

Inner Melbourne Action plan

Briefing Paper

G2.P1 Business Case: Inner Melbourne Cycling Network

Purpose

1. To propose that the Inner Melbourne Action Plan (IMAP) Implementation Committee agrees to commission transport modelling work to support cycling in inner Melbourne, as an important step in the development of a wider Metropolitan Cycling Network.

Background

2. One priority in the *Inner Melbourne Action Plan 2016-2026* is the proposal for an Inner Melbourne Cycling Network, led by the City of Melbourne.
3. The City of Melbourne commissioned the development of a bicycle network modelling tool to analyse rider behaviour in the municipality and the impact of infrastructure on rider behaviours. This analysis identified and ranked priority links within the municipal network for both future investment and research (Appendix 3)
4. Resilient Melbourne has committed to developing a metropolitan wide cycling network. To deliver on this Resilient Melbourne, with representatives from 28 of the 32 metropolitan councils (including all IMAP councils) and Jacobs (a 100 Resilient Cities Platform Partner), developed an Action Plan for the implementation of the Metropolitan Cycling Network.
5. A key action from this was the creation of a network map that unites existing cycling routes from the metropolitan region. These include the Strategic Cycling Corridors, the Principal Bicycle Network, as well as routes and trails developed and maintained by local government.

Discussion

6. It was agreed with the IMAP Transport Managers Forum that IMAP should, in their own councils' interests, support this broader work with Resilient Melbourne and that this proposal should come to Committee for agreement.
7. The proposal is that existing City of Melbourne modelling work be scaled up to the inner Melbourne region. Having a clear guidance for the placement of recommended network links and upgrades will provide a strong evidence case to advance collective active transport and cycling efforts. It was agreed that this approach provides a greater opportunity and is the logical next step to advance support for cycling in Inner Melbourne than a business case, as previously suggested.
8. Alignment to IMAP 2016-2026 is provided in Appendix 1, along with an indicative project staging process in Appendix 2.
9. This project could be applied at individual council levels, as well as for the inner Melbourne region.

Benefit to IMAP Councils

10. The IMAP councils would see a number of benefits individual and collectively, including:
 - a. An accessibility analysis report of the proposed routes with relation to education, jobs and entertainment within the IMAP region.
 - b. Identification of forecast ridership increase based on initial market survey and correlation between social accessibility indicators and the proposed network links.

11. The above will be completed for the IMAP councils. It will provide an important platform that will support Resilient Melbourne in attracting funding to complete additional mapping for the wider metropolitan network map, which will in turn have further benefits for IMAP councils.

RECOMMENDATION

12. That the Implementation Committee supports the proposal to develop a bicycle network map that immediately benefits IMAP councils, as well as having broader application beyond the inner Melbourne region that will in turn support the creation of a Metropolitan Cycling Network.

Appendix 1 – Inner Melbourne Cycling Network alignments and project rationale

<p>Name and purpose of the project/action</p>	<p>Name: Inner Melbourne Cycling Network</p> <p>Purpose: Build and provide a metropolitan wide cycling model to map existing infrastructure, analyse gaps and prioritise future network planning:</p> <ul style="list-style-type: none"> • Collect existing cycling infrastructure (bike lanes, protected bike lanes and off road) and GIS data from across the 32 metropolitan councils, commencing with the Inner Melbourne Councils. • Include State Government priorities including the Strategic Cycling Corridors, Metropolitan Trails Network, Principal Bicycle Network. • Source and map the detailed user modelling (as per City of Melbourne work) across inner Melbourne. • Identify and rank key gaps in the network according to current bicycle usage. • Identify and evaluate the value uplift of key gaps in the IMAP area including the potential increase in bicycle use and their correlated benefits to key social and economic indicators.
<p>Alignment with IMAP Goals and Strategies;</p>	<p>This was listed as an action with the goal of making Inner Melbourne an <i>“internationally renowned cycling and walking region that is well connected by a network of convenient, comfortable, safe and direct walking and bike riding routes”</i> within 10 years.</p> <p>The specific goals and strategies that this action meets are:</p> <ul style="list-style-type: none"> • Goal 2: A connected transport network that provides real travel choices. • Strategy 2.3: We will make Inner Melbourne a ‘cycling friendly’ region by creating a continuous network of on and off road cycling routes. Opportunities include: <ul style="list-style-type: none"> ○ Developing evidence based guidance for the design and implementation of the complete central sub-region cycling network; ○ Improving connectivity and quality of cycling and walking networks in the inner west, inner south and inner southeast. <p>IMAP Three Year Implementation Program:</p> <p>The current Program lists the following priority project commencing 2017-18 with a budget of \$100,000:</p> <p>G2.P1 – Business Case: Inner Melbourne Cycling Network</p> <ul style="list-style-type: none"> • Prepare a network map for an integrated IMAP connected cycling network, highlighting existing routes, modelled rider flow and prioritised missing links.

