

M^cLAREN TRAFFIC ENGINEERING

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Transport Planning, Traffic Impact Assessments, Road Safety Audits, Expert Witness

7th August 2015

Reference: 15084.03FA

Bluestone Property Solutions
Suite 1, Level 6, 71 Macquarie Street
Sydney NSW 2000
Attention: Adam Lucas

SIDRA INTERSECTION MOVEMENT SUMMARIES OF WBTC - RESIDENTIAL PRECINCT AT CAPTAIN COOK DRIVE, WOOLLOOWARE

Dear Adam,

Reference is made to your request for detailed outputs of the intersection analyses performed for the S75W Traffic Report (Reference Final Report 2B - WBTC Residential GFA Increase - 11 June 2015). The outputs have thus been extracted and are provided in Annexure A to this letter.

Please contact the undersigned should you require further information or assistance.

Yours faithfully
M^cLaren Traffic Engineering



Craig M^cLaren
Director

BE Civil. Graduate Diploma (Transport Eng) MAITPM MITE [1985]

RMS Accredited Level 3 Road Safety Auditor

RMS Accredited Traffic Control Planner, Auditor & Certifier (Orange Card)

ANNEXURE A: SIDRA MOVEMENT SUMMARIES

MOVEMENT SUMMARY

Site: EX-WOCA-FRI

Captain Cook Drive / Woollooware Road North / Site Access
 Existing traffic volumes
 Friday Peak 4.45-5.45pm
 Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|------|----------------------|---------|------------------|----------------------|------------------|--------------------------------------|--------------------------------|--------------|--------------------------------|-----------------------|
| Mov ID | Turn | Demand Flow veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Back of Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: Woollooware Road (S) | | | | | | | | | | | |
| 1 | L | 177 | 8.0 | 0.215 | 9.6 | LOS A | 1.3 | 9.8 | 0.64 | 0.80 | 47.1 |
| 2 | T | 14 | 0.0 | 0.079 | 10.7 | LOS A | 0.4 | 2.9 | 0.64 | 0.77 | 45.7 |
| 3 | R | 23 | 8.0 | 0.079 | 16.1 | LOS B | 0.4 | 2.9 | 0.64 | 0.90 | 42.6 |
| Approach | | 214 | 7.5 | 0.215 | 10.3 | LOS A | 1.3 | 9.8 | 0.64 | 0.81 | 46.5 |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 4 | L | 9 | 8.0 | 0.338 | 9.2 | LOS A | 2.9 | 22.0 | 0.60 | 0.68 | 47.9 |
| 5 | T | 694 | 8.0 | 0.341 | 8.2 | LOS A | 3.1 | 23.0 | 0.61 | 0.63 | 47.8 |
| 6 | R | 15 | 0.0 | 0.343 | 13.5 | LOS A | 3.1 | 23.0 | 0.62 | 0.80 | 45.2 |
| Approach | | 718 | 7.8 | 0.341 | 8.4 | LOS A | 3.1 | 23.0 | 0.61 | 0.64 | 47.7 |
| North: Car Park Access (N) | | | | | | | | | | | |
| 7 | L | 14 | 0.0 | 0.163 | 17.8 | LOS B | 1.4 | 9.8 | 0.91 | 0.88 | 40.2 |
| 8 | T | 26 | 0.0 | 0.163 | 17.0 | LOS B | 1.4 | 9.8 | 0.91 | 0.88 | 40.3 |
| 9 | R | 34 | 0.0 | 0.164 | 22.2 | LOS B | 1.4 | 9.8 | 0.91 | 0.91 | 38.3 |
| Approach | | 74 | 0.0 | 0.163 | 19.5 | LOS B | 1.4 | 9.8 | 0.91 | 0.89 | 39.3 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L | 75 | 0.0 | 0.374 | 7.5 | LOS A | 3.3 | 24.1 | 0.25 | 0.59 | 49.2 |
| 11 | T | 1363 | 8.0 | 0.773 | 6.7 | LOS A | 15.2 | 114.0 | 0.37 | 0.46 | 49.1 |
| 12 | R | 255 | 8.0 | 0.774 | 11.9 | LOS A | 15.2 | 114.0 | 0.42 | 0.69 | 46.0 |
| Approach | | 1693 | 7.6 | 0.773 | 7.5 | LOS A | 15.2 | 114.0 | 0.37 | 0.50 | 48.6 |
| All Vehicles | | 2698 | 7.5 | 0.773 | 8.3 | LOS A | 15.2 | 114.0 | 0.47 | 0.57 | 47.9 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

Processed: Thursday, 1 December 2011 10:17:16 AM

SIDRA INTERSECTION 5.1.13.2093

Project: Z:\Jobs\2010\10166\PRE DOPI APPROVAL\Revised March 2012 TMP\RMS SIDRA - JAN 2012

\UPDATED - 10166 - 11 Dec 2012.sip

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SIDRA
INTERSECTION

MOVEMENT SUMMARY

Site: EX-WOCA-SAT

Captain Cook Drive / Woollooware Road North / Site Access
 Existing traffic volumes
 11.30am-12.30pm Saturday Peak
 Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|------|----------------------|------|------------------|----------------------|------------------|--------------------------------------|--------------------------------|--------------|--------------------------------|-----------------------|
| Mov ID | Turn | Demand Flow veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Back of Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: Woollooware Road (S) | | | | | | | | | | | |
| 1 | L | 162 | 8.0 | 0.168 | 8.7 | LOS A | 1.0 | 7.5 | 0.53 | 0.70 | 47.7 |
| 2 | T | 5 | 0.0 | 0.036 | 9.2 | LOS A | 0.2 | 1.3 | 0.55 | 0.64 | 47.2 |
| 3 | R | 15 | 8.0 | 0.036 | 14.6 | LOS B | 0.2 | 1.3 | 0.55 | 0.79 | 43.7 |
| Approach | | 182 | 7.8 | 0.168 | 9.2 | LOS A | 1.0 | 7.5 | 0.54 | 0.71 | 47.3 |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 4 | L | 15 | 8.0 | 0.217 | 9.3 | LOS A | 1.8 | 13.2 | 0.57 | 0.67 | 48.0 |
| 5 | T | 425 | 8.0 | 0.218 | 8.3 | LOS A | 1.8 | 13.5 | 0.58 | 0.62 | 47.9 |
| 6 | R | 13 | 0.0 | 0.218 | 13.6 | LOS A | 1.8 | 13.5 | 0.59 | 0.80 | 45.0 |
| Approach | | 453 | 7.8 | 0.218 | 8.5 | LOS A | 1.8 | 13.5 | 0.58 | 0.62 | 47.8 |
| North: Car Park Access (N) | | | | | | | | | | | |
| 7 | L | 8 | 0.0 | 0.077 | 10.7 | LOS A | 0.5 | 3.2 | 0.63 | 0.74 | 46.1 |
| 8 | T | 13 | 0.0 | 0.077 | 9.9 | LOS A | 0.5 | 3.2 | 0.63 | 0.71 | 46.4 |
| 9 | R | 35 | 0.0 | 0.077 | 15.2 | LOS B | 0.5 | 3.2 | 0.63 | 0.83 | 43.2 |
| Approach | | 56 | 0.0 | 0.076 | 13.3 | LOS A | 0.5 | 3.2 | 0.63 | 0.79 | 44.3 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L | 32 | 0.0 | 0.253 | 7.2 | LOS A | 1.9 | 14.2 | 0.17 | 0.60 | 49.6 |
| 11 | T | 828 | 8.0 | 0.523 | 6.2 | LOS A | 5.7 | 43.0 | 0.19 | 0.45 | 50.3 |
| 12 | R | 313 | 8.0 | 0.523 | 11.5 | LOS A | 5.7 | 43.0 | 0.20 | 0.75 | 46.1 |
| Approach | | 1173 | 7.8 | 0.523 | 7.7 | LOS A | 5.7 | 43.0 | 0.19 | 0.54 | 49.1 |
| All Vehicles | | 1863 | 7.5 | 0.523 | 8.2 | LOS A | 5.7 | 43.0 | 0.33 | 0.58 | 48.4 |

Level of Service (LOS) Method: Delay (RTA NSW).
 Vehicle movement LOS values are based on average delay per movement
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 Roundabout Capacity Model: SIDRA Standard.
 SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

 Site: EX-WOCA-FRI

Captain Cook Drive / Woollooware Road North / Site Access
Existing traffic volumes
Friday Peak 4.45-5.45pm
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|---------------|
| Mov ID | OD Mov | Demand Flows | | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue | | Prop. Queued | Effective Stop Rate | Average Speed |
| | | Total veh/h | HV % | v/c | sec | | Vehicles veh | Distance m | | per veh | km/h |
| South: Woollooware Road (S) | | | | | | | | | | | |
| 1 | L2 | 177 | 8.0 | 0.218 | 7.1 | LOS A | 1.0 | 7.8 | 0.64 | 0.79 | 52.6 |
| 2 | T1 | 14 | 0.0 | 0.080 | 9.1 | LOS A | 0.3 | 2.3 | 0.64 | 0.83 | 50.7 |
| 3 | R2 | 23 | 8.0 | 0.080 | 13.7 | LOS A | 0.3 | 2.3 | 0.64 | 0.83 | 50.3 |
| Approach | | 214 | 7.5 | 0.218 | 7.9 | LOS A | 1.0 | 7.8 | 0.64 | 0.80 | 52.2 |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 4 | L2 | 9 | 8.0 | 0.337 | 6.5 | LOS A | 2.6 | 19.1 | 0.61 | 0.60 | 51.9 |
| 5 | T1 | 694 | 8.0 | 0.337 | 6.8 | LOS A | 2.6 | 19.1 | 0.62 | 0.62 | 53.3 |
| 6 | R2 | 15 | 0.0 | 0.337 | 10.9 | LOS A | 2.5 | 18.4 | 0.63 | 0.63 | 53.1 |
| Approach | | 718 | 7.8 | 0.337 | 6.9 | LOS A | 2.6 | 19.1 | 0.62 | 0.62 | 53.3 |
| North: Car Park Access (N) | | | | | | | | | | | |
| 7 | L2 | 14 | 0.0 | 0.167 | 15.5 | LOS B | 1.1 | 8.0 | 0.92 | 0.89 | 46.2 |
| 8 | T1 | 26 | 0.0 | 0.167 | 15.7 | LOS B | 1.1 | 8.0 | 0.92 | 0.89 | 47.0 |
| 9 | R2 | 34 | 0.0 | 0.167 | 19.9 | LOS B | 1.1 | 8.0 | 0.92 | 0.89 | 46.9 |
| Approach | | 74 | 0.0 | 0.167 | 17.6 | LOS B | 1.1 | 8.0 | 0.92 | 0.89 | 46.8 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L2 | 75 | 0.0 | 0.377 | 4.8 | LOS A | 2.7 | 20.2 | 0.26 | 0.44 | 53.7 |
| 11 | T1 | 1363 | 8.0 | 0.781 | 5.2 | LOS A | 14.1 | 105.2 | 0.39 | 0.45 | 54.0 |
| 12 | R2 | 255 | 8.0 | 0.781 | 9.3 | LOS A | 14.1 | 105.2 | 0.44 | 0.46 | 53.3 |
| Approach | | 1693 | 7.6 | 0.781 | 5.8 | LOS A | 14.1 | 105.2 | 0.39 | 0.46 | 53.9 |
| All Vehicles | | 2698 | 7.5 | 0.781 | 6.6 | LOS A | 14.1 | 105.2 | 0.49 | 0.54 | 53.4 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 Site: EX-WOCA-SAT

