

# **TECHNICAL NOTE**

ToCity of Port PhillipDate14 January 2021FromC. MunroProject No. 0176SubjectComparative Assessment of Park Street Bike Link

## **Executive Summary**

The Park Street Bike Link between Moray Street and St Kilda Road has been committed for construction by the City of Port Phillip and Victorian Government. This report was commissioned by the City of Port Phillip to provide an independent review of the merit of the link, considering both the merits of the link within the current cycling network and in conjunction with other committed network improvements such as the Shrine to Sea cycling corridor and St Kilda Road as well as anticipated future land use developments.

The assessment leveraged off all available data sources and our understanding of likely land use developments and foreseeable travel patterns in around 2030. The key conclusions from this assessment are that:

- 1. The Park Street Bike Link best meets the dominant use case of local transport riding trips for commuting to work, shopping and other activities along an arc running from Fishermans Bend, Port Melbourne, South Melbourne through to South Yarra.
  - There is no direct public transport servicing these movements, and private car use is limited by congestion and parking constraints.
  - The demand for travel along this arc is likely to increase with background population growth, the development of the Domain and Fishermans Bend precincts and the opening of Anzac station as part of Melbourne Metro.
- There are only three alternative east-west cycling corridors between Moray Street and St Kilda Road which could conceivably serve as alternatives to Park Street (Dorcas Street – Sturt Street – Coventry Street, Albert Road and Albert Road – Mac Robertson Girls School – Kingsway).
  - The northern (Dorcas Street Sturt Street Coventry Street) and southern (Albert Road – Mac Robertson Girls School – Kingsway) corridors have severe constructability issues which would make them prohibitively expensive to develop to a satisfactory standard, both in financial terms and in their impact on other transport modes.
  - The Albert Road corridor, which is committed for improvement as part of the Shrine to Sea project, serves different travel movements to Park Street.
    Moreover, these improvements are unlikely to significantly impact route choices between Moray Street and St Kilda Road beyond the shared path that already exists.
- 3. The Park Street Bike Link is likely to have net community benefits if it attracts at least 130 new riding trips/day above current levels of around 370 trips/day.

## 1. Introduction

The City of Port Phillip, in conjunction with the State Government, has committed to constructing a high-quality bicycle lane along Park Street between St Kilda Road and Moray Street over a distance of 700 m. The bicycle lane is intended to complement wider network improvements such as:

- the recently improved north-south connection along Moray Street north of Park Street,
- a protected bicycle lane along St Kilda Road committed for construction by the State Government,
- the Shrine to Sea bicycle path running from Albert Road at St Kilda Road to the beach along Kerferd Road.

The present assessment was commissioned by the council to provide an independent review of the merit of the Park Street Bike Link. Specific issues for consideration included:

- What, if any, impact the Shrine to Sea improvements along Albert Road would have on demand and the justification for the Park Street Bike Link.
- The cost-benefit of the Link considering the current estimated construction cost of around \$2m, of which \$1.2m has been committed by the Victorian Government.

The assessment considers existing and likely future demand for cycling travel in an east-west direction in an area roughly bounded by Moray Street and St Kilda Road, and from Albert Road in the south to Citylink in the north. As Kings Way severely restricts east-west movements the analysis was confined to consider the four corridors which could conceivably serve this demand (Figure 1.1):

- **Park Street Bike Link:** a protected bicycle lane extending from Moray Street to St Kilda Road
- **Coventry Street:** a northern route along Dorcas Street, Sturt Street and Coventry Street
- Albert Road: along Albert Road, the northern service road or the existing shared path on the southern side of the road. It is noted at least part of the existing shared path, and the on-road route farther west along Kerferd Road, will be improved as part of the Shrine to Sea project.
- Albert Park: the existing shared path along the southern side of Albert Road in Albert Park, diverting to the south of Mac Robertson Girls School and then following Kings Way at Queens Road to St Kilda Road.



Figure 1.1: Study area and key corridors

The detail design of each of these possible corridors is not considered; rather, this comparative assessment is limited to a high-level strategic network assessment of the justification for each corridor.

#### 2. Methodology

The assessment sought to leverage off whatever limited data on existing and potential rider travel demand exists along with committed and likely future transport and land use developments. The assessment is focussed on:

- a) identifying the most likely use cases for riding through the study area
- b) assessing the likely magnitude of this demand, and
- c) ascertain which of the four corridors is likely to best meet this demand.

