

## Report to the Future Melbourne Committee

Agenda item 6.5

### Victorian Government Shared E-Scooter Trial

16 November 2021

**Presenter:** Sophie Handley, Director City Strategy

#### Purpose and background

1. On 1 June 2021, Future Melbourne Committee resolved to request that management:
  - 1.1. Submit an Expression of Interest (EoI) for the City of Melbourne to participate in the Victorian Government shared e-scooter trial.
  - 1.2. Propose to the Victorian Government that three metro councils be selected (instead of two as originally planned).
  - 1.3. Provide a further report on management's approach to planning and launching a shared e-scooter trial, should the submission be successful.
2. On 4 June 2021, Management submitted the EoI (see Attachment 2). On 2 September 2021, the Victorian Government announced that the Cities of Melbourne, Port Phillip, Yarra and Ballarat had been selected to participate in the trial.
3. The Department of Transport (DoT) regulatory changes for the e-scooter trial have been gazetted and take effect from 15 November 2021.
4. The purpose of this report is to provide an update on the approach to the trial.

#### Key issues

5. The City of Melbourne is working with the Cities of Yarra and Port Phillip to run an integrated e-scooter trial across the three LGAs. The three councils have also been in partnership managing the shared e-bike trial (Lime bikes) since December 2019.
6. On 23 October 2021, the City of Melbourne published, on behalf of the three councils, a Request for Proposals from e-scooter fleet operators to participate in the trial. It is expected that an agreement will be reached with one or more e-scooter operators. The agreement would be similar to the MOU for the e-bike trial. It will contain provisions to require:
  - 6.1. Scooter parking which does not impede footpaths or create a safety issue.
  - 6.2. Response times for operators to resolve problems.
  - 6.3. Measures to prevent and reduce vandalism.
  - 6.4. Remote speed control over scooters in sensitive areas.
  - 6.5. Capacity and processes to handle customer inquiries.
  - 6.6. Local operations and maintenance supporting jobs in inner Melbourne.
  - 6.7. A collaborative approach on public communications and stakeholder engagement.
  - 6.8. A specific plan for the launch phase of the trial including scooter numbers, locations and parking rules.
7. In addition, the agreements will also include:
  - 7.1. A greater emphasis on the role of e-scooters in activation and economic recovery and as a fun, new way to travel to and around the inner city.
  - 7.2. An increased emphasis on safety, including new vehicle standards, measures to prevent footpath use, given e-scooters are a new form of travel in Victoria, including training and messages for e-scooter users.
  - 7.3. Fees payable by e-scooter fleet operators for recovery of Council costs.
  - 7.4. Provisions for community access programs e.g.: reduced rates for concession card holders.
  - 7.5. Detailed data sharing requirements including a provision that data be provided to Councils free of charge.
8. In accordance with the Victorian Government e-scooter regulations, Councils have the power to pause, alter or terminate the e-scooter trial at any time. The only e-scooter companies which will be permitted to operate will be those with an agreement in place with an approved LGA. The use in public places of privately-owned e-scooters which can travel at more than 10 kph remains illegal under Victorian Government regulations.
9. Management is aiming to launch the e-scooter scheme in December to support pre-Christmas reactivation, however the launch date will depend on the proposals received by the City of Melbourne. Agreements reached with e-scooter providers will be published on Council's website.

**Recommendation from management**

10. That the Future Melbourne Committee notes management's approach to planning and launching the shared e-scooter trial.

Attachments:

1. Supporting Attachment (Page 3 of 33)
2. Safety-based e-scooter trial regulatory parameters from DoT (Page 5 of 33)
3. City of Melbourne Submission to Victorian E-scooter trial EOI (Page 6 of 33)

## **Supporting Attachment**

---

### **Legal**

1. Legislative and regulatory changes through DoT will legalise the use of e-scooters for the purposes of this trial. These changes would only apply to vehicles operated by an approved shared e-scooter company which has an agreement with a Local Government as part of the trial. Should a Local Government choose to discontinue an agreement with an e-scooter operator, this would remove the operator's ability to operate legally and for users to use their e-scooters legally.
2. Private e-scooter use would continue to be subject to current speed and use restrictions.

### **Finance**

3. E-scooter operators would be charged a fee to operate e-scooters in the Municipality. This fee would be calculated based on estimated cost recovery for Council. Costs incurred by Council include: 3rd Party GPS monitoring, Local Laws/Enforcement costs, Customer Service costs, Administration etc.

### **Conflict of interest**

4. No member of Council staff, or other person engaged under a contract, involved in advising on or preparing this report has declared a material or general conflict of interest in relation to the matter of the report.

### **Occupational Health and Safety**

5. Any occupational health and safety risks which arise due to the shared e-scooter trial are expected to be able to be managed through the trial rules developed by the Victorian Government, through agreements developed with e-scooter providers and via the steering committee which will be set up to evaluate the trial and will include the Transport Accident Commission, Victoria Police, the DoT and successful councils. The cities of Melbourne, Yarra and Port Phillip currently have an MoU with the operators of the shared e-bike scheme running in the three council areas. This has been successful in managing OH&S and other issues since scheme was re-launched in December 2020.

### **Stakeholder consultation**

6. The Victorian Government has consulted with key stakeholders such as the TAC and Victoria Police in the development of the rules which will govern the trial. These bodies and others, including participating councils, sit on the project steering committee.
7. Officers have discussed our approach to this trial with some key stakeholders as a result of recent media coverage. No formal community consultation has been undertaken in the preparation of this report. Further consultation will happen as part of the trial. Extensive consultation was undertaken with stakeholders and the broader community during preparation of the Transport Strategy 2030.
8. The City of Melbourne will include a consultation and engagement plan as part of the evaluation of the shared e-scooter trial.

### **Relation to Council policy**

9. The recommendation is consistent with the Municipal Public Health and Wellbeing Plan contained within Council Plan 2021-25 in that it will facilitate opportunities for people in the Melbourne municipality to live more active lifestyles.
10. The City of Melbourne Transport Strategy 2030 supports micro-mobility trials that deliver public benefit.

11. This recommendation is consistent with the draft Economic Development Strategy 2031. It is expected that it will make a number of economic contributions including boosting Melbourne's reputation as a place for innovation, attracting people into the city, job creation in its own right and improving the connections between people leading to greater economic activity.
12. This recommendation is consistent with the City of Melbourne Covid-19 Reactivation and Recovery Plan. The launch of a new, popular, fun transport mode is expected to contribute to reactivating the city.
13. This recommendation is also consistent with the City of Melbourne Startup Action Plan 2017-21 by establishing the City of Melbourne as a place for innovation.

**Environmental sustainability**

14. The recommendation supports Council's commitment to lower carbon intensive modes of transport and transition to electric vehicles, as outlined in Council's Climate Change Mitigation Strategy (2018).

## Summary of e-scooter trial regulatory parameters

*(with maximum court enforced penalty units noted)*

1. E-scooters will be limited to using low-speed roads (up to and including 50 kilometres per hour), bicycle lanes, bicycle paths, separated and shared paths (on the bicycle side, if specified) (3 penalty units).
  - a. Note the 50km/h road limit always applies – i.e., you can ride an e-scooter in a bicycle lane provided that the lane is on a road with a speed limit of 50km/h or less.
2. E-scooters will not be permitted on footpaths (but are allowed on separated and shared paths) and high-speed roads (i.e., where the specified speed limit is above 50 kilometres per hour) (3 penalty units).
3. E-scooters must have a maximum speed of and not travel in excess of 20 kilometres per hour (3 penalty units).
4. E-scooter riders will be subject to blood alcohol content (BAC) and drug use restrictions applying to other motorists under the *Road Safety Act 1986* (penalties as per *Road Safety Act 1986*).
  - a. While a driver licence is not required to operate an e-scooter, the penalties that apply under the RSA for breaching BAC/drug use restrictions (except for vehicle impoundment) will apply to the e-scooter rider's licence, should they have one.
5. A person must not consume alcoholic beverages while travelling on an e-scooter (5 penalty units).
6. Users must wear a helmet when operating an e-scooter (5 penalty units).
7. E-scooter riders must be at least 18 years of age (3 penalty units).
8. E-scooter use should be restricted to specific local government areas (LGAs) (3 penalty units).
9. Only e-scooters operated by share scheme commercial operators within participating LGAs can be used (no private e-scooters) (3 penalty units).
  - a. '*Commercially operated share scheme*' is defined in the regulations as "a joint arrangement between a Council and a commercial operator to provide electric scooters for hire on a short-term basis to members of the public."
10. E-scooters must meet certain physical and hardware requirements (i.e., must have 2 wheels; built to transport one person while standing; is steered by means of a handlebar etc.). E-scooters are treated in the same way as bicycles in relation to brakes, warning device (bell), lights, reflectors, etc (2-5 penalty units).
11. E-scooter riders must adhere to certain behaviours, including that riders:
  - a. have proper control at all times and ride with due care and reasonable consideration for road users and pedestrians (5 penalty units)
  - b. use a warning (e.g., bell, horn, or verbal) to avert danger
  - c. not ride two abreast (3 penalty units)
  - d. not carry passengers (3 penalty units)
  - e. give way to pedestrians (where appropriate, i.e., on a shared path; and keep left unless impractical) (3 penalty units)
  - f. not use a hand-held mobile phone whilst riding (10 penalty units)
  - g. not lead an animal, including by tethering the animal to the e-scooter (3 penalty units).



CITY OF MELBOURNE

GPO Box 1603  
Melbourne VIC 3001  
Telephone (03) 9658 9658  
Facsimile (03) 9654 4854  
DX210487

ABN 55 370 219 287

Friday, 4 June 2021

Joe Monforte  
Executive Director, Policy and Reform  
Department of Transport  
GPO Box 2392  
Melbourne, VIC 3001

Dear Mr Monforte,

### **City of Melbourne submission to the Victorian Government e-scooter trial**

The City of Melbourne is pleased to submit this expression of interest to participate in the Victorian Government e-scooter trial. The Future Melbourne Committee of the Council unanimously passed a motion on 1 June 2021 in support of this submission (see [link](#)).

The City of Melbourne has a strong track record of facilitating trials and supporting new initiatives. In particular we have been working very closely with the Cities of Yarra and Port Phillip to undertake a 12-month trial of shared e-bikes.

This letter confirms that Council agrees to work with DoT to develop a communications plan and commit to implementing marketing and communications strategies in relation to the e-scooter trial. The letter also confirms that the Council is committed to working with DoT to meet the conditions of the trial, as outlined below, and is keen to participate in the steering committee for the trial.

