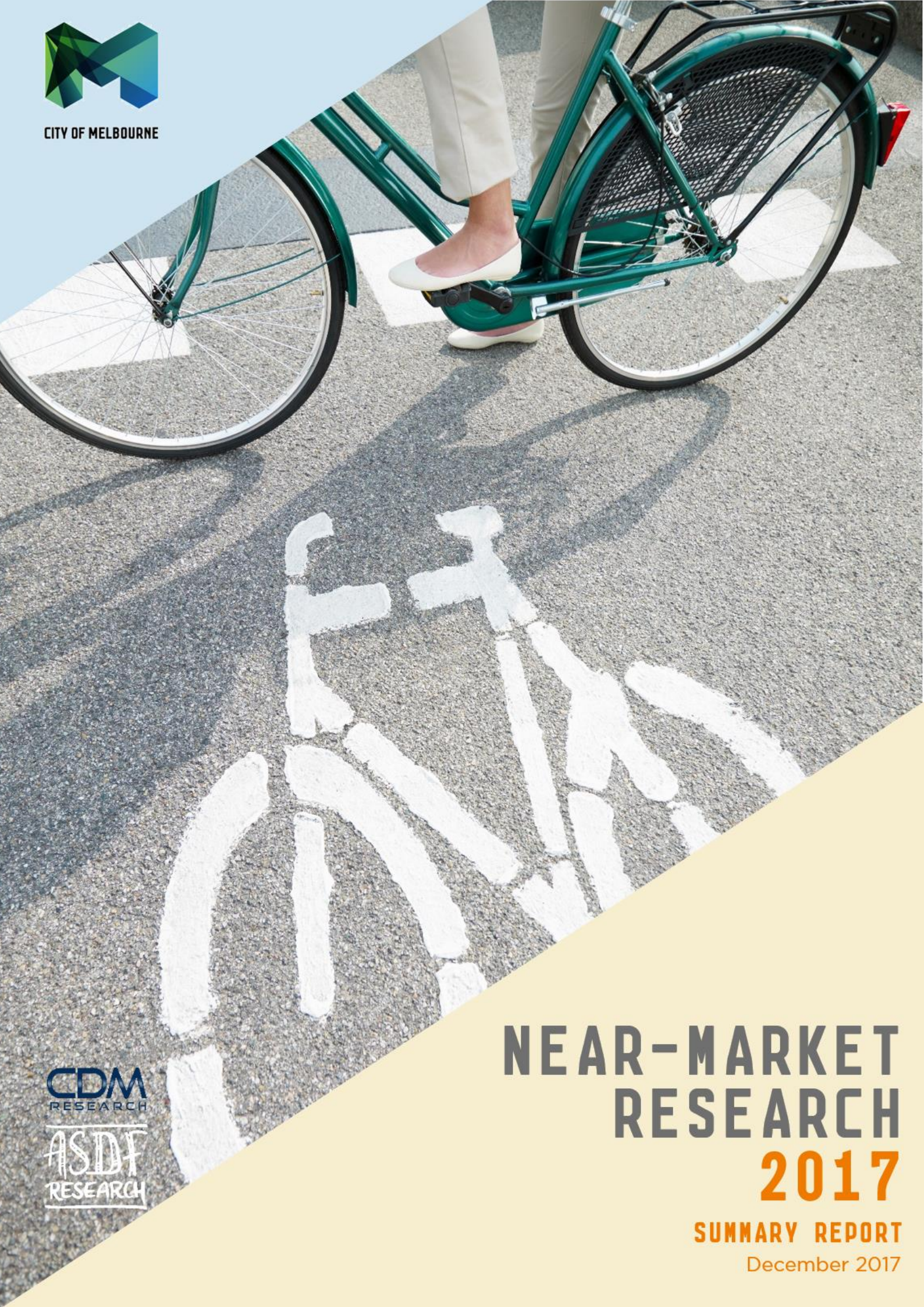
CITY OF MELBOURNE



# NEAR-MARKET RESEARCH 2017

## SUMMARY REPORT

December 2017

CDM RESEARCH

ASDF RESEARCH

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# KEY FINDINGS

1. City of Melbourne undertook social research to help inform the design of cycling infrastructure to encourage people to cycle to, from, and around the city. For this research a particular segment of the population was targeted to understand the behaviours and confidence of potential riders, herein referred to as the *near-market,* and defined as follows:

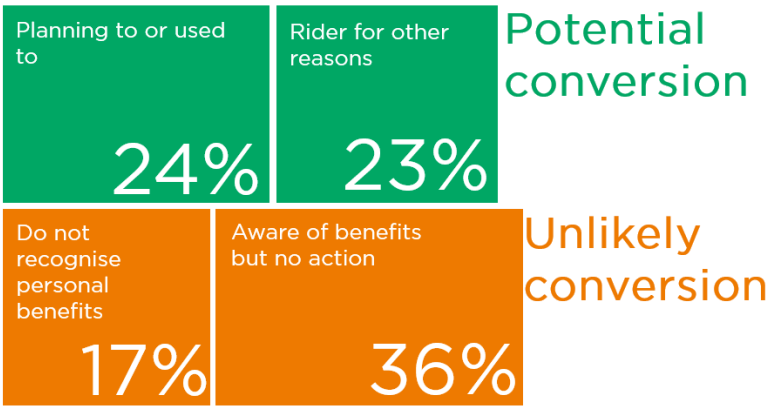
| Survey participants must: | Individuals not included if they: |
|---|---|
| Live in City of Melbourne, or a bordering LGA | Cycled to work/study in the city in the last year |
| Travel to the City of Melbourne for work and/or study at least once a week | Can't ride a bike due to inability, health, or a need to carry equipment for work |

2. A variety of methods were used to find respondents for this research, with 859 people qualifying as *near-market* completing the online survey.
3. Findings suggest that almost half of the *near-market* likely have the necessary equipment to cycle commute; 43% said they own a bike and a further 4% said they have access to a bike that they can use.
4. The majority of the *near-market* (77%) considered themselves to be cautious riders; that is, they prefer off-road paths or low stress roads and are willing to take a longer route to get to their destination. Only 8% considered themselves confident (prefer most direct route regardless of traffic conditions).
5. A range of other characteristics of the *near-market* were identified, and can assist in tailoring programs and communications to encourage cycling uptake:

| | |
|---|---|
| | Traveling to the city in a private car (driver or passenger) was more common amongst those who travel for work (53%) than study (37%). All of those who travelled for study said they had used public transport in the week prior to the interview (the most common mode being tram), compared to 85% of those who had travelled for work. |
| | The average travel time to work or study (one way) was 30 minutes. This varies by LGA with Moonee Valley and Moreland residents registering the highest average trip times to work or study. |
| | Almost half of the near-market (48%) had ridden a bicycle for non-commuting purposes in the year prior to the interview. The most common reasons for riding were for fun / leisure or exercise. |

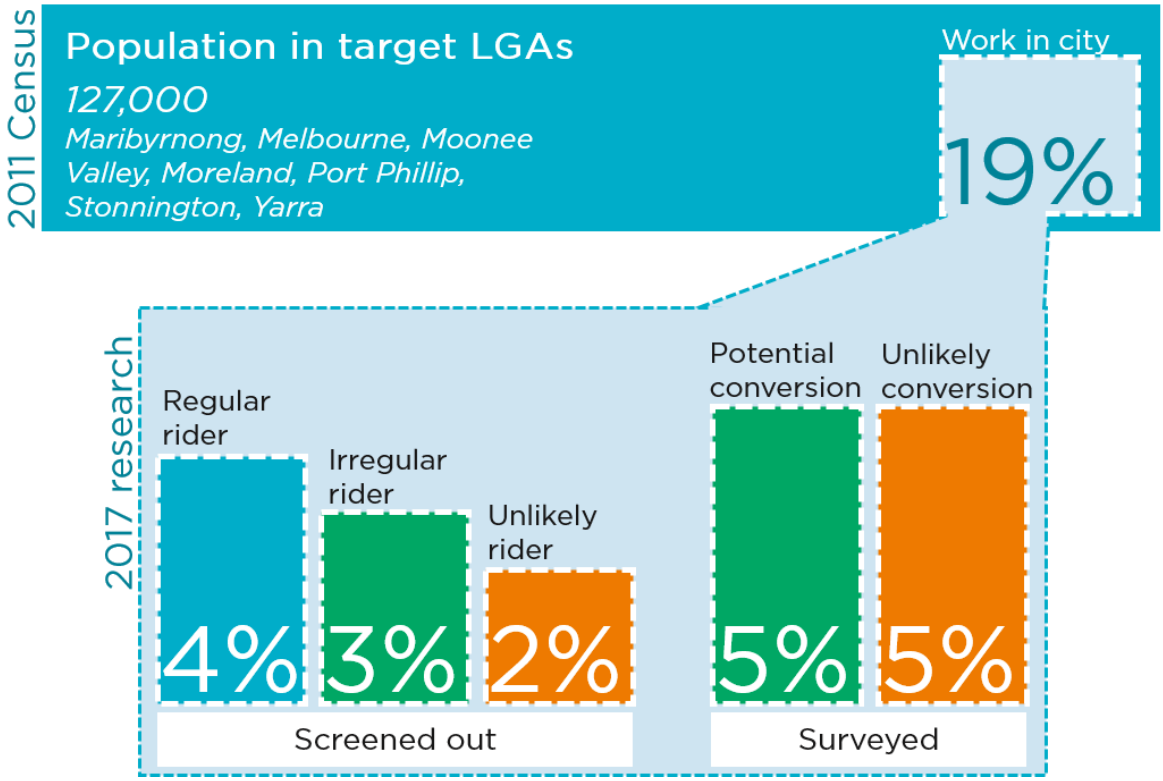
6. If road and weather conditions were favourable, the near-market would be willing to cycle an average of 32 minutes to get to work or study in the City (one way). Half of the acceptable cycling durations stated were longer than current travel times, by an average of 15 minutes.

7. A question was included in the survey to help understand the potential for taking up cycling to commute. Respondents were asked to self-report their alignment with a range of statements about riding a bicycle; covering recognition of benefits, riding behaviour, and stage of action. These categories were then grouped to assist in understanding the proportion of the *near-market* who may be easier to convert to riding a bicycle to commute:



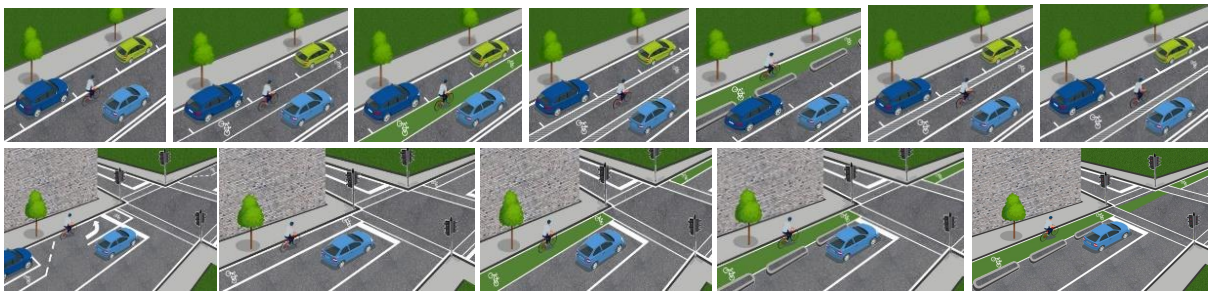

8. Analysis of Census data and the research findings suggests that there are two groups of people for whom an increase or commencement of riding to commute may be feasible, totalling 8% of the overall population of bordering LGAs:
   1. Those who currently ride on an irregular basis;
   2. Those who fall into one of the potential conversion segments (ride for other reasons, or are aware of the benefits and have taken action towards riding).

The following diagram shows the estimated proportion of the **overall population** for each of these groups.



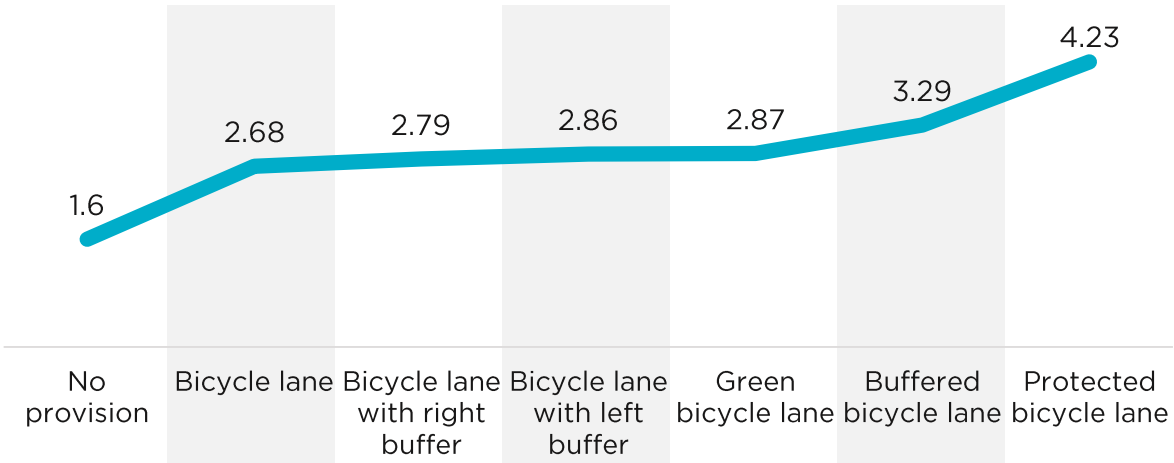

*Note: the research findings include those who travel to the city for study, which is not captured in the census data.*

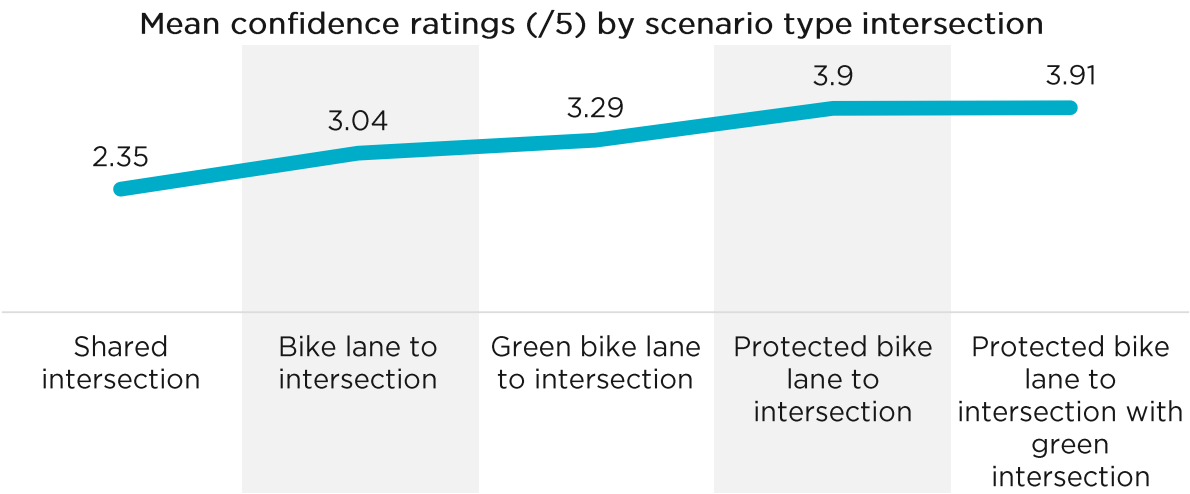
9. As well as estimating the scale of the near market, another purpose of this research was to determine what types of infrastructure would be likely to encourage this group to ride for commuting.



