Attachment A12

Pedestrian Comfort Assessment

383 Kent Street: Pedestrian Comfort Assessment

Reference: 015-C 383KSPCA

FINAL 21.07.2023

MOVISSIAN
SHAPING PLACE & MOVEMENT

Executive Summary

This Pedestrian Comfort Assessment (PCA) Report has been prepared by Movissian in support of a Planning Proposal to amend the Sydney Local Environmental Plan 2012 (Sydney LEP). This report has been prepared on behalf of Charter Hall Holdings Pty Ltd (Charter Hall) (the Proponent) and it relates to a single development lot identified as Lot 1 in DP 778342 or 383 Kent Street, Sydney (the site).

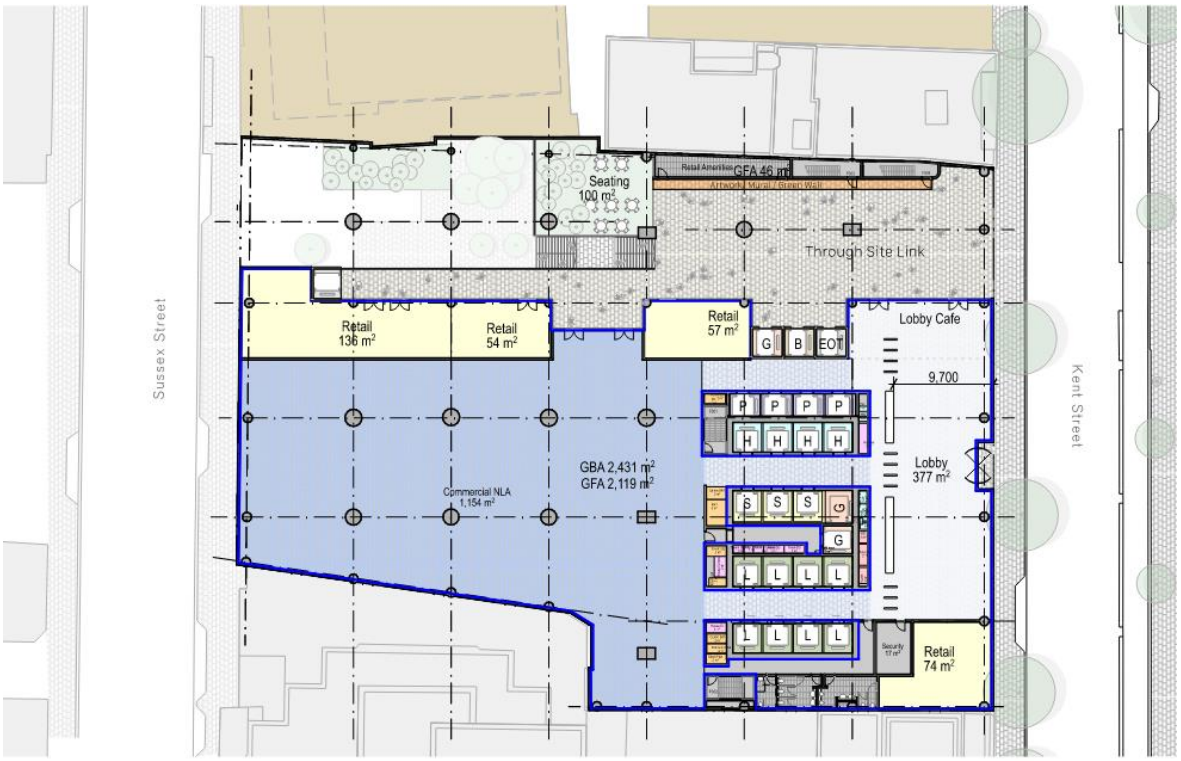

Figure 1 383 Kent Street – street interface

The PCA has followed TfNSW's Walking Space Guide which is a requirement of the City of Sydney Guidelines for Site Specific Planning Proposals. The assessment has looked at four scenarios:

1. 2022 Existing: Existing (post covid) conditions based on recorded observations and data. This sets the baseline for analysis.

2. 2042 Existing Development, Future Background Flows: Future 2042 Performance including background growth due to employment (@0.4% per annum). This sets the baseline for future analysis.

3. 2022 Future Development, Existing Background Flows: A new 65,110m^2 NLA (~75,021m^2 of GFA) development in operation as of 2022 with existing background flows. This assumes a similar occupancy/profile as of 2022.

4. 2042 Future Development, Future Background Flows: Future 2042 Performance including background growth due to employment and the *net* impact of the future development at 383 Kent Street. This assumes a proxy – return to pre-covid behaviours.

A pedestrian survey was undertaken to derive Street Type classifications. The results indicated that the west side of Kent Street should be classified at the low end of a Street Type 4, whereas the east side is classified as a Street Type 3. The Street Type 4 band relates to a pedestrian peak hour volume between 400 p/hr and 2000 p/hr. The results across scenario 1-3 are the same as the volumes are estimated to stay within this range. Only in Scenario 4, which assumes a higher

return to the city akin to pre-covid behaviours does the southern-west side of Kent Street move into a Type 5 classification.

The review shows:

- The east side of Kent Street has a modal performance of Level of Service C, but does narrow in places around trees/furniture that create the Walking Space metric of Level of Service D-E.
- The west side of Kent Street and the east side of Sussex Street are both expected to be largely unchanged and can both meet a Level of Service C criteria under the Walking Space Guidelines.
- The 383 Kent Street property itself has very few obstructions and fronts to parked cars along the length of the title boundary. As such, for all scenarios, **Level of Service C** can be provided if 3.7m of width is maintained and assumes parked vehicles are retained (or even better, the parking lane is returned to pedestrians). The reference design maintains this width along the frontage of Kent Street.
- It is noted that several localised areas along the western pavement between Market and King streets narrow due to trees, poles, a phone booth, parking meters, benches and a bus stop. The Walking Space analysis indicates these localised points are considered Level of Service F – even at existing demand levels. This holds true for Scenarios 2 and 3. The Walking Guide indicates that, to achieve Level of Service C, a clear channel (excluding the obstructions and recognising areas adjacent to moving vehicles) of 3.7m. The total width of the pavement is approximately 3.7m.
- For the future Scenario 4, where behaviours are moving towards to 2019 levels, the south-west side (south of 383 Kent Street) is estimated to be within a Type 5 classification, and therefore puts pressure on pavement widths and the ability to maintain the bus stop at the existing location.

Recommendations to improve pinch-point areas in the short term include:

- Removal of Telstra cabinet (responsibility of the City of Sydney)
- Removal of parking meter directly outside of 383 Kent Street (responsibility of City of Sydney). If this is achieved, and the development maintains the 3.7m outside, then LoS C can be achieved. Two localised reductions in width will still be evident at the two tree locations outside of the development – but the value of the trees (shade and urban amenity) – should outweigh the reduction in Level of Service.
- Static survey around the public bench (location #4) at the north-west of Kent Street – to understand usage and whether this is better placed elsewhere (CoS). This is recommended on the basis that observations showed little usage of the bench, and its adjacency to both the signalised intersection and moving traffic would indicate extra width in this location would offer better value for pedestrians.
- Review of the lamp post/traffic signal pole at the South-East corner of Kent/King (responsibility of the City of Sydney). Existing observations showed this to be a pinch-point – and likely to be a constraints/compromise as a result of the inclusion of the cycle lane.

Recommendations to improve walking performance as volumes, arrival/departure profile and occupancy trend towards Scenario #4:

- Removal of parked vehicles and extend the footpath all the way to Market/Kent intersection (responsibility of the City of Sydney).
- Consider moving the bus stop to an indent just further north of 383 Kent Street (i.e. to approximately where the parked motor bikes are currently located). (responsibility of TfNSW/CoS)
- Encourage greater usage of both sides of Kent Street – by usage of a zebra crossing which is likely to be needed to aid the cross city through links. (responsibility of City of Sydney /TfNSW). This shares arrival / departure demand across both sides of the street.

Recommendations for the next stage of the development design include:

- Review of the quantum and placement of the entrance portals to the building. There may be better opportunities to have the main 'postal address' revolving door as shown, but with a secondary, larger entrance (potentially sliding doors subject to wind impacts) for staff movements in/out of the laneway as well as one within the noted 'retail' outlet at the south. This will be dependent on speedstile locations and hence lift core, so can be reviewed during the subsequent design competition stage.

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1 Introduction

This Pedestrian Comfort Assessment Report has been prepared by Movissian in support of a Planning Proposal to amend the Sydney Local Environmental Plan 2012 (Sydney LEP). This report has been prepared on behalf of Charter Hall Holdings Pty Ltd (Charter Hall) (the Proponent) and it relates to a single development lot identified as Lot 1 in DP 778342 or 383 Kent Street, Sydney (the site).

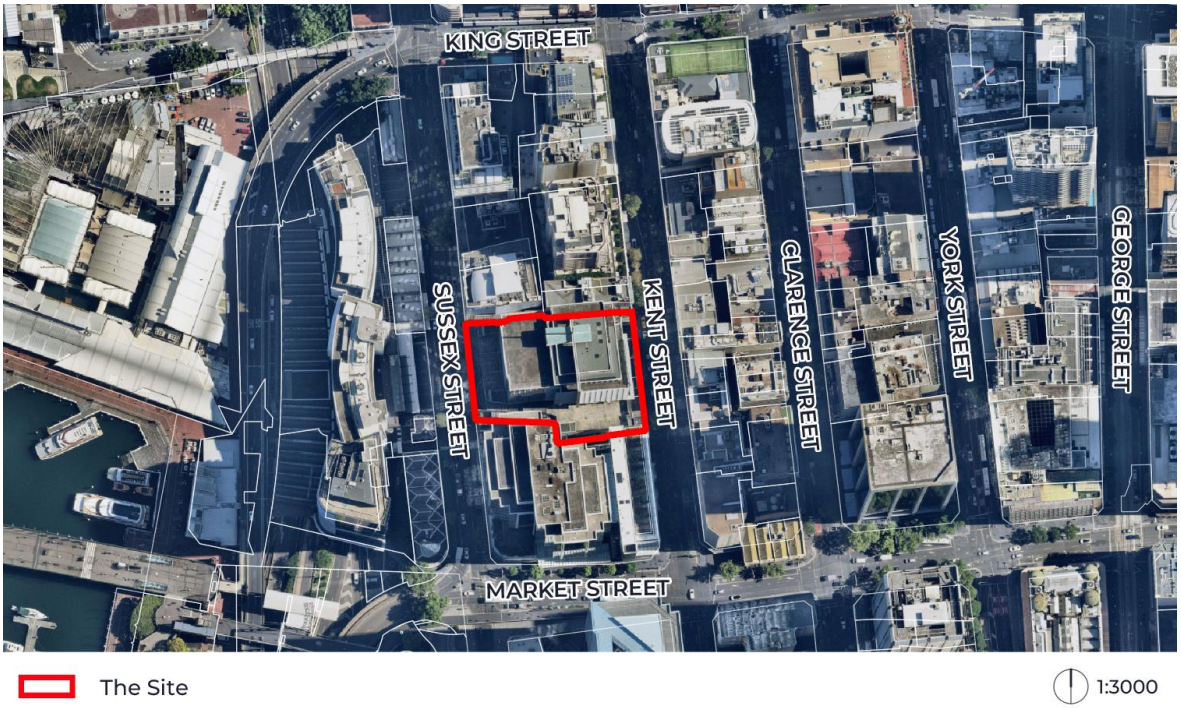


Figure 2 Aerial Map [*Source: Nearmap, edits by Ethos Urban*]

The purpose of this Planning Proposal is to amend the site's maximum Height of Building development standard and maximum Floor Space Ratio (FSR) development standard to unlock additional floor space to be used exclusively for employment generating land uses, consistent with the vision and intent of the Central Sydney Planning Strategy (CSPS) for tower cluster sites. This Planning Proposal will also seek to facilitate significant public benefits through additional site activation by way of a new pedestrian through-site link, shared loading dock facility and delivering on sustainable initiatives to contribute to the City of Sydney's vision to achieve net zero energy buildings.

The proposed Sydney LEP amendment is part of the broader redevelopment plan for the site to demolish the existing structure on the site (including the existing 10 storey car park), and construct a new 42 storey commercial office tower with a total GFA of approximately 75,021m^2.

1.1 Indicative Reference Scheme Overview

The reference scheme supporting the Planning Proposal and site specific DCP can be described as follows:

- Demolition of the existing building, including removal of the over 800 capacity public car park.
- Construction of the following:
  - New 42-storey office tower comprising a total GFA of 75,021m^2, up to a height of RL 189.60 (approximately 170m above Kent Street and 180m above Sussex Street).

- New premium-grade commercial floorspace totalling 71,497m^2 of GFA.
- New through-site link connecting Kent and Sussex Streets, including public art activation.
- New ground floor activation opportunities, including 640m^2 of retail GFA.
- 2 levels of basement, comprising:
  - Basement Level 1 facilitating 70 car parking spaces; and
  - Sussex Street ground level shared loading dock facility including SRV and MRV short term stay bays to service retail tenancies within buildings along Kent Street (located between Market Street and King Street).
- New end of trip facilities below the Kent Street ground level comprising 1,976m^2 GFA.

The reference design drawing below shows the main entry into 383 Kent Street as well as the interface to Sussex Street.