Our submission, attached below, demonstrates that there would be significant benefits from the City of Melbourne participating in the trial. It also shows that City of Melbourne has an extensive network of low-speed streets and bicycle routes serving a dense and diverse range of land uses which create an ideal e-scooter test environment.

We understand from your letter of 3 May 2021 that two metropolitan LGAs would be selected to participate in the trial. If the opportunity were to arise for the Victorian Government to select more metropolitan LGAs for the trial, the City of Melbourne would be very interested in working with the City of Yarra and City of Port Phillip on a coordinated trial of e-scooters. The three council areas cover a suitable scale, are contiguous and economically intertwined and offer a range of land uses for a successful micromobility scheme. We also have a strong working relationship and could achieve economies of scale by working together.

If you have any further questions about this EoI, please contact Richard Smithers, Manager Transport Strategy on 0417 345 625 or [Richard.Smithers@melbourne.vic.gov.au](mailto:Richard.Smithers@melbourne.vic.gov.au)

Deb Cailles  
(Acting) General Manager  
Strategy, Planning and Climate Change  
City of Melbourne

## Executive Summary

### **The City of Melbourne is an ideal location for an e-scooter trial.**

1. The trial is well aligned with [City of Melbourne's COVID-19 Reactivation and Recovery Plan](#), providing new, enjoyable experiences for Melburnians as they rediscover our city.
2. Participating in the Victorian e-scooter trial aligns with the [City of Melbourne Transport Strategy 2030](#) which support trials to test new technology and evaluate performance and impacts (Policy 38).
3. The City of Melbourne is ideally located to create micro mobility corridors to adjacent LGAs for a range of trip purposes that e-scooters would support. People who live in and visit the City of Melbourne already use a range of transport modes and are pre-disposed to using e-scooters.
4. The economic benefits of a trial of e-scooters are likely to be greatest in the City of Melbourne because the recovery of the central city post-covid is so important to the statewide economy. The greater diversity and intensity of economic activity in the City of Melbourne means that an e-scooter trial there has the potential to accelerate economic activity at a greater rate than in other places. The current popularity of e-scooters means they are likely to be an attraction in their own right, bringing people to the city who will then participate in other economic activity. The city is at the heart of the state transport network so it has the capacity to attract people from the widest possible area to try e-scooters.
5. Other potential economic benefits include making greater use of new protected bicycle lanes by a new class of users, enabling more space-efficient economic activity and providing a new way for people to connect and to generate different types of economic activity. Opportunities include business partnerships between e-scooter operators and city employers and businesses.
6. Tourism Research in 2020 shows people are focusing on new experiences closer to home. Connecting with the familiar is the premise of the [Victorian Government Stay Close Go Further campaign](#) which aims to invigorate the economy through local visitation. Using an e-scooter to is an ideal experience to add to a visit to the city.
7. The City of Melbourne has well-established community and business groups. These will provide a forum to promote and evaluate a trial of e-scooters through networks and feedback.
8. The City of Melbourne has well-established internal processes for managing micromobility trials including existing customer service, on-street compliance and monitoring systems developed for the shared e-bike trial.

### **Transport and land-use network**

9. The City of Melbourne has an extensive network of roads with a speed limit of 50km/h or lower as well as on and off road protected lanes, painted bike lanes and shared paths. These provide access to the most diverse mix of destinations in Victoria, including almost half a million jobs as well as a range of land uses for education, retail, hospitality, cultural, sporting and places of interest.
10. The City of Melbourne has taken a leadership role in accelerating the delivery of new protected bicycle lanes in response to COVID-19. These will provide a more comfortable and connected network for people to use e-scooters during a trial. Our road network is uniquely suitable for e-scooters and it continues to improve.

### **Communications and marketing**

11. The City of Melbourne commits to working with the Department of Transport on the coordinated communications and marketing of a trial of e-scooters in Melbourne.
12. The City of Melbourne has an ongoing and close working relationship with DoT in relation to a range of transport initiatives including speed limit reductions and the approval and delivery of Covid-19 protected bicycle lanes.
13. We will also work closely with industry, all levels of government and the community to facilitate trials and pilots of new transport technology.

### **Steering Committee**

14. The City of Melbourne supports robust evaluation the trial to ensure that the costs, benefits, opportunities and learnings of the trial are identified in the Melbourne and Victorian context.
15. The City of Melbourne would welcome an opportunity to be actively involved in the Steering Committee for the trial. We hope to learn and assist DoT to develop an approach for the optimal approach to the deployment e-scooters in Melbourne and Victoria to provide the greatest benefit to the community.



### City of Melbourne e-scooter accessible network and areas of interest

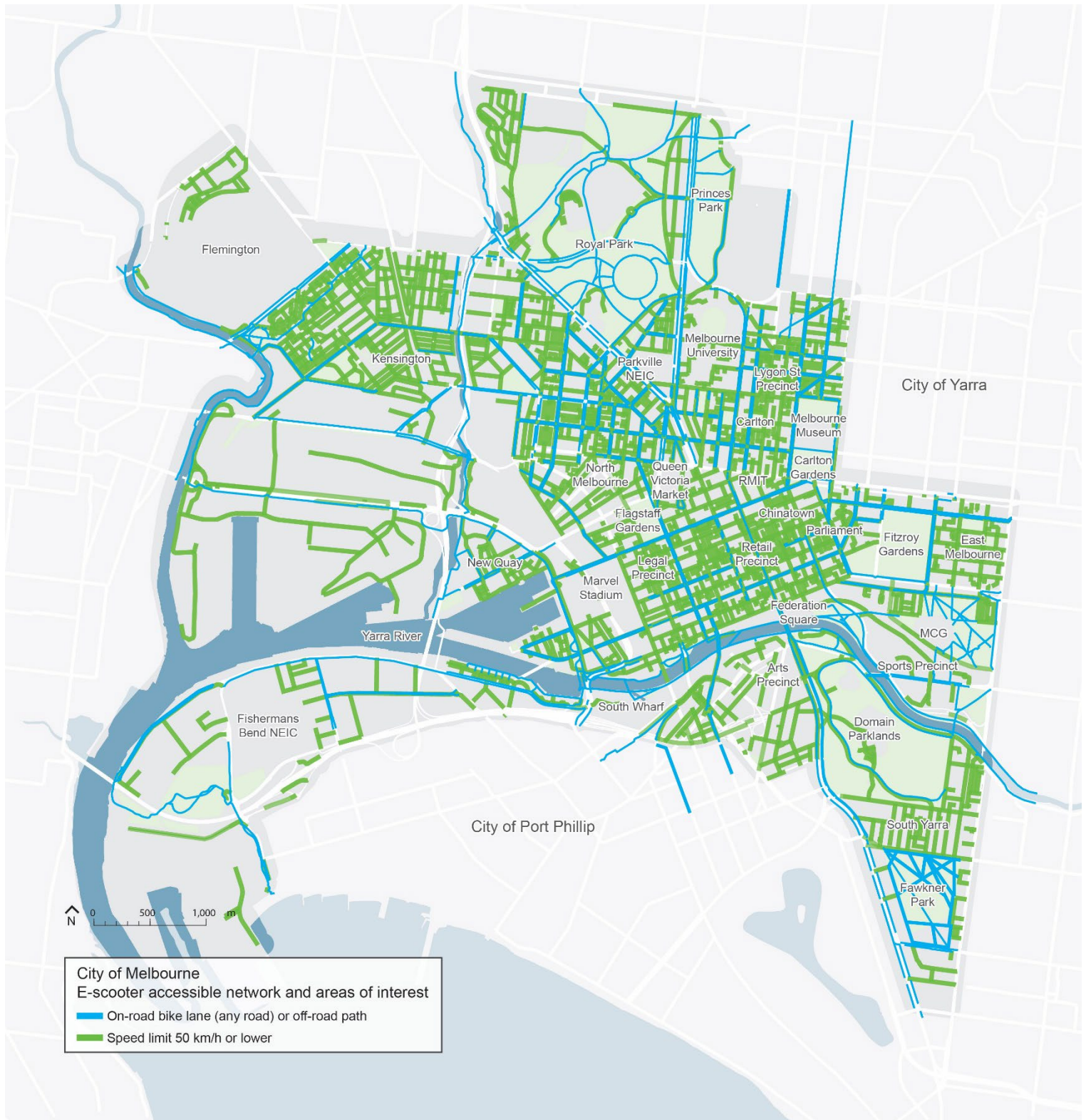


Figure 1. The City of Melbourne has a dense network of protected and separated lanes and low speed roads suitable for e-scooters to access a dense mix of land uses (City of Melbourne and Department of Transport data).

## Why The City of Melbourne is an appropriate location for the Victorian e-Scooter trial

### Network Coverage

- The City of Melbourne has an extremely dense (and growing) network of painted bicycle lanes, protected bicycle lanes and streets with a speed limit of 50 km/h or lower. This network provides the opportunity to access a wide variety of destinations that are of local, metropolitan and national significance.
- Within this network of low speed (50 km/h or lower) streets, there are even more suitable protected and off-road routes available that would appeal to people who are not comfortable riding unprotected from traffic. This increases the appeal and likelihood of increased trips on e-scooters in the City of Melbourne.
- The e-scooter accessible network in Melbourne is likely to expand during the time period of the trial as we construct more separated bicycle infrastructure and continue our program of speed limit reductions.

### The City of Melbourne has the greatest potential for e-scooter use in Victoria.

- The City of Melbourne commissioned independent analysis to assess the potential for scooter use in Inner Metropolitan Melbourne. It is called the Scooter-use Propensity Index (ScooPI) and shows the relative potential for e-scooter use in different LGAs in inner Melbourne. (See Attachment 1 below).
- ScooPI has identified that the City of Melbourne has the highest potential for e-scooter use in metropolitan Melbourne.
- ScooPI combines six factors which are significant drivers of shared mobility and e-scooters use. The factors have been determined by recent research.
- City of Melbourne's composite ScooPI score is 5.75 out of 6. The next nearest LGA achieves a score of around 3 out of 6. In five of the ScooPI factors City of Melbourne ranks highest.
- Recent research also demonstrates that a diversity of land uses increases e-scooter use. A land use diversity index has been developed, based on ABS data (see Attachment 1). The City of Melbourne has a greater diversity of land use than other LGAs. This diversity is likely to generate more trips, especially short trips, for which e-scooters are suitable.
- ScooPI also shows that the demographics and existing trip patterns in the City of Melbourne are highly conducive to e-scooter use.