10. When asked to rate their confidence cycling in these different scenarios (where 1 is not at all confident and 5 is extremely confident), the findings were similar for both mid-section and intersection scenarios; that is, the higher the level of separation from motor traffic the more confident were respondents. Providing a standard line-marked bicycle lane provided a substantial increase in confidence over providing nothing for riders. However, further variations in the marking used (green surface, painted buffers etc.) made little difference to confidence, although providing buffers on both the parking and traffic side of a bicycle lane provided some incremental improvement. It is only when a physically protected bicycle lane is provided that a marked improvement in confidence occurs.

Mean confidence ratings (/5) by scenario type mid-section






11. Physical protection from cars is likely to result in a marked improvement in cyclist confidence, and by implication increase cycling participation, although this infrastructure is likely to be needed beyond the City of Melbourne's boundaries for marked increases in cycle commuting to occur.

# INTRODUCTION

## Research Purpose

The City of Melbourne's Bicycle Plan 2016-2020 has a goal of delivering an interconnected network for people of all ages and abilities to ride bikes. Moreover, the strategy has the target of 7% for all trips to, within, and from the City to be made by bike by 2020, increasing to 10% by 2030. Achieving these targets will require attracting a much broader audience to cycling than is currently the case.

The first step of this project is to develop an understanding of the potential needs of those who might be persuaded to cycle within, to, and from the city (at all/more often) for work or study given the right infrastructure; we refer to this as the 'near-market' in this report. The present research was focussed on identifying what types of bicycle lane infrastructure may be required to encourage this near-market to ride for work or study related transport trips in the City of Melbourne.

## Background

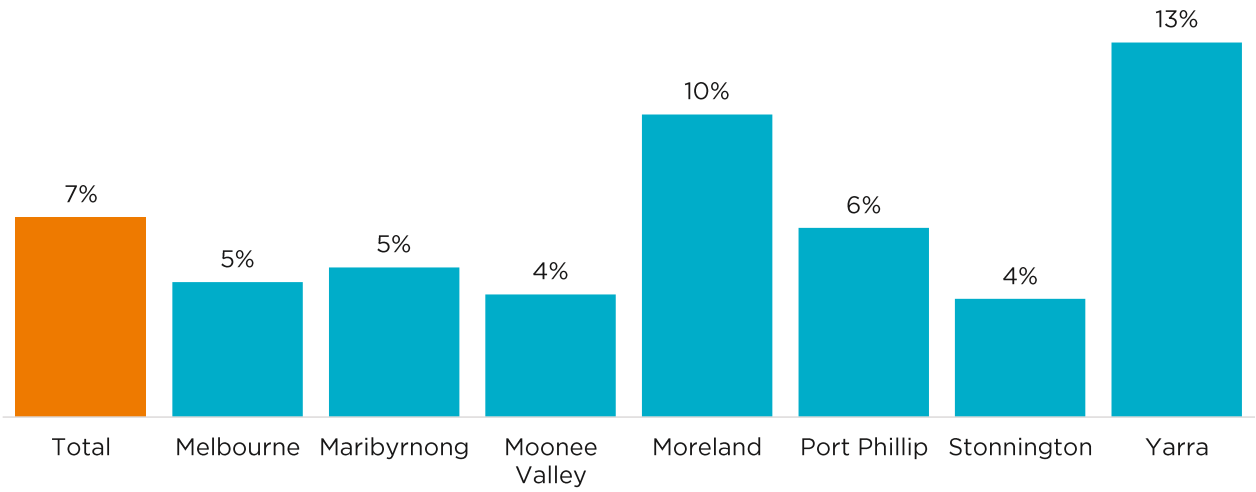
Achieving the cycling mode share target will require collaboration with adjoining municipalities and VicRoads to create the cycling networks that facilitate riding from these municipalities.

According to the 2011 ABS Census approximately 7% of employed persons who live in a neighbouring Local Government Area and who work in the City of Melbourne currently cycle to work (as a sole mode).

The rate of cycling to work is relatively low amongst those who live in the City of Melbourne due to 48% indicating they walk to work.

This data does not incorporate non-work related cycle trips.

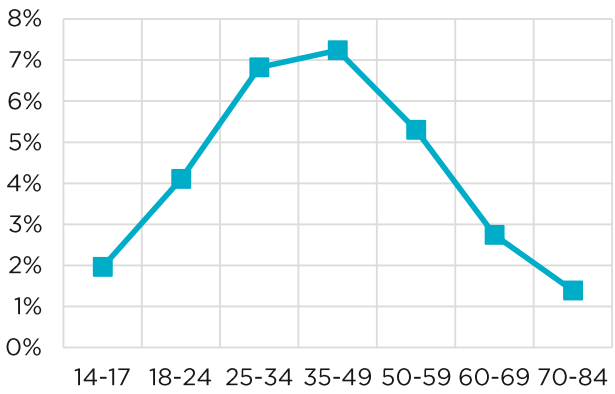
Figure 1: Percentage of persons employed in the City of Melbourne who ride to work (sole mode) by LGA



When exploring 2011 Census data, those who live in this defined region (7 LGAs shown in figure 1) who ride to work (sole mode) in the city show the following demographic traits:

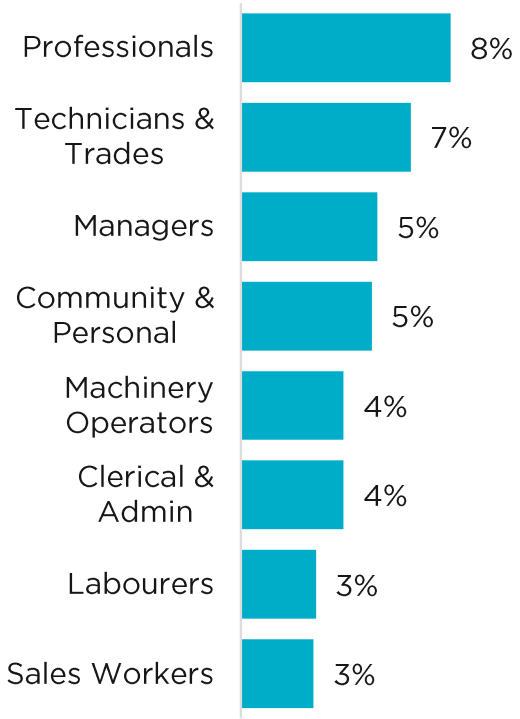
- Higher incidence of indicating they cycle to work amongst males (8%, 4% females);
- Higher incidence of indicating they cycle to work amongst 25-49 year olds;

Figure 2: Percentage of employed persons from target region who ride to work (sole mode) in the Melbourne LGA by age




- The incidence of riding to work is higher amongst those in the professional and 'technicians & trades' occupations;

Figure 3: Percentage of employed persons from target region who ride to work (sole mode) in the Melbourne LGA by occupation




- Riding to work is more common amongst those who work full time (7%, 5% part time workers).

This data suggests that the most common cycling commuters are 25-49 year old male, full-time employees in professional occupations.

## Methodology

The objective of this research was to understand under what conditions those travelling to the City of Melbourne regularly to work or study (hereafter referred to as "commuters") may consider riding a bicycle. Those already riding to commute to the city, at least occasionally, were explicitly outside the scope of this research.

For this study an online survey was distributed through a number of different channels to capture people who live within the defined catchment area and travel to work or study in the city.

An online research methodology was deemed most appropriate for this project for a number of reasons:

- It was necessary to show imagery of different cycle lane scenarios;
- The target market for the research is spread over a geographically large area;
- The screening parameters to qualify to participate in the research are very specific; and
- It represented a cost effective and timely means to survey the target market.

Upon making enquiries with online sample providers (panels) many indicated that they would not be able to achieve sufficient sample given the screening parameters (target sample of n=800). Therefore a multi-channel distribution methodology was employed including two panels, direct recruitment, and distribution through large employers to achieve this n=800+ sample.

### Recruitment parameters

These parameters helped ensure that we researched those who were not currently cycle commuters but who potentially could be if circumstances were appropriate.

- ➔ Travel to the City (Melbourne CBD, including Docklands, South Melbourne and North Melbourne) for work or study at least **once a week**;
- ➔ **Not ridden a bike** on this journey to work/study in the **7 days prior** to interview (regular rider).
- ➔ **Not ridden a bike** to commute to the city for work or study **within a year prior** to interview (irregular rider).
- ➔ Not faced any of the following barriers to riding to the city for work/study:
  - Carrying equipment for work that requires a motor vehicle;
  - Health condition that precludes riding;
  - Doesn't know how to ride a bike; or
  - Lives too close to work or education to ride.
- ➔ **Live too far from the city** for riding to be feasible, such that only those resident in suburbs within the following local government areas were considered:
  - City of Melbourne
  - City of Maribyrnong
  - City of Moonee Valley
  - City of Moreland
  - City of Port Phillip
  - City of Stonington
  - City of Yarra

## Distribution

Distribution included two online research panels, direct recruitment, and approaching employees of large employers in the city.

Figure 4: Distribution method summary

| Distribution | Sample | Dates | Notes on the sample quality |
|---|---|---|---|
| Direct recruitment | n=86 | 2-26 June | A professional research recruiter was contracted to recruit 100 individuals who met the recruitment parameters.<br>Due to discrepancies between answers provided in the recruitment process and the survey, only 86 of these 100 respondents were selected for inclusion in the sample. |
| Online panel 1 | n=91 | 28 June – 2 July | Survey Sampling International (SSI) panel. This panel had a higher incidence of younger respondents (49% 25-49) than panel 2 (18%) and therefore provided a sample more representative of the broader population. |
| Online panel 2 | n=550 | 5-21 July | KANTAR panel (Qantas frequent flyers). This panel had a higher incidence of 35-59 year olds (70%) than panel 1 (41%). |
| Employers | n=131 | 20 July – 16 August | This survey was launched after the panel surveys were completed to ensure it wouldn't reduce the success rate for the panels. A list of the 10 largest employers in the City of Melbourne was provided by Council. These employers were contacted and invited to distribute the survey, with all but two distributing the link. |

## Notes on analysis

When referring to 'traveling to the city' the term 'city' refers to City of Melbourne - covering the Melbourne CBD, Docklands, North Melbourne, Carlton, East Melbourne, Kensington, Parkville and Southbank.

Only statistically significant differences have been noted in the analysis text.

## Glossary of key terms

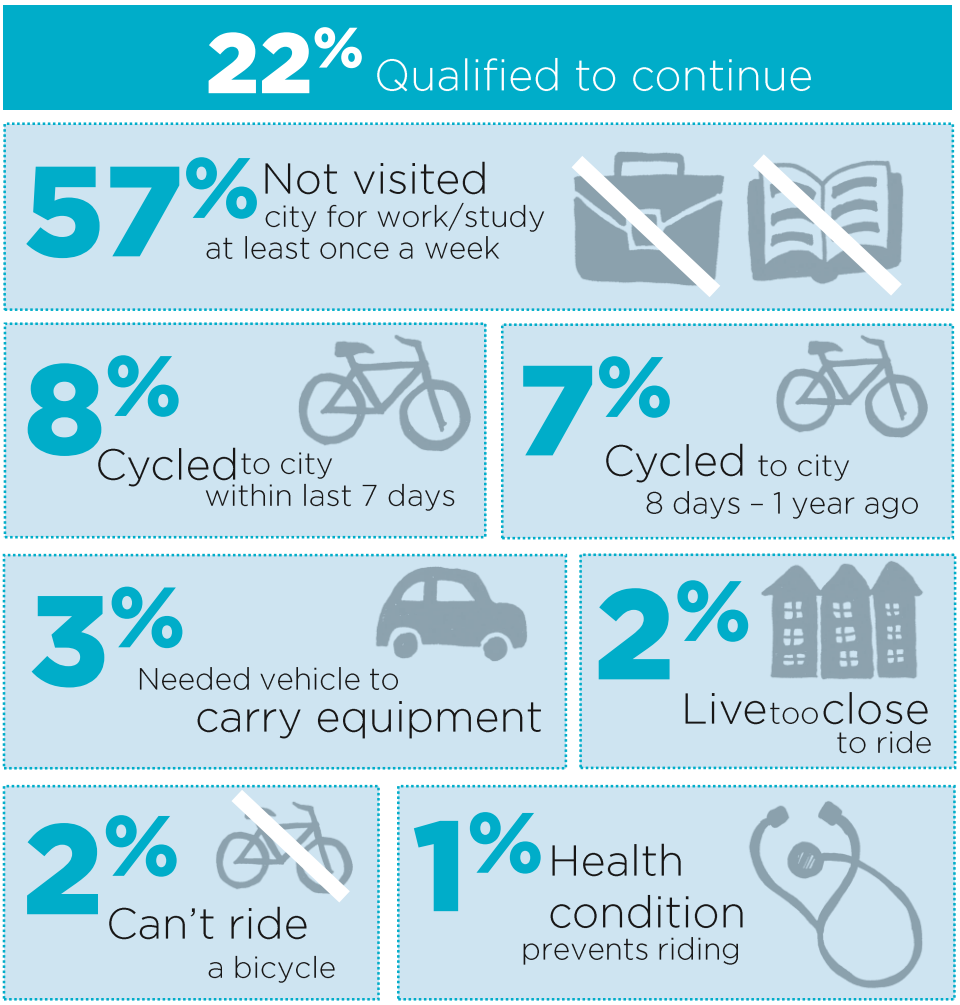
| | |
|---|---|
| ABS | Australian Bureau of Statistics |
| CBD | Central Business District (Melbourne) |
| LGA | Local Government Area |
| n= | Number of people who answered the question (sample base) |

## Near-market profile

To assist in understanding the potential size of the near-market, an analysis was conducted of those who were screened out of the **online panel surveys**. This provides us with an understanding of the incidence of potential cyclist commuters amongst those visiting the city for work or study, and the variables which disqualify people from potentially riding.