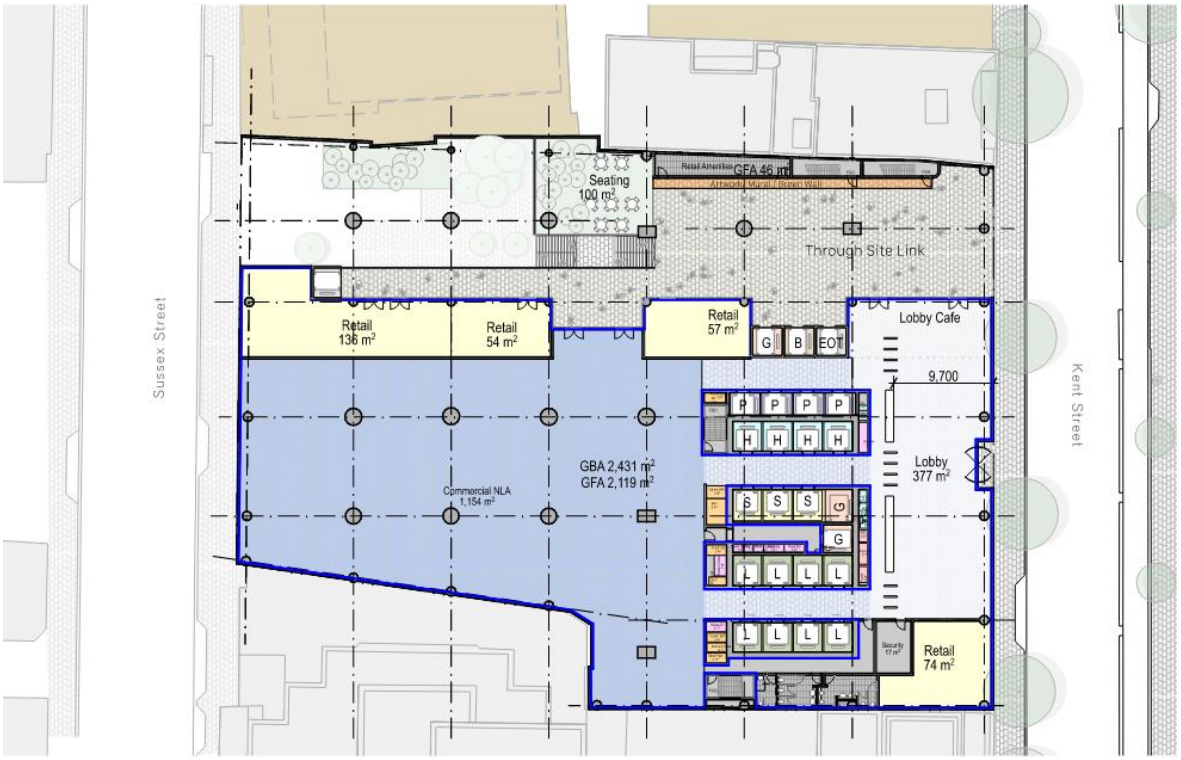


Figure 3 383 Kent Street – street interface

1.2 Pedestrian Comfort Assessment Analysis

The analysis has focussed on a] both sides of Kent Street as well b] the two adjacent intersections north and south. The review has also considered the movements along Sussex Street. The analysis provides TfNSW and CoS considerations of action for the future that are in their direct control and informs Charter Hall on the parameters and opportunities to improve pedestrian amenity around the development in their control.

The assessment has followed the Walking Space Guide framework. The Walking Space Guide has been complimented by the following:

- Site visit and observations
- A walking journey assessment from key transport modes of arrival
- Survey of pedestrian activity for both AM and PM peaks along footpaths and at the two intersections (Market/Kent and King/Kent)
- A count of movements into/out of 383 Kent Street to provide a post-covid arrival / departure profile for the existing tenants
- A review of the 2016 Census data for the specific DZN in which the development sits and provide a high-level assessment of the impact of Metro West.
- A review of the transport trips within Sydney in 2019 compared with 2022 (to provide a Covid adjustment)
- A review of the intersections of Market/Kent and King/Kent to understand the ability for the reservoir spaces to absorb the additional demand

The combination of data sources as well as the observations of behaviour on-site have informed the recommendations of the study.

2 Study Area

2.1 Context

The building of 383 Kent Street sits between King Street to the north and Market Street to the south. The main entry of the building is via Kent Street, although there is an opportunity to enter the building from Sussex Street. The proposed development increases the NLA from just under 18,000m^2 of NLA[1] to approximately ~65,110m^2 of NLA (based on ~75,021m^2 of GFA). The dotted area in red has been used to define the study area.

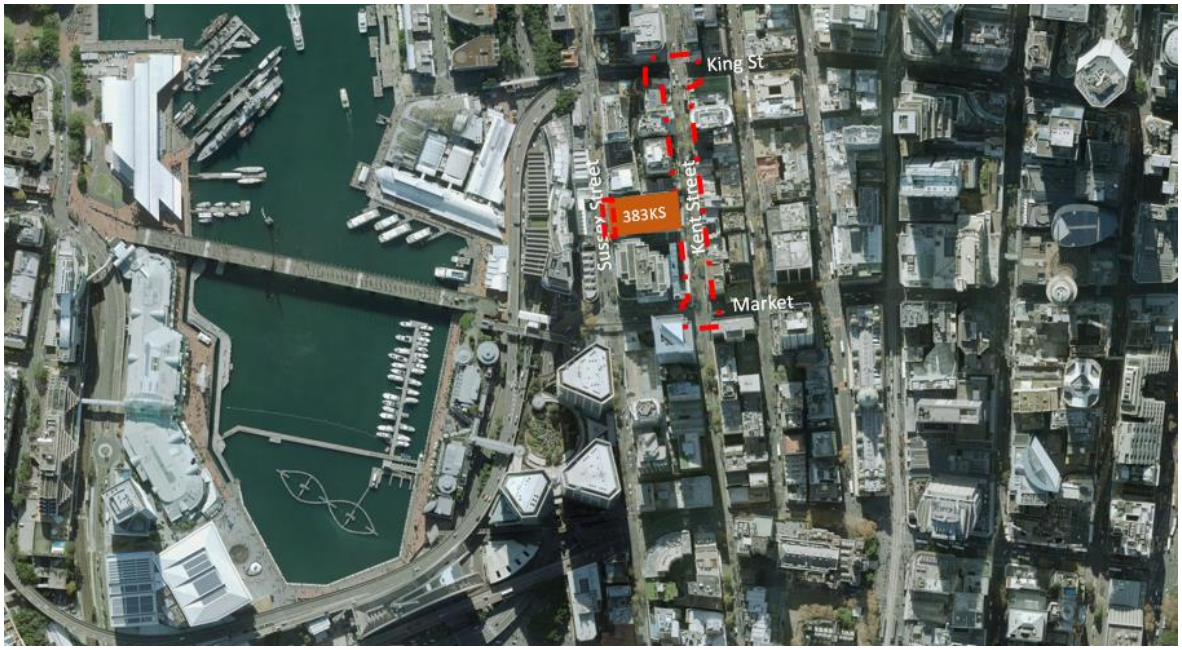


Figure 4: Study area denoted by red dotted line

2.2 Existing & Future Arrival Modes

The opportunities to access 383 Kent Street using mass transit modes are excellent. Figure 5 shows the relationship between the site and the surrounding transit nodes. Not only is the building located within easy reach of these nodes, but most of the walking routes to/from these transit hubs are in highly pedestrianised environments (e.g., Pyrmont Metro via the bridge, Martin Place via the existing streetscape network, Town Hall/Pitt St stations via underground connections or George Street pedestrianised shareway). The ambition for the site should therefore be to encourage a high public transport access strategy.

The routes also indicate that Kent Street is the primary arrival point. There are opportunities to transfer from the extended Pyrmont Bridge to the new Sussex Place (as part of the Cockle Bay Wharf redevelopment), but that would require a grade change down to Sussex Place, only to rise again within the development. Kent Street is therefore considered the most welcoming address for staff and visitors with any vehicular modes will accessed via Sussex Street.

The study investigated the time to walk from each of the key points of arrival to 383 Kent Street. The times for each are presented in the Table 1. The interesting finding was that the timing from Town Hall Station was longer than Wynyard Station and (future) Pyrmont Station. The timing was influenced by the number of intersections required to be crossed. The quickest journey was from Wynyard Station – primarily because of the movement via the partial Kent Street Tunnel and the

[1] Sale of 383 Kent Street Sydney | Dexus

efficiency of moving either south or west at a signalised intersection which minimises waiting time.

The introduction of the new Pyrmont Station provides an efficient and largely pedestrianised walking environment. It would imply that almost all people that have the opportunity to access the new Metro station once completed would shift from using Town Hall Station as the primary arrival point (e.g., all those travelling from Paramatta). However, in terms of the PCA study, the introduction of Metro West does not influence or change movement patterns significantly. If the development was much further north then a shift to Hunter Street Station away from Town Hall Station would influence the directional approach to the building.

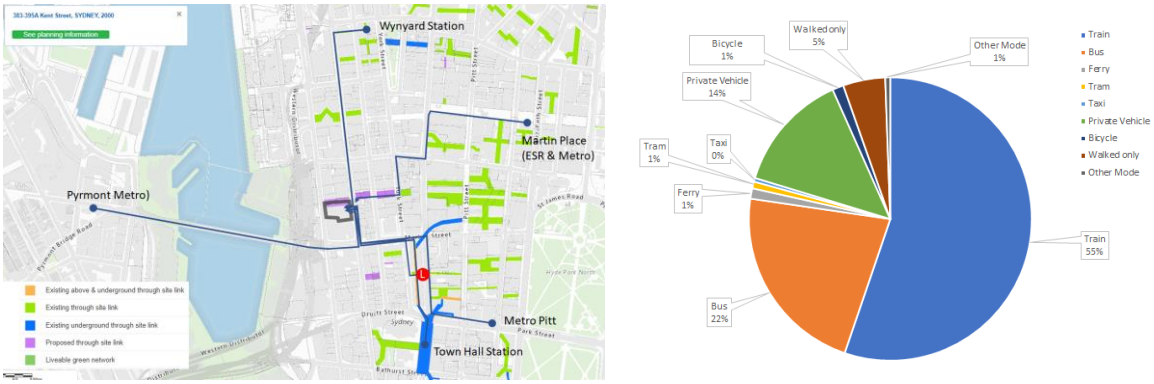


Figure 5: 383 Kent Street and routes to major transport nodes (map source: DCP), and Mode Shares

Station	Time from station (ticket line) to 383 Kent Street
Pyrmont Station	9 mins 5 seconds
Wynyard Station	7 mins 20 seconds
Martin Place (Metro)	7 mins 45 seconds
Town Hall Station	10 mins 45 seconds

Table 1: Timing from key station locations

Existing mode shares were also examined by analysing 2016 Census data (2021 data being compromised by abnormal behaviours during Covid). The data shows over 55% of people accessed the site by rail and 23% of people used Bus (or now LR). Cycling is noted as only 1% for the zone. The development will provide 500 bike spaces (7.5% of building occupancy), so contributes to the opportunity for greater use of sustainable modes of travel.

3 Approach to the Pedestrian Comfort Assessment (PCA)

A four-step approach for the PCA follows the recommendations set out in the "Walking Space Guide: Towards Pedestrian Comfort and Safety". [2] The following sections outline each of these steps in detail.

3.1 Step 1: Select and Assess the Site

A site visit was undertaken on 23rd and 24th November 2022 with a subsequent pedestrian survey undertaken on Tuesday 29th November. The site visit provided the opportunity to review behaviours during the AM, Midday and PM periods. The observations were able to answer the following questions posed within the Walking Space Guide.

Walking Guide Prompt Questions	Response
Is the footpath now (or likely to become) a walking route to or from a transport stop (bus or light rail stop or train station)?	*The footpath currently contains a bus stop to the south of the development. However, this bus stop is not a major stop with high volumes (either alighting or boarding). For rail, Metro West does not provide a significant change of walking route as the introduction of Pyrmont Station does not significantly alter the southern approach to the building.*
Does it connect major destinations?	*No. The major connections would be Pyrmont Bridge to George Street, or along the Sydney Walking 'Ribbon'. Kent Street (between Market and King Streets) is not considered part of a connection between major destinations.*
Are there any locations with high numbers of people waiting (static activity) that may require a static activity survey?	*No. There is a bus stop close by, but the volumes observed waiting were low. A café is located opposite the development on the east side of Kent Street. Again, volumes were low and not considered high enough to require a static activity survey. [see observations]*
Are there any other issues about pedestrian activity and behaviours that may be relevant?	*The area does not have many high-volume commercial developments (383 Kent Street and 2 Market Street are the only major offices in the study area). There are no major retail outlets, major restaurants, or other attractions to drive movement or waiting behaviour.*

Table 2: Walking Guide Questions

Observations

The busiest time of the day for the west side of the street was during the AM peak. Approximately 40-45% of all Northbound or Southbound movements were travelling to 383 Kent Street. The east pavement observations were very similar during both AM and PM peaks and observed to be lower during the midday. The PM peak generally showed a flatter departure profile, and this is reflected in the PM pedestrian counts. Midday was relatively quiet – mainly because the footpath is not part of a major connection to shopping/lunch destinations. The west side of Kent Street (where the development sits) was busier than the east side. But this was largely driven by the commercial offices of 383 Kent Street and 2 Market Street. The survey counts were therefore focussed on the AM and PM peak periods.

Passengers were seen waiting and alighting buses at the nearby bus stop. Observations (and filming at this location) showed negligible impediment to movement because of the alighting or waiting behaviour. During the AM peak, waiting was negligible. During the PM period, the adjacent food outlet removed the outdoor furniture and an additional circulation width is provided by the 2 Market Street development (see Figure 6). The area could be improved during

[2] Walking Space Guide (nsw.gov.au)

the AM peak by removing (or finding an alternative placement) of the Cali Press retail advertising board.

The café across the road to the development was seen as being active, but not especially busy. People were seen crossing the road away from the intersection to get to the café.

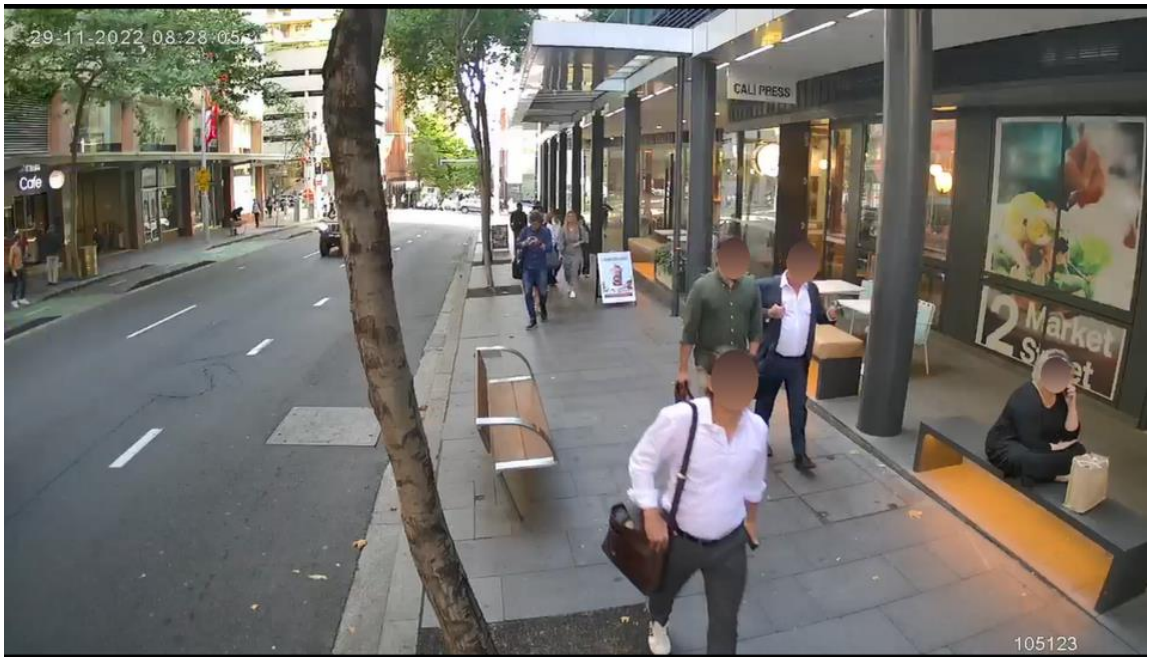


Figure 6: Bus Stop, west side of Kent Street, looking south, 29th November 2022 AM Peak (08:28)

