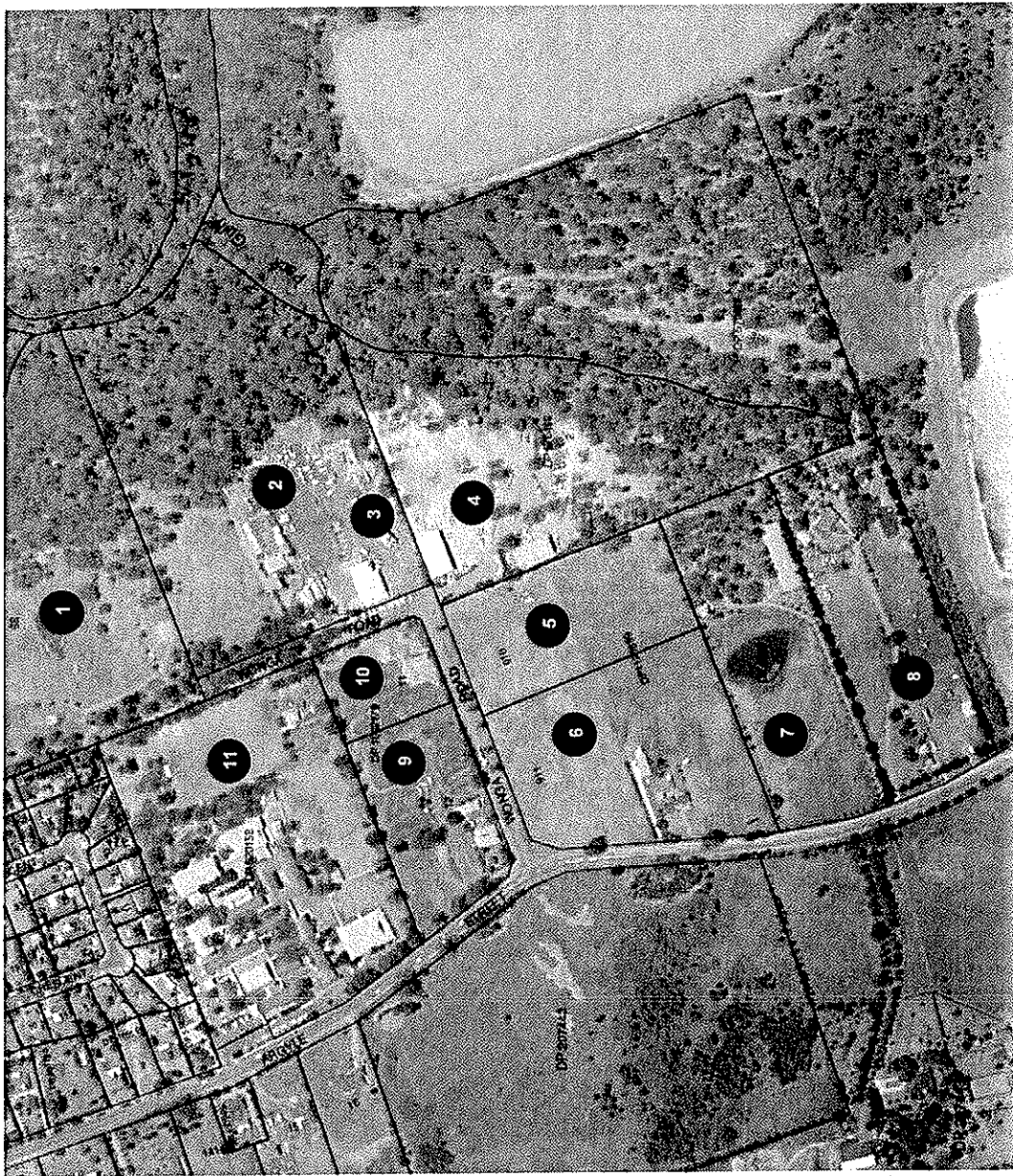


APPENDICES

Appendix A:
Wonga Road Precinct Consideration for
Possible Future Developments



WONGA ROAD PRECINCT – CONSIDERATIONS RE POSSIBLE FUTURE DEVELOPMENTS

v2, for Executive Meeting 21 Oct 10

#	Land & Owner	Area	Zoning	Classification	Use	Issues
1	Lot 68 DP 3007 – WSC Plus 42/246487, 9/590597, 3/559222, 6/574093	8.50 ha	<u>Now:</u> 6(a) Open Space “A” (Recreation) <u>Proposed:</u> In DWLEP 2009: RE1 Public Recreation	<u>Now:</u> Community <u>Proposed:</u> Mostly Community and southern part Operational	<u>Now:</u> Open Space but mainly inaccessible due to vegetation and mounds of uncontrolled fill <u>Proposed:</u> Majority Public Recreation, Southern area for Access, maneuvering and parking for WSC Depot and High School	- Northern parts previously used as landfill, Picton Sewerage Scheme (PSS) contractors dump and effluent disposal (sanitary depot) - Investigations and remediation needed before can be used for sporting fields - Area includes proposed environmental conservation zone - Proximity to Wollondilly Leisure Centre - Residences to the west - Depot permissible with consent in RE1 zone with DWLEP 2009
2	Lot 1 DP 1118401 – WSC (ie part of Lot 67 DP 3007)	5.11 ha	<u>Now:</u> part 5(a) Special Uses “A” – Sanitary Purposes, part 6(a) <u>Proposed:</u> In DWLEP 2009: IN2 Light Industrial	<u>Now:</u> part Operational, part Community <u>Proposed:</u> Operational	<u>Now:</u> Nursery & Animal Shelter <u>Proposed:</u> Council Works Depot, Nursery & Animal Shelter, Access, maneuvering and parking for plant, equipment, vehicles	- Depot prohibited on Community Land, so need reclassification to Operational - Boundary adjustment needed - Depot prohibited in 6(a) zone. OK in proposed WLEP 2009 IN2 - Parts ex PSS dump & sani depot - Investigations and remediation needed - Area includes proposed environmental conservation zone - Some upgrading of intersection - Remembrance/Wonga may be required for depot