In both online panel surveys, invitations were sent to panel members who lived within the defined suburb list (see Appendix 4). Of those within this target area, 57% of all survey attempts screened out due to not working or studying in Melbourne City at least once a week, 15% were disqualified because they had ridden in the year prior to interview, and 6% had further reasons for not qualifying for near-market (can't ride, live to close, health condition or need to carry equipment: includes multiple responses). This leaves 22% of the population living in the bordering LGAs who qualify as near-market.

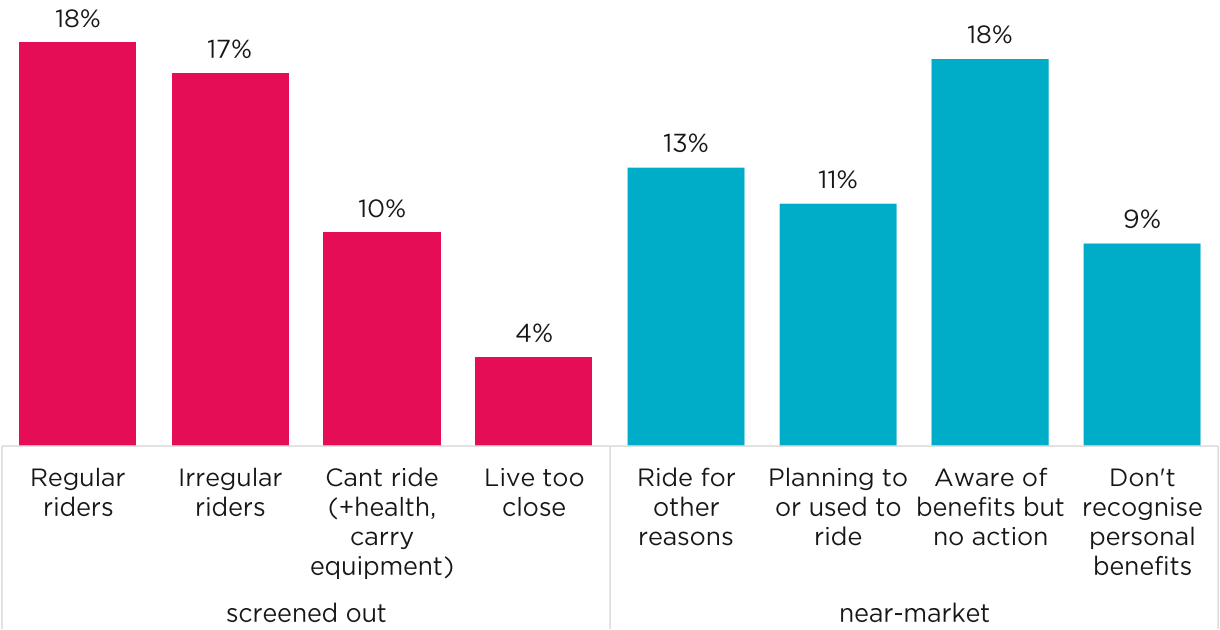
Figure 5: Survey screener results of those who live within defined region



The following chart provides a subset of this data, showing commuting behaviours and near-market attitudes as a percentage of the population who **travels to the city for work or study** (the above data with the 57% removed). This provides a clearer picture of the behaviour of the city worker/student population who live in close proximity of the city. The pink bars show those who screened out and the blue bars show the potential conversion categories of those who qualified as near-market.

This chart reveals that 17% of those in bordering LGAs who currently visit the city at least weekly for work or study are irregular riders and therefore could potentially be encouraged to ride more often. Furthermore, 24% of those who currently visit the city at least weekly for work or study could potentially be persuaded to ride as they currently ride for other reasons or are planning to or used to ride.

Figure 6: Screen-out statistics and near-market segments, of those within bordering LGAs who work or study in Melbourne City



# RESEARCH FINDINGS

## Travel to the city

Most of those who qualified to participate in the research travelled to the city for work related purposes multiple times a week.

Figure 7: Purpose of most recent journey to the city

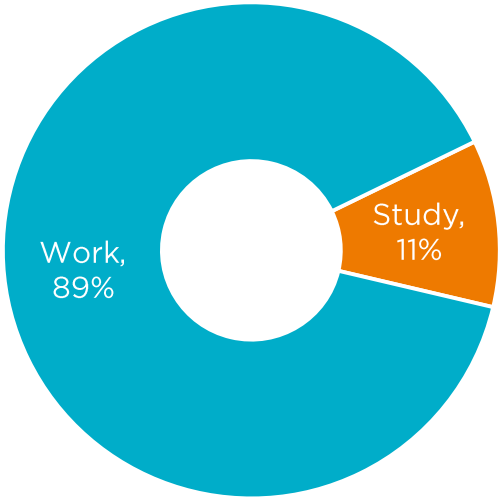
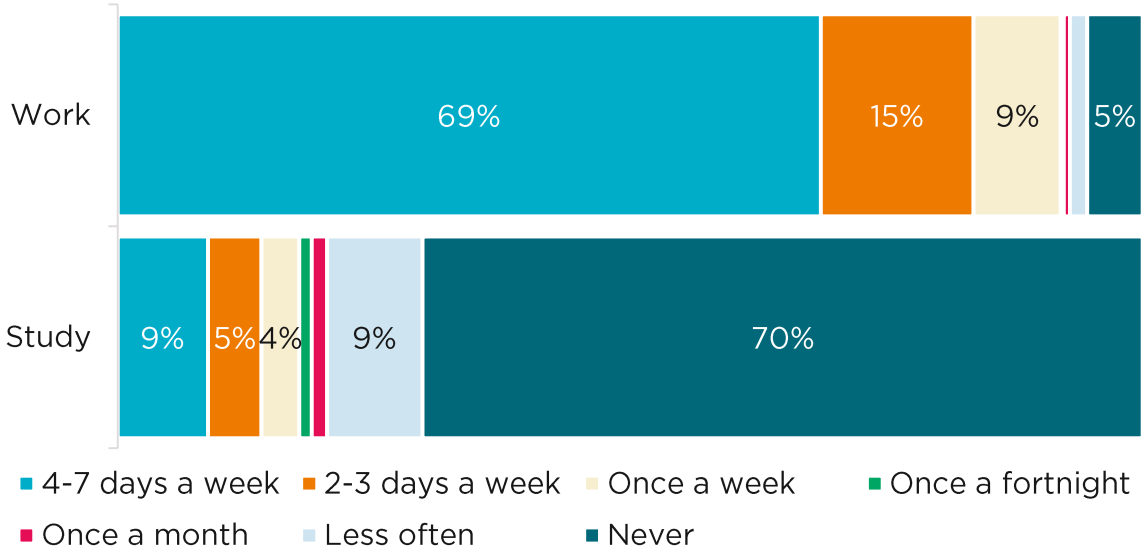



Figure 8: Frequency of travelling to the city for work and/or study

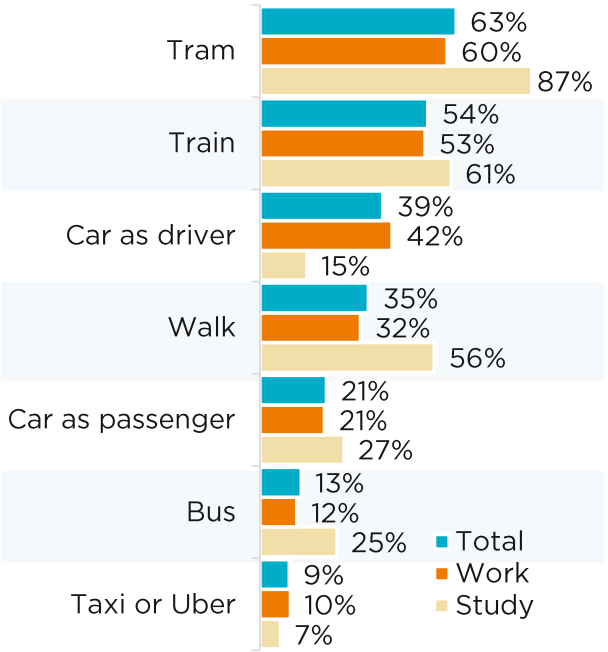


Public transport was the most common method for travelling to the city in the week prior to interview.

Use of public transport or walking is more common amongst those travelling for study than work, whereas car transportation is more common amongst those travelling for work than study.

Note: those who require their car to transport equipment for work were screened out of the survey, therefore the 39% who indicated that they use a car as a driver do not have 'transport of equipment' as a barrier to switching to cycling (although 8 people did mention this in the open ended question at the end of the survey). Moreover, this question was multi-response such that, for example, a respondent may indicate they have taken multiple modes over the past week.

Figure 9: Methods used to travel to the city in 7 days prior to interview




Given this question included multiple responses, we have created 3 groupings for further analysis:

- **'car only'** includes those who used a private vehicle but excluding those who caught public transport (13%, n=108);
- **'public transport only'** includes those who caught trams, trains, buses or taxis, but does not include those who travelled by private motor vehicle (48%, n=414); and
- **the rest**, which includes those who used both public transport and a private motor vehicle (39% n=337).

A higher proportion of males used a car only (15%, 10% females), whereas females show a higher incidence public transport only (53%, 42% males). Use of only a car was higher amongst those aged 35-59 (18%, compared to 4% 25-34 year olds).

Overall, people travel for an average of 30 minutes to and 32 minutes from work or study in the city. Those who travelled by car only on average reported shorter duration journeys (57 minutes average) than those who only used public transport (64 minutes average).

The average daily travel time (to and from the city) was higher amongst those living in Moreland (73 minutes) and Moonee Valley (71 minutes); and lower in Yarra (54 minutes) and Melbourne (51 minutes). This is likely due to distance and mode differences by LGA:

- Maribyrnong – higher incidence of travelling by bus (34%) and/or train (77%);
- Moreland – higher incidence of travelling by tram (67%);
- Yarra – higher incidence of walking (47%) or traveling by tram (69%);
- Melbourne – higher incidence of walking (60%) or tram (74%).

## Cycling behaviours

### Last time they rode a bike

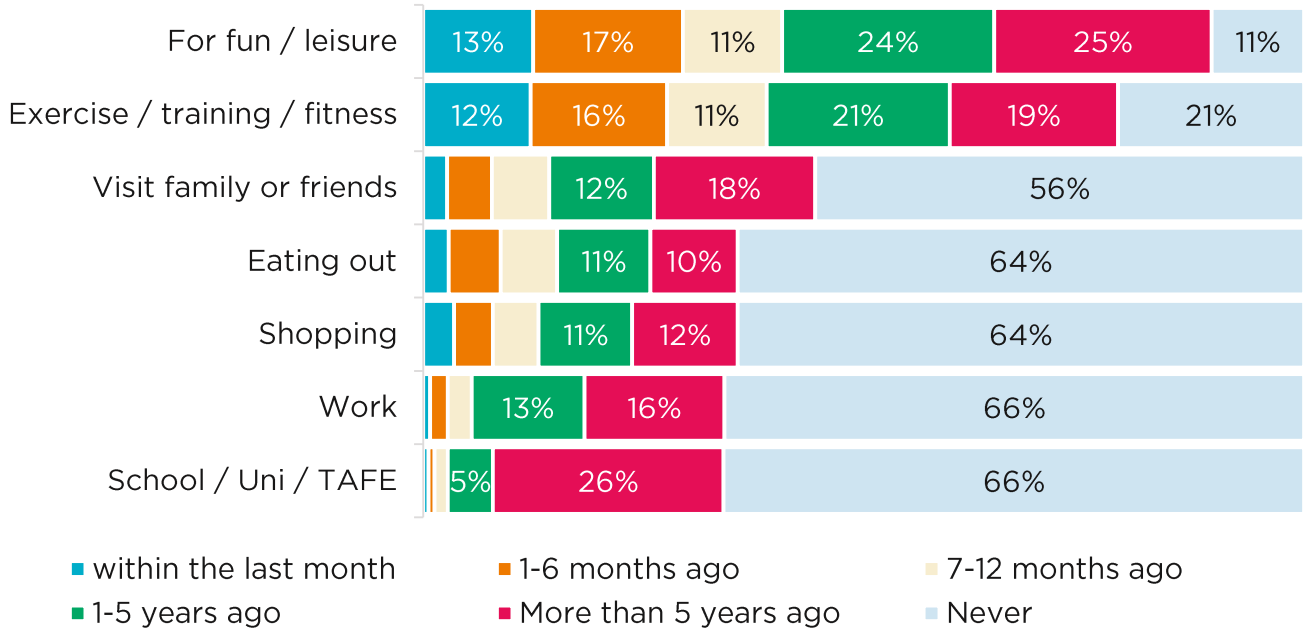
When asked to specify the last time they rode a bike (for a range of reasons), 6% indicated that they had never ridden a bike for any of the specified reasons, increasing to 10% amongst those who indicated that they don't have a bicycle.

Almost half of the sample (48%) indicated that they had ridden a bike in the year prior to interview, increasing to 73% amongst those who own a bicycle. One quarter (26%) of those who indicated that they don't have a bike or access to a bike said they had ridden in the last year.

By far the most common purpose for which respondents had ridden was for recreational purposes (leisure and fitness). However, around a third had ridden to work or study at least once in their lifetime.

There were a couple of respondents who stated that they had ridden for work or study in the last year within this question; this may include riding to locations not in the city, so these people have been left in the sample.

Figure 10: Last time rode a bike




There does not seem to be a correlation between having ridden recently and stated confidence as a rider: 12% of those who had ridden in the month prior to interview said they were a confident rider, compared to 7% of those who hadn't ridden in the last year. This variation is not statistically significant.