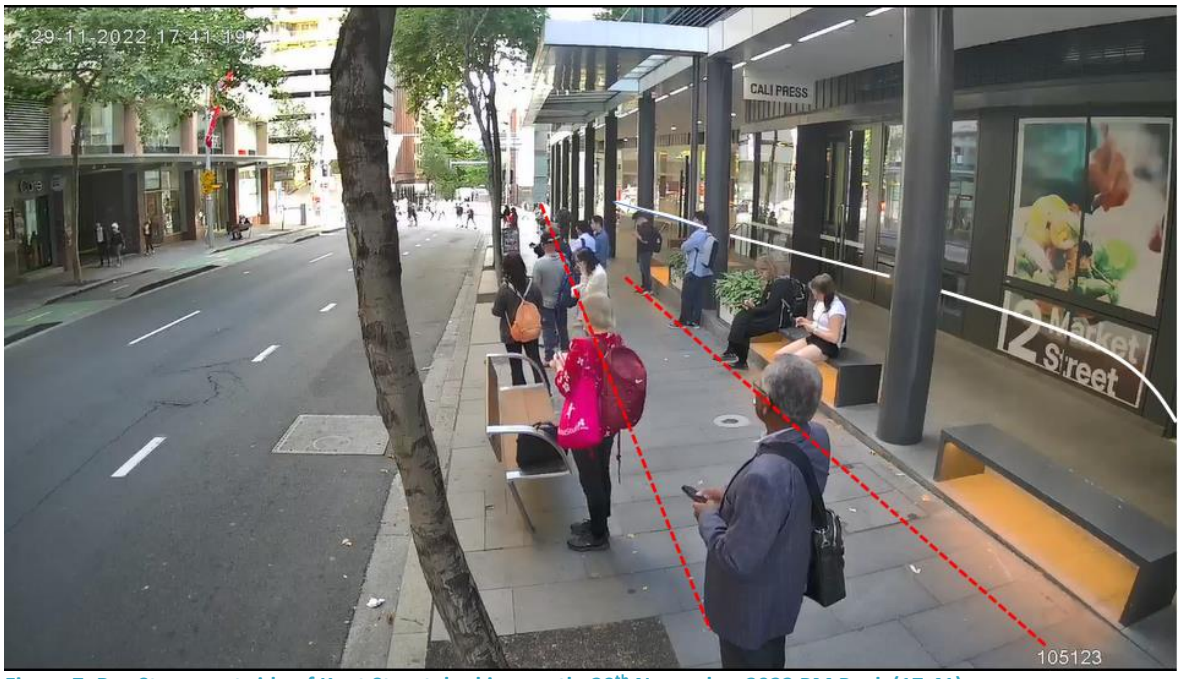


Figure 7: Bus Stop, west side of Kent Street, looking south, 29th November 2022 PM Peak (17:41)

Footpath Dimensions for Assessment

Measurements were taken along both sides of Kent Street. Measurements were taken periodically to test overall width and were taken where any obstruction was observed. Each location (locations labelled A-T) and measurement have been provided within the Appendix. Nine key locations (labelled 1-9) were then taken forward for assessment. These are provided in Figure 8. These locations are the main pinch points along each side of the road and are not reflective of the generic modal width of the full street length. For the east side, the general (or modal) width available is approximately 2.7m-2.9m, with a maximum of 3.6m. A dedicated bike lane is adjacent to the footpath. For the west side the general mode of available width is similar, and the maximum width was measured as just over 3.7m. The difference on the west side is that a portion of the street has parked vehicles, removing the Kerb Side Traffic buffer, and a portion of the street has free flowing traffic within a 40km/hr zone.

The diagram also shows placement of parked vehicles (cars/bikes) and the location of the bus stop. The development is located within a 40km/hr CBD traffic zone.

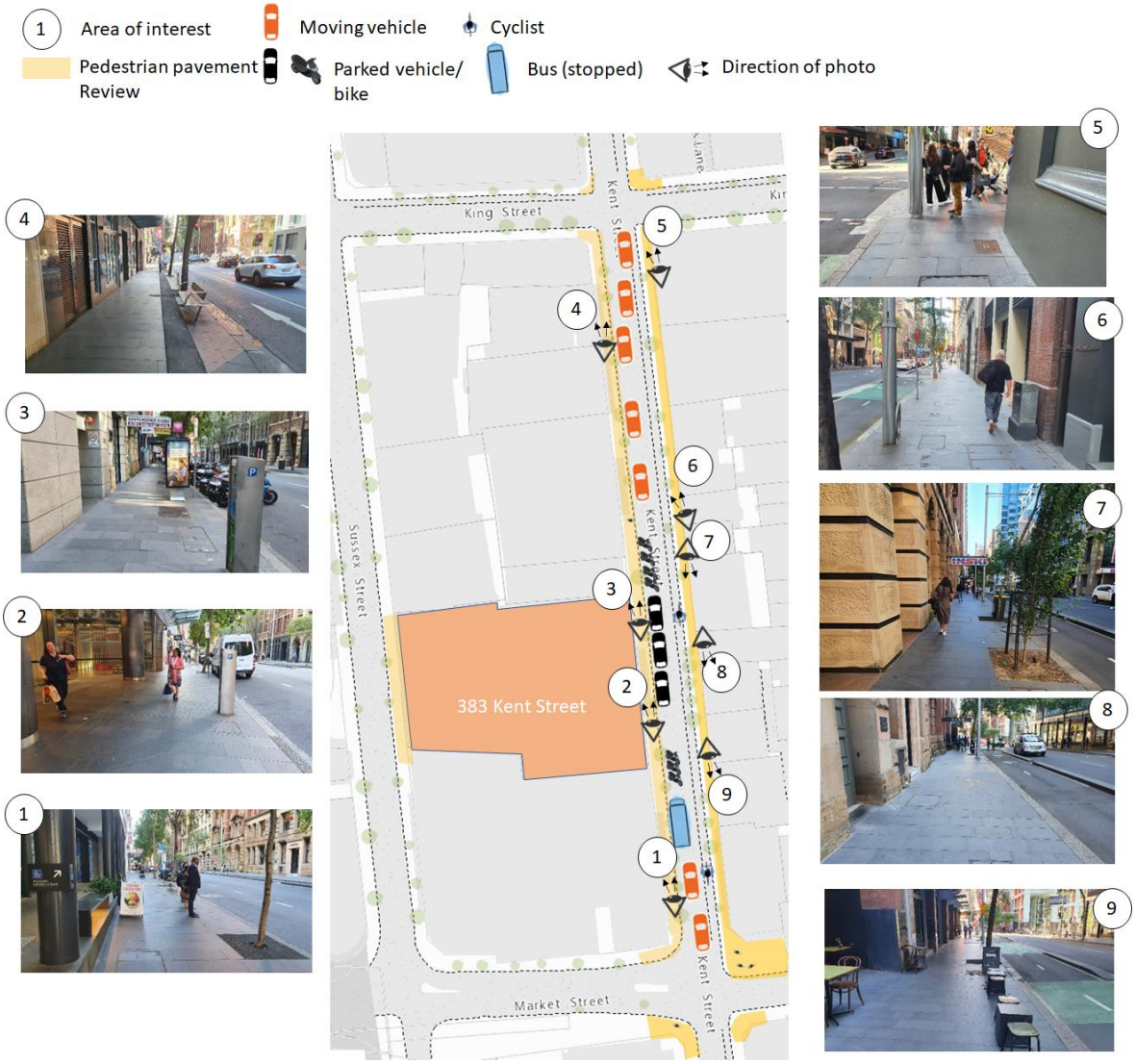


Figure 8: The nine key locations for the Pedestrian Comfort Assessment

Pedestrian Counts

The pedestrian survey counts were undertaken on 29th November for both sides of Kent Street, the two intersections (King and Market) as well as directly outside of 383 Kent Street to assess movement in and out of the existing building. The numbers entering and exiting the existing 383 Kent Street building were then used to adjust for volumes on the west side pavement (i.e. locations 1, 3, and 4).

The peak hour counts for both sides of Kent Street (including those entering and exiting 383 Kent Street) are given in the tables below. The west side shows a higher volume during the AM peak. The east side is slightly higher in the PM, but not significantly and demonstrates a more even split.

There is a dominance from the south during the AM peak – reflecting movement from Town Hall Station and Light Rail stops. This is reversed in the PM.

Time Period			West side of Kent Street								Grand Total
			Left IN	Left OUT	Right IN	Right OUT	Total	NB Incl 383KS, North of 383 KS	SB Incl 383KS, North of 383 KS	Total	
8:10	to	9:10	284	59	97	49	489	415	229	644	**1,133**
17:00	to	18:00	18	70	3	211	302	249	338	587	**889**

Table 3: Pedestrian Counts, west side of Kent Street, peak hour, 29th November 2022

Time Period			East side of Kent Street			Grand Total
			NB	SB	Total	
8:00	to	9:00	209	115	324	**324**
17:00	to	18:00	187	170	357	**357**

Table 4: Pedestrian Counts, east side of Kent Street, peak hour, 29th November 2022

Background Flow uplift

The TfNSW Travel Zone explorer was utilised to estimate the uplift to background flows up to 2042. Six travel zones either side of Kent Street were used as a proxy for movement through the study area. This provided a per annum uplift factor of 0.4%. This is relatively low for Sydney CBD, and likely to reflect this specific corridor.

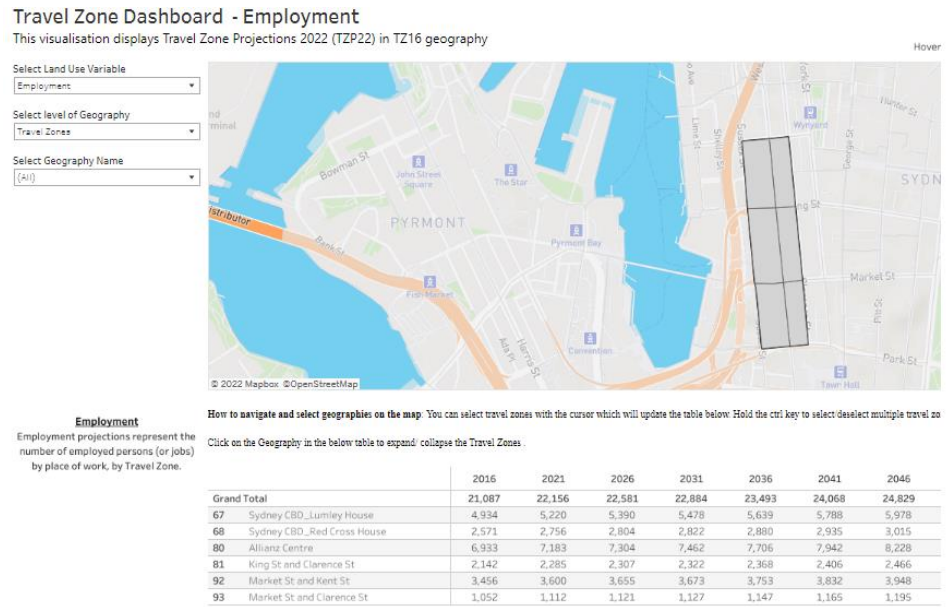


Figure 9: Employment forecasts to aid uplift of background flows [*Source:* Travel Zone Explorer - Visualisation | Transport for NSW]

3.2 Step 2: Classify Footpath Types

The pedestrian survey was undertaken for both the AM (3hrs) and PM (2hrs) peaks. These were the two peaks observed to have the greatest movement activity. The peak hour demand for both AM and PM were then utilised for the analysis. Note the demand values includes the existing patrons of 383 Kent Street. The approach used for the 'Footpath Type' is based on the peak hour flows as outlined in the Walking Space Guide (using Table 2A, Page 22 of 58). Table 5 shows the resultant classifications.

Location# (see Figure 8)	Location Description	Peak Hour Flows (Based on observed data)	Footpath Type (Based on Table 2A of the Walking Guide)
1	Bus Stop, west side	821	Type 4
2	Between Parking Meter and 383 KS property Line, west Side	537	Type 4
3	At Telstra Phonebooth, west side	644	Type4
4	At bench, west side	644	Type 4
5	At intersection (SE of Kent/King) between lamp post and wall, east side	357	Type 3
6	Between signal box and lamp post, east side	357	Type 3
7	Between newly planted tree and building edge, east side	357	Type 3
8	At widest part of east side of Kent Street, east side – directly opposite 383 Kent Street	357	Type 3
9	In between furniture, east side	357	Type 3

Table 5: Footpath Classifications

The table shows the east footpath (locations 1-4) have the highest volumes and are classified as 'Type 4'. Locations on the east of Kent Street are classified at the high end of Type 3.

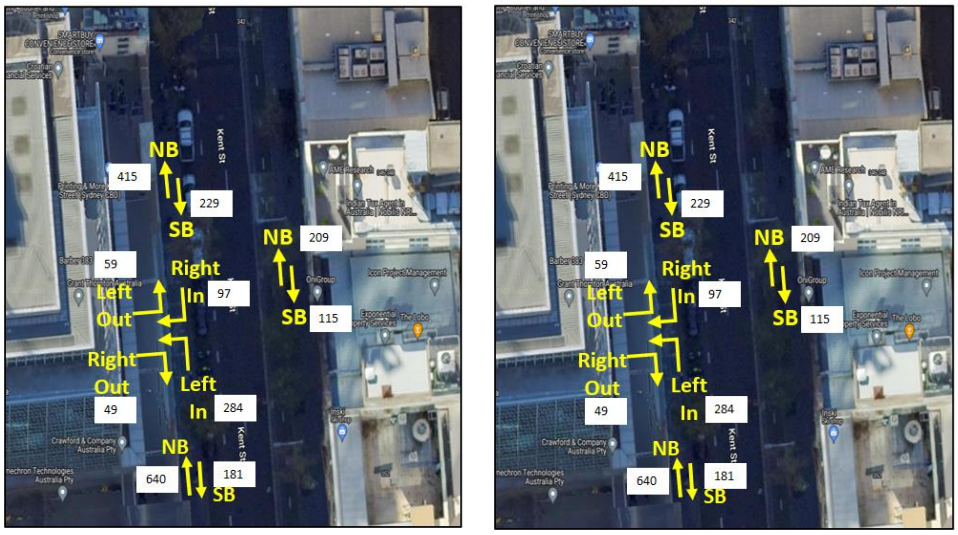


Figure 10: Peak hour flows during AM (left) and PM (right) periods, Nov 2022

3.3 Step 3: Determine the Walking Space

An assessment was undertaken to determine the Walking Space used to then define the Level of Service. The Walking Space was calculated based on the overall footpath width minus:

- Kerbside Traffic Buffer: The development is situated in a 40km/hr CBD Traffic area. A kerbside buffer of 1.2m is therefore applicable at certain locations.
- Width of obstructions: The available pavement width at key locations is provided in the appendix.
- Any Static Activity: Whilst a bus stop is placed south of the development, a static assessment was not undertaken given low volumes.
- Active Edges: not applicable as there are no significant active edges along either side of Kent Street.