Captain Cook Drive / Woolooware Road North / Site Access
Existing traffic volumes
11.30am-12.30pm Saturday Peak
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|---------------|
| Mov ID | OD Mov | Demand Flows | | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue | | Prop. Queued | Effective Stop Rate | Average Speed |
| | | Total veh/h | HV % | v/c | sec | | Vehicles veh | Distance m | | per veh | km/h |
| South: Woolooware Road (S) | | | | | | | | | | | |
| 1 | L2 | 162 | 8.0 | 0.170 | 6.2 | LOS A | 0.8 | 6.0 | 0.53 | 0.67 | 53.0 |
| 2 | T1 | 5 | 0.0 | 0.036 | 7.7 | LOS A | 0.1 | 1.1 | 0.55 | 0.72 | 51.4 |
| 3 | R2 | 15 | 8.0 | 0.036 | 12.2 | LOS A | 0.1 | 1.1 | 0.55 | 0.72 | 51.0 |
| Approach | | 182 | 7.8 | 0.170 | 6.8 | LOS A | 0.8 | 6.0 | 0.54 | 0.68 | 52.8 |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 4 | L2 | 15 | 8.0 | 0.216 | 6.6 | LOS A | 1.5 | 11.2 | 0.58 | 0.59 | 52.1 |
| 5 | T1 | 425 | 8.0 | 0.216 | 6.9 | LOS A | 1.5 | 11.2 | 0.59 | 0.60 | 53.4 |
| 6 | R2 | 13 | 0.0 | 0.216 | 11.0 | LOS A | 1.4 | 10.7 | 0.59 | 0.61 | 53.2 |
| Approach | | 453 | 7.8 | 0.216 | 7.0 | LOS A | 1.5 | 11.2 | 0.59 | 0.60 | 53.4 |
| North: Car Park Access (N) | | | | | | | | | | | |
| 7 | L2 | 8 | 0.0 | 0.077 | 8.4 | LOS A | 0.4 | 2.6 | 0.64 | 0.77 | 50.2 |
| 8 | T1 | 13 | 0.0 | 0.077 | 8.5 | LOS A | 0.4 | 2.6 | 0.64 | 0.77 | 51.2 |
| 9 | R2 | 35 | 0.0 | 0.077 | 12.7 | LOS A | 0.4 | 2.6 | 0.64 | 0.77 | 51.1 |
| Approach | | 56 | 0.0 | 0.077 | 11.1 | LOS A | 0.4 | 2.6 | 0.64 | 0.77 | 51.0 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L2 | 32 | 0.0 | 0.255 | 4.6 | LOS A | 1.6 | 11.7 | 0.17 | 0.43 | 54.1 |
| 11 | T1 | 828 | 8.0 | 0.528 | 4.7 | LOS A | 4.9 | 36.8 | 0.19 | 0.47 | 54.6 |
| 12 | R2 | 313 | 8.0 | 0.528 | 8.8 | LOS A | 4.9 | 36.8 | 0.21 | 0.50 | 53.8 |
| Approach | | 1173 | 7.8 | 0.528 | 5.8 | LOS A | 4.9 | 36.8 | 0.20 | 0.48 | 54.4 |
| All Vehicles | | 1863 | 7.5 | 0.528 | 6.4 | LOS A | 4.9 | 36.8 | 0.34 | 0.54 | 53.8 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 Site: EX-CAGA-FRI

Gannons Rd / Captain Cook Drive / Toyota Access
Existing Volumes
Friday Peak 4.45-5.45 PM
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------------|--------------|-----------------------------|--------------------|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: Gannons Rd (S) | | | | | | | | | | | |
| 1 | L2 | 275 | 0.0 | 0.143 | 2.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.35 | 48.8 |
| 2 | T1 | 3 | 0.0 | 0.265 | 6.5 | LOS A | 1.3 | 9.3 | 0.69 | 0.86 | 34.4 |
| 3 | R2 | 192 | 0.0 | 0.265 | 10.2 | LOS A | 1.3 | 9.3 | 0.69 | 0.86 | 49.8 |
| Approach | | 470 | 0.0 | 0.265 | 5.6 | LOS A | 1.3 | 9.3 | 0.29 | 0.56 | 49.1 |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 4 | L2 | 207 | 0.0 | 0.708 | 12.1 | LOS A | 7.5 | 52.6 | 0.91 | 1.05 | 49.3 |
| 5 | T1 | 950 | 0.0 | 0.708 | 12.9 | LOS A | 7.5 | 52.6 | 0.91 | 1.06 | 56.5 |
| 6 | R2 | 1 | 0.0 | 0.708 | 18.2 | LOS B | 7.1 | 49.8 | 0.91 | 1.07 | 53.4 |
| Approach | | 1158 | 0.0 | 0.708 | 12.8 | LOS A | 7.5 | 52.6 | 0.91 | 1.06 | 55.1 |
| North: Toyota Access (N) | | | | | | | | | | | |
| 7 | L2 | 12 | 0.0 | 0.138 | 7.9 | LOS A | 0.6 | 4.5 | 0.83 | 0.83 | 37.6 |
| 8 | T1 | 41 | 0.0 | 0.207 | 7.3 | LOS A | 1.1 | 7.8 | 0.83 | 0.84 | 35.1 |
| 9 | R2 | 94 | 0.0 | 0.207 | 8.3 | LOS A | 1.1 | 7.8 | 0.87 | 0.91 | 37.8 |
| Approach | | 147 | 0.0 | 0.207 | 8.0 | LOS A | 1.1 | 7.8 | 0.85 | 0.89 | 37.0 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L2 | 5 | 0.0 | 0.709 | 6.5 | LOS A | 8.4 | 59.1 | 0.72 | 0.59 | 39.0 |
| 11 | T1 | 1285 | 0.0 | 0.709 | 6.8 | LOS A | 8.4 | 59.1 | 0.73 | 0.61 | 58.9 |
| 12 | R2 | 567 | 0.0 | 0.709 | 12.2 | LOS A | 8.4 | 58.6 | 0.76 | 0.67 | 51.4 |
| Approach | | 1857 | 0.0 | 0.709 | 8.5 | LOS A | 8.4 | 59.1 | 0.74 | 0.63 | 56.3 |
| All Vehicles | | 3632 | 0.0 | 0.709 | 9.4 | LOS A | 8.4 | 59.1 | 0.74 | 0.77 | 53.8 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 Site: EX-CAGA-SAT

Gannons Rd / Captain Cook Drive / Toyota Access
 Existing Volumes
 Sat Peak: 11.30am-12.30pm
 Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|-----------------------------|--------------------|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: Gannons Rd (S) | | | | | | | | | | | |
| 1 | L2 | 561 | 0.0 | 0.291 | 2.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.35 | 48.7 |
| 2 | T1 | 1 | 0.0 | 0.264 | 6.1 | LOS A | 1.3 | 9.0 | 0.66 | 0.83 | 34.4 |
| 3 | R2 | 203 | 0.0 | 0.264 | 9.8 | LOS A | 1.3 | 9.0 | 0.66 | 0.83 | 49.9 |
| Approach | | 765 | 0.0 | 0.291 | 4.4 | LOS A | 1.3 | 9.0 | 0.18 | 0.48 | 49.0 |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 4 | L2 | 134 | 0.0 | 0.667 | 11.5 | LOS A | 6.9 | 48.2 | 0.90 | 1.00 | 49.6 |
| 5 | T1 | 950 | 0.0 | 0.667 | 12.2 | LOS A | 6.9 | 48.2 | 0.90 | 1.02 | 57.1 |
| Approach | | 1084 | 0.0 | 0.667 | 12.1 | LOS A | 6.9 | 48.2 | 0.90 | 1.02 | 56.1 |
| North: Toyota Access (N) | | | | | | | | | | | |
| 7 | L2 | 5 | 0.0 | 0.031 | 6.8 | LOS A | 0.1 | 1.0 | 0.79 | 0.74 | 38.0 |
| 8 | T1 | 10 | 0.0 | 0.046 | 5.9 | LOS A | 0.2 | 1.7 | 0.80 | 0.76 | 35.4 |
| 9 | R2 | 21 | 0.0 | 0.046 | 7.4 | LOS A | 0.2 | 1.7 | 0.81 | 0.80 | 38.2 |
| Approach | | 36 | 0.0 | 0.046 | 6.9 | LOS A | 0.2 | 1.7 | 0.81 | 0.78 | 37.4 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L2 | 1 | 0.0 | 0.661 | 6.4 | LOS A | 7.2 | 50.7 | 0.68 | 0.59 | 39.1 |
| 11 | T1 | 1082 | 0.0 | 0.661 | 6.7 | LOS A | 7.2 | 50.7 | 0.69 | 0.60 | 59.2 |
| 12 | R2 | 633 | 0.0 | 0.661 | 12.0 | LOS A | 7.0 | 49.0 | 0.71 | 0.68 | 51.1 |
| Approach | | 1716 | 0.0 | 0.661 | 8.6 | LOS A | 7.2 | 50.7 | 0.70 | 0.63 | 55.9 |
| All Vehicles | | 3601 | 0.0 | 0.667 | 8.8 | LOS A | 7.2 | 50.7 | 0.65 | 0.71 | 54.1 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: FU-WOCA-FRI + Dev + Kurnell

Captain Cook Drive / Woollooware Road North / Site Access
 Moved access, CCD upgraded to 4 lanes, changed to signals
 Existing + Development + Kurnell Subdivision Volumes
 Friday PM Peak
 Signals - Fixed Time Cycle Time = 100 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|------|-------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|-----------------------------|--------------------|
| Mov ID | Turn | Demand Flow veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: Woollooware Road (S) | | | | | | | | | | | |
| 1 | L | 194 | 8.0 | 0.275 | 9.2 | LOS A | 2.2 | 16.5 | 0.31 | 0.65 | 42.3 |
| 2 | T | 309 | 0.0 | 0.748 | 42.4 | LOS C | 14.9 | 104.4 | 1.00 | 0.90 | 24.3 |
| 3 | R | 23 | 8.0 | 0.162 | 53.6 | LOS D | 1.1 | 8.1 | 0.95 | 0.72 | 22.8 |
| Approach | | 526 | 3.3 | 0.748 | 30.7 | LOS C | 14.9 | 104.4 | 0.74 | 0.80 | 28.8 |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 4 | L | 9 | 8.0 | 0.423 | 24.6 | LOS B | 12.0 | 90.0 | 0.68 | 0.97 | 36.8 |
| 5 | T | 775 | 8.0 | 0.423 | 16.9 | LOS B | 12.0 | 90.1 | 0.68 | 0.59 | 39.1 |
| 6 | R | 318 | 0.0 | 0.775 | 24.8 | LOS B | 8.3 | 58.3 | 0.84 | 0.89 | 35.9 |
| Approach | | 1102 | 5.7 | 0.775 | 19.3 | LOS B | 12.0 | 90.1 | 0.73 | 0.68 | 38.1 |
| North: Car Park Access (N) | | | | | | | | | | | |
| 7 | L | 317 | 0.0 | 0.413 | 32.6 | LOS C | 11.3 | 79.2 | 0.78 | 0.82 | 31.6 |
| 8 | T | 232 | 0.0 | 0.520 | 39.4 | LOS C | 10.2 | 71.1 | 0.94 | 0.78 | 27.3 |
| 9 | R | 21 | 0.0 | 0.171 | 57.6 | LOS E | 1.0 | 7.2 | 0.97 | 0.70 | 23.3 |
| Approach | | 569 | 0.0 | 0.520 | 36.3 | LOS C | 11.3 | 79.2 | 0.85 | 0.80 | 29.4 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L | 62 | 0.0 | 0.065 | 8.2 | LOS A | 0.1 | 0.9 | 0.06 | 0.61 | 49.1 |
| 11 | T | 1444 | 8.0 | 0.771 | 2.2 | LOS A | 6.6 | 49.2 | 0.20 | 0.18 | 55.5 |
| 12 | R | 259 | 8.0 | 0.627 | 8.3 | LOS A | 0.9 | 6.4 | 0.13 | 0.64 | 47.9 |
| Approach | | 1765 | 7.7 | 0.771 | 3.3 | LOS A | 6.6 | 49.2 | 0.19 | 0.27 | 54.0 |
| All Vehicles | | 3963 | 5.5 | 0.775 | 16.1 | LOS B | 14.9 | 104.4 | 0.51 | 0.53 | 39.9 |