	<ul style="list-style-type: none"> • Prepare evidence based guidance for IMAP councils to advocate for improved cycling infrastructure both municipally and regionally. • Overlay the prioritised routes with existing and forecasted improvements in social and economic indicators for the inner Melbourne region.
Investment logic analysis (e.g. what are the problems, benefits, potential strategic responses and solutions)	<ul style="list-style-type: none"> • This provides the first single resource for the inner Melbourne Councils which encompasses existing routes within individual councils and the wider region. • To build on the City of Melbourne's work it is regionally and economically more viable that this be completed as part of Resilient Melbourne's metropolitan cycling network. • This will provide a per council more resource effective tool to recognise and prioritise future transport both for IMAP councils, the inner Melbourne region and across metropolitan Melbourne. • Additionally, this will provide the IMAP councils a more solid baseline to seek State Government funding as it relates to active transport infrastructure both within inner Melbourne and within the metropolitan region.
Project scope and timeframe;	<ul style="list-style-type: none"> • Initial inquiries indicate that this project would be completed within 3-6 months.
Project cost and funding sources;	<p>Total Metro-wide Project Cost Estimate range: \$200,000 - \$450,000</p> <p>The intention of a metropolitan wide initiative is that individual investments are collaborated and congregated with those additional and related investments across the region.</p> <p>Resilient Melbourne has been working across the metropolitan region to review and propose funding sources for this network map, these include:</p> <p>Indicative potential funding sources:</p> <ul style="list-style-type: none"> • Metro Partnerships (6) - \$50K State Government funding each (Total \$300,000) – Positive response from Office for Suburban Development received. Distribution of funds cannot be made until next round of partnerships in 2019. • IMAP Councils - \$100,000 IMAP project funds (already allocated for a Bicycle Network project) • State Government partners – Funding TBA • Regional transport collectives (i.e. Eastern Transport Coalition) <p>As this is a project budget which exceeds the lead council's procurement threshold, the contract will go to tender.</p>
Lead Council and project team	<p>City Of Melbourne, Resilient Melbourne.</p> <ul style="list-style-type: none"> • Toby Kent, Resilient Melbourne