The resultant walking space for each of the nine locations is given in Table 6.

Location#	Walking Space (unadjusted)	Adjustment	Comment
1	2400mm	None.	Note, the retail board (see Appendix, Location B), is a temporary board, and therefore for the purposes of this assessment is assumed to be able to be relocated easily. The measurement does however consider waiting passengers.
2	2531mm	None	Opportunity to utilise full width of pavement if meter is removed given parked vehicles
3	2092mm	-200mm	Buffer for the physical obstruction of the advertising
4	2537mm	-500mm	For people waiting (although no one observed to sit at this bench)
5	1983mm	None	Based on 'Individual Posts', page 40 of the Walking Guide
6	2290mm	None	Based on 'Individual Posts', page 40 of the Walking Guide
7	1896mm	None	This has the opportunity to increase in width as the tree matures and the protective cage could be removed.
8	3510mm	None	Adjacent to bike lane, not a vehicular lane
9	2400mm	None	Lane in between furniture.

Table 6: Walking Space with adjustments and comments

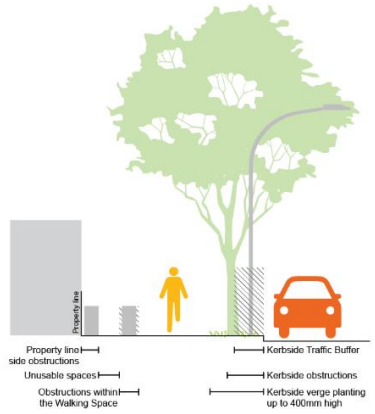


Figure 11: Walking Space were derived based on the intent provided within the Walking Space Guide.

3.4 Step 4: Assessment

The following scenarios have been assessed:

1. **2022 Existing**: Existing (post covid) conditions based on recorded observations and data. This sets the baseline for analysis.

2. **2042 Existing Development, Future Background Flows**: Future 2042 Performance including background growth due to employment (@0.4% per annum). This sets the baseline for future analysis.

3. **2022 Future Development, Existing Background Flows**: A new ~65,110m^2 NLA (~75,021m^2 of GFA) development in operation as of 2022 with existing background flows. This assumes a similar occupancy/profile as of 2022.

4. **2042 Future Development, Future Background Flows**: Future 2042 Performance including background growth due to employment and the *net* impact of the development at 383 Kent Street. This assumes a proxy – return to pre-covid behaviours, but still reflects a shift to a more flexible arrival profile than is evident today.

1. Existing Conditions

The assessment of the walking types (Types 3 & 4) indicates that the target Walking Space to meet the Walking Space Guide LoS C criteria is 3.7m for Type 4 and 3m for Type 3 (excluding Kerbside Traffic Buffers). Type 4 is triggered if the peak hour volumes range from 400-2000 per hour. On a per minute basis this is estimated to equate to 8 people per minute through to 40 people per minute. This range of flow rate would traditionally be described as being Fruin LoS A Walkways through to Fruin LoS C Walkways and would indicate a significant range. The impact and physical characteristics of a flow of 40 people per minute is very different to that of 8 people per minute. The London TfL Pedestrian Comfort Levels (PCL) of 9-11 people per metre per minute or PCL B+ would be considered to be a desirable comfort level.

The inclusion of trees and other obstructions noted in Table 6 show that the Walking Space is reduced from the maximum footpath width of 3.7m, to widths ranging from ~2.0m through to ~3.5m. The generic modal width along each footpath is 2.7m-2.9m.

The analysis process of the Walking Guide indicates that, at the assessment points, the current existing conditions of the pavement LoS along the eastern side of Kent Street are all **Level of Service F – "intervention triggers".** This is because the Walking Space Guide recommends a Type 4 street to have a target width of 3.7m to meet the Level of Service C and a Level of Service F is triggered for walking space less than 2.7m. The full widths of the pavements are approximately 3.7m and 3.5 metres for the west and east sides of Kent Street respectively. This analysis indicates that the Walking Guide Level of Service target metric can only be met on the eastern side if all furniture is removed (and some considerations of a buffer for the bike lane). The Walking Space performance metric can only be met on the western side if a traffic lane is removed (and this cannot be achieved at the northern part of the street). This is for existing conditions. This feels at odds with existing observations and footage which does not show the need for LoS F intervention triggers – even at the assessment points**.**

For the majority of the footpaths, (i.e. the modal widths), the performance based on the Walking Space Guide would be LoS E on the west where parked cars are evident, and LoS C on the east side.

LocM5+A 5:M14	Location Description	Observed Peak Hour flow rate	Observed Peak 5 minute Flow	Footpath Type	Active Building Edge	PPMM (Walking Guide = Observed Pk hr/60)	Walking Space	LOS - Walking Guide	Flow rate (based on observed peak 5mins)	LOS - Fruin Walkways
1	Bus Stop, west side	821	100	4	Not Adjacent	5.7	2.40	F	8.3	A
2	Between Parking Meter and 383 KS property Line, west Side	537	70	4	Not Adjacent	3.5	2.53	F	5.5	A
3	At Telstra Phonebooth, west side	644	85	4	Not Adjacent	5.7	1.89	F	9.0	A
4	At bench, west side	644	85	4	Not Adjacent	5.3	2.04	F	8.3	A
5	At intersection (SE of Kent/King) between lamp post and wall, east side	357	56	3	Not Adjacent	3.0	1.98	F	5.6	A
6	Between signal box and lamp post, east side	357	56	3	Not Adjacent	2.6	2.29	E	4.9	A
7	Between newly planted tree and building edge, east side	357	56	3	Not Adjacent	3.1	1.90	F	5.9	A
8	At widest part of east side of Kent Street, east side – directly opposite 383 Kent Street	357	56	3	Not Adjacent	1.7	3.51	A	3.2	A
9	In between furniture, east side	357	49.98	3	Not Adjacent	2.5	2.40	D	4.2	A

Figure 12: Walking Space Guide Level of Service Assessment, Existing Conditions.

Summary Point #1 – Existing Conditions

The maximum width of the Kent Street pavement is 3.7m – so there is little opportunity to meet the Walking Space Guide's Level of Service C Target – even during existing (post covid) conditions. Traffic lanes are adjacent to the pavement for approximately 60% of the road between King and Market Streets. Therefore, an additional 1.2m of width is required in certain locations to cater for the 40km/hr speed restrictions.

An analysis taking into consideration the observed peak 5-minute flows and reflecting a Fruin Walkways analysis was also undertaken. The flows per metre per minute ranged from 3.2people/m/min through to 9.0 people/m/min. These rates are very low and would be considered to meet the desirable flow of PCL B+ if the TfL Pedestrian Comfort Guidelines are utilised. The physical characteristic of this flow would be described as 'free circulation' and be considered as Level of Service A – Fruin Walkways. This aligns to the video footage of the survey. Hence, even with obstructions, it is unclear why an 'intervention trigger' is required.

The analysis also shows for sites 8 and 9 that the difference in flow rate *per metre per minute* is 1 person. Yet the corresponding Walking Space metric increases from Level of Service A through to Level of Service D. This is because Walking Space Guide is driven by bands of widths for Footpath type (which itself is a large range of volume), and not for the resultant per minute flows.

The per minute flow for each location was also mapped the Walking Space Guide's research of 'Comfort vs. Flow'. This is shown in Figure 13. It shows that the percentage of people having comfort at these assessment locations are above 50%. The intent of the guide is that 50% and more people should feel comfortable to meet the target. On this basis, only the locations of 1, 3 and 4 are the ones in which further investigation may be warranted. Location 2 – directly at 383 Kent Street can utilise the full pavement width (of 3.7m) given parked vehicles *if* the parking meter is removed. This then provides a **Walking Space Guideline of Level of Service C**.

Figure 15 – Percentage of people comfortable versus flow

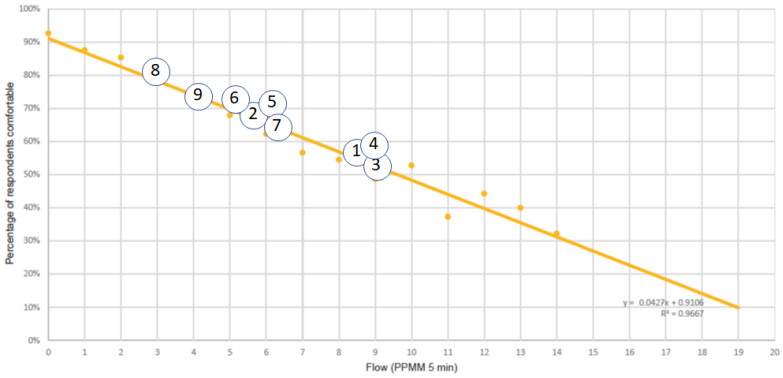


Figure 13: Observed Peak Per Minute flows (PPMM) plotted against the research underpinning the Walking Space Guide

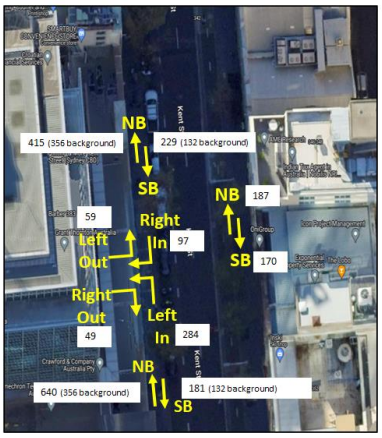
Summary Point #2 – Recommendation for the development to meet LoS C

With respect to the 383 Kent Street development – the modal pavement widths directly outside of the building entrance (i.e. from property line to the kerb) are approximately 3.7m. The design (see Figure 1) shows the development building edge is aligned to the footages of the adjacent buildings and so aims to maintain these modal pavement widths. The adjacency of the parked vehicles means that the whole width can be used and therefore 383 Kent Street is predominantly **Level of Service C.** The only main pinch point is the parking meter, which is recommended to be removed given there are two meters within the length of 383 Kent Street block title. There are also two trees (see Location D in the appendix). As such, the key for the development is to maximise the opportunity to maintain 3.7m – assuming either parked vehicles are maintained or, even better, the parking area is returned to pedestrians.

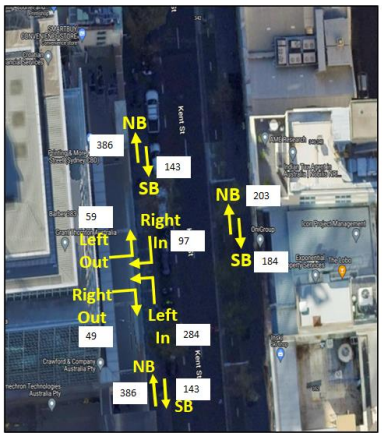
2. Existing Development with future background flows

The volume of patrons entering and exiting the 383 Kent Street building were removed from the survey counts to construct a background flow demand set. This background demand was then uplifted by 0.4% per annum over a 20-year period. Unsurprisingly, because the background demand within this corridor is low, the results for the Walking Space Guide and Fruin Walkways is the same as existing conditions. The same conclusions and recommendations from Scenario 1 therefore apply.

Existing Counts: background (extracted N/S)



Existing Development: background uplifted at 0.4% p.a over 20 years



Existing Development: N/S flows inclusive of development

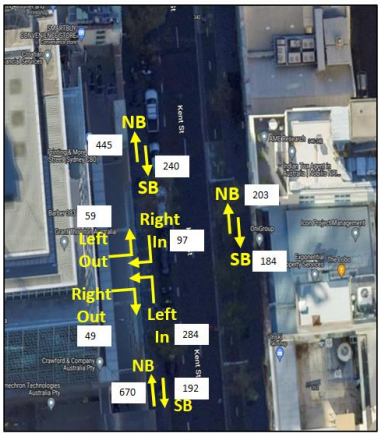


Figure 14: Background demand extracted from the counts and then uplifted at 0.4% per annum over 20 years

Loc#	Location Description	Observed Peak Hour flow rate	Adjusted Peak 5 minute flow	Footpath Type	Active Building Edge	PPMM (Walking Guide = Observed Pk hr/60)	Walking Space	LOS - Walking Guide	Flow rate (based on adjusted future peak 5mins)	LOS - Fruin Walkways
1	Bus Stop, west side	862	102	4	Not Adjacent	6.0	2.40	F	8.5	A
2	Between Parking Meter and 383 KS property Line, west Side	578	72	4	Not Adjacent	3.8	2.53	F	5.7	A
3	At Telstra Phonebooth, west side	685	87	4	Not Adjacent	6.0	1.89	F	9.2	A
4	At bench, west side	685	87	4	Not Adjacent	5.6	2.04	F	8.6	A
5	At intersection (SE of Kent/King) between lamp post and wall, east side	387	57	3	Not Adjacent	3.3	1.98	F	5.8	A
6	Between signal box and lamp post, east side	387	57	3	Not Adjacent	2.8	2.29	E	5.0	A
7	Between newly planted tree and building edge, east side	387	57	3	Not Adjacent	3.4	1.90	F	6.1	A
8	At widest part of east side of Kent Street, east side – directly opposite 383 Kent Street	387	57	3	Not Adjacent	1.8	3.51	A	3.3	A
9	In between furniture, east side	387	56	3	Not Adjacent	2.7	2.40	D	4.6	A

Figure 15: Walking Space Guideline results and Fruin Walkway Results for Scenario 2

3. Future Development with Existing background flows

This scenario assumes the development is built and operational as of November 2022. This is purely a theoretical exercise to understand the impact of increasing the NLA of the existing building within the background demands of the noted survey date.

Since Covid has fundamentally changed travel behaviours within the CBD, both occupancy rates (i.e. number of people who travel) and arrival/departure profiles (when people travel) have been impacted by the hybrid working practices of employees. The process for estimating the future demand has been based on the existing observed demand entering/exiting 383 Kent Street and uplifting these volumes by the ratio of existing (18,000m^2) to future net lettable area (65,110m^2). i.e.