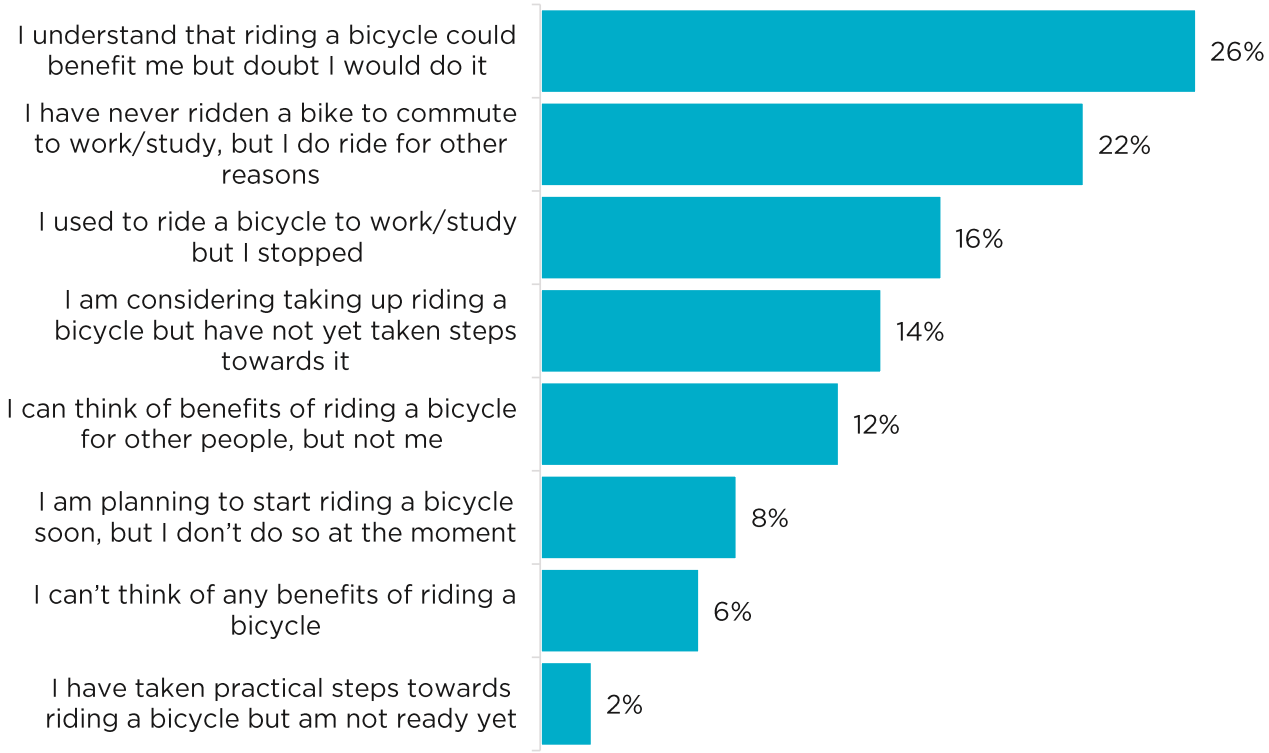
Respondents who indicated that they live in a suburb within the City of Port Phillip showed a significantly higher incidence of having ridden in the year prior to interview (66%) when compared to those in Moreland (39%) and Melbourne (43%). This is driven by a higher incidence of riding for fun/leisure amongst respondents from Port Phillip.

## Riding segments

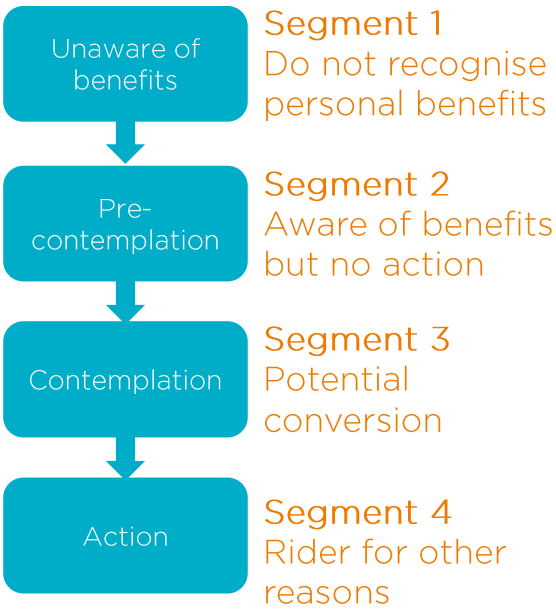
To better understand the positioning of each respondent on a 'potential for cycling' spectrum, respondents were asked to indicate which of a range of categories best described them in terms of cycling.

Analysis of finding by demographics show that a notable proportion of young people are considering taking up cycling but haven't taken steps towards it (26% of 18-24 year olds), and that people stop riding to work when they hit their 50s (21% of 50-69yo used to ride but stopped).

Figure 11: Stage of consideration regarding cycling




This question was used to develop a number of segments within the data for further analysis. These segments were designed based on the behaviour change process, understanding that people move from a lack of recognition of any benefits, through to pre-contemplation, then contemplation, then action. Given the question allowed for multiple responses, some respondents selected answers that spanned across a number of segment categories. When this was the case they were assigned to the segment that aligned with the response closest to the 'action' end of this behaviour change process.



A summary of segment classifications (and sizes) follows:

| Segment 1 | 17% (n=138) |
|---|---|
| **Do not recognise personal benefits** | |
| I can't think of any benefits of riding a bicycle | I can think of benefits of riding a bicycle for other people, but not me |

| Segment 2 | 36% (n=296) |
|---|---|
| **Aware of benefits but no action** | |
| I understand that riding a bicycle could benefit me but doubt I would do it | I am considering taking up riding a bicycle but have not yet taken steps towards it |

| Segment 3 | 24% (n=200) |
|---|---|
| **Planning to or used to** | |
| I have taken practical steps towards riding a bicycle but I am not ready yet | I am planning to start riding a bicycle soon, but I don't do so at the moment |
| I used to ride a bicycle to work/study but I stopped | |

| Segment 4 | 23% (n=187) |
|---|---|
| **Rider for other reasons** | |
| I have never ridden a bike to commute to work/study, but I do ride for other reasons | |

38 respondents answered 'don't know' and therefore were not included in a segment.

When analysing the segments by demographics the following variations are evident:

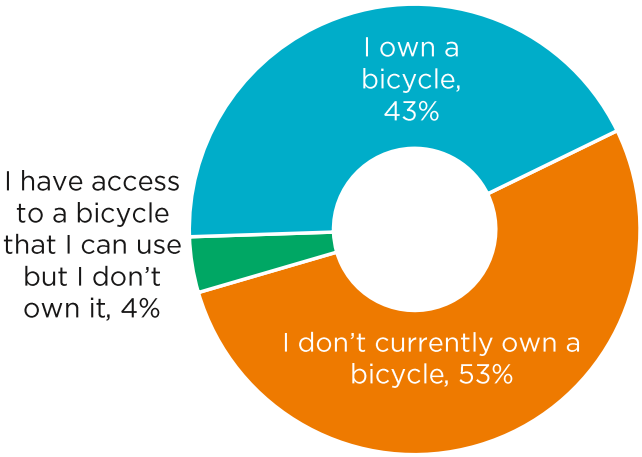
- High incidence of 'Aware of benefits but no action' people in Moreland (44%), compared to 27% in Melbourne.
- More than half (55%) of those who never ride fall into the 'Do not recognise the personal benefits' segment.

This segmentation analysis shows that of the 'near-market'; 23% have a high level of opportunity for conversion to cyclist commuting (already ride for other reasons), 24% are on the brink of taking up riding and therefore may need some assistance or encouragement, 36% have barriers to uptake that will need to be addressed, and 17% need to be educated on the benefits. These figures have been presented as a proportion of the City of Melbourne work/study population in the near-market profile on page 7.

## Bicycle ownership

Approximately half of the sample said that they own or have access to a bike.

Figure 12: Bicycle ownership




The incidence of bike ownership was higher amongst 50-59 year olds (55%) and lower amongst 25-34 year olds (33%).

Owning a bike was less common in City of Melbourne (34%) when compared to City of Port Phillip (55%).

Those in the 'Not recognise personal benefits' and 'Aware of benefits but no action' segments show a significantly lower incidence of owning a bike (17% and 28% respectively).

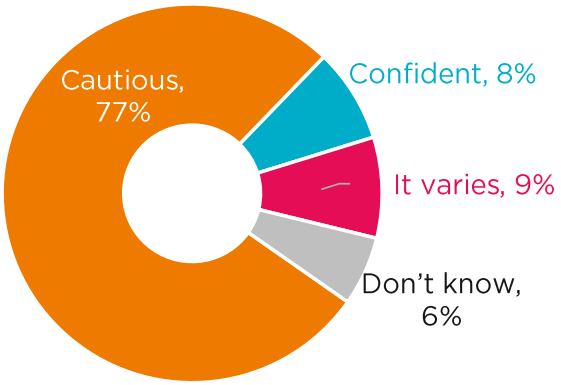
## Cycling confidence

To help understand the sample, respondents were asked to rate their confidence level when riding on roads or paths. Given that the sample consists of those who do not currently ride to work/study, it is not surprising that few described their riding style as confident.

The definition supplied to respondents for the two terms was as follows:

- **Cautious:** prefer off-road paths or low stress roads and willing to take a longer route to get to a destination
- **Confident:** prefer to use the most direct and convenient route, regardless of traffic conditions

Figure 13: Cycling confidence




## Likely cycling duration

The average length of time that respondents indicated they would be willing to ride to get to work/study in the city (in ideal conditions) was 32 minutes. Nine in ten (89%) respondents indicated they would be prepared to ride up to 20 minutes and 68% up to 30 minutes.

In 33% of cases the stated acceptable cycling to work duration was less than the duration currently experienced using other modes of transport. Half (50%) entered an acceptable cycling time that was longer than their current travel time, by an average of 15.6 minutes.

A number of respondents (n=52, 6%) entered 0 or no answer to this question (not included in calculations).

Figure 14: Difference between likely cycling duration and current travel time to work

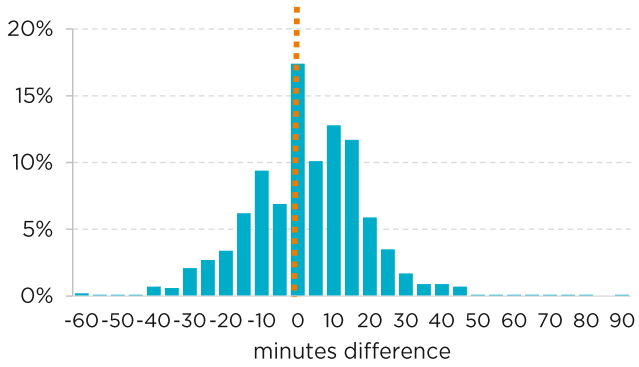
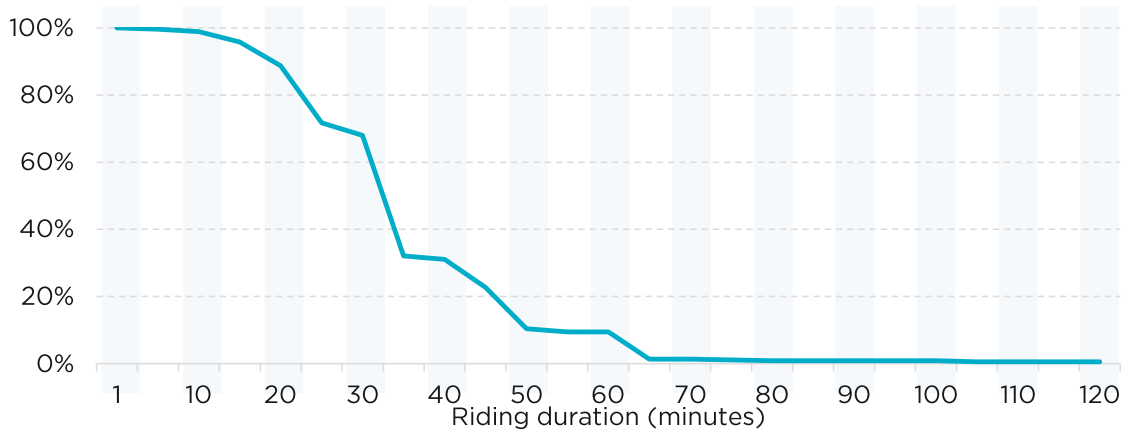



Figure 15: Likely cycling duration



## Concept testing

### Confidence

Each participant was shown a random nine scenarios in sequential order. The order is shown in brackets after each scenario description in the following table.

The following table shows a summary of the mean confidence rating (out of 5 where 1 means *not at all confident* and 5 means *extremely confident*), and the features of each of the on-road cycling scenarios shown to survey participants. See Appendix 2 for images shown.

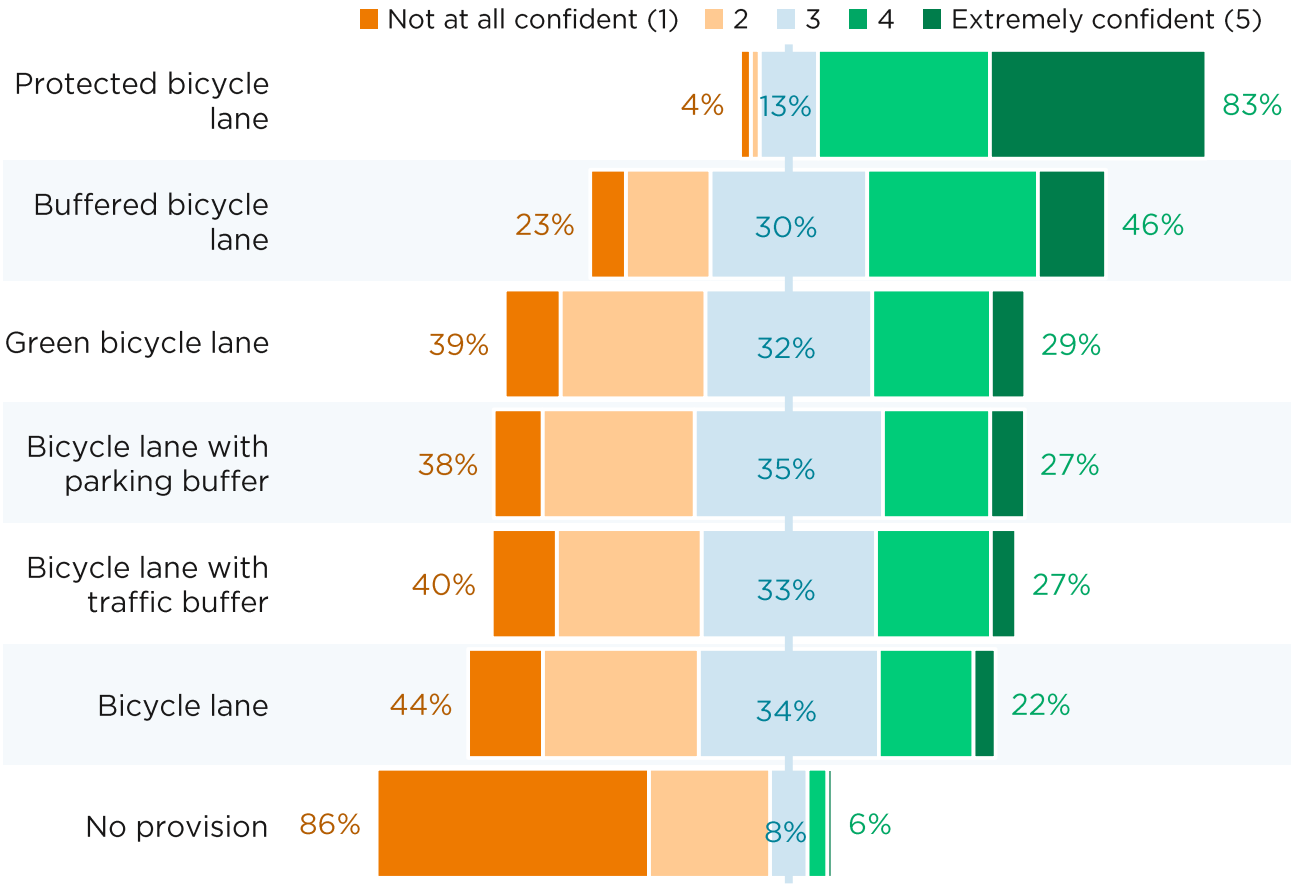
Figure 16: Summary of concept features and mean confidence

| | n= | Mean | Cycle lane | Green surface | Painted divider | Physical divider | Inside parking |
|---|---|---|---|---|---|---|---|
| **Midblocks** | | | | | | | |
| No provision (1) | 564 | 1.6 | | | | | |
| Bicycle lane (2) | 576 | 2.68 | ✓ | | | | |
| Green bicycle lane (3) | 543 | 2.87 | ✓ | ✓ | | | |
| Buffered bicycle lane (4) | 562 | 3.29 | ✓ | | ✓ | | |
| Protected bicycle lane (5) | 577 | 4.23 | ✓ | ✓ | | ✓ | ✓ |
| Bicycle lane with parking buffer (11) | 584 | 2.86 | ✓ | | ✓ left | | |
| Bicycle lane with traffic buffer (12) | 579 | 2.79 | ✓ | | ✓ right | | |
| **Intersections** | | | | | | | |
| Shared intersection (6) | 583 | 2.35 | | | | | |
| Bike lane to intersection (7) | 587 | 3.04 | ✓ | | | | |
| Green bike lane to intersection (8) | 565 | 3.29 | ✓ | ✓ | | | |
| Protected bike lane to intersection (9) | 561 | 3.9 | ✓ | ✓ | | ✓ | |
| Protected bike lane to intersection with green intersection (10) | 584 | 3.91 | ✓ | ✓ through inter-section | | ✓ | |