Level of Service (LOS) Method: Delay (RTA NSW).
 Vehicle movement LOS values are based on average delay per movement
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 SIDRA Standard Delay Model used.

| Movement Performance - Pedestrians | | | | | | | | |
|------------------------------------|-------------------|-------------------|-------------------|------------------|--------------------------------------|------------|--------------|-----------------------------|
| Mov ID | Description | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Distance m | Prop. Queued | Effective Stop Rate per ped |
| P1 | Across S approach | 53 | 20.5 | LOS C | 0.1 | 0.1 | 0.64 | 0.64 |
| P3 | Across E approach | 53 | 44.2 | LOS E | 0.1 | 0.1 | 0.94 | 0.94 |
| P5 | Across N approach | 53 | 23.8 | LOS C | 0.1 | 0.1 | 0.69 | 0.69 |
| P7 | Across W approach | 53 | 44.2 | LOS E | 0.1 | 0.1 | 0.94 | 0.94 |
| All Pedestrians | | 212 | 33.2 | LOS D | | | 0.80 | 0.80 |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
 Pedestrian movement LOS values are based on average delay per pedestrian movement.
 Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FU-WOCA-SAT + Dev + Kurnell

Captain Cook Drive / Woollooware Road North / Site Access
 Moved access, CCD upgraded to 4 lanes, changed to signals
 Existing + Development + Kurnell Subdivision Volumes
 Saturday Noon Peak
 Signals - Fixed Time Cycle Time = 110 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|------|-------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|-----------------------------|--------------------|
| Mov ID | Turn | Demand Flow veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: Woollooware Road (S) | | | | | | | | | | | |
| 1 | L | 164 | 8.0 | 0.192 | 8.1 | LOS A | 1.4 | 10.3 | 0.23 | 0.62 | 43.2 |
| 2 | T | 173 | 0.0 | 0.459 | 43.1 | LOS D | 8.3 | 58.4 | 0.94 | 0.76 | 24.2 |
| 3 | R | 15 | 8.0 | 0.091 | 56.0 | LOS D | 0.7 | 5.5 | 0.93 | 0.70 | 22.3 |
| Approach | | 352 | 4.1 | 0.459 | 27.3 | LOS B | 8.3 | 58.4 | 0.60 | 0.70 | 30.4 |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 4 | L | 15 | 8.0 | 0.304 | 27.2 | LOS B | 8.6 | 64.5 | 0.67 | 0.95 | 35.0 |
| 5 | T | 506 | 8.0 | 0.304 | 19.6 | LOS B | 8.6 | 64.7 | 0.67 | 0.57 | 37.4 |
| 6 | R | 260 | 0.0 | 0.506 | 15.2 | LOS B | 5.0 | 34.9 | 0.62 | 0.77 | 42.5 |
| Approach | | 781 | 5.3 | 0.506 | 18.3 | LOS B | 8.6 | 64.7 | 0.65 | 0.64 | 38.9 |
| North: Car Park Access (N) | | | | | | | | | | | |
| 7 | L | 256 | 0.0 | 0.296 | 30.1 | LOS C | 8.9 | 62.3 | 0.70 | 0.79 | 32.8 |
| 8 | T | 181 | 0.0 | 0.447 | 44.1 | LOS D | 8.7 | 60.9 | 0.93 | 0.77 | 25.7 |
| 9 | R | 27 | 0.0 | 0.134 | 55.8 | LOS D | 1.4 | 9.5 | 0.93 | 0.72 | 23.8 |
| Approach | | 464 | 0.0 | 0.447 | 37.1 | LOS C | 8.9 | 62.3 | 0.80 | 0.78 | 29.1 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L | 24 | 0.0 | 0.023 | 8.0 | LOS A | 0.1 | 0.4 | 0.05 | 0.61 | 49.3 |
| 11 | T | 909 | 8.0 | 0.524 | 3.0 | LOS A | 3.4 | 25.6 | 0.15 | 0.13 | 54.6 |
| 12 | R | 315 | 8.0 | 0.516 | 8.2 | LOS A | 1.0 | 7.6 | 0.10 | 0.63 | 47.9 |
| Approach | | 1248 | 7.8 | 0.524 | 4.4 | LOS A | 3.4 | 25.6 | 0.14 | 0.27 | 52.7 |
| All Vehicles | | 2845 | 5.4 | 0.524 | 16.4 | LOS B | 8.9 | 64.7 | 0.44 | 0.51 | 39.9 |

Level of Service (LOS) Method: Delay (RTA NSW).
 Vehicle movement LOS values are based on average delay per movement
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 SIDRA Standard Delay Model used.

| Movement Performance - Pedestrians | | | | | | | | |
|------------------------------------|-------------------|-------------------|-------------------|------------------|--------------------------------------|------------|--------------|-----------------------------|
| Mov ID | Description | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Distance m | Prop. Queued | Effective Stop Rate per ped |
| P1 | Across S approach | 53 | 24.2 | LOS C | 0.1 | 0.1 | 0.66 | 0.66 |
| P3 | Across E approach | 53 | 49.2 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 |
| P5 | Across N approach | 53 | 27.7 | LOS C | 0.1 | 0.1 | 0.71 | 0.71 |
| P7 | Across W approach | 53 | 49.2 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 |
| All Pedestrians | | 212 | 37.6 | LOS D | | | 0.82 | 0.82 |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
 Pedestrian movement LOS values are based on average delay per pedestrian movement.
 Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FU-NEWACCESS EAST-FRI +
Dev + Kurnell

New western signals on Captain Cook Drive
Existing + Development + Kurnell Subdivision Volumes
Friday PM Peak
Signals - Fixed Time Cycle Time = 70 seconds (Practical Cycle Time)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|------|-------------------|------|---------------|-------------------|------------------|--------------------------------|--------------------------|--------------|-----------------------------|--------------------|
| Mov ID | Turn | Demand Flow veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Back of Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 5 | T | 921 | 0.0 | 0.435 | 10.3 | LOS A | 11.1 | 77.6 | 0.64 | 0.56 | 50.4 |
| 6 | R | 1 | 0.0 | 0.009 | 26.2 | LOS B | 0.0 | 0.3 | 0.65 | 0.67 | 37.5 |
| Approach | | 922 | 0.0 | 0.435 | 10.3 | LOS A | 11.1 | 77.6 | 0.64 | 0.56 | 50.3 |
| North: New Access (N) | | | | | | | | | | | |
| 7 | L | 1 | 0.0 | 0.003 | 6.3 | LOS A | 0.0 | 0.1 | 0.35 | 0.49 | 30.5 |
| 9 | R | 223 | 0.0 | 0.287 | 25.1 | LOS B | 5.6 | 39.1 | 0.81 | 0.74 | 24.3 |
| Approach | | 224 | 0.0 | 0.287 | 25.0 | LOS B | 5.6 | 39.1 | 0.80 | 0.74 | 24.3 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L | 208 | 0.0 | 0.840 | 16.2 | LOS B | 15.3 | 107.4 | 0.43 | 0.94 | 47.9 |
| 11 | T | 1559 | 0.0 | 0.840 | 5.8 | LOS A | 15.5 | 108.2 | 0.43 | 0.43 | 56.7 |
| Approach | | 1767 | 0.0 | 0.840 | 7.0 | LOS A | 15.5 | 108.2 | 0.43 | 0.49 | 55.7 |
| All Vehicles | | 2914 | 0.0 | 0.840 | 9.4 | LOS A | 15.5 | 108.2 | 0.52 | 0.53 | 49.1 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

| Movement Performance - Pedestrians | | | | | | | | |
|------------------------------------|-------------------|-------------------|-------------------|------------------|--------------------------------------|--------------------------|--------------|-----------------------------|
| Mov ID | Description | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Back of Queue Distance m | Prop. Queued | Effective Stop Rate per ped |
| P3 | Across E approach | 53 | 29.3 | LOS C | 0.1 | 0.1 | 0.91 | 0.91 |
| P5 | Across N approach | 53 | 10.9 | LOS B | 0.1 | 0.1 | 0.56 | 0.56 |
| P7 | Across W approach | 53 | 28.4 | LOS C | 0.1 | 0.1 | 0.90 | 0.90 |
| All Pedestrians | | 159 | 22.8 | LOS C | | | 0.79 | 0.79 |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FU-NEWACCESS EAST-SAT
+ Dev + Kurnell

New western signals on Captain Cook Drive
Existing + Development + Kurnell Subdivision Volumes
Saturday noon peak
Signals - Fixed Time Cycle Time = 60 seconds (Practical Cycle Time)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|------|----------------------|---------|------------------|----------------------|------------------|--------------------------------------|--------------------------------|--------------|--------------------------------|-----------------------|
| Mov ID | Turn | Demand Flow veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Back of Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 5 | T | 617 | 0.0 | 0.339 | 11.0 | LOS A | 7.4 | 51.9 | 0.67 | 0.57 | 49.5 |
| 6 | R | 1 | 0.0 | 0.008 | 30.4 | LOS C | 0.0 | 0.3 | 0.78 | 0.64 | 34.7 |
| Approach | | 618 | 0.0 | 0.339 | 11.0 | LOS A | 7.4 | 51.9 | 0.67 | 0.57 | 49.4 |
| North: New Access (N) | | | | | | | | | | | |
| 7 | L | 1 | 0.0 | 0.002 | 7.5 | LOS A | 0.0 | 0.1 | 0.44 | 0.50 | 30.0 |
| 9 | R | 162 | 0.0 | 0.177 | 19.4 | LOS B | 3.3 | 23.4 | 0.73 | 0.70 | 25.8 |
| Approach | | 163 | 0.0 | 0.177 | 19.3 | LOS B | 3.3 | 23.4 | 0.73 | 0.70 | 25.9 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L | 161 | 0.0 | 0.836 | 19.7 | LOS B | 17.2 | 120.4 | 0.68 | 0.95 | 44.6 |
| 11 | T | 1353 | 0.0 | 0.836 | 9.3 | LOS A | 17.3 | 121.3 | 0.68 | 0.67 | 50.9 |
| Approach | | 1514 | 0.0 | 0.836 | 10.4 | LOS A | 17.3 | 121.3 | 0.68 | 0.70 | 50.2 |
| All Vehicles | | 2295 | 0.0 | 0.836 | 11.2 | LOS A | 17.3 | 121.3 | 0.68 | 0.67 | 46.9 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

| Movement Performance - Pedestrians | | | | | | | | |
|------------------------------------|-------------------|----------------------|----------------------|------------------|--|--------------------------------|--------------|--------------------------------|
| Mov ID | Description | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Back of Queue Distance m | Prop. Queued | Effective Stop Rate per ped |
| P3 | Across E approach | 53 | 24.3 | LOS C | 0.1 | 0.1 | 0.90 | 0.90 |
| P5 | Across N approach | 53 | 12.7 | LOS B | 0.1 | 0.1 | 0.65 | 0.65 |
| P7 | Across W approach | 53 | 23.4 | LOS C | 0.1 | 0.1 | 0.88 | 0.88 |
| All Pedestrians | | 159 | 20.1 | LOS C | | | 0.81 | 0.81 |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FU-NEWACCESS WEST-FRI
+ Dev + Kurnell