#	Land & Owner	Area	Zoning	Classification	Use	Issues
3	Lot 1 DP 1118401 – WSC lease to Thiess (ie part of Lot 67 DP 3007)	1.67 ha	<u>Now:</u> 5(a) Special Uses <u>Proposed:</u> In DWLEP 2009: IN2 Light Industrial,	<u>Now:</u> Operational <u>Proposed:</u> No change - Operational	<u>Now:</u> Waste Services depot, workshop, transfer station, office <u>Proposed:</u> To be discussed with Thiess initially	• A Masterplan and various studies will be needed • Leased until 2012 • Lease generates significant income for Council • Thiess plans beyond 2012 unknown • Area includes proposed environmental conservation zone • Most of the currently leased land is expected to be suitable for constructing buildings • A Masterplan and various studies will be needed • Approval for waste transfer station
4	Lot 2 DP 570466 – Godfrey	5.429 ha	<u>Now:</u> 1(a3) Rural <u>Proposed:</u> In DWLEP 2009: RU2 Rural Landscape		<u>Now:</u> Earthworks contractors depot. Approval for retail nursery and wholesale sand & soil supply (Godfreys Sand and Soil)	• Potential for future employment generating development if rezoned IN2 • Invited to meeting at WSC 29 Oct 10
5	Lot 910 DP 1121899 – Picton Bus Lines	2.013 ha	<u>Now:</u> 1(a3) Rural <u>Proposed:</u> In DWLEP 2009:		<u>Now:</u> DA D527-07P5 Deferred Commencement Consent on 15 June 2009 for Bus Depot. Applicant Williams	• Applicant to register drainage easement over Lot 2 DP 570466 (Godfrey's) • Applicant to construct roadworks on Remembrance Dr & Wonga Rd

