Halcrow

CityOne Project

Thakral

Walkway Width Issues

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Transport NSW Requirements

Provisional Functional Specifications for the Eastern Exits to Wynyard Station

Transport NSW provisional function specifications are that they must total no less than 20m and offer unimpeded pedestrian flows between the concourse and the street.

The provisional 20m eastern exit width requirement is inclusive of the Hunter Connection exit which is approximately 4m wide at its narrowest point meaning that a minimum of 16m of unimpeded width to George Street must be provided.

Capacity of Walkways

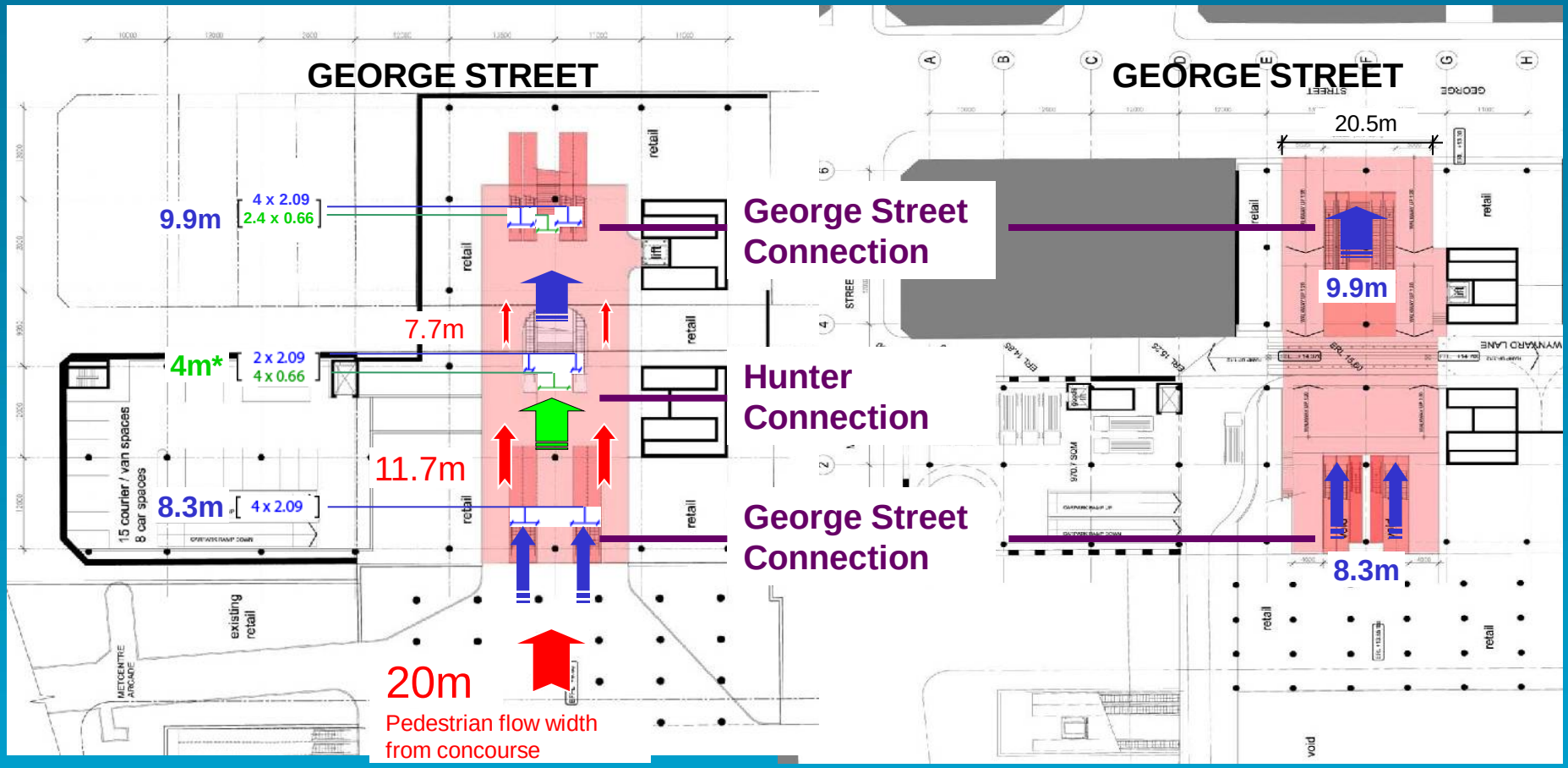
The relative capacities of different pedestrian facilities are as follows:

walkway	– 2870 peds/m/hr
stair	– 1885 peds/m/hr
escalator	– 6000 peds/m/hr

Thus equivalent capacity widths are:

1m stair	= 0.66m walkway
1 escalator	= 2.09m walkway

Current Proposals

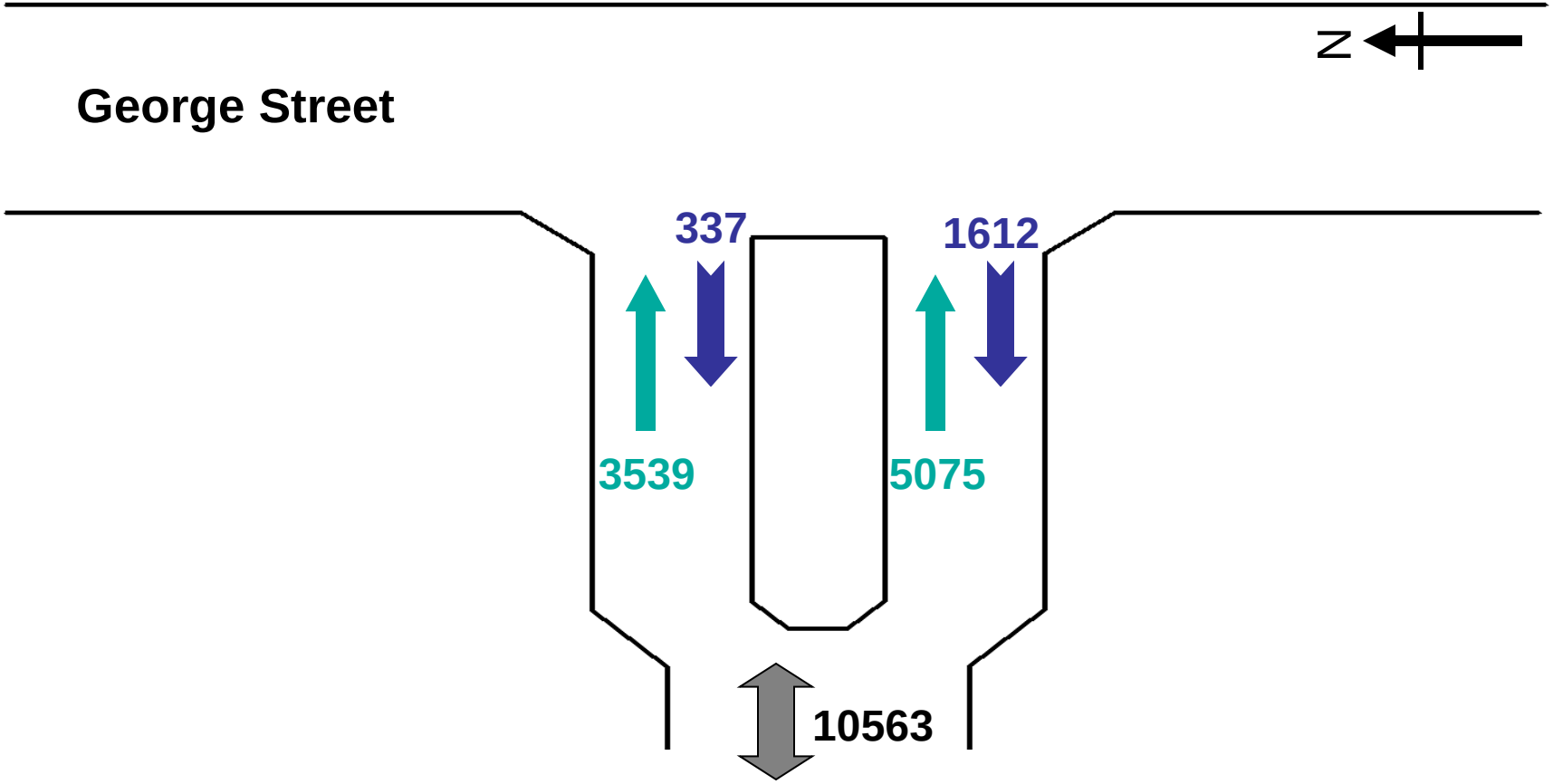


CONCOURSE LEVEL

GEORGE ST LEVEL

Existing Pedestrian Flows at George Street Ramp

2009 Pedestrian Survey AM Peak Flow 8AM-9AM



Estimate of Future Pedestrian Flows at George St Ramp

2031 Pedestrian demand distribution - Connell Wagner STEPS analysis

Source/Destination	P3	P4	P5	P6	Westpac	York St	Wynyard Park	Met Centre	Hunter Arcade	George St	New Infrastructure*	TOTAL
Platform 3 (P3)			199	522	2996	2134	810	2525	2060	3227	1995	16466
Platform 4 (P4)				108	1427	1015	388	1196	976	1528	1710	8347
Platform 5 (P5)	19	417			950	677	257	801	653	1023	285	5081
Platform 6 (P6)		761			1853	1318	504	1552	1267	1984	1710	10948
Westpac	19	45	26	14				73	68	154	48	446
York St	20	53	29	13				94	31	200	60	501
Wynyard Park	118	328	175	72	437			459	362	591	60	2603
Met Centre	160	448	238	96							45	986
Hunter Arcade	16	45	24	9	118	81	36	86			39	453
George St	101	284	151	61	747	512	224	549			48	**2676**
New infrastructure*	2400	1680	1680	240	960	1200	1200	900	780	960		12000
TOTAL	2854	4060	2521	1134	9488	6935	3417	8234	6197	**9667**	6000	60507