Future Peak hour entries = Existing Peak hour entries x (65,110 *[future NLA]* / 18,000 *[existing NLA]*)

Future Peak hour exits = Existing Peak hour exits x (65,110 *[future NLA]* / 18,000 *[existing NLA]*)

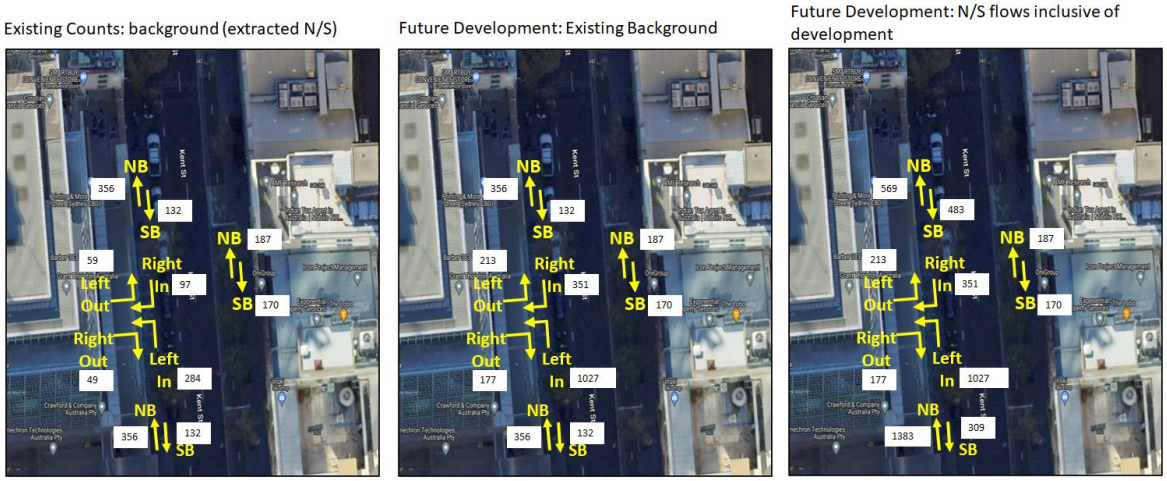


Figure 16: Future Development demand and existing background demand

The results of the Walking Space Guide analysis provide the following outcomes.

- The Classification Type is still Type 4 for the west side of the Kent Street and Type 3 for east side of Kent Street. As such, the Level of Service based on the Walking Space Guide remain the same as existing conditions (i.e. a modal result of LoS C for the west and LoS A for the east).
- Based on an adjusted estimated flow rate, the predicted flow rates through the bus stop and adjacent to the Telstra booth are approx. 18 and 20 people per metre per minute. These rates are getting high and would benefit from improvement in available walking space in areas both within and outside of the control of the Developer. The options could include:
    - Removal of the Telstra Booth. This would seem a sensible intervention measure given there are better locations available (e.g. north east corner of Market/Kent Street intersection).
    - Move the bus stop further north past the 383 Kent Street site (the highest flows are still anticipated to arrive from the south).
    - Removal of the parked vehicles/bikes. This could be enabled by the City of Sydney and aligned with the move of the bus stop. This would aid the southern portion of the west side of Kent Street. This would also seem sensible if a zebra crossing is required to aid the cross city through links.

- The performance of the west side of the Kent Street pavement is considered to be unchanged (people are expected to cross at the intersections). However, there may be an opportunity in the future for a zebra crossing located close to the development as part of City of Sydney's proposed through site (east-west) links. In this way the opportunity exists to share demand originating from Wynyard/Martin Place and Town Hall Stations via the west side of the street.
- The results also indicate that the parking meter directly outside of the development should be removed (there is a second meter very close to the north) to maximise the opportunity to have a clear 3.7m of width to align with the Walking Space Guide recommendation for a Type 4 street.

Loc#	Location Description	Future Predicted with Development	Adjusted Peak 5 minute flow	Footpath Type	Active Building Edge	PPMM (Walking Guide = Observed Pk hr/60)	Walking Space	LOS - Walking Guide	Flow rate (based on adjusted future peak 5mins)	LOS - Fruin Walkways
1	Bus Stop, west side	1,692	213	4	Not Adjacent	11.8	2.40	F	17.7	A
2	Between Parking Meter and 383 KS property Line, west Side	665	149	4	Not Adjacent	4.4	2.53	F	11.8	A
3	At Telstra Phonebooth, west side	1052	185	4	Not Adjacent	9.3	1.89	F	19.6	A
4	At bench, west side	1052	181	4	Not Adjacent	8.6	2.04	F	17.8	A
5	At intersection (SE of Kent/King) between lamp post and wall, east side	357	56	3	Not Adjacent	3.0	1.98	F	5.6	A
6	Between signal box and lamp post, east side	357	56	3	Not Adjacent	2.6	2.29	E	4.9	A
7	Between newly planted tree and building edge, east side	357	56	3	Not Adjacent	3.1	1.90	F	5.9	A
8	At widest part of east side of Kent Street, east side – directly opposite 383 Kent Street	357	56	3	Not Adjacent	1.7	3.51	A	3.2	A
9	In between furniture, east side	387	56	3	Not Adjacent	2.7	2.40	D	4.6	A

Figure 17: Walking Space Guideline results and Fruin Walkway Results for Scenario 3

Summary Point #3 – Impact of the development to Street Type Classification

With respect to the 383 Kent Street development – the future development (existing post covid behaviour) does not trigger a change to the street type. As such, the recommendations for Scenario 3 are the same as existing conditions. The adjacency of the parked vehicles means that the whole width can be used and therefore 383 Kent Street is predominantly operating at **Level of Service C.** The only main pinch point is the parking meter (location #2), which is recommended to be removed given there are two meters within the length of 383 Kent Street block title. There are also two trees (see Location D in the appendix). For scenario #3 the key for the development is to maximise the opportunity to maintain 3.7m – assuming either parked vehicles are maintained or, even better, the parking area is returned to pedestrians.

4. Future Development with Future background flows (2042)

This scenario combines Scenario 2 with Scenario 3. The difference in this scenario is that a factor has been applied to reflect an 'occupancy' return to pre-covid behaviours, but still reflects the more flexible arrival/departure profile that is observed today (i.e. the legacy of Covid is a greater acceptance by employers for more flexible work practices). This factor has been derived by comparing overall transport trips within the city both pre-covid to post-covid and using the ratio as a proxy for the covid impact. Analysis of travel trips across all travel modes in 2019 vs 2022 is shown in **Figure 18**. The number of trips in 2019 pre-Covid is approximately 66% higher than in 2022. The graph also shows a month-on-month increase in trips from February through to November 2022 which is reflected of a return-to-city behaviour. It is not clear whether this uptrend will continue to pre-covid levels, but we have assumed that they have returned to at least the trip volumes associated with 2019 (i.e. have excluded additional employment growth between 2019-2022) and have maintained the assumed floor ratio of the existing 383 Kent Street.

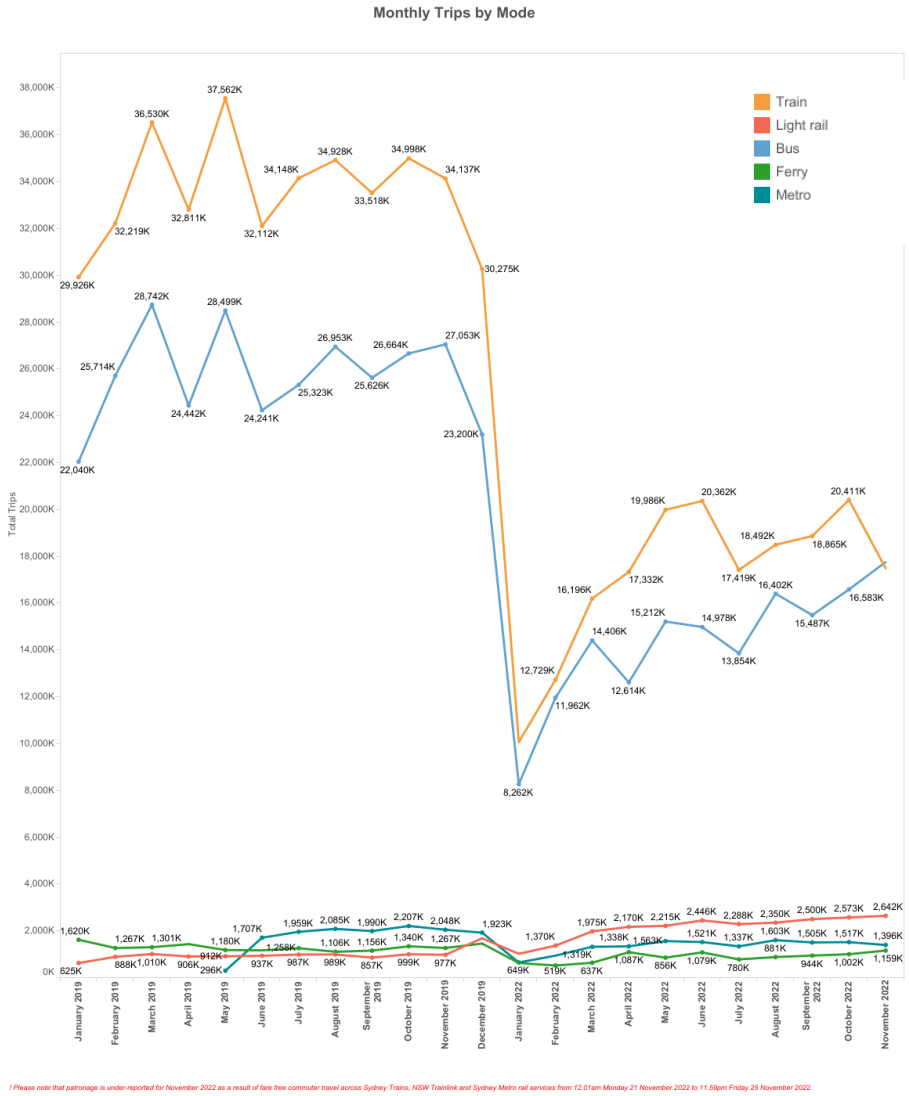


Figure 18: Comparison of 2019 vs 2022 travel trips [*Source:* Public Transport Patronage - Top Level Chart | Transport for NSW]

The results for Scenario 4 are provided in Figure 20 and indicate a total of approximately 2500 staff arriving within the peak hour (some people arrive before or after the peak). Considering bike and basement carparking, this total equates to approximately 45% of full occupancy at 1:10, and 54% of full occupancy at 1:12. Surveys pre-Covid shows arrival profiles were in the range of 55-

65% of building occupancy. Therefore, the process has (by uplifting from existing data of 383 Kent Street) reflected a more flexible working arrangements, including the time of arrival / departure.

These results indicate that the demand from the south past the bus stop may exceed 2000 people in a peak hour and move the Footpath Classification at this location into Type 5. Once people enter 383 Kent Street, the volumes reduce back to Type 4. Movement from the north is within the Type 4 classification.

The results indicate that the bus stop might be a constrained area (and would indicate a higher usage of the link adjacent to 2 Market Street during the PM peak as more people wait for buses). However, the demand across the area could be reduced with the inclusion of zebra crossing (likely with the introduction of the through-site link and other east-west through site city links as proposed and shown in Figure 5). The volumes from Town Hall Station / Light Rail are still estimated to be higher than that from Pyrmont Station and as such, there is greater opportunity to share demand across both sides of the street up to the point of the zebra crossing.

The public bench to the north of Kent Street is also identified as having high adjacent flow rates. A review of usage might indicate that the bench is not being utilised sufficiently and that an alternative placement may aid both users of the bench, and those walking along this footpath. The Telstra cabinet is also recommended for removal, if possible.

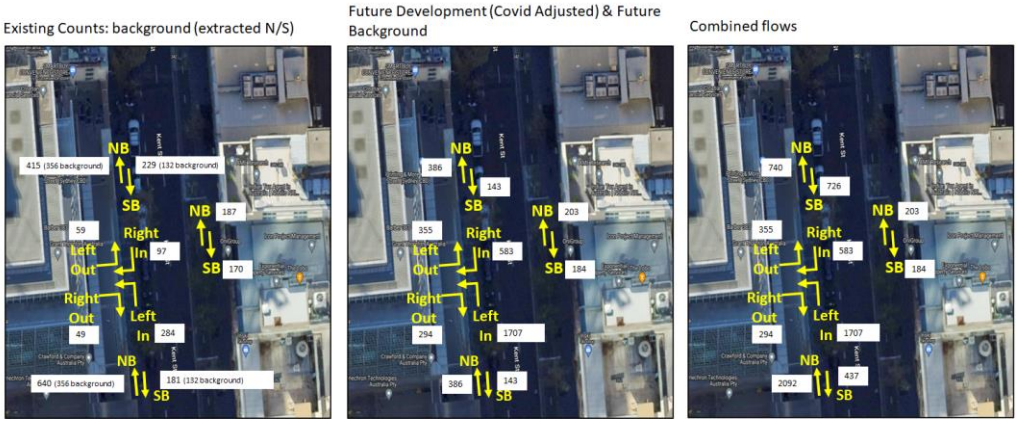


Figure 19: Future Demand Movements for Scenario 4

Loc#	Location Description	Future Predicted with Development	Adjusted Peak 5 minute flow	Footpath Type	Active Building Edge	PPMM (Walking Guide = Observed Pk hr/60)	Walking Space	LOS - Walking Guide	Flow rate (based on adjusted future peak 5mins)	LOS - Fruin Walkways
1	Bus Stop, west side	2,529	308	5	Not Adjacent	17.6	2.40	F	25.7	B
2	Between Parking Meter and 383 KS property Line, west Side	822	107	4	Not Adjacent	5.4	2.53	F	8.5	A
3	At Telstra Phonebooth, west side	1466	193	4	Not Adjacent	12.9	1.89	F	20.5	A
4	At bench, west side	1466	193	4	Not Adjacent	12.0	2.04	F	19.0	A
5	At intersection (SE of Kent/King) between lamp post and wall, east side	387	61	3	Not Adjacent	3.3	1.98	F	6.1	A
6	Between signal box and lamp post, east side	387	61	3	Not Adjacent	2.8	2.29	E	5.3	A
7	Between newly planted tree and building edge, east side	387	61	3	Not Adjacent	3.4	1.90	F	6.4	A
8	At widest part of east side of Kent Street, east side – directly opposite 383 Kent Street	387	61	3	Not Adjacent	1.8	3.51	A	3.5	A
9	In between furniture, east side	387	54	3	Not Adjacent	2.7	2.40	D	4.5	A

Figure 20: Walking Space Guideline results and Fruin Walkway Results for Scenario 4

3.5 Sussex Street

A review of the existing and future pedestrian movements of Sussex Street has also been undertaken. The November 2022 survey identified the busiest period along with street (east) side) was during the AM peak with an hourly flow of 254 pedestrians (08:20-09:20). All these flows are considered predominantly background demand as access to the existing 383 Kent Street is via Kent Street and does not have the proposed through-site link. There is a significant level change between Sussex Street and Kent Street and therefore it is unlikely that the through site link will generate a significant switch in background movement behaviour from those coming from the north towards Market Street/Kent Street intersection as the new route is similar in distance but requires greater effort given the vertical rise via stairs. The new through route does however provide better mobility access given the pavement grade from Sussex Street to the Market Street/Kent Street intersection is steep and not DDA compliant.