Among midblock treatments, most respondents indicated they would feel confident in the protected bicycle lanes (83% rated as 4 or 5), followed by buffered bicycle lanes.

On all other treatments more respondents felt unconfident than confident, with 86% of respondents feeling unconfident in situations with no provision.

Figure 17: Rating of midblock confidence by concept

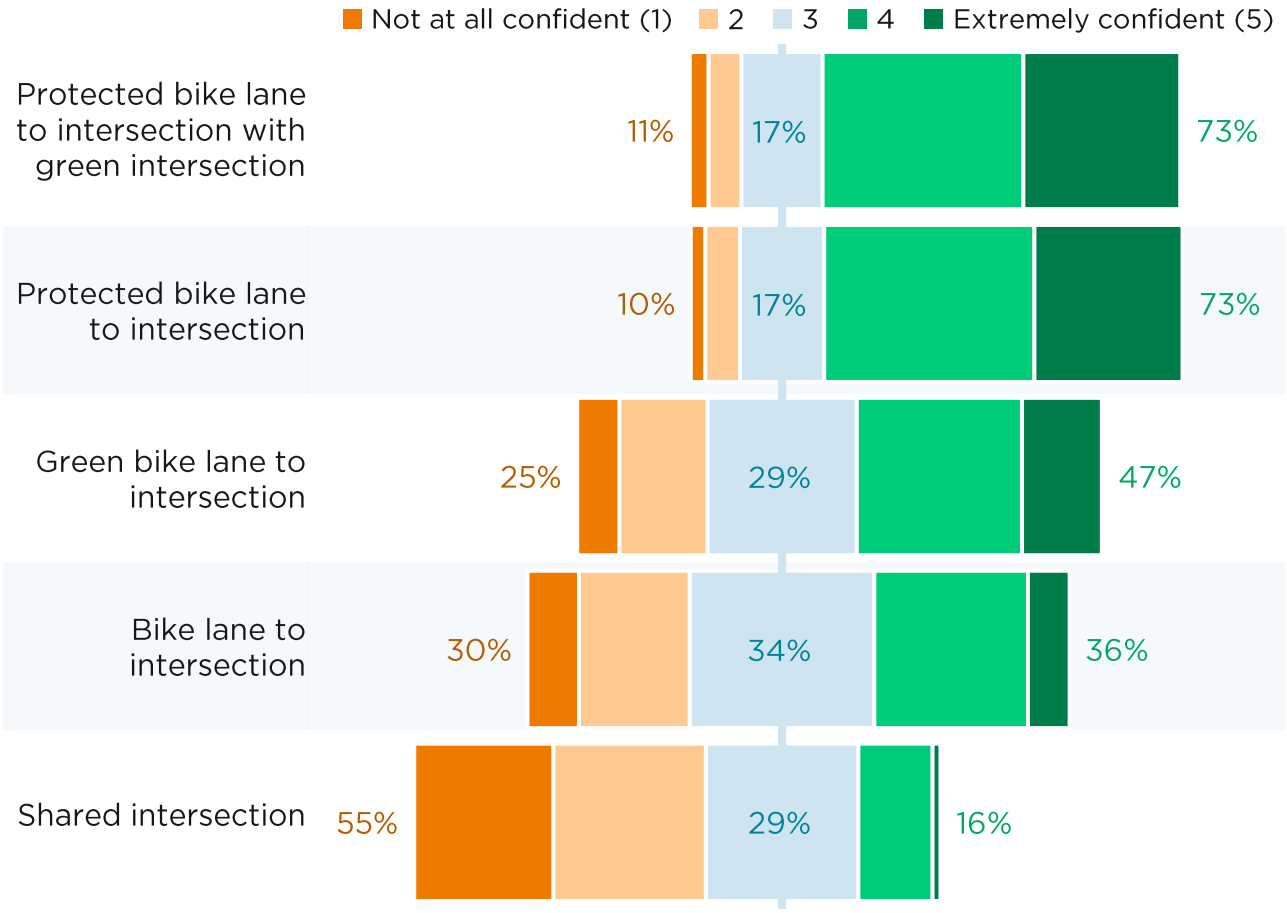



Findings suggest that buffering on both the side of parked cars *and* traffic is required for higher near-market confidence, with buffering on one side and not the other instilling similar levels of confidence as a simple bicycle lane. Furthermore, the green road surface resulted in a similar incidence of confidence to other road surface options (bike lane without green surface and single-side buffering) suggesting that implementing this infrastructure is unlikely to have measurable impact on near-market confidence beyond that achieved by a simple bike lane. Comments provided in the survey shed some light on this, showing that a lack of confidence in these painted road surface options is driven by a wish to be physically protected from cars (parked and moving), as there was an expectation that cars would drive over the paint-only lanes.

Similar results were observed for intersection treatments; fully protected intersection approaches led to around three quarters of the sample indicating they felt confident.

Whilst twice as many felt confident with the green bike lane to intersection (47%) as unconfident (25%), the green road surface makes little difference over a standard bicycle lane. Furthermore, extending the green road surface over the intersection seems to do little to alter confidence levels when compared to the protected bike lane without the through-intersection markings.

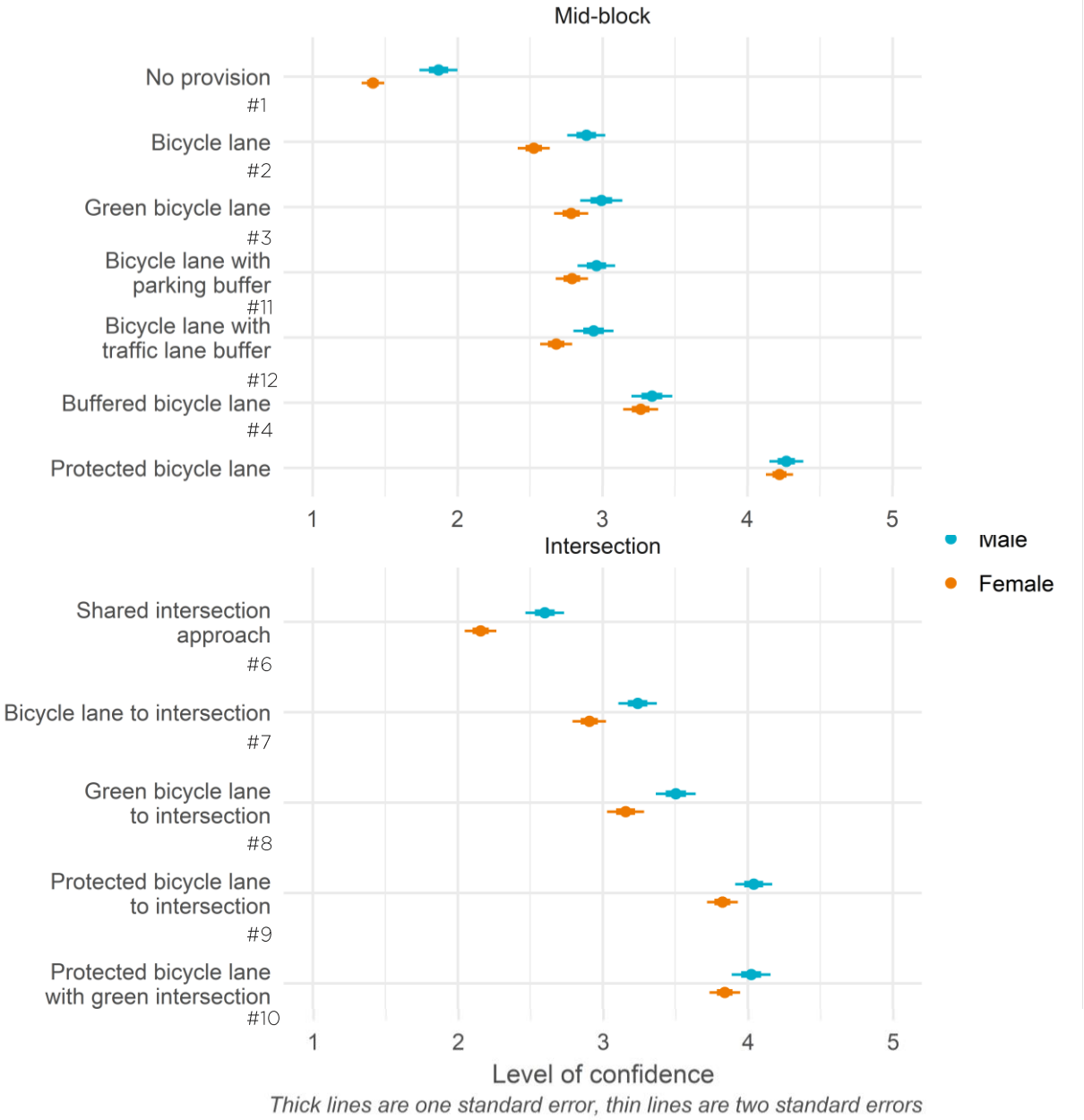
Figure 18: Rating of intersection confidence by concept



## Key observations by demographics

For scenarios with limited cyclist safety features (no bike lane at all or a simple white line for the bike lane) males showed higher incidences of being confident riding in these spaces than females. Indeed, in most cases males showed higher incidences of choosing 'extremely confident' (rating 5) than females.

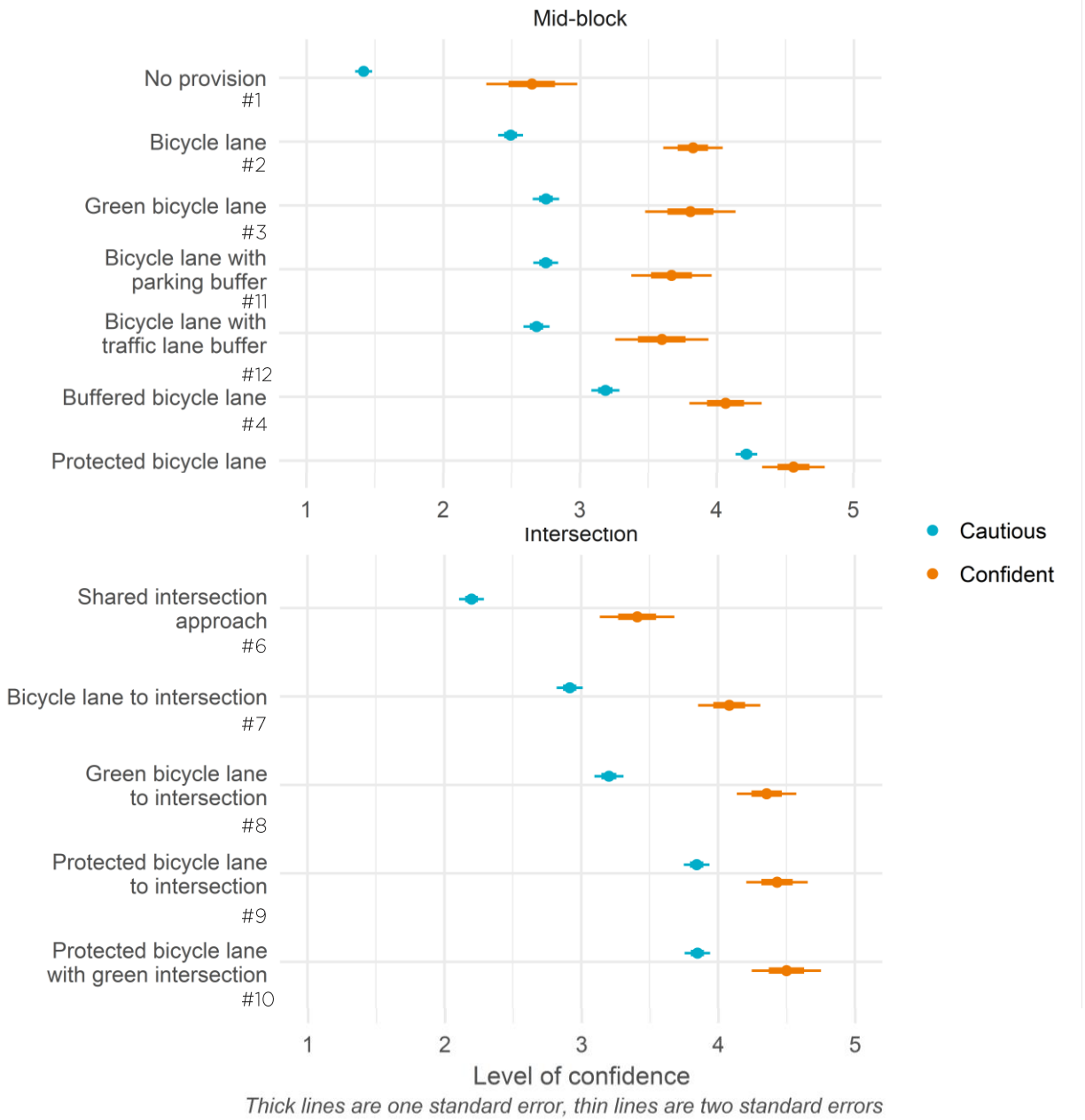
Figure 19: Mean confidence ratings by gender



Understandably, those who consider themselves to be cautious riders consistently show lower average confidence ratings to the different bicycle lane scenarios.