#	Land & Owner	Area	Zoning	Classification	Use	Issues
			RU2 Rural Landscape		River Steel	- Bus depot will not occupy entire area of lot 910, therefore potential to accommodate additional employment uses on site if rezoned to IN2 - Invited to meeting at WSC 29 Oct 10.
6	Lot 911 DP 1121899 - (SE corner Remembrance & Wonga) - Picton Bus Lines Same owner as # 5 above	3.138 ha	<u>Now:</u> 1(a3) Rural <u>Proposed:</u> In DWLEP 2009: RU2 Rural Landscape		<u>Now:</u> Residence	- Potential for future employment generating development if rezoned IN2 - Invited to meeting at WSC 29 Oct 10
7	Lot 11 DP 3007 - Walker	3.001 ha	<u>Now:</u> 1(a3) Rural <u>Proposed:</u> In DWLEP 2009: RU2 Rural Landscape		<u>Now:</u> Residence	- Owners have expressed concerns - Wants rezoning to IN2 ? - Invited to meeting at WSC 29 Oct 10
8	Lot 1 DP570466 - Kalpaxis	10.31 ha	<u>Now:</u> 1(a3) Rural <u>Proposed:</u> In DWLEP 2009: RU2 Rural Landscape		<u>Now:</u> Residence	- Potential for future employment generating development if rezoned IN2 - Invited to meeting at WSC 29 Oct 10
9	Lot 12 DP 1092179 - (NE corner	1.71 ha	<u>Now:</u> 1(a3) Rural		<u>Now:</u> Residence	Potential for future employment generating development if rezoned IN2

#	Land & Owner	Area	Zoning	Classification	Use	Issues
	Remembrance Wonga - Hilder		<u>Proposed:</u> In DWLEP 2009: RU2 Rural Landscape			Invited to meeting at WSC 29 Oct 10
10	Lot 11 DP 1092179 – Picton Gospel Trust	0.808 4 ha	<u>Now:</u> 1(a3) Rural <u>Proposed:</u> In DWLEP 2009: RU2 Rural Landscape		<u>Now:</u> Church under construction. Capacity 630 persons?, 132 car parking spaces	- Expect most traffic to Church will generally occur outside normal school and business hours - Invited to meeting at WSC 29 Oct 10
11	Lot 2 DP 520158 – NSW Gov	5.691 ha	<u>Now:</u> 5(a) Special Uses <u>Proposed:</u> In DWLEP 2009: R2 Low Density Residential		<u>Now:</u> Picton High School	- Safety issues due to access & parking on Remembrance Drive - Trade School \$2m grant received - Hospitality TTC grant awaiting determination - Centre for DYP proposed - Junior & Senior campuses proposed - Facilities for outreach support programs proposed - Site area inadequate for proposed future facilities - Expect major upgrading of intersection Remembrance & Wonga (R&W) would be required if access to school from Wonga - Additional land will be required to enable upgrading of the R&W intersection - Traffic Modelling to 2036 needs to be reviewed by Gabites Porter re the R&W intersection (SP/RW)

#	Land & Owner	Area	Zoning	Classification	Use	Issues
						• SP will commission Cardno for Design of the R&W Intersection

Appendix B

Calculation of Short and Long Term Traffic Movements

Figure B1: Per Cent Distribution of Existing Traffic Entering and Leaving Wonga Road (16 Nov 2005)

