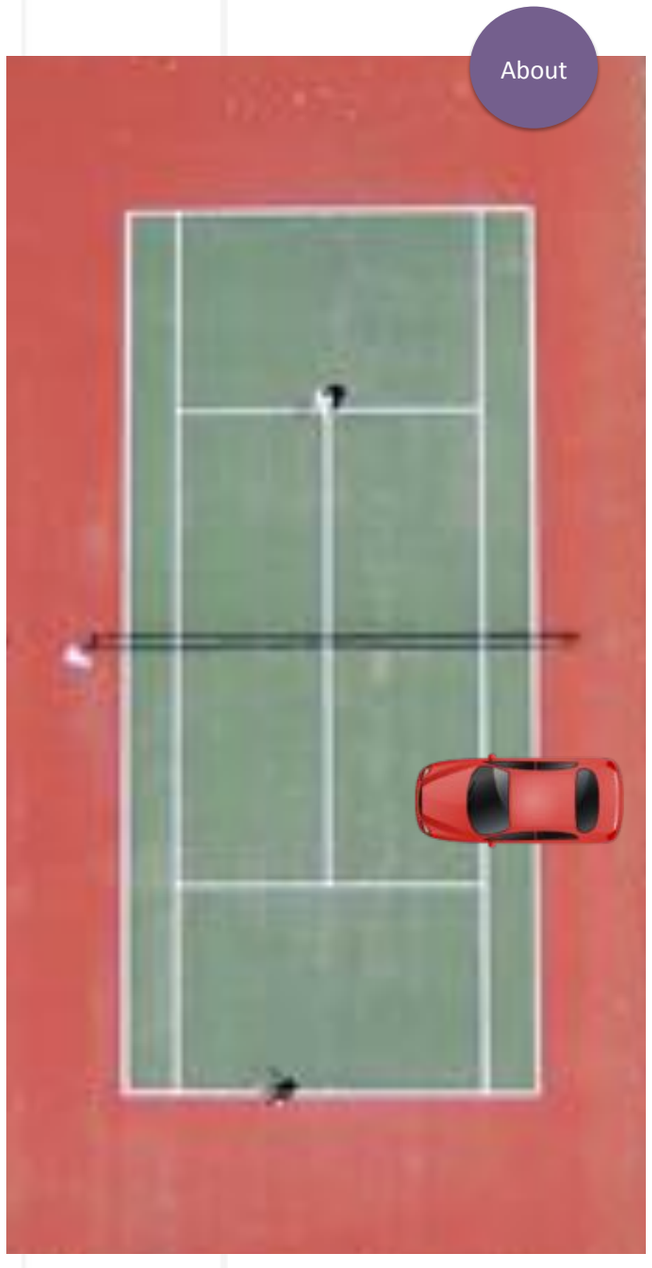
We can get an intuitive feel for cars per square metre by dividing the municipalities into tennis court sized units (260 square metres) and seeing how many cars would have be parked on each tennis court in each municipality.

The Cities of Port Phillip, Stonnington and Glen Eira all have half a car or more on the tennis court.

Eight other municipalities have one-third of a car on each tennis court.

The Cities of Maribrynong (0.29) and Melbourne (0.2) have low 'tennis court ratios' for small municipalities.





CHAPTER 3

Measure 2: Motorisation

Motorisation in the municipalities of metropolitan Melbourne ranges from 32 to 66 cars per one hundred people.

The ratio

Around the world the motorisation ratio is reported in different ways. Some sources provide a rate of cars per person (0.7 cars per person), others provide cars per thousand people (700 cars per thousand people). This booklet uses the most easily visualised - the number of cars per one hundred people: 70 cars for every one hundred people.

The motorisation rate for Australia is 75 cars for every one hundred people. The ratio can vary depending on how it is calculated. This is discussed in Chapter 7 *Under the Bonnet*.

We have a lower rate than some countries – North America and Italy are in the low 80s.

Motorisation in other countries

Finland - 107

Italy - 84

USA - 83

Malaysia - 80

Austria - 75

Australia - 75

UK - 51

About

Our rate is higher than some similar countries. New Zealand is just in the 70s, the EU (on average) is in the 50s. The UK has a motorisation rate of 51 while Israel has a rate of 37.

The lowest rate in a developed country is in Singapore. The island state limits the size of the vehicle fleet and imposes a range of taxes on car owners. As a result, the motorisation rate in Singapore is 18.

Motorisation is lower in countries with low per capita incomes. Peru for example has a lower motorisation rate than Singapore, reflecting the lower per capita income in the South American country.

The chart with the blue bars shows the motorisation data for EU states changing over time. (The rate is being reported in vehicles per thousand people.)

The map shows motorisation rates across the EU. Italy, Austria and areas of Germany have higher rates while countries to the south east such as Greece have lower rates.

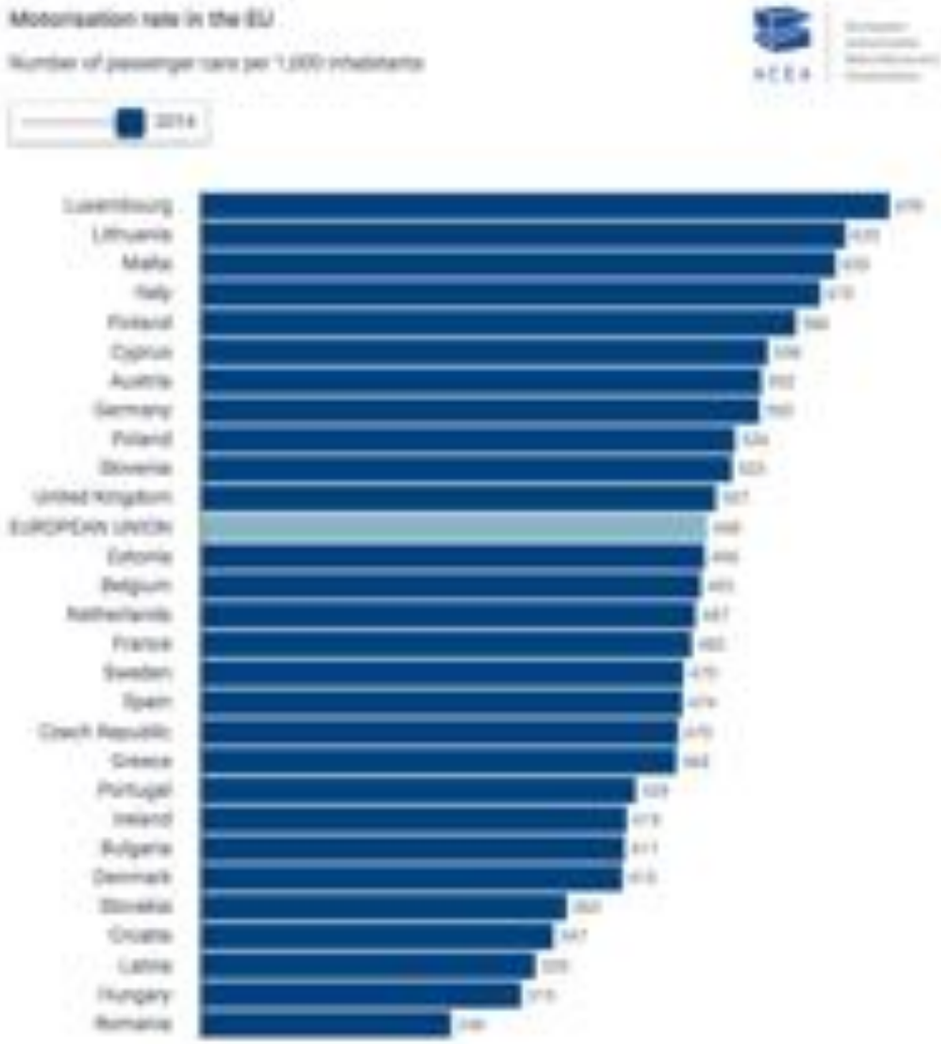
On the map the purple areas have a rate above 55, the green 40 - 55 and the tan areas lower than 40.

