KUR-World

Appendix 13

Transport Modelling Data

Environmental Impact Statement

KUR-World

Appendix 13a

Traffic Count Survey Data

Environmental Impact Statement

Traffic Count Site Summary

[for tube counters]

STREET NAME :	Barnwell Road	LOCATION:	300m South of Kingfisher Drive <60>
SUBURB:	Kuranda	START DATE :	Wednesday 10 May 2017
FILE NAME :	13356-1 BCC NS.txt	FINISH DATE :	Tuesday 23 May 2017
SITE ID NUMBER :	1	SPEED ZONE :	60
PREPARED BY :	Austraffic	ROAD CLASSIFICATION:	
DATE:	06/12/2017		
SIGNATURE:			

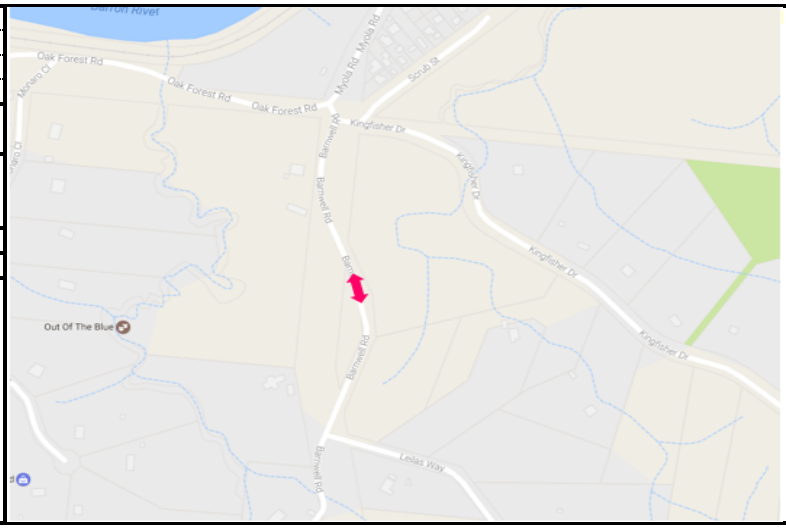
		DIRECTION OF TRAVEL		
		TWO-WAY	Northbound	Southbound
TRAFFIC VOLUME: [VEH/DAY]	Week Days Only Average	74	37	37
	Total Survey Average	69	34	35
WEEK DAY PEAK HOUR VOLUME: AM	7:00	8	4	4
PM	14:00	7	3	4
PEAK DAY		Fri 19 May 2017	Fri 19 May 2017	Fri 19 May 2017
PEAK DAY VOLUME		97	48	49
WEEKDAY PACE	15Kph Pace Starts	41	38	42
	% Pace Volume	72%	76%	73%
TOTAL SPEEDS: Km/Hr	85th Percentile	54	51	57
	Average	46.7	44.4	48.9
95th Percentile	Wednesday 10/05/17	57.1	53.0	59.1
	Thursday 11/05/17	65.6	51.6	66.8
	Friday 12/05/17	58.0	54.2	59.0
	Saturday 13/05/17	63.2	53.0	65.8
	Sunday 14/05/17	59.0	58.3	59.0
	Monday 15/05/17	57.0	56.0	57.3
	Tuesday 16/05/17	59.8	53.5	60.5
CLASSIFICATION % *:	Week Days CLASS 1 %	88.5%	89.5%	87.5%
	Week Days Commercial	4.6%	3.5%	5.7%

NOTES : (OBSERVATIONS)

* CLASS 1 - Short Vehicles up to 5.5m
Commercial - Classes 3 to 12 inclusive

Automatic Traffic Counts - Site Data

Site No:	1
Date:	Wednesday 10 May 2017
Start Time:	0:00
Officer:	ATS
Road:	Barnwell Road
Suburb:	Kuranda
LOCATION: 300m South of Kingfisher Drive <60>	
Map Ref:	S16.810864, E145.605445
Comments:	



North Point

Traffic Count Site Summary

[for tube counters]

STREET NAME :	Kennedy Highway	LOCATION:	approx 240m North of Greenhills Road <60>
SUBURB:	Kuranda	START DATE :	Wednesday 10 May 2017
FILE NAME :	13356-2 BCC NS.txt	FINISH DATE :	Tuesday 23 May 2017
SITE ID NUMBER :	2	SPEED ZONE :	60
PREPARED BY :	Austraffic	ROAD CLASSIFICATION:	
DATE:	06/12/2017		
SIGNATURE:			

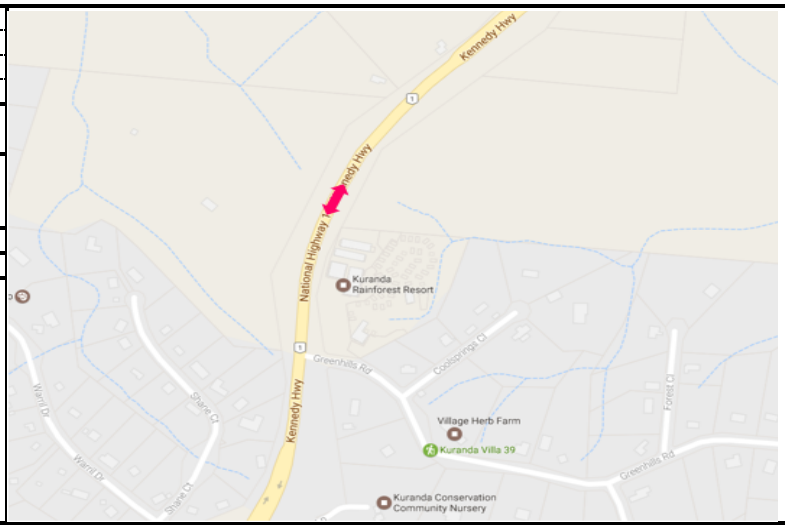
		DIRECTION OF TRAVEL		
		TWO-WAY	Northbound	Southbound
TRAFFIC VOLUME: [VEH/DAY]	Week Days Only Average	8,262	4,129	4,133
	Total Survey Average	8,109	4,052	4,056
WEEK DAY PEAK HOUR VOLUME: AM	8:00	641	406	249
PM	16:00	718	308	410
PEAK DAY		Fri 12 May 2017	Fri 12 May 2017	Fri 12 May 2017
PEAK DAY VOLUME		9086	4535	4551
WEEKDAY PACE	15Kph Pace Starts	63	62	66
	% Pace Volume	72%	80%	67%
TOTAL SPEEDS: Km/Hr	85th Percentile	78	75	80
	Average	71.0	69.4	72.5
95th Percentile	Wednesday 10/05/17	82.0	79.0	84.0
	Thursday 11/05/17	82.0	79.0	84.0
	Friday 12/05/17	83.0	79.0	84.0
	Saturday 13/05/17	83.0	79.0	84.0
	Sunday 14/05/17	83.0	79.0	84.0
	Monday 15/05/17	83.0	79.0	84.0
	Tuesday 16/05/17	83.0	79.0	84.0
CLASSIFICATION % *:	Week Days CLASS 1 %	86.1%	89.7%	82.5%
	Week Days Commercial	11.8%	8.0%	15.5%

NOTES : (OBSERVATIONS)

* CLASS 1 - Short Vehicles up to 5.5m
Commercial - Classes 3 to 12 inclusive

Automatic Traffic Counts - Site Data

Site No:	2
Date:	Wednesday 10 May 2017
Start Time:	0:00
Officer:	ATS
Road:	Kennedy Highway
Suburb:	Kuranda
LOCATION: approx 240m North of Greenhills Road <60>	
Map Ref:	S16.826989, E145.621904
Comments:	



North Point

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Appendix 13b

Intersection Count Survey Data

Environmental Impact Statement

AUSTRAFFIC VIDEO INTERSECTION COUNT

Site No.: 4 **Weather:** Fine

Location: Myola Road/Barnwell Road, Kuranda

Day/Date: Wednesday, 10 May 2017

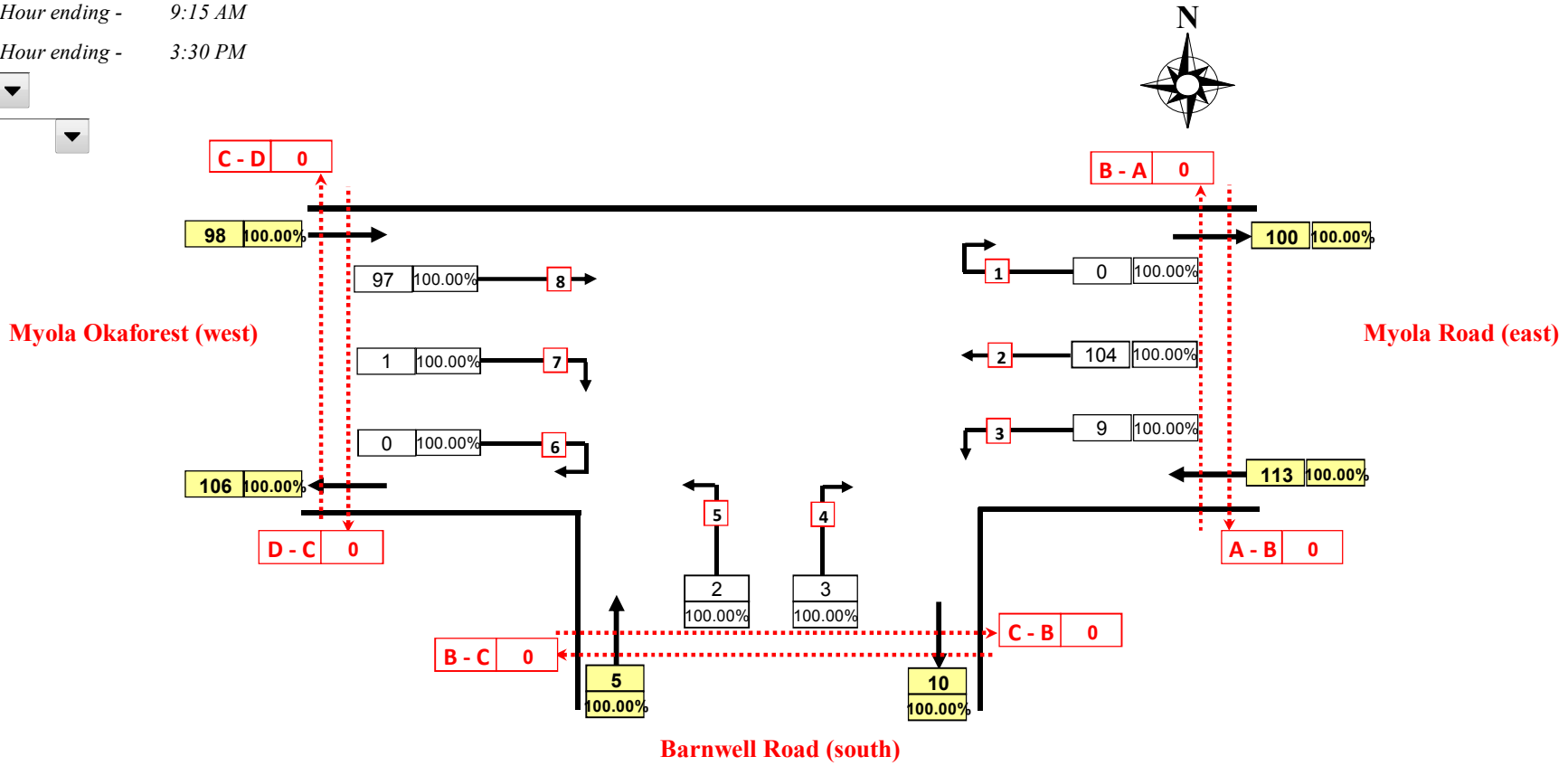
Summary: 14 Hour Volumes : *6:00 AM to 8:00 PM*

AM Peak : *Hour ending - 9:15 AM*

PM Peak : *Hour ending - 3:30 PM*

Hour Ending: 3:30 PM

Classification: Total Vehicles



Note: 3.28% = proportion of selected vehicle classification as a percentage of total vehicles

AUSTRAFFIC VIDEO INTERSECTION COUNT

Site No.: 4 **Weather:** Fine

Location: Myola Road/Barnwell Road, Kuranda

Day/Date: Wednesday, 10 May 2017

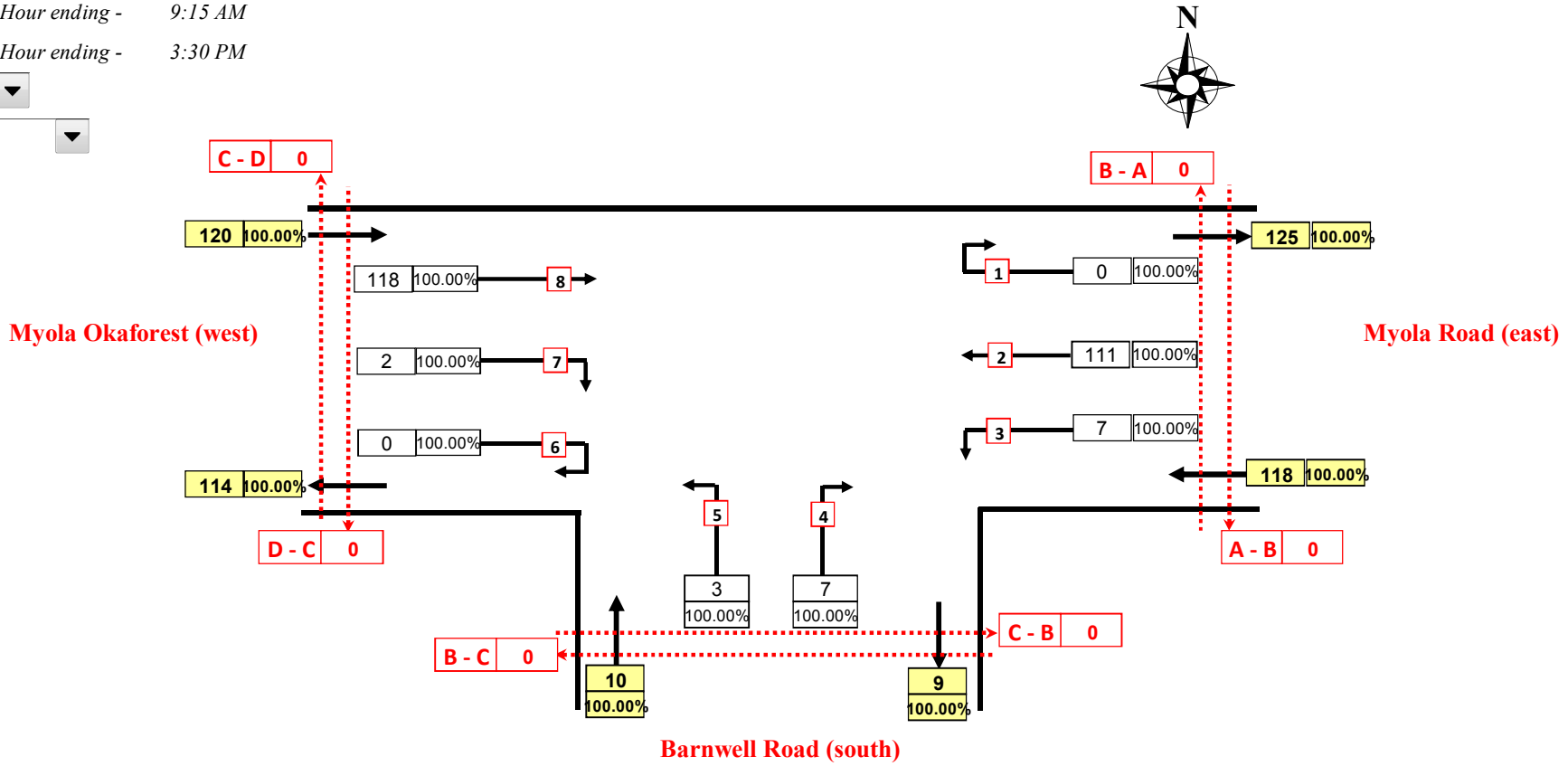
Summary: 14 Hour Volumes : *6:00 AM to 8:00 PM*

AM Peak : *Hour ending - 9:15 AM*

PM Peak : *Hour ending - 3:30 PM*

Hour Ending: 9:15 AM

Classification: Total Vehicles



Note: 3.28% = proportion of selected vehicle classification as a percentage of total vehicles