In terms of the majority of pedestrian movement driven by the development, those coming from the south (i.e. either from Pyrmont Bridge or Town Hall/ George Street) are estimated to stay at a higher level if accessing 383 Kent Street for Ground Level and above. Those arriving from the north are likely to access via Kent Street as noted in the previous analysis.

There is approximately 1445m^2 of NLA attributed to the Lower Ground level which can be accessed from both Kent Street and Sussex Street. For a 1:10 floor ratio, and 60% within the peak hour would equate to approximately 87 people in the peak hour. Those that arrive during the AM from the south (i.e. approximately 50%) are estimated to walk down the hill along Market Street (or access directly to Sussex Street from the Pyrmont Bridge). There is also the option of utilising the through-site link to access retail (e.g. to grab a coffee prior to work). These workers then have the ability to access the site directly from the stairs within the through-site link with no pedestrian-vehicle conflicts from the development's carpark entry (i.e. the design provides an amenity choice). Those that arrive from the north will likely utilise the through site link or, less likely, continue down King Street towards Sussex Street.

10mins interval

Time Period	IN				OUT				Grand Total	Peds			Grand Total
	Cars	Trucks	Cyclists	Total	Cars	Trucks	Cyclists	Total		NB	SB	Total	
7:30 to 7:40	5	0	0	5	2	0	0	2	7	10	11	21	21
7:40 to 7:50	5	0	0	5	2	0	0	2	7	17	11	28	28
7:50 to 8:00	12	0	1	13	2	0	0	2	15	7	15	22	22
8:00 to 8:10	6	0	0	6	2	0	0	2	8	10	11	21	21
8:10 to 8:20	11	0	0	11	0	0	0	0	11	13	27	40	40
8:20 to 8:30	13	0	0	13	2	0	0	2	15	29	20	49	49
8:30 to 8:40	5	0	0	5	1	0	0	1	6	16	18	34	34
8:40 to 8:50	9	0	0	9	2	0	0	2	11	32	17	49	49
8:50 to 9:00	11	0	1	12	2	0	0	2	14	19	28	47	47
9:00 to 9:10	14	0	0	14	2	0	0	2	16	16	19	35	35
9:10 to 9:20	9	0	0	9	3	0	0	3	12	10	6	16	16
9:20 to 9:30	11	0	0	11	2	0	0	2	13	11	7	18	18
AM Total	**111**	**0**	**2**	**113**	**22**	**0**	**0**	**22**	**135**	**190**	**190**	**380**	**380**

Figure 21: Pedestrian counts along Sussex Street directly outside of the development parcel (vehicle counts in/out of carpark). Counts over two hours in the AM peak.

The Footpath Type Classification for this side of the street is assessed as Type 3 (<399 pedestrians per hour) and requires 3m of footpath width to meet a LoS C – PCA rating (Based on Table 4a of the Walking Space Guide). This 3m of width is more than provided for within the reference drawings with the colonnade being retained to provide a generous walking environment. The increase in pedestrian movement as a result of the development is not estimated to change the classification of the street even if all workers to the lower ground floor utilised Sussex Street. No changes are therefore recommended.

4 Summary Findings & Recommendations

The results of the Walking Space Guide for each scenario along **Kent Street** are summarised in the Table 7. The Street Type 4 band relates to a pedestrian peak hour volume between 400 p/hr and 2000 p/hr. The results across scenario 1-3 are the same as the volumes are estimated to stay within this range. Only in Scenario 4, which assumes a higher return to the city akin to pre-covid behaviours does the southern-west side of Kent Street get triggered into a Type 5 classification.

The east side of the street has a modal performance of Level of Service C, but does have narrowing's around trees/furniture that create the Walking Space metric of Level of Service D-E.

For **Sussex Street**, the existing classification is Type 3 and expected to remain Type 3 even with the development. A width of 3m is therefore sufficient to maintain Level of Service C performance.

Summary Point #4

The 383 Kent Street property itself has very few obstructions and fronts to parked cars along the length of the title boundary. As such, for all scenarios, Level of Service C can be provided *if* 3.7m of width is maintained and assumes parked vehicles are retained. A more beneficial pedestrian outcome is that the parking lane is returned to pedestrians given that 3 of the 6 parking bays are loading bays. A return of this space to pedestrians may also aid the opportunity to include a zebra crossing to support movement to/from the through-site link

Recommendations to improve assessment areas in the short term in the vicinity of the site include:

- Removal of Telstra cabinet (CoS/Telstra)
- Removal of parking meter directly outside of 383 Kent Street (CoS). If this is achieved, and the developer maintains or improves (by indenting the building) from the property line.
- Static survey around the public bench (location #4) at the north-west of Kent Street – to understand usage and whether this is better placed elsewhere (CoS)

Recommendations to improve walking performance as behaviours tend towards Scenario #4

- Removal of parked vehicles and extend the footpath all the way to Market/Kent intersection (CoS).
- Move the bus stop to an indent just further north of 383 Kent Street (i.e. to approximately where the parked bikes are currently located). (TfNSW/CoS)
- Encourage greater usage of both sides of Kent Street – by usage of a zebra crossing which is likely to be needed to aid the cross city through links. (CoS/TfNSW)

Recommendations for the next stage of the development design competition include:

- Review of the quantum and placement of the entrance portals to the building. There may be better opportunities to have the main 'postal address' revolving door as shown, but with a secondary, larger entrance (potentially sliding doors subject to wind impacts) for staff movements in/out of the laneway as well as one within the noted 'retail' outlet at the south. This will be dependent on speedstile locations and hence lift core, so can be reviewed during the subsequent design competition stage.

Scenario	Modal Performance (West/East)	Performance at Assessment Points (West/East)
1. Existing	LoS E / LoS C	LoS F / LoS D-E
2. Existing + Future Background	LoS E / LoS C	LoS F / LoS D-E
3. Future Development + Existing Background	LoS E / LoS C	LoS F / LoS D-E
4. Future Development + Future Background (pre-covid profile)	LoS F (south of 383KS) – although this excludes the through link of 2 Market Street. LoS E (all other areas on east) / LoS C	LoS F / LoS D-E

Table 7: Summary of LoS analysis for Kent Street based on the Walking Space Guide

5 Intersection Analysis

The Walking Space Guide does not provide guidance on the data collection or approach to I pedestrian movement at intersections. The guidelines do indicate a complimentary guide will be released, but as far as we are aware that has not yet occurred.

For completeness, Movissian has investigated the current volumes associated with both the Kent/King intersection to the north and Kent/Market intersection to the south.

A pedestrian survey was undertaken investigating the crossing volumes for each leg, as well as some level of indication of the primary routes to the west side of Kent Street.

Figure 22: Kent / King St intersection (left) and Kent / Market St intersection (right)

The volumes associated with the legs (A-G) for each intersection as noted in Figure 22 are given in the tables below. The peak hour demands are similar for both the AM and PM peaks.

The Kent/Market intersection has pedestrian volumes that are over double that of the Kent / King St intersection. The signals operate on a 90 second cycle, inclusive of a dedicated bike phase.

East-west pedestrian movements are higher than north-south movements. This is a likely to be a factor of:

- greater attractions east-west (e.g. movement to George Street or movement to/from Cocklebay Wharf/across Pyrmont Bridge) and;
- the pedestrian timings for the intersection in which greater vehicular time (and hence pedestrian green time) is awarded to east-west movements. Approximately 25 seconds is awarded to North-South crossing movements and up to 45 seconds for East-West movements (Nb. The available crossing time is less for movements labelled "E & F" of Kent/Market given right turning vehicle movements).

Time Period	South Leg (Kent St)			East Leg (King St)			North Leg (Kent St)			West Leg (King St)			Grand Total
	A	B	Total	C	D	Total	E	F	Total	G	H	Total	
8:10 to 9:10	335	207	542	373	117	490	133	180	313	135	127	262	1,607
17:00 to 18:00	242	397	639	136	241	377	221	223	444	112	101	213	1,673

Table 8: Kent St / King St peak hour counts

Time Period	South Leg (Kent St)			East Leg (Market St)			North Leg (Kent St)			West Leg (Market St)			Grand Total
	A	B	Total	C	D	Total	E	F	Total	G	H	Total	
8:10 to 9:10	1,097	481	1,578	204	252	456	230	438	668	486	154	640	3,342
17:00 to 18:00	763	1,156	1,919	299	144	443	439	254	693	172	325	497	3,552

Table 9: Kent St / Market St peak hour counts

Reservoir Analysis

Movissian has considered the average volumes of people waiting on each corner across the peak hour. The average volumes waiting for Kent/King are all below eleven people. There is more than sufficient space at each corner to cater for this demand.

Time Period			South Leg (Kent St)			East Leg (King St)			North Leg (Kent St)			West Leg (King St)		
			A	B	Total	C	D	Total	E	F	Total	G	H	Total
8:10	to	9:10	8	5	14	9	3	12	3	5	8	3	3	7
17:00	to	18:00	6	10	16	3	6	9	6	6	11	3	3	5

Table 10: Kent St / King St average number of people waiting to cross each leg (Nov 29 2022)

The Kent / King intersection is not expected to be a major issue due to the new development. The only notable consideration for the City of Sydney is the placement of the lamp post/traffic signals on the south-east corner (see Figure 23). This is not expected to be an issue for the development as people will have likely crossed to the west side of the street prior to this intersection. However, it was observed to be a pinch-point. It is likely to be known to the City and created and an accepted constraint given the inclusion of the cycle lane.

Figure 23: Kent / King St intersection – south-east corner, showing pinch point of the lamp/traffic signal pole.

For the busier Kent/Market St intersection, the key legs that will be impacted by an increase in the development for 383 Kent Street are:

- AM – legs G, and D (i.e. northbound movements)
- AM – legs F & A (i.e. west bound movement from Town Hall/George Street)
- PM – leg H southbound
- PM – leg E eastbound

The busiest of these is leg A (which impacts the south-east reservoir space of the intersection). This has an average waiting volume of 27 people.

Time Period			South Leg (Kent St)			East Leg (Market St)			North Leg (Kent St)			West Leg (Market St)		
			A	B	Total	C	D	Total	E	F	Total	G	H	Total
8:10	to	9:10	27	12	39	5	6	11	6	11	17	12	4	16
17:00	to	18:00	19	29	48	7	4	11	11	6	17	4	8	12

Table 11: Kent St / Market St average number of people waiting to cross each leg (Nov 29 2022)

For **Scenario 3** (future development with a similar profile of arrival/occupancy), then the estimated *additional* (average) people crossing for the primary north movements are as follows:

- Leg D: 9 people
- Leg G: 17 people

The existing reservoir spaces can easily cater for these additional people.

For **Scenario 4** (future development but with a greater return to 2019 behaviours) then the estimated extra (average) people crossing for the primary north movements are as follows:

- Leg D: 15 people
- Leg G: 29 people

Again, the existing reservoir spaces are large and can cater for these additional people. However, in a future context where a zebra crossing might be in place, the demand would be expected to be shared more equally between Legs D and G. Note that once Pyrmont Station is open, a higher proportion of the estimated 29 people will be arriving from the west and hence not all of these people will impact the SE corner reservoir (i.e. they will not all be adding to the 'A' leg).

Summary Point #5 Intersection / Reservoir Analysis

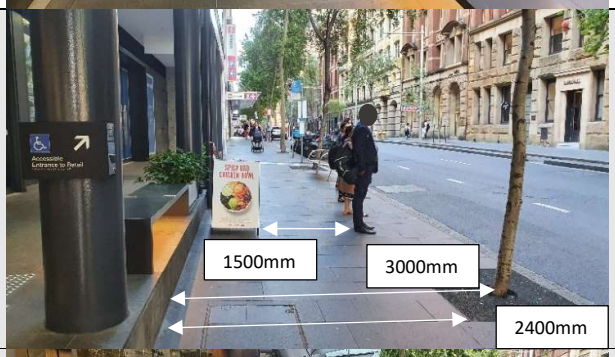
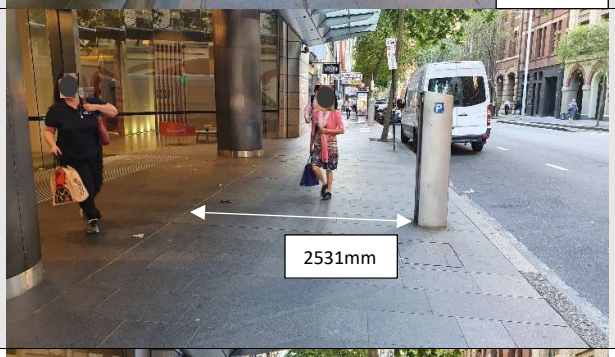
In summary, the two intersections (Market/Kent and King/Kent) are not estimated to become congestion issues because of the development. The Kent/Market Street reservoir spaces present large spaces for people to wait and circulate– even with the increase in demand from the development.