The assessment is structured as follows:

- Strategic context: existing network priorities in the study area.
- **Cycling activity:** bicycle counts and Strava cycling travel in the study area to assess current rider demand and route preferences.
- **Crash history:** Police-recorded crash data for bicycle riders, both as an indicator of crash risk and as a proxy indicator of existing riding activity.
- **Commuter travel:** existing commuting travel patterns by residents of nearby suburbs to destinations in the inner Melbourne area that are likely to traverse through the study area.
- **Population, employment and school student catchments:** indicators of trip generation and attraction in each of the corridors.
- **Future demand:** a qualitative assessment of the likely impact of committed and proposed future developments such as the St Kilda Road bicycle lane improvements, Anzac train station and Domain and Fishermans Bend precinct development.
- **Ease of delivery:** likely constructability, cost and availability of land from which to allocate space for high-quality cycling provision.
- **Rapid economic assessment:** a rapid assessment of the likely quantum of new cycling activity that will be required for the project to achieve a favourable benefit-cost ratio.
- Discussion and recommendations based on the above analysis as to the implications for an improved east-west cycling connection(s) in the study area.

To assist in the overall assessment each of the four corridors is subjectively assigned a high/medium/low rating on each of these criteria.

#### 3. Strategic context

Three strategic planning documents that cover the study area were reviewed:

- Council's Move, Connect, Live Integrated Transport Strategy 2018-28
- Council's Domain Precinct Public Realm Masterplan
- The Victorian Government's Strategic Cycling Corridors 2018-2019.

#### 3.1 Move, Connect, Live Integrated Transport Strategy 2018-28

Council's Integrated Transport Strategy identifies the Park Street Bike Link as one of 15 corridors to be completed by Council or the Victorian Government. Park Street is listed as a corridor to be completed by 2027/28. A subsequent corridor prioritisation<sup>1</sup> commissioned by council did not consider the Park Street Bike Link as it was assumed to be committed for

<sup>&</sup>lt;sup>1</sup> CDM Research (2020), *Integrated Transport Strategy: Bike Corridor Prioritisation*, prepared for City of Port Phillip.

construction (along with the Moray Street Bike Link, Shrine to Sea and Garden City off-road connection to the Sandridge Trail).

#### 3.2 Domain Precinct Public Realm Masterplan

The Domain Precinct Public Realm Masterplan makes extensive reference to Park Street and the bike link:

- It notes that Rail Projects Victoria has committed to extending the tram line along Park Street west of Kings Way to Heather Street.
- That the community consultation indicated support for a protected separated bike lane along Park Street, but this was moderated by concern about the loss of car parking and footpath width.
- That the Victorian Government has committed funding of \$1.2 m to deliver the bike connection along Park Street.

The masterplan provides conceptual plans and cross-sections of a bike lane positioned between kerbside parking and the general-purpose traffic lane west of Kings Way and a kerbside protected bike lane with no on-street parking east of Kings Way.<sup>2</sup>

#### 3.3 Strategic cycling corridors

Strategic cycling corridors (SCCs) are key transport cycling links identified by the State Government in collaboration with local councils. Both Park Street and Dorcas Street are designated as primary routes (C1) in the 2018-2019 update (Figure 3.1), while Albert Road is designated as a main route (C2). Bicycle riders travelling east-west would be serviced by Dorcas Street, Park Street and Albert Road.

<sup>&</sup>lt;sup>2</sup> The ordinary council meeting of 18 September 2019 resolved that council would consider the feasibility of providing a protected bicycle lane along the full length from Moray Street to St Kilda Road. It is understood this full protection is now the preferred option for the corridor.



Figure 3.1: Strategic cycling corridors in the study area (source: Department of Transport)

No documentation outlining the rationale for this route selection is available. However, it is noted that:

- The Dorcas Street crossing of Kings Way is currently unsignalised and restricted to left-in, left-out movements on both approaches. It would be prohibitively expensive to signalise this intersection and difficult to justify doing so given the traffic demands on Kings Way and proximity to other signalised intersections. Given this formidable constraint it is assumed in this assessment that a direct connection along Dorcas Street is unviable.
- The Park Street route diverts north along Moray Street and then west along Dorcas Street. In practice riders travelling west are more likely to continue along Park Street rather than turn right onto Moray Street and then left onto Dorcas Street. Doing so is likely to be quicker and less onerous than making two unnecessary turns and there is no strong benefit of riding on Dorcas Street above Park Street.<sup>3</sup> Significantly

<sup>&</sup>lt;sup>3</sup> While Dorcas Street has a solid edgeline and 1 m shoulder to angled parking that could be misconstrued as a bicycle lane it is not marked or designated as such, and it would be unsafe for riders

improving the riding quality on either corridor would almost certainly require a significant loss of parking.