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Appendix 13c

Crash Data

Environmental Impact Statement

Crash Reference Number	Crash Severity	Year	Month	Day of Week	Hour	Crash Nature	Crash Type	Longitude (GDA94)	Latitude (GDA94)	Street	Intersection Street	Suburb	LGA Area	Post Code	Controlling Authority	Roadway Feature	Traffic Control	Speed Limit	Road Surface Condition	Atmospheric Condition	Lighting Condition	Road Horizontal Alignment	Vertical Alignment	DCA Code	DCA Description	DCA Group Description	Casualty Fatality Count	Casualty Hospitalised Count	Casualty MedicallyTreated Count	Casualty Minor Injury Count	Casualty Total Count	Car Count	Motorcycle Count	Truck Count	Bus Count	Bicycle Count	Pedestrian Count	Other Count
250731	Hospitalisation	2012	October	Thursday	16	Overturned	Single Vehicle	145.5962	-16.8696	Kennedy Hwy		Speewah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Curved - view open	Level	803	Off Path-Curve: Off Cway Rt Bend Hit Obj	Off carriageway on curve hit object	0	1	0	0	1	1	0	0	0	0	0	0
255636	Hospitalisation	2013	March	Sunday	21	Rear-end	Multi-Vehicle	145.5693	-16.889	Kennedy Hwy	Palm Vly Rd	Koah	Mareeba Shire	4881	State-controlled	Intersection - T-Junction	No traffic control	100 - 110 km/h	Sealed - Wet	Raining	Darkness - Not lighted	Curved - view open	Level	303	Veh'S Same Direction: Right Rear	Rear-end	0	1	0	1	2	2	0	0	0	0	0	0
263962	Hospitalisation	2013	November	Sunday	5	Hit object	Single Vehicle	145.601	-16.8572	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Dawn/Dusk	Straight	Level	703	Off Path-Straight: Left Off Cway Hit Obj	Off carriageway on straight hit object	0	1	0	0	1	1	0	0	0	0	0	0
272468	Hospitalisation	2014	July	Saturday	18	Hit object	Single Vehicle	145.601	-16.8599	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Dawn/Dusk	Straight	Dip	804	Off Path-Curve: Off Cway Lt Bend Hit Obj	Off carriageway on curve hit object	0	1	0	0	1	1	0	0	0	0	0	0
281464	Hospitalisation	2015	April	Monday	18	Rear-end	Multi-Vehicle	145.6086	-16.844	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Wet	Clear	Dawn/Dusk	Straight	Dip	301	Veh'S Same Direction: Rear End	Rear-end	0	1	1	0	2	3	0	0	0	0	0	0
282955	Hospitalisation	2015	May	Sunday	15	Hit object	Single Vehicle	145.5993	-16.8648	Kennedy Hwy		Speewah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Straight	Grade	704	Off Path-Straight:Right Off Cway Hit Obj	Off carriageway on straight hit object	0	1	0	0	1	1	0	0	0	0	0	0
286378	Hospitalisation	2015	September	Saturday	15	Sideswipe	Multi-Vehicle	145.5911	-16.8706	Kennedy Hwy		Speewah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	201	Veh'S Opposite Approach: Head On	Head-on	0	1	0	1	2	2	0	0	0	0	0	0
287327	Hospitalisation	2015	October	Monday	19	Hit object	Single Vehicle	145.5678	-16.9007	Kennedy Hwy		Koah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Darkness - Not lighted	Straight	Level	404	Veh'S Manoeuvring: Reversing	Hit parked vehicle	0	1	0	0	1	1	0	0	0	0	0	0
293014	Hospitalisation	2016	April	Friday	12	Hit object	Single Vehicle	145.5956	-16.8699	Kennedy Hwy		Speewah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Curved - view open	Level	804	Off Path-Curve: Off Cway Lt Bend Hit Obj	Off carriageway on curve hit object	0	1	0	0	1	1	0	0	0	0	0	0
296734	Hospitalisation	2016	July	Tuesday	7	Hit object	Single Vehicle	145.5915	-16.8706	Kennedy Hwy		Speewah	Mareeba Shire	4881	Not coded	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	703	Off Path-Straight: Left Off Cway Hit Obj	Off carriageway on straight hit object	0	1	0	0	1	1	0	0	0	0	0	0
261021	Medical treatment	2013	August	Monday	17	Angle	Multi-Vehicle	145.5696	-16.8881	Kennedy Hwy		Koah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Curved - view open	Grade	506	Veh'S Overtaking: Overtake-Right Turn	Overtaking same direction	0	0	1	0	1	1	0	0	1	0	0	0
268844	Medical treatment	2014	April	Monday	9	Angle	Multi-Vehicle	145.5978	-16.8681	Kennedy Hwy		Speewah	Mareeba Shire	4881	State-controlled	Intersection - T-Junction	Give way sign	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	104	Veh'S Adjacent Approach: Thru-Right	Intersection from adjacent approaches	0	0	1	0	1	2	0	0	0	0	0	0
271241	Medical treatment	2014	June	Saturday	21	Angle	Multi-Vehicle	145.5688	-16.8924	Kennedy Hwy	Anzac Dr	Koah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Wet	Fog	Darkness - Not lighted	Straight	Level	202	Veh'S Opposite Approach: Thru-Right	Opposing vehicles turning	0	0	1	0	1	1	0	0	0	0	0	0
290188	Medical treatment	2016	January	Tuesday	13	Hit object	Single Vehicle	145.5678	-16.9007	Kennedy Hwy		Koah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Straight	Dip	703	Off Path-Straight: Left Off Cway Hit Obj	Off carriageway on straight hit object	0	0	1	0	1	1	0	0	0	0	0	0
240372	Minor injury	2012	January	Sunday	16	Hit object	Single Vehicle	145.5804	-16.8739	Kennedy Hwy		Koah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	704	Off Path-Straight:Right Off Cway Hit Obj	Off carriageway on straight hit object	0	0	0	1	1	0	0	1	0	0	0	0
255813	Fatal	2013	March	Friday	19	Head-on	Multi-Vehicle	145.4917	-16.9834	Kennedy Hwy		Mareeba	Mareeba Shire	4880	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Darkness - Not lighted	Straight	Level	201	Veh'S Opposite Approach: Head On	Head-on	2	1	0	0	3	2	0	0	0	0	0	0
268938	Fatal	2014	April	Thursday	14	Head-on	Multi-Vehicle	145.5396	-16.9587	Kennedy Hwy		Mareeba	Mareeba Shire	4880	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	201	Veh'S Opposite Approach: Head On	Head-on	1	6	0	0	7	2	0	0	0	0	0	0
275705	Fatal	2014	October	Thursday	11	Hit object	Single Vehicle	145.5428	-16.9399	Kennedy Hwy		Koah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Curved - view open	Grade	805	Off Path-Curve: Out Of Control On Cway	Out of control on curve	1	0	0	0	1	1	0	0	0	0	0	0
247610	Hospitalisation	2012	July	Monday	7	Rear-end	Multi-Vehicle	145.5189	-16.9873	Kennedy Hwy		Mareeba	Mareeba Shire	4880	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Straight	Grade	301	Veh'S Same Direction: Rear End	Rear-end	0	1	0	0	1	2	0	0	0	0	0	0
249730	Hospitalisation	2012	September	Wednesday	19	Rear-end	Multi-Vehicle	145.5259	-16.9849	Kennedy Hwy		Mareeba	Mareeba Shire	4880	State-controlled	Merge Lane	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Darkness - Not lighted	Curved - view open	Grade	301	Veh'S Same Direction: Rear End	Rear-end	0	1	0	0	1	1	0	0	0	0	0	1
261637	Hospitalisation	2013	September	Wednesday	6	Hit object	Single Vehicle	145.5321	-16.9784	Kennedy Hwy		Mareeba	Mareeba Shire	4880	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Wet	Raining	Dawn/Dusk	Straight	Level	201	Veh'S Opposite Approach: Head On	Head-on	0	1	1	0	2	2	0	0	0	0	0	0
262067	Hospitalisation	2013	September	Monday	14	Hit object	Single Vehicle	145.5339	-16.9192	Kennedy Hwy		Koah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Curved - view open	Level	803	Off Path-Curve: Off Cway Rt Bend Hit Obj	Off carriageway on curve hit object	0	1	0	0	1	1	0	0	0	0	0	0
266073	Hospitalisation	2014	January	Thursday	10	Overturned	Single Vehicle	145.5327	-16.9773	Kennedy Hwy		Mareeba	Mareeba Shire	4880	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Wet	Raining	Daylight	Straight	Level	702	Off Path-Straight: Right Off Cway	Off carriageway on straight	0	1	0	0	1	1	0	0	0	0	0	0
282956	Hospitalisation	2015	May	Sunday	2	Hit object	Single Vehicle	145.4848	-16.9811	Kennedy Hwy		Mareeba	Mareeba Shire	4880	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Wet	Clear	Darkness - Not lighted	Straight	Level	704	Off Path-Straight:Right Off Cway Hit Obj	Off carriageway on straight hit object	0	1	1	0	2	1	0	0	0	0	0	0
290107	Hospitalisation	2016	January	Saturday	12	Rear-end	Multi-Vehicle	145.5012	-16.9853	Kennedy Hwy		Mareeba	Mareeba Shire	4880	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Curved - view open	Level	303	Veh'S Same Direction: Right Rear	Rear-end	0	3	0	0	3	2	0	0	0	0	0	0
297133	Hospitalisation	2016	August	Saturday	16	Sideswipe	Multi-Vehicle	145.551	-16.9233	Kennedy Hwy		Koah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	503	Veh'S Overtaking: Pulling Out	Overtaking same direction	0	1	2	0	3	2	0	0	0	0	0	0
298073	Hospitalisation	2016	September	Saturday	11	Hit object	Single Vehicle	145.5106	-16.9888	Kennedy Hwy		Mareeba	Mareeba Shire	4880	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	703	Off Path-Straight: Left Off Cway Hit Obj	Off carriageway on straight hit object	0	1	0	0	1	1	0	0	0	0	0	0
298700	Hospitalisation	2016	September	Saturday	15	Rear-end	Multi-Vehicle	145.5481	-16.9285	Kennedy Hwy		Koah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	301	Veh'S Same Direction: Rear End	Rear-end	0	1	0	0	1	3	0	0	0	0	0	0
299795	Hospitalisation	2016	October	Wednesday	8	Hit object	Single Vehicle	145.5451	-16.9335	Kennedy Hwy		Koah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	502	Veh'S Overtaking: Out Of Control	Off carriageway on straight	0	1	0	0	1	1	0	0	0	0	0	1
258133	Medical treatment	2013	June	Saturday	13	Overturned	Single Vehicle	145.5324	-16.9777	Kennedy Hwy		Mareeba	Mareeba Shire	4880	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Wet	Raining	Daylight	Straight	Level	703	Off Path-Straight: Left Off Cway Hit Obj	Off carriageway on straight hit object	0	0	1	0	1	0	0	0	0	0	0	0
259111	Medical treatment	2013	June	Friday	15	Rear-end	Multi-Vehicle	145.5389	-16.9456	Kennedy Hwy		Koah	Mareeba Shire	4880	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Straight	Crest	303	Veh'S Same Direction: Right Rear	Rear-end	0	0	2	0	2	3	0	0	0	0	0	0
282988	Medical treatment	2015	June	Monday	15	Hit object	Single Vehicle	145.5121	-16.9889	Kennedy Hwy		Mareeba	Mareeba Shire	4880	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Curved - view open	Level	803	Off Path-Curve: Off Cway Rt Bend Hit Obj	Off carriageway on curve hit object	0	0	1	0	1	1	0	0	0	0	0	0
284203	Medical treatment	2015	July	Friday	10	Rear-end	Multi-Vehicle	145.5492	-16.9266	Kennedy Hwy		Koah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Wet	Raining	Daylight	Straight	Level	301	Veh'S Same Direction: Rear End	Rear-end	0	0	1	0	1	2	0	0	0	0	0	0
294199	Medical treatment	2016	May	Friday	19	Hit animal	Other	145.5597	-16.9138	Kennedy Hwy		Koah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Darkness - Not lighted	Straight	Grade	609	Pass & Misc: Hit Animal	Hit animal	0	0	1	0	1	1	0	0	0	0	0	0
295994	Medical treatment	2016	July	Monday	11	Hit object	Single Vehicle	145.5147	-16.9886	Kennedy Hwy		Mareeba	Mareeba Shire	4880	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Straight	Grade	705	Off Path-Straight:Out Of Control On Cway	Out of control on straight	0	0	1	0	1	1	0	0	0	0	0	0
299861	Medical treatment	2016	October	Friday	15	Rear-end	Multi-Vehicle	145.5537	-16.9195	Kennedy Hwy		Koah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	100 - 110 km/h	Sealed - Dry	Clear	Daylight	Straight	Grade	301	Veh'S Same Direction: Rear End	Rear-end	0	0	1	0	1	3	0	0	0	0	0	0
299585	Hospitalisation	2016	October	Thursday	14	Rear-end	Multi-Vehicle	145.5613	-16.9122	Kennedy Hwy		Koah	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	301	Veh'S Same Direction: Rear End	Rear-end	0	1	0	0	1	2	0	0	0	0	0	0
229240	Medical treatment	2011	February	Saturday	12	Hit object	Single Vehicle	145.607	-16.8452	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Wet	Raining	Daylight	Curved - view open	Dip	803	Off Path-Curve: Off Cway Rt Bend Hit Obj	Off carriageway on curve hit object	0	0	3	0	3	1	0	0	0	0	0	0
288308	Hospitalisation	2015	November	Wednesday	18	Angle	Multi-Vehicle	145.4737	-16.9859	Kennedy Hwy		Mareeba	Mareeba Shire	4880	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Dry	Clear	Darkness - Not lighted	Straight	Level	406	Veh'S Manoeuvring: Leaving Driveway	Vehicle leaving driveway	0	1	0	0	1	2	0	0	0	0	0	0
241657	Hospitalisation	2012	February	Thursday	19	Hit object	Single Vehicle	145.5493	-16.8725	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Wet	Raining	Darkness - Not lighted	Curved - view open	Grade	803	Off Path-Curve: Off Cway Rt Bend Hit Obj	Off carriageway on curve hit object	0	2	0	0	2	3	0	0	0	0	0	0
269294	Hospitalisation	2014	April	Monday	17	Hit object	Single Vehicle	145.6466	-16.8192	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Wet	Raining	Daylight	Straight	Level	201	Veh'S Opposite Approach: Head On	Head-on	0	2	1	0	3	2	0	0	0	0	0	0
280029	Hospitalisation	2015	March	Sunday	20	Overturned	Single Vehicle	145.6323	-16.8183	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Dry	Clear	Darkness - Not lighted	Curved - view open	Dip	802	Off Path-Curve: Off Cway Left Bend	Off carriageway on curve	0	1	1	0	2	1	0	0	0	0	0	0
281658	Hospitalisation	2015	April	Sunday	21	Hit pedestrian	Hit pedestrian	145.6391	-16.814	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Dry	Clear	Darkness - Not lighted	Curved - view obscure	Level	4	Ped'N: Play; Work; Stand; Lie On C'Way	Pedestrian	0	1	0	0	1	1	0	0	0	0	1	0
286126	Hospitalisation	2015	September	Friday	11	Hit object	Single Vehicle	145.6334	-16.8171	Kennedy Hwy		Kuranda	Mareeba Shire	4881	Locally-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	704	Off Path-Straight:Right Off Cway Hit Obj	Off carriageway on straight hit object	0	1	0	0	1	1	0	0	0	0	0	0
244101	Medical treatment	2012	April	Tuesday	10	Angle	Multi-Vehicle	145.6441	-16.8171	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	Merge Lane	No traffic control	80 - 90 km/h	Sealed - Dry	Clear	Daylight	Straight	Grade	305	Veh'S Same Direction: Lane Side Swipe	Lane changes	0	0	2	0	2	2	0	1	0	0	0	0
251977	Medical treatment	2012	November	Friday	15	Hit object	Single Vehicle	145.6443	-16.8173	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Wet	Raining	Daylight	Curved - view obscure	Grade	804	Off Path-Curve: Off Cway Lt Bend Hit Obj	Off carriageway on curve hit object	0	0	1	0	1	1	0	0	0	0	0	0
256055	Medical treatment	2013	April	Saturday	8	Head-on	Multi-Vehicle	145.651	-16.8236	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Wet	Raining	Daylight	Curved - view open	Grade	201	Veh'S Opposite Approach: Head On	Head-on	0	0	4	0	4	2	0	0	0	0	0	0
258901	Medical treatment	2013	June	Saturday	10	Overturned	Single Vehicle	145.6465	-16.8206	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Dry	Clear	Daylight	Curved - view obscure	Grade	805	Off Path-Curve: Out Of Control On Cway	Out of control on curve	0	0	1	0	1	1	0	1	0	0	0	0
260279	Medical treatment	2013	July	Wednesday	22	Hit object	Single Vehicle	145.6519	-16.827	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Dry	Clear	Darkness - Not lighted	Curved - view open	Grade	803	Off Path-Curve: Off Cway Rt Bend Hit Obj	Off carriageway on curve hit object	0	0	1	0	1	1	0	0	0	0	0	0
276454	Medical treatment	2014	November	Saturday	11	Sideswipe	Multi-Vehicle	145.6483	-16.8216	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Dry	Clear	Daylight	Curved - view open	Level	201	Veh'S Opposite Approach: Head On	Head-on	0	1	0	0	1	1	0	0	0	0	0	0
253076	Minor injury	2013	January	Monday	11	Hit object	Single Vehicle	145.6443	-16.8173	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	Merge Lane	No traffic control	80 - 90 km/h	Sealed - Dry	Clear	Daylight	Straight	Dip	301	Veh'S Same Direction: Rear End	Rear-end	0	0	0	2	2	2	0	0	0	0	0	0
264036	Minor injury	2013	November	Tuesday	4	Hit object	Single Vehicle	145.6465	-16.8189	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Wet	Raining	Darkness - Not lighted	Curved - view obscure	Grade	804	Off Path-Curve: Off Cway Lt Bend Hit Obj	Off carriageway on curve hit object	0	0	0	1	1	1	0	0	0	0	0	0
278018	Minor injury	2015	January	Thursday	8	Hit object	Single Vehicle	145.6514	-16.8261	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Wet	Clear	Darkness - Lighted	Curved - view open	Grade	805	Off Path-Curve: Out Of Control On Cway	Out of control on curve	0	0	0	1	1	1	0	0	0	0	0	0
263275	Medical treatment	2013	October	Monday	6	Head-on	Multi-Vehicle	145.6484	-16.8214	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Wet	Raining	Dawn/Dusk	Curved - view open	Grade	201	Veh'S Opposite Approach: Head On	Head-on	0	0	3	0	3	2	0	0	0	0	0	0
252351	Medical treatment	2012	December	Tuesday	14	Hit object	Single Vehicle	145.6234	-16.8249	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Dry	Clear	Daylight	Straight	Dip	703	Off Path-Straight: Left Off Cway Hit Obj	Off carriageway on straight hit object	0	0	1	0	1	1	0	0	0	0	0	0
284101	Minor injury	2015	July	Tuesday	16	Rear-end	Multi-Vehicle	145.6233	-16.8251	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	303	Veh'S Same Direction: Right Rear	Rear-end	0	0	0	1	1	1	0	0	0	0	0	1
254759	Medical treatment	2013	February	Wednesday	7	Hit pedestrian	Hit pedestrian	145.6732	-16.8458	Kennedy Hwy		Macalister	Cairns Region	4871	State-controlled	No Roadway Feature	Miscellaneous	0 - 50 km/h	Sealed - Dry	Clear	Daylight	Curved - view obscure	Level	4	Ped'N: Play; Work; Stand; Lie On C'Way	Pedestrian	0	0	1	0	1	1	0	0	0	0	1	0
272369	Medical treatment	2014	July	Wednesday	11	Rear-end	Multi-Vehicle	145.684	-16.8487	Kennedy Hwy		Macalister	Cairns Region	4871	State-controlled	No Roadway Feature	Road/Rail worker	0 - 50 km/h	Sealed - Dry	Clear	Daylight	Curved - view obscure	Grade	301	Veh'S Same Direction: Rear End	Rear-end	0	0	1	0	1	2	0	0	0	0	0	0
283400	Minor injury	2015	June	Saturday	5	Rear-end	Multi-Vehicle	145.6732	-16.8429	Kennedy Hwy		Macalister	Cairns Region	4871	State-controlled	No Roadway Feature	No traffic control	0 - 50 km/h	Sealed - Wet	Raining	Darkness - Not lighted	Curved - view obscure	Grade	301	Veh'S Same Direction: Rear End	Rear-end	0	0	1	0	1	2	0	0	0	0	0	0
240538	Hospitalisation	2012	January	Saturday	9	Hit object	Single Vehicle	145.6587	-16.8299	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Curved - view open	Grade	805	Off Path-Curve: Out Of Control On Cway	Out of control on curve	0	2	0	0	2	1	0	0	0	0	0	0
246839	Hospitalisation	2012	July	Monday	12	Overturned	Single Vehicle	145.6574	-16.8277	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Wet	Raining	Daylight	Curved - view obscure	Grade	800	Off Path-Curve: Other	Other	0	1	0	0	1	1	0	0	0	0	0	0
272982	Hospitalisation	2014	August	Sunday	19	Hit object	Single Vehicle	145.6581	-16.8286	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Wet	Raining	Darkness - Not lighted	Curved - view obscure	Dip	803	Off Path-Curve: Off Cway Rt Bend Hit Obj	Off carriageway on curve hit object	0	1	0	0	1	1	0	0	0	0	0	0
279118	Hospitalisation	2015	February	Monday	17	Hit object	Single Vehicle	145.663	-16.8319	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Wet	Fog	Darkness - Lighted	Curved - view open	Grade	804	Off Path-Curve: Off Cway Lt Bend Hit Obj	Off carriageway on curve hit object	0	1	0	0	1	1	0	0	0	0	0	0
293013	Hospitalisation	2016	April	Friday	13	Hit object	Single Vehicle	145.6623	-16.8316	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Wet	Raining	Daylight	Curved - view open	Grade	803	Off Path-Curve: Off Cway Rt Bend Hit Obj	Off carriageway on curve hit object	0	1	0	0	1	1	0	0	0	0	0	0
248283	Medical treatment	2012	August	Friday	16	Head-on	Multi-Vehicle	145.6612	-16.8313	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Curved - view obscure	Grade	201	Veh'S Opposite Approach: Head On	Head-on	0	0	2	0	2	3	0	0	0	0	0	0
259217	Medical treatment	2013	July	Monday	12	Rear-end	Multi-Vehicle	145.6578	-16.8279	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Curved - view obscure	Level	301	Veh'S Same Direction: Rear End	Rear-end	0	0	1	0	1	4	0	0	0	0	0	0
264787	Medical treatment	2013	December	Wednesday	15	Angle	Multi-Vehicle	145.6562	-16.8271	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Curved - view obscure	Grade	201	Veh'S Opposite Approach: Head On	Head-on	0	0	1	0	1	1	0	1	0	0	0	0
275359	Medical treatment	2014	October	Monday	21	Overturned	Single Vehicle	145.6581	-16.8282	Kennedy Hwy		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Wet	Raining	Darkness - Not lighted	Curved - view open	Level	803	Off Path-Curve:

287822	Medical treatment	2015	October	Tuesday	15	Rear-end	Multi-Vehicle	145.686	-16.85	Kennedy Hwy		Macalister	Cairns Region	4871	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Curved - view obscure	Dip	301	Veh'S Same Direction: Rear End	Rear-end	0	0	1	0	1	2	0	0	0	0	0	0
291085	Medical treatment	2016	February	Tuesday	15	Angle	Multi-Vehicle	145.6858	-16.8505	Kennedy Hwy		Macalister	Cairns Region	4871	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Wet	Raining	Daylight	Curved - view obscure	Grade	201	Veh'S Opposite Approach: Head On	Head-on	0	0	1	0	1	2	0	0	0	0	0	0
293125	Medical treatment	2016	April	Monday	10	Sideswipe	Multi-Vehicle	145.6821	-16.8492	Kennedy Hwy		Macalister	Cairns Region	4871	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Curved - view obscure	Grade	305	Veh'S Same Direction: Lane Side Swipe	Lane changes	0	0	1	0	1	0	1	1	0	0	0	0
294081	Medical treatment	2016	May	Tuesday	16	Sideswipe	Multi-Vehicle	145.6704	-16.8329	Kennedy Hwy		Macalister	Cairns Region	4871	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Curved - view obscure	Grade	201	Veh'S Opposite Approach: Head On	Head-on	0	0	1	1	2	2	0	0	0	0	0	0
295322	Medical treatment	2016	June	Monday	13	Head-on	Multi-Vehicle	145.6829	-16.8483	Kennedy Hwy		Macalister	Cairns Region	4871	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Curved - view obscure	Crest	201	Veh'S Opposite Approach: Head On	Head-on	0	0	1	0	1	2	0	0	0	0	0	0
295361	Medical treatment	2016	June	Tuesday	23	Overturned	Single Vehicle	145.6726	-16.8383	Kennedy Hwy		Macalister	Cairns Region	4871	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Wet	Raining	Darkness - Not lighted	Curved - view open	Crest	801	Off Path-Curve: Off Cway Right Bend	Off carriageway on curve	0	0	1	0	1	1	0	0	0	0	0	0
299315	Medical treatment	2016	October	Wednesday	11	Hit object	Single Vehicle	145.6832	-16.8469	Kennedy Hwy		Macalister	Cairns Region	4871	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Curved - view open	Grade	804	Off Path-Curve: Off Cway Lt Bend Hit Obj	Off carriageway on curve hit object	0	0	1	0	1	1	0	0	0	0	0	0
268466	Minor injury	2014	March	Thursday	22	Rear-end	Multi-Vehicle	145.6834	-16.8502	Kennedy Hwy		Macalister	Cairns Region	4871	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Darkness - Lighted	Curved - view open	Level	301	Veh'S Same Direction: Rear End	Rear-end	0	0	0	1	1	2	0	0	1	0	0	0
274236	Minor injury	2014	September	Sunday	9	Hit object	Single Vehicle	145.673	-16.8422	Kennedy Hwy		Macalister	Cairns Region	4871	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Curved - view obscure	Level	803	Off Path-Curve: Off Cway Rt Bend Hit Obj	Off carriageway on curve hit object	0	0	0	1	1	0	1	0	0	0	0	0
276787	Minor injury	2014	November	Monday	9	Rear-end	Multi-Vehicle	145.6731	-16.8454	Kennedy Hwy		Macalister	Cairns Region	4871	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Curved - view obscure	Level	301	Veh'S Same Direction: Rear End	Rear-end	0	0	0	1	1	2	0	0	0	0	0	0
277229	Minor injury	2014	December	Saturday	16	Hit object	Single Vehicle	145.6829	-16.8468	Kennedy Hwy		Macalister	Cairns Region	4871	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Curved - view open	Level	805	Off Path-Curve: Out Of Control On Cway	Out of control on curve	0	0	0	1	1	1	0	0	0	0	0	0
281252	Minor injury	2015	April	Tuesday	13	Head-on	Multi-Vehicle	145.6859	-16.8505	Kennedy Hwy		Macalister	Cairns Region	4871	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Wet	Raining	Daylight	Curved - view open	Level	201	Veh'S Opposite Approach: Head On	Head-on	0	0	0	1	1	2	0	0	0	0	0	0
301405	Minor injury	2016	December	Monday	17	Hit object	Single Vehicle	145.6827	-16.845	Kennedy Hwy		Macalister	Cairns Region	4871	State-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Wet	Clear	Daylight	Curved - view open	Grade	800	Off Path-Curve: Other	Other	0	0	0	1	1	1	0	0	0	0	0	0
264565	Medical treatment	2013	November	Thursday	6	Head-on	Multi-Vehicle	145.6806	-16.8476	Kennedy Hwy		Macalister	Cairns Region	4871	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Wet	Raining	Daylight	Curved - view obscure	Dip	201	Veh'S Opposite Approach: Head On	Head-on	0	0	1	0	1	2	0	0	0	0	0	0
255814	Hospitalisation	2013	March	Friday	8	Hit object	Single Vehicle	145.6839	-16.8377	Kennedy Hwy		Smithfield	Cairns Region	4878	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Wet	Raining	Daylight	Curved - view obscure	Grade	804	Off Path-Curve: Off Cway Lt Bend Hit Obj	Off carriageway on curve hit object	0	2	0	0	2	1	0	0	0	0	0	0
263313	Hospitalisation	2013	October	Tuesday	15	Head-on	Multi-Vehicle	145.6853	-16.8376	Kennedy Hwy		Smithfield	Cairns Region	4878	State-controlled	No Roadway Feature	No traffic control	80 - 90 km/h	Sealed - Wet	Raining	Daylight	Curved - view obscure	Dip	201	Veh'S Opposite Approach: Head On	Head-on	0	2	0	0	2	2	0	0	0	0	0	0
246171	Hospitalisation	2012	June	Wednesday	18	Angle	Multi-Vehicle	145.625	-16.8236	Kennedy Hwy	Rob Veivers Dr	Kuranda	Mareeba Shire	4881	State-controlled	Intersection - Cross	Operating traffic li	80 - 90 km/h	Sealed - Dry	Clear	Darkness - Lighted	Straight	Level	202	Veh'S Opposite Approach: Thru-Right	Opposing vehicles turning	0	2	0	0	2	2	0	0	0	0	0	0
256019	Hospitalisation	2013	April	Friday	13	Angle	Multi-Vehicle	145.625	-16.8236	Kennedy Hwy	Rob Veivers Dr	Kuranda	Mareeba Shire	4881	State-controlled	Intersection - Cross	Operating traffic li	80 - 90 km/h	Sealed - Wet	Clear	Daylight	Straight	Level	202	Veh'S Opposite Approach: Thru-Right	Opposing vehicles turning	0	2	0	0	2	2	0	0	0	0	0	0
261374	Hospitalisation	2013	August	Wednesday	10	Angle	Multi-Vehicle	145.625	-16.8236	Kennedy Hwy	Myola Rd	Kuranda	Mareeba Shire	4881	State-controlled	Intersection - Cross	Operating traffic li	80 - 90 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	101	Veh'S Adjacent Approach: Thru-Thru	Intersection from adjacent approaches	0	1	0	0	1	1	0	1	0	0	0	0
281497	Hospitalisation	2015	April	Tuesday	18	Angle	Multi-Vehicle	145.625	-16.8236	Kennedy Hwy	Rob Veivers Dr	Kuranda	Mareeba Shire	4881	State-controlled	Intersection - Cross	Operating traffic li	80 - 90 km/h	Sealed - Dry	Clear	Darkness - Lighted	Straight	Level	202	Veh'S Opposite Approach: Thru-Right	Opposing vehicles turning	0	1	0	0	1	2	0	0	0	0	0	0
270641	Medical treatment	2014	May	Thursday	14	Angle	Multi-Vehicle	145.6251	-16.8236	Kennedy Hwy	Rob Veivers Dr	Kuranda	Mareeba Shire	4881	State-controlled	Intersection - Cross	Operating traffic li	80 - 90 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	202	Veh'S Opposite Approach: Thru-Right	Opposing vehicles turning	0	0	1	0	1	2	0	0	0	0	0	0
277675	Minor injury	2014	December	Friday	7	Angle	Multi-Vehicle	145.625	-16.8236	Kennedy Hwy	Rob Veivers Dr	Kuranda	Mareeba Shire	4881	State-controlled	Intersection - Cross	Operating traffic li	80 - 90 km/h	Sealed - Dry	Clear	Daylight	Straight	Grade	202	Veh'S Opposite Approach: Thru-Right	Opposing vehicles turning	0	0	0	3	3	2	0	0	0	0	0	0
285516	Medical treatment	2015	August	Monday	16	Rear-end	Multi-Vehicle	145.625	-16.8236	Kennedy Hwy	Rob Veivers Dr	Kuranda	Mareeba Shire	4881	State-controlled	Intersection - T-Junction	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	302	Veh'S Same Direction: Left Rear	Rear-end	0	0	1	0	1	2	0	0	0	0	0	0
248434	Hospitalisation	2012	August	Wednesday	1	Hit object	Single Vehicle	145.628	-16.8234	Rob Veivers Dr		Kuranda	Mareeba Shire	4881	Locally-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Wet	Raining	Darkness - Not lighted	Curved - view obscure	Level	804	Off Path-Curve: Off Cway Lt Bend Hit Obj	Off carriageway on curve hit object	0	1	0	1	2	1	0	0	0	0	0	0
280955	Hospitalisation	2015	April	Saturday	13	Rear-end	Multi-Vehicle	145.6257	-16.8234	Rob Veivers Dr		Kuranda	Mareeba Shire	4881	Locally-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Curved - view obscure	Level	301	Veh'S Same Direction: Rear End	Rear-end	0	1	0	0	1	4	0	0	0	0	0	0
290583	Hospitalisation	2016	January	Sunday	9	Fall from vehi	Single Vehicle	145.6257	-16.8233	Rob Veivers Dr		Kuranda	Mareeba Shire	4881	State-controlled	No Roadway Feature	No traffic control	0 - 50 km/h	Sealed - Dry	Clear	Daylight	Curved - view obscure	Level	805	Off Path-Curve: Out Of Control On Cway	Out of control on curve	0	1	0	0	1	0	1	0	0	0	0	0
242017	Medical treatment	2012	February	Sunday	16	Hit pedestrian	Hit pedestrian	145.6336	-16.8196	Rob Veivers Dr		Kuranda	Mareeba Shire	4881	Locally-controlled	No Roadway Feature	Pedestrian crossing	0 - 50 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	1	Ped'N: Near Side Vehicle Hit From Right	Pedestrian	0	0	1	0	1	1	0	0	0	1	0	0
248471	Medical treatment	2012	August	Thursday	18	Hit pedestrian	Hit pedestrian	145.6332	-16.8218	Rob Veivers Dr		Kuranda	Mareeba Shire	4881	Locally-controlled	No Roadway Feature	No traffic control	0 - 50 km/h	Sealed - Dry	Clear	Darkness - Not lighted	Curved - view open	Level	3	Ped'N: Far Side Vehicle Hit From Left	Pedestrian	0	0	1	0	1	1	0	0	0	1	0	0
235769	Hospitalisation	2011	August	Monday	19	Overturned	Single Vehicle	145.6144	-16.8048	Myola Rd		Kuranda	Mareeba Shire	4881	Locally-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Darkness - Lighted	Curved - view open	Level	801	Off Path-Curve: Off Cway Right Bend	Off carriageway on curve	0	1	0	0	1	1	0	0	0	0	0	0
288889	Hospitalisation	2015	November	Saturday	13	Hit object	Single Vehicle	145.6213	-16.8153	Myola Rd		Kuranda	Mareeba Shire	4881	Locally-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Curved - view open	Level	803	Off Path-Curve: Off Cway Rt Bend Hit Obj	Off carriageway on curve hit object	0	1	0	0	1	1	0	0	0	0	0	0
254178	Medical treatment	2013	February	Monday	9	Hit object	Single Vehicle	145.6103	-16.8029	Myola Rd		Kuranda	Mareeba Shire	4881	Locally-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Curved - view open	Level	804	Off Path-Curve: Off Cway Lt Bend Hit Obj	Off carriageway on curve hit object	0	0	1	0	1	1	0	0	0	0	0	0
228698	Minor injury	2011	February	Friday	9	Sideswipe	Multi-Vehicle	145.6077	-16.8048	Myola Rd		Kuranda	Mareeba Shire	4881	Locally-controlled	No Roadway Feature	No traffic control	60 km/h	Sealed - Wet	Clear	Daylight	Straight	Grade	303	Veh'S Same Direction: Right Rear	Rear-end	0	0	0	1	1	1	0	0	0	0	0	0
246171	Hospitalisation	2012	June	Wednesday	18	Angle	Multi-Vehicle	145.625	-16.8236	Kennedy Hwy	Rob Veivers Dr	Kuranda	Mareeba Shire	4881	State-controlled	Intersection - Cross	Operating traffic li	80 - 90 km/h	Sealed - Dry	Clear	Darkness - Lighted	Straight	Level	202	Veh'S Opposite Approach: Thru-Right	Opposing vehicles turning	0	2	0	0	2	2	0	0	0	0	0	0
256019	Hospitalisation	2013	April	Friday	13	Angle	Multi-Vehicle	145.625	-16.8236	Kennedy Hwy	Rob Veivers Dr	Kuranda	Mareeba Shire	4881	State-controlled	Intersection - Cross	Operating traffic li	80 - 90 km/h	Sealed - Wet	Clear	Daylight	Straight	Level	202	Veh'S Opposite Approach: Thru-Right	Opposing vehicles turning	0	2	0	0	2	2	0	0	0	0	0	0
261374	Hospitalisation	2013	August	Wednesday	10	Angle	Multi-Vehicle	145.625	-16.8236	Kennedy Hwy	Myola Rd	Kuranda	Mareeba Shire	4881	State-controlled	Intersection - Cross	Operating traffic li	80 - 90 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	101	Veh'S Adjacent Approach: Thru-Thru	Intersection from adjacent approaches	0	1	0	0	1	1	0	1	0	0	0	0
281497	Hospitalisation	2015	April	Tuesday	18	Angle	Multi-Vehicle	145.625	-16.8236	Kennedy Hwy	Rob Veivers Dr	Kuranda	Mareeba Shire	4881	State-controlled	Intersection - Cross	Operating traffic li	80 - 90 km/h	Sealed - Dry	Clear	Darkness - Lighted	Straight	Level	202	Veh'S Opposite Approach: Thru-Right	Opposing vehicles turning	0	1	0	0	1	2	0	0	0	0	0	0
270641	Medical treatment	2014	May	Thursday	14	Angle	Multi-Vehicle	145.6251	-16.8236	Kennedy Hwy	Rob Veivers Dr	Kuranda	Mareeba Shire	4881	State-controlled	Intersection - Cross	Operating traffic li	80 - 90 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	202	Veh'S Opposite Approach: Thru-Right	Opposing vehicles turning	0	0	1	0	1	2	0	0	0	0	0	0
277675	Minor injury	2014	December	Friday	7	Angle	Multi-Vehicle	145.625	-16.8236	Kennedy Hwy	Rob Veivers Dr	Kuranda	Mareeba Shire	4881	State-controlled	Intersection - Cross	Operating traffic li	80 - 90 km/h	Sealed - Dry	Clear	Daylight	Straight	Grade	202	Veh'S Opposite Approach: Thru-Right	Opposing vehicles turning	0	0	0	3	3	2	0	0	0	0	0	0
285516	Medical treatment	2015	August	Monday	16	Rear-end	Multi-Vehicle	145.625	-16.8236	Kennedy Hwy	Rob Veivers Dr	Kuranda	Mareeba Shire	4881	State-controlled	Intersection - T-Junction	No traffic control	60 km/h	Sealed - Dry	Clear	Daylight	Straight	Level	302	Veh'S Same Direction: Left Rear	Rear-end	0	0	1	0	1	2	0	0	0	0	0	0