*Source: Connell Wagner, 2008, *Original analysis assumed CBD Metro*

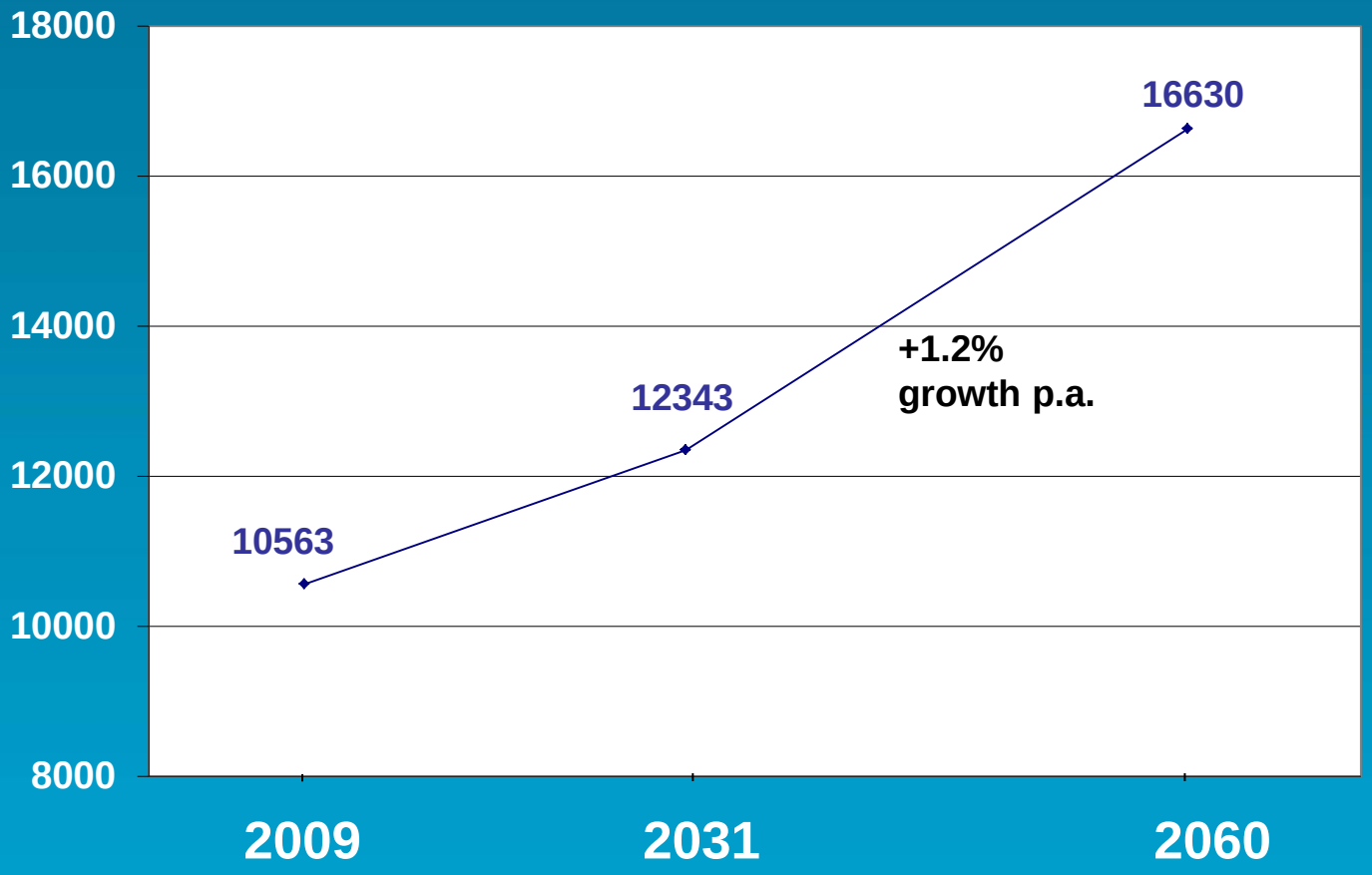
Estimate of Future Pedestrian Flows at George St Ramp