The green road surface shows some positive impact on the confidence of cautious riders over a standard bicycle lane when in an intersection scenario, however this green surface makes no notable difference for confident riders.

Figure 20: Mean confidence ratings by cycling confidence



## Individual scenario findings

### No provision (#1) ➔

The lack of confidence is primarily driven by there not being any protection from moving cars (92% of those who rated their confidence as 1), followed by car-dooring (83% of those who rated their confidence as 1).

Additional observations made beyond the original codeframe reveal lack of confidence due to there not being any road markings to signify a bike lane area, and a fear that cars wouldn't leave enough room when passing.

### ➔ Bicycle lane (#2)

Fear of car-dooring and lack of physical protection from moving cars are both selected by similar proportions as reasons for not feeling confident about cycling in this scenario (~80%). The white road lines play a greater role in instilling confidence than the bike symbols.

A few comments were made about cars pulling out of parking without looking for cyclists (three comments) and that the bike lane is too narrow (two comments).

### Green bicycle lane (#3) ➔

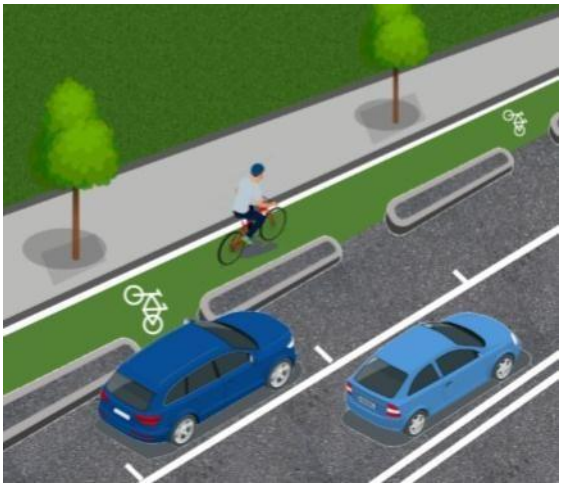
As with the previous scenario, the main barriers to feeling confident with this scenario were fear of car-dooring and lack of physical protection from moving cars. The Green road surface is recognised as an appealing feature, although in the 'other' comments one respondent suggested that it is slippery for bikes and cars, and another indicated that they believed it was made out of glass flakes which work their way into tyres. Four further commenters indicated that they believed cars would still drive in this defined cycling space.

## ← Buffered bicycle lane (#4)

The wide white road lines and additional space to prevent car-dooring were more often selected as reasons for confidence in this scenario, closely followed by additional space between cyclists and traffic. The key barrier to feeling confident was the lack of physical protection from moving cars. In the 'other' comments two people mentioned that they prefer the green road surface as they feel it is more visible.

## Protected bicycle lane (#5) →

The physical barrier shown in this scenario clearly drives confidence, followed by the space left for parked cars to open their doors. There were some, however who were concerned about people exiting cars having to cross the bike lane (31% of respondents), and the other comments reveal further concerns about pedestrians entering the bike lane without looking (six comments). This scenario also raises a few concerns about detracting from road space from cars (four comments).

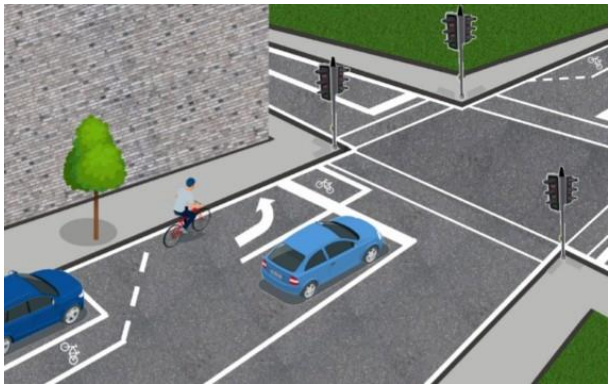


## ← Bicycle lane with left buffer (#11)

Whilst the space left for parked cars to open their doors instilled confidence in some, the lack of physical protection from moving cars was a concern for others. The 'other' comments included a concern that cars can still drive in the bike lane (three comments) and a fear that cyclists could still be struck by parked car doors (two comments).

## Bicycle lane with right buffer (#12) ➔

The additional space between riders and cars is driving confidence in this scenario, whilst the primary concern is that there is no physical barrier. The fear of being struck by parked car doors was not included in the provided list of options for this question, however 8% mentioned this as an 'other' comment. The key other concern expressed in the 'other' comments was that this design would take space away from motor vehicles.

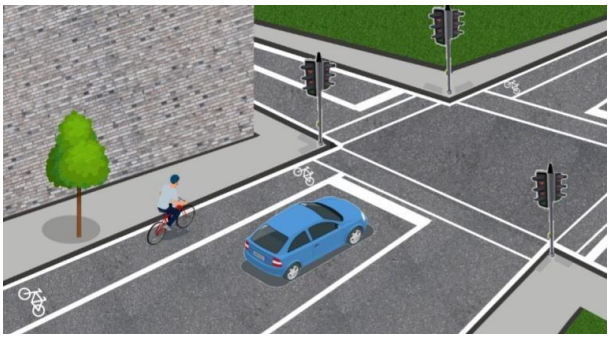


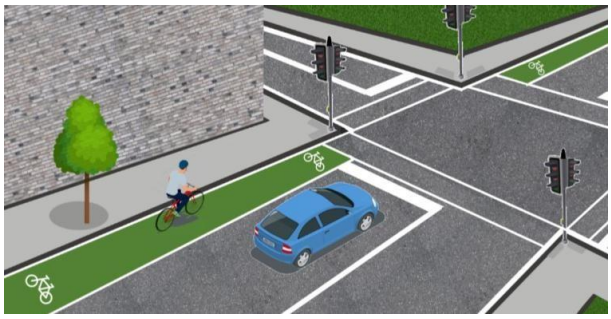
## ➔ Shared intersection (#6)

The few who indicated that the felt confident in this scenario mostly indicated this was due to the bike lane past the parked cars. Lack of confidence was driven by having to merge with traffic, followed by lack of protection from moving cars. In the 'other' verbatim comments, respondents were expressing concerns about not knowing who has right of way and cars turning left not respecting/seeing cyclists.

## Bike lane to intersection (#7) ➔

The aspects of this scenario driving lack of confidence were primarily the lack of physical protection from cars and vehicles turning left across the bike lane. Those who felt confident praised the bike lane all the way to the intersection. However, verbatim comments show there are some who are concerned with right of way for cars turning.



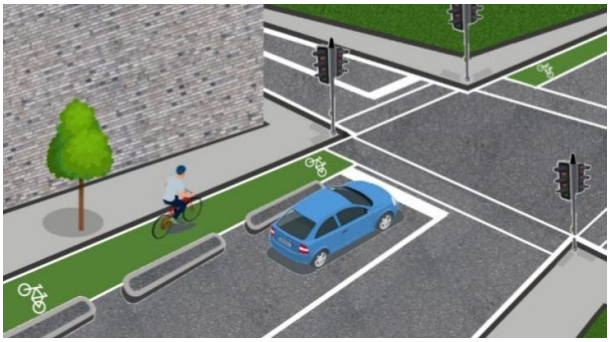


## ← Green bike lane to intersection (#8)

The green road surface is driving confidence in this scenario, followed closely by the bike lane extending all the way to the intersection. Cars turning left over the bike lane and the lack of physical protection from cars are the key barriers to feeling confident in a scenario such as this.

## Protected bike lane to intersection (#9) →

The physical barrier is driving confidence in riding in a scenario such as this, closely followed by the green road surface. However the need for motor vehicles to turn across the bike lane is inhibiting the confidence of some in potentially riding in this scenario. In the verbatim 'other' comments, three people raised concerns that pedestrians might not see cyclists.



*adding a barrier will slow traffic and cause accidents*

*not clear if there are bike specific crossing lights*

*Cars turning left, how does it work?*

## ← Protected bike lane to intersection with green intersection (#10)

Whilst the green road surface through the intersection was named by many as a reason for feeling confident in this scenario (77% of those who rating their confidence as 5), the physical barrier and green road surface in general are stronger drivers of confidence. Those who indicated that they wouldn't feel confident were mostly concerned about vehicles turning left across the bike lane. In the 'other' comments three people queried whether cyclists would have a dedicated crossing signal and two expressed concern that the barrier may slow traffic, resulting in accidents.

## Factors likely to encourage cycling

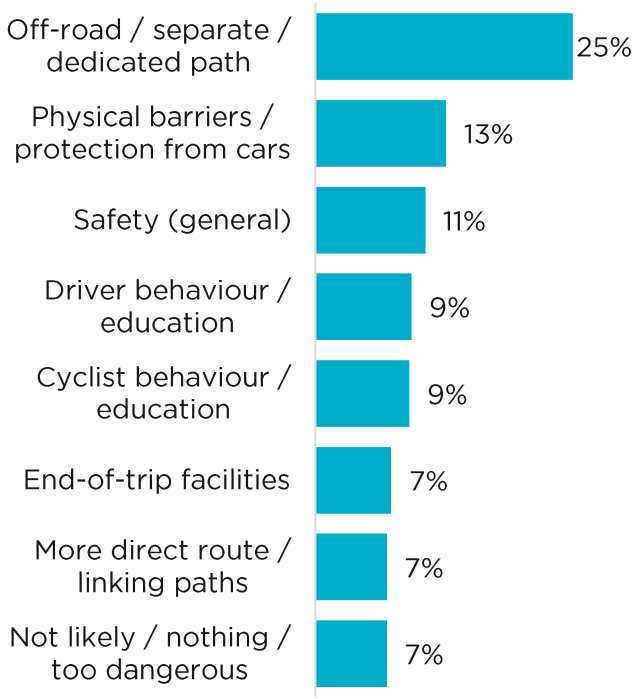
Respondents were asked to share any thoughts of things that might encourage them to ride a bicycle to the City of Melbourne when travelling for work/ study, with 499 respondents (58%) typing in an answer.

These comments were thematically coded for ease of analysis. Thirty themes/topics were identified, each mentioned by four or more respondents. Only 7% of those who shared an idea indicated that there was nothing that would encourage them to cycle (35 people). Some specific barriers to uptake mentioned include living too far away (11 mentions), weather (10 mentions), need a car/to carry items for work/study (8 mentions), hills (7 mentions) and riding making one sweaty (6 mentions).

A call for an off-road, dedicated bike path separate from cars was by far the most commonly mentioned factor that would be likely to encourage people to cycle, mentioned by a quarter of those who provided a comment. Although presumably some have access to these and still don't ride, potentially due to lack of availability for the entire journey.

Poor cyclist and driver behaviour and the need for education of these road users features quite prominently, with comments revealing perceptions that some drivers have bad attitudes towards cyclists, don't look for bikes, or are distracted by phones; whilst others perceive that some cyclists have bad attitudes towards other road users, don't follow road rules and can behave in a way that is dangerous to pedestrians, other cyclists and themselves. Seven comments were strongly anti-cyclist and 21 directly called for the introduction of registration for cyclists (4%).

Figure 21: Thoughts on things that might encourage cycling (top 8)




End-of-trip facilities mentioned were mostly secure bike parking and showers.

Other thoughts shared relating to the design of cycling infrastructure include:

- Keeping the bike lane separate to pedestrians (16 mentions);
- Green/blue road surface (14 mentions);
- No bike paths on main roads (11 mentions);
- Traffic lights for bikes (10 mentions);
- Wider bike paths (10 mentions);
- Amsterdam style bike lanes (9 mentions);
- Faster cyclist lane for overtaking (8 mentions); and
- Bike lanes on major streets (6 mentions).

Seven people said that they would consider riding if they didn't have to wear a helmet.

*We need dedicated bike lanes for cyclists, not shared ones. Motorists won't care about barriers or road colour. Cyclists and motorists must be separated completely. I would love to ride more if it was safer for me to do so*

*The rise of e-bikes will mean that some bikes will travel at speeds that will endanger other riders and pedestrians. The impact of this technology must be factored into planning*

*If cars are turning there is always confusion about if the car has to give way to the bike or the bike to the car. If a car in front of a bike is turning left most drivers would suggest a bike should give way (just like a car behind would) and then go once the car has turned. If there are lots of bikes in the city giving way to them is hard for cars/bikes often speed up to make lights and come up quickly behind a car who might not see them. Maybe a traffic light system allowing bikes to go first before cars go or bikes stopping to let people turn left before being allowed to go straight ahead might be good.*

*I'd love to ride to work however really lack confidence when it comes to riding on the roads. I'm noticing more and more that drivers are distracted and using mobile phones a lot. Dedicated and protected bike lanes would definitely go a long way to helping with my confidence in riding on the roads.*

*Prefer walking because it's safer than cycling. And what do you do with your bike once you get to work or shops? Also, please do something about cyclists who don't follow road rules and often put pedestrians at risk. I've nearly been run over on several occasions by cyclists who ignore road rules / tram stops etc*

*Dedicated isolated and green-painted bike lanes to avoid hitting an opening door+ white or green strips that would make noise when car are driving onto it*