	<ul style="list-style-type: none"> • Damon Rao, City Of Melbourne • Richard Smithers, City of Melbourne • Rufael Tsegay, Resilient Melbourne
Assessment against IMAP project criteria;	
Alignment with the IMAP vision -	
<ul style="list-style-type: none"> • Will the project/action demonstrably enhance the liveability of Inner Melbourne by delivering defined outcomes which contribute to achievement of the goal and aims of the plan? 	<ul style="list-style-type: none"> • This builds on existing work from the City of Melbourne, to create a cycling network and meets Goal 2 of the Inner Melbourne Action Plan 2016-2026 by: <ul style="list-style-type: none"> ○ Improving connectivity and quality of cycling and walking networks by identifying priority routes for Inner Melbourne residents. ○ The modelled routes would provide guidance to highlight local social and economic benefits for increased cycling infrastructure in the Inner Melbourne region. ○ Additional to the goal, this will directly relate IMAP's connectivity to the metropolitan region as a whole, granting it further importance to relevant state government actors.
<ul style="list-style-type: none"> • Does the project/action align with potential programs and/or funding opportunities within the state or federal government, or elsewhere? 	<p>As well as the Metropolitan Cycling Network, this action aligns with a number of external strategies with potential funding, including:</p> <ul style="list-style-type: none"> • Infrastructure Victoria 30 year Strategy <ul style="list-style-type: none"> ○ Action 4.1 Increase walking and cycling for transport • Plan Melbourne <ul style="list-style-type: none"> ○ Action 42: Strategic Cycling Corridors ○ Action 44: Local networks of cycling routes • Victorian Cycling Strategy 2018-28 <ul style="list-style-type: none"> ○ Goal 1: Invest in a safer, lower-stress, better connected network.
Regional benefit	
<ul style="list-style-type: none"> • Will the project/action's benefits accrue to a broader region (i.e. more than just one local authority)? 	<p>Benefits for IMAP</p> <ul style="list-style-type: none"> • Critical collateral to support making the case for cycling infrastructure within inner Melbourne. • Has the benefit of providing immediate solutions beyond a relatively simplistic lobbying position that a cost benefit study might be used for. • It could nonetheless be used to support a more comprehensive business case for the development of cycling infrastructure within the region, in line with state government objectives and the wider metropolitan region. <p>As described in appendix 2 stages 2, 4.4, 4.5 and 4.6 are undertaken exclusively for those IMAP councils. These are:</p> <ul style="list-style-type: none"> • IMAP will be the first to benefit from the implementation of the Metropolitan Cycling Network. • An accessibility analysis of proposed routes with relation to education, jobs and entertainment within the IMAP region. • Identification of potential increase of ridership based on initial market survey and correlation between social accessibility indicators and the proposed network.

<ul style="list-style-type: none"> Is there sufficient agreement amongst the IMAP members to undertake the project/action? 	<ul style="list-style-type: none"> It has been agreed by both the lead council and the IMAP Transport Managers Forum that proceeding as outlined will deliver significant benefits to IMAP councils.
Shared resources	
<ul style="list-style-type: none"> Are there opportunities for resource sharing and/or economies of scale? 	<p>Apart from IMAP, the following organisations share the objective of developing cycling infrastructure and present an opportunity of shared resources and scaling, these include:</p> <ul style="list-style-type: none"> Metropolitan Partnerships – Transport connectivity, active transport and open space were recognised as priorities across all partnerships. Transport for Victoria – Which prioritises both <i>Putting people first</i> and <i>supporting one system</i> through the Movement and Place Framework. VicRoads – Cycling identified as critical to the six transport objectives identified in the <i>Transport Integration Act 2010</i>.
Focus on results	
<ul style="list-style-type: none"> Does the project/action present opportunities to find new or better ways to address issues/challenges facing Inner Melbourne? 	<ul style="list-style-type: none"> An Inner Melbourne Cycling Network map will: <ul style="list-style-type: none"> Allow IMAP councils to determine how and where to invest to achieve their cycling and active transport priorities and increase ridership across the region. As well as the above, this will better equip IMAP councils to invest on priorities which expand into the metropolitan region. More broadly linking this to a Metropolitan Cycling Network will best mitigate the challenges of population growth and traffic congestion. When implemented there is the potential to address other issues such as rates of chronic illness through increased physical activity through transport. This provides a more robust advocacy platform, based on the broader economic viability of the region as it relates and can be improved by active transport infrastructure.
<ul style="list-style-type: none"> Can the expected results of the project/action be clearly defined? 	<ul style="list-style-type: none"> As a similar method has been completed by the city of Melbourne, there is an existing concept to review and expand on. <ul style="list-style-type: none"> Appendix 2 gives an indicative stage by stage process for this project. Appendix 3 of this document provides a summary of the proposed work to be scaled for the inner Melbourne and metropolitan region.
Timeliness	
<ul style="list-style-type: none"> Can the desired result be achieved within a 5-10-year period? 	<ul style="list-style-type: none"> The creation of the IMAP and metropolitan wide network map is estimated to take between 3-6 months. Moreover, the prioritised links will best position the IMAP councils to deliver on their priorities in optimal timeframes both as individual councils and regionally.
Effectiveness	