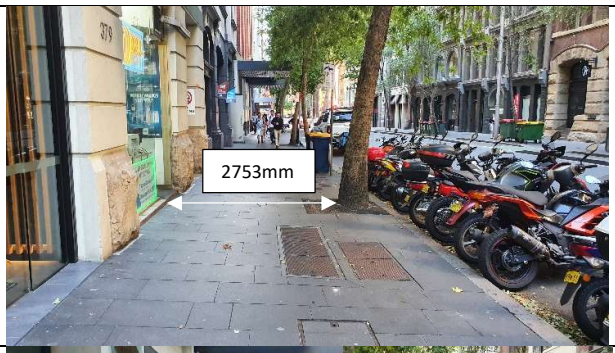
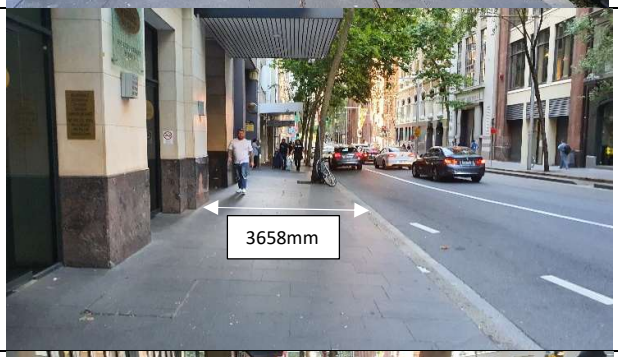
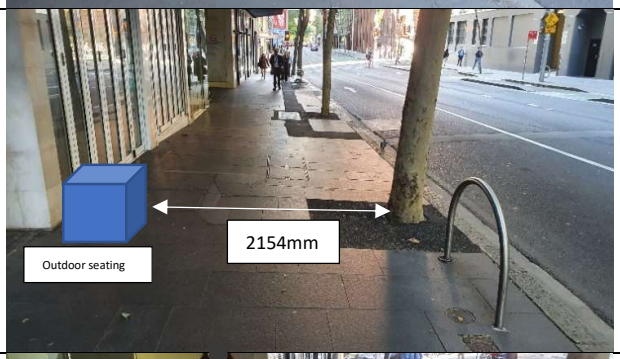
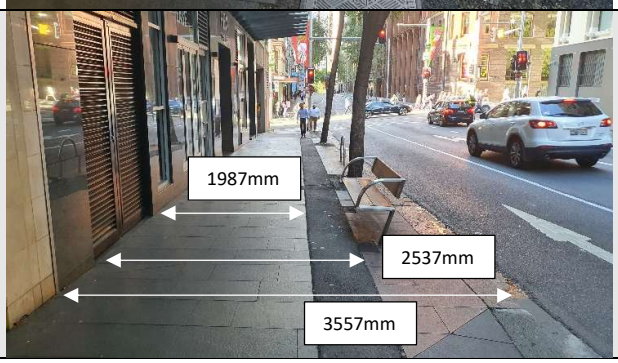
Appendix

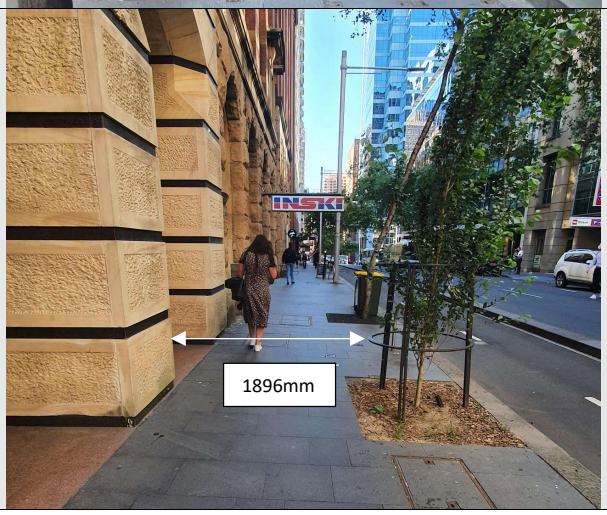
A Footpath Measurements

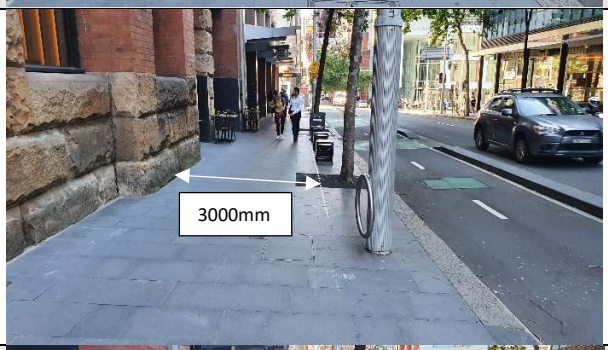
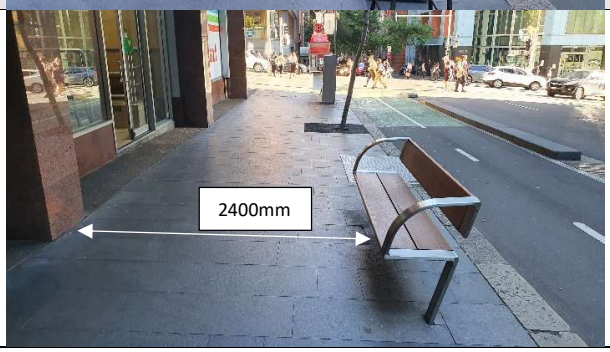
B Pedestrian Counts

Appendix A - Footpath Measurements

#	Site Photo	Comment
A		An extra channel is available adjacent to the bus stop. However, this is available during PM, as during AM the adjacent retail utilises there area with outdoor furniture.
B (1)		People tend to wait in the vicinity of the bus stop, not directly next to it. People were observed to stand and utilise the benches. The retail board restricted width, but there were no observed reduction in personal speed or direction. For the purposes of the analysis, the advertising board is relocated to maximise width.
C (2)		Parking meter directly outside of 383 Kent Street. There is also one directly north at the boundary line of the property. There could be an opportunity to consolidate into one meter, or remove both entirely for smarter methods of payment.
D		
E (3)		The Telstra booth is the major constrainer of width along the western footpath of Kent Street. This is not the best placement of this facility given parked bikes and pedestrian movement along Kent Street. An alternative location should be considered in future planning opportunities.

F		
G		At this point, the parking stops, so a buffer from kerb will be applied.
H		
I		
J (4)		Noone was observed using the bench in this location.

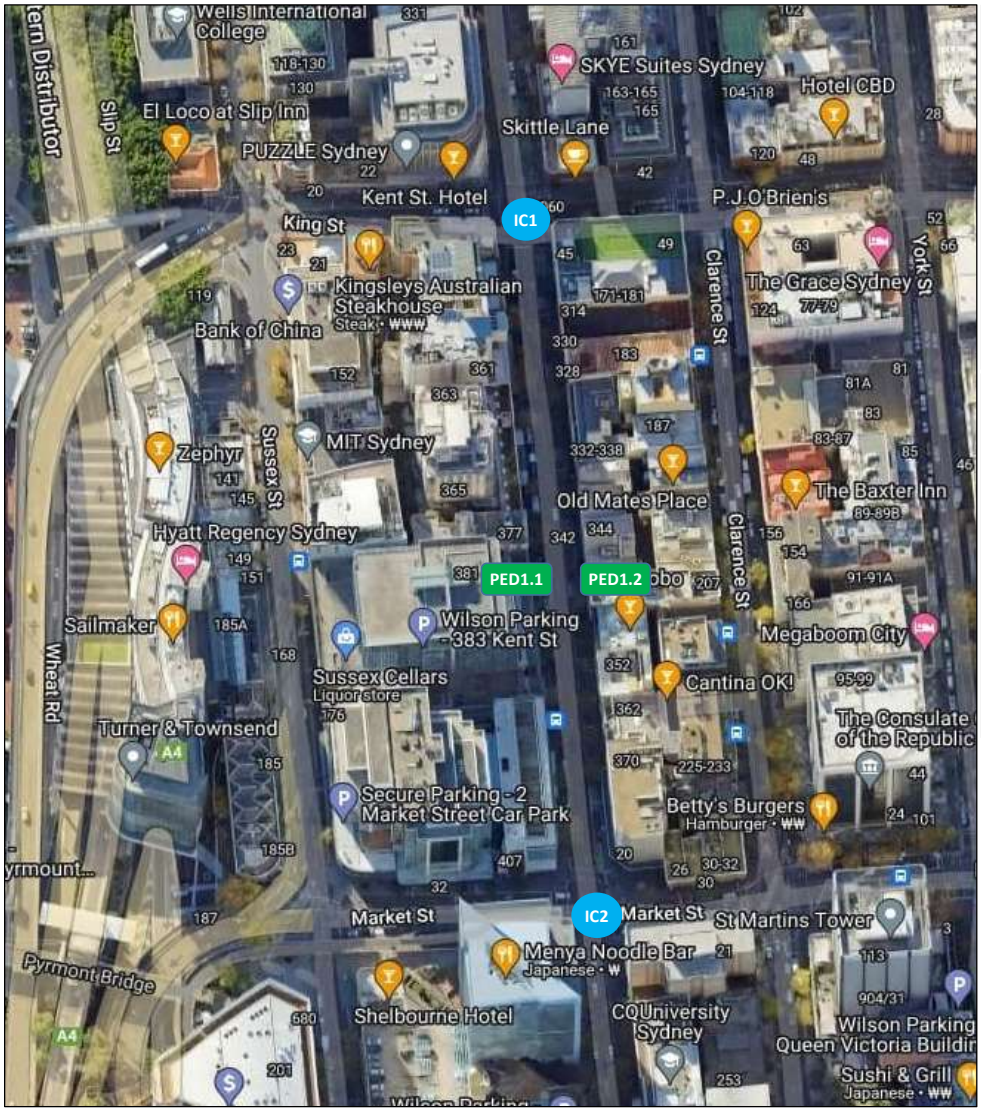
K (5)		South-east corner of King/Kent St has the second most constrained width across the whole observed site. However, the waiting behaviour at the intersection excerbates the constraint further and was seen to be the most congested part of the observed area. The inclusion of the bike path, and the three lanes of traffic (turn right lane) reduces pavement width to 2.3m.
L		
M (6)		
N (7)		The recent (since May 2022) planting of the tree creates the most constrained width across the whole observed site. The constraint is localised, and volumes along the eastern side of Kent Street are lower than those along with west.

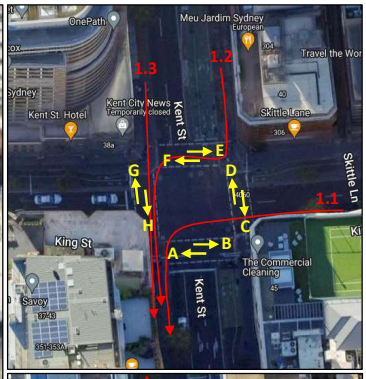
O		
P (8)		
Q		Outdoor dining at the café opposite 383 Kent Street was observed to be busy during AM peak period, where people wait outside. The activity was not observed to impeded anyone materially.
R (9)		
S		No one was observed to be using the bench during site inspections.

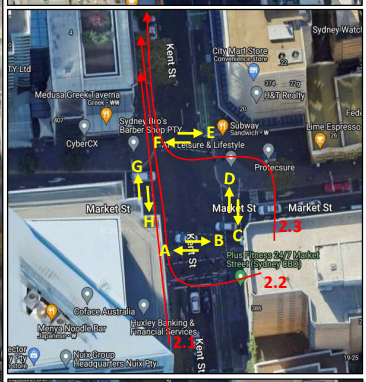
T		

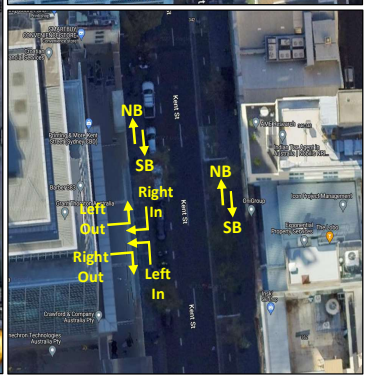
Appendix B - Pedestrian Counts

Date	Tue, 29th November 2022
Survey Time	07:30-09:30 & 16:00-18:00 (4 hours)
Description	Kent St Pedestrians surveys









Location PED1.1. Outside 383 Kent St, Westside footpath bi-directional movements, IN/OUT of 383 Kent St
Date Tue, 29th November 2022
Survey Time 07:30-09:30 & 16:00-18:00 (4 hours)
Description Kent St Pedestrians surveys

[Peak Hour Summary]

Time Period	PED 1.1								Grand Total
	Left IN	Left OUT	Right IN	Right OUT	Total	NB	SB	Total	
8:10 to 9:10	284	59	97	49	489	415	229	644	**1,133**
17:00 to 18:00	18	70	3	211	302	249	338	587	**889**

[Peak 5mins / rest 10mins interval]

Time Period	PED 1.1								Grand Total
	Left IN	Left OUT	Right IN	Right OUT	Total	NB	SB	Total	
7:30 to 7:40	11	2	3	0	16	25	14	39	**55**
7:40 to 7:50	21	2	10	1	34	29	22	51	**85**
7:50 to 8:00	42	6	10	3	61	44	23	67	**128**
8:00 to 8:10	40	6	14	2	62	50	35	85	**147**
8:10 to 8:15	18	5	6	1	30	35	11	46	**76**
8:15 to 8:20	24	6	4	2	36	38	15	53	**89**
8:20 to 8:25	27	1	8	0	36	28	28	56	**92**
8:25 to 8:30	26	6	11	8	51	37	19	56	**107**
8:30 to 8:35	23	4	6	3	36	32	14	46	**82**
8:35 to 8:40	26	2	9	4	41	22	29	51	**92**
8:40 to 8:45	27	4	15	7	53	30	22	52	**105**
8:45 to 8:50	23	6	8	5	42	38	15	53	**95**
8:50 to 8:55	25	7	8	2	42	40	25	65	**107**
8:55 to 9:00	26	5	9	1	41	58	16	74	**115**
9:00 to 9:05	18	8	9	3	38	26	17	43	**81**
9:05 to 9:10	21	5	4	13	43	31	18	49	**92**
9:10 to 9:20	50	12	10	8	80	53	22	75	**155**
9:20 to 9:30	14	12	7	24	57	52	21	73	**130**
AM Total	462	99	151	87	799	668	366	1,034	**1,833**
16:00 to 16:10	3	7	1	16	27	17	36	53	**80**
16:10 to 16:20	2	3	1	11	17	35	36	71	**88**
16:20 to 16:30	2	6	1	15	24	25	32	57	**81**
16:30 to 16:40	3	6	0	24	33	31	47	78	**111**
16:40 to 16:50	0	8	3	20	31	30	68	98	**129**
16:50 to 17:00	1	7	0	29	37	35	42	77	**114**
17:00 to 17:05	3	9	0	18	30	26	27	53	**83**
17:05 to 17:10	3	11	0	24	38	23	19	42	**80**
17:10 to 17:15	3	7	1	29	40	19	27	46	**86**
17:15 to 17:20	4	9	0	17	30	23	34	57	**87**
17:20 to 17:25	2	4	0	21	27	24	43	67	**94**
17:25 to 17:30	0	6	1	12	19	17	34	51	**70**
17:30 to 17:35	2	1	0	21	24	10	27	37	**61**
17:35 to 17:40	0	8	1	21	30	21	18	39	**69**
17:40 to 17:45	1	4	0	13	18	17	28	45	**63**
17:45 to 17:50	0	3	0	6	9	17	27	44	**53**
17:50 to 17:55	0	4	0	21	25	25	31	56	**81**
17:55 to 18:00	0	4	0	8	12	27	23	50	**62**
PM Total	29	107	9	326	471	422	599	1,021	**1,492**

[Hourly Summary]

Time Period	PED 1.1								Grand Total
	Left IN	Left OUT	Right IN	Right OUT	Total	NB	SB	Total	
7:30 to 8:30	209	34	66	17	326	286	167	453	**779**
7:40 to 8:40	247	38	78	24	387	315	196	511	**898**
7:50 to 8:50	276	46	91	35	448	354	211	565	**1,013**
8:00 to 9:00	285	52	98	35	470	408	229	637	**1,107**
8:10 to 9:10	284	59	97	49	489	415	229	644	**1,133**
8:20 to 9:20	292	60	97	54	503	395	225	620	**1,123**
8:30 to 9:30	253	65	85	70	473	382	199	581	**1,054**
AM Total	462	99	151	87	799	668	366	1,034	**1,833**
16:00 to 17:00	11	37	6	115	169	173	261	434	**603**
16:10 to 17:10	14	50	5	141	210	205	271	476	**686**
16:20 to 17:20	19	63	5	176	263	212	296	508	**771**
16:30 to 17:30	19	67	5	194	285	228	341	569	**854**
16:40 to 17:40	18	70	6	212	306	228	339	567	**873**
16:50 to 17:50	19	69	3	211	302	232	326	558	**860**
17:00 to 18:00	18	70	3	211	302	249	338	587	**889**
PM Total	29	107	9	326	471	422	599	1,021	**1,492**