Captain Cook Drive/ New Apartment Access
Existing + Development + Kurnell Subdivision Volumes
Friday PM Peak
Signals - Fixed Time Cycle Time = 80 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|------|----------------------|---------|------------------|----------------------|------------------|--------------------------------------|--------------------------------|--------------|--------------------------------|-----------------------|
| Mov ID | Turn | Demand Flow veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Back of Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 5 | T | 939 | 0.0 | 0.397 | 1.1 | LOS A | 2.2 | 15.3 | 0.09 | 0.08 | 67.0 |
| Approach | | 939 | 0.0 | 0.397 | 1.1 | LOS A | 2.2 | 15.3 | 0.09 | 0.08 | 67.0 |
| North: New Access (N) | | | | | | | | | | | |
| 7 | L | 6 | 0.0 | 0.013 | 30.2 | LOS C | 0.3 | 2.1 | 0.77 | 0.65 | 27.4 |
| 9 | R | 47 | 0.0 | 0.145 | 30.7 | LOS C | 2.2 | 15.1 | 0.80 | 0.71 | 27.4 |
| Approach | | 54 | 0.0 | 0.145 | 30.7 | LOS C | 2.2 | 15.1 | 0.80 | 0.70 | 27.4 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L | 169 | 0.0 | 0.745 | 10.5 | LOS A | 7.4 | 52.1 | 0.19 | 1.04 | 52.3 |
| 11 | T | 1583 | 0.0 | 0.745 | 1.6 | LOS A | 7.5 | 52.5 | 0.19 | 0.17 | 65.0 |
| Approach | | 1753 | 0.0 | 0.745 | 2.4 | LOS A | 7.5 | 52.5 | 0.19 | 0.25 | 63.7 |
| All Vehicles | | 2745 | 0.0 | 0.745 | 2.5 | LOS A | 7.5 | 52.5 | 0.16 | 0.20 | 63.1 |

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

| Movement Performance - Pedestrians | | | | | | | | |
|------------------------------------|-------------------|----------------------|----------------------|------------------|--|--------------------------------|--------------|--------------------------------|
| Mov ID | Description | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Back of Queue Distance m | Prop. Queued | Effective Stop Rate per ped |
| P3 | Across E approach | 53 | 34.2 | LOS D | 0.1 | 0.1 | 0.93 | 0.93 |
| P5 | Across N approach | 53 | 13.8 | LOS B | 0.1 | 0.1 | 0.59 | 0.59 |
| P7 | Across W approach | 53 | 34.2 | LOS D | 0.1 | 0.1 | 0.93 | 0.93 |
| All Pedestrians | | 159 | 27.4 | LOS C | | | 0.81 | 0.81 |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FU-NEWACCESS WEST-SAT
+ Dev + Kurnell

Captain Cook Drive/ New Apartment Access
Existing + Development + Kurnell Subdivision Volumes
Saturday Noon Peak
Signals - Fixed Time Cycle Time = 80 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|------|----------------------|------|------------------|----------------------|------------------|--------------------------------------|--------------------------------|--------------|--------------------------------|-----------------------|
| Mov ID | Turn | Demand Flow veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Back of Queue Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 5 | T | 861 | 0.0 | 0.364 | 1.1 | LOS A | 1.9 | 13.5 | 0.08 | 0.07 | 67.1 |
| Approach | | 861 | 0.0 | 0.364 | 1.1 | LOS A | 1.9 | 13.5 | 0.08 | 0.07 | 67.1 |
| North: New Access (N) | | | | | | | | | | | |
| 7 | L | 2 | 0.0 | 0.004 | 30.0 | LOS C | 0.1 | 0.7 | 0.77 | 0.62 | 27.5 |
| 9 | R | 23 | 0.0 | 0.071 | 30.3 | LOS C | 1.1 | 7.5 | 0.79 | 0.68 | 27.6 |
| Approach | | 25 | 0.0 | 0.071 | 30.2 | LOS C | 1.1 | 7.5 | 0.79 | 0.68 | 27.5 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L | 26 | 0.0 | 0.743 | 10.5 | LOS A | 7.3 | 51.4 | 0.18 | 1.05 | 52.3 |
| 11 | T | 1721 | 0.0 | 0.740 | 1.5 | LOS A | 7.4 | 51.5 | 0.18 | 0.17 | 65.2 |
| Approach | | 1747 | 0.0 | 0.740 | 1.7 | LOS A | 7.4 | 51.5 | 0.18 | 0.18 | 65.0 |
| All Vehicles | | 2634 | 0.0 | 0.740 | 1.8 | LOS A | 7.4 | 51.5 | 0.16 | 0.15 | 64.8 |

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model used.

| Movement Performance - Pedestrians | | | | | | | | |
|------------------------------------|-------------------|----------------------|----------------------|------------------|--|--------------------------------|--------------|--------------------------------|
| Mov ID | Description | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Back of Queue Distance m | Prop. Queued | Effective Stop Rate per ped |
| P3 | Across E approach | 53 | 34.2 | LOS D | 0.1 | 0.1 | 0.93 | 0.93 |
| P5 | Across N approach | 53 | 13.8 | LOS B | 0.1 | 0.1 | 0.59 | 0.59 |
| P7 | Across W approach | 53 | 34.2 | LOS D | 0.1 | 0.1 | 0.93 | 0.93 |
| All Pedestrians | | 159 | 27.4 | LOS C | | | 0.81 | 0.81 |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 **Site: FU-WOCA-FRI + Dev + Kurnell**

Captain Cook Drive / Woolooware Road North / Site Access

Moved access, CCD upgraded to 4 lanes, changed to signals

Existing + Development + Kurnell Subdivision Volumes

Signals - Fixed Time Coordinated Cycle Time = 105 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|---------------|
| Mov ID | OD Mov | Demand Flows | | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue | | Prop. Queued | Effective Stop Rate | Average Speed |
| | | Total veh/h | HV % | v/c | sec | | Vehicles veh | Distance m | | per veh | km/h |
| South: Woolooware Road (S) | | | | | | | | | | | |
| 1 | L2 | 194 | 8.0 | 0.173 | 7.4 | LOS A | 2.3 | 17.4 | 0.32 | 0.61 | 48.3 |
| 2 | T1 | 309 | 0.0 | 0.785 | 46.8 | LOS D | 16.1 | 112.9 | 1.00 | 0.93 | 32.6 |
| 3 | R2 | 23 | 8.0 | 0.171 | 54.1 | LOS D | 1.1 | 8.6 | 0.95 | 0.71 | 29.9 |
| Approach | | 526 | 3.3 | 0.785 | 32.6 | LOS C | 16.1 | 112.9 | 0.75 | 0.80 | 36.8 |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 4 | L2 | 9 | 8.0 | 0.445 | 25.1 | LOS B | 13.2 | 99.0 | 0.71 | 0.63 | 41.9 |
| 5 | T1 | 775 | 8.0 | 0.445 | 19.5 | LOS B | 13.2 | 99.1 | 0.71 | 0.62 | 45.5 |
| 6 | R2 | 318 | 0.0 | 0.788 | 36.3 | LOS C | 11.9 | 83.3 | 1.00 | 1.00 | 37.6 |
| Approach | | 1102 | 5.7 | 0.788 | 24.4 | LOS B | 13.2 | 99.1 | 0.79 | 0.73 | 42.9 |
| North: Car Park Access (N) | | | | | | | | | | | |
| 7 | L2 | 317 | 0.0 | 0.383 | 28.7 | LOS C | 11.3 | 78.9 | 0.75 | 0.79 | 40.0 |
| 8 | T1 | 232 | 0.0 | 0.546 | 42.4 | LOS C | 10.8 | 75.6 | 0.95 | 0.80 | 33.6 |
| 9 | R2 | 21 | 0.0 | 0.199 | 59.7 | LOS E | 1.1 | 7.7 | 0.98 | 0.70 | 30.2 |
| Approach | | 569 | 0.0 | 0.546 | 35.4 | LOS C | 11.3 | 78.9 | 0.84 | 0.79 | 36.7 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L2 | 62 | 0.0 | 0.119 | 17.8 | LOS B | 1.1 | 7.8 | 0.56 | 0.67 | 46.0 |
| 11 | T1 | 1444 | 8.0 | 0.810 | 2.8 | LOS A | 8.0 | 60.0 | 0.22 | 0.21 | 57.4 |
| 12 | R2 | 259 | 8.0 | 0.552 | 6.1 | LOS A | 0.3 | 2.4 | 0.05 | 0.57 | 49.9 |
| Approach | | 1765 | 7.7 | 0.810 | 3.8 | LOS A | 8.0 | 60.0 | 0.21 | 0.28 | 55.7 |
| All Vehicles | | 3963 | 5.5 | 0.810 | 17.9 | LOS B | 16.1 | 112.9 | 0.53 | 0.55 | 45.4 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians | | | | | | | | | |
|------------------------------------|---------------------|-------------|---------------|------------------|-----------------------|------------|--------------|---------------------|--|
| Mov ID | Description | Demand Flow | Average Delay | Level of Service | Average Back of Queue | | Prop. Queued | Effective Stop Rate | |
| | | ped/h | sec | | Pedestrian ped | Distance m | | per ped | |
| P1 | South Full Crossing | 53 | 22.7 | LOS C | 0.1 | 0.1 | 0.66 | 0.66 | |
| P2 | East Full Crossing | 53 | 46.8 | LOS E | 0.1 | 0.1 | 0.94 | 0.94 | |
| P3 | North Full Crossing | 53 | 26.1 | LOS C | 0.1 | 0.1 | 0.71 | 0.71 | |
| P4 | West Full Crossing | 53 | 46.8 | LOS E | 0.1 | 0.1 | 0.94 | 0.94 | |
| All Pedestrians | | 211 | 35.6 | LOS D | | | 0.81 | 0.81 | |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 **Site: FU-WOCA-SAT + Dev + Kurnell**