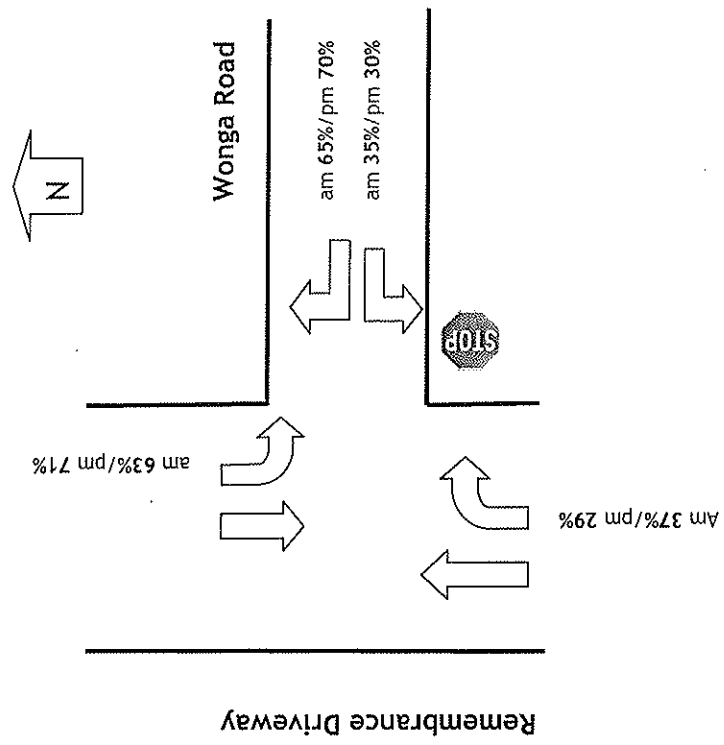


Table B2: Short Term Traffic Impacts – Morning Peak

Road	Turning Movement	2005 AM			2015 AM Increase			2015 Total	
		Existing Traffic	Turning %	HV% Count	HV Count	Traffic Increase*	HV% of Increase**	Final Traffic Count	HV% Count
Remembrance Dr (N)	L	15	63%	10%	2	178	27%	193	26%
	T	294	0	10%	29	0	0	294	10%
Remembrance Dr (S)	T	457	0	10%	46	0	0	457	10%
	R	9	38%	10%	1	107	27%	116	26%
Wonga Rd (E)	L	8	35%	10%	1	38	51%	46	44%
	R	15	65%	10%	2	70	51%	85	44%
Totals		798			80	392		1190	

* Traffic distributed according to turning %

**Heavy Vehicle movements for future traffic flows determined using Table 4

Table B3: Short Term Traffic Impacts – Afternoon Peak

Road	Turning Movement	2005 PM			2015 PM Increase			2015 Total	
		Existing Traffic	Turning %	HV% Count	HV Count	Traffic Increase*	HV% of Increase**	Final Traffic Count	HV% Count
Remembrance Dr (N)	L	12	71%	10%	1	76	51%	88	46%
	T	484	0	10%	48	0	0	484	10%
Remembrance Dr (S)	T	379	0	10%	38	0	0	379	10%
	R	5	29%	10%	1	32	51%	37	46%
Wonga Rd (E)	L	9	30%	10%	1	85	27%	94	25%
	R	21	70%	10%	2	199	27%	220	25%
Totals		798			91	392		1302	

* Traffic distributed according to turning %

**Heavy Vehicle movements for future traffic flows determined using Table 4

Table B4: Long Term Traffic Impacts – Morning Peak

Road	Turning Movement	2005 AM			2036 AM Increase			2036 Total	
		Existing Traffic	Turning %	HV %	HV Count	Traffic Increase	HV% of Increase	Final Traffic Count	HV%
Remembrance Dr (N)	L	15	63%	10%	2	253	20%	268	19%
	T	294	0	10%	29	197	10%	491	10%
Remembrance Dr (S)	T	457	0	10%	46	306	10%	763	10%
	R	9	38%	10%	1	152	20%	161	19%
Wonga Rd (E)	L	8	35%	10%	1	46	43%	54	38%
	R	15	65%	10%	2	85	43%	100	38%
Totals		798			80	1038	0%	1836	

* Traffic distributed according to turning %

**Heavy Vehicle movements for future traffic flows determined using Table 4

Table B5: Long Term Traffic Impacts – Afternoon Peak

Road	Turning Movement	2005 PM			2036 PM Increase			2036 Total	
		Existing Traffic	Turning %	HV %	HV Count	Traffic Increase	HV% of Increase	Final Traffic Count	HV%
Remembrance Dr (N)	L	12	71%	10%	1	92	43%	104	39%
	T	484	0	10%	48	324		808	10%
Remembrance Dr (S)	T	379	0	10%	38	254		633	10%
	R	5	29%	10%	1	39	43%	44	39%
Wonga Rd (E)	L	9	30%	10%	1	121	20%	130	19%
	R	21	70%	10%	2	283	20%	304	19%
Totals		798			91	1113		2023	