• A sealed asphalt shared path currently exists along the south side of Albert Road extending from MSAC to the Mac Robertson Girls School car park, which then splits into paths to the northeast to the Kings Way / Albert Road intersection and east behind the school to the Kings Way / Queens Road intersection.

#### 3.4 Assessment

The Park Street Bike Link is referred to in all the relevant strategic planning documents, while the Albert Road route is referred to in the *Move, Connect, Live Integrated Transport Strategy* as part of the Shrine to Sea corridor. Clearly, the Park Street corridor most closely aligns with existing strategies from both council and the Victorian Government.

Table 3.1: Strategic assessment

Corridor	Strategies	Assessment	
Park St	Move, Connect, Live ITS	High	
	Strategic Cycling Corridor		
Coventry St	-	Low	
Albert Rd	Move, Connect, Live ITS	Medium	
Albert Park	-	Low	

#### 4. Cycling activity

There is extremely limited data available on travel at a local level by any mode, and this is especially true for cycling. The most comprehensive dataset on commuting travel is conducted only infrequently and in mid-winter (i.e. the census every five years, and for one weekday in August) and the sample size of the all-purpose VISTA<sup>4</sup> travel diary dataset is insufficient to support local analysis.

Cyclist counts are limited to five sites in or near the study area based on one weekday in 2019 as shown in Figure 4.1. These counts suggest that Albert Road has the highest existing

to be positioned immediately behind angled parking. It is speculated that less confident riders may not perceive much difference in riding comfort between the two routes: Dorcas Street offers has lower traffic volumes than Park Street but has a single carriageway and angled parking (as opposed to parallel parking on Park Street). This situation may change however as council has identified Dorcas Street for improvement in the Integrated Transport Strategy. If an upgrade is provided along Dorcas Street this may affect rider route preferences, particularly for less confident riders.

<sup>&</sup>lt;sup>4</sup> Victorian Integrated Survey of Travel and Activity: <u>https://transport.vic.gov.au/about/data-and-research/vista</u>.



demand, followed by Park Street with around twice the riding activity of Dorcas Street. The Albert Road count corresponds to riders turning left or right onto St Kilda Road.

Figure 4.1: Cyclist counts (Tuesday 5 March 2019 7 am - 7 pm, source: City of Port Phillip)

Another means of estimating cycling activity is to use Strava.<sup>5</sup> This data is highly skewed towards sport cyclists and is very unlikely to be representative of the wider riding population. The cycling movements obtained using the Strava dataset are shown in Figure 4.2 and are consistent with the counts insofar as they suggest Albert Road is the busiest east-west corridor, followed by Park Street and that Coventry Street has little current riding activity. It is also notable that there is a significant riding movement from Park Street onto Sturt Street and then Southbank Boulevard to the eastern side of the CBD.

<sup>&</sup>lt;sup>5</sup> <u>https://www.strava.com/heatmap</u>



Figure 4.2: Cycling activity heatmap (source: Strava, https://strava.com/heatmap)

Overall, the two cycling data sources suggest Park Street and Albert Road have the highest existing ridership, with modest movements through Albert Park behind Mac Robertson Girls School. A further insight from this data is to note that at least some riders are choosing to use Park Street (in the absence of any bicycle lane) despite the presence of the shared path alongside Albert Road. It is assumed that these riders are choosing to do so because Park Street represents the most convenient route for their trip. Furthermore, it is suggested the proposed improvements<sup>6</sup> along Albert Road as part of the Shrine to Sea project are unlikely to be substantial enough to encourage many riders to shift from Park Street.

<sup>&</sup>lt;sup>6</sup> It is understood the Shrine to Sea project may provide a segregated path alongside Albert Road to separate riders and pedestrians, and likely improvements to the path alignment and roadway crossings. These improvements, while beneficial, are unlikely to attract riders who currently use Park Street to divert what may be (depending on their origin and destination) an extra 400 m on their trip.