The EU has an excellent discussion of motorisation in the Union at the link with the map.

(See Under the Bonnet at the back of the book for an explanation of the data sources used to calculate motorisation).

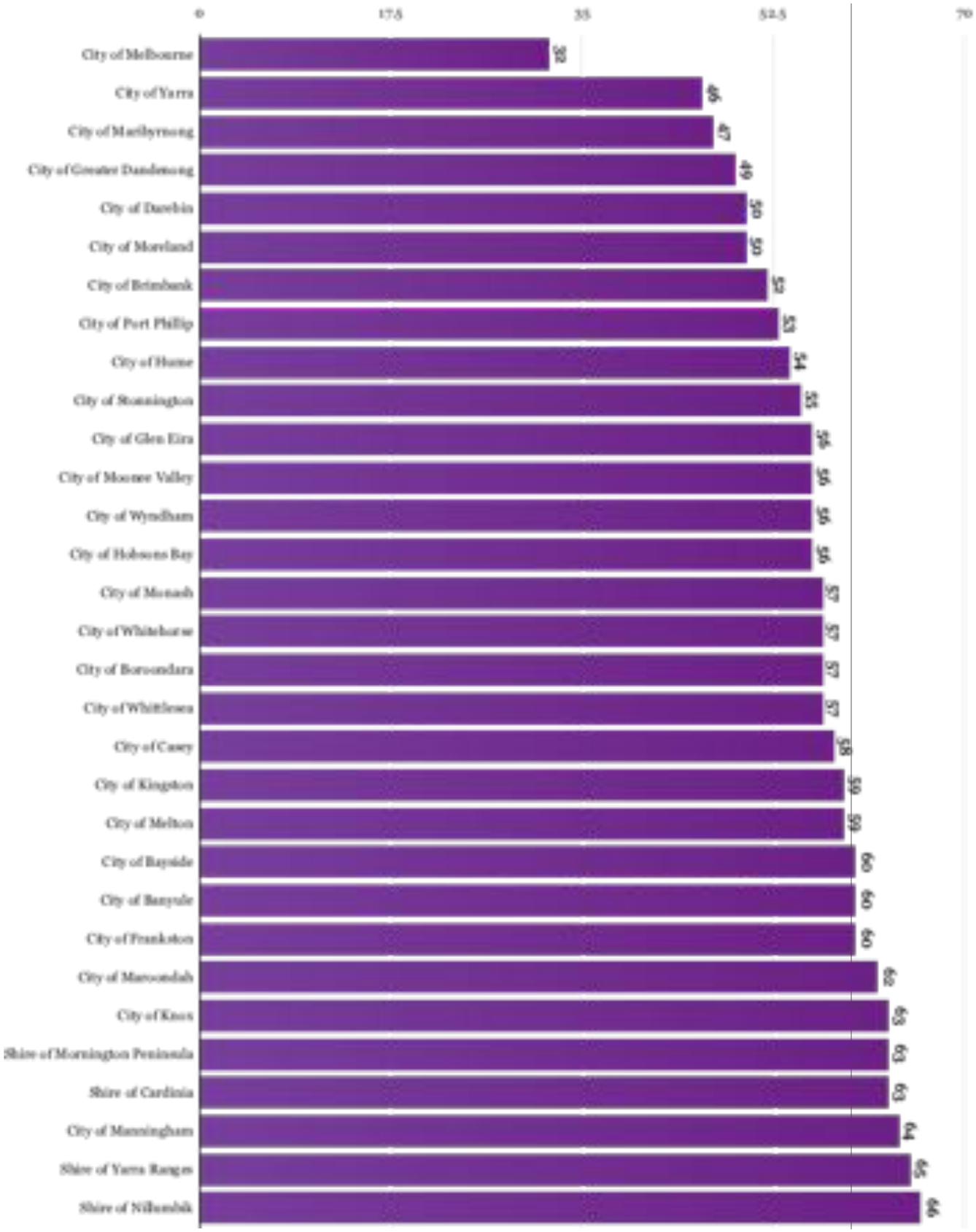
Passenger Car Fleet Per Capita

The European Union has almost one car for every two citizens.



About

About



Motorisation in metropolitan Melbourne

The purple chart shows the variation in motorisation across the municipalities in metropolitan Melbourne.

Most municipalities are in the 50s.

Only four municipalities have a motorisation rate below 50.

The inner municipalities of City of Port Phillip (53) and the City of Stonnington (55) have high rates of motorisation compared to the City of Yarra (46) and Maribyrnong City Council (47).

The City of Greater Dandenong has a low level of motorisation (49) compared to its neighbours, the City of Monash (57) and the City of Frankston (60).