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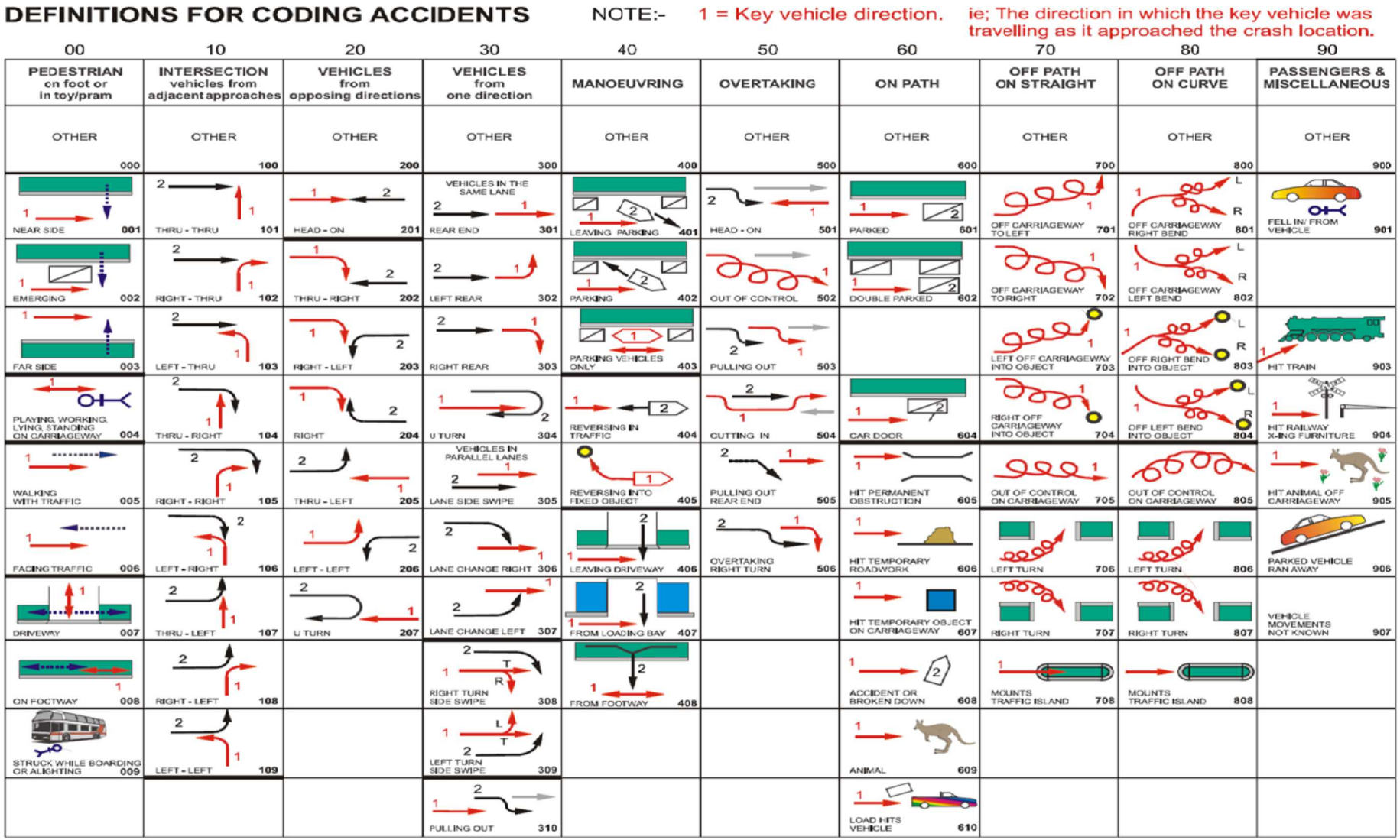
Appendix 13d

DCA Codes

Environmental Impact Statement

Figure B 3: Department of Transport and Main Roads Queensland



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Appendix 13e

Calculated Growth Rates

Environmental Impact Statement

CALCULATED GROWTH RATES

Historical Growth Rates

Historical growth rates are for the Kennedy Highway (Cairns to Kuranda) and Kennedy Highway (Kuranda to Mareeba) are seen below in Table and Table 2 below. Traffic volumes have been provided by DTMR.

Table 1: Kennedy Highway (Cairns to Kuranda) historical growth rates. Average growth rate was 1.05% per annum from 2010-2016.

Year	2016	2015	2014	2013	2012	2011	2010
AADT	8665	8092	7997	7906	8171	8184	8162
Yearly Growth Rate	7.08%	1.19%	1.15%	-3.24%	-0.16%	0.27%	

Table 2: Kennedy Highway (Kuranda to Mareeba) historical growth rates. Average growth rate was 1.58% per annum from 2012-2016.

Year	2016	2015	2014	2013	2012
AADT	5863	5456	5456	5392	5520
Yearly Growth Rate	7.46%	0.00%	1.19%	-2.32%	

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Appendix 13f

Base Traffic Link Diagrams

Environmental Impact Statement

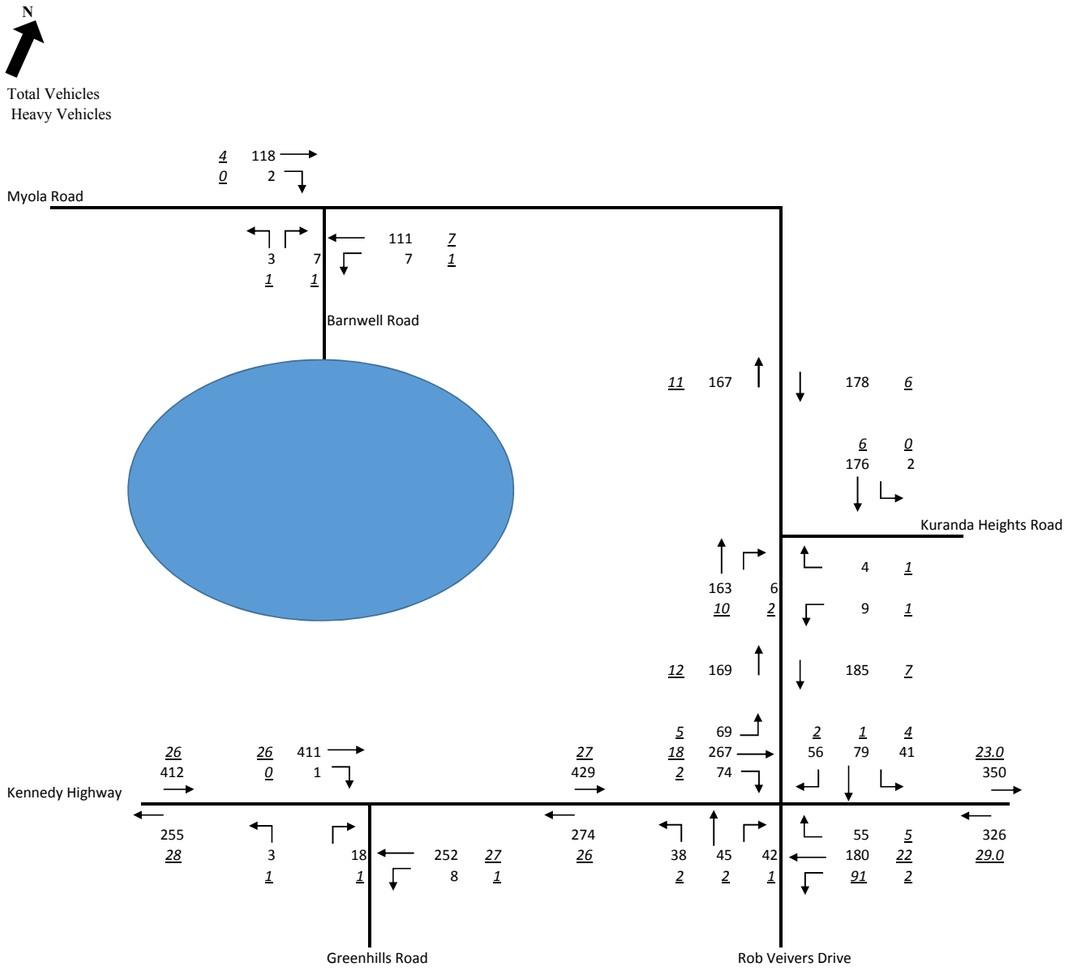

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Figure A1: 2017 AM Peak Base Traffic Volumes

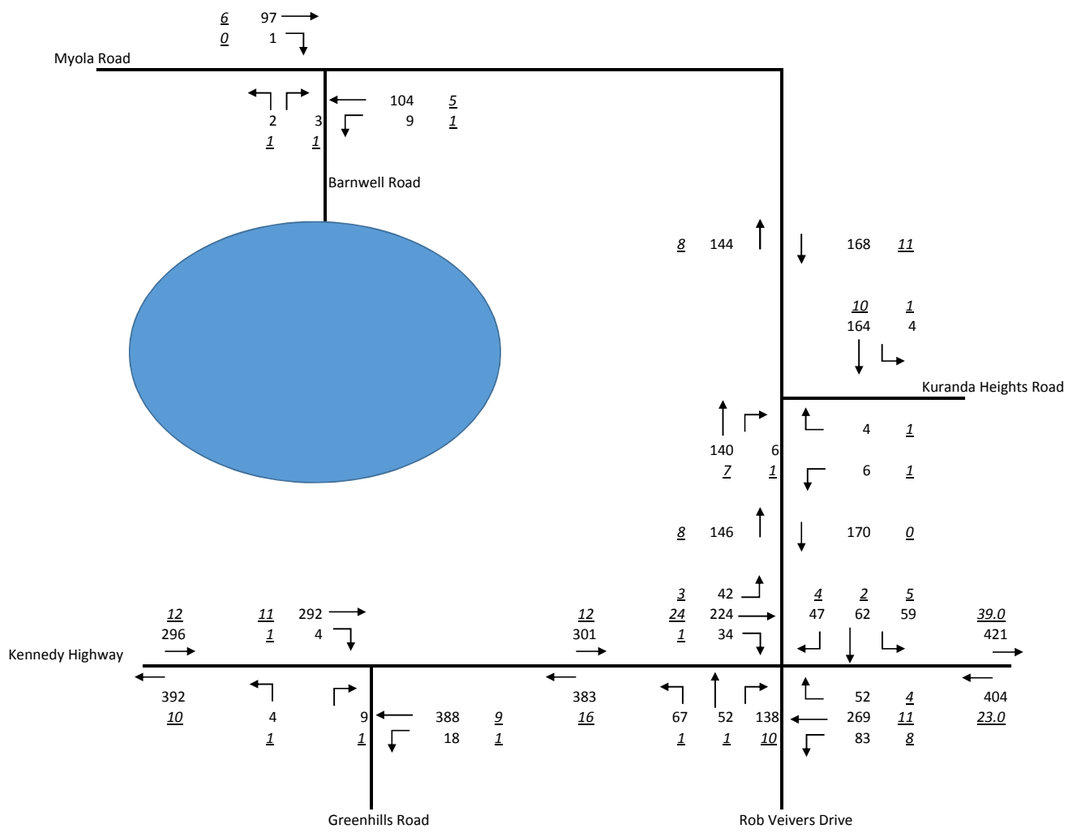

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Figure A2: 2017 PM Peak Base Traffic Volumes

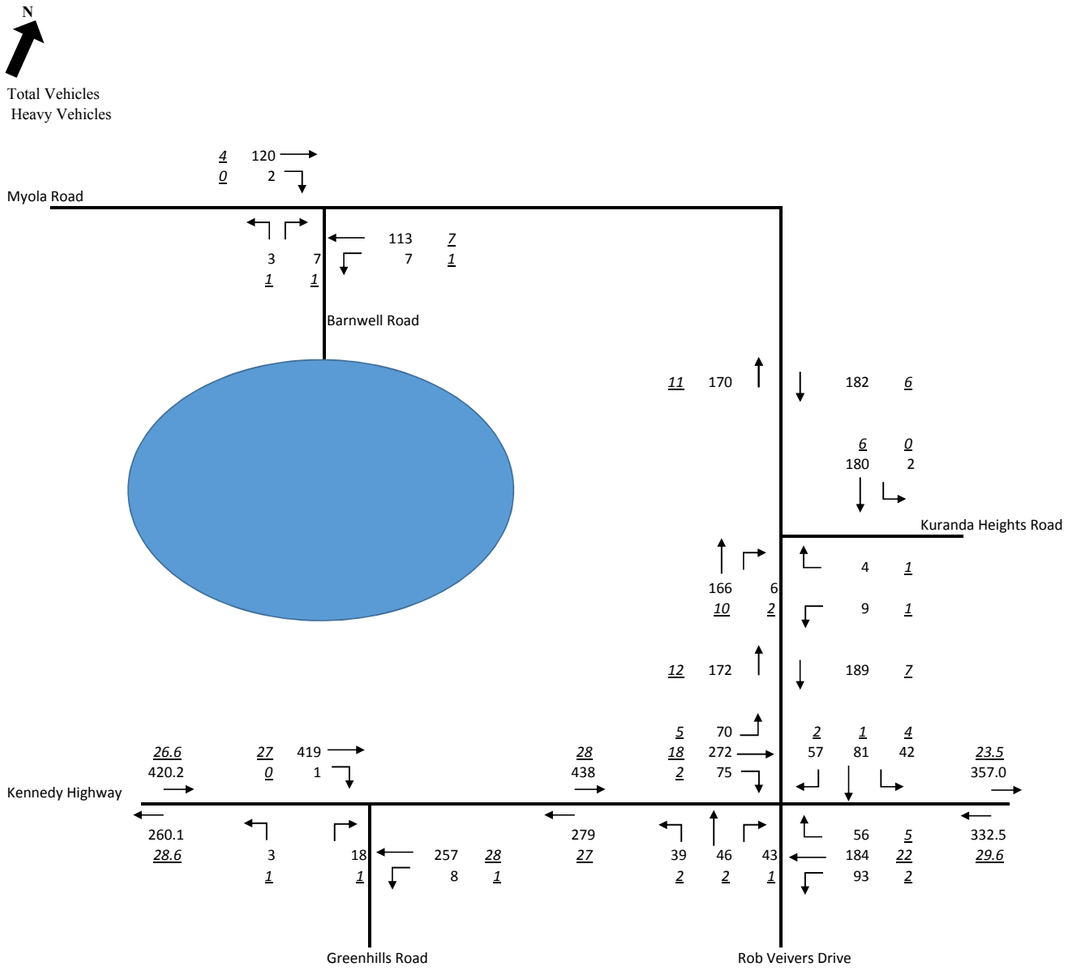

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Figure A3: 2018 AM Peak Base Traffic Volumes

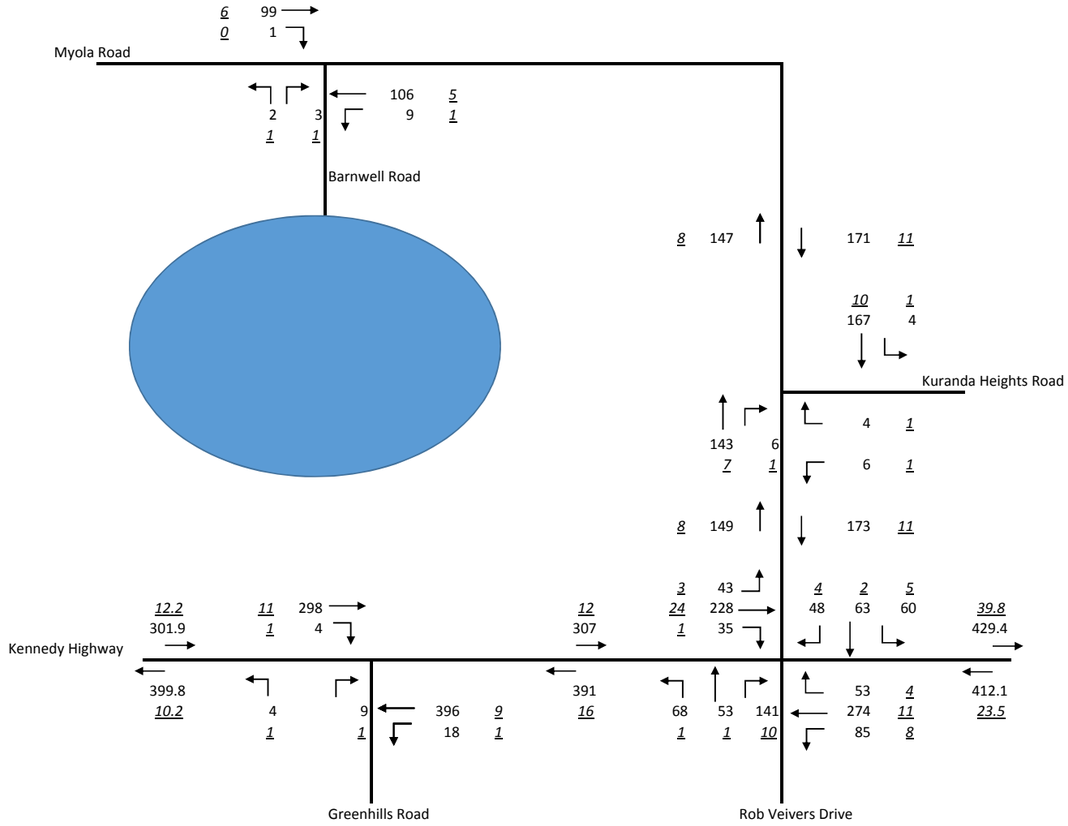

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Figure A4: 2018 PM Peak Base Traffic Volumes

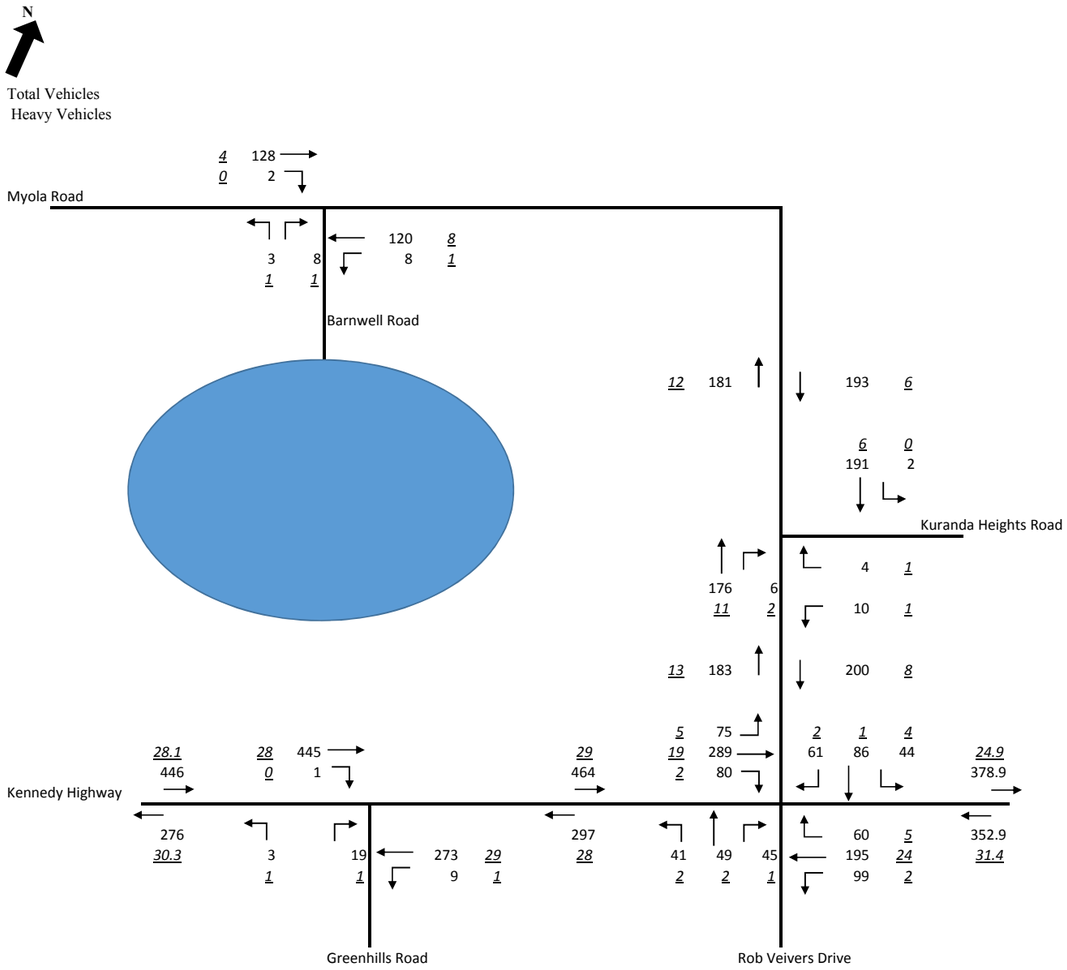

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Figure A5: 2021 AM Peak Base Traffic Volumes