#### Table 4.1: Existing demand assessment

Corridor	Assessment	
Park St	High	
Coventry St	Low	
Albert Rd	High	
Albert Park	Medium	

#### 5. Crash history

Cyclist crash data provides an indication of both the crash frequency *and* the level of cycling activity<sup>7</sup>. Police-reported crashes involving bicycle riders were extracted for a region bounding Ferrars Street, Albert Road, St Kilda Road and Citylink and City Road between January 2010 and November 2020. Crashes that occurred on St Kilda Road or City Road are excluded, and crashes outside the road reserve such as along the shared path in Albert Park are not included in the Police-reported data. The crash locations are shown in Figure 5.1; there are clear crash clusters at:

- Albert Road and Ferrars Street
- Albert Road and Kings Way
- Moray Street and Dorcas Street
- Dorcas Street and Kings Way.

Over the period of almost 11 years there were:

- 37 bicycle riders involved in crashes along Dorcas Street
- 35 along Albert Road
- 18 along Park Street.

Not all of these crashes involved a rider travelling along these streets – there will be some instances where the rider is travelling along an intersecting road. Of the 18 crashes along Park Street, two thirds (12) were on the section covered by the Bike Link (i.e. Moray Street to St Kilda Road). Most (8) resulted in serious injuries to the rider. Three occurred at the roundabout at Heather Street, three at Kings Way and two each at Palmerston Crescent / Wells Street, Little Bank Street and approaching St Kilda Road.

<sup>&</sup>lt;sup>7</sup> Clearly, crashes are not perfectly correlated with cycling activity given that different roads have different risks. However, there is generally a relationship between corridors with high crash frequency also having high cycling demand.



Figure 5.1: Cyclists involved in crashes (January 2010 - November 2020, crashes located at the same location are jittered for clarity, source: VicRoads Crashstats)

In considering the impact of the four possible corridors on crash mitigation it is noted that most of the crashes are occurring at or near intersections, and indeed almost all the remainder involving motorists emerging from or turning into driveways or kerbside parking. Whether these crash types will be affected by any treatment will depend on the intersection design details, which are not yet known. Furthermore, it is assumed that at least in the case of the Albert Road corridor and Shrine to Sea project there will be little change in cyclist route choices so the exposure pattern will not significantly change.

Given the importance of intersection treatments and recognising that effective treatments may be difficult to implement at the critical intersections without significant impacts on traffic capacity, it is suggested that the none of the corridors are likely to be justified on safety grounds.<sup>8</sup> Moreover, it is difficult to differentiate between the corridors on the potential safety benefit. However, on balance if Park Street were to become more attractive and to entice riders away from higher speed, higher volume Albert Road and from Sturt Street there *may* be marginal safety benefits given that Park Street likely has lower crash risk given the lower traffic

<sup>&</sup>lt;sup>8</sup> This is not to suggest there is no merit in investing in treatments to reduce crash likelihood, but rather that if safety of itself were the motivation the most cost-effective approach may be to address the crash clusters (blackspots) in isolation.

speeds and volumes – hence this corridor is assessed as medium in the crash assessment in Table 5.1

Table 5.1: Crash assessment

Corridor	Assessment		
Park St	Medium		
Coventry St	Low		
Albert Rd	Low		
Albert Park	Low		

## 6. Commuting travel

The census journey to work data provides insight into commuting journeys for an August weekday in 2016. Origin-destination data was analysed using Statistical Area 2 (SA2) as the home location and Destination Zone (DZ) as the workplace.<sup>9</sup> Total commuting flows were obtained for the four SA2 zones most likely to account for commuting outflows (i.e. South Melbourne, Albert Park, Port Melbourne and Port Melbourne Industrial) and three that likely contribute inflows (i.e. South Yarra – West, South Yarra – East, Prahran – Windsor). The SA2 and DZs in the study area are shown in Figure 6.1.

<sup>&</sup>lt;sup>9</sup> SA2s have an average population of around 10,000 people and, in the study area, broadly accord with suburb boundaries (e.g. South Melbourne, Port Melbourne, Albert Park). Destination zones are smaller than SA2s; in the study area there are approximately 10 destination zones for every SA2.