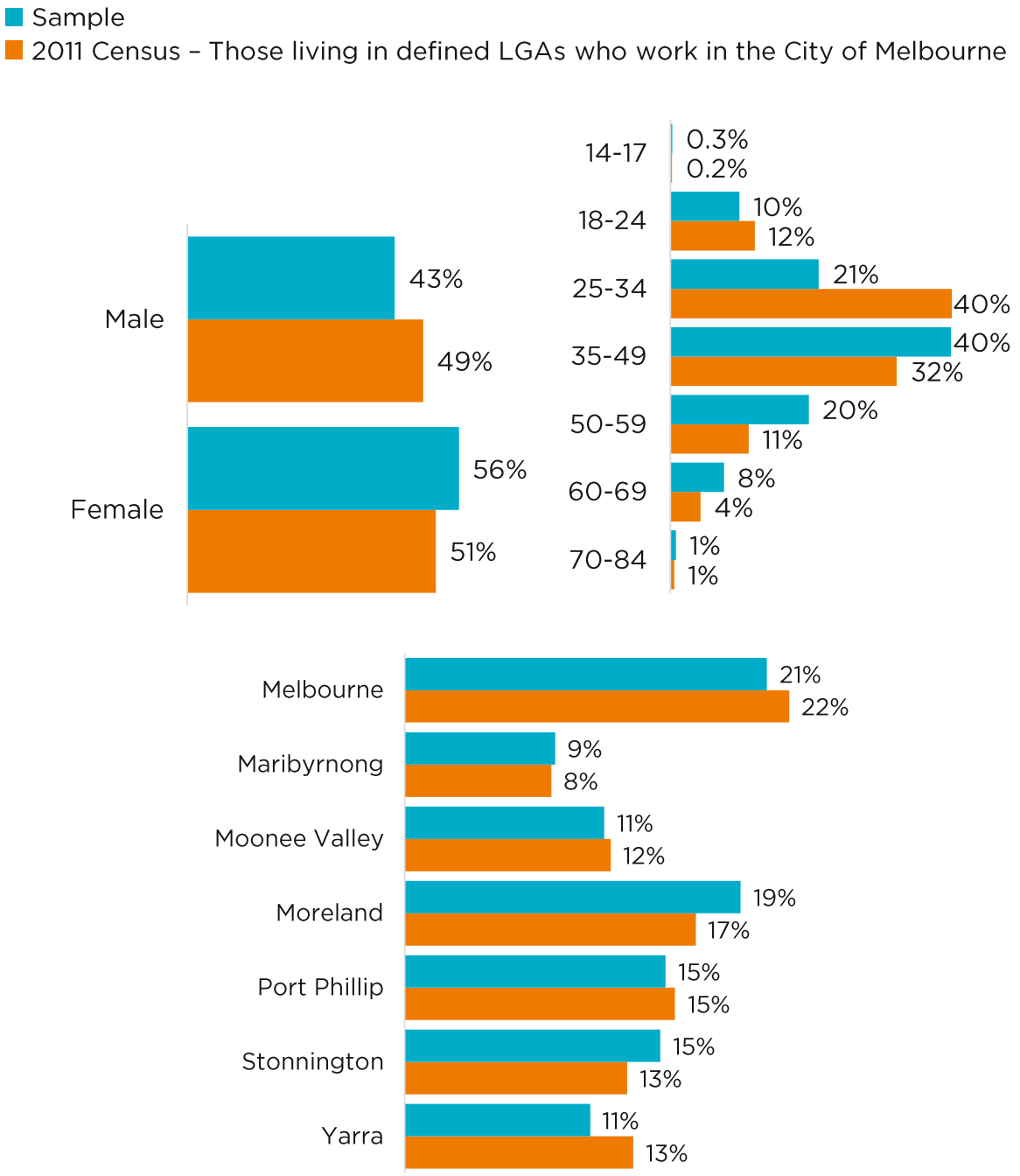
*I love the idea of physical separation, I think many more people would ride if this was introduced. The close nature of traffic can be dangerous, especially if there are many bike riders (trying to pass one another) swerving into traffic.*

# APPENDICES

## Appendix 1: Sample demographics

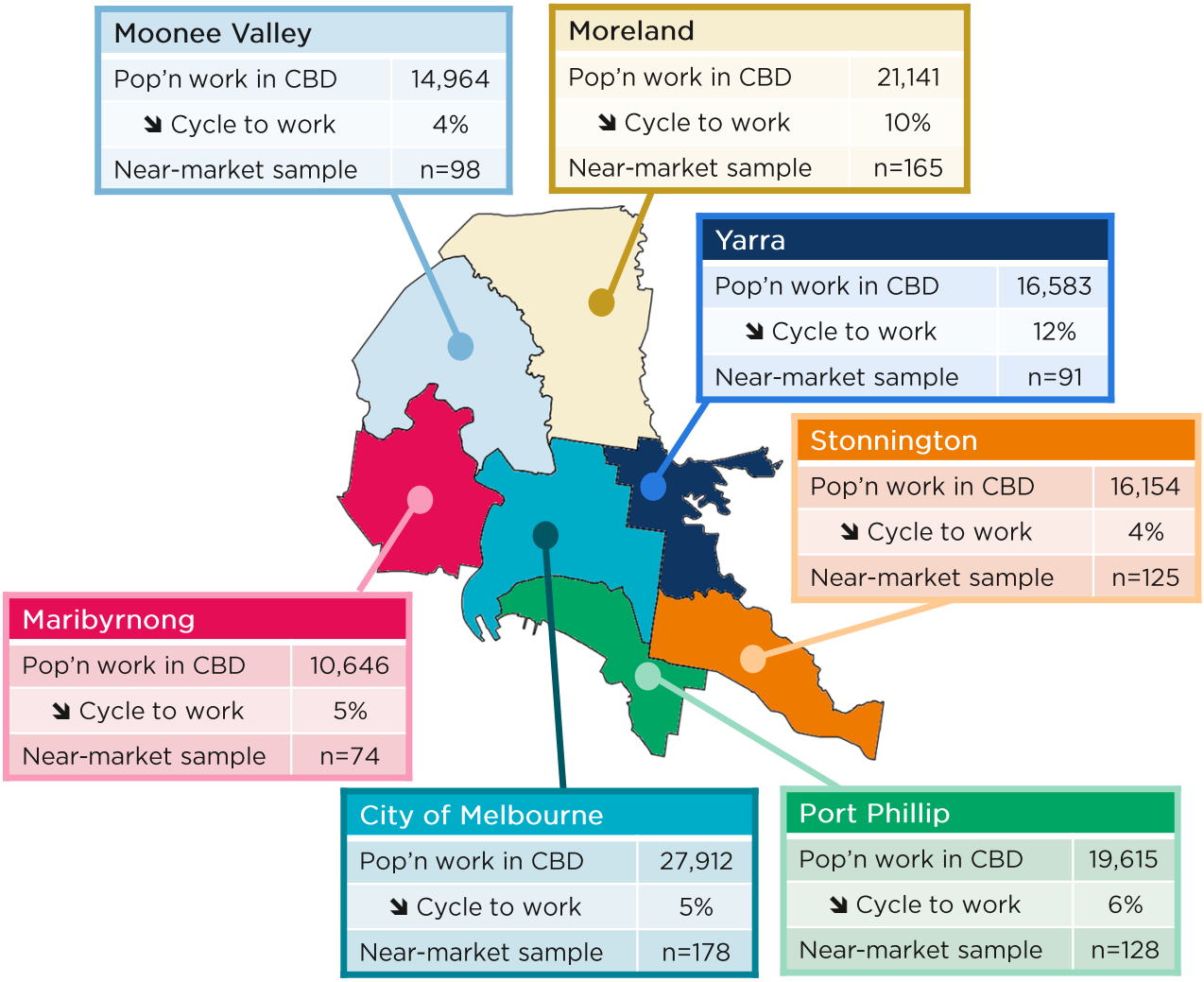
The distribution of the qualifying sample across gender, age and LGA of residence is relatively in line with 2011 Census data for those who work in the City of Melbourne within the defined region, which is surprising but reassuring given that online research usually results in significantly higher instances of female participation (usually over 65%).

Figure 22: Sample distribution by demographics, compared to 2011 Census data for those who live in the target LGAs and work in City of Melbourne



The following map shows a summary of LGA level data, including 2011 Census data and research sample sizes.

Figure 23: Summary of 2011 Census data and near-market samples by LGA



# Appendix 2: Questionnaire

## Screener questions

The City of Melbourne is undertaking a survey with the broader community to help with transport planning.

S1. How often do you visit the City of Melbourne for the following reasons?
*For the purpose of this survey City of Melbourne covers the Melbourne CBD, Docklands, North Melbourne, Carlton, East Melbourne, Kensington, Parkville and Southbank. Please select one answer per row*

COLUMNS
4-7 days a week
2-3 days a week
Once a week
Once a fortnight
Once a month
Less often
Never

ROWS
Work
Study
Shopping
Entertainment
[SCREEN OUT IF WORK OR STUDY < ONCE A WEEK]

[IF S1 WORK OR STUDY = 1+ DAYS A WEEK]

S2. Thinking of the last 7 days, what methods of transport have you used to travel to work or study in the City of Melbourne? *Please select all that apply. If you are currently on leave/holiday, please select the method you usually use*

Car as driver
Car as passenger
Tram
Train
Bus
Bicycle [SCREEN OUT]
Walk
Taxi
Motorcycle
Ran / jogged
Other *(please specify)*
[SCREEN OUT IF BICYCLE OR WALK ONLY]

[IF S2 NOT BICYCLE]

S3. Have you ridden a bicycle to work/study in the City of Melbourne in the last year?

Yes [DISCONTINUE]
No
[SCREEN OUT IF CYCLED IN LAST YEAR]

[IF S3 NO]

S4. We'd like you to think about the most recent work/study trip you made into the City of Melbourne. Do any of the following apply to you? *Please select any that apply*

I needed to carry equipment on this trip for which I had to use a vehicle; I could not possibly have carried this equipment on public transport
I have a health condition which means I could not have walked or ridden a bicycle, even slowly.
I don't know how to ride a bike, so that would not have been an option for this trip.
I live so close it wouldn't make sense to ride a bicycle for this trip
I used a car for part or all of my trip
I used public transport for part or all of my trip
None of the above apply to me
[SCREEN OUT IF HEALTH ISSUE, NEVER LEARNED, OR USE CAR FOR WORK, LIVE TOO CLOSE TO RIDE]

S5 In which suburb do you live?
*We will use this information to group your responses with other people in the same region to help understand geographic variations in results.*

See Appendix 3 for list.
[SCREEN OUT THOSE OUTSIDE OF SPECIFIED AREA]

## Main survey

Thank you, you have qualified to participate further in this survey. The following questions will take approximately 7 minutes to complete.

[ONLY ASKED IF TRAVEL FOR WORK AND STUDY IN S1]

Q0 We'd like you to think about the most recent trip you made into the City of Melbourne for work or education. For which purpose was this trip? *If both, please choose the activity of longest duration*

Work
Education

Q1 On your most recent trip, approximately how long did it take you to get to and from [Q0 ANSWER] in the City on Melbourne?

Time to work: [NUMBER BOX] minutes

Time to home: [NUMBER BOX] minutes

Q2 Which of the following best describes you with regards to riding a bicycle?

I used to ride a bicycle to work/study but I stopped
I have never ridden a bike to commute to work/study, but I do ride for other reasons
I am planning to start riding a bicycle soon, but I don't do so at the moment
I have taken practical steps towards riding a bicycle but am not ready yet
I am considering taking up riding a bicycle but have not yet taken steps towards it
I understand that riding a bicycle could benefit me but doubt I would do it
I can think of benefits of riding a bicycle for other people, but not me
I can't think of any benefits of riding a bicycle
Don't know

Q2a Which of the following best describes you?

I don't currently own a bicycle
I have access to a bicycle that I can use but I don't own it
I own a bicycle

[IF Q2A NO BIKE AND NO ACCESS TO ONE]

Please answer the following questions imagining that you have access to a bicycle.

Q3 We would like you to think about the way you ride a bicycle when on-road around traffic. Which of the following do you feel best describes your riding style?
*If you haven't ridden in a while, please think about which would most likely apply to you*

**Cautious** (prefer off-road paths or low stress roads and willing to take a longer route to get to a destination)
**Confident** (prefer to use the most direct and convenient route, regardless of traffic conditions)
It varies
Don't know

Q4 Imagine you had a car-free, flat bike path to get directly to [Q0 ANSWER] and the weather was perfect. What is the longest time you would be willing to ride a bicycle to get to work/study in the city?

[NUMBER BOX] minutes (one way)

We are now going to show you a few roadway designs and find out what you think of them. You will be shown 5 diagrams, with brief text explaining the roadway; please take the time to read this text as it is very important to ensure you understand the features. [RANDOMISE THOSE SHOWN, EACH RESPONDENT WILL REVIEW 9]

See Appendix 2 for concept images

[FOLLOWING QUESTIONS ASKED FOR EACH CONCEPT]

C1 How confident would you feel riding here? [5 POINT SLIDER]

Not at all confident [TO] Extremely confident

C2 Which features make you say that?
*Please select all that apply*

See Appendix 2 for feature list for each concept
Other *(please specify)*
Don't know

[END QUESTION LOOP]

Q5 Please share any thoughts you have of things that might encourage you to ride a bicycle to the City of Melbourne when travelling for [Q0 ANSWER]?

## Demographics

Now we have some questions to help group your responses with other people for analysis.

D1 When did you last ride a bicycle for the following reasons? *Please select one option per row*

COLUMNS
within the last month
1-6 months ago
7-12 months ago
1-5 years ago
More than 5 years ago
Never

ROWS
Commuting (to or from work)
Travelling to or from school / Uni / TAFE
Exercise / training / fitness
Shopping
Eating out (including coffee)
Visit family or friends
For fun / leisure

D2 Please record your gender.

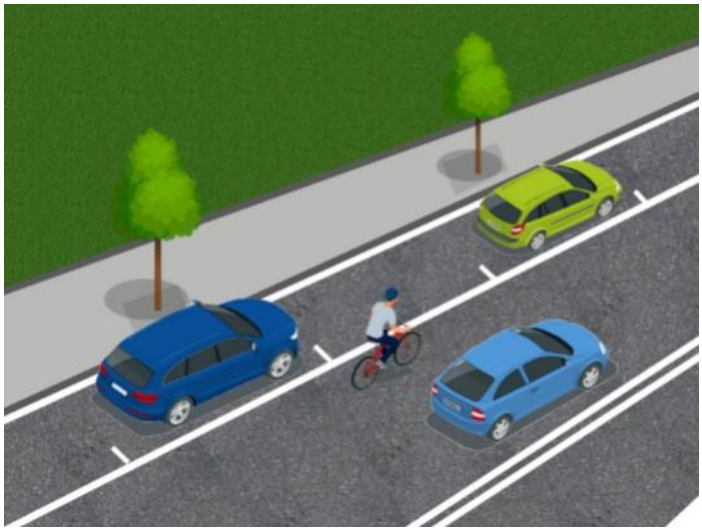
Male
Female
Other
I'd prefer not to say

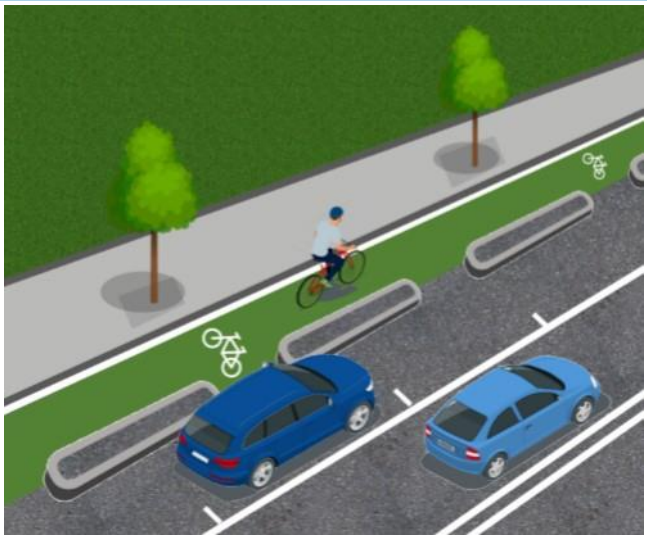
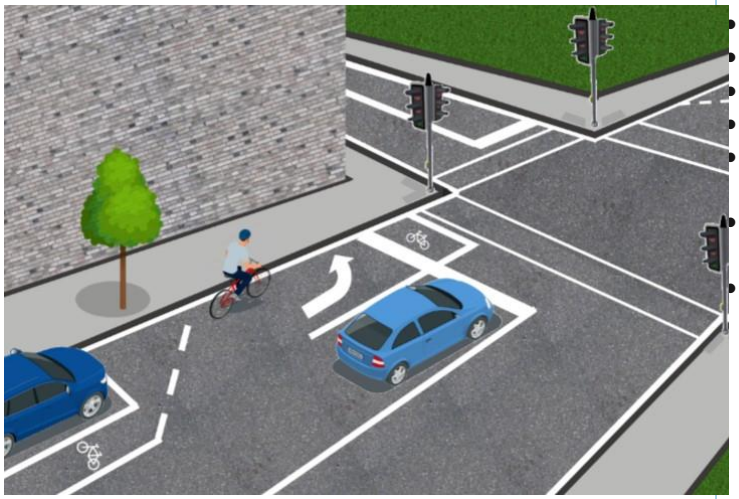
D3 Please record your age group.