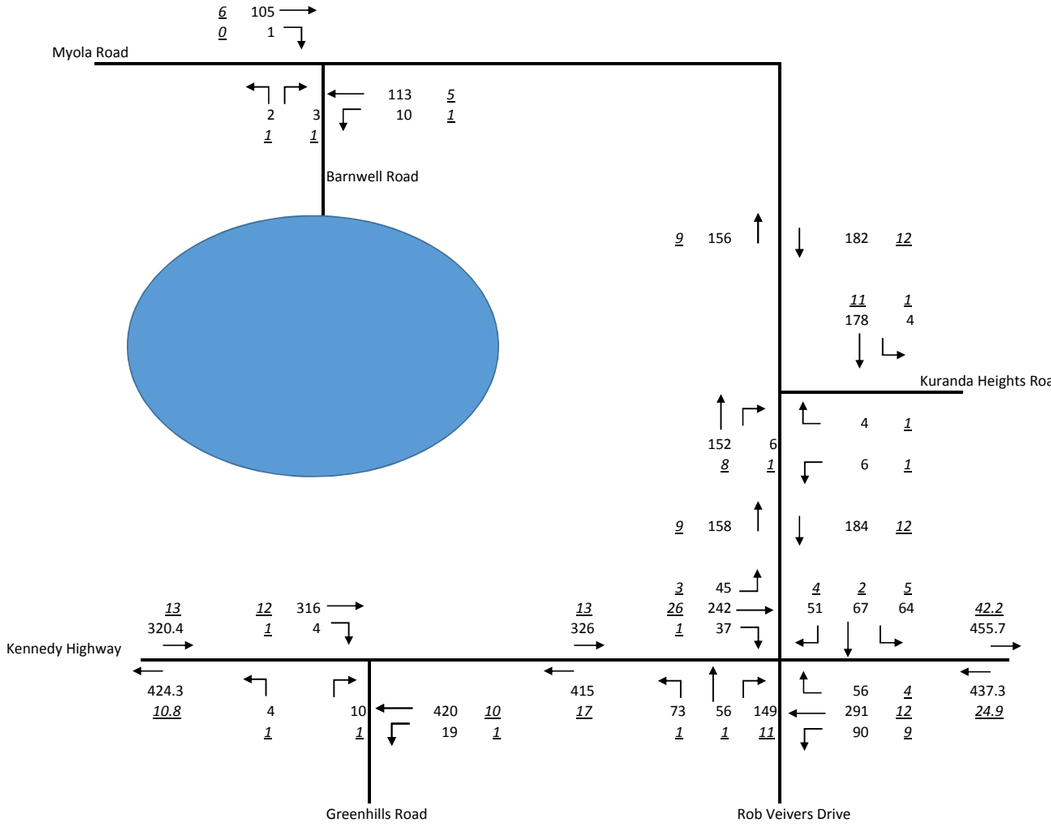

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Figure A6: 2021 PM Peak Base Traffic Volumes

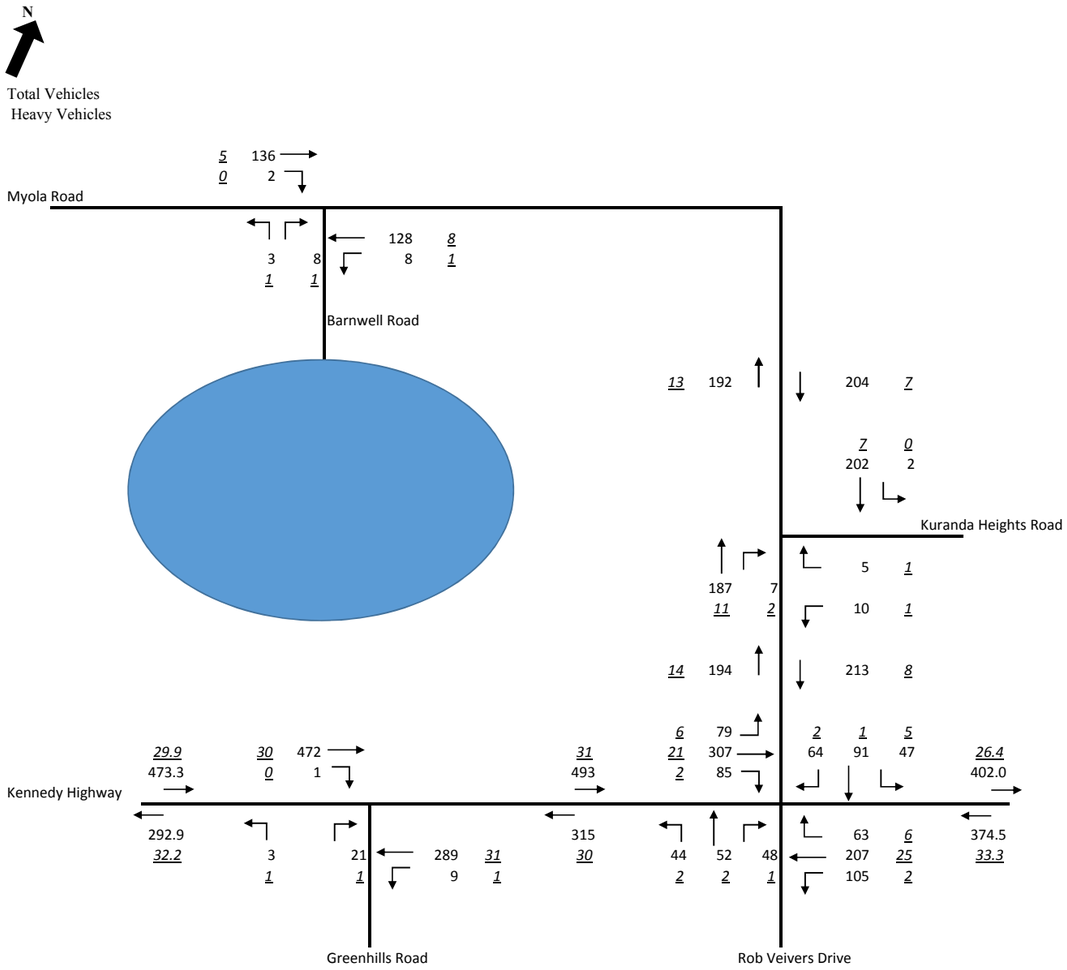

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Figure A7: 2024 AM Peak Base Traffic Volumes

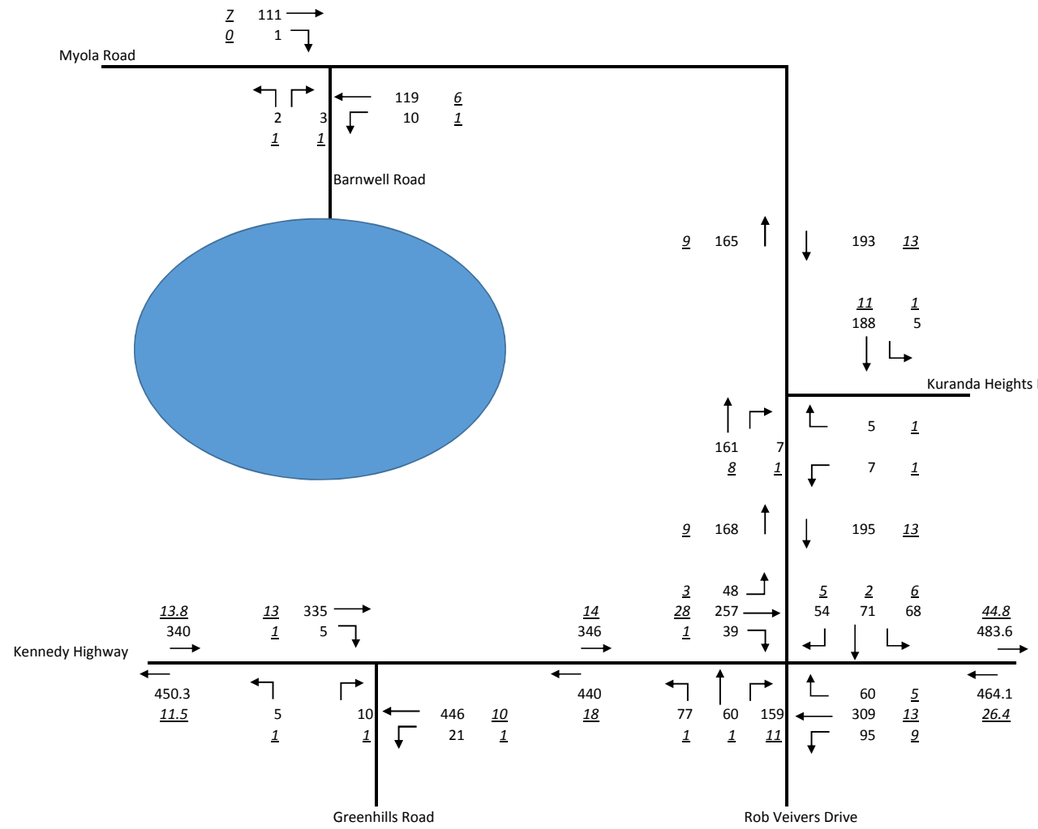

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Figure A8: 2024 PM Peak Base Traffic Volumes

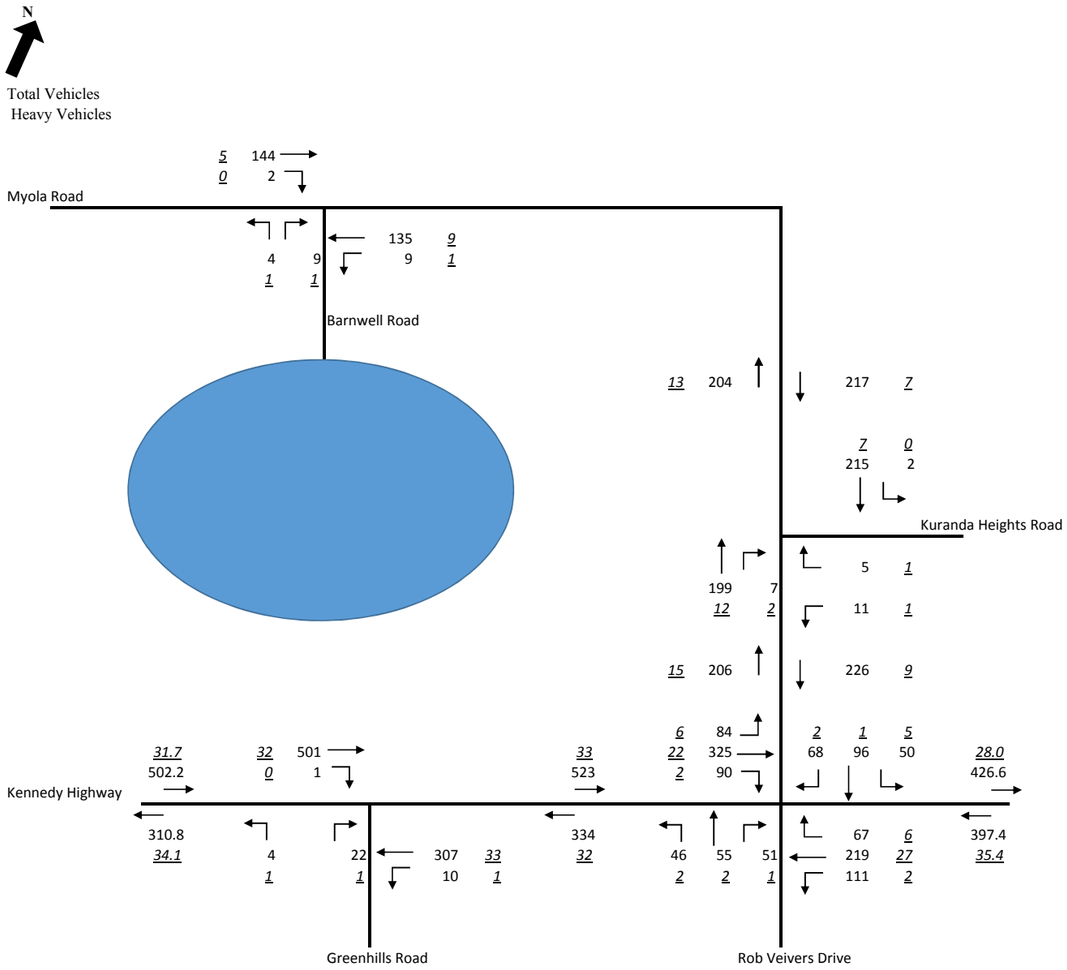

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Figure A9: 2027 AM Peak Base Traffic Volumes

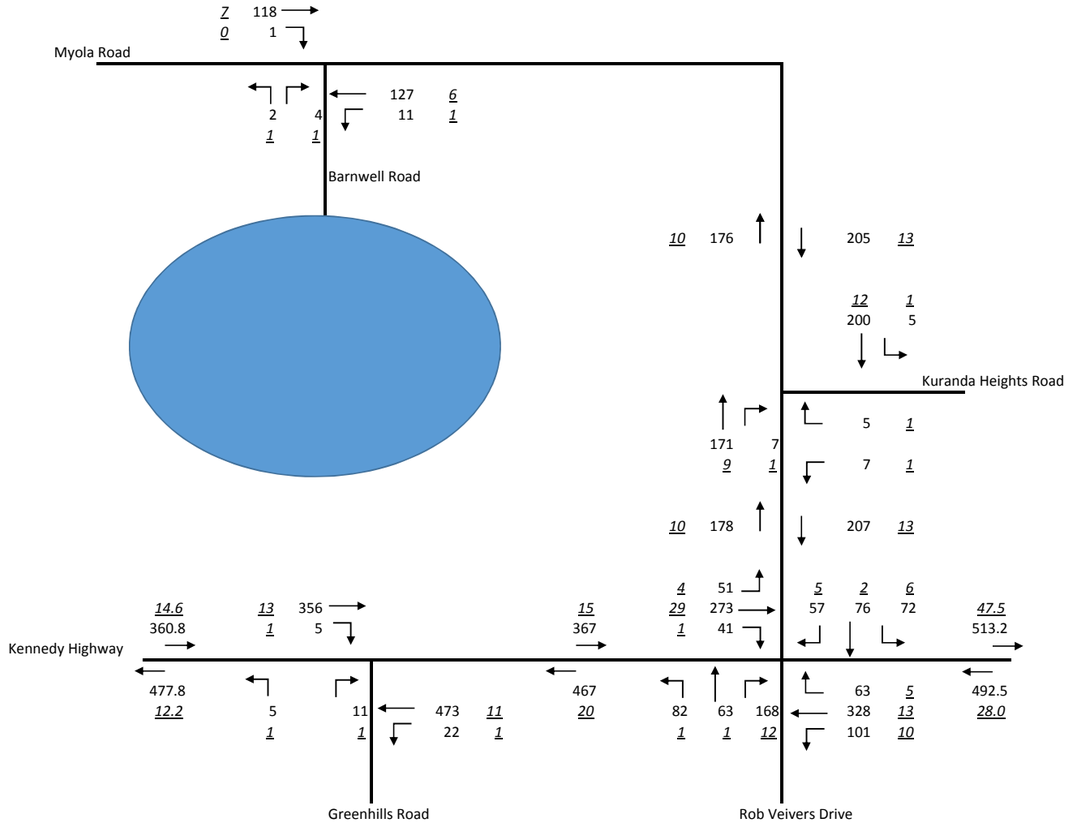

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Figure A10: 2027 PM Peak Base Traffic Volumes

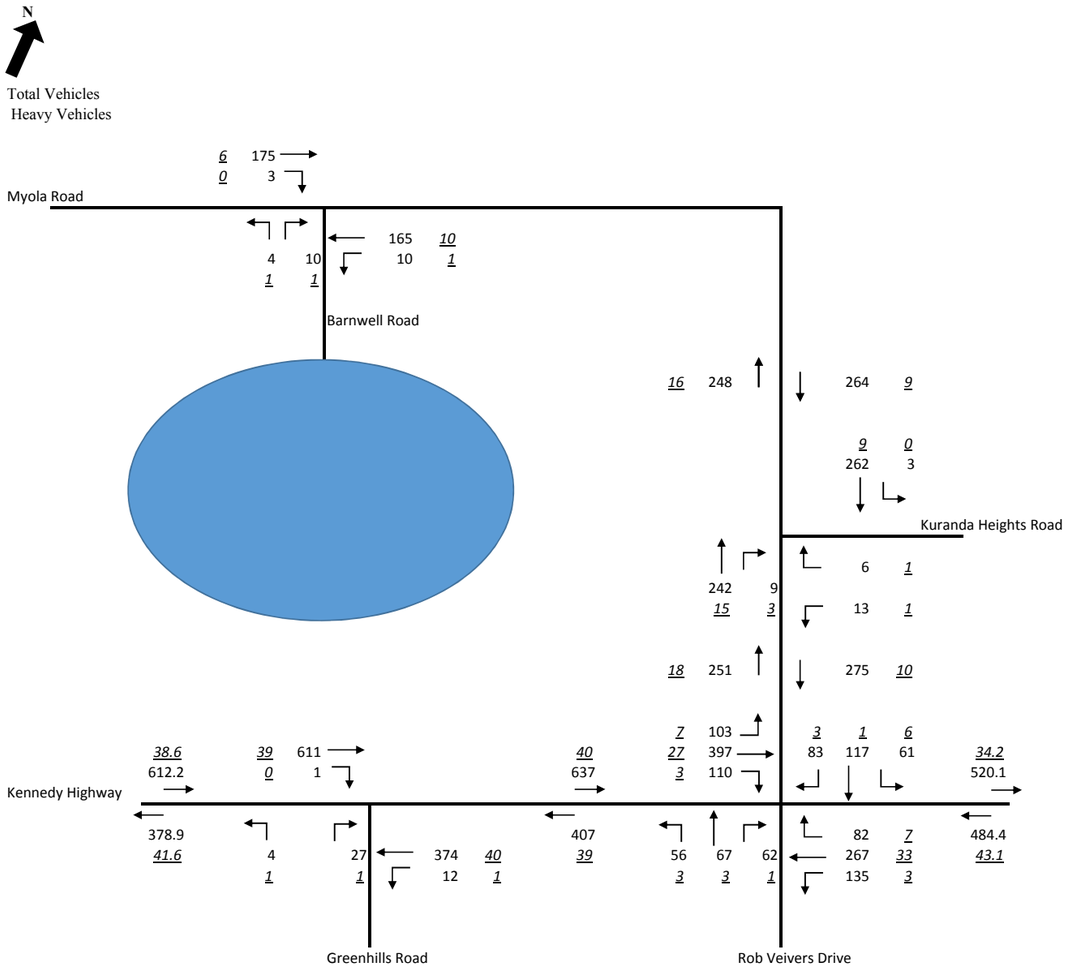

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Figure A11: 2037 AM Peak Base Traffic Volumes

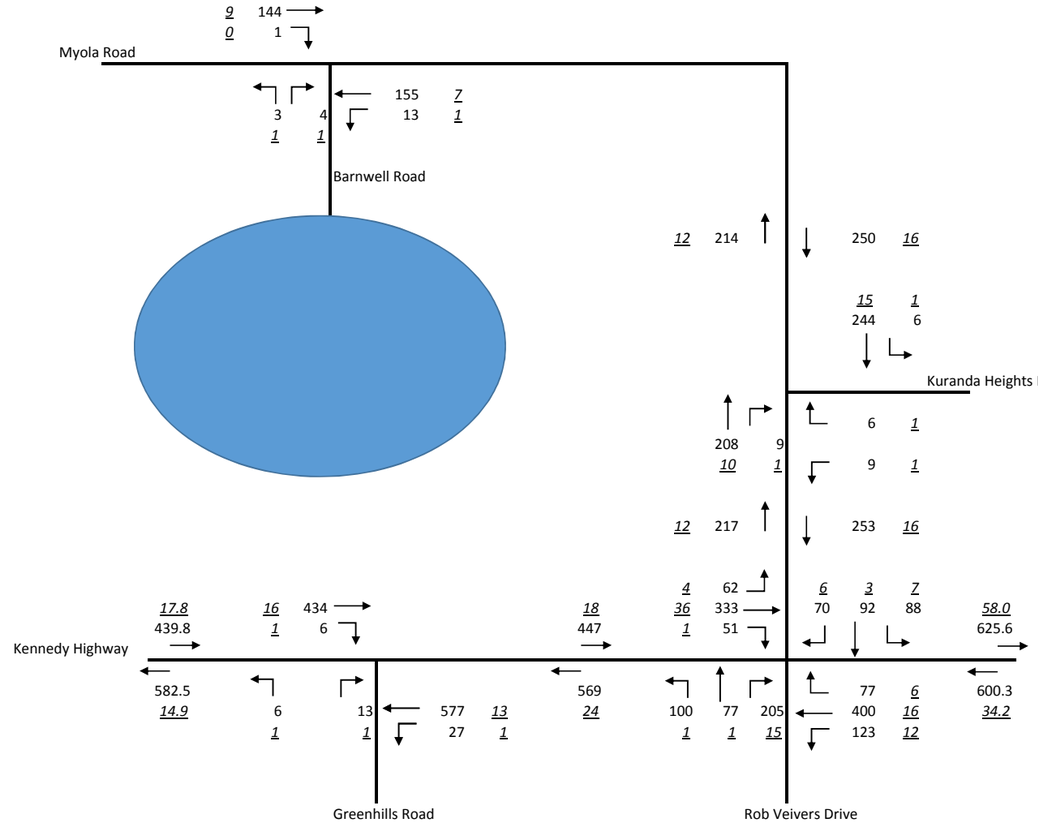

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Figure A12: 2037 PM Peak Base Traffic Volumes

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Appendix 13g

Usage Profiles

Environmental Impact Statement

Traffic Generation

Use	KUR Campus Day Students							
Description	Daily commute of Kur World Day Students. Likely to come from surrounding suburbs Assuming that only 60% of enrolled students will be there at any one day							
Daily Profile		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Based on 10 Students to get Average								
Origin/Destination	Cairns	6	8	8	4	6	4	4
	Kuranda	2	2		2	2	2	2
	Wider Tablelands	4	2	4	6	4	2	
	Total Trips	12	12	12	12	12	8	6

Total Trips Per Week	74
Trips Per Person Per Day	1.06
Origin/Destination Splits	
Cairns	54%
Kuranda	16%
Wider Tablelands	30%
Traffic Generation Rat	1.2
PT Split	75%
PV Split	25%
Bus Split	100%
Skyrail/Scenic Rail Spl	0%
Bus Occupancy	35.00
Car Occupancy	1.8
Passenger Car Equival	3

Traffic Generation

Use	Farmstay Accommodation							
Description	The Farmstay Accommodation is a series of bunkhouses aimed at visiting school groups. It is anticipated that the School Groups will stay on average two nights. Access will be predominately by Bus with minor PV use for Staff. Anticipated that there will be a day trip to Kuranda during each stay							
Beds	350							
Daily Profile	Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Based on 10 Guest to get Average								
Origin/Destination	Cairns	9		18		18		9
	Kuranda		20		20		20	
	Wider Tablelands	1		2		2		1
	Total Trips	10	20	20	20	20	20	10

Total Trips Per Week	120
Trips Per Person Per Day	1.71
Origin/Destination Splits	
Cairns	45%
Kuranda	50%
Wider Tablelands	5%
Service Vehicles	0.07
Generation	1.78
Traffic Generation Rat	2
PT Split	80%
PV Split	20%
Bus Split	100%
Skyrail/Scenic Rail Spli	0%
Bus Occupancy	35.00
Car Occupancy	2.5
Passenger Car Equival	3

Traffic Generation

Use	Function - Dining - Unique							
Description	This use is associated with the unique guests to the resort who will utilise the function/dining and retail areas only. Theses guests are unlikely to be sold tickets as part of a package and are likely to be high self drive tourists visiting the wider cairns region. Return Trips have been allowed for.							
Daily Profile		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Based on 10 Guest to get Average								
Origin/Destination	Cairns	8	6	8	10	8	12	6
	Kuranda	6	10	4	4	4	4	10
	Wider Tablelands	6	4	8	6	8	4	4
	Total Trips	20	20	20	20	20	20	20

Total Trips Per Week	140
Trips Per Person Per Day	2
Origin/Destination Splits	
Cairns	41%
Kuranda	30%
Wider Tablelands	29%
Traffic Generation Ra	2
PT Split	0%
PV Split	100%
Bus Split	100%
Skyrail/Scenic Rail Spl	0%
Bus Occupancy	35.00
Car Occupancy	2.5
Passenger Car Equiva	3