Wynyard Station AM Peak Growth to 2051

2008	Paid Demand	44 717	
			1.26% p.a.
2031	Paid Demand	57 819	
			1.2% p.a.
2051	Paid Demand	72 005	

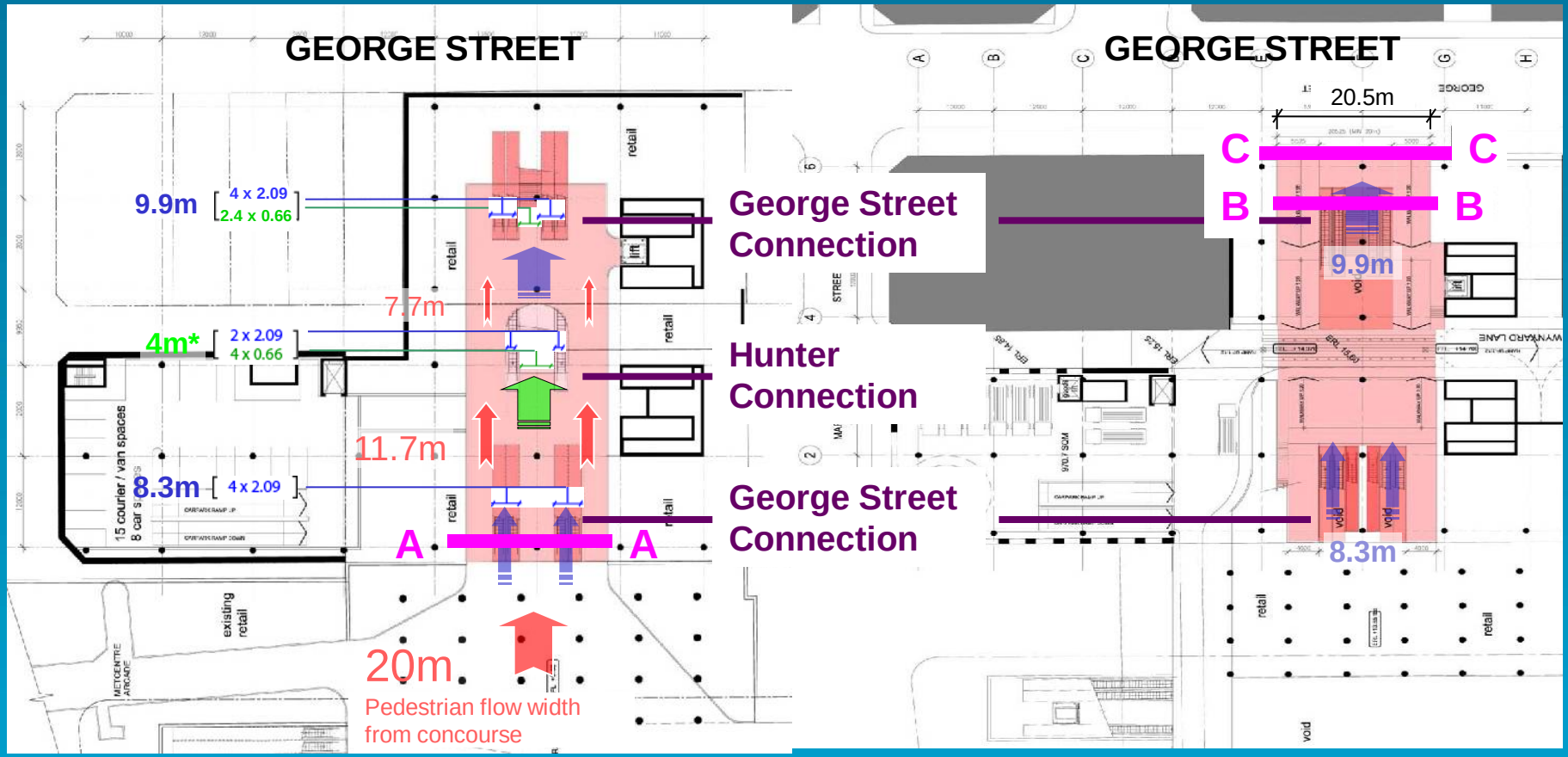
Source: Arup, 2009, Wynyard Station Master Plan – 2009 Pedestrian Analysis Report for RailCorp

Estimate of Future Pedestrian Flows at George St Ramp



** 1.2% growth rate p.a. was previously provided by RailCorp for pedestrian modelling in Wynyard Station and also noted in Arup Pedestrian Analysis Report*

Capacity at Key Sections