Centroids

- Destination zone (DZ)
- Origin zone (SA2)

Figure 6.1: Origin and destination zones in study area

Destination zone centroids with 10 km of the SA2 centroids based on crowfly distance were excluded<sup>10</sup> and the shortest path using an OpenStreetMap routing algorithm<sup>11</sup> for bicycle riders used to obtain likely travel paths between each origin-destination pair. A complete series of maps for each suburb are given in Appendix A and suggest that:

- The most significant commuter flow from South Melbourne is along Dorcas Street and Moray Street into the CBD, followed by Cecil Street, Sturt Street (for trips heading east towards Richmond), Montague Street to Docklands and Park Street to South Yarra and southern suburbs. Most notably, there are very few trips along Coventry Street or Albert Road.
- Almost all trips from Port Melbourne would use the Sandridge Trail towards the CBD. However, there is some movement along Park Street and modest movements along Albert Road and Coventry Street.
- Trips from Albert Park would predominantly travel up Clarendon Street and Cecil Street towards the CBD. A modest number would use Albert Road through the study area and almost none would use Park Street or Coventry Street.

<sup>&</sup>lt;sup>10</sup> It was arbitrarily assumed that very few commuting bicycle trips are likely to extend beyond 10 km. This assumption was necessary to reduce the computation time – even with this limit there are 2,009 origin-destination pairs that require computation.

<sup>&</sup>lt;sup>11</sup> The Open Source Routing Machine (OSRM) using bicycle mode was used to obtain the shortest paths (<u>http://project-osrm.org/</u>). Weights for intersections are defined in the default cycling file: <u>https://github.com/Project-OSRM/osrm-backend/blob/master/profiles/bicycle.lua</u>. The routing algorithm does not prioritise routes with cycling infrastructure.

• There are significant movements from South Yarra travelling up St Kilda Road, turning left onto Park Street to reach destinations in South Melbourne, Port Melbourne and Docklands.

The estimated flows from all origins in the study area are shown in Figure 6.2. Park Street and Sturt Street are clearly the busiest routes according to this analysis. However, it is noted that the routing algorithm does not capture the attractiveness of the current painted bicycle lane along St Kilda Road, let alone the committed protected bicycle lane. It is plausible that a significant proportion of the demand routed along Sturt Street in this analysis would instead use Park Street to access St Kilda Road, especially after completion of the protected bicycle lane along St Kilda Road. As such, if anything this analysis is likely to <u>underrepresent</u> the current and future commuter potential along Park Street.



Figure 6.2: Estimated cycling commuting potential

The analysis suggests the markets for Park Street and Albert Road are distinct; that is, each route serves different rider demands. A select link analysis<sup>12</sup> for Park Street shown in Figure 6.3 suggests that most of the commuter cycling potential is from residences in South Melbourne, Port Melbourne and South Yarra. By contrast, demand along Albert Road is predominantly originating in Albert Park and travelling to the south-eastern or eastern suburbs.

<sup>&</sup>lt;sup>12</sup> In a select link analysis all trips that travel along a single link are selected; for example, all trips that use Park Street immediately east of Kings Way. This analysis is useful to understand the pattern of origins and destinations that use a link in a transport network.



This reiterates the conclusion that the Park Street Bike Link and Shrine to Sea projects are likely to be complementary rather than directly competing with one another.

Figure 6.3: Select link analysis for Park Street



#### Figure 6.4: Select link analysis for Albert Road corridor

In summary, this analysis suggests that:

- a) There is significant orbital commuting demand along a corridor from South Yarra through South Melbourne towards Port Melbourne and Docklands for which Park Street would be the most direct riding route.
- b) Albert Road may also attract riders, but predominantly from Albert Park. This market is independent of the Park Street market.

Given these findings we assess the Park Street corridor as having the highest commuter cycling potential, with Albert Road having medium potential.

Table 6.1: Commuter travel assessment

Corridor	Assessment
Park St	High
Coventry St	Low
Albert Rd	Medium
Albert Park	Low

#### 7. Population, employment and school catchments

The resident population, employment and school student catchment for each of the four corridors was obtained within a radius of 300 m of each corridor. This distance of 300 m was arbitrarily chosen as representing:

- a) A convenient, close distance someone is likely to be comfortable riding to access the corridor.
- b) The approximate distance between the corridors, such that all residences in the study area are captured by at least one corridor.
- c) The desirable network density for cycling networks of 300 400 m.<sup>13</sup>

Population and employment data were obtained from the ABS Census of Population and Housing 2016 with the smallest spatial resolution available<sup>14</sup>. Both full- and part-time employment was included. Where the zones extended across the 300 m buffer the population or employment were apportioned based on the area covered by the buffer. School enrolment data for February 2020 was used from the Department of Education and Training.

The catchment is illustrated in Figure 7.1. This limited analysis has major limitations; very few riders are likely to travel entirely within the corridor, with many (if not most) travelling *through* the corridors en route to elsewhere (as identified in the commuter analysis in Section 6). Nevertheless, it provides some indication of the locally generated and attracted demand.