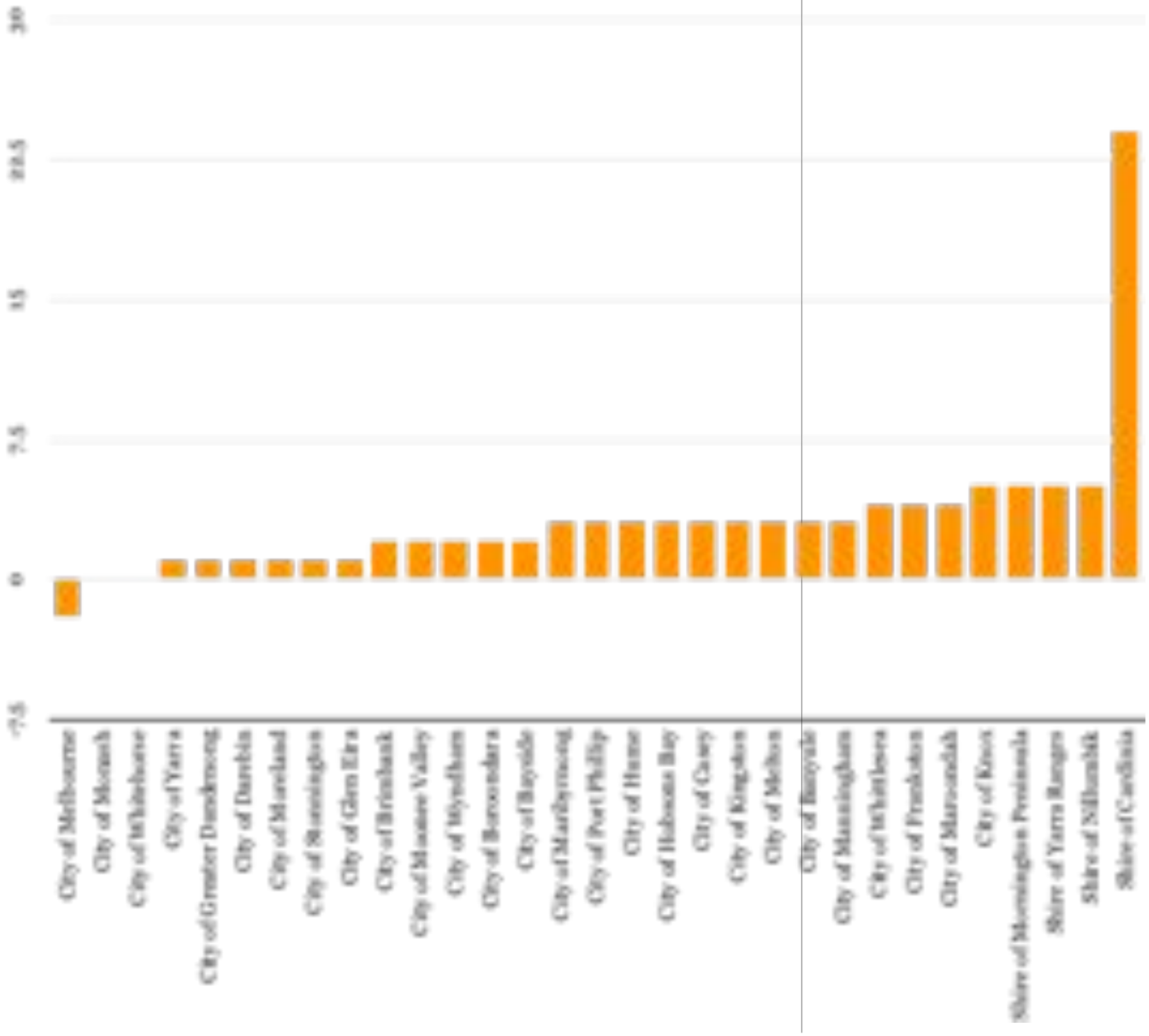
The City of Whitehorse has a rate of (57), significantly less than the municipalities to the north: the City of Manningham (64) and Shire of Nillumbik (66).

Seven municipalities have rates above 60.

About

Growth in motorisation

The orange chart shows the change by percentage in motorisation between 2001 and 2011 for the metropolitan municipalities.



The one municipality with a positive trend is the City of Melbourne. Motorisation has dropped by 5%.

In most municipalities the level of motorisation has grown – most spectacularly in the Shire of Cardinia where it has jumped by 60%. (The big change in Cardinia came between 2001 and 2006 when the number of motor vehicles in Cardinia increased by 93% - 16,000 vehicles.)

In Frankston, Knox, Maribyrnong and Whittlesea the growth in motorisation has been between 7 - 9%.

In Yarra Ranges motorisation grew by 10%.

The Cities of Monash and Whitehorse have maintained the same level of motorisation over ten years.

Motorisation and population

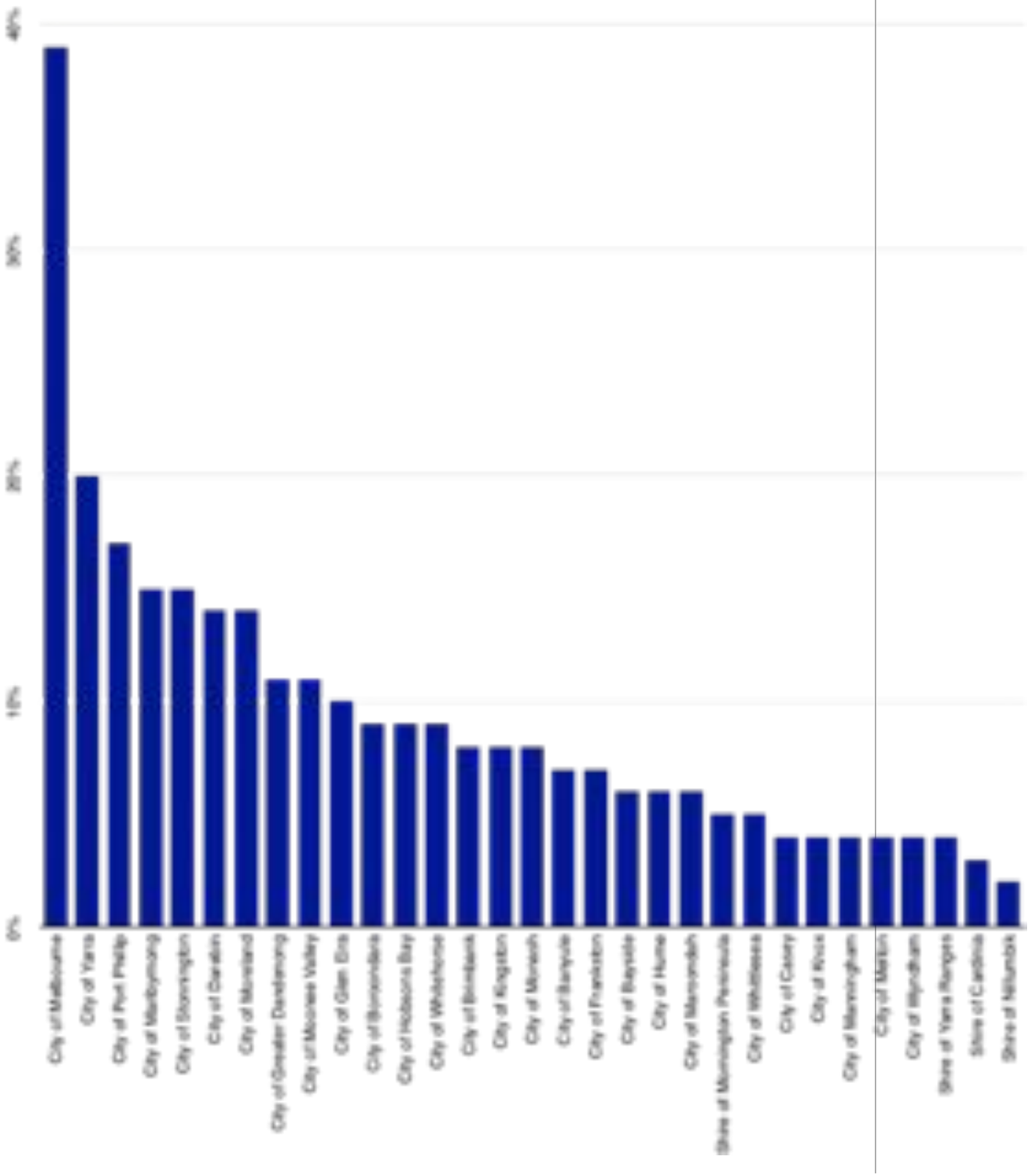
Motorisation reflects local conditions not population growth:

- The population in the City of Melbourne grew, but the motorisation rate went down.
- The Shire of Cardinia's population growth was less than in the City of Whittlesea, but the growth in motorisation in the east was more than eight times greater.
- The population growth in the Cities of Frankston, Maribyrnong and Monash over the period was similar – but the City of Monash was able to hold its motorisation rate.
- The population growth in the City of Knox over that period was almost half that of the City of Whitehorse, but the City of Knox was unable to hold its motorisation rate.

Chapter 4

Measure 3: Zero car households

Zero car households are the households without any car owners.



Proportion

The proportion of zero car households varies across the metropolitan area.

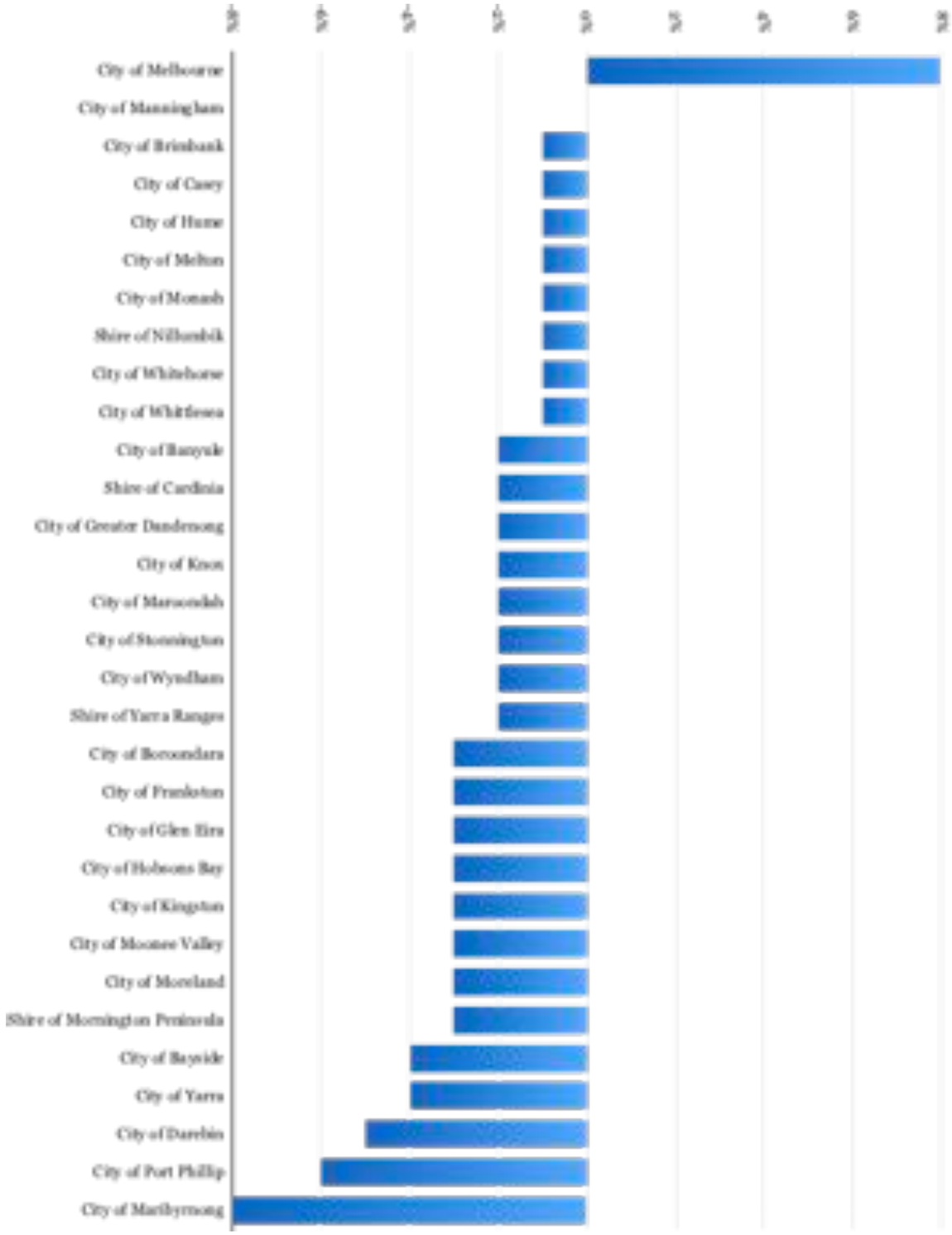
The dark blue chart shows the proportion of zero car households in each municipality.

High levels

In five municipalities zero car households are 15% or more of the total.

Nearly forty percent of the households in the City of Melbourne are zero car households. The Cities of Yarra (20%) and Port Phillip (17%) have substantial proportions.

Twenty one municipalities have fewer than 10% of zero car households. This group includes the Cities of Boroondara, Hobsons Bay and Whitehorse (9%) to the Shire of Nillumbik (2%).



Change in number

In most municipalities the number of zero car households is decreasing. The light blue chart shows the percentage change in the number of zero car households in each municipality.

Substantial decreases have occurred in many municipalities, in particular in the Cities of Bayside, Yarra, Darebin, Port Phillip and Maribyrnong. The exception is the City of Melbourne where the number of zero car households is growing.