Captain Cook Drive / Woolooware Road North / Site Access

Moved access, CCD upgraded to 4 lanes, changed to signals

Existing + Development + Kurnell Subdivision Volumes

Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|---------------|
| Mov ID | OD Mov | Demand Flows | | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue | | Prop. Queued | Effective Stop Rate | Average Speed |
| | | Total veh/h | HV % | v/c | sec | | Vehicles veh | Distance m | | per veh | km/h |
| South: Woolooware Road (S) | | | | | | | | | | | |
| 1 | L2 | 164 | 8.0 | 0.130 | 6.1 | LOS A | 1.4 | 10.3 | 0.24 | 0.57 | 49.1 |
| 2 | T1 | 173 | 0.0 | 0.459 | 43.1 | LOS D | 8.3 | 58.4 | 0.94 | 0.76 | 33.6 |
| 3 | R2 | 15 | 8.0 | 0.091 | 53.7 | LOS D | 0.7 | 5.5 | 0.93 | 0.69 | 30.0 |
| Approach | | 352 | 4.1 | 0.459 | 26.3 | LOS B | 8.3 | 58.4 | 0.61 | 0.67 | 39.2 |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 4 | L2 | 15 | 8.0 | 0.304 | 25.2 | LOS B | 8.6 | 64.5 | 0.67 | 0.58 | 41.8 |
| 5 | T1 | 506 | 8.0 | 0.304 | 19.6 | LOS B | 8.6 | 64.7 | 0.67 | 0.57 | 45.4 |
| 6 | R2 | 260 | 0.0 | 0.469 | 12.8 | LOS A | 5.0 | 34.9 | 0.55 | 0.72 | 49.3 |
| Approach | | 781 | 5.3 | 0.469 | 17.5 | LOS B | 8.6 | 64.7 | 0.63 | 0.62 | 46.6 |
| North: Car Park Access (N) | | | | | | | | | | | |
| 7 | L2 | 256 | 0.0 | 0.296 | 27.5 | LOS B | 8.9 | 62.3 | 0.70 | 0.77 | 40.6 |
| 8 | T1 | 181 | 0.0 | 0.447 | 44.1 | LOS D | 8.7 | 60.9 | 0.93 | 0.78 | 33.1 |
| 9 | R2 | 27 | 0.0 | 0.134 | 53.6 | LOS D | 1.4 | 9.5 | 0.93 | 0.72 | 31.8 |
| Approach | | 464 | 0.0 | 0.447 | 35.5 | LOS C | 8.9 | 62.3 | 0.80 | 0.77 | 36.7 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L2 | 24 | 0.0 | 0.024 | 5.8 | LOS A | 0.0 | 0.1 | 0.02 | 0.55 | 54.1 |
| 11 | T1 | 909 | 8.0 | 0.524 | 3.0 | LOS A | 3.4 | 25.6 | 0.15 | 0.13 | 57.2 |
| 12 | R2 | 315 | 8.0 | 0.520 | 6.1 | LOS A | 0.4 | 3.1 | 0.04 | 0.57 | 49.9 |
| Approach | | 1248 | 7.8 | 0.524 | 3.8 | LOS A | 3.4 | 25.6 | 0.12 | 0.25 | 55.1 |
| All Vehicles | | 2845 | 5.4 | 0.524 | 15.5 | LOS B | 8.9 | 64.7 | 0.43 | 0.49 | 46.6 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians | | | | | | | | | |
|------------------------------------|---------------------|-------------|---------------|------------------|-----------------------|------------|--------------|---------------------|--|
| Mov ID | Description | Demand Flow | Average Delay | Level of Service | Average Back of Queue | | Prop. Queued | Effective Stop Rate | |
| | | ped/h | sec | | Pedestrian ped | Distance m | | per ped | |
| P1 | South Full Crossing | 53 | 24.3 | LOS C | 0.1 | 0.1 | 0.67 | 0.67 | |
| P2 | East Full Crossing | 53 | 49.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | |
| P3 | North Full Crossing | 53 | 27.7 | LOS C | 0.1 | 0.1 | 0.71 | 0.71 | |
| P4 | West Full Crossing | 53 | 49.3 | LOS E | 0.2 | 0.2 | 0.95 | 0.95 | |
| All Pedestrians | | 211 | 37.6 | LOS D | | | 0.82 | 0.82 | |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 **Site: FU-NEWACCESS EAST-FRI + Dev + Kurnell**

New western signals on Captain Cook Drive
 Existing + Development + Kurnell Subdivision Volumes
 Friday PM Peak
 Signals - Fixed Time Coordinated Cycle Time = 70 seconds (Practical Cycle Time)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|-----------------------------|--------------------|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 5 | T1 | 921 | 0.0 | 0.435 | 10.3 | LOS A | 9.4 | 65.9 | 0.64 | 0.56 | 58.5 |
| 6 | R2 | 1 | 0.0 | 0.007 | 22.1 | LOS B | 0.0 | 0.2 | 0.65 | 0.63 | 34.3 |
| Approach | | 922 | 0.0 | 0.435 | 10.3 | LOS A | 9.4 | 65.9 | 0.64 | 0.56 | 58.4 |
| North: New Access (N) | | | | | | | | | | | |
| 7 | L2 | 1 | 0.0 | 0.001 | 4.2 | LOS A | 0.0 | 0.1 | 0.35 | 0.37 | 38.9 |
| 9 | R2 | 223 | 0.0 | 0.210 | 22.9 | LOS B | 2.9 | 20.6 | 0.80 | 0.71 | 32.3 |
| Approach | | 224 | 0.0 | 0.210 | 22.8 | LOS B | 2.9 | 20.6 | 0.80 | 0.71 | 32.3 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L2 | 208 | 0.0 | 0.840 | 12.1 | LOS A | 14.0 | 97.8 | 0.43 | 0.52 | 39.6 |
| 11 | T1 | 1559 | 0.0 | 0.840 | 5.8 | LOS A | 14.1 | 98.7 | 0.43 | 0.47 | 62.4 |
| Approach | | 1767 | 0.0 | 0.840 | 6.5 | LOS A | 14.1 | 98.7 | 0.43 | 0.48 | 58.4 |
| All Vehicles | | 2914 | 0.0 | 0.840 | 9.0 | LOS A | 14.1 | 98.7 | 0.52 | 0.52 | 55.0 |

Level of Service (LOS) Method: Delay (RTA NSW).
 Vehicle movement LOS values are based on average delay per movement
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians | | | | | | | | |
|------------------------------------|---------------------|-------------------|-------------------|------------------|--------------------------------------|------------|--------------|-----------------------------|
| Mov ID | Description | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Distance m | Prop. Queued | Effective Stop Rate per ped |
| P2 | East Full Crossing | 53 | 29.3 | LOS C | 0.1 | 0.1 | 0.92 | 0.92 |
| P3 | North Full Crossing | 53 | 10.9 | LOS B | 0.1 | 0.1 | 0.56 | 0.56 |
| P4 | West Full Crossing | 53 | 28.4 | LOS C | 0.1 | 0.1 | 0.90 | 0.90 |
| All Pedestrians | | 158 | 22.9 | LOS C | | | 0.79 | 0.79 |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
 Pedestrian movement LOS values are based on average delay per pedestrian movement.
 Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 **Site: FU-NEWACCESS EAST-SAT + Dev + Kurnell**

New western signals on Captain Cook Drive
 Existing + Development + Kurnell Subdivision Volumes
 Saturday noon peak
 Signals - Fixed Time Coordinated Cycle Time = 60 seconds (Practical Cycle Time)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|-----------------------------|--------------------|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 5 | T1 | 617 | 0.0 | 0.339 | 11.0 | LOS A | 5.8 | 40.4 | 0.67 | 0.57 | 57.8 |
| 6 | R2 | 1 | 0.0 | 0.007 | 26.4 | LOS B | 0.0 | 0.2 | 0.78 | 0.62 | 33.0 |
| Approach | | 618 | 0.0 | 0.339 | 11.0 | LOS A | 5.8 | 40.4 | 0.67 | 0.57 | 57.8 |
| North: New Access (N) | | | | | | | | | | | |
| 7 | L2 | 1 | 0.0 | 0.001 | 5.4 | LOS A | 0.0 | 0.1 | 0.44 | 0.40 | 38.4 |
| 9 | R2 | 162 | 0.0 | 0.131 | 17.3 | LOS B | 1.7 | 11.7 | 0.73 | 0.67 | 33.9 |
| Approach | | 163 | 0.0 | 0.131 | 17.2 | LOS B | 1.7 | 11.7 | 0.73 | 0.66 | 34.0 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L2 | 161 | 0.0 | 0.836 | 15.6 | LOS B | 16.0 | 112.0 | 0.68 | 0.71 | 38.2 |
| 11 | T1 | 1353 | 0.0 | 0.836 | 9.3 | LOS A | 16.1 | 113.0 | 0.68 | 0.69 | 58.9 |
| Approach | | 1514 | 0.0 | 0.836 | 9.9 | LOS A | 16.1 | 113.0 | 0.68 | 0.69 | 55.7 |
| All Vehicles | | 2295 | 0.0 | 0.836 | 10.8 | LOS A | 16.1 | 113.0 | 0.68 | 0.66 | 53.8 |

Level of Service (LOS) Method: Delay (RTA NSW).
 Vehicle movement LOS values are based on average delay per movement
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians | | | | | | | | |
|------------------------------------|---------------------|-------------------|-------------------|------------------|--------------------------------------|------------|--------------|-----------------------------|
| Mov ID | Description | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Distance m | Prop. Queued | Effective Stop Rate per ped |
| P2 | East Full Crossing | 53 | 24.4 | LOS C | 0.1 | 0.1 | 0.90 | 0.90 |
| P3 | North Full Crossing | 53 | 12.7 | LOS B | 0.1 | 0.1 | 0.65 | 0.65 |
| P4 | West Full Crossing | 53 | 23.5 | LOS C | 0.1 | 0.1 | 0.89 | 0.89 |
| All Pedestrians | | 158 | 20.2 | LOS C | | | 0.81 | 0.81 |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
 Pedestrian movement LOS values are based on average delay per pedestrian movement.
 Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 **Site: FU-NEWACCESS WEST-FRI + Dev + Kurnell**

Captain Cook Drive/ New Apartment Access

Existing + Development + Kurnell Subdivision Volumes

Friday PM Peak

Signals - Fixed Time Coordinated Cycle Time = 80 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|---------------|
| Mov ID | OD Mov | Demand Flows | | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue | | Prop. Queued | Effective Stop Rate | Average Speed |
| | | Total veh/h | HV % | v/c | sec | | Vehicles veh | Distance m | | per veh | km/h |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 5 | T1 | 939 | 0.0 | 0.397 | 0.4 | LOS A | 0.6 | 4.2 | 0.04 | 0.03 | 69.4 |
| Approach | | 939 | 0.0 | 0.397 | 0.4 | LOS A | 0.6 | 4.2 | 0.04 | 0.03 | 69.4 |
| North: New Access (N) | | | | | | | | | | | |
| 7 | L2 | 6 | 0.0 | 0.013 | 27.5 | LOS B | 0.2 | 1.3 | 0.77 | 0.62 | 35.7 |
| 9 | R2 | 47 | 0.0 | 0.101 | 28.5 | LOS B | 1.4 | 10.0 | 0.80 | 0.70 | 35.4 |
| Approach | | 54 | 0.0 | 0.101 | 28.3 | LOS B | 1.4 | 10.0 | 0.80 | 0.69 | 35.5 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L2 | 169 | 0.0 | 0.745 | 7.0 | LOS A | 2.5 | 17.6 | 0.08 | 0.19 | 50.1 |
| 11 | T1 | 1583 | 0.0 | 0.745 | 0.6 | LOS A | 2.5 | 17.7 | 0.08 | 0.12 | 68.5 |
| Approach | | 1753 | 0.0 | 0.745 | 1.2 | LOS A | 2.5 | 17.7 | 0.08 | 0.13 | 66.1 |
| All Vehicles | | 2745 | 0.0 | 0.745 | 1.5 | LOS A | 2.5 | 17.7 | 0.08 | 0.11 | 66.1 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians | | | | | | | | | |
|------------------------------------|---------------------|-------------|---------------|------------------|-----------------------|------------|--------------|---------------------|---------|
| Mov ID | Description | Demand Flow | Average Delay | Level of Service | Average Back of Queue | | Prop. Queued | Effective Stop Rate | |
| | | ped/h | sec | | Pedestrian ped | Distance m | | per ped | per ped |
| P2 | East Full Crossing | 53 | 34.3 | LOS D | 0.1 | 0.1 | 0.93 | 0.93 | |
| P3 | North Full Crossing | 53 | 13.8 | LOS B | 0.1 | 0.1 | 0.59 | 0.59 | |
| P4 | West Full Crossing | 53 | 34.3 | LOS D | 0.1 | 0.1 | 0.93 | 0.93 | |
| All Pedestrians | | 158 | 27.5 | LOS C | | | 0.81 | 0.81 | |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