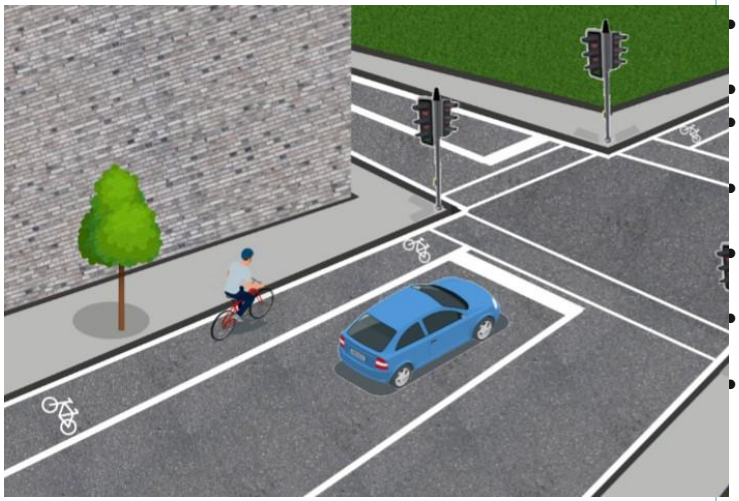
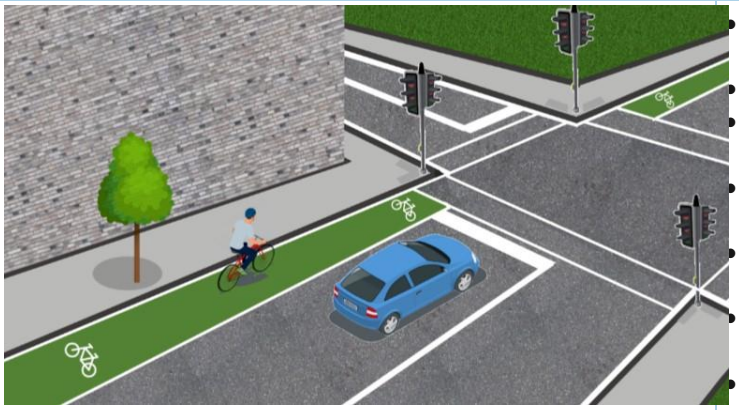
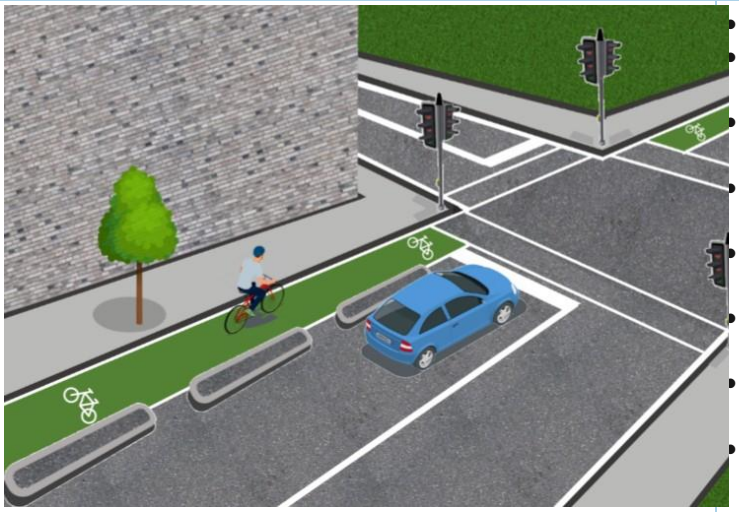
14-18
18-24
25-34
35-49
50-59
60-69
70-84
85+
I'd prefer not to say

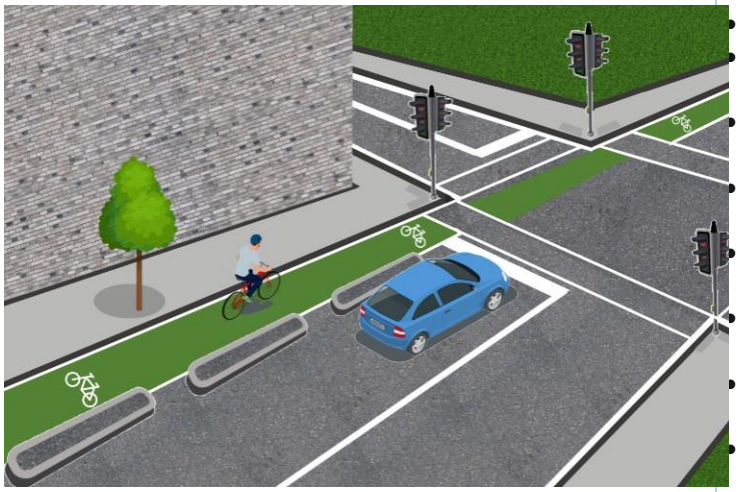
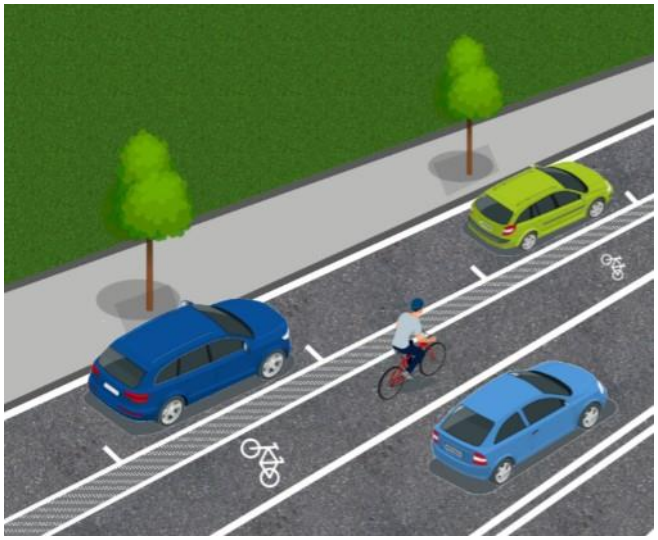
## Appendix 3: Concept images

Concept art was designed by ASDF Research specifically for this project.

| # | Art | C2 features<br>*(Which features make you say that?)* |
|---|---|---|
| 1 |  | • enough space to ride past moving cars<br>• parked cars could open doors into rider<br>• no protection from moving cars<br>• Other |
| 2 | | • White road lines to defined bike lane<br>• Bike symbols<br>• parked cars could open doors into rider<br>• no physical protection from moving cars<br>• Other |
| 3 | | • White road lines to defined bike lane<br>• Green coloured bike lane<br>• Bike symbols<br>• parked cars could open doors into rider<br>• no physical protection from moving cars<br>• Other |

| # | Art | C2 features<br>*(Which features make you say that?)* |
|---|---|---|
| 4 | | • Wide white road lines to define bike path<br>• Bike symbols<br>• Space left for parked cars to open doors without hitting riders<br>• More space between rider and cars<br>• no physical protection from moving cars<br>• Other |
| 5 |  | • Bike symbols<br>• Space left for parked cars to open doors without hitting riders<br>• Physical barrier between rider and moving cars<br>• people exiting cars have to cross bike lane<br>• Other |
| 6 |  | • bike lane past parked cars<br>• box at intersection for cyclists<br>• have to merge with traffic<br>• bike lane stops<br>• parked cars could open doors into rider<br>• no protection from moving cars<br>• Other |

| # | Art | C2 features<br>*(Which features make you say that?)* |
|---|---|---|
| 7 |  | • White road lines to defined bike path<br>• Bike symbols<br>• Bike lane all the way to the intersection<br>• Bike lane not marked through intersection<br>• Vehicles turning left cross bike lane<br>• no physical protection from moving cars<br>• Other |
| 8 |  | • White road lines to defined bike path<br>• Bike symbols<br>• Green road surface to define bike path<br>• Bike lane all the way to the intersection<br>• Bike lane not marked through intersection<br>• Vehicles turning left cross bike lane<br>• no physical protection from moving cars<br>• Other |
| 9 |  | • Bike symbols<br>• Green road surface to define bike path<br>• Bike lane all the way to the intersection<br>• Physical barrier between rider and moving cars<br>• Bike lane not marked through intersection<br>• Vehicles turning left cross bike lane<br>• no physical protection from turning cars<br>• Other |

| # | Art | C2 features<br>*(Which features make you say that?)* |
|---|---|---|
| 10 |  | • Bike symbols<br>• Green road surface to define bike path<br>• Bike lane all the way to the intersection<br>• Green road surface through intersection<br>• Physical barrier between rider and moving cars<br>• Bike lane not marked through intersection<br>• Vehicles turning left cross bike lane<br>• no physical protection from moving cars<br>• Other |
| 11 |  | • Bike symbols<br>• Space left for parked cars to open doors without hitting riders<br>• no physical protection from moving cars<br>• Other |
| 12 | | • Wide white road line to define bike path<br>• Bike symbols<br>• More space between rider and cars<br>• no physical protection from moving cars<br>• Other |

## Appendix 4: Suburbs

Suburb list used in S5 of questionnaire:

| Suburb | Postcode | LGA |
|---|---|---|
| Abbotsford | 3067 | Yarra |
| Aberfeldie | 3040 | Moonee Valley |
| Airport West | 3042 | Moonee Valley |
| Albert Park | 3206 | Port Phillip |
| Alphington | 3078 | Yarra |
| Armadale | 3143 | Stonnington |
| Ascot Vale | 3032 | Moonee Valley |
| Avondale Heights | 3034 | Moonee Valley |
| Balaclava | 3183 | Port Phillip |
| Braybrook | 3019 | Maribyrnong |
| Brunswick | 3056 | Moreland |
| Brunswick East | 3057 | Moreland |
| Brunswick West | 3055 | Moreland |
| Burnley | 3121 | Yarra |
| Carlton | 3053 | Melbourne |
| Carlton North | 3054 | Yarra, Melbourne |
| Clifton Hill | 3068 | Yarra |
| Coburg | 3058 | Moreland |
| Coburg North | 3058 | Moreland |
| Collingwood | 3066 | Yarra |
| Cremorne | 3121 | Yarra |
| Docklands | 3008 | Melbourne |
| East Melbourne | 3002 | Melbourne |
| Elwood | 3184 | Port Phillip |
| Essendon | 3040 | Moonee Valley |
| Essendon Fields | 3041 | Moonee Valley |
| Essendon North | 3041 | Moonee Valley |
| Essendon West | 3040 | Moonee Valley |
| Fairfield | 3078 | Yarra |
| Fawkner | 3060 | Moreland |
| Fitzroy | 3065 | Yarra |
| Fitzroy North | 3068 | Yarra |
| Flemington | 3031 | Melbourne, Moonee Valley |
| Footscray | 3011 | Maribyrnong |
| Glen Iris | 3146 | Stonnington |
| Glenroy | 3046 | Moreland |
| Gowanbrae | 3043 | Moreland |
| Hadfield | 3046 | Moreland |
| Keilor East | 3033 | Moonee Valley |

| Suburb | Postcode | LGA |
|---|---|---|
| Kensington | 3031 | Melbourne |
| Kingsville | 3012 | Maribyrnong |
| Kooyong | 3144 | Stonnington |
| Maidstone | 3012 | Maribyrnong |
| Malvern | 3144 | Stonnington |
| Malvern East | 3145 | Stonnington |
| Maribyrnong | 3032 | Maribyrnong |
| Melbourne | 3004 | Port Phillip, Melbourne |
| Middle Park | 3206 | Port Phillip |
| Moonee Ponds | 3039 | Moonee Valley |
| Niddrie | 3042 | Moonee Valley |
| North Melbourne | 3051 | Melbourne |
| Oak Park | 3046 | Moreland |
| Parkville | 3052 | Melbourne |
| Pascoe Vale | 3044 | Moreland |
| Pascoe Vale South | 3044 | Moreland |
| Port Melbourne | 3207 | Port Phillip, Melbourne |
| Prahran | 3181 | Stonnington |
| Princes Hill | 3054 | Yarra |
| Richmond | 3121 | Yarra |
| Ripponlea | 3185 | Port Phillip |
| Seddon | 3011 | Maribyrnong |
| South Melbourne | 3205 | Port Phillip |
| South Wharf | 3006 | Port Phillip, Melbourne |
| South Yarra | 3141 | Stonnington, Melbourne |
| Southbank | 3006 | Port Phillip, Melbourne |
| St Kilda | 3182 | Port Phillip |
| St Kilda East | 3183 | Port Phillip |
| St Kilda West | 3182 | Port Phillip |
| Strathmore | 3041 | Moonee Valley |
| Strathmore Heights | 3041 | Moonee Valley |
| Toorak | 3142 | Stonnington |
| Tottenham | 3012 | Maribyrnong |
| Travancore | 3032 | Moonee Valley |
| Tullamarine | 3043 | Moreland |
| West Footscray | 3012 | Maribyrnong |
| West Melbourne | 3003 | Melbourne |
| Windsor | 3181 | Stonnington |
| Yarraville | 3013 | Maribyrnong |

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