Zero car households and motorisation

Zero car households are not the same as motorisation. The Shire of Cardinia has had a small decrease in the number of zero car households and a steep increase in motorisation.

Yarraville provides an interesting example of all three measures. In the City of Maribyrnong the motorisation rate has risen and the total resident vehicle fleet has also grown strongly. Yet, in the first decade of the century in Yarraville:

- The population grew
- Motorisation went down
- The motor vehicle fleet shrank.

Over this time 3 and 4 car households were replaced by 1 and 2-car households. However over the period, the number of zero car households in Yarraville fell in number and as a proportion.

CHAPTER 5

The dashboard

This section discusses the three measures presented in this booklet:

- The resident vehicle fleet
- Motorisation
- Zero car households

THREE INDICATORS

What is motorisation?

Motorisation is the ratio of cars-to-people.

Motorisation tells us how much we depend on cars for transport. When tracked over time, motorisation indicates whether that dependency is growing or reducing.

What is the resident vehicle fleet?

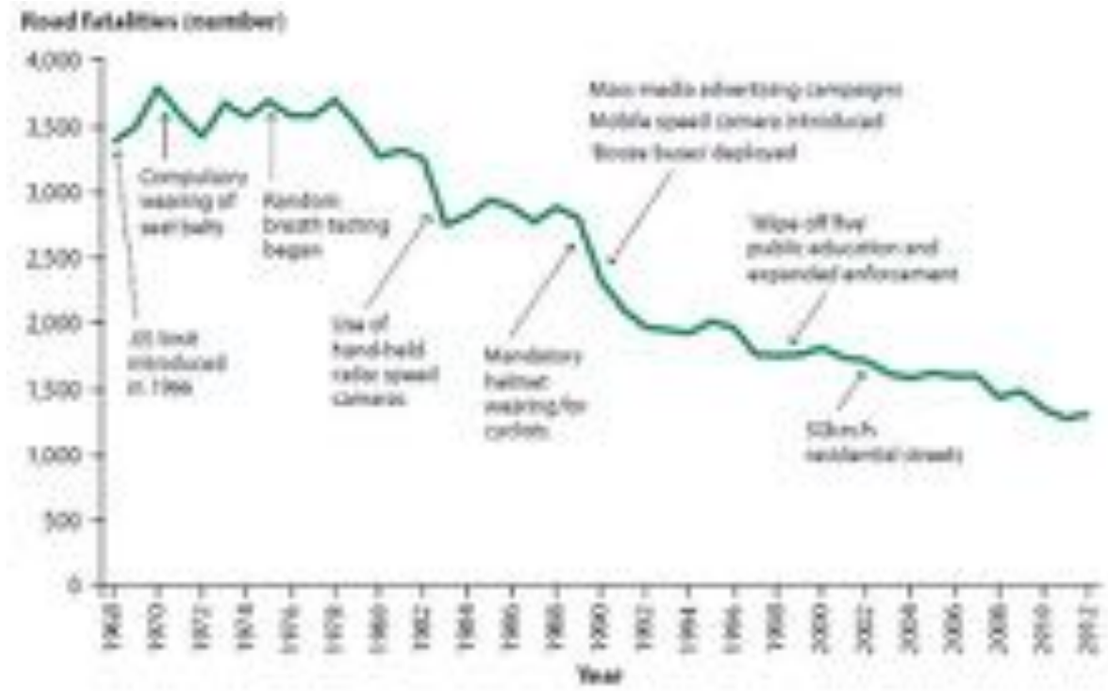
The resident vehicle fleet is the number of cars based in a municipality – the 'car population'.

When tracked over time, the resident vehicle fleet shows us whether the space taken up by motor vehicles based in the area is increasing or decreasing.

What are zero car households?

Zero car households are the households without any car owners.

The location of zero car households is an excellent indication that the alternative mobility options are good enough to support mobility without needing to own a car.



Tracking high level indicators

About

The motorisation rate is similar to other indicators such as litres of water per person per day, literacy, GDP or blood pressure.

These high-level indicators help us track the overall performance of complex, multi-factor systems over long periods time. They allow us to ask 'big questions'. An example is 'Are more young people completing school?'

High-level indicators have limitations. They don't describe how or why things are happening and they cover up exceptions. For example the overall school completion rates might be high, but, at the same time, the rate could be falling in economically disadvantaged communities.

High-level measures are most useful when debating, setting and working towards policy goals.

In the world of energy, the high-level measure 'renewable energy generation', allows us to debate and set a strategy that encompasses many complex areas including solar, wind and hydro power. The State government has set a target for this measure of 25 per cent by 2020 and 40 per cent by 2025.

This renewable energy target sends a signal that the government's broad aim is 'more'. The broad aim can be debated. People can put the case that the setting should be negative or neutral rather than positive.

The target performs a similar function. People can make the case that it is too low or too high.

The target allows progress towards the goal to be measured. If the goal is not being met, then steps can be taken to accelerate the process.

The best known of these high-level measures in the world of transport is 'the road toll'. Sweden's broad aim is zero. The target is 0 deaths by 2050. In Victoria our broad aim is 'fewer'. Our target is 'less than 200 deaths a year by 2020'.

When these high level indicators are in place, governments can launch initiatives that contribute to the desired goal.

This happens when progress towards the goal 'gets stuck'. 'Wipe off 5' was a recent intervention to keep the road toll going down.

In this way we can, with one measure, develop public awareness, set policy goals, decide investment priorities and measure performance.

Using motorisation to track car dependence

We have a certain level of car dependence. Some would say it is too high, some think it is about right and others would be happy to see it increase.

Unless we track motorisation we have no foundation for a discussion about the broad aim.

We have no target to debate. Should we be trying to keep motorisation where it is? If so, we need a measure of where it is. If we want to change the level of motorisation, then we need a target for that.

Are all the things that your Council is doing to influence car dependence having an impact? Or has the trend got 'stuck'? Are things going quietly and steadily in the wrong direction?

At the moment there is no way of knowing.

When we become familiar with motorisation we will be able to use it to answer these questions.

What motorisation is not

Motorisation is a measurement of ownership not use.

Motorisation does not describe car use. It is possible to have high ownership and low use. In 2014 the Policy Advisor Direc-

torate of Traffic and Transport City of Amsterdam reported that 54% of Amsterdam residents were afraid to use their car, because they would lose 'their space' at the kerb. For this group motorisation is high, but use is low.

The best measure of use is 'vehicle kilometres travelled' (VKT). Like motorisation, average VKT varies from municipality to municipality from the Australian average of around 13,000 km a year down to less than 4,000km a year. Someone who pays for a vehicle that travels less than 100km a week may benefit from alternatives to car ownership. Tracking this indicator would help Councils and residents, but it is not the subject of this booklet.