CONCOURSE LEVEL

GEORGE ST LEVEL

Summary Table

Capacities at Sections

Proposed Section	Walkway Width (m)	Escalator Width (m)	Stairway Width (m)	Equivalent Width (m)*	Capacity @ LoS C (ped/m/hr)
A-A	11.6	4	0	20.0	40800
B-B	10.5	4	2.4	20.4	41700
EXISTING	17.3	0	0	17.3	35500

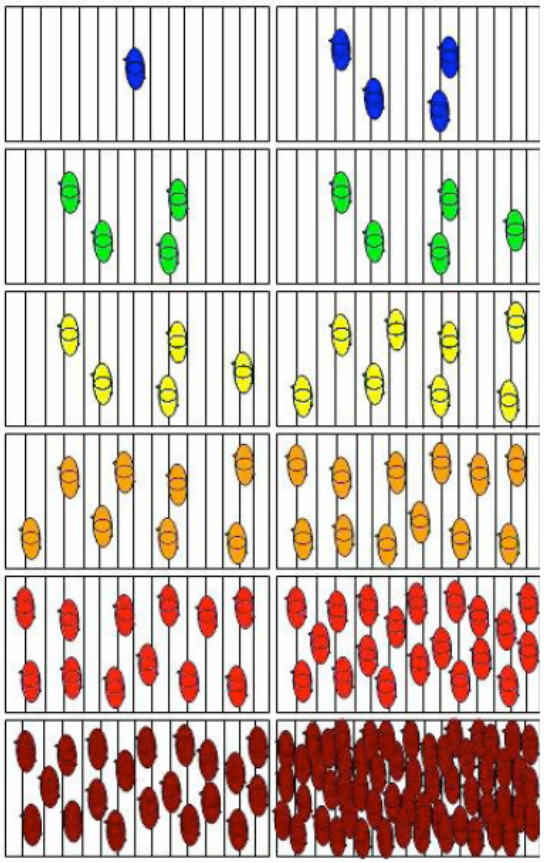
** This assumes a 1m escalator provides 2.09 times the capacity of a walkway and a staircase provides 0.66 times the capacity of a walkway*