 **Site: FU-NEWACCESS WEST-SAT + Dev + Kurnell**

Captain Cook Drive/ New Apartment Access

Existing + Development + Kurnell Subdivision Volumes

Saturday Noon Peak

Signals - Fixed Time Coordinated Cycle Time = 80 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|---------------|
| Mov ID | OD Mov | Demand Flows | | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue | | Prop. Queued | Effective Stop Rate | Average Speed |
| | | Total veh/h | HV % | v/c | sec | | Vehicles veh | Distance m | | per veh | km/h |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 5 | T1 | 861 | 0.0 | 0.364 | 0.4 | LOS A | 0.5 | 3.6 | 0.03 | 0.03 | 69.4 |
| Approach | | 861 | 0.0 | 0.364 | 0.4 | LOS A | 0.5 | 3.6 | 0.03 | 0.03 | 69.4 |
| North: New Access (N) | | | | | | | | | | | |
| 7 | L2 | 2 | 0.0 | 0.004 | 27.3 | LOS B | 0.1 | 0.4 | 0.77 | 0.59 | 35.8 |
| 9 | R2 | 23 | 0.0 | 0.049 | 28.0 | LOS B | 0.7 | 4.8 | 0.79 | 0.67 | 35.6 |
| Approach | | 25 | 0.0 | 0.049 | 27.9 | LOS B | 0.7 | 4.8 | 0.79 | 0.66 | 35.6 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L2 | 26 | 0.0 | 0.740 | 7.0 | LOS A | 2.5 | 17.3 | 0.08 | 0.09 | 50.8 |
| 11 | T1 | 1721 | 0.0 | 0.740 | 0.6 | LOS A | 2.5 | 17.3 | 0.08 | 0.08 | 69.1 |
| Approach | | 1747 | 0.0 | 0.740 | 0.7 | LOS A | 2.5 | 17.3 | 0.08 | 0.08 | 68.7 |
| All Vehicles | | 2634 | 0.0 | 0.740 | 0.9 | LOS A | 2.5 | 17.3 | 0.07 | 0.07 | 68.3 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians | | | | | | | | | |
|------------------------------------|---------------------|-------------|---------------|------------------|-----------------------|------------|--------------|---------------------|--|
| Mov ID | Description | Demand Flow | Average Delay | Level of Service | Average Back of Queue | | Prop. Queued | Effective Stop Rate | |
| | | ped/h | sec | | Pedestrian ped | Distance m | | per ped | |
| P2 | East Full Crossing | 53 | 34.3 | LOS D | 0.1 | 0.1 | 0.93 | 0.93 | |
| P3 | North Full Crossing | 53 | 13.8 | LOS B | 0.1 | 0.1 | 0.59 | 0.59 | |
| P4 | West Full Crossing | 53 | 34.3 | LOS D | 0.1 | 0.1 | 0.93 | 0.93 | |
| All Pedestrians | | 158 | 27.5 | LOS C | | | 0.81 | 0.81 | |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

 **Site: FU-CAGA-FRI + Dev + Kurnell**

Gannons Rd / Captain Cook Drive / Toyota Access
Existing + Development + Kurnell Subdivision Volumes
Friday Peak 4.45-5.45 PM
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|---------------|
| Mov ID | OD Mov | Demand Flows | | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue | | Prop. Queued | Effective Stop Rate | Average Speed |
| | | Total veh/h | HV % | v/c | sec | | Vehicles veh | Distance m | | per veh | km/h |
| South: Gannons Rd (S) | | | | | | | | | | | |
| 1 | L2 | 275 | 0.0 | 0.143 | 2.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.35 | 48.8 |
| 2 | T1 | 3 | 0.0 | 0.611 | 10.3 | LOS A | 4.2 | 29.6 | 0.84 | 1.03 | 33.4 |
| 3 | R2 | 369 | 0.0 | 0.611 | 14.0 | LOS A | 4.2 | 29.6 | 0.84 | 1.03 | 47.6 |
| Approach | | 647 | 0.0 | 0.611 | 9.0 | LOS A | 4.2 | 29.6 | 0.48 | 0.74 | 48.0 |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 4 | L2 | 317 | 0.0 | 0.940 | 29.7 | LOS C | 23.0 | 161.0 | 1.00 | 1.55 | 39.9 |
| 5 | T1 | 1130 | 0.0 | 0.940 | 31.5 | LOS C | 23.0 | 161.0 | 1.00 | 1.56 | 44.1 |
| 6 | R2 | 16 | 0.0 | 0.940 | 37.4 | LOS C | 21.4 | 149.8 | 1.00 | 1.56 | 41.8 |
| Approach | | 1463 | 0.0 | 0.940 | 31.2 | LOS C | 23.0 | 161.0 | 1.00 | 1.56 | 43.1 |
| North: Toyota Access (N) | | | | | | | | | | | |
| 7 | L2 | 12 | 0.0 | 0.223 | 13.7 | LOS A | 1.1 | 8.0 | 0.91 | 0.91 | 35.5 |
| 8 | T1 | 41 | 0.0 | 0.332 | 13.1 | LOS A | 2.1 | 14.5 | 0.93 | 0.93 | 33.3 |
| 9 | R2 | 94 | 0.0 | 0.332 | 14.2 | LOS A | 2.1 | 14.5 | 0.98 | 1.01 | 35.7 |
| Approach | | 147 | 0.0 | 0.332 | 13.9 | LOS A | 2.1 | 14.5 | 0.96 | 0.98 | 35.0 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L2 | 5 | 0.0 | 0.970 | 33.5 | LOS C | 43.1 | 301.8 | 1.00 | 1.51 | 31.1 |
| 11 | T1 | 1508 | 0.0 | 0.970 | 35.1 | LOS C | 43.1 | 301.8 | 1.00 | 1.54 | 41.9 |
| 12 | R2 | 567 | 0.0 | 0.970 | 44.0 | LOS D | 40.9 | 286.4 | 1.00 | 1.61 | 36.4 |
| Approach | | 2080 | 0.0 | 0.970 | 37.5 | LOS C | 43.1 | 301.8 | 1.00 | 1.56 | 40.2 |
| All Vehicles | | 4337 | 0.0 | 0.970 | 30.3 | LOS C | 43.1 | 301.8 | 0.92 | 1.41 | 41.9 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: FU-CAGA-SAT + Dev + Kurnell**

Gannons Rd / Captain Cook Drive / Toyota Access
Existing + Development + Kurnell Subdivision Volumes
Sat Peak: 11.30am-12.30pm
Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|-----------------------------|--------------------|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: Gannons Rd (S) | | | | | | | | | | | |
| 1 | L2 | 591 | 0.0 | 0.307 | 2.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.35 | 48.7 |
| 2 | T1 | 1 | 0.0 | 0.496 | 8.1 | LOS A | 3.0 | 21.2 | 0.79 | 0.96 | 34.0 |
| 3 | R2 | 327 | 0.0 | 0.496 | 11.8 | LOS A | 3.0 | 21.2 | 0.79 | 0.96 | 48.9 |
| Approach | | 919 | 0.0 | 0.496 | 5.7 | LOS A | 3.0 | 21.2 | 0.28 | 0.57 | 48.8 |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 4 | L2 | 240 | 0.0 | 0.926 | 27.4 | LOS B | 19.9 | 139.6 | 1.00 | 1.44 | 40.9 |
| 5 | T1 | 1105 | 0.0 | 0.926 | 28.9 | LOS C | 19.9 | 139.6 | 1.00 | 1.44 | 45.5 |
| 6 | R2 | 2 | 0.0 | 0.926 | 34.6 | LOS C | 18.4 | 129.0 | 1.00 | 1.44 | 43.3 |
| Approach | | 1347 | 0.0 | 0.926 | 28.6 | LOS C | 19.9 | 139.6 | 1.00 | 1.44 | 44.6 |
| North: Toyota Access (N) | | | | | | | | | | | |
| 7 | L2 | 5 | 0.0 | 0.050 | 11.1 | LOS A | 0.2 | 1.7 | 0.88 | 0.87 | 36.4 |
| 8 | T1 | 11 | 0.0 | 0.075 | 10.0 | LOS A | 0.4 | 3.0 | 0.90 | 0.88 | 34.1 |
| 9 | R2 | 22 | 0.0 | 0.075 | 11.1 | LOS A | 0.4 | 3.0 | 0.92 | 0.90 | 36.9 |
| Approach | | 38 | 0.0 | 0.075 | 10.8 | LOS A | 0.4 | 3.0 | 0.91 | 0.89 | 36.0 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L2 | 1 | 0.0 | 0.852 | 12.5 | LOS A | 17.2 | 120.2 | 1.00 | 0.92 | 37.7 |
| 11 | T1 | 1272 | 0.0 | 0.852 | 13.1 | LOS A | 17.2 | 120.2 | 1.00 | 0.93 | 55.6 |
| 12 | R2 | 666 | 0.0 | 0.852 | 19.6 | LOS B | 16.9 | 118.3 | 1.00 | 0.98 | 47.2 |
| Approach | | 1939 | 0.0 | 0.852 | 15.3 | LOS B | 17.2 | 120.2 | 1.00 | 0.95 | 52.4 |
| All Vehicles | | 4243 | 0.0 | 0.926 | 17.4 | LOS B | 19.9 | 139.6 | 0.84 | 1.02 | 48.7 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 Site: WOCA-FRI-FU

