Manly 2015 – Oval Car Park access/egress traffic modelling

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This presentation

- SIDRA Modelling of 2 intersections on Sydney Road near the oval car park
- Key assumptions
- Schematic intersection layouts
- AM peak period results
- PM peak period results
- Peak Exodus results
- Q & A

SIDRA intersection modelling

- Intersection analysis tool
- Isolated intersections only
- Does not model interaction between intersections
- Key performance indicators:
  - Average delay
  - Level of Service (A = Very Good, to F = Severe Congestion)
  - 95% queue lengths on each approach

Key Assumptions - general

- No car park entry/exit in Raglan Street
- Most traffic from north would use Manly National and Pacific Waves car parks off Central Avenue (via Raglan Street east)
- Therefore, the current SIDRA modelling assumes that most of the oval car park demand comes from the west (Sydney Road), or east/south (Eastern Hill precinct)

Key Assumptions – peak exodus scenario

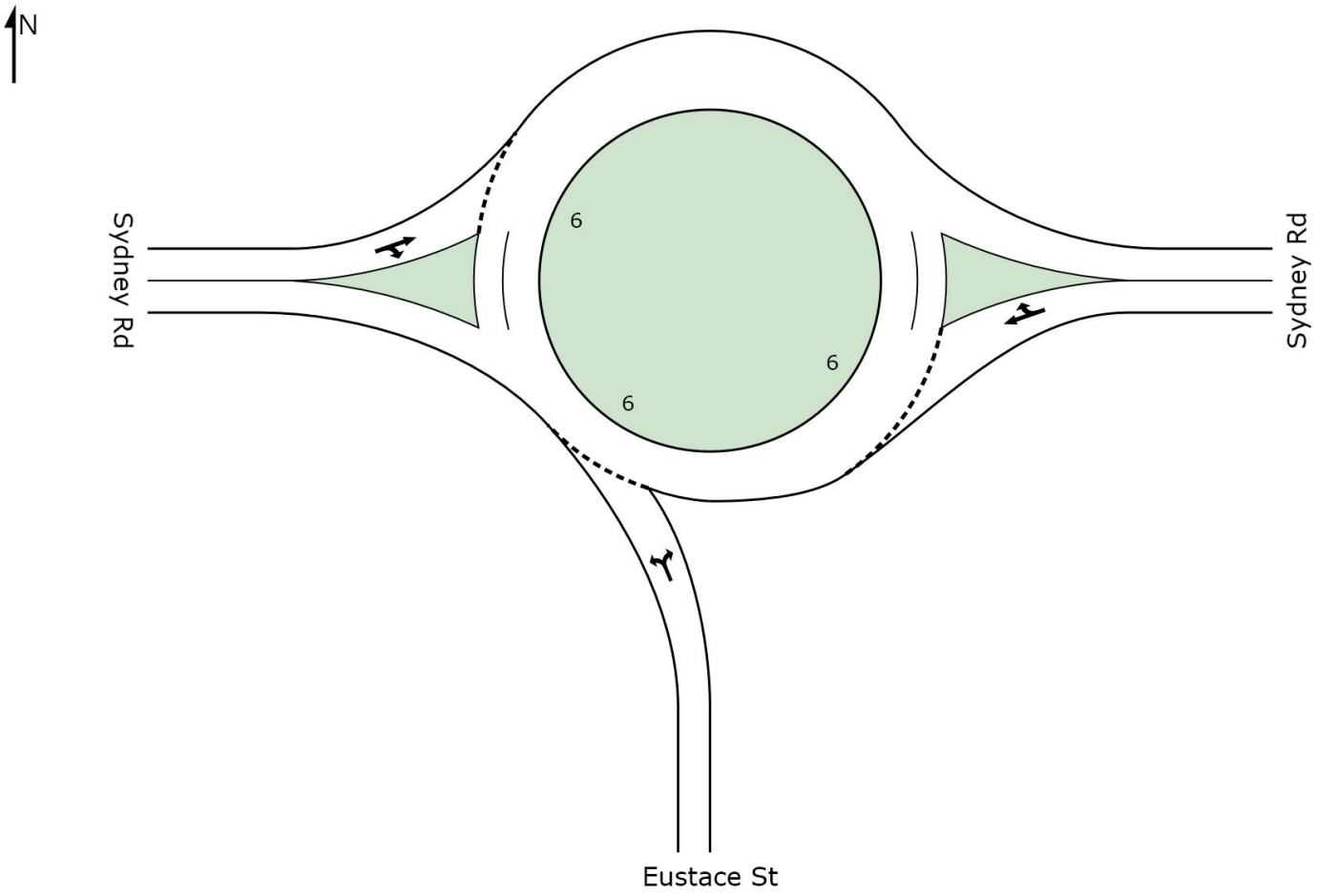
- Peak exodus associated with end of special event (e.g. football match or concert)
- 'background' traffic on road network lower than normal AM or PM peak – say 50% of average of both peaks
- 800 spaces in oval car park
- Assume 80% (640 vehicles) would want to exit immediately – say within 15 minutes
- Equates to 2560 vehicles per hour
- Assume destinations 50% eastbound and 50% westbound
- Assume eastbound exit flow splits 50:50 left and right at Sydney Rd/Belgrave St
- Assume nominal car park entry flows of 50 vehicles per hour from each direction