Capacity characteristics of the proposed George Street entry (i.e. Section C-C)

Location	Width	Capacity@ LoS C
Total Proposed Walkway	**20.5m**	**42,100**
Existing Walkway	17.3m*	35,500
Change in capacity	**3.2**	**+ 6,600**

*If pedestrian flow in **2060** is 16,630, the project would provide a Level of Service **A** at George Street entry*

Levels of Service



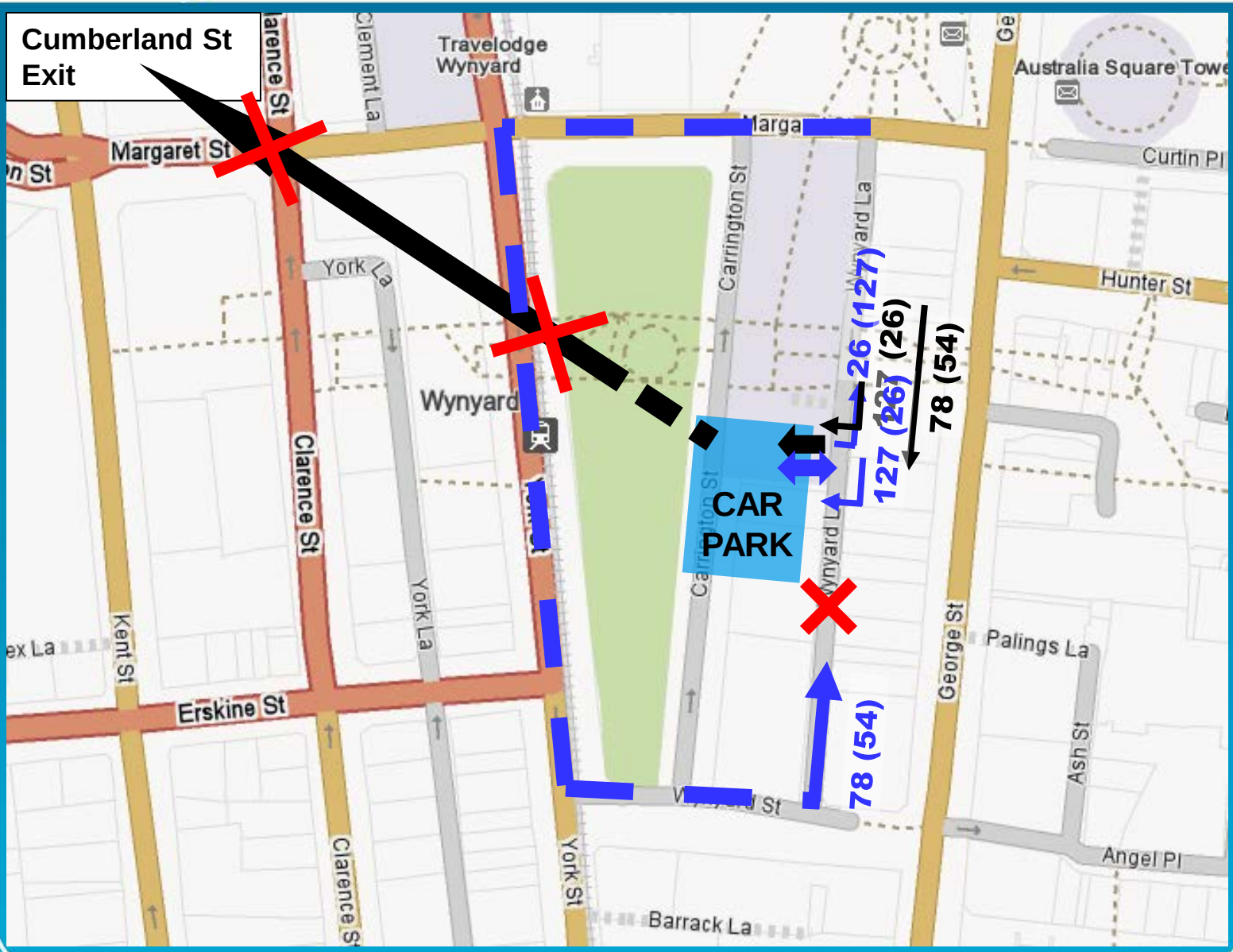
Level of Service	Description
A	• Flow rate of less than 23 people per metre per minute. • Virtually unrestricted choice of walking speed. • Minimum manoeuvring needed to pass fellow pedestrians. • Unrestricted crossing and reverse movements.
B	• Flow rate of between 23 and 33 people per metre per minute. • Normal walking speeds, restricted only occasionally. • Occasional interference in passing fellow pedestrians. • Occasional interference in crossing and reverse movements.
C	• Flow rate of between 33 and 49 people per metre per minute. • Partially restricted walking speeds. • Restricted passing movements, but possible with manoeuvring. • Restricted crossing and reverse movements, with significant manoeuvring needed to avoid conflict. • Reasonably fluid flow.
D	• Flow rate of between 49 and 66 people per metre per minute. • Restricted and reduced walking speeds. • Passing fellow pedestrians rarely possible without conflict. • Severely restricted crossing and reverse movements, with • multiple conflicts. • Momentary flow stoppages possible when critical densities are • intermittently reached.
E	• Flow rate of between 66 and 82 people per metre per minute. • Restricted walking speeds, occasionally reduced to shuffling. • Passing fellow pedestrians impossible without conflict. • Severely restricted crossing and reverse, with unavoidable • conflicts. • Flow achieves maximum capacity under pressure, but with • frequent interruptions and stoppages.
F	• Flow rate variable. • Walking speed reduced to shuffling. • Passing movements are impossible • Crossing and reverse movements are impossible • Frequent and unavoidable physical contact • Sporadic flow, on the verge of complete breakdown and • stoppage.