Analysis for S75W Submission - Proposed Scale + Kurnell Subdivision
 Signals - Fixed Time Coordinated Cycle Time = 140 seconds (User-Given Cycle Time)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|---------------|
| Mov ID | OD Mov | Demand Flows | | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue | | Prop. Queued | Effective Stop Rate | Average Speed |
| | | Total veh/h | HV % | v/c | sec | | Vehicles veh | Distance m | | per veh | km/h |
| South: Woolloomare Road (S) | | | | | | | | | | | |
| 1 | L2 | 167 | 0.0 | 0.141 | 10.7 | LOS A | 3.1 | 21.6 | 0.42 | 0.64 | 41.8 |
| 2 | T1 | 187 | 0.0 | 0.664 | 62.5 | LOS E | 12.4 | 86.5 | 1.00 | 0.83 | 28.6 |
| 3 | R2 | 20 | 0.0 | 0.084 | 53.4 | LOS D | 1.1 | 7.9 | 0.90 | 0.68 | 30.1 |
| Approach | | 374 | 0.0 | 0.664 | 38.9 | LOS C | 12.4 | 86.5 | 0.74 | 0.74 | 32.3 |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 4 | L2 | 8 | 0.0 | 0.524 | 30.0 | LOS C | 23.0 | 161.1 | 0.72 | 0.65 | 39.8 |
| 5 | T1 | 871 | 0.0 | 0.524 | 23.8 | LOS B | 23.0 | 161.1 | 0.70 | 0.62 | 38.0 |
| 6 | R2 | 183 | 0.0 | 0.482 | 15.7 | LOS B | 4.4 | 31.1 | 0.68 | 0.76 | 47.5 |
| Approach | | 1062 | 0.0 | 0.524 | 22.4 | LOS B | 23.0 | 161.1 | 0.69 | 0.64 | 39.9 |
| North: Car Park Access (N) | | | | | | | | | | | |
| 7 | L2 | 131 | 0.0 | 0.197 | 41.3 | LOS C | 6.3 | 44.3 | 0.76 | 0.76 | 35.2 |
| 8 | T1 | 93 | 0.0 | 0.402 | 93.7 | LOS F | 9.2 | 64.6 | 0.97 | 0.83 | 22.8 |
| 9 | R2 | 87 | 0.0 | 0.402 | 61.8 | LOS E | 9.2 | 64.6 | 0.97 | 0.76 | 23.8 |
| Approach | | 311 | 0.0 | 0.402 | 62.7 | LOS E | 9.2 | 64.6 | 0.88 | 0.78 | 27.5 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L2 | 44 | 0.0 | 0.047 | 6.3 | LOS A | 0.1 | 0.4 | 0.02 | 0.58 | 50.1 |
| 11 | T1 | 1499 | 0.0 | 0.761 | 1.2 | LOS A | 4.0 | 27.7 | 0.09 | 0.08 | 58.3 |
| 12 | R2 | 328 | 0.0 | 0.742 | 8.2 | LOS A | 3.2 | 22.2 | 0.23 | 0.64 | 44.4 |
| Approach | | 1871 | 0.0 | 0.761 | 2.5 | LOS A | 4.0 | 27.7 | 0.11 | 0.19 | 55.1 |
| All Vehicles | | 3618 | 0.0 | 0.761 | 17.3 | LOS B | 23.0 | 161.1 | 0.41 | 0.43 | 42.2 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians | | | | | | | | | |
|------------------------------------|---------------------|-------------|---------------|------------------|-----------------------|------------|--------------|---------------------|--|
| Mov ID | Description | Demand Flow | Average Delay | Level of Service | Average Back of Queue | | Prop. Queued | Effective Stop Rate | |
| | | ped/h | sec | | Pedestrian ped | Distance m | | per ped | |
| P1 | South Full Crossing | 50 | 25.3 | LOS C | 0.1 | 0.1 | 0.60 | 0.60 | |
| P2 | East Full Crossing | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | |
| P3 | North Full Crossing | 50 | 28.3 | LOS C | 0.1 | 0.1 | 0.64 | 0.64 | |
| P4 | West Full Crossing | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | |
| All Pedestrians | | 200 | 45.5 | LOS E | | | 0.79 | 0.79 | |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 Site: WOCA-SAT-FU

Analysis for S75W Submission - Proposed Scale + Kurnell Subdivision
 Signals - Fixed Time Coordinated Cycle Time = 140 seconds (User-Given Cycle Time)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------|------|-----------|---------------|------------------|-------------------|------------|--------------|---------------------|---------------|
| Mov ID | OD Mov | Demand Flows | | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue | | Prop. Queued | Effective Stop Rate | Average Speed |
| | | Total veh/h | HV % | v/c | sec | | Vehicles veh | Distance m | | per veh | km/h |
| South: Woolloomare Road (S) | | | | | | | | | | | |
| 1 | L2 | 135 | 0.0 | 0.104 | 8.2 | LOS A | 2.1 | 14.5 | 0.30 | 0.59 | 43.6 |
| 2 | T1 | 209 | 0.0 | 0.743 | 64.8 | LOS E | 14.3 | 99.8 | 1.00 | 0.88 | 28.1 |
| 3 | R2 | 12 | 0.0 | 0.085 | 54.2 | LOS D | 0.7 | 4.7 | 0.96 | 0.67 | 29.9 |
| Approach | | 356 | 0.0 | 0.743 | 43.0 | LOS D | 14.3 | 99.8 | 0.73 | 0.76 | 31.4 |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 4 | L2 | 12 | 0.0 | 0.441 | 36.1 | LOS C | 17.0 | 119.2 | 0.76 | 0.67 | 37.3 |
| 5 | T1 | 627 | 0.0 | 0.441 | 30.2 | LOS C | 17.0 | 119.2 | 0.75 | 0.65 | 34.6 |
| 6 | R2 | 205 | 0.0 | 0.356 | 16.4 | LOS B | 5.0 | 34.7 | 0.62 | 0.74 | 47.1 |
| Approach | | 844 | 0.0 | 0.441 | 26.9 | LOS B | 17.0 | 119.2 | 0.72 | 0.67 | 37.9 |
| North: Car Park Access (N) | | | | | | | | | | | |
| 7 | L2 | 146 | 0.0 | 0.174 | 32.8 | LOS C | 6.2 | 43.2 | 0.67 | 0.74 | 38.3 |
| 8 | T1 | 104 | 0.0 | 0.425 | 79.1 | LOS F | 8.9 | 62.0 | 1.00 | 0.53 | 25.0 |
| 9 | R2 | 98 | 0.0 | 0.425 | 63.9 | LOS E | 8.9 | 62.0 | 0.99 | 0.70 | 23.4 |
| Approach | | 348 | 0.0 | 0.425 | 55.4 | LOS D | 8.9 | 62.0 | 0.86 | 0.66 | 29.3 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L2 | 47 | 0.0 | 0.060 | 13.1 | LOS A | 0.6 | 4.0 | 0.19 | 0.61 | 43.9 |
| 11 | T1 | 1014 | 0.0 | 0.621 | 10.1 | LOS A | 12.1 | 84.5 | 0.38 | 0.34 | 48.2 |
| 12 | R2 | 363 | 0.0 | 0.573 | 6.2 | LOS A | 0.6 | 4.5 | 0.05 | 0.58 | 46.1 |
| Approach | | 1424 | 0.0 | 0.621 | 9.2 | LOS A | 12.1 | 84.5 | 0.29 | 0.41 | 47.5 |
| All Vehicles | | 2972 | 0.0 | 0.743 | 23.7 | LOS B | 17.0 | 119.2 | 0.53 | 0.55 | 38.5 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians | | | | | | | | | |
|------------------------------------|---------------------|-------------|---------------|------------------|-----------------------|------------|--------------|---------------------|--|
| Mov ID | Description | Demand Flow | Average Delay | Level of Service | Average Back of Queue | | Prop. Queued | Effective Stop Rate | |
| | | ped/h | sec | | Pedestrian ped | Distance m | | per ped | |
| P1 | South Full Crossing | 50 | 33.0 | LOS D | 0.1 | 0.1 | 0.69 | 0.69 | |
| P2 | East Full Crossing | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | |
| P3 | North Full Crossing | 50 | 36.5 | LOS D | 0.1 | 0.1 | 0.72 | 0.72 | |
| P4 | West Full Crossing | 50 | 64.3 | LOS F | 0.2 | 0.2 | 0.96 | 0.96 | |
| All Pedestrians | | 200 | 49.5 | LOS E | | | 0.83 | 0.83 | |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 **Site: WEST RETAIL-FRI-FU**

Analysis for S75W Submission - Proposed Scale + Kurnell Subdivision
 Signals - Fixed Time Isolated Cycle Time = 70 seconds (User-Given Cycle Time)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|-----------------------------|--------------------|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| East: Captain Cook Drive East | | | | | | | | | | | |
| 5 | T1 | 941 | 0.0 | 0.367 | 5.8 | LOS A | 7.2 | 50.5 | 0.48 | 0.43 | 52.5 |
| 6 | R2 | 78 | 0.0 | 0.539 | 27.0 | LOS B | 2.4 | 16.7 | 0.83 | 0.81 | 35.1 |
| Approach | | 1019 | 0.0 | 0.539 | 7.4 | LOS A | 7.2 | 50.5 | 0.51 | 0.46 | 50.6 |
| North: Retail Driveway West | | | | | | | | | | | |
| 7 | L2 | 224 | 0.0 | 0.704 | 37.7 | LOS C | 7.8 | 54.7 | 0.99 | 0.87 | 30.4 |
| 9 | R2 | 87 | 0.0 | 0.273 | 33.7 | LOS C | 2.7 | 18.8 | 0.91 | 0.76 | 37.8 |
| Approach | | 311 | 0.0 | 0.704 | 36.6 | LOS C | 7.8 | 54.7 | 0.97 | 0.84 | 32.8 |
| West: Captain Cook Drive West | | | | | | | | | | | |
| 10 | L2 | 131 | 0.0 | 0.696 | 13.7 | LOS A | 19.1 | 133.6 | 0.68 | 0.65 | 51.0 |
| 11 | T1 | 1647 | 0.0 | 0.696 | 8.1 | LOS A | 19.2 | 134.6 | 0.68 | 0.64 | 49.5 |
| Approach | | 1778 | 0.0 | 0.696 | 8.6 | LOS A | 19.2 | 134.6 | 0.68 | 0.64 | 49.7 |
| All Vehicles | | 3108 | 0.0 | 0.704 | 11.0 | LOS A | 19.2 | 134.6 | 0.66 | 0.60 | 47.3 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians | | | | | | | | | |
|------------------------------------|---------------------|-------------------|-------------------|------------------|--------------------------------------|------------|--------------|-----------------------------|--|
| Mov ID | Description | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Distance m | Prop. Queued | Effective Stop Rate per ped | |
| P2 | East Full Crossing | 50 | 29.3 | LOS C | 0.1 | 0.1 | 0.92 | 0.92 | |
| P3 | North Full Crossing | 50 | 7.8 | LOS A | 0.0 | 0.0 | 0.47 | 0.47 | |
| P4 | West Full Crossing | 50 | 29.3 | LOS C | 0.1 | 0.1 | 0.92 | 0.92 | |
| All Pedestrians | | 150 | 22.1 | LOS C | | | 0.77 | 0.77 | |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 Site: WEST RETAIL-SAT-FU

Analysis for S75W Submission - Proposed Scale + Kurnell Subdivision
 Signals - Fixed Time Isolated Cycle Time = 41 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|-----------------------------|--------------------|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| East: Captain Cook Drive East | | | | | | | | | | | |
| 5 | T1 | 671 | 0.0 | 0.336 | 6.5 | LOS A | 4.0 | 28.3 | 0.63 | 0.53 | 51.7 |
| 6 | R2 | 88 | 0.0 | 0.366 | 20.0 | LOS B | 1.6 | 11.1 | 0.85 | 0.77 | 39.0 |
| Approach | | 759 | 0.0 | 0.366 | 8.1 | LOS A | 4.0 | 28.3 | 0.65 | 0.56 | 49.8 |
| North: Retail Driveway West | | | | | | | | | | | |
| 7 | L2 | 251 | 0.0 | 0.693 | 24.5 | LOS B | 5.3 | 36.9 | 0.98 | 0.89 | 36.4 |
| 9 | R2 | 98 | 0.0 | 0.270 | 21.6 | LOS B | 1.8 | 12.4 | 0.89 | 0.75 | 43.2 |
| Approach | | 349 | 0.0 | 0.693 | 23.7 | LOS B | 5.3 | 36.9 | 0.95 | 0.85 | 38.7 |
| West: Captain Cook Drive West | | | | | | | | | | | |
| 10 | L2 | 146 | 0.0 | 0.665 | 13.9 | LOS A | 10.1 | 70.9 | 0.79 | 0.74 | 50.6 |
| 11 | T1 | 1175 | 0.0 | 0.665 | 8.4 | LOS A | 10.2 | 71.6 | 0.79 | 0.72 | 49.2 |
| Approach | | 1321 | 0.0 | 0.665 | 9.0 | LOS A | 10.2 | 71.6 | 0.79 | 0.72 | 49.4 |
| All Vehicles | | 2429 | 0.0 | 0.693 | 10.8 | LOS A | 10.2 | 71.6 | 0.77 | 0.69 | 47.5 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

| Movement Performance - Pedestrians | | | | | | | | | |
|------------------------------------|---------------------|-------------------|-------------------|------------------|--------------------------------------|------------|--------------|-----------------------------|--|
| Mov ID | Description | Demand Flow ped/h | Average Delay sec | Level of Service | Average Back of Queue Pedestrian ped | Distance m | Prop. Queued | Effective Stop Rate per ped | |
| P2 | East Full Crossing | 50 | 15.0 | LOS B | 0.0 | 0.0 | 0.86 | 0.86 | |
| P3 | North Full Crossing | 50 | 10.3 | LOS B | 0.0 | 0.0 | 0.71 | 0.71 | |
| P4 | West Full Crossing | 50 | 15.0 | LOS B | 0.0 | 0.0 | 0.86 | 0.86 | |
| All Pedestrians | | 150 | 13.4 | LOS B | | | 0.81 | 0.81 | |