### Multi Modal Travel in the City of Melbourne

- Research for Transport Strategy 2030 revealed that people in the City of Melbourne are more multi-modal than other LGAs in metropolitan Melbourne. It found that 68 per cent of visitors to the City of Melbourne used more than one mode of transport each day. This is more than double the metropolitan average of 32 per cent. Also, active transport rates for people who visit the City of Melbourne are about twice that of the wider population. The higher tendency to use active transport and multiple modes suggests that city transport users are more likely to try using e-scooters

### Our understanding of e-scooters

- The City of Melbourne has a well-developed understanding of e-scooters as a micromobility mode. This expertise will help deliver a successful trial. We understand how they are similar

to - and different from - shared and electric bicycles. This will enable us to make better decisions in planning and delivering a trial of e-scooters in Victoria.

- Shared e-bikes are more aligned to commuting trip behaviour in the AM and PM peak whereas e-scooters tend to peak later in the day.
- Shared e-bike users take longer trips on average than shared e-scooter users however each e-scooter is generally used more times per day.
- The user base of shared e-bikes and shared e-scooters generally only have a 5% overlap, meaning that adding e-scooters to Melbourne is likely to attract a predominantly new group of people to micromobility.
- E-scooters are considered easier to ride by users and have a lower barrier to entry than e-bikes. Users tend to feel more comfortable in everyday or business attire, with the mode having a lower association with exercise.
- While the user base of both modes is male dominated, the cohort of e-scooter users tend to be less male dominated than for e-bikes.

### **Shared e-bikes MoU**

- We have established a framework for the management of micromobility through our previous experiences with Melbourne Bike Share (MBS), oBike and the Lime shared e-bike scheme.
- The experience has helped refine what we would require from micromobility operators. One example is our requirement that operators must employ staff based in Metropolitan Melbourne under normal conditions of stable ongoing employment. This contrasts with the insecure working conditions often present in the micromobility industry. Our approach has meant that Lime shared e-bikes are serviced and maintained by Good Cycles, a non-profit organisation which empowers young people facing barriers to work by offering them employment pathways.
- The City of Melbourne has a long history in micromobility dating back to partnering with the DoT on the first Melbourne Bike Share (MBS) program in 2008. Key lessons learned from MBS include the need to ensure that bikes are attractive to ride and easy for the customer to access and that they need to be deployed over a wide enough area to make the using them worth the effort of hiring and “un-hiring” the bike. Other learnings related to the appropriate scale for shared schemes, governance arrangements, density, marketing and customer requirements.

### **Real-time micromobility monitoring and evaluation**

- We have recently established a partnership with Ride Report in conjunction with the City of Yarra and City of Port Phillip to monitor the current Lime shared e-bikes trial. Ride Report is the leading internationally-recognised, third-party monitoring platform for micromobility transport systems. The current agreement allows for multiple operators and vehicle types to be added to our subscription.

### **Systems to support the e-scooter trial**

- City of Melbourne has well established systems to respond to community enquiries and concerns. These include Customer Service, Local Laws enforcement and media/communications. We have received a small number of customer concerns during the Lime shared e-bike pilot in 2021, but have established a customer service process which is adequately resourced to manage the proposed e-scooter trial.
- Our Local Laws team is equipped with monitoring tools and powers to promptly resolve

issues which we anticipate may arise, to ensure the trial delivers benefits for our community.

### **Melbourne Innovation District**

- Melbourne Innovation District (MID) City North is a partnership with the University of Melbourne and RMIT and is located immediately north of the Melbourne CBD in an area with 21 per cent of all the knowledge sector jobs in metropolitan Melbourne. The MID aims to provide opportunities for Melbourne's knowledge workers, researchers, students, business and community organisations to connect and collaborate, creating innovative ideas essential for the city to continue to thrive and prosper.
- MID is an ideal location for e-scooter deployment. An e-scooter trial is well aligned with the MID City North Opportunities Plan. The vision is to create a place designed to leverage emerging technologies and innovation. Trials of emerging micromobility technology offer opportunities to support start-ups and foster innovation in Victoria's leading innovation district. New mobility services around the world have a demonstrated clear alignment for new users who may not otherwise use active transport. A range of research and data sharing opportunities with universities have been identified as part of an e-scooter trial.

### **Fishermans Bend**

- Fishermans Bend is an existing and growing centre for advanced manufacturing. The Fishermans Bend Framework notes the issues with transport to, from and within the Employment Precinct. E-scooters provide an opportunity to leverage Victorian Government investment in the Gateway to GMH bicycle connection which will be accessible to e-scooters. This will support development of GMH Site, University of Melbourne and activation of the precinct.

### **Creation of micromobility corridors**

The City of Melbourne is ideally located to facilitate the creation of micromobility corridors with adjacent LGAs for a range of trip purposes. This could include:

- **Melbourne – Port Phillip:** Supporting the visitor, tourist and social economy for recreation by providing connections from the Central City of Port Phillip Bay.
- **Melbourne – Yarra:** Supporting the start up economy in locations like Cremorne and Collingwood with an enhanced connection to the Melbourne CBD.
- **Melbourne – Moreland:** Supporting Victoria's highest use bicycle commuter corridor for trips to the Melbourne CBD with additional micromobility options to provide efficient and enjoyable transport options for more people.

### **Tourism, visitation and reactivation of the central city**

- Pre-pandemic, central and Greater Melbourne was one of the most attractive, prosperous and thriving parts of Australia. Up until March 2020, Melbourne's central city had a daytime population of nearly a million people, Australia's fastest growing night time economy and an annual Gross Local Product of more than \$104 billion. Greater Melbourne was on track to become Australia's biggest city by 2030. Accolades such as the World's Most Liveable City were frequent. The Covid-19 pandemic has had devastating health, economic and social impacts on Melbourne's businesses and communities. Restrictions to stem the spread of Covid-19 have sharply disrupted the way Melburnians live and work, changing the very nature of our social fabric. Our economy has been hit hard and the livelihood and well-being of so many has been significantly damaged.

- The City of Melbourne recovery will be central to the economic regeneration of Victoria and Australia. In order to plan the recovery, the City of Melbourne has developed a Covid-19 Reactivation and Recovery Plan. This includes further implementation of protected bicycle lanes as well as reactivation of “little streets”.
- Additionally the Council has endorsed a draft Economic Development Strategy “Melbourne’s Thriving Economic Future” which builds upon the Reactivation and Recovery plan. This includes initiatives to “Partner with industry and the Victorian and Australian governments to develop our innovation ecosystems, through international engagement, emerging technology trials, digital infrastructure delivery and more”.
- A trial of e-scooters in the City of Melbourne is aligned with reactivation and is a fun new way of rediscovering the city.
- Any agreement which City of Melbourne would make with e-scooter providers would include a requirement for partnerships between the provider and business precinct groups, businesses and other city activations.

### Safety

- Melbourne has a strong focus on road safety, particularly keeping vulnerable road users - people riding e-scooters, walking and riding bikes – safe. Research undertaken for the City of Melbourne Transport Strategy 2030 has shown that overall road safety has increased. The number of crashes per year have been trending downwards over the last ten years even though the daily population estimates are trending upwards. This shows that the number of crashes per capita have been decreasing. This is highly-correlated with the reduction of speed limits that have been implemented across the City of Melbourne.

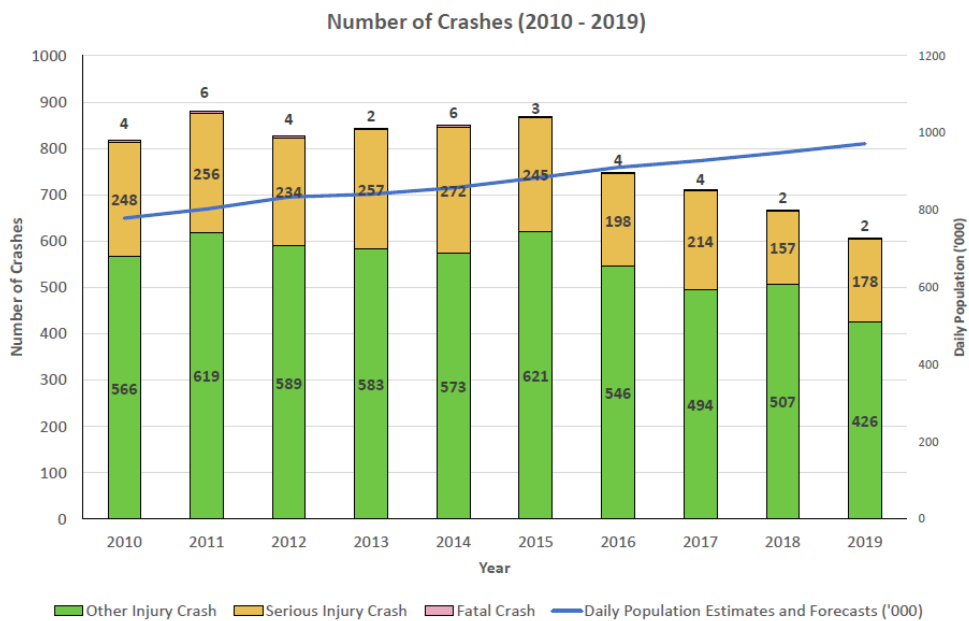


Figure 2 Number of Crashes in the City of Melbourne 2010-19 Source: City of Melbourne

### Speed Limits

- The City of Melbourne’s evidence-based approach is that one of the most significant measures that can be taken to reduce the incidence of traffic crashes and trauma is to reduce speed limits. The City of Melbourne has been progressively reducing speed limits across the municipality, particularly in areas of high pedestrian activity and high density land

use, for many years. These speed limit reductions have been focused on local shopping precincts, the central city and on local neighbourhood areas.

- There are further speed limit reductions that will be implemented in the near future, subject to DoT approval. This includes the proposed neighbourhood speed limit reductions in North Melbourne and West Melbourne in November 2021.
- As a result of these reductions, the majority of streets in the City of Melbourne are accessible to e-scooters in line with the proposed regulatory changes.

### **Development of the protected bicycle network**

- There has been substantial investment into the development of a network of protected bicycle lanes by the City of Melbourne and the Victorian Government. This protected bicycle network expansion will enable more people to feel comfortable and safe to try e-scooters during the trial period.
- The City of Melbourne has invested \$8 million to deliver more than 13km of protected lane kilometres since June 2020. The draft budget for 2021/22 includes a further \$8 million for protected lanes that will be able to be accessed by e-scooters during a trial. Currently there are over 215 lane-km of bike lanes and shared paths in the City of Melbourne.
- Network quality improvements have included adding physical protection to existing bike lanes and continuing physical protection from existing lanes to the intersection. This has also included the first physically protected intersection treatment at the corner of Albert and Lansdowne St in East Melbourne. These quality improvements to the network will encourage and enable more people to use them.