<sup>&</sup>lt;sup>13</sup> For example, the Dutch *CROW Design Manual for Bicycle Traffic* states that an ideal cycling network density in urban areas is 300 – 500 m, and for a good level of service a density of 250 – 400 m is stipulated in the *London Cycling Design Standards*.

<sup>&</sup>lt;sup>14</sup> Mesh blocks for population and Statistical Area 2 for employment.



Figure 7.1: 300 m buffer around each corridor

The catchments are given in Table 7.1. The Park Street corridor has the highest population and second highest employment, but no schools within 300 m. The Coventry Street corridor has the second highest population, highest employment and second highest student enrolment.<sup>15</sup> That the Albert Road and Albert Park corridors have the lowest population and employment catchments is unsurprising given the presence of the park.

<sup>&</sup>lt;sup>15</sup> The Coventry Street corridor includes the Victoria College of the Arts Secondary School and Hester Hornbrook Academy within the northern periphery of the catchment, while the Albert Road and Albert Park corridors pass adjacent to Mac Robertson Girls School.

			School
Corridor	Population	Employment	enrolments
Park Street	6,203	7,034	0
Coventry Street	5,348	8,821	537
Albert Park	4,337	5,291	989
Albert Road	4,651	5,564	989

#### Table 7.1: Catchment statistics within 300 m

Both Park Street and Coventry Street are assessed as having medium catchments on the basis that while Park Street has marginally higher population and employment, Coventry Street has (albeit at the periphery of the catchment) two schools within the 300 m catchment.

#### Table 7.2: Catchment assessment

Corridor	Assessment		
Park St	Medium		
Coventry St	Medium		
Albert Rd	Low		
Albert Park	Low		

#### 8. Future demand

The existing travel patterns in the study area are expected to alter significantly once the Melbourne Metro project is complete and development occurs in the Domain precinct. It is also conceivable that the Fishermans Bend urban renewal will affect the corridor.

The Melbourne Metro Business Case<sup>16</sup> states that:

- Daily patronage of around 38,000 passengers forecast by 2031 at Anzac station, of which just over half (55 57%) would interchange from/to tram and bus services.
- Local population catchment of around 17,000 and 33,000 jobs within 800 m by 2031.

Fishermans Bend is anticipated to accommodate 80,000 residents and 80,000 jobs by 2050.17

 <sup>&</sup>lt;sup>16</sup> <u>https://metrotunnel.vic.gov.au/\_\_\_\_\_data/assets/pdf\_\_file/0020/40484/MM-Business-Case-Feb-2016-APPENDIX-05.PDF</u>
<sup>17</sup> <u>https://www.fishermansbend.vic.gov.au/\_\_\_\_\_data/assets/pdf\_\_file/0020/35093/Fishermans-Bend-</u>

<sup>&</sup>quot;<u>https://www.fishermansbend.vic.gov.au/\_\_data/assets/pdf\_file/0020/35093/Fishermans-Bend-Framework.pdf</u>

It is understood that rider access to the Domain station will be good from both Park Street and Domain Road. However, Park Street will provide a more direct connection into the South Melbourne activity centre and towards Fishermans Bend and so may reasonably be expected to better meet travel to and from these new developments. Coventry Street will operate towards the periphery and so is assessed as having the least alignment with these future developments.

Table 8.1: Future development assessment

Corridor	Assessment		
Park St	High		
Coventry St	Low		
Albert Rd	Medium		
Albert Park	Low		

## 9. Ease of delivery

Ease of delivery is one the prioritisation criteria in the *Move, Connect, Live Integrated Transport Strategy.* Many of the corridors present significant challenges to delivery, either because of limited road reservations with significant competition for space or are outside the direct control of the City of Port Phillip. Only the Park Street corridor resides entirely within land managed by the City of Port Phillip; Coventry Street to the north is part of the City of Melbourne and Albert Park to the south through which the existing shared path travels is managed by Parks Victoria. Furthermore, Albert Road (including the service lanes) and Kings Way (including the short section between Queens Road and St Kilda Road) are declared roads and so controlled by VicRoads.