Motorisation does not describe mobility.

Motorisation is not an indicator of mobility. It is possible to have high mobility without owning a car. For example it is unlikely that residents in the City of Melbourne, which has the lowest metropolitan motorisation ratio, have lower mobility than people in the Shire of Nillumbik which has the highest.

Nor does high motorisation necessarily mean high mobility. A car owner in a highly motorised, densely-populated place is likely to spend a long time in congestion. This loss of time reduces their mobility. We must also remember the people who cannot use a car. In a highly motorised society, their mobility choices are likely to be compromised.

Tracking the residential vehicle fleet

> CAR SHARE POLICY 2016 - 2021
>
> 5.2.1 Expansion targets for car share are based upon reducing the level of private vehicle ownership within the municipality. Current trends in growth are that if not addressed a further 2,904 vehicles will added to the already 51,927 privately owned vehicles located within the City of Port Phillip between 2016 and 2021.
>
> 5.2.2 The target of 330 car share vehicles by 2021 is intended to stabilise car ownership levels at 2015 levels (52,000 privately owned vehicles).
>
> http://www.portphillip.vic.gov.au/

Councils track a number of measures related to 'space' including the number of children, the area of open space, and the number of registered dogs. These measures tell us whether we need more family day care places, more parks and more dog off leash areas.

It is surprising that we do not track the resident vehicle fleet.

Tracking the residential vehicle fleet gives us an idea how much space cars are taking up. If the fleet is forecast to increase, we can decide whether we want to accommodate it or prevent the increase.

In a nationally significant move this year the City of Port Phillip passed a car

share policy that aims to ‘stabilise’ the size of the resident vehicle fleet.

Tracking the number of zero car households

The number, proportion and trend of zero car households is a useful and positive measure.

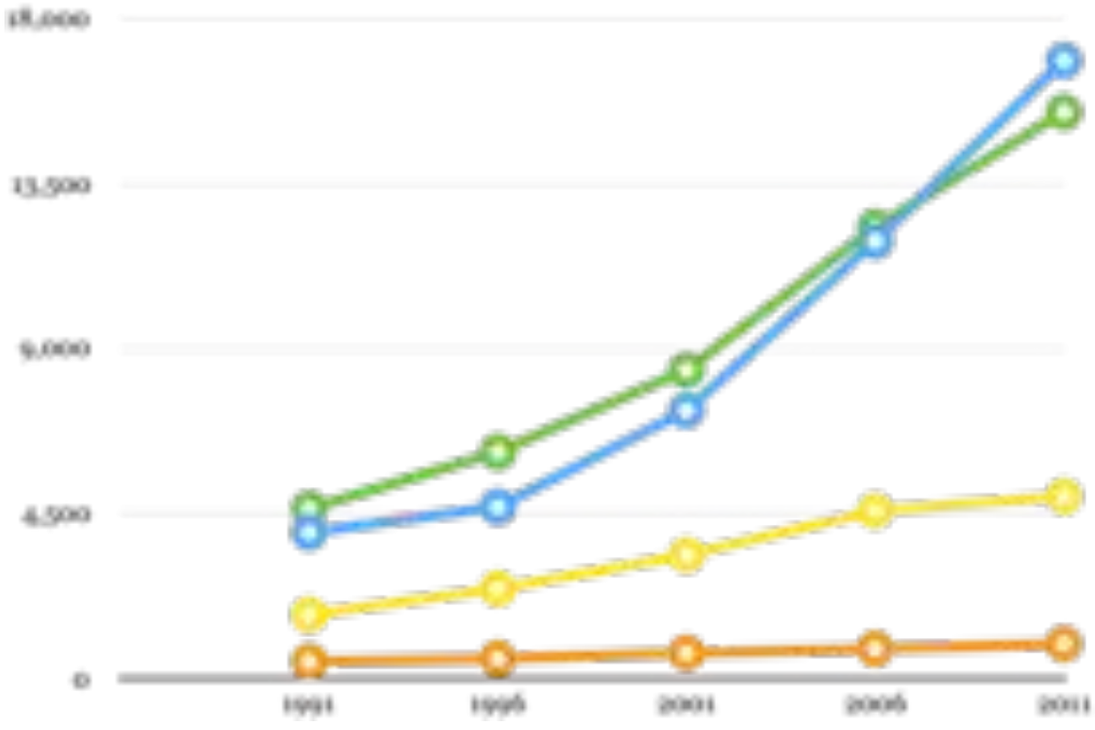
It tells us how many people have been able to avoid forced car ownership and can support their mobility without owning a car. The chart below shows the number of zero car households in the City of Melbourne (blue) against the 1 (green), 2 (yellow) and 3 or more car households (orange).

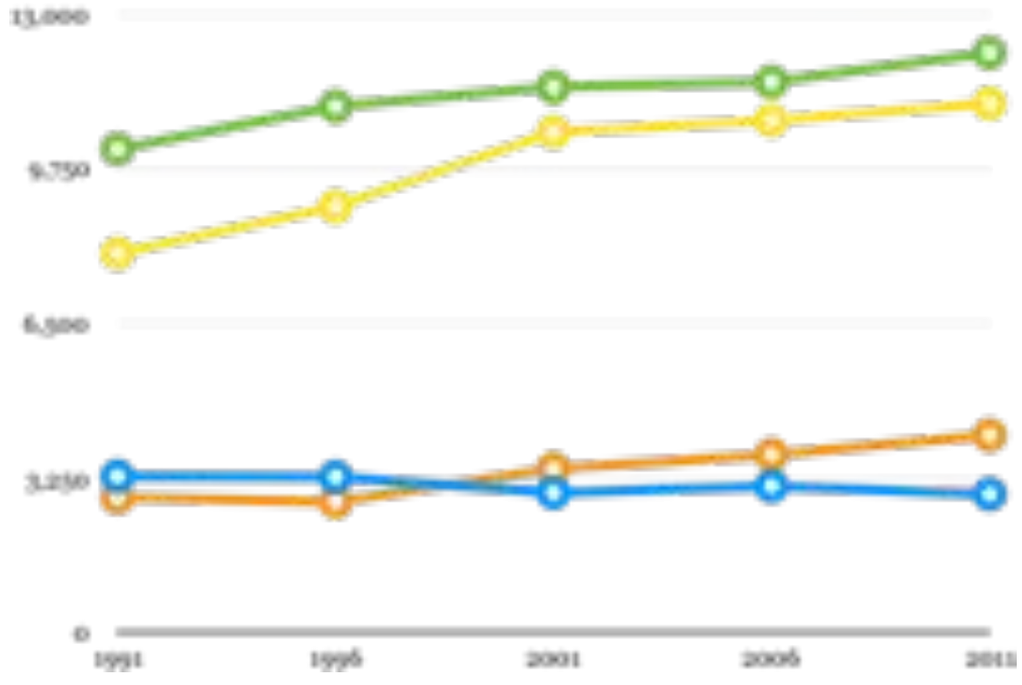
Some zero car households are low income households. Zero car ownership is a positive sign for this group. It means that people can use walking and public transport to achieve an acceptable level of mobility and avoid the additional expense of owning and running a car. Being forced into car ownership may improve your mobility but reduces the money available for other spending.