Traffic Generation

Use	Five Star Resort							
Description	Five Star Resort is focused on providing 3 night accommodation packages to international tourists. Packs will include a Reef Trip and Tablelands Tour. Occupancy varies with room configuration.							
	Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Typical Weekly Profile (Based on 85% Occupancy)	Trips Description	Arrival from Cairns, Evening Trip to Kuranda	Day Trip to Reef	Tableland Day Trip	Arrival and Departure to Cairns, Evening Trip to Kuranda	Day Trip to Reef	Tableland Day Trip	Departure to Cairns
Origin/Destination	Cairns	1	2		2	2		1
	Kuranda	2			2			
	Wider Tablelands			2			2	
	Total Trips	3	2	2	4	2	2	1

Total Trips Per Week	16
Average Trips Per Day	2.29
Origin/Destination Splits	
Cairns	50%
Kuranda	25%
Wider Tablelands	25%
Service Vehicle Percentage	5%
Service Vehicles	0.09
Average Daily Generation	2.38
Average Occupancy	1.8
Traffic Generation Ra	2.5
PT Split	60%
PV Split	40%
Bus Split	80%
Skyrail/Scenic Rail Spl	20%
Bus Occupancy	35.00
Car Occupancy	1.8
Passenger Car Equiva	3

Traffic Generation

Use	Golf Course							
Description	Golf course traffic generation is based only on users not staying at the resort (as they have been included in the accommodation rate). Due to the luggage requirements private vehicle is only option. Trip generation rate is a per person basis							
Daily Profile		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Based on 10 Guest to get Average								
Origin/Destination	Cairns	4	6	8	4	4	26	20
	Kuranda	4	0	6	2	2	8	8
	Wider Tablelands	0	2	8	4	4	12	8
	Total Trips	8	8	22	10	10	46	36

Total Trips Per Week	140
Trips Per Person Per Day	2
Origin/Destination Splits	
Cairns	51%
Kuranda	21%
Wider Tablelands	27%
Service Vehicles	Included in Resort Service Vehicles
Traffic Generation Ra	2
PT Split	0%
PV Split	100%
Bus Split	100%
Skyrail/Scenic Rail Spl	0%
Bus Occupancy	35.00
Car Occupancy	1.5
Passenger Car Equiva	3

Traffic Generation

Use	Glamping							
Description	Glamping experience is based on three night stays. Assumed similar profile to that of Leisure Hotel with Reef Trip and Tablelands Trip undertaken. Same PT rates adopted.							
Weekly Profile (Based on 85% Occupancy)	Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	Trips	Arrival from Cairns, Evening Trip to Kuranda	Day Trip to Reef	Tableland Day Trip	Departure to Cairns, Evening Trip to Kuranda	Day Trip to Reef	Tableland Day Trip	Departure to Cairns
Origin/Destination	Cairns	1	2		2	2		1
	Kuranda	2			2			
	Wider Tablelands			2			2	
	Total Trips	3	2	2	4	2	2	1

Total Trips Per Week	16
Average Trips Per Day	2.29
Origin/Destination Splits	
Cairns	50%
Kuranda	25%
Wider Tablelands	25%
Service Vehicles	0.09
Average Daily Generation	2.38
Number of Rooms	25
Average Occupancy	2.5
Traffic Generation Rat	2.5
PT Split	60%
PV Split	40%
Bus Split	80%
Skyrail/Scenic Rail Spli	20%
Bus Occupancy	35.00
Car Occupancy	2.5
Passenger Car Equival	3

Traffic Generation

Use	Health and Wellbeing Accommodation							
Description	Accommodation is based around 5 day stays with the goal of improving health and wellbeing. Likely to limit day trips and external activities							
Weekly Profile (Based on 85% Occupancy)		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	Trips	Arrival From Cairns	Day Trip to Reef		Trip to Kuranda		Depart and Arrival from Cairns	Day Trip to Reef
Origin/Destination	Cairns	1	2				2	2
	Kuranda				2			
	Wider Tablelands							
	Total Trips	1	2	0	2	0	2	2

Total Trips Per Week	9
Average Trips Per Day	1.29
Origin/Destination Splits	
Cairns	78%
Kuranda	22%
Wider Tablelands	0%
Service Vehicles	0.05
Average Daily Generation	1.34
Number of Rooms	60
Average Occupancy	1.3
Traffic Generation Rat	1.5
PT Split	60%
PV Split	40%
Bus Split	100%
Skyrail/Scenic Rail Spli	0%
Bus Occupancy	35.00
Car Occupancy	1.3
Passenger Car Equival	3

Traffic Generation

Use	Function - Dining - Unique							
Description	This use is associated with the unique guests to the resort who will utilise the function/dining and retail areas only. Theses guests are unlikely to be sold tickets as part of a package and are likely to be high self drive tourists visiting the wider cairns region. Return Trips have been allowed for.							
Daily Profile		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Based on 10 Guest to get Average								
Origin/Destination	Cairns	6	6	6	6	6	6	6
	Kuranda	2	2	2	2	2	2	2
	Wider Tablelands	2	2	2	2	2	2	2
	Total Trips	10	10	10	10	10	10	10

Total Trips Per Week	70
Trips Per Person Per Day	2
Origin/Destination Splits	
Cairns	60%
Kuranda	20%
Wider Tablelands	20%
Service Vehicles	Included in Health and WellbEing Accom
Traffic Generation Rate	2
PT Split	20%
PV Split	80%
Bus Split	100%
Skyrail/Scenic Rail Spl	0%
Bus Occupancy	35.00
Car Occupancy	2.5
Passenger Car Equival	3

Traffic Generation

Use	KUR Campus Accommodation							
Description	KUR Campus Accommodation is aimed at providing on site student accommodation to primarily international students. KUR Campus is likely to be run in conjunction with an established university requiring the occasional trip to Cairns for Study							
Weekly Profile (Based on 85% Occupancy)	Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	Trips	Classes in Cairns for the Day	Trip to Kuranda via Private Vehicle	No trips for day	Trip to Cairns for Classes. Trip to Kuranda	Trip to Cairns for Work/Work Experience	Social trip to Cairns and trip to Kuranda by PV	Trip to Kuranda
Origin/Destination	Cairns	2			2	2	2	1
	Kuranda		2		2		2	
	Wider Tablelands							
	Total Trips	2	2	0	4	2	4	1
	PT to Cairns	2			2	2		
	PT to Kuranda							

Total Trips Per Week	15
Average Trips Per Day	2.14
Origin/Destination Splits	
Cairns	60%
Kuranda	40%
Wider Tablelands	0%
Service Vehicles	0.09
Average Daily Generation	2.23
Average Occupancy	1
Traffic Generation Ra	2.5
PT Split	50%
PV Split	50%
Bus Split	100%
Skyrail/Scenic Rail Sp	0%
Bus Occupancy	35.00
Car Occupancy	1
Passenger Car Equiva	1.8

Traffic Generation

Use	Leisure Hotel/Apartments							
Description	Leisure Hotel/Apartments are focused on providing 3 night accommodation packages to international tourists. Packages will include a Reef Trip and Tablelands Tour. Occupancy varies with room configuration.							
	Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Weekly Profile (Based on 85% Occupancy)	Trips	Arrival from Cairns, Evening Trip to Kuranda	Day Trip to Reef	Tableland Day Trip	Arrival and Departure to Cairns, Evening Trip to Kuranda	Day Trip to Reef	Tableland Day Trip	Departure to Cairns
Origin/Destination	Cairns	1	2		2	2		1
	Kuranda	2			2			
	Wider Tablelands			2			2	
	Total Trips	3	2	2	4	2	2	1

Total Trips Per Week	16
Average Trips Per Day	2.29
Origin/Destination Splits	
Cairns	50%
Kuranda	25%
Wider Tablelands	25%
Service Vehicles	0.09
Average Daily Generation	2.38
Number of Rooms	270
Average Occupancy	3.03
Traffic Generation Ra	2.5
PT Split	60%
PV Split	40%
Bus Split	80%
Skyrail/Scenic Rail Spl	20%
Bus Occupancy	35.00
Car Occupancy	3.03
Passenger Car Equiva	3

Traffic Generation

Use	Owner Occupied Accommodation							
Description	Assumed family of four, one parent (professional) working in Cairns, one parent working locally/part time/stay at home, one child at school in Cairns, one at school in Kuranda. Two Car Family							
	Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Weekly Profile (Based on 85% Occupancy)	Trips	Trips to Cairns per Day, (Two PV, Two PT), Return Trip to Kuranda (work) (including Local School	Trips to Cairns per Day, (Two PV, Two PT), Two Return School Pick Up/Drop Off, One Courier Delivery from	Trips to Cairns per Day, (Two PV (Work), Two PT (School)), Return Trip to Kuranda (including	Work, Shopping/Medical etc.) Return Trips to Cairns (Two PT), Two Return School Pick Up Drop	Trips to Cairns per Day, (Two PV, Two PT), Return Trip to Kuranda (work) (including Local School	Two Return Trips to Cairns For Entertainment Purposes, Return Trip Locally	One Return Trip Kuranda, One Return Trip to Wider Tablelands
Origin/Destination	Cairns	4	6	4	6	4	4	
	Kuranda	2	0	2		4		2
	Wider Tablelands						2	2
	Local Roads Only	2	4	2	4	2	2	
	Total Trips	8	10	8	10	10	8	4
	PT Trips	2	2	2	2	2		

Total Trips Per Week	58
Average Trips Per Day	8.29
Origin/Destination Splits	
Cairns	48%
Kuranda	17%
Wider Tablelands	7%
Local	28%
Service Vehicles	Included
Average Daily Generation	8.29
Traffic Generation Ra	8.5

Traffic Generation

Use	Premium Villas Owner Occupied							
Description	Assumed family of four, one parent (professional) working in Cairns, one parent working locally/part time/stay at home, one child at school in Cairns, one at school in Kuranda. Two Car Family with various origin/destinations. Likely to undertake shopping in Cairns							
Weekly Profi	Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	Trips	Trips to Cairns per Day, (Two PV, Two PT), Return Trip to Kuranda (work) (including Local School Drop off), Return	Trips to Cairns per Day, (Two PV, Two PT), Two Return School Pick Up/Drop Off, One Courier Delivery from	to Cairns per Day, (Two PV (Work), Two PT (School)), Return Trip to Kuranda (including Local School Drop off), Return	Three (School, Work, Shopping/Medical etc.) Return Trips to Cairns (Two PT), Two Return School Pick Up Drop Off	Trips to Cairns per Day, (Two PV, Two PT), Return Trip to Kuranda (work) (including Local School Drop off), Return	Two Return Trips to Cairns For Entertainment Purposes, Return Trip Locally	One Return Trip Kuranda, One Return Trip to Wider Tablelands
Origin/Destination	Cairns	4	6	4	6	4	4	
	Kuranda	2	0	2		4		2
	Wider Tablelands						2	2
	Local Roads Only	2	4	2	4	2	2	
	Total Trips	8	10	8	10	10	8	4
	PT Trips	2	2	2	2	2		

Total Trips Per Week	58
Average Trips Per Day	8.29
Origin/Destination Splits	
Cairns	48%
Kuranda	17%
Wider Tablelands	7%
Local	28%
Service Vehicles	Included
Traffic Generation Ra	8.5

Use	Premium Villas							
Description	Premium Villas will consist of short term stays aimed at families (two bedrooms, three persons per dwelling) and results in a slightly higher PV mode share							
Weekly Profile (Based on 85% Occupancy)	Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	Trips	Arrival from Cairns, Evening Trip to Kuranda	Day Trip to Reef	Tableland Day Trip	Arrival and Departure to Cairns, Evening Trip to Kuranda	Day Trip to Reef	Tableland Day Trip.	Departure to Cairns. Morning Trip to Kuranda
Origin/Destination	Cairns	1	2		2	2		1
	Kuranda	2				2		2
	Wider Tablelands			2			2	
	Total Trips	3	2	2	2	4	2	3

Total Trips Per Week	18
Average Trips Per Day	2.57
Origin/Destination Splits	
Cairns	44%
Kuranda	33%
Wider Tablelands	22%
Service Vehicles	0.10
Average Daily Generation	2.67
Average Occupancy	3
Traffic Generation Rat	3
PT Split	60%
PV Split	40%
Bus Split	80%
Skyrail/Scenic Rail Spli	20%
Bus Occupancy	35.00
Car Occupancy	3
Passenger Car Equival	3

Traffic Generation

Use	Premium Villas Units							
Description	60 Premium Villa Units focused on providing 3 night accommodation packages to international tourists. Packs will include a Reef Trip and Tablelands Tour. Rooms are assumed to be two bedrooms with an average occupancy of 3 persons. Limited car parking to be provided to encourage use of Private Coach							
Weekly Profile (Based	Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	Trips	Arrival from Cairns, Evening Trip to Kuranda	Day Trip to Reef	Tableland Day Trip	Arrival and Departure to Cairns, Evening Trip to Kuranda	Day Trip to Reef	Tableland Day Trip	Departure to Cairns
Origin/Destination	Cairns	1	2		2	2		1
	Kuranda	2			2			
	Wider Tablelands			2			2	
	Total Trips	3	2	2	4	2	2	1

Total Trips Per Week	16
Average Trips Per Day	2.29
Origin/Destination Splits	
Cairns	50%
Kuranda	25%
Wider Tablelands	25%
Service Vehicles	0.09
Average Daily Generation	2.38

Number of Rooms	60
Average Occupancy	3

Traffic Generation Ra	2.5
PC Split	60%
PV Split	40%
Bus Split	80%
Skyrail/Scenic Rail Sp	20%
Bus Occupancy	35.00
Car Occupancy	3
Passenger Car Equiva	3

Traffic Generation

Use	Rainforest Accommodation Centre							
Description	The Rainforest Education Centre is a series of bunkhouses aimed at visiting school groups. It is anticipated that the School Groups will stay on average two nights. Access will be predominately by Bus with minor PV use for Staff. Anticipated that there will be a day trip to Kuranda during each stay							
Beds	350							
Daily Profile		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Based on 10 Guest to get Average								
Origin/Destination	Cairns	9		18		9		
	Kuranda		20		20			
	Wider Tablelands	1		2		1		
	Total Trips	10	20	20	20	10	0	0

Total Trips Per Week	80
Trips Per Person Per Day	1.14
Origin/Destination Splits	
Cairns	45%
Kuranda	50%
Wider Tablelands	5%
Service Vehicles	0.05
Average Daily Generation	1.19
Traffic Generation Ra	1.5
PT Split	80%
PV Split	20%
Bus Split	100%
Skyrail/Scenic Rail Spl	0%
Bus Occupancy	35.00
Car Occupancy	2.5
Passenger Car Equiva	3

Traffic Generation

Use	Tourist Lifestyle Lots								
Description	Assumed that accommodation is aimed at larger Family Groups that may chose to Self Drive in a higher proportion. Assumed average occupancy of 3 people. PV may be brought or hired from KUR World. Assumed average 3 night stay.								
Weekly Profile (Based	Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	
	Trips	Arrival from Cairns Via PT. Car hire from KUR World for Stay. Trip to Kuranda for Groceries/Sight seeing etc.	Self Drive Tour of Tablelands and separate self drive trip to Kuranda.	PT to Reef for day, other activities are limited to resort	Departure via PT, Arrival via PV. Additional trip to Kuranda	Day trip via PV to Port Douglas/Cairns. Trip into Kuranda for Sight seeing	PT Cairns for Reef Tour.	Departure Trip to Cairns	Trips per Day
Origin/Destination	Cairns	1	0	2	2	2	2	1	1.43
	Kuranda	2	2		2	2			
	Wider Tablelands		2						
	Local Roads Only								
	Total Trips	3	4	2	4	4	2	1	
	PT Trips	1		0	1		2		

Total Trips Per Week	20
Average Trips Per Day	2.86
Origin/Destination Splits	
Cairns	50%
Kuranda	40%
Wider Tablelands	10%
Local	0%
Service Vehicles	0.11
Average Daily Generation	2.97
Traffic Generation Ra	3
PT Split	50%
PV Split	50%
Bus Split	80%
Skyrail/Scenic Rail Sp	20%
Bus Occupancy	35.00
Car Occupancy	3
Passenger Car Equiva	3

Traffic Generation

Use	Tourist Activities							
Description	These include daily activities that attract unique (i.e. not staying at the resort) visitors to KUR-World. Predominate travel is via PT. Does not include daily visitors to KUR-Campus and Golf Course (Luggage Issues prevent use of Skyrail)							
Based on 10 Guest to get Average	Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Origin/Destination	Trips							
	Cairns	20	18	20	18	20	18	18
	Kuranda		0		2			2
	Wider Tablelands		2				2	
	Total Trips	20	20	20	20	20	20	20

Total Trips Per Week	140
Trips Per Person Per Day	2
Origin/Destination Splits	
Cairns	94%
Kuranda	3%
Wider Tablelands	3%
Traffic Generation Rat	2
PT Split	90%
PV Split	10%
Bus Split	60%
Skyrail/Scenic Rail Spl	40%
Bus Occupancy	35.00
Car Occupancy	3
Passenger Car Equival	3

KUR-World

Appendix 13h

Traffic Generation Development Tech Note

Environmental Impact Statement

Technical Note

ARUP

Cairns Corporate Tower
Level 10 15 Lake Street
Cairns QLD 4870
PO Box 939 Edge Hill QLD 4870
Australia
www.arup.com

t +61 7 4032 6000
f +61 7 4032 6001
d +61 7 4032 6060

Project title	KUR-World Environmental Impact Statement	Job number	253251-00
cc	Nathan Lee Long	File reference	
Prepared by	Elliott Horsup	Date	25 October 2017
Subject	KUR-World Traffic Generation Methodology		

1 Introduction

KUR-World is a proposed Integrated Eco-Resort with Coordinated Project status. The proponent is currently preparing an Environmental Impact Statement for the project expected to be submitted to the Office of the Coordinator General in late 2018. The KUR-World customer / visitor experience will focus on the appreciation and protection of the site's natural and cultural assets, as well as those of the surrounding Atherton Tablelands and Wet Tropics World Heritage Area. It will deliver a combination of day experiences, short term and permanent residential options (including education), recreation, wellbeing, nature-based activities and rural experiences. The project site comprises 12 titles and extends to 672 ha (including internal roads) of pasture, regrowth, open woodland, rainforest and watercourses.

The KUR-World Integrated Eco-Resort will be based on the following themes:

- Premium nature and culturally-based-tourism;
- Rainforest, Agriculture and Environmental Education and business;
- Health, rejuvenation and wellbeing; and
- Tropical adventure and recreation.

KUR-World will be a unique Eco-Resort providing different activities and targeting the growing nature-based tourism market. The project will be staged over three stages and includes the following uses:

- Stage 1:
  - Farm Theme Park and day activities;
  - Queenslander Lots and Accommodation;
  - Produce Garden;
  - Lifestyle Villa Accommodation;

  - Premium Villa Accommodation
  - KUR-Village; and
  - Business and Leisure Hotel.
- Rainforest Education Centre
- Stage 2:
  - Sporting Precinct;
  - Golf Club and Function Centre;
  - Golf Course;
  - Premium Villa Accommodation; and
  - 5-Star Resort.
- Stage 3:
  - Five Star Resort;
  - KUR-World University Campus;
  - Health and Wellbeing Retreat; and
  - Premium Villa Accommodation.

The following Technical Memo details the general method of the formulation of the traffic generation rates for the various uses within the resort along with an overview of the key assumptions used in the estimation of traffic generated by the development. It has been provided as a guide to assist in the assessment of the overall traffic impact of the resort.

2 Terms of Reference

As specified in Section 11.58 of the Terms of Reference document for the KUR-World Integrated Eco-Resort issued by the Department of State Development, the traffic impact assessment has been undertaken in accordance with the *Guidelines for the Assessment of Road Impacts of Development* (*GARID*).

3 Traffic Generation Formulation

Due to the uniqueness of the proposed KUR-World Eco-Resort, the varied uses, occupancy rates, location and target cliental, the use of standard traffic generation rates is considered inappropriate as it is likely to overestimate the traffic generated by the development. Therefore, an alternative method to estimate the traffic generation of the various uses was developed using first principals in order to accurately estimate the traffic generated by the development.

The method used to formulate the traffic generation for each of the uses was based around the expected trips generated in a typical week and the likely origin/destination of each trip for the various uses. Details regarding the formulation of the traffic generation for the two general uses; overnight accommodation and day tours are presented in the following sections accompanied by the method for determining the origin/destination splits and the key assumptions used.

3.1 Origin/Destination Split of Trips

The assumed origin/destination of trips is based on the three trip directions possible from the KUR-World site. These directions include:

- To/from Cairns and surrounds via the Kennedy Highway (Kuranda Range);
- To/from the Wider Tablelands via the Kennedy Highway; and
- To/from Kuranda via Rob Veivers Drive.

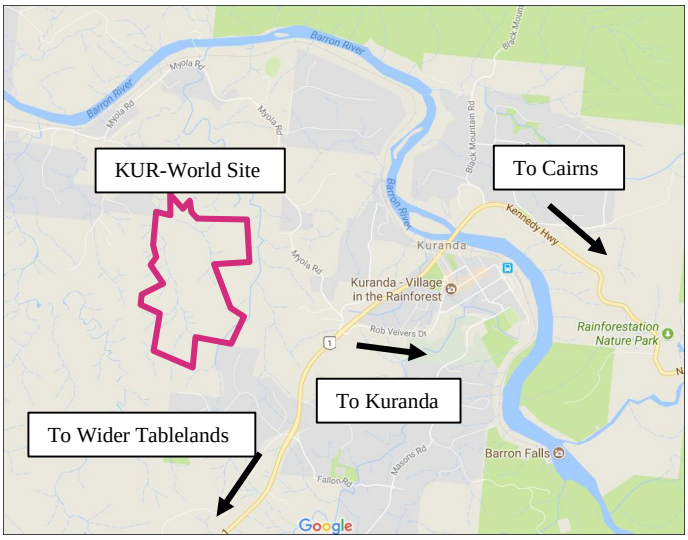

Figure 1: KUR-World site and the possible origin/destination directions

These origin/destination locations accommodate all major external trips likely to be generated by the KUR-World development, including access to the resort from the Cairns International Airport and other Cairns accommodation, access to the Reef Fleet Terminal for day trips to the Great Barrier Reef (GBR) and day trips to the wider Atherton Tablelands and Kuranda Village.

The origin/destination splits vary for the differing uses and are based on the anticipated trip profile of guests. For example, it has been assumed that 94% of Unique Day Guests will have an origin/destination of Cairns, while the KUR-Campus Day Students are likely to have a lower proportion of trips with Cairns as the origin/destination reflecting that students are likely to be residents of Kuranda and the Wider Tablelands as well as Cairns. The method used to formulate these assumption is explained further in Section 3.4.

3.2 Access to KUR-World from Cairns

Access to the KUR-World development from Cairns and surrounds will be available from three distinct modes:

- Access via the Kuranda Range via Private Vehicle (PV) or Private Coach (PC);
- Access via Sky Rail from the Smithfield Sky Rail Station; and
- Access via Kuranda Scenic Rail from either Cairns Central Station or Freshwater Station.

Guests accessing KUR-World via Sky Rail or Kuranda Scenic Rail will be transported from Kuranda Station to the resort via the proposed shuttle service which has been accounted for within the traffic generation formulation. Transport to and from the Cairns based stations is anticipated to be via the existing private shuttle services that currently operate between the stations and Cairns accommodation, with a proposed new shuttle service to be provided between the airport and each of the stations. It is estimated that the KUR-World development will generate demand for approximately 40 additional private shuttle trips per day between the Sky Rail and Scenic Rail stations and the airport and Cairns accommodation to support access to the resort (approximately an additional 20 private shuttle trips for Scenic Rail/ Sky Rail required based on the assumption that

the current private shuttles do not have additional capacity). KUR-World will either provide the additional shuttles or engage a suitable private coach service to provide the services.

3.2.1 Capacity of Kuranda Scenic Rail and Sky Rail

Due to the private commercial nature of these transport modes, it has not been possible to access passenger data in order to assess the capacity of these modes to accommodate the KUR-World development. However, it is noted that:

- Not all trips on these modes will be new trips as existing Kuranda Scenic Rail and Sky Rail guests are likely to visit KUR-World while in Kuranda;
- The project team has had verbal confirmation of Sky Rails ability to accommodate the development through a combination of increased operating times and capacity improvements achieved through the use of a higher occupancy gondola. Therefore, it is assumed that the Sky Rail has ability to accommodate the expected 400 return trips per day associated with KUR-World; and
- The current passenger occupancy on the Kuranda Scenic Rail is unknown, although through conversations with the service manager and observation of train operations over a number of weeks, it is not anticipated that the accommodation of up to an additional 150 passengers per journey (300 return trips per day) will be a significant issue based on the current 550 passenger capacity of the Scenic Rail trains.

It is noted that overnight guests luggage is unable to be accommodated on the Kuranda Scenic Rail and Sky Rail transport modes, therefore a luggage service will be utilised to transport guest's luggage to and from the resort as required via the Kennedy Highway (Kuranda Range). Due to check in and departure times this is anticipated to be limited to 2 to 4 (1 to 2 return) truck movements per day.

3.3 Accommodation Elements

KUR-World accommodation will predominately be sold as three night packages to international tourists with elements such as day trips to the GBR and Wider Tablelands included as part of the overall accommodation package. The accommodation elements to be provided at KUR-World include:

- A 270 Apartment Leisure Hotel;
- A 200 Room Five-Star Resort;
- 323 Premium Accommodation Villas;
- A 60 Room Health and Wellbeing Retreat;
- A 350 Bed Rainforest Education Centre; and
- A Glamping Experience (25 tents/rooms).