* Traffic distributed according to turning %

**Heavy Vehicle movements for future traffic flows determined using Table 4

Appendix C:
Sensitivity Test

Sensitivity Analysis:

Table C1 - Short Term

Option	Peak Hour	Comments	Remembrance Dr, Right Turn	Wonga Rd, Left Turn	Wonga Rd, Right Turn
1 (Existing STOP)	AM	Intersection adequate	LoS A, Q 5m	LoS F, Q 58m	LoS F, Q 58m
	PM	Intersection adequate	LoS A, Q 2m	LoS C, Q 57m	LoS C, Q 57m
2 (Modified STOP)	AM	Intersection adequate	LoS A, Q 3m	LoS B, Q 3m	LoS C, Q 12m
	PM	Intersection adequate	LoS A, Q 2m	LoS B, Q 6m	LoS C, Q 33m
3 (Traffic Signals)	AM	Intersection adequate	LoS B, Q 15m	LoS B, Q 6m	LoS B, Q 11m
	PM	Intersection adequate	LoS B, Q 5m	LoS B, Q 13m	LoS B, Q 31m
4 (Roundabout)	AM	Intersection adequate	LoS A, Q 32m	LoS A, Q 8m	LoS A, Q 8m
	PM	Intersection adequate	LoS A, Q 26m	LoS A, Q 21m	LoS A, Q 21m
5 (Seagull)	AM	Intersection adequate	LoS A, Q 5m	LoS B, Q 3m	LoS B, Q 4m
	PM	Intersection adequate	LoS A, Q 2m	LoS A, Q 6m	LoS A, Q 10m

LoS – Level of Service, Q – Queue Length (m)

Table C2 - Long Term

Option		Comments	Remembrance Dr, Right Turn	Wonga Rd, Left Turn	Wonga Rd, Right Turn
1 (Existing STOP)	AM	Intersection fails due to Wonga Rd Traffic	LoS A, Q 9m	LoS F, Q 159m	LoS F, Q 159m
	PM	Intersection fails due to Wonga Rd Traffic	LoS B, Q 4m	LoS F, Q 1277m	LoS F, Q 1277m
2 (Modified STOP)	AM	Intersection fails due to Right Turn Wonga Rd	LoS A, Q 9m	LoS B, Q 4m	LoS B, Q 80m
	PM	Intersection fails due to Right Turn Wonga Rd	LoS B, Q 4m	LoS C, Q 18m	LoS B, Q 812m
3 (Traffic Signals)	AM	Intersection adequate	LoS B, Q 28m	LoS B, Q 10m	LoS B, Q 19m
	PM	Intersection adequate	LoS C, Q 10m	LoS B, Q 28m	LoS C, Q 70m
4 (Roundabout)	AM	Intersection adequate	LoS A, Q 72m	LoS A, Q 11m	LoS B, Q 11m
	PM	Intersection adequate	LoS A, Q 64m	LoS B, Q 61m	LoS B, Q 61m
5 (Seagull)	AM	Intersection adequate	LoS A, Q 9m	LoS B, Q 4m	LoS B, Q 6m
	PM	Intersection adequate	LoS B, Q 4m	LoS C, Q 18m	LoS B, Q 25m

LoS – Level of Service, Q – Queue Length (m)

Appendix D:

Interpretation of Levels of Service

The following table for the interpretation of Level of Service has been extracted from the RTA Guide to Traffic Generating Developments Table 4.2 Levels of Service Criteria for Intersections.

Level of service criteria for intersections	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabouts	Give Way & Stop Signs
A	< 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays & Spare Capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode	At capacity, requires other control mode

Appendix E:
SIDRA Results

Appendix F:

**Remembrance Driveway/Wonga
Road Proposed Intersection
Configuration**