*Figure 3: Workers install Orca protective kerbing to improve the quality and connectivity of the bicycle network in Albert St East Melbourne Source: City of Melbourne*



# ScooPI – E-Scooter Propensity Index

Prepared for the City of Melbourne

May, 2021

Institute for  
Sensible Transport



**Prepared by**

Liam Davies, Vaughn Allan, and Gary Tong  
Senior Transport Analyst  
E: [liam@sensibletransport.org.au](mailto:liam@sensibletransport.org.au)  
P: 0404 207 633

**Institute for Sensible Transport**

ABN 78 504 466 884  
102/1 Silver Street, Collingwood  
Melbourne, Australia VIC 3066  
E: [info@sensibletransport.org.au](mailto:info@sensibletransport.org.au)  
[www.sensibletransport.org.au](http://www.sensibletransport.org.au)



# Contents

- 1. Introduction..... 4**
- 2. Methodology and assumptions..... 6**
  - 2.1 ScooPI..... 7
  - 2.2 Land use diversity index ..... 7
- 3. Results ..... 8**
  - 3.1 ScooPI..... 9
  - 3.2 Land use diversity index ..... 10
- 4. ScooPI Factor Maps .....12**

## List of figures

- Figure 1 ScooPI..... 9
- Figure 2 Land use diversity index..... 10
- Figure 3 Land use diversity index - City of Melbourne..... 11
- Figure 4 ScooPI - Residential population index.....13
- Figure 5 ScooPI - Residential tertiary student index .....14
- Figure 6 ScooPI - Employment index .....15
- Figure 7 ScooPI - Trips under 2km index .....16
- Figure 8 ScooPI - Trips after 5pm index.....17
- Figure 9 ScooPI - Social and recreation trips index..... 18

# 1. Introduction



## **The ScooPI (E-Scooter-use Propensity Index) was developed to illustrate relative propensity for e-scooter use in LGAs across inner Melbourne.**

ScooPI is the Scooter Propensity Index. It determines the relative propensity of particular places for shared e-scooter use. ScooPI combines six factors which are significant to use on shared mobility and e-scooters. The factors have been determined by recent research. The propensity for scooter use can be compared between LGAs.

In five of these six factors, City of Melbourne receives the highest rank, demonstrating peak potential for e-scooter use. City of Melbourne receives a composite ScooPI score of 5.75 out of 6, well above the next nearest LGAs, which receive less than 3 out of 6.

Recent research (see section 2.1 for relevant research papers) also demonstrates that a diversity of land uses increases e-scooter use. A land use diversity index has been developed, based on ABS data. City of Melbourne contains many areas of high land use diversity. This diversity will support more trip possibilities, especially short trips, for which e-scooters are most suitable.

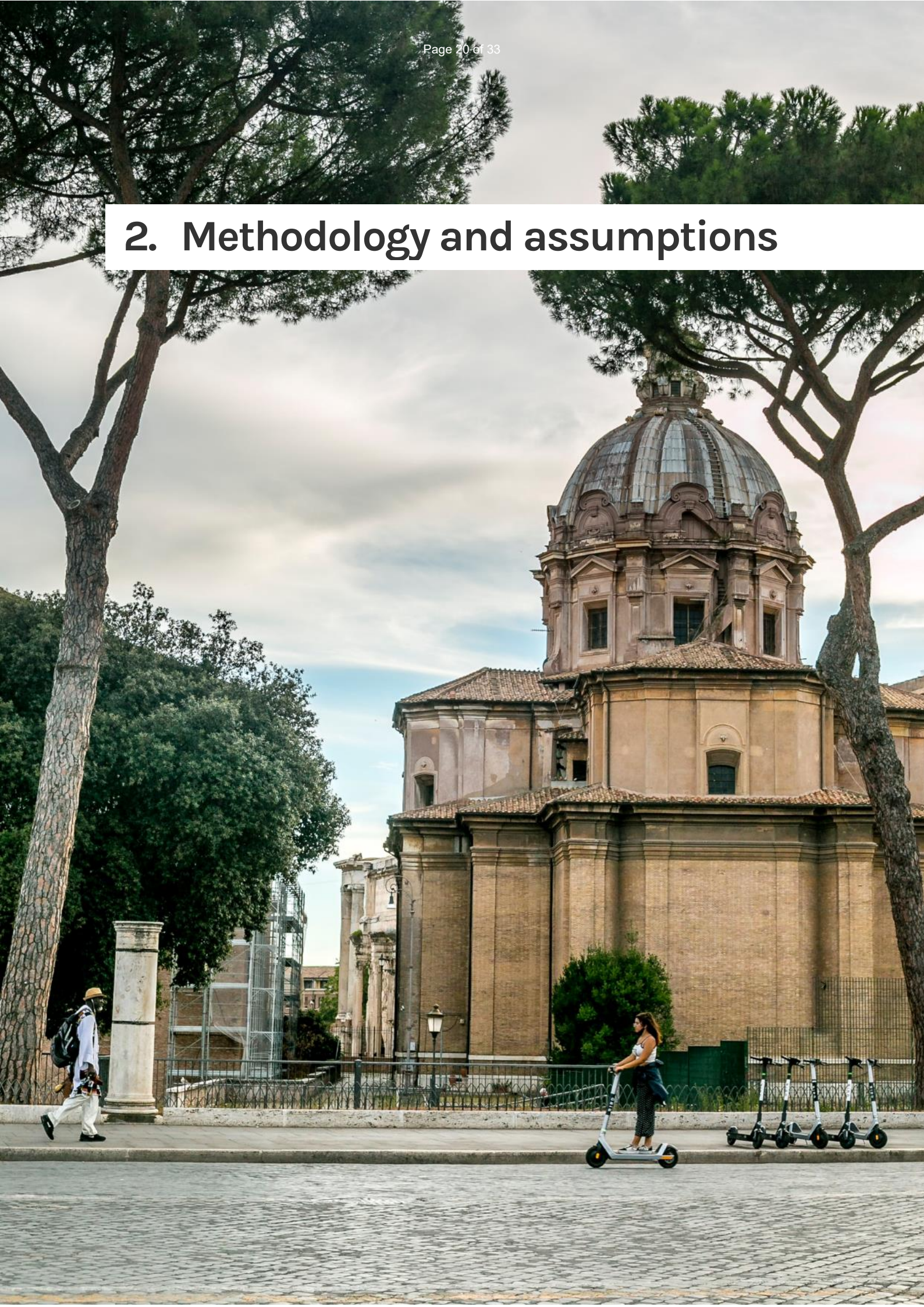
---

## **The City of Melbourne is the most appropriate LGA in Metro Melbourne for a shared e-scooter scheme.**

---

The observed demographics and trip patterns in the City of Melbourne are highly conducive to e-scooter use. This is reflected in a ScooPI score almost twice as high as the next LGA, and with a high level of land use diversity across the LGA. In our assessment, the City of Melbourne is the most appropriate LGA in metro Melbourne for a shared e-scooter scheme.

## 2. Methodology and assumptions



**The ScooPI is a composite index of six factors significant to e-scooter use. It has been developed for City of Melbourne to best understand e-scooter propensity. The Land Use Diversity Index illustrates diversity of land uses for areas within City of Melbourne and surrounding LGAs.**

## 2.1 ScooPI

The ScooPI is a composite index of six factors which measure the propensity for e-scooter use, at an LGA level. The Index has been developed for City of Melbourne based on the Bike Use Propensity Index, and emerging knowledge about e-scooters. The six factors are:

- Residential population density (ABS Census)
- Residential tertiary student density (ABS Census)
- Employment density (ABS Census)
- Trips under 2km (per square km) (VISTA)
- Trips after 5pm (per square km) (VISTA)
- Social and recreation trips (per square km) (VISTA)

Residential population density and employment density are recognised as key factors driving the use of bike share.<sup>1</sup> These factors have been included in previous propensity indexes and are included here as they are likely to have positive impacts upon shared e-scooter use.

No post-COVID data is available to determine the extent residential, tertiary student, nor employment densities may have changed, nor the possible long-term implications of COVID on either factor.

Recent research investigating shared e-scooter has revealed that e-scooter users are almost twice as likely to be students, an important difference between bike share schemes and scooter share schemes.<sup>2</sup>

Data from the Austin, Texas shared e-scooter scheme reveals an average trip distance of 1.2km, with 50% of trips being between 800m and 1.6km.<sup>3</sup> The same study has revealed that many trips occur on e-scooters between 5pm and 8pm in the evening. Further, many e-scooter users listed fun, social meetings, and recreation as trip purposes.<sup>4</sup>

For each of these factors, the highest ranking LGA has been assigned a 1, with all other LGAs assigned a relative score between 0-1. All factors were weighted equally. For example, a score of 1 is the highest ranking LGA, while a score of 0.3 indicates that LGA is 30% the value of the highest. The ScooPI is the aggregate of all factors, creating a score of 0 to 6.

## 2.2 Land use diversity index

A Land use diversity index has been created to demonstrate diversity in land forms across LGAs. Previous analysis of shared e-scooter has shown a significant relationship between land-use and e-scooter use.<sup>5</sup> The index is an entropy index, using ABS Mesh Block land use categories as base data. This is an established method of analysis for e-scooter use<sup>6</sup> and urban transport analysis.<sup>7</sup>

One limitation of using ABS Mesh Block data in an entropy index is that only a single land use can be assigned to a single mesh block. This depresses rankings in areas with fine grain diversity, such as Melbourne's CBD. Evidence shows that CBDs are extremely likely to have high e-scooter use.<sup>8</sup> To address this distortion, Melbourne's CBD has been excluded from the index.

<sup>1</sup> Fishman, E & von Wyss, M 2017, 'Bike share in the Australian city: Assessing the feasibility of a future bike share program for Adelaide', *Road & Transport Research*, vol. 26, iss. 2.

<sup>2</sup> Bielinski, T & Wazna, A 2020, 'Electric Scooter Sharing and Bike Sharing User Behaviour and Characteristics', *Sustainability*, vol. 12, iss. 22.

<sup>3</sup> Jiao, J & Bai, S 2020, 'Understanding the Shared E-scooter Travels in Austin, TX', *ISPRS International Journal of Geo-Information*, vol. 9, iss. 2.