Proposed oval car park entry and exit

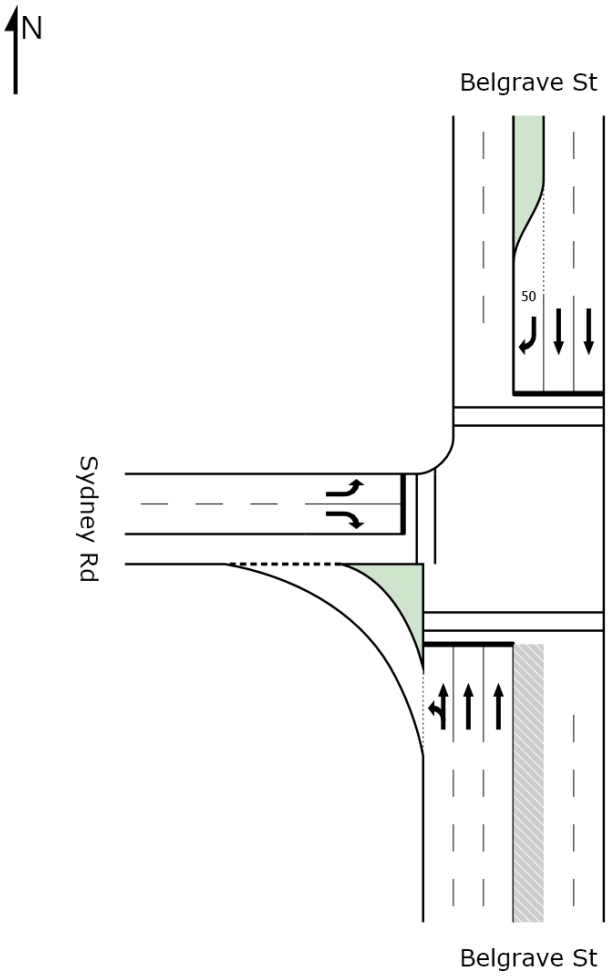
Roundabout at Eustace Street

- Eustace Street one-way northbound
- Westbound exit portal west of Eustace Street
- Eastbound entry portal just east of the roundabout, so traffic from south and east must U-turn at the roundabout
- Eastbound exit portal separate from roundabout and into protected lane (so flow not modelled)

Eustace Street SIDRA Layout



Sydney Road and Belgrave Street SIDRA Layout



SIDRA modelling results – AM peak

Indicator	Eustace Street	Belgrave Street
Overall Level of Service	A	B
Overall Average Delay (s)	7.7	19.3
Eustace St queue (cars)	0.8	
Sydney Rd E queue (cars)	1.4	
Sydney Rd W queue (cars)	2.7	
Belgrave St S queue (cars)		6.5
Belgrave St N queue (cars)		7.5
Sydney Rd W queue (cars)		4.6

SIDRA modelling results – PM peak

Indicator	Eustace Street	Belgrave Street
Overall Level of Service	A	B
Overall Average Delay (s)	7.6	18.0
Eustace St queue (cars)	0.9	
Sydney Rd E queue (cars)	1.5	
Sydney Rd W queue (cars)	0.9	
Belgrave St S queue (cars)		5.2
Belgrave St N queue (cars)		7.0
Sydney Rd W queue (cars)		4.4

SIDRA modelling results – Peak Exodus

Indicator	Eustace Street	Belgrave Street
Overall Level of Service	A	B
Overall Average Delay (s)	7.1	22.7
Eustace St queue (cars)	0.8	
Sydney Rd E queue (cars)	0.8	
Sydney Rd W queue (cars)	1.2	
Belgrave St S queue (cars)		3.6
Belgrave St N queue (cars)		4.7
Sydney Rd W queue (cars)		25.8

Results summary – peak exodus scenario

- Level of Service B – acceptable, BUT
- Eastbound queues in Sydney Rd are 125m in left lane, and 181m in right lane
- Would exceed the available storage length of about 50m (from car park exit portal to Belgrave St stop line)
- Hence queue would extend into car park
- Would probably require RMS manual override of signals operation to ensure eastbound car park exit did not block back