<ul style="list-style-type: none"> Do the expected outcomes warrant the expected investment of time and resources? 	<ul style="list-style-type: none"> As described in “<i>Regional Benefit</i>”, the existing funding will meet as well as provide additional benefits to the inner Melbourne councils, their ability to advocate for increased active transport infrastructure and ultimately the benefits to their communities.
Value add	
<ul style="list-style-type: none"> Does the project/action overlap, duplicate or enhance other strategies being undertaken elsewhere? 	<p>This builds on existing work from the City of Melbourne as well as overarching State Government strategic objectives to deliver additional benefits to the inner Melbourne region, these include:</p> <ul style="list-style-type: none"> City of Melbourne work The Metropolitan Cycling Network Victorian Cycling Strategy
<p>Sponsor organisations and potential partners;</p>	<p>It has been agreed that this work be led by the City of Melbourne and Resilient Melbourne with input from relevant parties as necessary, including:</p> <ul style="list-style-type: none"> Melbourne Water Parks Victoria Public Transport Victoria Transport Accident Commission Transport for Victoria
<p>Recommendation.</p>	<p>That the IMAP Implementation Committee supports the prescribed approach for the Inner Melbourne Cycling Network.</p>

Appendix 2 – Indicative staging of a metropolitan wide network map (*Stages exclusive to IMAP councils)

Stage 1	Kick off meeting
	1.1 Inception meeting
	1.2 Identification of data
	1.3 Method workshop/presentation
Stage 2	Network Preparation IMAP*
	2.1 Collection of data existing and proposed Network IMAP Councils*
	2.2 Collection Open street map*
	2.3 Existing Network preparation (paint/ protected/ off road)*
	2.4 Proposed Network Preparation (paint/ protected/ off road)*
Stage 3	Network Preparation Non IMAP
	3.1 Collection of data existing and proposed Network Non IMAP 27 Councils
	3.2 Collection Open street map
	3.3 Existing Network preparation (paint/ protected/ off road)
	3.4 Proposed Network Preparation (paint/ protected/ off road)
Stage 4	Analysis
	4.1 OD Matrix ABS 2016 (assignment)
	4.2 Routes analysis
	4.3 Identification of Gaps (current gaps)
	4.4 Accessibility analysis, Education, Jobs, entertainment (SGS small area model zones) 2018 & 2028 (bicycle and PT)*
	4.5 Correlation accessibility analysis (JTW/access to Job)*
	4.6 Identification of potential increase in ridership based on market survey and/or correlation (whichever works better)*
Stage 5	Accessibility report (for IMAP municipalities)*
	5.5 Results workshop
	5.6 IMAP Report
	5.7 Individual Municipalities infographic

Appendix 3 – Summary of City of Melbourne Bicycle Network Modelling

City of Melbourne commissioned SGS to analyse commuter rider behaviour in inner Melbourne and the impact that improved infrastructure has had on rider flows. SGS completed detailed spatial analysis to compare actual rider routes (record on the Bicycle Victoria's Rider Log app) with the shortest route possible using network analysis. From this SGS developed a Switch Route Model (SRM) that emulated rider's behaviour and estimated commuter flows across the network. The model incorporates actual rider preferences and hence highlights the impact of improved infrastructure/links.

A number of key findings can be drawn from the study:

- **Cyclists do take longer routes to access improved infrastructure.** In fact, 65 per cent of riders choose a route 15 per cent longer than the shortest route possible to access improved bicycle infrastructure.
- **Recent bicycle infrastructure has significantly changed rider patterns.** Analysis of actual Rider Log data has shown that riders quickly shift their routes to leverage improved infrastructure. This can often impact route choice well before the actual piece of infrastructure and effectively create preferred rider corridors, similar to how major arterial roads and freeways focus traffic.
- **Data can be used to model commuter rider behaviour and inform investment decisions.** ABS Census Journey to Work data can be combined with rider behaviours to model commuter rider flows. This can be used to provide and evidence base to prioritisation of network gaps. It can also be used to model the impact of improvements (or removal) on key links in the network.

The study identified and ranked 14 priority gaps in the network based on the analysis (see below). These should be the focus of future research and potential investment.

The cutting edge study represents the first time rider behaviour has been modelled to this level of detail in the Melbourne context. It provides a platform to prioritise future investments and to model the impact of them. It could also model the impact of competing infrastructure conflicts such as; distribution on Swanston Street during the development of the Melbourne Metro.