<sup>4</sup> Bielinski & Wazna, 'Electric Scooter Sharing and Bike Sharing User Behaviour and Characteristics'.

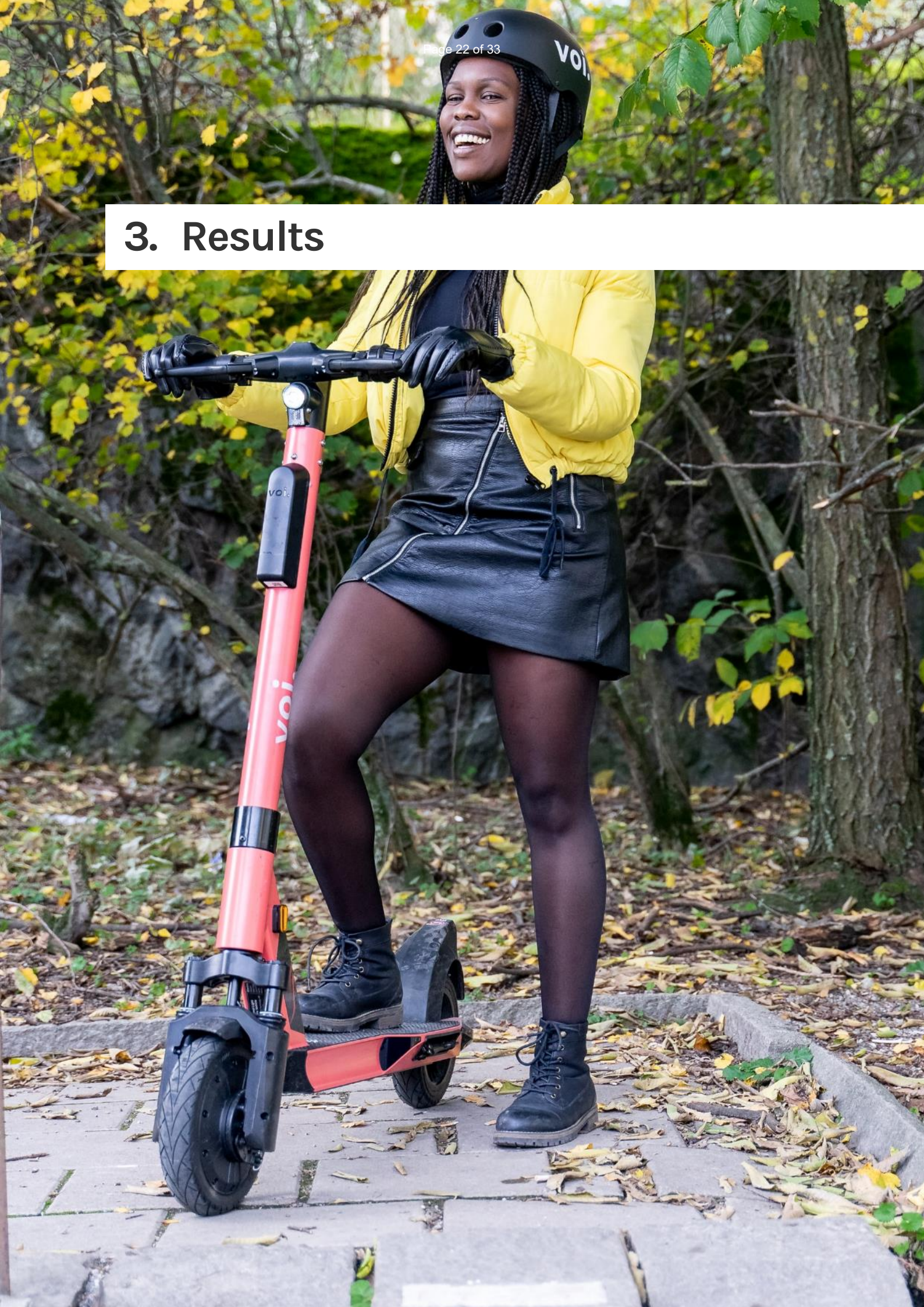
<sup>5</sup> Jiao & Bai, 'Understanding the Shared E-scooter Travels in Austin, TX'.

<sup>6</sup> Jiao & Bai, 'Understanding the Shared E-scooter Travels in Austin, TX'.

<sup>7</sup> De Gruyter, C, Truong, LT, Taylor, EJ 2020, 'Can high quality public transport support reduced car parking requirements for new residential apartments?', *Journal of Transport Geography*, vol. 82.

<sup>8</sup> Jiao & Bai, 'Understanding the Shared E-scooter Travels in Austin, TX'.

### 3. Results



### 3.1 ScooPI

The composite ScooPI is shown, at an LGA level, in Figure 1. The City of Melbourne has the highest propensity for e-scooter use.

The City of Melbourne achieves a total score of 5.75 out of 6, having received 1 in five of the six factors (see ScooPI Factor Maps). This is significantly higher than the next LGAs, the City of Yarra and the City of Port Phillip, which both scored less than 3.

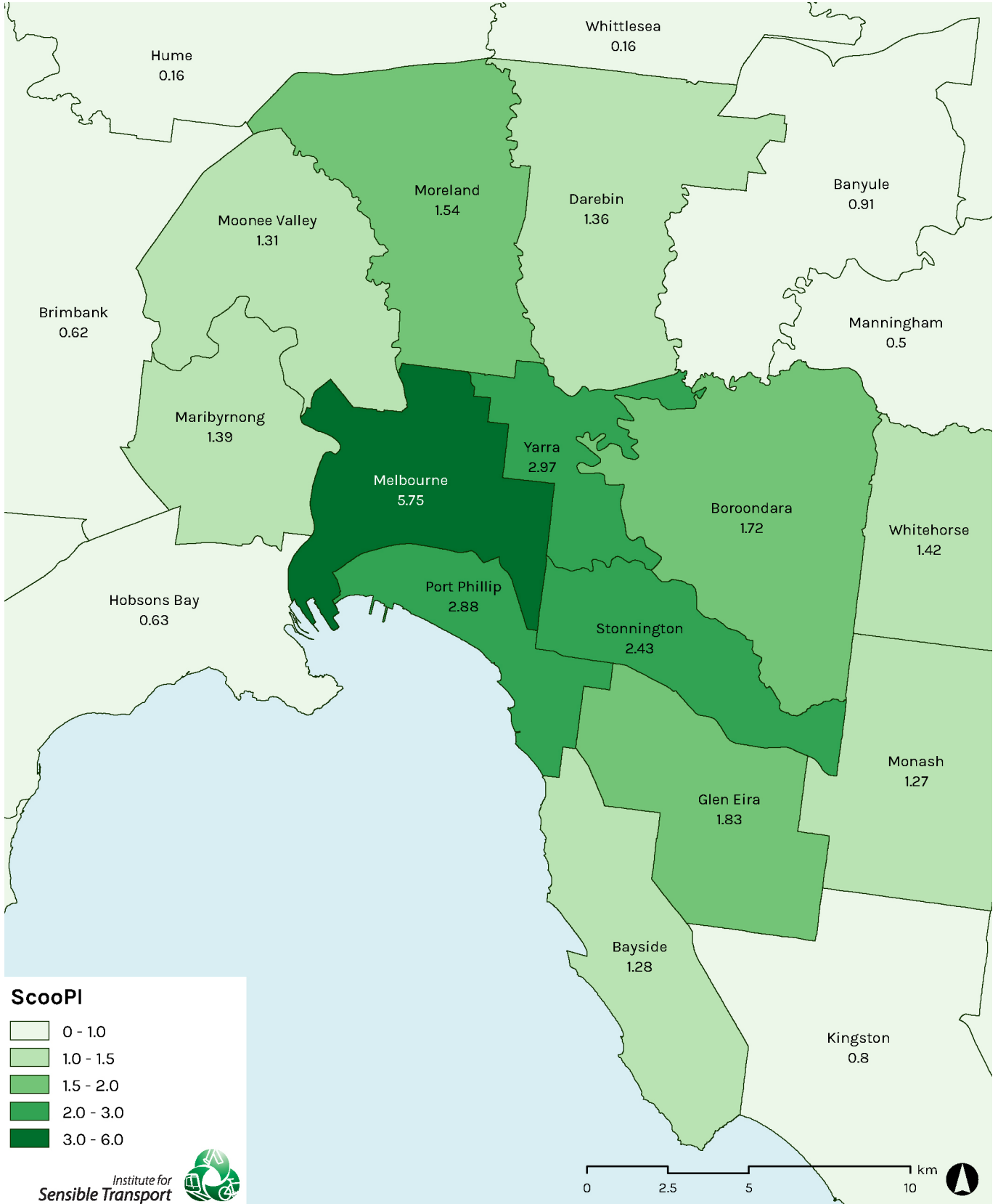


Figure 1 ScooPI

### 3.2 Land use diversity index

The Land use diversity index is shown in Figure 2 and Figure 3, at an ABS SA2 Level (statistical area level two, which is roughly equivalent to a suburb).

Areas within the City of Melbourne consistently score highly, meaning they have a greater diversity of land uses. Importantly, Carlton and Melbourne Uni, Docklands, and Southbank are all very high. This suggests a high potential for e-scooter use.