Our high-level assessment of ease of delivery is summarised in Table 9.1. The Park Street corridor is assessed as having the highest deliverability, primarily because:

- It is entirely within Council's jurisdiction.
- There are substantial logistical and cost savings to be achieved by combining the works with the tram extension and Metro rail works, whereas there are no major projects planned for the other corridors aside from Albert Road near Anzac station.
- The intersections of Park Street at Kings Way and St Kilda Road are less complex than the alternative corridors.

It is noted that no consideration was given to the presence of major underground services in this assessment, which (if present) could have a significant impact on deliverability.

Corridor	Benefits	Challenges	Assessment
Park St	Entirely within CoPP control Construction cost savings associated with tram and Metro rail works Relative simple controlled intersection at Kings Way and St Kilda Road Designated as a SCC	On-street parking retention Drainage and possible underground services Heather Street intersection is complex	High
Coventry St	Dorcas St and Sturt St are in CoPP control	Coventry Street is managed by City of Melbourne Unlikely to be able to take roadspace for bicycle lane on Sturt Street Narrow footpath on eastern side of Sturt Street; possible loss of parkland if path widened in Dorcas St Reserve Not designed as a SCC	Low
Albert Rd	Shared path in Albert Park already exists	Albert Rd and service lanes are declared roads Existing shared path in Albert Park managed by Parks Victoria Not designed as a SCC	Medium
Albert Park	Shared path in Albert Park already exists and is generally in good condition Signalised crossing at Queens Road would warrant only minor improvement	Existing shared path in Albert Park managed by Parks Victoria Rider-pedestrian conflict risk by declaring footpath on south side of Kings Way (between Queens Rd and St Kilda Road) a shared path Challenging intersection of Kings Way at St Kilda Road: all intersecting roads are declared and operate at close to saturation capacity during peak periods. Providing additional signal phasing time to cyclists would likely have severe impacts on motor traffic capacity. Moreover, there is no pedestrian crossing directly at the intersection, leading to a circuitous route for riders and pedestrians. Not designed as a SCC	Low

## Table 9.1: Ease of delivery

#### 10. Economic assessment

It is not feasible to develop reliable cyclist demand forecasts for the Park Street Bike Link. However, the construction costs have been established at around \$2m (of which the State Government has committed \$1.2m) and the economic benefits of an *additional* cycling kilometre of travel is specified in ATAP M4 Active Travel<sup>18</sup>. The economic benefits of additional cycling in the corridor extend across domains such as:

- congestion (road network) and crowding (public transport)
- emissions reduction
- fuel cost savings
- noise
- safety
- health.

Most economic benefit is usually obtained from reduction in crash costs (i.e. safety benefits) and health benefits accruing both from increased physical activity. As the crash benefit will be heavily dependent on the intersection treatments (Section 5) they cannot be estimated at this in the absence of detail designs. Instead, it is conservatively be assumed that any treatment along Park Street would not affect the crash rate. Rather, it is assumed the benefits would entirely accrue from a reduction in mortality and morbidity associated with increased physical activity among those who shift to riding, or who make additional riding trips they would not otherwise have made in the absence of the project. ATAP provides units values for these benefits of \$0.45/km for the health benefits to the individual<sup>19</sup> and \$0.48/km for healthy system cost savings (that is, the avoided cost to the taxpayer of not having to treat chronic disease associated with physical inactivity). These 2013 prices and values are escalated to 2020 using the Melbourne consumer price index (ABS 6401.03) in the case of the individual benefits and using total health expenditure estimates from AIHW<sup>20</sup> for Victoria, giving individual health benefits of \$0.57/km and \$0.61/km for health system benefits.

The counts suggest around 370 cycling trips/weekday currently occur on Park Street. VISTA indicates that the average inner Melbourne cycling trip is 3.9 km long, which would be consistent with a trip from South Melbourne to South Yarra. Assume a 30-year economic life, 270 day annualisation, 7% discount rate and other assumptions as per ATAP M4. If cycling were to increase from 370 riders/day (as measured in the 2019 count) to 450 riders/day the net present value (NPV) of the benefits would be \$1.34 m. This equates to a project benefit-cost ratio of 0.7 using the \$2 m total project cost, or 1.7 if only the \$800,000 contribution from the City of Port Phillip is considered. Repeating this process for a series of demand forecasts

<sup>20</sup> Australian Institute of Health and Welfare (2019), *Health expenditure Australia 2017-18*. <u>https://www.aihw.gov.au/reports/health-welfare-expenditure/health-expenditure-australia-2017-18/data</u>

<sup>&</sup>lt;sup>18</sup> <u>https://www.atap.gov.au/mode-specific-guidance/active-travel/index</u>