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: Z:\Jobs\2015\15084\MTE SIDRA\15 06 10\15 06 10 WBTC + Kurnell + Existing.sip6.sip6

MOVEMENT SUMMARY

 Site: RES-FRI-FU

Analysis for S75W Submission - Proposed Scale + Kurnell Subdivision
 Signals - Fixed Time Isolated Cycle Time = 120 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|-----------------------------|--------------------|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| East: Captain Cook Drive East | | | | | | | | | | | |
| 5 | T1 | 1115 | 0.0 | 0.336 | 2.0 | LOS A | 6.7 | 46.7 | 0.23 | 0.21 | 67.4 |
| Approach | | 1115 | 0.0 | 0.336 | 2.0 | LOS A | 6.7 | 46.7 | 0.23 | 0.21 | 67.4 |
| North: RoadName | | | | | | | | | | | |
| 7 | L2 | 19 | 0.0 | 0.205 | 64.5 | LOS E | 1.1 | 7.9 | 0.99 | 0.70 | 23.6 |
| 9 | R2 | 47 | 0.0 | 0.506 | 66.4 | LOS E | 2.9 | 20.2 | 1.00 | 0.74 | 23.3 |
| Approach | | 66 | 0.0 | 0.506 | 65.9 | LOS E | 2.9 | 20.2 | 1.00 | 0.73 | 23.4 |
| West: Captain Cook Drive West | | | | | | | | | | | |
| 10 | L2 | 168 | 0.0 | 0.584 | 9.2 | LOS A | 16.3 | 114.3 | 0.32 | 0.38 | 41.1 |
| 11 | T1 | 1759 | 0.0 | 0.584 | 2.8 | LOS A | 16.5 | 115.2 | 0.32 | 0.34 | 65.8 |
| Approach | | 1927 | 0.0 | 0.584 | 3.4 | LOS A | 16.5 | 115.2 | 0.32 | 0.34 | 62.5 |
| All Vehicles | | 3108 | 0.0 | 0.584 | 4.2 | LOS A | 16.5 | 115.2 | 0.30 | 0.30 | 61.9 |

Level of Service (LOS) Method: Delay (RTA NSW).
 Vehicle movement LOS values are based on average delay per movement
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

 Site: RES-SAT-FU

Analysis for S75W Submission - Proposed Scale + Kurnell Subdivision
 Signals - Fixed Time Isolated Cycle Time = 120 seconds (Optimum Cycle Time - Minimum Delay)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|-----------------------------|--------------------|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| East: Captain Cook Drive East | | | | | | | | | | | |
| 5 | T1 | 866 | 0.0 | 0.261 | 1.8 | LOS A | 4.8 | 33.3 | 0.21 | 0.19 | 67.6 |
| Approach | | 866 | 0.0 | 0.261 | 1.8 | LOS A | 4.8 | 33.3 | 0.21 | 0.19 | 67.6 |
| North: RoadName | | | | | | | | | | | |
| 7 | L2 | 4 | 0.0 | 0.043 | 62.9 | LOS E | 0.2 | 1.6 | 0.97 | 0.63 | 23.9 |
| 9 | R2 | 9 | 0.0 | 0.097 | 63.8 | LOS E | 0.5 | 3.7 | 0.98 | 0.66 | 23.7 |
| Approach | | 13 | 0.0 | 0.097 | 63.5 | LOS E | 0.5 | 3.7 | 0.98 | 0.65 | 23.7 |
| West: Captain Cook Drive West | | | | | | | | | | | |
| 10 | L2 | 34 | 0.0 | 0.408 | 8.5 | LOS A | 8.8 | 61.9 | 0.25 | 0.25 | 41.7 |
| 11 | T1 | 1318 | 0.0 | 0.408 | 2.2 | LOS A | 8.9 | 62.1 | 0.25 | 0.24 | 67.0 |
| Approach | | 1352 | 0.0 | 0.408 | 2.3 | LOS A | 8.9 | 62.1 | 0.25 | 0.24 | 66.0 |
| All Vehicles | | 2231 | 0.0 | 0.408 | 2.5 | LOS A | 8.9 | 62.1 | 0.24 | 0.22 | 65.9 |

Level of Service (LOS) Method: Delay (RTA NSW).
 Vehicle movement LOS values are based on average delay per movement
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

 Site: CAGA-FRI-FU

Analysis for S75W Submission - Proposed Scale + Kurnell Subdivision Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------|------|-----------|---------------|------------------|-------------------|--------------|---------------------|---------------|------|
| Mov ID | OD Mov | Demand Flows | | Deg. Satn | Average Delay | Level of Service | 95% Back of Queue | Prop. Queued | Effective Stop Rate | Average Speed | |
| | | Total veh/h | HV % | v/c | sec | | Vehicles veh | Distance m | per veh | km/h | |
| South: Gannons Rd (S) | | | | | | | | | | | |
| 1 | L2 | 275 | 0.0 | 0.143 | 2.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.38 | 48.3 |
| 2 | T1 | 3 | 0.0 | 0.419 | 7.4 | LOS A | 2.5 | 17.4 | 0.74 | 0.92 | 34.2 |
| 3 | R2 | 310 | 0.0 | 0.419 | 11.1 | LOS A | 2.5 | 17.4 | 0.74 | 0.92 | 36.4 |
| Approach | | 588 | 0.0 | 0.419 | 7.2 | LOS A | 2.5 | 17.4 | 0.39 | 0.67 | 41.0 |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 4 | L2 | 307 | 0.0 | 0.734 | 7.7 | LOS A | 7.2 | 50.7 | 0.92 | 1.15 | 34.7 |
| 5 | T1 | 867 | 0.0 | 0.734 | 6.8 | LOS A | 7.6 | 53.5 | 0.92 | 1.14 | 28.4 |
| 6 | R2 | 1 | 0.0 | 0.734 | 9.2 | LOS A | 7.6 | 53.5 | 0.92 | 1.14 | 30.0 |
| Approach | | 1175 | 0.0 | 0.734 | 7.0 | LOS A | 7.6 | 53.5 | 0.92 | 1.14 | 29.8 |
| North: Toyota Access (N) | | | | | | | | | | | |
| 7 | L2 | 12 | 0.0 | 0.101 | 13.8 | LOS A | 0.6 | 3.9 | 0.94 | 0.94 | 27.4 |
| 8 | T1 | 41 | 0.0 | 0.451 | 16.4 | LOS B | 3.0 | 21.3 | 0.98 | 1.07 | 32.0 |
| 9 | R2 | 94 | 0.0 | 0.451 | 19.9 | LOS B | 3.0 | 21.3 | 1.00 | 1.12 | 27.3 |
| Approach | | 147 | 0.0 | 0.451 | 18.4 | LOS B | 3.0 | 21.3 | 0.99 | 1.09 | 28.5 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L2 | 5 | 0.0 | 0.976 | 26.8 | LOS B | 47.1 | 329.5 | 1.00 | 2.00 | 25.0 |
| 11 | T1 | 1701 | 0.0 | 0.976 | 27.9 | LOS B | 47.1 | 329.5 | 1.00 | 2.05 | 24.4 |
| 12 | R2 | 567 | 0.0 | 0.976 | 34.6 | LOS C | 45.3 | 316.8 | 1.00 | 2.18 | 28.5 |
| Approach | | 2273 | 0.0 | 0.976 | 29.6 | LOS C | 47.1 | 329.5 | 1.00 | 2.08 | 25.3 |
| All Vehicles | | 4183 | 0.0 | 0.976 | 19.7 | LOS B | 47.1 | 329.5 | 0.89 | 1.59 | 28.1 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 Site: **CAGA-SAT-FU**

Analysis for S75W Submission - Proposed Scale + Kurnell Subdivision Roundabout

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|--------|--------------------------|------|---------------|-------------------|------------------|--------------------------------|------------|--------------|-----------------------------|--------------------|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: Gannons Rd (S) | | | | | | | | | | | |
| 1 | L2 | 561 | 0.0 | 0.291 | 2.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.35 | 48.7 |
| 2 | T1 | 1 | 0.0 | 0.522 | 9.4 | LOS A | 3.4 | 23.6 | 0.83 | 0.99 | 33.6 |
| 3 | R2 | 311 | 0.0 | 0.522 | 13.1 | LOS A | 3.4 | 23.6 | 0.83 | 0.99 | 48.1 |
| Approach | | 873 | 0.0 | 0.522 | 6.2 | LOS A | 3.4 | 23.6 | 0.29 | 0.58 | 48.5 |
| East: Captain Cook Drive (E) | | | | | | | | | | | |
| 4 | L2 | 223 | 0.0 | 0.969 | 50.2 | LOS D | 31.1 | 217.5 | 1.00 | 1.85 | 32.7 |
| 5 | T1 | 1212 | 0.0 | 0.969 | 48.5 | LOS D | 33.8 | 236.9 | 1.00 | 1.85 | 36.7 |
| 6 | R2 | 1 | 0.0 | 0.969 | 52.2 | LOS D | 33.8 | 236.9 | 1.00 | 1.85 | 35.9 |
| Approach | | 1436 | 0.0 | 0.969 | 48.8 | LOS D | 33.8 | 236.9 | 1.00 | 1.85 | 36.0 |
| North: Toyota Access (N) | | | | | | | | | | | |
| 7 | L2 | 5 | 0.0 | 0.024 | 14.1 | LOS A | 0.1 | 0.9 | 0.92 | 0.82 | 35.4 |
| 8 | T1 | 10 | 0.0 | 0.109 | 11.6 | LOS A | 0.7 | 4.8 | 0.97 | 0.96 | 33.3 |
| 9 | R2 | 21 | 0.0 | 0.109 | 14.2 | LOS A | 0.7 | 4.8 | 0.97 | 0.96 | 36.0 |
| Approach | | 36 | 0.0 | 0.109 | 13.5 | LOS A | 0.7 | 4.8 | 0.96 | 0.94 | 35.1 |
| West: Captain Cook Drive (W) | | | | | | | | | | | |
| 10 | L2 | 1 | 0.0 | 0.864 | 14.7 | LOS B | 18.2 | 127.3 | 1.00 | 0.98 | 36.9 |
| 11 | T1 | 1359 | 0.0 | 0.864 | 14.2 | LOS A | 18.3 | 128.3 | 1.00 | 0.96 | 54.4 |
| 12 | R2 | 633 | 0.0 | 0.864 | 17.8 | LOS B | 18.3 | 128.3 | 1.00 | 0.91 | 48.7 |
| Approach | | 1993 | 0.0 | 0.864 | 15.4 | LOS B | 18.3 | 128.3 | 1.00 | 0.94 | 52.5 |
| All Vehicles | | 4338 | 0.0 | 0.969 | 24.6 | LOS B | 33.8 | 236.9 | 0.86 | 1.17 | 44.8 |

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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