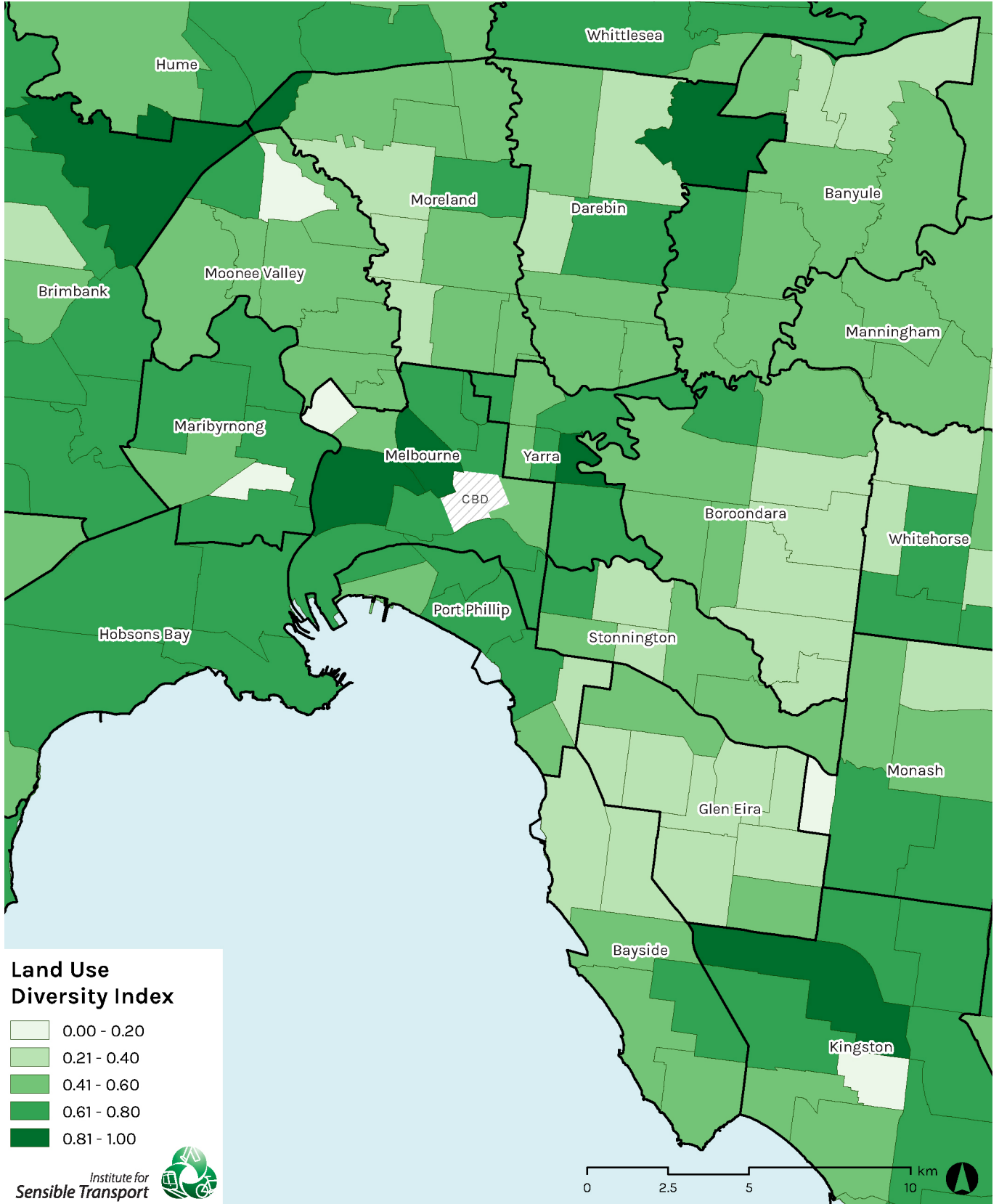


Figure 2 Land use diversity index



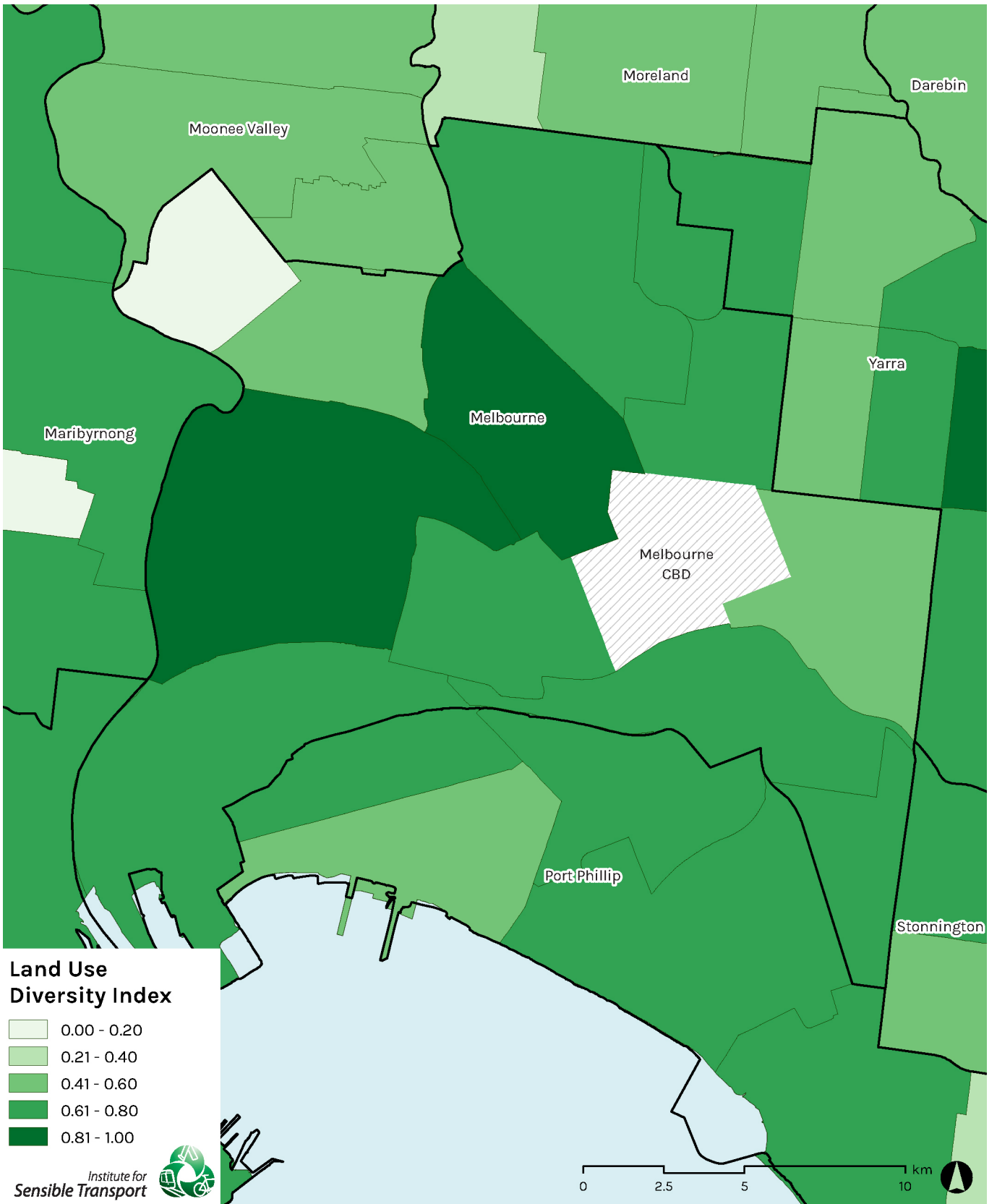


Figure 3 Land use diversity index - City of Melbourne

## 4. ScooPI Factor Maps



The ScooPI residential population index is shown in Figure 4. The City of Port Phillip has the highest residential population density of all LGAs. The City of Melbourne receives a 0.75, having a density 75% that of Port Phillip. This is the only factor the City of Melbourne does not receive a 1 for, given that several parts of the Melbourne LGA do not have a residential population (Port of Melbourne, Fishermans Bend, etc). However, densities of the residential parts of the City of Melbourne are often denser than anywhere else in Metropolitan Melbourne. Workers, students, shoppers, and tourists significantly contribute to the City of Melbourne’s daytime population, which is not captured in this figure.

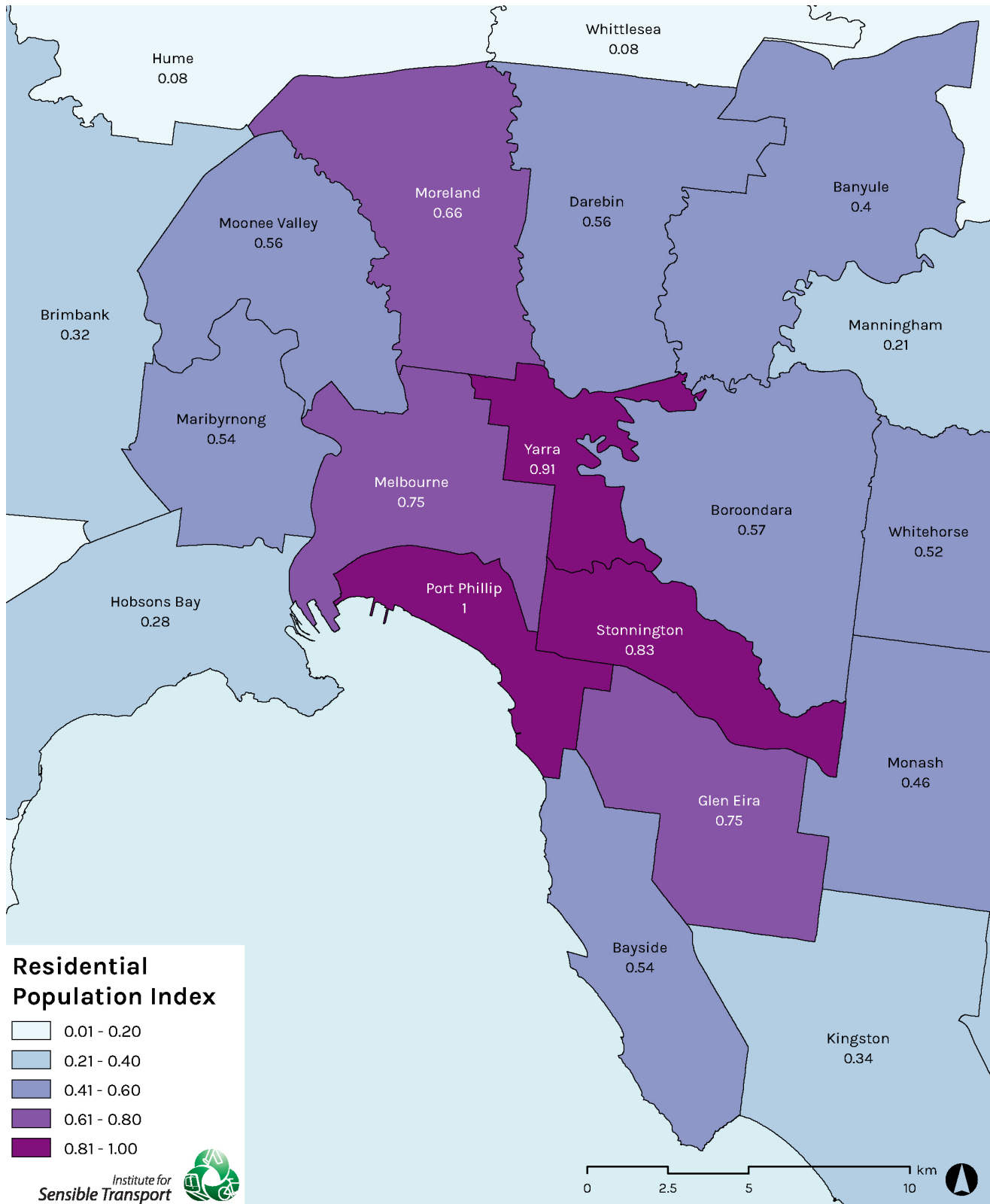


Figure 4 ScooPI – Residential population index

The ScooPI residential tertiary student index is shown in Figure 5. The City of Melbourne has the highest residential tertiary student population density of all LGAs. The next highest is the City of Yarra, at 47% the density of the City of Melbourne.