<sup>&</sup>lt;sup>19</sup> These individual benefits are *after* the application of rule-of-half to account for consumer surplus. Rule-of-half does not apply to the health system costs.

suggest that demand of around 500 riders/day will be required to achieve a positive BCR using the total \$2m construction cost (Table 10.1). In other words, for the investment to produce net health benefits greater than the costs demand will need to increase by around 35% from 370 riders/day to 500 riders/day. It should be noted that this analysis excludes operating costs and non-health benefits and costs, and that the increase in demand will need to come from *new* riding trips (i.e. trips that otherwise would have been made by motorised modes or are all-new) rather than riding trips that have diverted from other routes. In our view an increase of this order that can be attributed<sup>21</sup> to the project is plausible. As such, it is suggested the Park Street Bike Link is likely to represent good value for money. This will be especially true if the design can reduce the crash risk. On the balance of probabilities, it seems far more likely the project will reduce crashes than have a neutral effect or even increase crashes. This will be especially true if the project incorporates wider street calming measures which provide for a safer pedestrian and motorist environment, in which case there should be safety benefits for all modes.

		Benefit-Cost Ratio		
Forecast demand (ADT, currently ≈ 370/day)	NPV (\$m, 2020 values)	Based on total cost (\$2m)	Based on Council contrib. (\$800k)	
400	\$0.50	0.3	0.6	
450	\$1.34	0.7	1.7	
500	\$2.18	1.1	2.7	
550	\$3.02	1.5	3.8	
600	\$3.86	1.9	4.8	

Table 10.1: Rapid economic assessment (health benefits only)

<sup>&</sup>lt;sup>21</sup> Only changes in ridership directly attributable to the project can be incorporated in the cost-benefit analysis; increases in riding due to, for example, to the construction of Anzac station or wider land use changes (all of which are forecast to occur irrespective of the presence of the bike link) cannot be incorporated into the project benefits.

#### 11. Conclusion

The attributes of each of the corridors are summarised in Table 11.1. On all the criteria assessed in this analysis the Park Street Bike Link is assessed as being equal or better than the alternative corridors.

Table 11.1: Assessment summary

	Corridor			
Attribute	Park St	Coventry St	Albert Rd	Albert Park
Strategic alignment	High	Low	Medium	Low
Cycling activity	High	Low	High	Medium
Crash history	Medium	Low	Low	Low
Commuter travel	High	Low	Medium	Low
Catchment	Medium	Medium	Low	Low
Future development	High	Low	Medium	Low
Ease of delivery	High	Low	Medium	Low

The most compelling arguments in support of the Park Street Bike Link are likely to be that:

- Park Street best aligns with the most likely usage; that is, for travel along an arc from Fishermans Bend through Port Melbourne to South Melbourne and east to South Yarra.
- This primary market is distinct from that likely to be met by the Shrine to Sea project along Albert Road, such that there is limited duplication in having both links.
- The impediments to construction of the Park Street Bike Link are less than for the Coventry Street and Albert Park options. There would be almost insurmountable difficulties in providing a high-quality cycling connection along Sturt Street and Coventry Street to the north or from the shared path behind Mac Robertson Girls School across Queens Road to St Kilda Road.

In considering the merit of the Park Street Bike Link we note that:

- The main use case is unlikely to be residents of South Melbourne or surrounding suburbs commuting to the CBD; instead, these movements will continue to be served by north-south corridors along Moray Street, Clarendon Street and Cecil Street.
- Trips originating or finishing in Albert Park and Middle Park with destination in the east are more likely to use Kerferd Road and Albert Road, or Albert Park, than Park Street.
- There is already demonstrable rider demand along Park Street; these riders are choosing not to use the shared path along Albert Road that already exists. The proposed improvements along Albert Road as part of Shrine to Sea are unlikely to be

sufficient to encourage these riders to divert to instead use Albert Road given the longer distance and incremental nature of the improvements.

It is suggested the Park Street Bike Link is best aligned to meet local transport cycling needs now and this will become increasingly true in the future as the Domain and Fishermans Bend precincts develop. In our view the Park Street Bike Link has merit within the current cycling network and will continue to do so once the Shrine to Sea project is complete given that the routes serve different markets.

# Appendix A: Commuter travel maps

South Melbourne originating trips







# Port Melbourne originating trips



# Albert Park originating trips

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# South Yarra - West originating trips

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# Prahran - Windsor originating trips

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