WYNYARD LANE ISSUES

Parking and Other Proposals

- Currently 335 parking spaces
- Proposal is
  - 177 commercial parking spaces,
  - 158 spaces retained for public use.

- Wynyard Lane Closed
- Cumberland Street Tunnel Closed to traffic


Cumberland St Exit
Travelodge Wynyard
Australia Square Towe
Margaret St
Curtin Pl
Carrington St
Hunter St
York La
Wynyard
Clarence St
CAR PARK
26 (127)
127 (26)
78 (54)
Kent St
Erskine St
George St
Palings La
Ash St
78 (54)
Angel Pl
York St
Barrack La

Benefits from Proposed Scheme

Public car parks/commercial car parks behave differently

- Wynyard Lane - short term / relatively high turnaround visitors

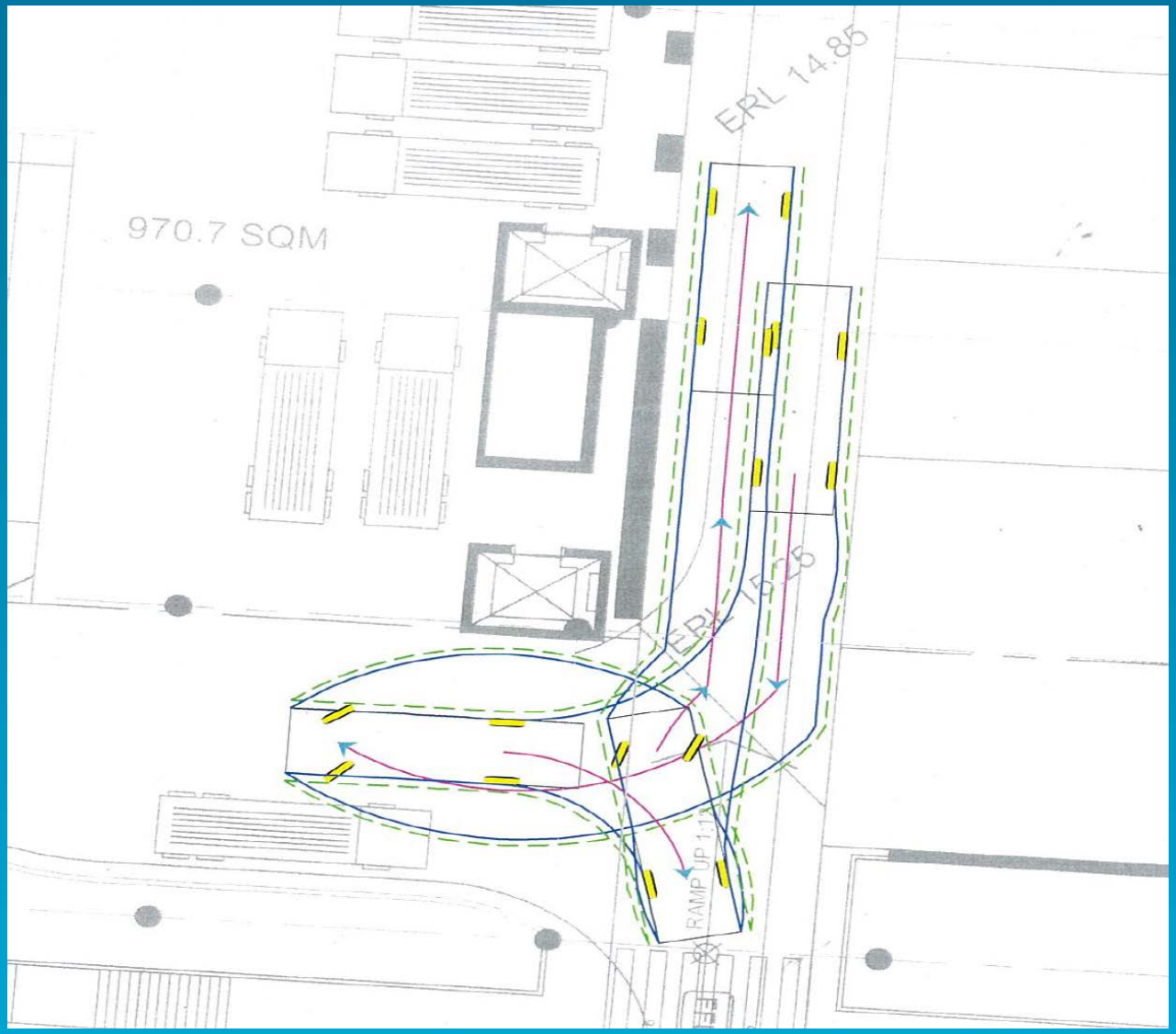
- 335 public spaces generate 153 peak hour trips (two-way)
- 158 public spaces should generate 72 peak hour trips (two-way).

- Halcrow extensive surveys around Sydney CBD showing commercial trip rate of 0.26 (AM) 0.20 (PM) per space
- 177 commercial spaces will generate 46(AM) and 35(PM)

	Existing			TOTAL Proposed Parking		
	IN	OUT	TOTAL	IN	OUT	TOTAL
AM Peak	127	26	153	97	21	118
PM Peak	26	127	153	19	88	107

- Proposed change in type of car parking could reduce impact

Entrance from Margaret Street for 8.8m MRV



Entrance from Wynyard Street for 8.8m MRV