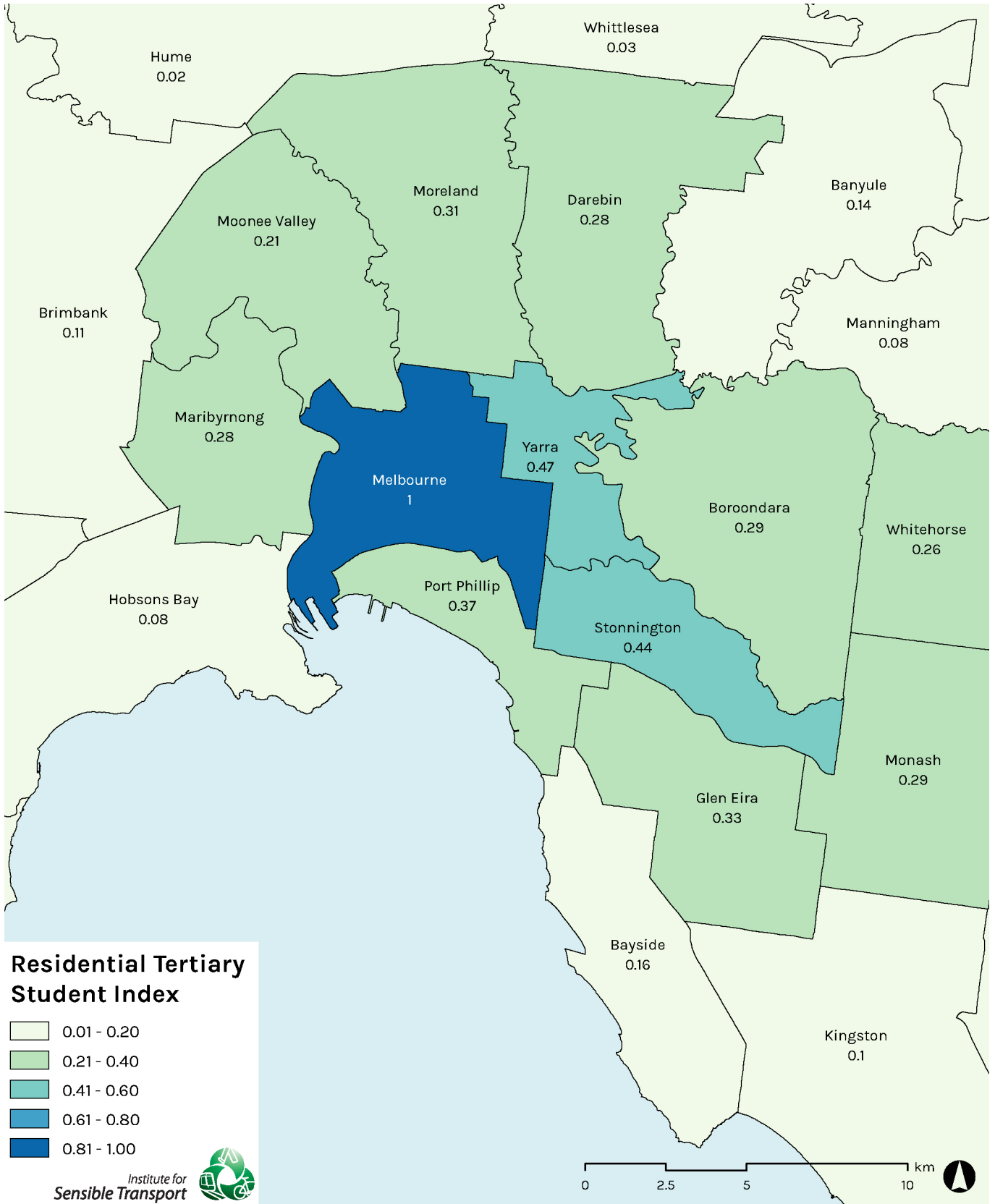


Figure 5 ScooPI – Residential tertiary student index

The ScooPI employment index is shown in Figure 6Figure 5. The City of Melbourne has the highest employment density of all LGAs. The next highest is the City of Yarra, at 35% the density of the City of Melbourne.

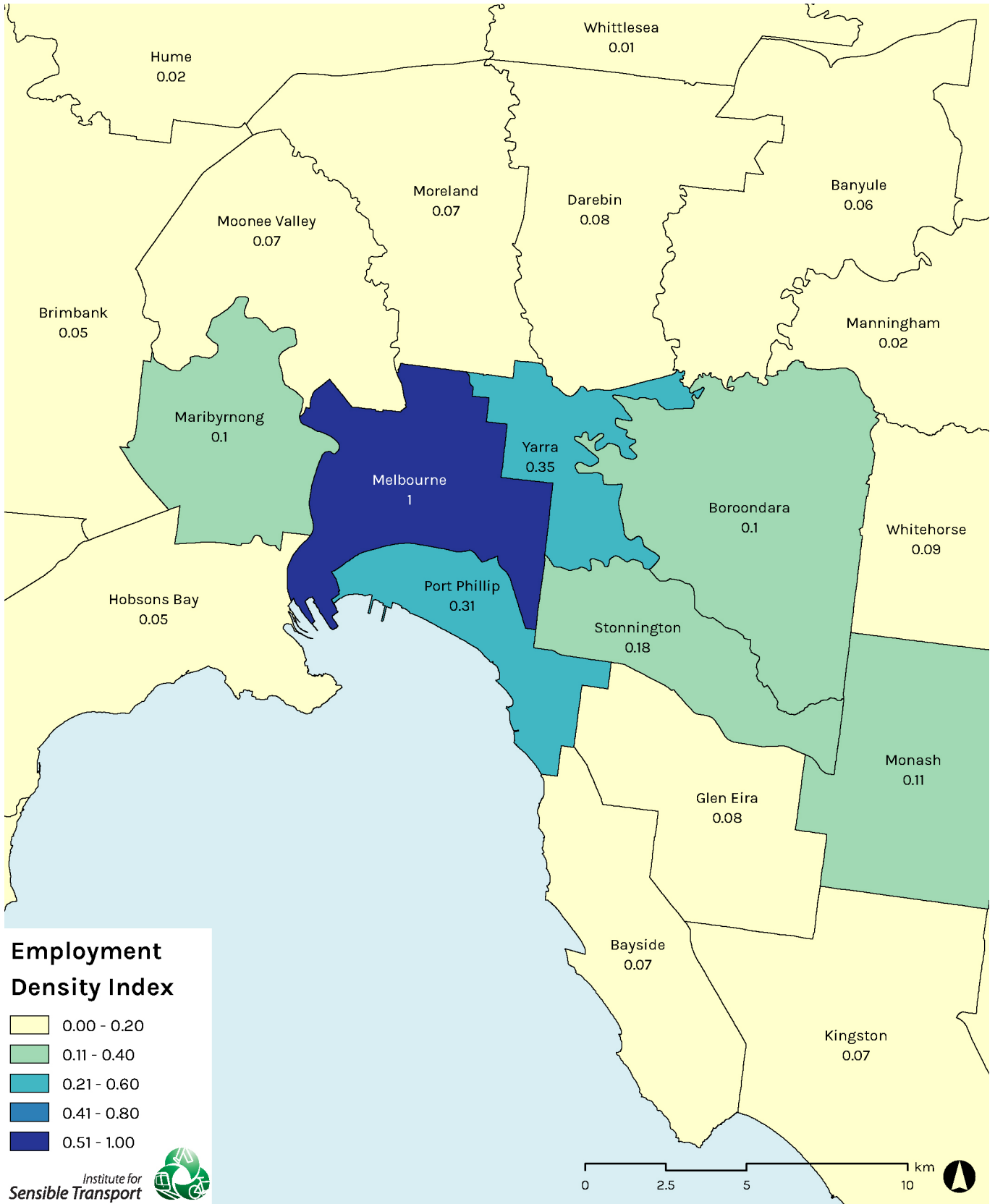


Figure 6 ScooPI – Employment density index

The ScooPI trips under 2km index is shown in Figure 7. The City of Melbourne has the highest number of trips under 2km per square kilometre of all LGAs. The next highest is the City of Yarra, at 37% the rate of the City of Melbourne.