To estimate the traffic generation of these accommodation elements, a standard weekly profile was formulated based on the expected usage, typical clientele and the trips they are likely to generate.

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25 October 2017

The typical weekly profile for a room in the Five Star Resort is presented below in Table 1. Key features of the traffic generation formulation for a Five Star Resort room include:

- Five Star Resort rooms will predominately be sold as a three night package. The three night package is set to include a day trip to the GBR and to the Wider Tablelands along with a return trip to Kuranda. Resort guests are anticipated to utilise the significant on-site facilities for dining and recreational activities which limits the number of external trips generated. There is potential for only a single return trips to Cairns to be generated for each room per three night stay (based on one return trip to / from Cairns International Airport / Cairns accommodation assuming that no external day trips are undertaken). Therefore the weekly profile developed accommodating daily external trips is seen to be a realistic estimate of the per room trip generation;
- The weekly profile is based upon two, three night packages per room per week or an 85% occupancy rate i.e. one night per week the room is unoccupied. Extended stays are likely to reduce the overall traffic generation as it is unlikely that additional day trips (outside of those allowed in the three night scenario) will be requested for trips extend beyond three nights;
- The generation rate for the Five Star Resort is exclusive to guests as Five Star Resort staff traffic generation will be accommodated as a separate use;
- The 'per room' service vehicle generation has been based on the addition of 5% of the total daily trip rate. For the Five Star Resort this represent approximately 20 service vehicle trips per day which is considered appropriate to service the facilities;
- The combined daily and service vehicle traffic generation rate has been increased from 2.4 vehicles per day (vpd) to 2.5vpd to accommodate any additional vehicle trips not accounted for to provide a robust realistic scenario; and
- The Peak Hour Traffic generation is to be based on the standard peak hour traffic generation rates scaled proportionally to the traffic generation of the use (i.e. daily rate of 3.0 vpd (RTA Motel Rate) to 2.5vpd, peak hour rate of 0.4vph (RTA Motel Rate) to 0.33vph).

The traffic generation rates for all accommodation elements have been developed using the same methodology based on the typical weekly profile and expected number of trips. Other key assumptions such as the split of Private Vehicle and Public Transport access to KUR-World have been based on existing tourism data, these assumptions are further explored in Section 4.1 along with the major assumptions used for the formulation of the overall site traffic generation.

Table 1: The typical weekly profile and traffic generated by a room in the Five Star Resort.

Five Star Resort								
Description	The Five Star Resort is focused on providing 3 night accommodation packages to international tourists. Packages will include a GBR Trip and Tablelands Tour. Occupancy rates of Five Star Resort rooms are 1.8 persons.							
Typical Weekly Profile (Based on 85% Occupancy)	Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	Trip Description	Arrival from Cairns, Evening	Day Trip to GBR	Tableland Day Trip	Arrival and Departure to Cairns, Evening	Day Trip to GBR	Tableland Day Trip	Departure to Cairns

		Return Trip to Kuranda			Trip to Kuranda			
Origin/ Destination	Cairns	1	2		2	2		1
	Kuranda	2			2			
	Wider Tablelands			2			2	
	Total Trips	3	2	2	4	2	2	1

Total Trips Per Week	16
Average Trips Per Day	2.29 vpd
Origin/Destination Splits	
Cairns	50%
Kuranda	25%
Wider Tablelands	25%
Traffic Generation	
Service Vehicle Percentage	5%
Service Vehicles Per Room per Day	0.11 vpd
Total Vehicles Per Day	2.4 vpd
Traffic Generation of Use	2.5vpd
Peak Hour Traffic Generation	0.33 vph

3.4 Day Trip Elements

In addition to the accommodation elements, the KUR-World development proposes a number of uses that will generate day trips, in addition to use by overnight guests at the resort. KUR-World proposes uses such as KUR-Cow, a farm based theme park, Golf Course, adventure tourism operations such as quad biking and zip-lining and various other uses such as the Health and Wellbeing centre that will attract unique day guests to the resort. The traffic generated by the day trip elements is limited to a return trip per person per day, noting that staff trip will be accommodated as a separate use. The number of guests per day has been comprehensively developed in conjunction with the business plan and is based on the anticipated number of unique day guests per day (i.e. not staying at the resort and requiring daily transport to and from the resort) for each of the proposed uses.

As the generation rates are limited to the return trip for each guest, only the origin/destination of these guests is unknown. To generate the origin/destination split of these movements a typical weekly profile of guests was developed (as seen in Table 2). The typical weekly profile is based on an average number of ten (10) guests per day and their assumed origin/destination. The weekly profile of Day Trip Tourist Activities (as seen in Table 2) reflects the very high proportion of guests likely to originate from the Cairns area. Similar weekly profiles has been developed for other uses that will likely have a different user profile such as the Golf Course (likely to appeal to a wider range of users including residents of surrounding areas and have a low use of PC due to luggage requirements) and KUR-Campus (the daily trip generation of this use is to be based on student numbers, however attendance is not consistent over the week leading to a lower daily trip rate per student. This use is also likely to have a wider origin/destination profile).

A manual traffic survey was conducted at the nearby Rainforest Station tourist park in order to bench mark the expected mode split and arrival and departure profile. The survey results showed 90% of guests utilise some form of group transport (mini-van through to 50 seat bus) while only

10% utilised a private car. The peak arrival/departure rates at Rainforest Station showed that approximately 13% of guests arrived in the morning period between 9:00-10:00 AM while approximately 18% of trips occurred between 2:30-3:30 PM. The hourly arrival and departure profile of Rainforest Station is shown in Figure 2. KUR-World proposes to adopt a rate of 15% of all Unique Day Guests arriving in the peak periods, generally consistent with the observations at Rainforest Station and survey results for theme parks based in the Gold Coast area (approximately 14% in peak periods for these developments).

Table 2: Origin/Destination of unique day guests based on a 10 guest profile.

Use	**Day Trip Tourist Activities**							
Description	These include daily activities that attract unique (i.e. not staying at the resort) visitors to KUR-World. Predominate travel is via PC. Does not include daily visitors to KUR-Campus and Golf Course.							
Based on 10 Guests per Day	Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Origin/Destination	Cairns	20	18	20	18	20	18	18
	Kuranda				2			2
	Wider Tablelands		2				2	
	Total Trips	20	20	20	20	20	20	20

Trips per person per day	2
Origin / Destination	
Cairns	94%
Kuranda	3%
Wider Tablelands	3%

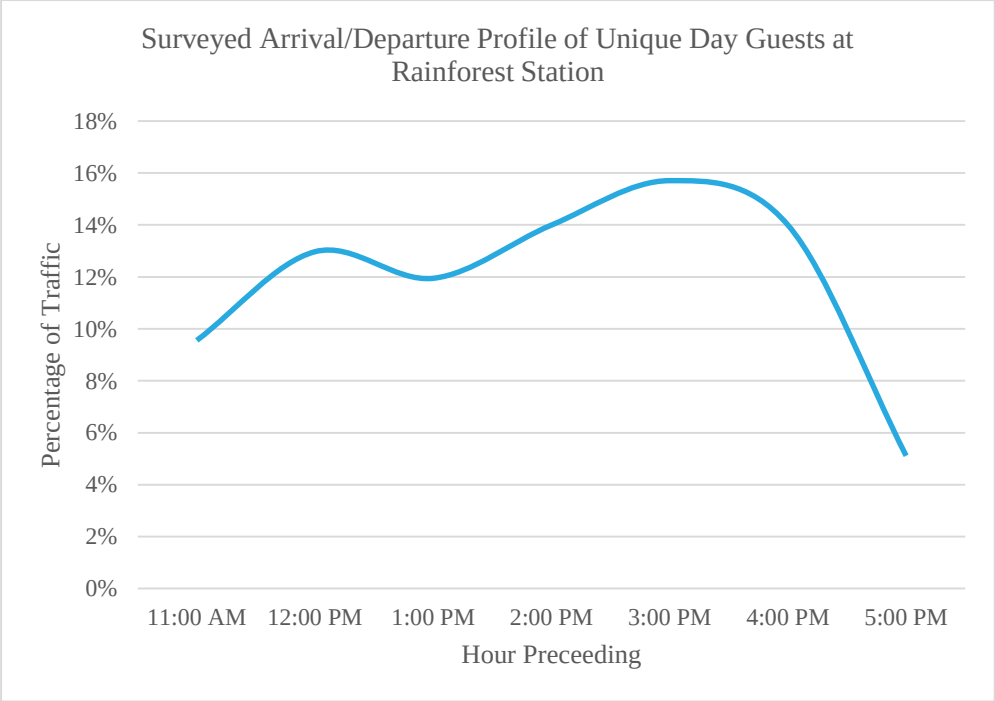


Figure 2: Surveyed arrival and departure profile of Rainforest Station.

3.5 Cairns to Resort Shuttle Service

KUR-World proposes to operate a number of shuttles between the subject site and Cairns to transport guests and resort staff. Based on the current traffic generation, there will be approximately 100 shuttle trips between the resort and Cairns daily (50 return trips) once KUR-World is fully operational in 2027. Preliminary shuttle schedules have been developed to cater for all users including staff and resort guests. The preliminary shuttle schedules for the resorts full operation and Stage One operation are presented in Figure 3 and Figure 4 respectively. The shuttle schedule has been based on the assumption that shuttles are at 70% capacity and therefore have additional capacity throughout the day to cater for variations in demand. Operating hours are extended to cater for staff movements and outside hour's guest travel and can be revised as necessary to cater for demand.

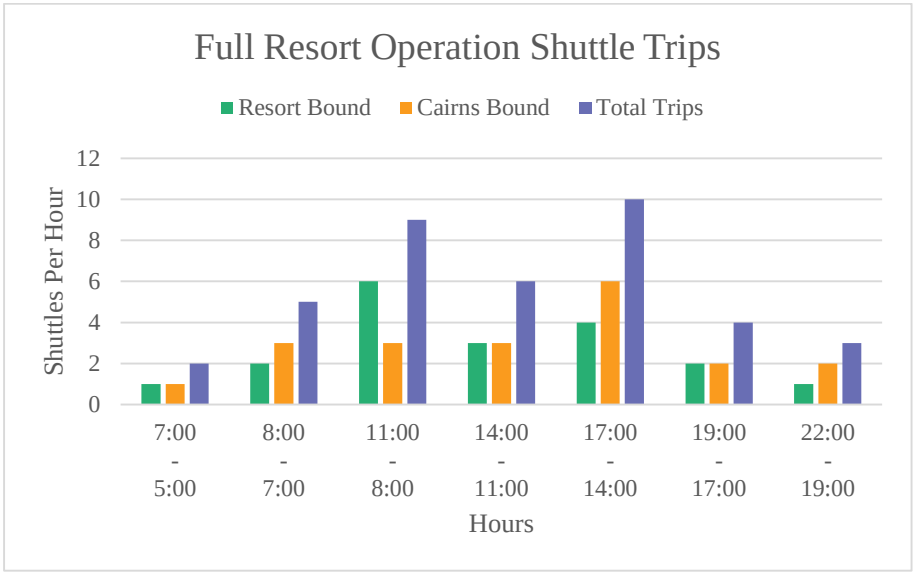


Figure 3: Preliminary shuttle schedule during full operation of the resort.

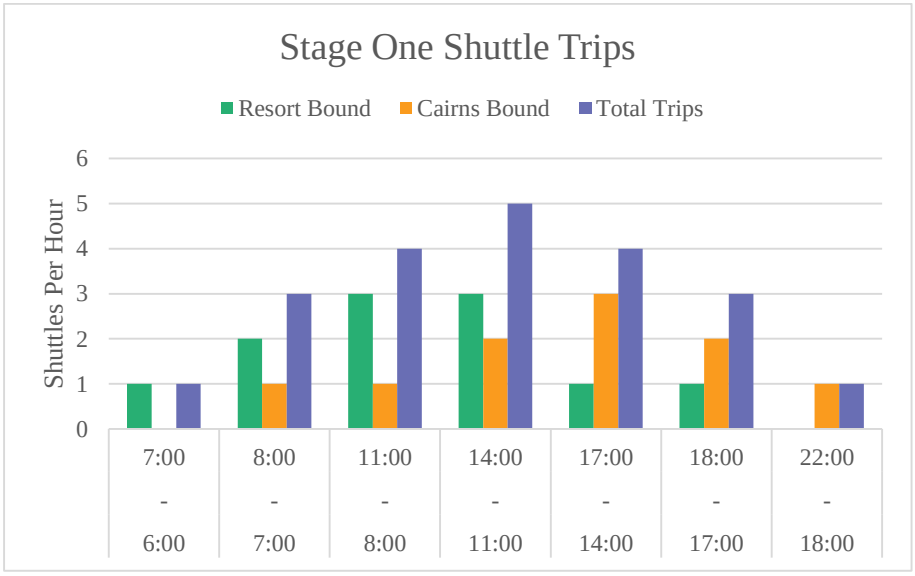


Figure 4: Preliminary shuttle schedule for Stage 1 operation of the resort.

4 Summary

This technical memo presents the method used to formulate the traffic generation rates and origin/destination splits for the various uses at KUR-World. Traffic generation rates for all the resorts uses have been developed based on the general methodology presented in this technical memo and the methodology used is considered appropriate for this unique resort development. The methods used seek to present a realistic estimation of the traffic generated by this development.

Key assumptions that have been used in the formulation of the overall traffic generation of the development and their basis are highlighted in Section 4.1.

4.1 Key Assumptions

Key assumptions used in the formulation of the traffic generation for the varied uses are presented in Table 3 below. The table details the key assumptions proposed and the basis of the assumption, providing additional commentary as needed.

Table 3: Key assumptions utilised in the formulation of the traffic generation for KUR-World.

Key Assumption	Assumption Proposed	Basis of Assumption	Commentary	Kuranda Range Sensitivity Analysis
Mode Share of Private Coach to Resort for Accommodation	For accommodation elements such as the Five Star Resort, KUR-World proposes to adopt a 60% PC/40%PV vehicle split.	Tropical North Queensland Tourist Data compiled by Tourism Research Australia (TRA) shows that the percentage of self-drive trips for both international and domestic overnight tourists is 40%. Therefore the PC percentage is 60%.	TRA data shows that international tourists (the KUR-World target market) undertake 11% of all trips as self-drive, while domestic tourists undertake 48% of all trips as self-drive. The assumed 60/40 splits represent a realistic scenario and accommodates any transition from predominately international tourism to domestic tourism that the resort may have in the future. Recent surveys undertaken by Arup at Thala Beach Lodge (as a similarly comparable development) showed a PC/PV split of 55/45, given the smaller development intensity and a assumed higher proportion of domestic tourists, the observed rate supports the adoption of the proposed 60/40 PC/PV mode split.	A sensitivity analysis was conducted on the assumed mode split (60% PC/40% PV) to test the impacts of this assumption on traffic utilising the Kuranda Range. A 5% decrease in the PC vehicle usage (i.e. 55%PC/ 45% PV) for the major tourist accommodation elements (Five Star Resort, Leisure Hotel and Premium Villas) will see the amount of traffic associated with these uses utilising increase by approximately 8% (additional 38 vehicles) on the Kuranda Range. This is an increase of approximately 0.05 trips per unit/dwelling per day. The 8% increase represents an overall traffic increase of 0.36% (increased from 4.48% to 4.84%) on the assumed 2027 Kuranda Range traffic volumes (10774 vpd).
Mode Share of Private Coach to Resort for Day Guests	For day tour elements such as KUR-Cow, KUR-World proposes to adopt a 90% PC/10% PV split for access to KUR-World.	90% of Day Tour Guests to the nearby Rainforest Station (a similar tourist attraction) arrive via Coach/Minibus.	The 90/10 rate proposed is the observed mode split from a recent survey at the nearby Rainforest Station. The splits support a large proportion of international tourists (the KUR-World target market) accessing the resort as part of a day tour package involving door to door transfers that make a significant portion of the international tourist market in FNQ.	A 5% decrease in the PC usage (i.e. mode split decreases from 90/10 to 85/15) will see an relative increase in traffic associated with the Unique Day Guests (1135 Guests) of approximately 17.7%. A 5% decrease is expected to increase the traffic on the Kuranda Range by 30 passenger car equivalents. The 17.7% increase represents an overall traffic increase of 0.28% (increased from 1.58% to 1.86%) on the assumed 2027 Kuranda Range traffic volumes (10774 vpd).
Split of PC (Coach/ Skyrail/ Scenic Rail) for Cairns Based Trips.	For trips where Skyrail and Scenic Rail are viable transport modes (i.e. Cairns origin/destination and tourism based (i.e. not KUR-Campus/Staff)) the split of guests utilising these modes has been taken as a proportion of the overall PC trips. For accommodation elements, Skyrail/Scenic Rail is assumed to make up 20% of PC trips (80/20 Bus/Skyrail split). For unique day guest elements Skyrail/Scenic Rail is assumed to make up 40% of PC trips (60/40 Bus/Skyrail split). Skyrail and Scenic Rail trips are split evenly.	The assumed splits are considered to be in line with current transport modes to Kuranda for day trips. The lower rate for overnight guests reflects the expected lower number of guests wishing to utilise the Skyrail / Scenic Rail due to airport connections.		A 5% decrease in the usage of Skyrail and Scenic Rail by Unique Day Guests will see an increase (2.8 shuttles per day) in the number of shuttles utilising the Kuranda Range. This increase represents an overall traffic increase of 0.08% (increased from 1.58% to 1.66%) on the assumed 2027 Kuranda Range traffic volumes (10774 vpd).

Peak Hour Traffic Generation	KUR-World proposes to adopt a proportional peak hour traffic generation figure to that of the standard rates where available.	While the overall traffic generation rate is lower than the standard rates, the peak hour traffic generation is likely to assume a similar profile to that of the standard rate, therefore a proportional rate should be adopted for uses such as overnight accommodation elements.	As an example, the standard traffic generation rates for a Motel is 3vpd and 0.4vph, KUR-World proposes 2.5vpd and 0.33vph for accommodation elements.	
Service Vehicle Traffic Generation	Service Vehicle Traffic Generation for the various uses is assumed to be 4% of the total traffic generation.		In the absence of detailed service vehicle generation data, the 4% figure is seen to be a conservative estimate of the total service vehicle traffic generation for the various development uses. Recent surveys at Thala Beach Resort and Rainforest Station showed 7% and 3% total service vehicle respectively therefore the adopted 4% rate is seen as a realistic estimate of the service vehicle generation given the size and scale of the KUR-World development. In addition, the traffic generation has generally been rounded up to accommodate any additional vehicle movements associated with the resort operation.	
Private Vehicle Occupancy – Unique Day Guests	Private Vehicle occupancy for unique day guests is generally 3.0 persons per vehicle.	Day attractions are likely to attract small groups and families over single persons, therefore an occupancy rate of 3.0 persons per vehicle has been chosen for unique day guests. Uses with differing occupancy Rates include the Golf Course (1.5 persons per vehicle) and KUR-Campus day students (1.8 persons per vehicle)		
Private Vehicle Occupancy – Accommodation	The occupancy rate of private vehicle trips associated with the varied accommodation elements is directly related to room occupancy rates (i.e. 1.8 persons per room, 1.8 persons per vehicle for the Five Star Resort)	Car occupancy rates are likely to directly relate to the number of persons per room as it is unlikely that a room will be serviced by more than one car. It is also anticipated that most trips will be done on a room by room basis rather than a person by person basis, therefore leading to a direct relationship between room occupancy and car occupancy rates.		
Staff Traffic Generation Rate	The traffic generation rate adopted for staff is 1.5 trips per day reflecting the high levels of part time/casual employment at the resort.	In the absence of detailed daily staffing requirements a traffic generation rate lower than a return trip per day per staff member has been adopted. With an estimated 1450 staff, of which 950 are expected to be employed on a part time/casual basis at the resort the staff traffic it is expected that staff members will work approximately 4 day per week at the resorts leading to a reduced travel rate when extrapolated over a week. Therefore a rate of 1.5 trips per day		An increase in the traffic generation rate for staff from 1.5 to 1.75 trips per day will see a 16.7% increase in staff traffic. This increase represents an overall traffic increase of 0.39% (increased from 2.31% to 2.70%) on the assumed 2027 Kuranda Range traffic volumes (10774 vpd).

		per staff member employed at the resort has been adopted.		
Staff PC/PV Split	The PC/PV split for staff is currently assumed to be 40/60. A staff shuttle system and limited on-site car parking is proposed to support the high PC mode share for staff.	KUR-World proposes to utilise a park and ride shuttle service to accommodate a majority of staff transport to and from Cairns to minimise the impact on the Kennedy Highway Kuranda Range section. The location of these park and ride facilities are currently unknown however locations will be identified.		A sensitivity analysis was undertaken for Cairns based staff to understand the potential impacts of changes to the levels of PC usage and patronage on Kuranda Range traffic volumes. Should the current model split (40% PC/ 60% PV) decrease by 5% there will be a 6.7% increase in the traffic associated with Cairns based staff. This will result in a 0.15% increase (increased from 2.31% to 2.47%) in the assumed 2027 Kuranda Range traffic volumes (10774 vpd). The impact of shuttle patronage was also tested. It was found that should the staff patronage per shuttle decrease from 35 per bus to 25 per bus (on 50 seat buses) would increase shuttle trips by 17 % (1.1 shuttles per day), resulting in an overall increase in traffic generation of 1.3% for Cairns based staff. This increase represents a 0.03% increase in the assumed 2027 Kuranda Range traffic volumes.
Owner Occupied Accommodation	Approximately 20% of the Premium Villas and Lifestyle Lots will be sold as owner occupied accommodation.		The traffic generation associated with owner occupied accommodation elements is expected to be higher than the rate proposed for tourist accommodation. The traffic generation rate assumed for these elements is 8.5 trips per dwelling per day.	A sensitivity test on the potential increase in the rate of owner occupied accommodation among the Premium Villas was conducted to establish the potential impact on Kuranda Range traffic volumes. A 5% increase in owner occupied rates (i.e. to 25%) would result in an increase in a 9.3% increase in the traffic associated with these uses. The 9.3% increase represents an overall traffic increase of 0.32% (increased from 3.45% to 3.78%) on the assumed 2027 Kuranda Range traffic volumes (10774 vpd).