Some of the zero car households have an income high enough to afford to run a car, but chose not to. This is also a positive sign, showing that alternatives are strong in that area.

As a comparison to the City of Melbourne, the car ownership by household is shown for the City of Hobsons Bay below.

The 2-car households (yellow) are growing as fast as the 1-car households (green). The zero car households (blue) have fallen from 13% to 10% of households over the period.





Chapter 6

Tables

The following tables are behind the charts in the booklet.

(The forecasts for the City of Greater Dandenong are to 2024. All others are to 2026.)

Resident vehicle fleet 2011

COUNCIL	VEHICLES	COUNCIL	VEHICLES
City of Casey	145,252	City of Darebin	68,089
City of Boroondara	105,178	City of Greater Dandenong	66,634
City of Monash	96,471	City of Maroondah	64,148
City of Brimbank	95,197	City of Melton	64,148
Shire of Yarra Ranges	94,393	City of Moonee Valley	59,909
City of Knox	94,362	City of Bayside	54,994
Shire of Mornington Peninsula	91,087	City of Stonnington	51,088
City of Hume	91,073	City of Port Phillip	48,013
City of Wyndham	89,936	City of Hobsons Bay	46,938
City of Whittlesea	88,534	Shire of Cardinia	46,746
City of Whitehorse	85,895	Shire of Nillumbik	39,586
City of Kingston	83,943	City of Yarra	34,084
City of Frankston	76,171	City of Maribyrnong	34,004
City of Moreland	73,589	City of Melbourne	28,173
City of Glen Eira	72,770		
City of Banyule	71,041		
City of Manningham	70,858		

Estimated increase (decrease) in resident vehicle fleet (2011-2026.

COUNCIL	VEHICLES	COUNCIL	VEHICLES
City of Wyndham	83,836	Shire of Mornington Peninsula	15,450
City of Casey	71,398	City of Brimbank	15,090
City of Whittlesea	69,092	City of Whitehorse	15,020
City of Hume	64,939	Shire of Yarra Ranges	15,020
City of Melton	59,666	City of Banyule	13,419
Shire of Cardinia	40,269	City of Yarra	13,386
City of Melbourne	34,073	City of Stonnington	13,337
City of Moreland	27,163	City of Hobsons Bay	13,087
City of Maribyrnong	22,450	City of Bayside	12,670
City of Greater Dandenong*	21,370	City of Manningham	12,416
City of Darebin	18,738	City of Maroondah	12,186
City of Glen Eira	18,727	City of Frankston	11,845
City of Boroondara	18,264	City of Port Phillip	10,684
City of Kingston	18,180	Shire of Nillumbik	2,653
City of Moonee Valley	16,802		
City of Monash	16,067		
City of Knox	15,616		

Estimated percentage increase (decrease) in resident vehicle fleet 2011 - 2026

COUNCIL	INCREASE	COUNCIL	INCREASE
City of Melbourne	121%	City of Kingston	22%
City of Melton	93%	City of Port Phillip	22%
City of Wyndham	93%	City of Banyule	19%
Shire of Cardinia	86%	City of Maroondah	19%
City of Whittlesea	78%	City of Manningham	18%
City of Hume	71%	City of Boroondara	17%
City of Maribyrnong	66%	City of Knox	17%
City of Casey	49%	City of Monash	17%
City of Yarra	39%	Shire of Mornington Peninsula	17%
City of Moreland	37%	City of Whitehorse	17%
City of Greater Dandenong*	32%	City of Brimbank	16%
City of Darebin	28%	City of Frankston	16%
City of Hobsons Bay	28%	Shire of Yarra Ranges	16%
City of Moonee Valley	28%	Shire of Nillumbik	7%
City of Glen Eira	26%		
City of Stonnington	26%		
City of Bayside	23%		

Estimated total residential vehicle fleet 2026

COUNCIL	VEHICLES	COUNCIL	VEHICLES
Shire of Nillumbik	42,239	City of Moreland	100,752
City of Yarra	47,470	City of Whitehorse	100,915
City of Maribyrnong	56,454	City of Kingston	102,123
City of Port Phillip	58,697	Shire of Mornington Peninsula	106,537
City of Hobsons Bay	60,025	Shire of Yarra Ranges	109,413
City of Melbourne	62,246	City of Knox	109,978
City of Stonnington	64,425	City of Brimbank	110,287
City of Bayside	67,664	City of Monash	112,538
City of Maroondah	76,334	City of Boroondara	123,442
City of Moonee Valley	76,711	City of Melton	123,814
City of Manningham	83,274	City of Hume	156,012
City of Banyule	84,460	City of Whittlesea	157,626
City of Darebin	86,827	City of Wyndham	173,772
Shire of Cardinia	87,015	City of Casey	216,650
City of Greater Dandenong*	88,004		
City of Frankston	88,016		
City of Glen Eira	91,497		

Number of cars on a tennis court - 2011 resident vehicle fleet

COUNCIL	VEHICLES	COUNCIL	VEHICLES
City of Port Phillip	0.59	City of Brimbank	0.20
City of Stonnington	0.51	City of Hobsons Bay	0.19
City of Glen Eira	0.50	City of Manningham	0.16
City of Boroondara	0.46	City of Frankston	0.15
City of Yarra	0.44	City of Greater Dandenong	0.13
City of Bayside	0.40	City of Casey	0.09
City of Moreland	0.38	City of Hume	0.05
City of Moonee Valley	0.35	City of Whittlesea	0.05
City of Whitehorse	0.35	City of Wyndham	0.04
City of Darebin	0.33	Shire of Mornington Peninsula	0.03
City of Monash	0.31	City of Melton	0.03
City of Banyule	0.29	Shire of Nillumbik	0.02
City of Maribyrnong	0.29	Shire of Yarra Ranges	0.01
City of Maroondah	0.27	Shire of Cardinia	0.01
City of Kingston	0.24		
City of Knox	0.22		
City of Melbourne	0.20		