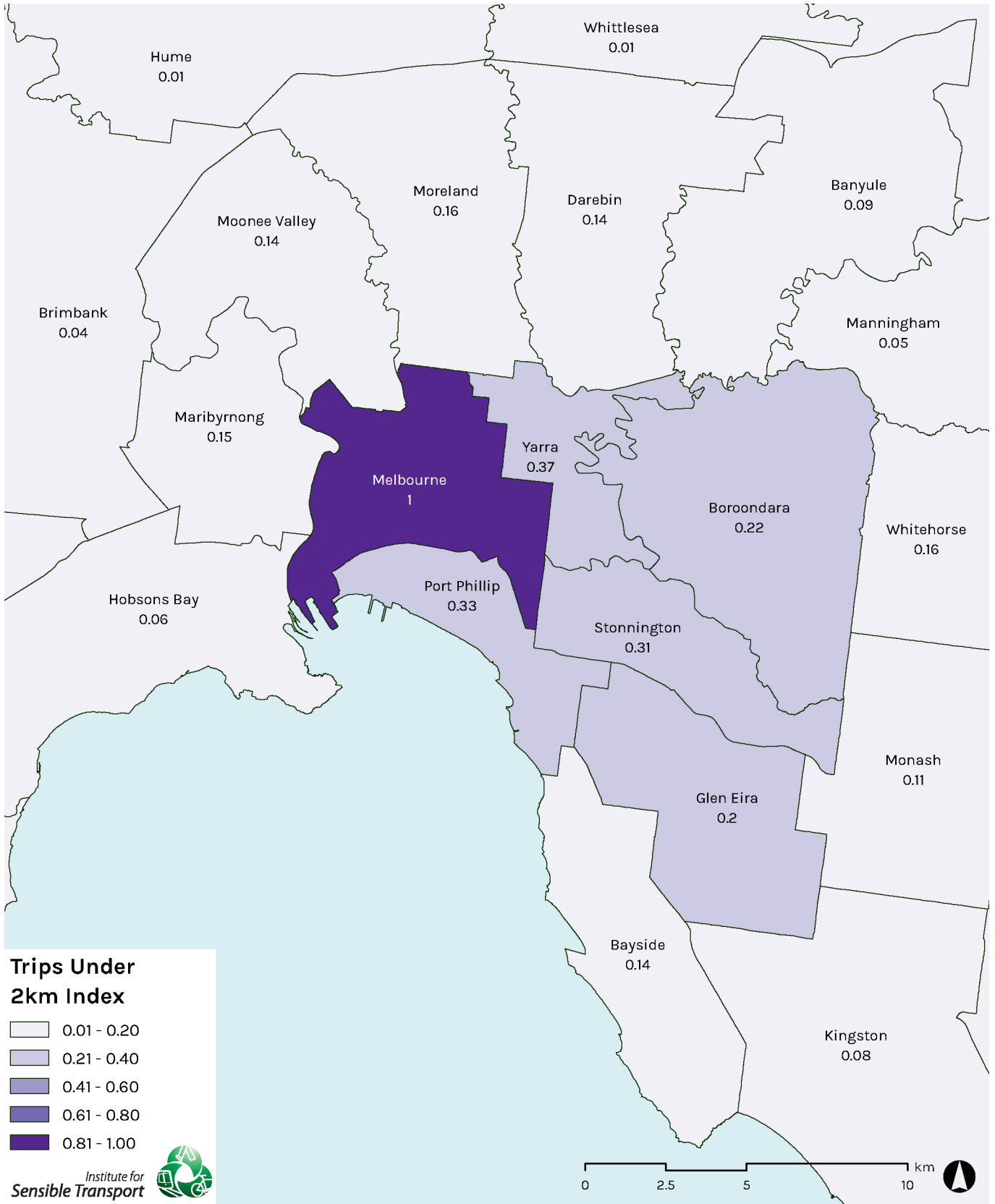


Figure 7 ScooPI – Trips under 2km index

The ScooPI trips after 5pm index is shown in Figure 8Figure 5. The City of Melbourne has the highest number of trips after 5pm per square kilometre of all LGAs. The next highest is the City of Yarra, at 37% the rate of the City of Melbourne.

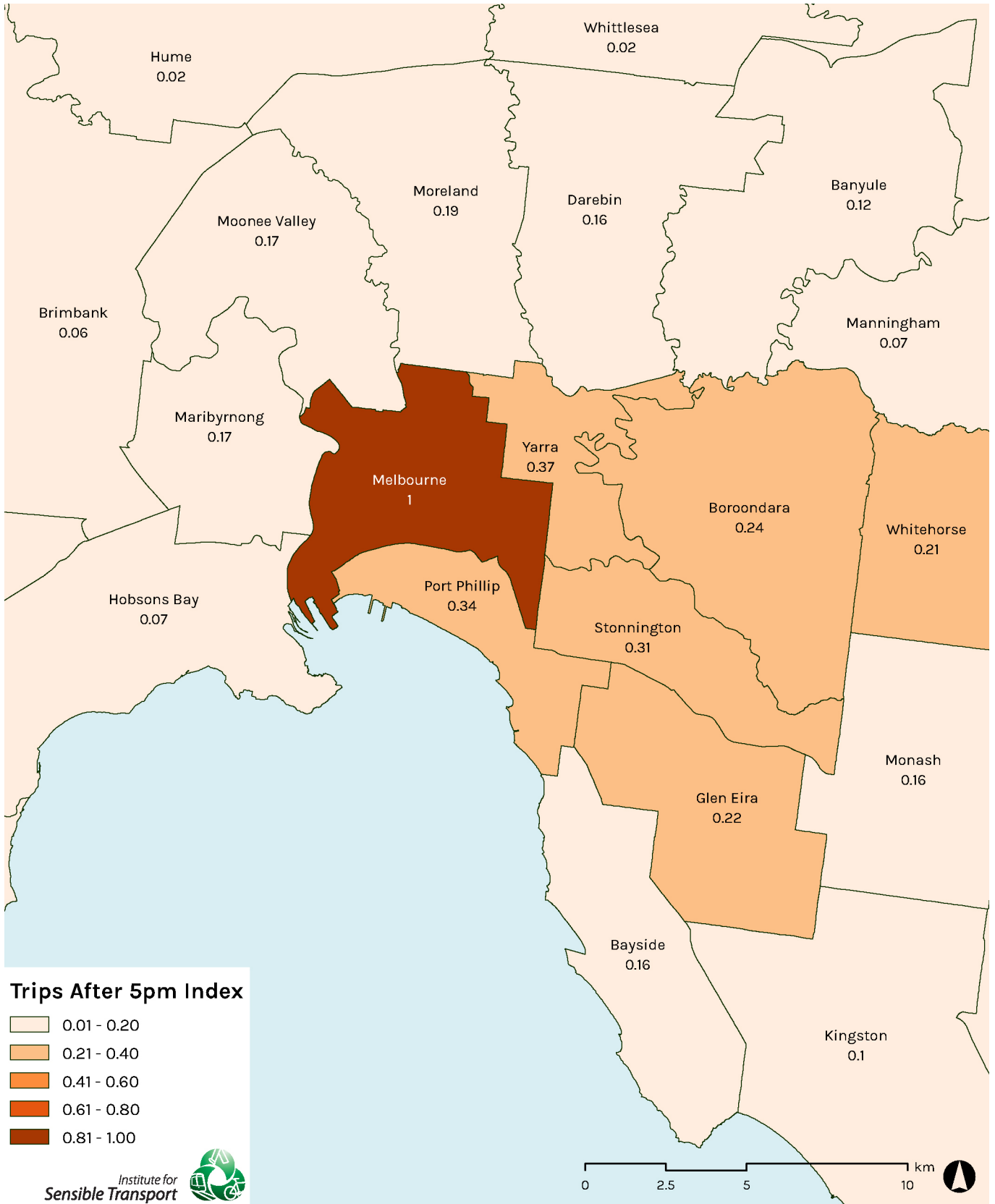


Figure 8 ScooPI – Trips after 5pm index

The ScooPI social and recreation trips index is shown in Figure 8Figure 5. The City of Melbourne has the highest number of social and recreation trips per square kilometre of all LGAs. The next highest is the City of Port Phillip, at 53% the rate of the City of Melbourne.

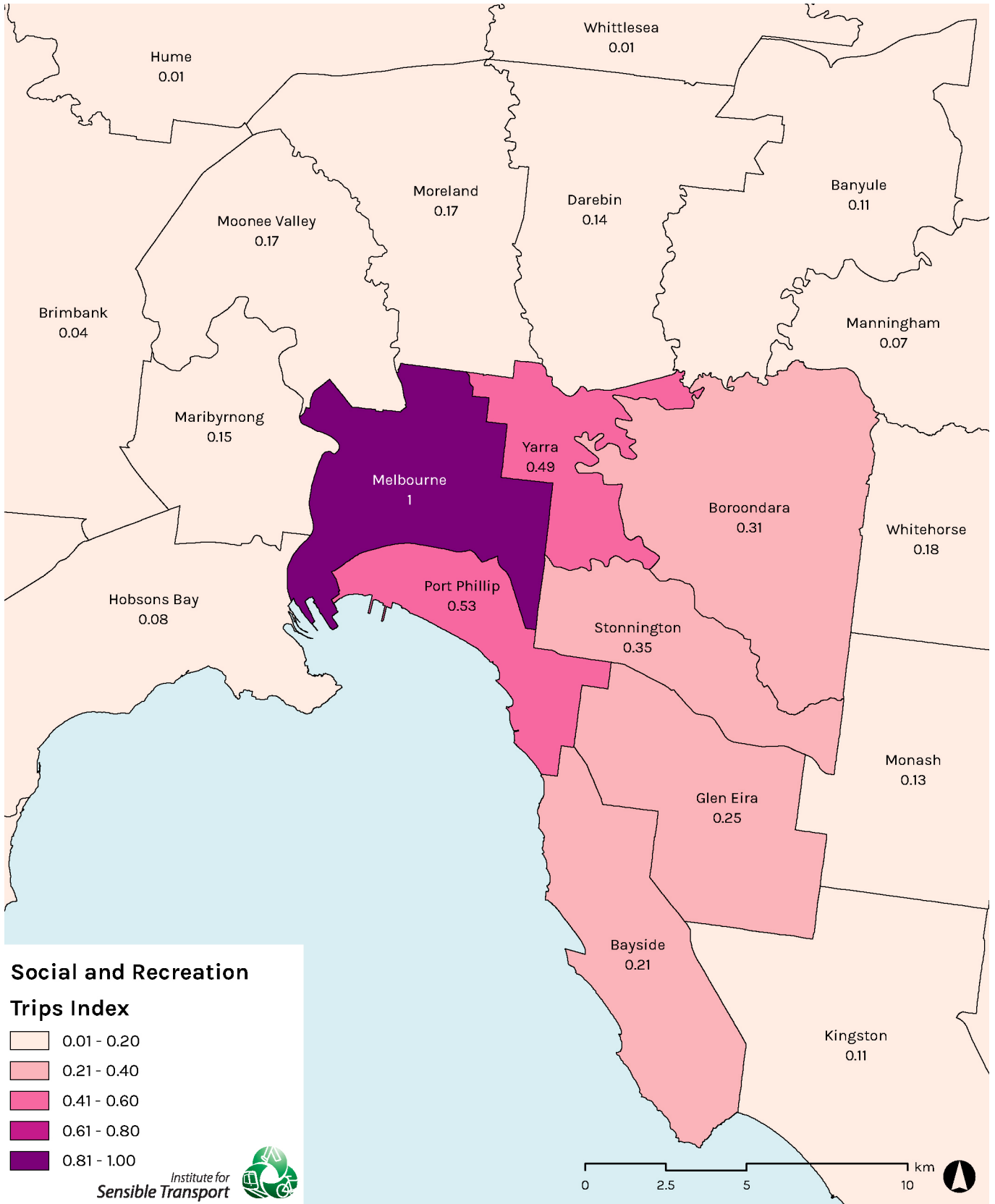


Figure 9 ScooPI – Social and recreation trips index



**Institute for Sensible Transport**

102/1 Silver Street, Collingwood  
Melbourne, Australia VIC 3065  
E: [info@sensibletransport.org.au](mailto:info@sensibletransport.org.au)  
[www.sensibletransport.org.au](http://www.sensibletransport.org.au)