Appendix A

Preliminary Overall Development Traffic Generation

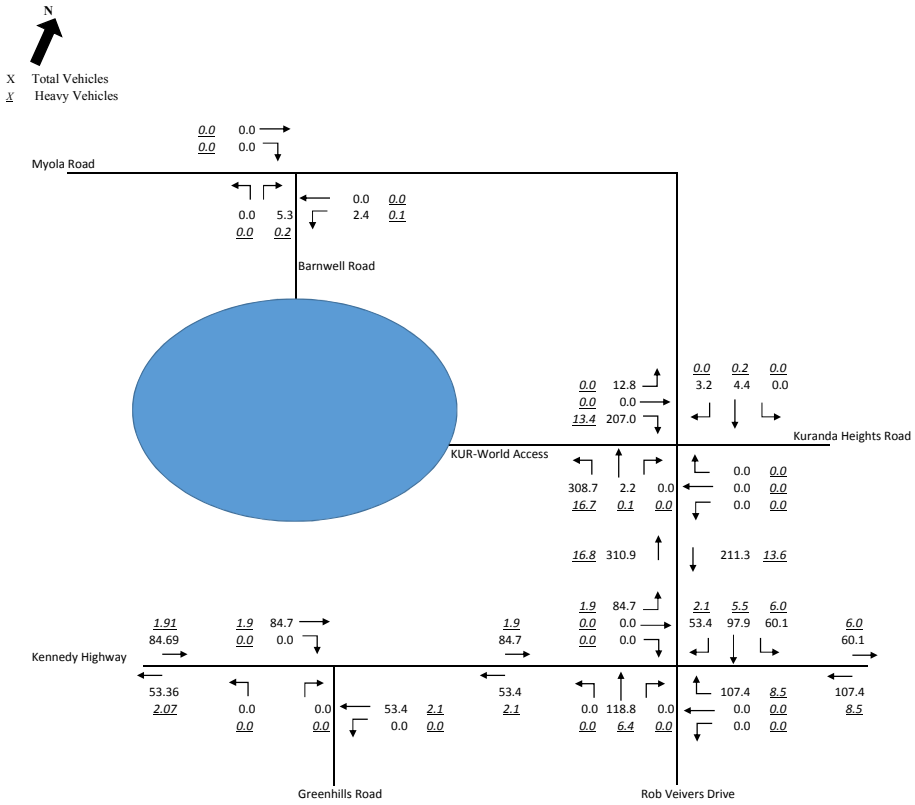
DOCUMENT CHECKING (not mandatory for File Note)

	Prepared by	Checked by	Approved by
Name	Elliott Horsup	Cathie Norton	Steven Jones
Signature			

KUR World Traffic Generation Rates

Use	Daily Traffic Generation	Number		Average Persons	Private Vehicle Occupancy	Private Coach		Origin/Destination: Cairns Private Vehicle (Trips)	Cairns Private Coach	Cairns Skyrail/Scenic Rail (Persons)	Kuranda Private Vehicle (Trips)	Kuranda Private Coach	Wider Tablelands Private Vehicle (Trips)	Wider Tablelands Private Coach	Local Roads Private Vehicle (Trips)	Local Roads Private Coach
Stage One																
Farmstay Accomodation	2	110	Beds		2.5	35.00	Direction Splits	9.0%	36.0%		10.0%	40.0%	1.0%	4.0%		
							Traffic Generated	7.9	2.3		8.8	2.5	0.9	0.3		
Leisure Hotel	2.5	60	Rooms	3.0	3.0	35.0	Direction Splits	20.0%	24.0%	6.0%	10.0%	15.0%	10.0%	15.0%		
							Traffic Generated	30.0	3.1	27.3	15.0	1.9	15.0	1.9		
Lifestyle Lots Tourist Accommodation	3	61	Dwellings	3.0	3.0	35.0	Direction Splits	30.0%	16.0%	4.0%	20.0%	20.0%	5.0%	5.0%		
							Traffic Generated	54.9	2.5	22.0	36.6	3.1	9.2	0.8		
Owner Occupied Lifestyle Lots	8.5	16	Dwellings			35.0	Direction Splits	31.0%	17.2%		17.2%		6.9%		27.6%	
							Traffic Generated	42.2	0.67		23.4		9.4		37.5	
Rainforest Education Centre	1.5	350	Beds		2.5	35.0	Direction Splits	9.0%	36.0%		10.0%	40.0%	1.0%	4.0%		
							Traffic Generated	18.9	5.4		21	6	2.1	0.6		
Glamping Experience	2.5	25	Rooms	2.5	2.5	35.0	Direction Splits	20.0%	24.0%	6.0%	10.0%	15.0%	10.0%	15.0%		
							Traffic Generated	12.5	1.1	9.4	6.3	0.7	6.3	0.7		
Unique Day Guests	2	1090	Guests		3.0	35.0	Direction Splits	9.4%	50.9%	33.9%	0.3%	2.6%	0.3%	2.6%		
							Traffic Generated	68.5	31.7	740.0	2.1	1.6	2.1	1.6		
Premium Villas	3	31	Dwellings	3.0	3.0	35.0	Direction Splits	22.2%	17.8%	4.4%	16.7%	16.7%	11.1%	11.1%		
							Traffic Generated	20.7	1.4	12.4	15.5	1.3	10.3	0.9		
ium Villas Owner Occ	8.5	8	Dwellings			35.00	Direction Splits	31.0%	17.2%		17.2%	0%	6.9%	0%	27.6%	0%
							Traffic Generated	21.1	0.33		11.7	0.0	4.7	0.0	18.8	0
Cairns Staff	1.5	188	Employees		1.5	35.0	Direction Splits	56.5%	37.7%	0.0%	0.0%	0.0%	0.0%	0.0%		
							Traffic Generated	106.2	3.0	0.0	0.0	0.0	0.0	0.0		
Kuranda Staff	1.5	283	Employees		1.5	35.0	Direction Splits	0.0%	0.0%	0.0%	74.0%	18.5%	0.0%	0.0%		
							Traffic Generated	0.0	0.0	0.0	209.5	2.2	0.0	0.0		
nda Staff (Cairns Redu	1.5	114	Employees		1.5	35.0	Direction Splits	N/A	N/A							
							Traffic Generated	-91.2	-1.0							
Wider Tableland Staff	1.5	162	Employees		1.5	35.0	Direction Splits	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%		
							Traffic Generated	0.0	0.0	0.0	0.0	0.0	162.0	0.0		
Total Stage One								291.7	50.6	811.0	349.9	19.4	221.9	6.7	56.3	0.0
Increase on Background Traffic Volumes						Year	2021	9567	4.6%		4692	10.2%	6473	3.7%	2650	2.1%
Stage Two																
Leisure Hotel	2.5	210	Rooms	3.0	3.0	35.0	Direction Splits	20.0%	24.0%	6.0%	10.0%	15.0%	10.0%	15.0%		
							Traffic Generated	105.0	10.9	95.4	52.5	6.8	52.5	6.8		
Golf Course	2	100	Persons		1.5	35.0	Direction Splits	51%	0%	0%	21%	0%	27%	0%		
							Traffic Generated	68.6	0.0	0.0	28.6	0.0	36.2	0.0		
Premium Villas	3	162	Dwellings	3.0	3.0	35.0	Direction Splits	22.2%	17.8%	4.4%	16.7%	16.7%	11.1%	11.1%		
							Traffic Generated	108.0	7.4	64.8	81.0	6.9	54.0	4.6		
ium Villas Owner Occ	8.5	30	Dwellings			35.00	Direction Splits	31.0%	17.2%		17.2%	0%	6.9%	0%	27.6%	0%
							Traffic Generated	79.1	1.26		44.0	0.0	17.6	0.0	70.3	0
Premium Villa Units	2.5	60	Units	3.0	3.0	35.0	Direction Splits	20.0%	24.0%	6.0%	10.0%	15.0%	10.0%	15.0%		
							Traffic Generated	30.0	3.1	27.0	15.0	1.9	15.0	1.9		
Function/Retail/Dining Unique Guests	2	55	Guests		2.5	35.0	Direction Splits	41%	0%	0%	30%	0%	29%	0%		
							Traffic Generated	18.2	0.0	0.0	13.2	0.0	12.6	0.0		
Unique Day Guest	2	45	Guests		3.0	35.0	Direction Splits	9.4%	50.9%	33.9%	0.3%	2.6%	0.3%	2.6%		
							Traffic Generated	2.8	1.3	30.5	0.1	0.1	0.1	0.1		
Cairns Staff	1.5	73	Employees		1.5	35.0	Direction Splits	56.5%	37.7%	0.0%	0.0%	0.0%	0.0%	0.0%		
							Traffic Generated	41.2	1.2	0.0	0.0	0.0	0.0	0.0		
Kuranda Staff	1.5	109	Employees		1.5	35.0	Direction Splits	0.0%	0.0%	0.0%	74.0%	18.5%	0.0%	0.0%		
							Traffic Generated	0.0	0.0	0.0	80.7	0.9	0.0	0.0		
nda Staff (Cairns Redu	1.5	44	Employees		1.5	35.0	Direction Splits	N/A	N/A							
							Traffic Generated	-35.2	-0.4							

							Direction Splits	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%		
Wider Tableland Staff	1.5	62	Employees		1.5	35.0	Traffic Generated	0.0	0.0	0.0	0.0	0.0	62.0	0.0		
Total Stage Two								417.8	24.8	217.8	315.0	16.6	249.9	13.4	70.3	0.0
Total Stage One								291.7	50.6	811.0	349.9	19.4	221.9	6.7	56.3	0.0
Total Stage One and Two								709.5	75.3		664.9	36.1	471.8	20.2	126.6	0.0
Increase on Background Traffic Volumes (Stage One and Two)						Year	2024	10152	9.2%	1028.7	4980	17.3%	6869	7.7%	2812	4.5%
Stage Three																
							Direction Splits	20.0%	24.0%	6.0%	10.0%	15.0%	10.0%	15.0%		
Five Star Resort	2.5	200	Rooms	1.8	1.8	35.0	Traffic Generated	100.0	6.2	54.0	50.0	3.9	50.0	3.9		
KUR Campus Student							Direction Splits	20%	40.0%		20.0%	20.0%	0%	0%		
Accommodation	2.5	300	Rooms	1.0	1.8	35.0	Traffic Generated	83.3	8.6		83.3	4.3	0.0	0.0		
KUR Campus Day							Direction Splits	13.5%	40.5%		4.1%	12.2%	7.4%	22.3%		
Students	1.2	300	Students		1.8	35.0	Traffic Generated	27.0	4.2		8.1	1.3	14.9	2.3		
Health and							Direction Splits	48.0%	12.0%	0.0%	16.0%	4.0%	16.0%	4.0%		
Wellbeing Retreat	2	5	Persons		2.5	35.00	Traffic Generated	1.9	0.0	0.0	0.6	0.0	0.6	0.0		
Health and							Direction Splits	31.1%	47%	0%	9%	13%	0%	0%		
Wellbeing Retreat	1.5	60	Rooms	1.3	1.3	35.0	Traffic Generated	28.0	1.6	0.0	8.0	0.4	0.0	0.0		
							Direction Splits	22.2%	17.8%	4.4%	16.7%	16.7%	11.1%	11.1%		
Premium Villas	3	75	Dwellings	3.0	3.0	35.0	Traffic Generated	50.0	3.4	30.0	37.5	3.2	25.0	2.1		
Premium Villas							Direction Splits	31.0%	17.2%		17.2%	0%	6.9%	0%	27.6%	0%
Owner Occupied	8.5	18	Dwellings			35.00	Traffic Generated	47.5	0.75		26.4	0.0	10.6	0.0	42.2	0
							Direction Splits	56.5%	37.7%	0.0%	0.0%	0.0%	0.0%	0.0%		
Cairns Staff	1.5	145	Employees		1.5	35.0	Traffic Generated	81.9	2.3	0.0	0.0	0.0	0.0	0.0		
							Direction Splits	0.0%	0.0%	0.0%	74.0%	18.5%	0.0%	0.0%		
Kuranda Staff	1.5	217	Employees		1.5	35.0	Traffic Generated	0.0	0.0	0.0	160.6	1.7	0.0	0.0		
							Direction Splits	N/A	N/A							
ıda Staff (Cairns Redu	1.5	88	Employees		1.5	35.0	Traffic Generated	-70.4	-0.8							
							Direction Splits	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%		
Wider Tableland Staff	1.5	124	Employees		1.5	35.0	Traffic Generated	0.0	0.0	0.0	0.0	0.0	124.0	0.0		
Total Stage Three								349.3	26.3	84.0	374.6	14.8	225.1	8.3	42.2	0.0
Total Stage One and Two								709.5	75.3	1028.7	664.9	36.1	471.8	20.2	126.6	0.0
Total Stage One, Two and Three								1058.8	101.6		1039.5	50.8	696.8	28.5	168.8	0.0
Increase on Background Traffic Volumes (Stage One, Two and Three)						Year	2027	10774	12.7%	1112.7	5284	24.4%	7290	10.7%	2984	5.7%



253251-00 KUR-World Eco Resort

Figure B15: Ultimat Stage AM Peak Traffic Volumes-Main Access from Myola Road

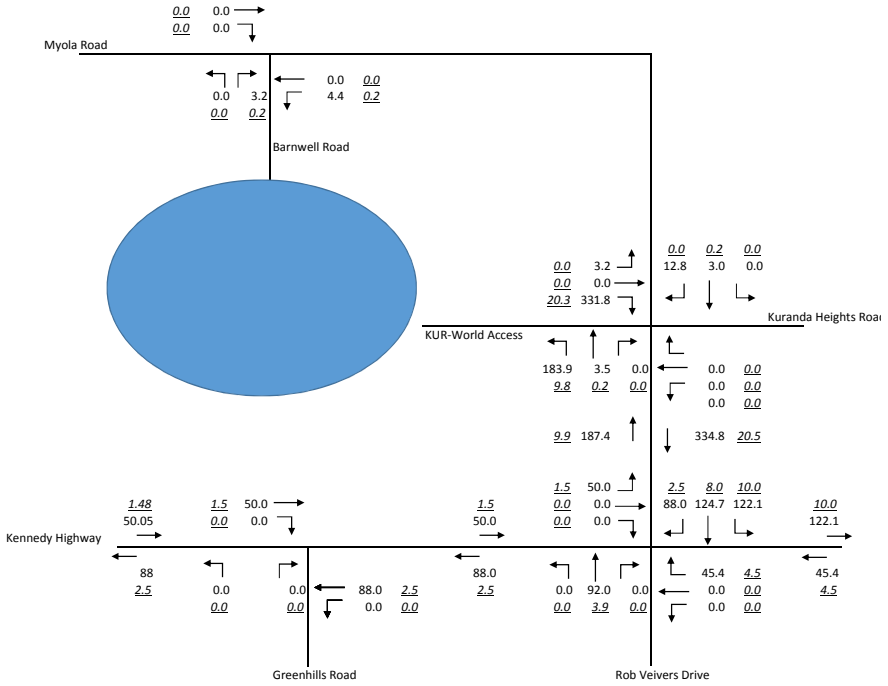


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Figure B16:Ultimate Stage PM Peak Traffic Volumes-Main Access from Myola Road

KUR-World

Appendix 13i

Comparable Use Surveys

Environmental Impact Statement

	Into Rainforest Station										Out of Rainforest Station										Total Traffic					
	Passenger Vehicles		Group Passenger Vehicle		Commercial Vehicles		Medium Sized Bus		Large Sized Bus		Passenger Vehicles		Group Passenger Vehicle		Commercial Vehicles		Medium Sized Bus		Large Sized Bus							
	Average Oc 2		Average Oc 4		Average O N/A		Average O 15		Average (25		Average Oc 2		Average Oc 4		Average O N/A		Average O 15		Average (25							
Time Period	Left In	Right In	Left In	Right In	Left In	Right In	Left In	Right In	Left In	Right In	Left Out	Right Out	Left Out	Right Out	Left Out	Right Out	Left Out	Right Out	Left Out	Right Out	In	Out	Total In/Ou	Hourly Trip	In Directio	Out Directi
8:20:00 AM - 8:30 AM	1										1	1									1	2	3			
8:30 AM - 8:40 AM	1					2															3	0	3	6		
8:40 AM - 8:50 AM		1										1									1	1	2	8		
8:50 AM - 9:00 AM	1	3						1													5	0	5	13		
9:00 AM - 9:10 AM																					0	0	0	13		
9:10 AM - 9:20 AM	2	3		1	1							1		1							7	2	9	22	77%	23%
9:20 AM - 9:30 AM	1	3									1										4	1	5	24	83%	17%
9:30 AM - 9:40 AM		1	1								1	1									2	2	4	25	76%	24%
9:40 AM - 9:50 AM	1	4								1											6	0	6	29	83%	17%
9:50 AM - 10:00 AM		1		1	1							1				1					3	2	5	29	76%	24%
10:00 AM - 10:10 AM	1	1						3			1							1		1	5	3	8	37	73%	27%
10:10 AM - 10:20 AM	1	1						1													3	0	3	31	74%	26%
10:20 AM - 10:30 AM	1	3						1										1			5	1	6	32	75%	25%
10:30 AM - 10:40 AM	1	1								1		1									3	1	4	32	78%	22%
10:40 AM - 10:50 AM		1	1	1															1		3	1	4	30	73%	27%
10:50 AM - 11:00 AM				1							1								1		1	2	3	28	71%	29%
11:00 AM - 11:10 AM		2					1		2		1	2						1		2	5	6	11	31	65%	35%
11:10 AM - 11:20 AM		1						1		1		2		1							3	3	6	34	59%	41%
11:20 AM - 11:30 AM			1	1					2			1									4	1	5	33	58%	42%
11:30 AM - 11:40 AM												1								1	0	2	2	31	52%	48%
11:40 AM - 11:50 AM	2								1		1										3	1	4	31	52%	48%
11:50 AM - 12:00 PM	1	2	1				2		1		1	1		1							7	3	10	38	58%	42%
12:00 PM - 12:10 PM	1			1							1									1	2	2	4	31	61%	39%
12:10 PM - 12:20 PM	2	1	1	1			1					2						1			6	3	9	34	65%	35%
12:20 PM - 12:30 PM									1									1			1	1	2	31	61%	39%
12:30 PM - 12:40 PM		2		1				1	1			2	1						1	1	5	5	10	39	62%	38%
12:40 PM - 12:50 PM		1									1										1	1	2	37	59%	41%
12:50 PM - 1:00 PM	2	1						1	1			2		1							5	3	8	35	57%	43%
1:00 PM - 1:10 PM	1						1			1		1		1				2		1	3	5	8	39	54%	46%
1:10 PM - 1:20 PM	2																				2	0	2	32	53%	47%
1:20 PM - 1:30 PM	2						1		1		2	2						1		1	4	6	10	40	50%	50%
1:30 PM - 1:40 PM				1				1										1			2	1	3	33	52%	48%
1:40 PM - 1:50 PM	2							1	3		2		1	2					1		6	6	12	43	51%	49%
1:50 PM - 2:00 PM							1	1		1		1					1	1		1	3	4	7	42	48%	52%

2:00 PM - 2:10 PM	1			1	1				1		1							1		1	4	3	7	41	51%	49%
2:10 PM - 2:20 PM	1								1			2		1					2		2	5	7	46	46%	54%
2:20 PM - 2:30 PM					1		1				1	1			1				1	1	2	5	7	43	44%	56%
2:30 PM - 2:40 PM	1										2	3	3	1			1			1	1	11	12	52	35%	65%
2:40 PM - 2:50 PM	1						1		2		1	1							1		4	3	7	47	34%	66%
2:50 PM - 3:00 PM		1									1	3									1	4	5	45	31%	69%
3:00 PM - 3:10 PM											1	1	1		1		2		1	2	0	9	9	47	21%	79%
3:10 PM - 3:20 PM											6	2									0	8	8	48	17%	83%
3:20 PM - 3:30 PM	1	1						1	1				2								4	2	6	47	21%	79%
3:30 PM - 3:40 PM											4	1					1			1	0	7	7	42	21%	79%
3:40 PM - 3:50 PM						1							1				1			1	1	3	4	39	15%	85%
3:50 PM - 4:00 PM		1									5	1									1	6	7	41	15%	85%
4:00 PM - 4:10 PM	1										5	4									1	9	10	42	17%	83%
4:10 PM - 4:20 PM	1										3										1	3	4	38	21%	79%
4:20 PM - 4:30 PM											3	5									0	8	8	40	10%	90%
4:30 PM - 4:40 PM																					0	0	0	33	12%	88%
Total	33	36	5	10	4	3	9	13	18	5	47	47	9	9	2	1	6	11	9	16	136	157	293			
Guests	23	19	4	9	3	0	9	11	17	4	32	32	9	8	2	0	6	9	9	15						
Staff	10	17	1	1	1	3	0	2	1	1	15	15	0	1	0	1	0	2	0	1						
Guests by Vehicle Type	46	38	16	36			135	165	425	100	64	64	36	32			90	135	225	375						

Guests Via Private Vehicle	106
Guests via Group Transport	885
Total Guests	991
Group Transport Split	89%
Private Vehicle Split	11%
Percentage of Service Vehicles	3%
AM Peak %	13%
PM Peak %	16%

Supplied Gate Data		
On Public	657	95%
On Private	37	5%
Total	694	

on

	Into Thala Beach Resort										Out of Thala Beach Resort										Into Thala		Out of Thala		Total Trips		Direction Splits	
	Passenger Vehicles Average Oc 2		Group Passenger Vehicle Average Oc 4		Commercial Vehicles Average O N/A		20-30 Seat Bus Average O 15		30+ Seat Bus Average (25		Passenger Vehicles Average Oc 2		Group Passenger Vehicle Average Oc 5		Commercial Vehicles Average O N/A		20-30 Seat Bus Average O 15		30+ Seat Bus Average (25									
Time Period	Left In	Right In	Left In	Right In	Left In	Right In	Left In	Right In	Left In	Right In	Left Out	Right Out	Left Out	Right Out	Left Out	Right Out	Left Out	Right Out	Left Out	Right Out	Total Veh	Hourly V	Total Veh	Hourly V	Total Vehi	Hourly Ve	In	Out
7:00:00 AM - 7:10:00 AM		1									2										1		2		3		33%	67%
7:10 AM - 7:20 AM			1				1							1							2		1		3		67%	33%
7:20 AM - 7:30 AM			2															1			2		1		3		67%	33%
7:30 AM - 7:40 AM	1							1				2		2							2		4		6		33%	67%
7:40 AM - 7:50 AM		1										1						1			1		2		3		33%	67%
7:50 AM - 8:00 AM						1															1	9	0	10	1	19	47%	53%
8:00 AM - 8:10 AM		1										1									1	9	1	9	2	18	50%	50%
8:10 AM - 8:20 AM										1						1					1	8	1	9	2	17	47%	53%
8:20 AM - 8:30 AM											2										0	6	2	10	2	16	38%	63%
8:30 AM - 8:40 AM												1									0	4	1	7	1	11	36%	64%
8:40 AM - 8:50 AM				1																1	1	4	1	6	2	10	40%	60%
9:00 AM - 9:10 AM																					0	4	0	6	0	10	40%	60%
9:10 AM - 9:20 AM												1									0	3	1	6	1	9	33%	67%
9:20 AM - 9:30 AM												1	1								0	3	2	6	2	9	33%	67%
9:30 AM - 9:40 AM					1							1									1	4	1	6	2	10	40%	60%
9:40 AM - 9:50 AM	1	2	1									1			1						4	7	2	7	6	14	50%	50%
9:50 AM - 10:00 AM											2	1									0	5	3	9	3	14	36%	64%
10:00 AM - 10:10 AM	1	1									2										2	7	2	11	4	18	39%	61%
10:10 AM - 10:20 AM		1				1					1	1									2	9	2	12	4	21	43%	57%
10:20 AM - 10:30 AM																1					0	9	1	11	1	20	45%	55%
10:30 AM - 10:40 AM												2									0	8	2	12	2	20	40%	60%
10:40 AM - 10:50 AM																					0	4	0	10	0	14	29%	71%
10:50 AM - 11:00 AM	2	1									1										3	7	1	8	4	15	47%	53%
11:00 AM - 11:10 AM		2										1									2	7	1	7	3	14	50%	50%
11:10 AM - 11:20 AM		2										1									2	7	1	6	3	13	54%	46%
11:20 AM - 11:30 AM		3										2									3	10	2	7	5	17	59%	41%
11:30 AM - 11:40 AM		1																			1	11	0	5	1	16	69%	31%
11:40 AM - 11:50 AM	1	1										1									2	13	1	6	3	19	68%	32%
11:50 AM - 12:00 PM	1	2									1										3	13	1	6	4	19	68%	32%
12:00 PM - 12:10 PM	1																				1	12	0	5	1	17	71%	29%
12:10 PM - 12:20 PM	5										2	1									5	15	3	7	8	22	68%	32%
12:20 PM - 12:30 PM	1	1									1	1		1							2	14	3	8	5	22	64%	36%
12:30 PM - 12:40 PM																					0	13	0	8	0	21	62%	38%
12:40 PM - 12:50 PM																					0	11	0	7	0	18	61%	39%
12:50 PM - 1:00 PM					1																1	9	0	6	1	15	60%	40%

	Into Thala Beach Resort										Out of Thala Beach Resort										Into Thala		Out of Thala		Total Trips		Direction Splits	
	Passenger Vehicles Average Oc 2		Group Passenger Vehicle Average Oc 4		Commercial Vehicles Average O N/A		20-30 Seat Bus Average O 15		30+ Seat Bus Average (25		Passenger Vehicles Average Oc 2		Group Passenger Vehicle Average Oc 5		Commercial Vehicles Average O N/A		20-30 Seat Bus Average O 15		30+ Seat Bus Average (25									
Time Period	Left In	Right In	Left In	Right In	Left In	Right In	Left In	Right In	Left In	Right In	Left Out	Right Out	Left Out	Right Out	Left Out	Right Out	Left Out	Right Out	Left Out	Right Out	Total Veh	Hourly V	Total Veh	Hourly V	Total Vehi	Hourly Ve	In	Out
1:00 PM - 1:10 PM	1															1					1	9	1	7	2	16	56%	44%
1:10 PM - 1:20 PM	1																				1	5	0	4	1	9	56%	44%
1:20 PM - 1:30 PM		1																			1	4	0	1	1	5	80%	20%
1:30 PM - 1:40 PM																					0	4	0	1	0	5	80%	20%
1:40 PM - 1:50 PM		3																			3	7	0	1	3	8	88%	13%
1:50 PM - 2:00 PM		1										1									1	7	1	2	2	9	78%	22%
2:00 PM - 2:10 PM	1										1										1	7	1	2	2	9	78%	22%
2:10 PM - 2:20 PM	1										2	1									1	7	3	5	4	12	58%	42%
2:20 PM - 2:30 PM	1	1		1								1									3	9	1	6	4	15	60%	40%
2:30 PM - 2:40 PM											1										0	9	1	7	1	16	56%	44%
2:40 PM - 2:50 PM			1		1						2	1		1							2	8	4	11	6	19	42%	58%
2:50 PM - 3:00 PM	1										1		1								1	8	2	12	3	20	40%	60%
3:00 PM - 3:10 PM												1									0	7	1	12	1	19	37%	63%
3:10 PM - 3:20 PM											1	2									0	6	3	12	3	18	33%	67%
3:20 PM - 3:30 PM		1										1									1	4	1	12	2	16	25%	75%
3:30 PM - 3:40 PM	1														1						1	5	1	12	2	17	29%	71%
3:40 PM - 3:50 PM	1											1									1	4	1	9	2	13	31%	69%
3:50 PM - 4:00 PM	1										1	2									1	4	3	10	4	14	29%	71%
4:00 PM - 4:10 PM																					0	4	0	9	0	13	31%	69%
4:10 PM - 4:20 PM												1									0	4	1	7	1	11	36%	64%
4:20 PM - 4:30 PM			1																		1	4	0	6	1	10	40%	60%
4:30 PM - 4:40 PM		1							1												2	5	0	5	2	10	50%	50%
4:40 PM - 4:50 PM	1			1			1					1	1								3	7	2	6	5	13	54%	46%
Total	27	28	6	3	3	2	2	1	1	1	23	35	4	6	2	3	1	2	1	1					Average		50%	50%
Guests by Priavte Vehicle	54	56									46	70																
Guests by Group Vehicle			24	12			30	15	25	25			20	30			15	30	25	25								
Rooms 85																												
Occupancy Rate 85%																												
Average Occupancy per Room 2																												
Trips per Person	27	28	12	6			15	7.5	12.5	12.5	23	35	10	15			7.5	15	12.5	12.5								