Motorisation rate 2011

COUNCIL	RATE	COUNCIL	RATE
City of Melbourne	32	City of Whittlesea	57
City of Yarra	46	City of Casey	58
City of Maribyrnong	47	City of Kingston	59
City of Greater Dandenong	49	City of Melton	59
City of Darebin	50	City of Bayside	60
City of Moreland	50	City of Banyule	60
City of Brimbank	52	City of Frankston	60
City of Port Phillip	53	City of Maroondah	62
City of Hume	54	City of Knox	63
City of Stonnington	55	Shire of Mornington Peninsula	63
City of Glen Eira	56	Shire of Cardinia	63
City of Moonee Valley	56	City of Manningham	64
City of Wyndham	56	Shire of Yarra Ranges	65
City of Hobsons Bay	56	Shire of Nillumbik	66
City of Monash	57		
City of Whitehorse	57		
City of Boroondara	57		

Increase (decrease) in motorisation 2001 - 2011

COUNCIL	CHANGE	COUNCIL	CHANGE
City of Melbourne	-2	City of Hobsons Bay	3
City of Monash	0	City of Casey	3
City of Whitehorse	0	City of Kingston	3
City of Yarra	1	City of Melton	3
City of Greater Dandenong	1	City of Banyule	3
City of Darebin	1	City of Manningham	3
City of Moreland	1	City of Whittlesea	4
City of Stonnington	1	City of Frankston	4
City of Glen Eira	1	City of Maroondah	4
City of Brimbank	2	City of Knox	5
City of Moonee Valley	2	Shire of Mornington Peninsula	5
City of Wyndham	2	Shire of Yarra Ranges	5
City of Boroondara	2	Shire of Nillumbik	5
City of Bayside	2	Shire of Cardinia	24
City of Maribyrnong	3		
City of Port Phillip	3		
City of Hume	3		

Proportion of zero car households 2011

COUNCIL	PROPORTION	COUNCIL	PROPORTION
City of Melbourne	39%	City of Frankston	7%
City of Yarra	20%	City of Bayside	6%
City of Port Phillip	17%	City of Hume	6%
City of Maribyrnong	15%	City of Maroondah	6%
City of Stonnington	15%	Shire of Mornington Peninsula	5%
City of Darebin	14%	City of Whittlesea	5%
City of Moreland	14%	City of Casey	4%
City of Greater Dandenong	11%	City of Knox	4%
City of Moonee Valley	11%	City of Manningham	4%
City of Glen Eira	10%	City of Melton	4%
City of Boroondara	9%	City of Wyndham	4%
City of Hobsons Bay	9%	Shire of Yarra Ranges	4%
City of Whitehorse	9%	Shire of Cardinia	3%
City of Brimbank	8%	Shire of Nillumbik	2%
City of Kingston	8%		
City of Monash	8%		
City of Banyule	7%		

Increase (decrease) in zero car households 1996 - 2011

COUNCIL	CHANGE	COUNCIL	CHANGE
City of Melbourne	8%	Shire of Yarra Ranges	-2%
City of Manningham	0%	City of Boroondara	-3%
City of Brimbank	-1%	City of Frankston	-3%
City of Casey	-1%	City of Glen Eira	-3%
City of Hume	-1%	City of Hobsons Bay	-3%
City of Melton	-1%	City of Kingston	-3%
City of Monash	-1%	City of Moonee Valley	-3%
Shire of Nillumbik	-1%	City of Moreland	-3%
City of Whitehorse	-1%	Shire of Mornington Peninsula	-3%
City of Whittlesea	-1%	City of Bayside	-4%
City of Banyule	-2%	City of Yarra	-4%
Shire of Cardinia	-2%	City of Darebin	-5%
City of Greater Dandenong	-2%	City of Port Phillip	-6%
City of Knox	-2%	City of Maribyrnong	-8%
City of Maroondah	-2%		
City of Stonnington	-2%		
City of Wyndham	-2%		

Chapter 7

Under the bonnet

This chapter describes the limitations of the data and the forecasts.

Deriving the motorisation ratio

Motorisation is derived by comparing the total population with the total number of vehicles.

Population

One side of the ratio is people. Generally the ratio uses the whole population which includes children without a drivers licence.

Vehicles

The other side of the ratio is vehicles. This may include 'light rigid trucks' and buses or may only count passenger vehicles.

The ratio

The motorisation ratio (or rate) will change if the definition of people or vehicle is changed.

In January 2016 the population of Australia was 24m and there were 18m vehicles in the fleet. The motorisation rate is therefore 75 vehicles for every 100 people. However if only passenger vehicles are considered, then the motorisation rate is 58. If the ratio were calculated using only licenced drivers, it would be different again.

Limitations of the data

The ratios used in this publication are based on self reported car ownership in the ABS census. This number will be similar to 'passenger vehicles' reported by the ABS.

The Census data has limitations. Around five per cent of households do not report car ownership in the Census. This is adequate for the ratio and the forecasts because the proportion of 'non-reporters' and the inaccuracies of the 'reporters' are broadly consistent from Census to Census.

The car ownership number could be derived from VicRoads registration data.

This data also would also have limitations.

- It would not include unregistered vehicles. (Around 50,000 people are booked for driving an unregistered vehicle each year (The Age 19 May 2014)).
- The home base of the vehicle would also be uncertain as people do not update their registration to align it with their residence (intentionally or unintentionally).

Limitations of the forecast

The resident vehicle forecasts are based on ABS census data for the past and population forecasts published by *id - the population experts*.

To understand the number of vehicles in the future resident vehicle fleet, it is assumed that the motorisation rate - the number of vehicles per person - will remain the same as it was in the 2011 Census.

The forecast is likely to be inaccurate as it assumes that the 2011 motorisation rate does not change over the forecast period. In all but one municipality the motorisation rate has been growing over the last ten years.

Cars per tennis court

The cars-per-tennis court ratio was derived by taking the area of the municipalities in square kilometres and dividing it by 260 square metres (the area of a tennis court). This number was then divided by the number of resident vehicles in the 2011 fleet.

Hyperlink to image sources

Aerial photos - NearMap

Melbourne Reservoirs

Car on tennis court

Tennis court

EU motorisation data:

Box

Website with slider

Map

Barigo weather station with barometer, hygrometer and thermometer.

Road toll trend

Kandi electric share car stacker

The toy car rack was for sale on Ebay

EH Holden 'red' motor

References

I*mproving mobility and public space, Parking policy in Amsterdam*

Wiard Kuné Policy Advisor Directorate of Traffic and Transport City of Amsterdam 2014

Format

The booklet is available as an ebook from the iBooks Store.

This platform has advantages:

- The booklet can be made available in the iBooks Store
- The booklet can be read on an iPad
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This is version 1.0 October 2016