Location PED1.2. Kent St East Side footpath
Date Tue, 29th November 2022
Survey Time 07:30-09:30 & 16:00-18:00 (4 hours)
Description Kent St Pedestrians surveys

[Peak Hour Summary]

Time Period	PED 1.2			Grand Total
	NB	SB	Total	
8:00 to 9:00	209	115	324	**324**
17:00 to 18:00	187	170	357	**357**

[Peak 5mins / rest 10mins interval]

Time Period	PED 1.2			Grand Total
	NB	SB	Total	
7:30 to 7:40	16	9	25	**25**
7:40 to 7:50	18	9	27	**27**
7:50 to 8:00	20	14	34	**34**
8:00 to 8:05	10	5	15	**15**
8:05 to 8:10	22	11	33	**33**
8:10 to 8:15	24	7	31	**31**
8:15 to 8:20	18	6	24	**24**
8:20 to 8:25	15	8	23	**23**
8:25 to 8:30	16	10	26	**26**
8:30 to 8:35	21	6	27	**27**
8:35 to 8:40	20	9	29	**29**
8:40 to 8:45	14	15	29	**29**
8:45 to 8:50	18	11	29	**29**
8:50 to 8:55	13	16	29	**29**
8:55 to 9:00	18	11	29	**29**
9:00 to 9:10	20	14	34	**34**
9:10 to 9:20	26	13	39	**39**
9:20 to 9:30	19	21	40	**40**
AM Total	**328**	**195**	**523**	**523**
16:00 to 16:10	13	27	40	**40**
16:10 to 16:20	21	12	33	**33**
16:20 to 16:30	14	30	44	**44**
16:30 to 16:40	18	14	32	**32**
16:40 to 16:50	19	17	36	**36**
16:50 to 17:00	21	14	35	**35**
17:00 to 17:05	15	9	24	**24**
17:05 to 17:10	32	24	56	**56**
17:10 to 17:15	15	15	30	**30**
17:15 to 17:20	20	12	32	**32**
17:20 to 17:25	6	14	20	**20**
17:25 to 17:30	18	15	33	**33**
17:30 to 17:35	15	14	29	**29**
17:35 to 17:40	8	8	16	**16**
17:40 to 17:45	14	14	28	**28**
17:45 to 17:50	11	14	25	**25**
17:50 to 17:55	18	17	35	**35**
17:55 to 18:00	15	14	29	**29**
PM Total	**293**	**284**	**577**	**577**

[Hourly Summary]

Time Period	PED 1.2			Grand Total
	NB	SB	Total	
7:30 to 8:30	159	79	238	**238**
7:40 to 8:40	184	85	269	**269**
7:50 to 8:50	198	102	300	**300**
8:00 to 9:00	209	115	324	**324**
8:10 to 9:10	197	113	310	**310**
8:20 to 9:20	181	113	294	**294**
8:30 to 9:30	169	116	285	**285**
AM Total	**293**	**195**	**523**	**523**
16:00 to 17:00	106	114	220	**220**
16:10 to 17:10	140	120	260	**260**
16:20 to 17:20	154	135	289	**289**
16:30 to 17:30	164	134	298	**298**
16:40 to 17:40	169	142	311	**311**
16:50 to 17:50	175	153	328	**328**
17:00 to 18:00	187	170	357	**357**
PM Total	**293**	**284**	**577**	**577**

Location IC1. Kent St / King St
Date Tue, 29th November 2022
Survey Time 07:30-09:30 & 16:00-18:00 (4 hours)
Description Kent St Pedestrians surveys

[Peak Hour Summary]

Time Period	South Leg (Kent St)			East Leg (King St)			North Leg (Kent St)			West Leg (King St)			Grand Total
	A	B	Total	C	D	Total	E	F	Total	G	H	Total	
8:10 to 9:10	335	207	542	373	117	490	133	180	313	135	127	262	**1,607**
17:00 to 18:00	242	397	639	136	241	377	221	223	444	112	101	213	**1,673**

[10mins interval]

Time Period	South Leg (Kent St)			East Leg (King St)			North Leg (Kent St)			West Leg (King St)			Grand Total
	A	B	Total	C	D	Total	E	F	Total	G	H	Total	
7:30 to 7:40	42	12	54	22	15	37	6	19	25	7	9	16	**132**
7:40 to 7:50	35	13	48	27	10	37	14	13	27	10	7	17	**129**
7:50 to 8:00	30	13	43	31	19	50	15	33	48	15	5	20	**161**
8:00 to 8:10	38	18	56	35	14	49	20	37	57	16	12	28	**190**
8:10 to 8:20	60	20	80	68	10	78	21	35	56	24	28	52	**266**
8:20 to 8:30	57	41	98	58	25	83	19	24	43	17	26	43	**267**
8:30 to 8:40	46	46	92	63	19	82	29	29	58	26	22	48	**280**
8:40 to 8:50	59	31	90	59	15	74	22	32	54	29	20	49	**267**
8:50 to 9:00	64	32	96	73	19	92	24	29	53	24	21	45	**286**
9:00 to 9:10	49	37	86	52	29	81	18	31	49	15	10	25	**241**
9:10 to 9:20	45	24	69	45	21	66	24	36	60	22	10	32	**227**
9:20 to 9:30	23	8	31	31	10	41	12	38	50	22	19	41	**163**
AM Total	548	295	843	564	206	770	224	356	580	227	189	416	**2,609**
16:00 to 16:10	34	27	61	4	28	32	22	22	44	12	2	14	**151**
16:10 to 16:20	52	20	72	16	27	43	27	24	51	14	9	23	**189**
16:20 to 16:30	33	21	54	20	30	50	31	24	55	21	7	28	**187**
16:30 to 16:40	55	111	166	17	23	40	20	19	39	9	13	22	**267**
16:40 to 16:50	32	45	77	28	31	59	24	8	32	6	16	22	**190**
16:50 to 17:00	30	53	83	11	28	39	27	20	47	12	9	21	**190**
17:00 to 17:10	46	47	93	25	31	56	24	49	73	17	11	28	**250**
17:10 to 17:20	55	42	97	24	55	79	34	25	59	19	18	37	**272**
17:20 to 17:30	38	77	115	21	47	68	34	38	72	21	15	36	**291**
17:30 to 17:40	30	84	114	23	39	62	56	45	101	17	13	30	**307**
17:40 to 17:50	41	99	140	18	33	51	41	27	68	18	24	42	**301**
17:50 to 18:00	32	48	80	25	36	61	32	39	71	20	20	40	**252**
PM Total	478	674	1,152	232	408	640	372	340	712	186	157	343	**2,847**

[Red Line]

Time Period	IC 1 Red Line			
	1.1	1.2	1.3	Total
7:30 to 7:45	2	0	5	7
8:30 to 8:45	9	0	11	20
AM Total	11	0	16	27
16:30 to 16:45	2	1	5	8
17:30 to 17:45	4	0	13	17
PM Total	6	1	18	25

Hourly Summary

Time Period	South Leg (Kent St)			East Leg (King St)			North Leg (Kent St)			West Leg (King St)			Grand Total
	A	B	Total	C	D	Total	E	F	Total	G	H	Total	
7:30 to 8:30	262	117	379	241	93	334	95	161	256	89	87	176	**1,145**
7:40 to 8:40	266	151	417	282	97	379	118	171	289	108	100	208	**1,293**
7:50 to 8:50	290	169	459	314	102	416	126	190	316	127	113	240	**1,431**
8:00 to 9:00	324	188	512	356	102	458	135	186	321	136	129	265	**1,556**
8:10 to 9:10	335	207	542	373	117	490	133	180	313	135	127	262	**1,607**
8:20 to 9:20	320	211	531	350	128	478	136	181	317	133	109	242	**1,568**
8:30 to 9:30	286	178	464	323	113	436	129	195	324	138	102	240	**1,464**
AM Total	548	295	843	564	206	770	224	356	580	227	189	416	**2,609**
16:00 to 17:00	236	277	513	96	167	263	151	117	268	74	56	130	**1,174**
16:10 to 17:10	248	297	545	117	170	287	153	144	297	79	65	144	**1,273**
16:20 to 17:20	251	319	570	125	198	323	160	145	305	84	74	158	**1,356**
16:30 to 17:30	256	375	631	126	215	341	163	159	322	84	82	166	**1,460**
16:40 to 17:40	231	348	579	132	231	363	199	185	384	92	82	174	**1,500**
16:50 to 17:50	240	402	642	122	233	355	216	204	420	104	90	194	**1,611**
17:00 to 18:00	242	397	639	136	241	377	221	223	444	112	101	213	**1,673**
PM Total	478	674	1,152	232	408	640	372	340	712	186	157	343	**2,847**

Location IC2. Kent St / Market St
Date Tue, 29th November 2022
Survey Time 07:30-09:30 & 16:00-18:00 (4 hours)
Description Kent St Pedestrians surveys

[Peak Hour Summary]

Time Period	South Leg (Kent St)			East Leg (Market St)			North Leg (Kent St)			West Leg (Market St)			Grand Total
	A	B	Total	C	D	Total	E	F	Total	G	H	Total	
8:10 to 9:10	1,097	481	1,578	204	252	456	230	438	668	486	154	640	**3,342**
17:00 to 18:00	763	1,156	1,919	299	144	443	439	254	693	172	325	497	**3,552**

[10mins interval]

Time Period	South Leg (Kent St)			East Leg (Market St)			North Leg (Kent St)			West Leg (Market St)			Grand Total
	A	B	Total	C	D	Total	E	F	Total	G	H	Total	
7:30 to 7:40	76	34	110	9	20	29	17	17	34	24	13	37	**210**
7:40 to 7:50	91	57	148	16	22	38	17	30	47	43	14	57	**290**
7:50 to 8:00	107	53	160	21	26	47	23	44	67	47	12	59	**333**
8:00 to 8:10	123	79	202	25	35	60	32	42	74	57	22	79	**415**
8:10 to 8:20	163	89	252	36	31	67	35	42	77	83	20	103	**499**
8:20 to 8:30	183	118	301	29	34	63	40	73	113	69	24	93	**570**
8:30 to 8:40	174	78	252	30	45	75	38	63	101	90	39	129	**557**
8:40 to 8:50	244	43	287	41	48	89	41	88	129	94	21	115	**620**
8:50 to 9:00	203	78	281	34	42	76	38	94	132	91	29	120	**609**
9:00 to 9:10	130	75	205	34	52	86	38	78	116	59	21	80	**487**
9:10 to 9:20	127	76	203	24	27	51	40	41	81	44	18	62	**397**
9:20 to 9:30	122	49	171	34	27	61	45	43	88	48	19	67	**387**
AM Total	1,743	829	2,572	333	409	742	404	655	1,059	749	252	1,001	**5,374**
16:00 to 16:10	66	111	177	49	15	64	28	19	47	16	29	45	**333**
16:10 to 16:20	111	158	269	26	17	43	28	32	60	31	28	59	**431**
16:20 to 16:30	87	109	196	38	16	54	45	43	88	16	40	56	**394**
16:30 to 16:40	88	121	209	32	20	52	52	36	88	31	29	60	**409**
16:40 to 16:50	124	114	238	39	18	57	44	53	97	25	36	61	**453**
16:50 to 17:00	98	164	262	37	24	61	49	49	98	22	37	59	**480**
17:00 to 17:10	134	176	310	49	23	72	78	41	119	24	53	77	**578**
17:10 to 17:20	119	181	300	66	26	92	80	40	120	31	48	79	**591**
17:20 to 17:30	115	208	323	44	16	60	61	45	106	26	67	93	**582**
17:30 to 17:40	122	188	310	50	20	70	81	36	117	38	70	108	**605**
17:40 to 17:50	141	191	332	41	24	65	68	48	116	22	40	62	**575**
17:50 to 18:00	132	212	344	49	35	84	71	44	115	31	47	78	**621**
PM Total	1,337	1,933	3,270	520	254	774	685	486	1,171	313	524	837	**6,052**

[Red Line]

Time Period	IC 2 Red Line			
	2.1	2.2	2.3	Total
8:30 to 8:45	77	6	2	85
9:15 to 9:30	20	1	1	22
AM Total	97	7	3	107
16:15 to 16:30	5	0	3	8
17:45 to 18:00	5	5	2	12
PM Total	10	5	5	20

Hourly Summary

Time Period	South Leg (Kent St)			East Leg (Market St)			North Leg (Kent St)			West Leg (Market St)			Grand Total
	A	B	Total	C	D	Total	E	F	Total	G	H	Total	
7:30 to 8:30	743	430	1,173	136	168	304	164	248	412	323	105	428	**2,317**
7:40 to 8:40	841	474	1,315	157	193	350	185	294	479	389	131	520	**2,664**
7:50 to 8:50	994	460	1,454	182	219	401	209	352	561	440	138	578	**2,994**
8:00 to 9:00	1,090	485	1,575	195	235	430	224	402	626	484	155	639	**3,270**
8:10 to 9:10	1,097	481	1,578	204	252	456	230	438	668	486	154	640	**3,342**
8:20 to 9:20	1,061	468	1,529	192	248	440	235	437	672	447	152	599	**3,240**
8:30 to 9:30	1,000	399	1,399	197	241	438	240	407	647	426	147	573	**3,057**
AM Total	1,743	829	2,572	333	409	742	404	655	1,059	749	252	1,001	**5,374**
16:00 to 17:00	574	777	1,351	221	110	331	246	232	478	141	199	340	**2,500**
16:10 to 17:10	642	842	1,484	221	118	339	296	254	550	149	223	372	**2,745**
16:20 to 17:20	650	865	1,515	261	127	388	348	262	610	149	243	392	**2,905**
16:30 to 17:30	678	964	1,642	267	127	394	364	264	628	159	270	429	**3,093**
16:40 to 17:40	712	1,031	1,743	285	127	412	393	264	657	166	311	477	**3,289**
16:50 to 17:50	729	1,108	1,837	287	133	420	417	259	676	163	315	478	**3,411**
17:00 to 18:00	763	1,156	1,919	299	144	443	439	254	693	172	325	497	**3,552**
PM Total	1,337	1,933	3,270	520	254	774	685	486	1,171	313	524	837	**6,052**

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