Total Trips per Rc	1.67	
Service Vehicle P	7%	
Total Trips per Rc	3.47	Includes Staff
Service Vehicle P	0.14	
Total Trips	152	
AM Peak Trips	19	
PM Peak Trips	17	
AM Peak %	13%	
PM Peak %	11%	
Total Guest Trips	502	
Private Split	45%	
Group Split	55%	

1.81
6%

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Appendix 13j

Construction Traffic

Environmental Impact Statement

N

X Total Vehicles
X Heavy Vehicles

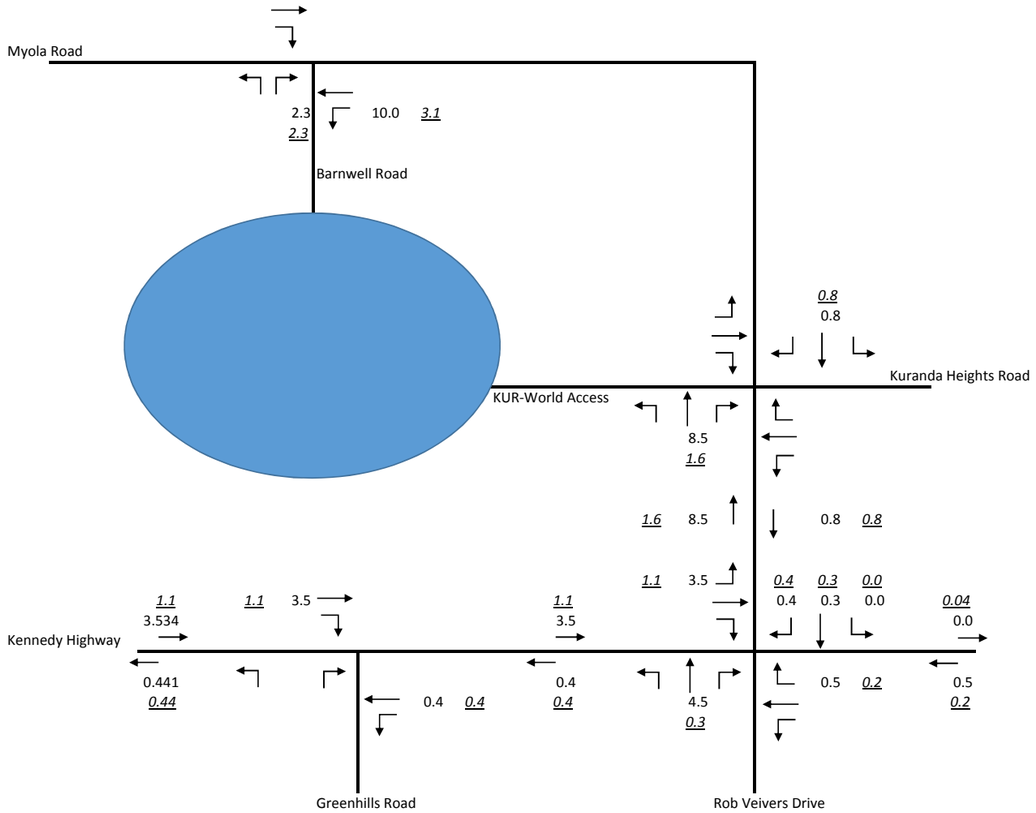

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Figure B17: Stage 1 AM Constuction Traffic

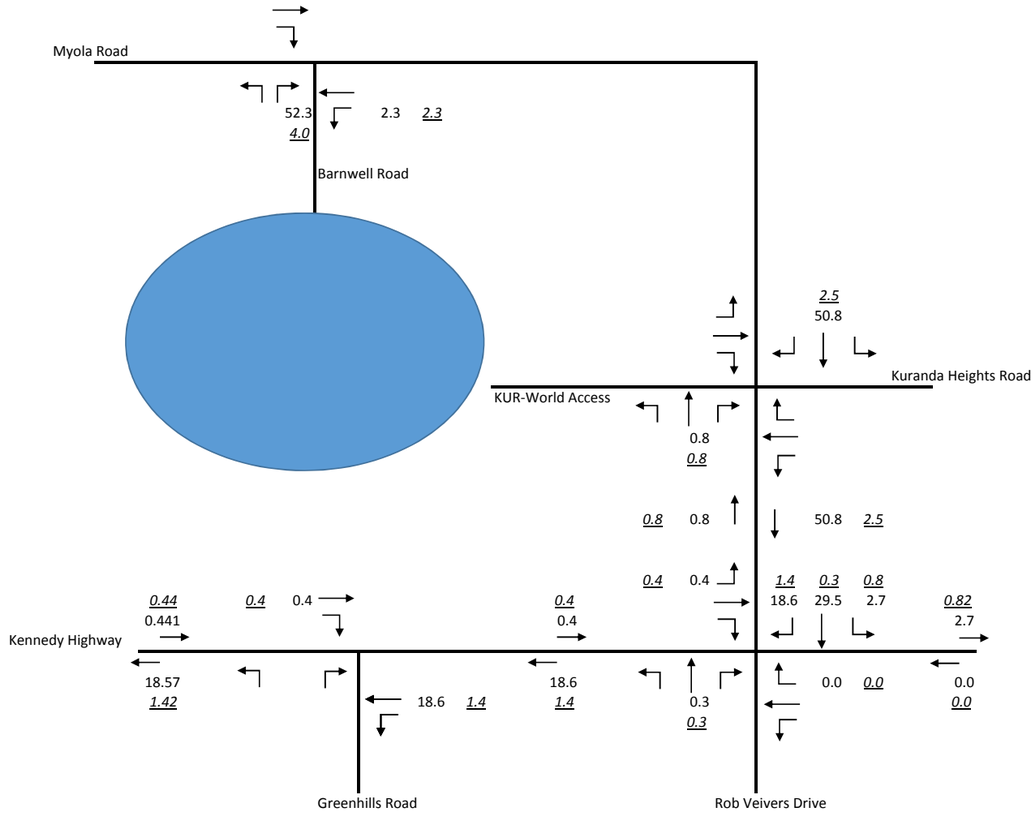

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Figure B18: Stage 1 PM Constuction Traffic

Stage 1 Construction Period 2 Years 100 Weeks Days per Week 5 days January 19 - December 20

Material		Units		Truck	Truck Capacity			Loaded Tri	Unloaded	Passenger	PCE Trips (	Daily Trips	Peak Perce	Peak Trips
Concrete (	16369	m^3		Four Axle T	6.5	m^3		2518	2518	2	10073	10.07323	10%	1.007323
Reinforcm	3931	t		Six Axle Art	20	t		197	197	3	1179	0.7862	10%	0.07862
Timber (M	1347	t		Six Axle Art	20	t		67	67	3	404	0.2694	10%	0.02694
Steel (Max	428	t		Six Axle Art	20	t		21	21	3	128	0.0856	10%	0.00856
Gravel	15300	m^3		Six Axle Art	15	m^3	Assuming 1.3t/m3 and 20t Capacity	1020	1020	3	6120	4.08	10%	0.408
Pavement	1836	m^3		Six Axle Art	15	m^3	Assuming 1.3t/m3 and 20t Capacity	122	122	3	734	0.4896	10%	0.04896
Glazing	10823	m^2		Four Axle T	333	m^2	Assuming 15kg/m^2 and 5t Capacity	32	32	2	130	0.129876	10%	0.012988
Roof Shee	29266	m^2		Six Axle Art	2667	m^2	Assuming 7.5kg/m^2 and 20t Capacity	11	11	3	66	0.043899	10%	0.00439
Construction Water Supply				Six Axle Articulated			Assuming 15 Return Trips Per Day					30	10%	3
Wastewater Removal				Six Axle Articulated			Assuming 3 Return Trips Per Day					6	10%	0.6
							Total Trips	3989	3989		18835	51.96		4.60
							Average Trips Per Day	26.0	26.0		37.7 vpd			
									52.0 vpd					

Construction Workforce			Private Veh	Shuttle	PV Occupar	Shuttle Occupancy	PV Trips	Shuttle Tri	AM Peak	PM Peak	AM PV Trip	AM Shuttl	PM PV Trip	PM Shuttle Trips
Cairns Based	105	persons	30%	70%	1.2	35	26.25	2.1	5%	35%	1.3125	0.105	9.1875	0.735
Kuranda Based	100	persons	100%	0%	1.2	35	83.33333	0	5%	35%	4.166667	0	29.16667	0
Kuranda Was Cairns	25	persons	100%	0%	1.2	35	-20.8333	0	5%	35%	-1.04167	0	-7.29167	0
Tablelands	98	persons	60%	40%	1.2	35	49	1.12	5%	35%	2.45	0.056	17.15	0.392
Total							137.75	3.22			6.8875	0.161	48.2125	1.127

			Private Vehicle					Heavy Vehicle					
Usage		Origin	Daily Volume	AM Peak In	AM Peak O	PM Peak In	PM Peak Out	Daily Volur	AM Peak I	AM Peak C	PM Peak I	PM Peak Out	
Concrete (Max)		Tablelands						10.07	0.71	0.30	0.30	0.71	
Reinforcment		Cairns						0.79	0.06	0.02	0.02	0.06	
Timber (Max)		Tablelands						0.27	0.02	0.01	0.01	0.02	Assumed 30% coming from Cairns
Steel (Max)		Cairns						0.09	0.01	0.00	0.00	0.01	
Gravel		Tablelands						4.08	0.29	0.12	0.12	0.29	
Pavement Seal		Tablelands						0.49	0.03	0.01	0.01	0.03	Assumed 30% coming from Cairns
Glazing		Cairns						0.13	0.01	0.00	0.00	0.01	
Roof Sheeting		Cairns						0.04	0.00	0.00	0.00	0.00	
Construction Water S		Myola Reservoir						30.00	1.50	1.50	1.50	1.50	
Wastewater Removal		Kuranda						6.00	0.30	0.30	0.30	0.30	
Cairns Based		Cairns	26.25	1.31	0.00	0.00	9.19	2.10	0.11	0.00	0.00	0.74	
Kuranda Based		Kuranda	83.33	4.17	0.00	0.00	29.17	0.00	0.00	0.00	0.00	0.00	
Kuranda Was Cairns		Cairns	-20.83	-1.04	0.00	0.00	-7.29	0.00	0.00	0.00	0.00	0.00	
Tablelands		Tablelands	49.00	2.45	0.00	0.00	17.15	1.12	0.06	0.00	0.00	0.39	
Totals			137.75	6.89	0.00	0.00	48.21	55.18	3.08	2.28	2.28	4.04	

Totals

Cairns		5.42	0.27	0.00	0.00	1.90	3.37	0.19	0.04	0.04	0.82	
Kuranda		83.33	4.17	0.00	0.00	29.17	6.00	0.30	0.30	0.30	0.30	
Tablelands		49.00	2.45	0.00	0.00	17.15	15.80	1.08	0.44	0.44	1.42	
Myola Road							30.00	1.50	1.50	1.50	1.50	
		137.75	6.89	0.00	0.00	48.21	55.18	3.08	2.28	2.28	4.04	

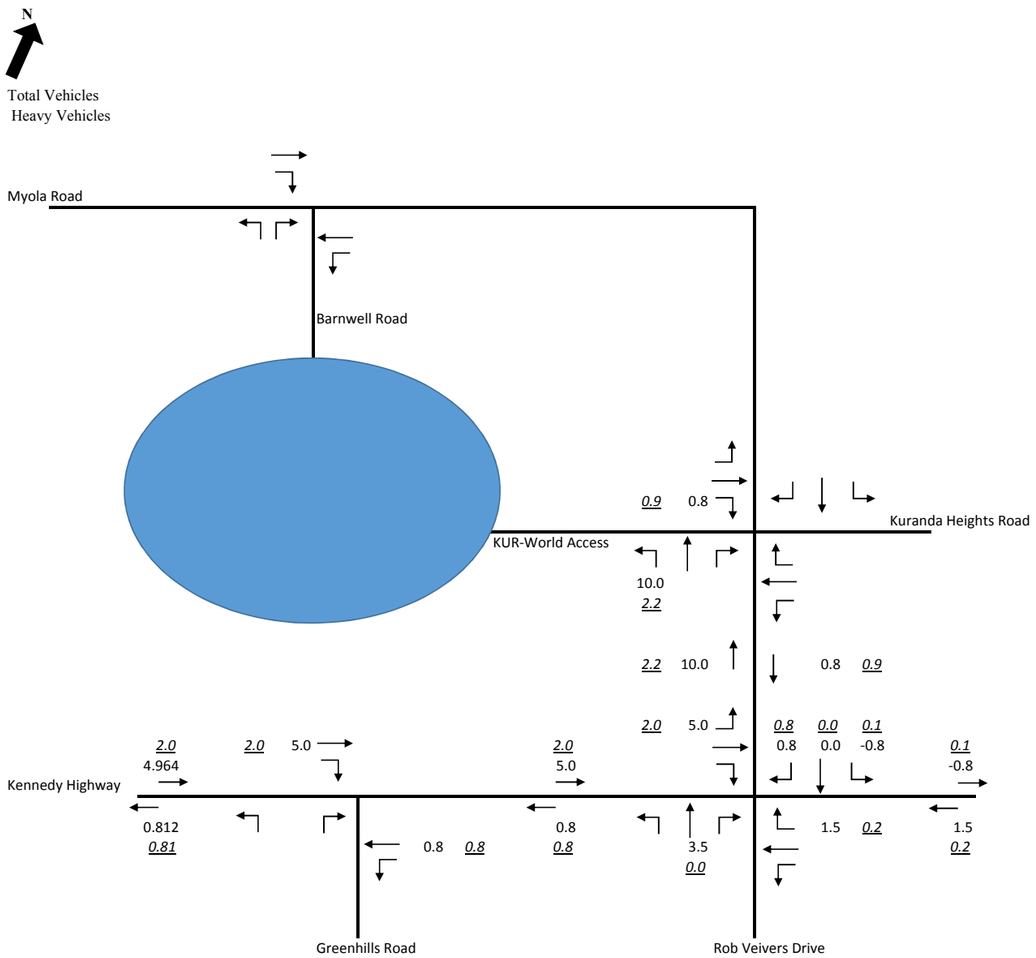

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Figure B19: Stage 2 AM Constuction Traffic

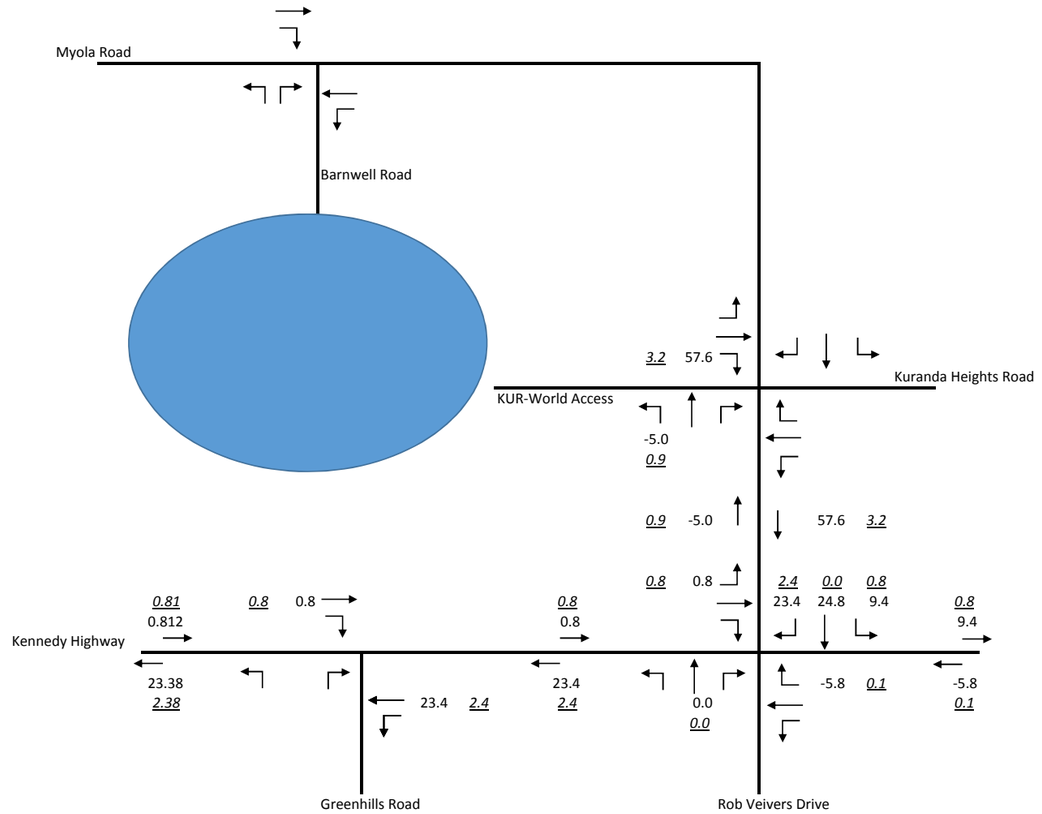

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Figure B20: Stage 2 PM Constuction Traffic

Stage 2 Construction 2 Years Days per Week 5 days January 21- December 23

100 Weeks

Material		Units		Truck	Truck Capacity			Loaded Trips	Unloaded Trips	Car Equivalen	PCE Trips (Total)	Daily Trips	Peak Percentage	Peak Trips
Concrete (Max)	27760	m^3		Four Axle Truck	6.5	m^3		4271	4271	2	17083	17.08	15%	2.562462
Reinforcment	7151	t		Six Axle Articulat	20	t		358	358	3	2145	1.43	10%	0.14302
Timber (Max)	1895	t		Six Axle Articulat	20	t		95	95	3	569	0.38	10%	0.0379
Steel (Max)	282	t		Six Axle Articulat	20	t		14	14	3	85	0.06	10%	0.00564
Gravel	4125	m^3		Six Axle Articulat	15	m^3	Assuming 1.3t/m^3 and 20t Capacity	275	275	3	1650	1.10	10%	0.11
Pavement Seal	495	m^3		Six Axle Articulat	15	m^3	Assuming 1.3t/m^3 and 20t Capacity	33	33	3	198	0.13	10%	0.0132
Glazing	17539	m^2		Four Axle Truck	333	m^2	Assuming 15kg/m^2 and 5t Capacity	53	53	2	210	0.21	10%	0.021047
Roof Sheeting	61496	m^2		Six Axle Articulat	2667	m^2	Assuming 7.5kg/m^2 and 20t Capacity	23	23	3	138	0.09	10%	0.009224
							Total Trips	5121	5121		22078	20.48		2.90
							Average Trips Per Day	10.2	10.2		44.2	vpd		
									20.5	vpd				

Construction Workforce				Private Vehicle	Shuttle	PV Occupancy	Shuttle Occupancy	PV Trips	Shuttle Trips	AM Peak	PM Peak	AM PV Trips	AM Shuttle Trips	PM PV Trips	PM Shuttle Trips
Cairns Based		98	persons	30%	70%	1.2	35	24.5	2.0	0.1	0.4	1.2	0.1	8.6	0.7
Kuranda Based		85	persons	100%	0%	1.2	35	70.8	0.0	0.1	0.4	3.5	0.0	24.8	0.0
Kuranda Was Cairns		20	persons	100%	0%	1.2	35	-16.7	0.0	0.1	0.4	-0.8	0.0	-5.8	0.0
Tablelands		120	persons	60%	40%	1.2	35	60.0	1.4	0.1	0.4	3.0	0.1	21.0	0.5
Total								138.7	3.3			6.9	0.2	48.5	1.2

			Private Vehicle					Heavy Vehicle					
Usage		Origin	Daily Volume	AM Peak In	AM Peak Out	PM Peak In	PM Peak Out	Daily Volume	AM Peak In	AM Peak Out	PM Peak In	PM Peak Out	
Concrete (Max)		Tablelands						17.08	1.79	0.77	0.77	1.79	
Reinforcment		Cairns						1.43	0.10	0.04	0.04	0.10	
Timber (Max)		Tablelands						0.38	0.03	0.01	0.01	0.03	Assumed 30% coming from Cairns
Steel (Max)		Cairns						0.06	0.00	0.00	0.00	0.00	
Gravel		Tablelands						1.10	0.08	0.03	0.03	0.08	
Pavement Seal		Tablelands						0.13	0.01	0.00	0.00	0.01	Assumed 30% coming from Cairns
Glazing		Cairns						0.21	0.01	0.01	0.01	0.01	
Roof Sheeting		Cairns						0.09	0.01	0.00	0.00	0.01	
Cairns Based		Cairns	24.50	1.23	0.00	0.00	8.58	1.96	0.10	0.00	0.00	0.69	
Kuranda Based		Kuranda	70.83	3.54	0.00	0.00	24.79	0.00	0.00	0.00	0.00	0.00	
Kuranda Was Cairns		Cairns	-16.67	0.00	-0.83	-5.83	0.00	0.00	0.00	0.00	0.00	0.00	
Tablelands		Tablelands	60.00	3.00	0.00	0.00	21.00	1.37	0.07	0.00	0.00	0.48	
Total			138.67	7.77	-0.83	-5.83	48.53	23.81	2.20	0.87	0.87	3.20	
Totals													
Cairns			7.83	1.23	-0.83	-5.83	8.58	3.90	0.23	0.06	0.06	0.82	
Kuranda			70.83	3.54	0.00	0.00	24.79	0.00	0.00	0.00	0.00	0.00	
Tablelands			60.00	3.00	0.00	0.00	21.00	19.91	1.96	0.81	0.81	2.38	
Total			138.67	7.77	-0.83	-5.83	54.37	23.81	2.20	0.87	0.87	3.20	

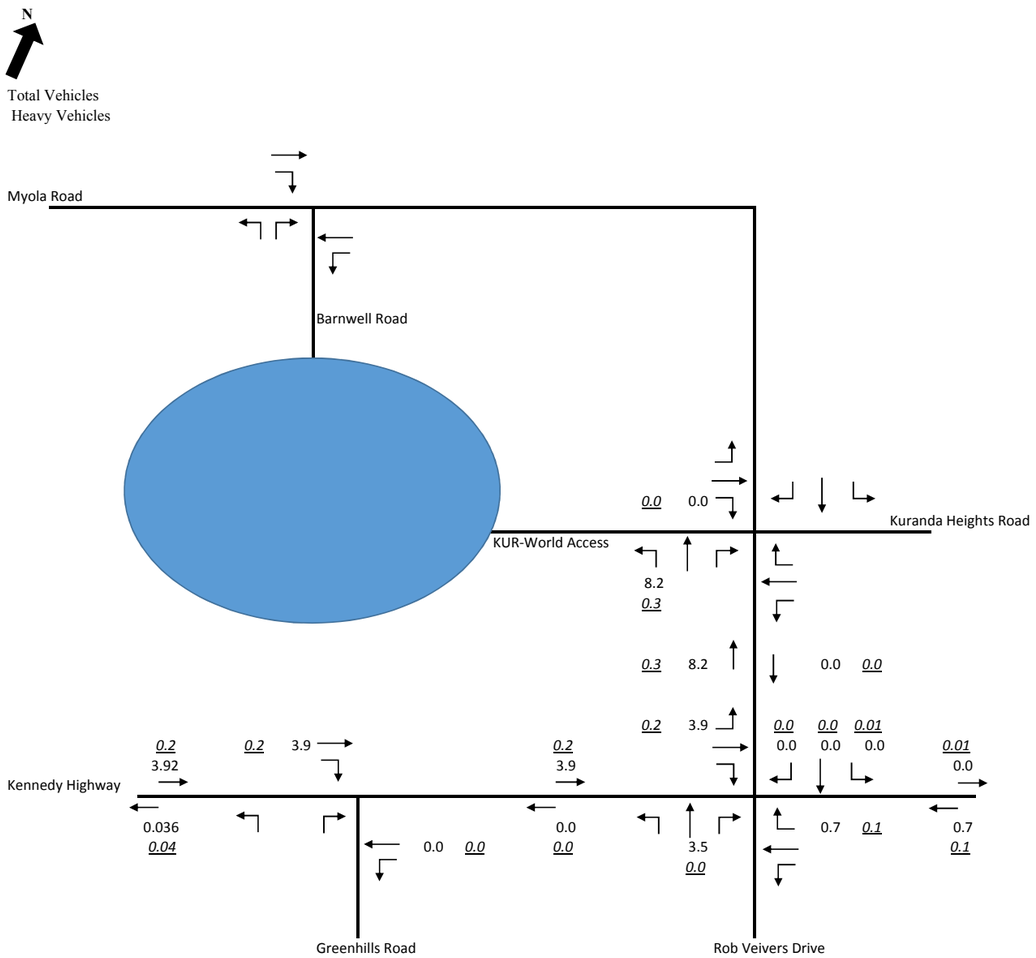

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Figure B21: Stage 3 AM Constuction Traffic

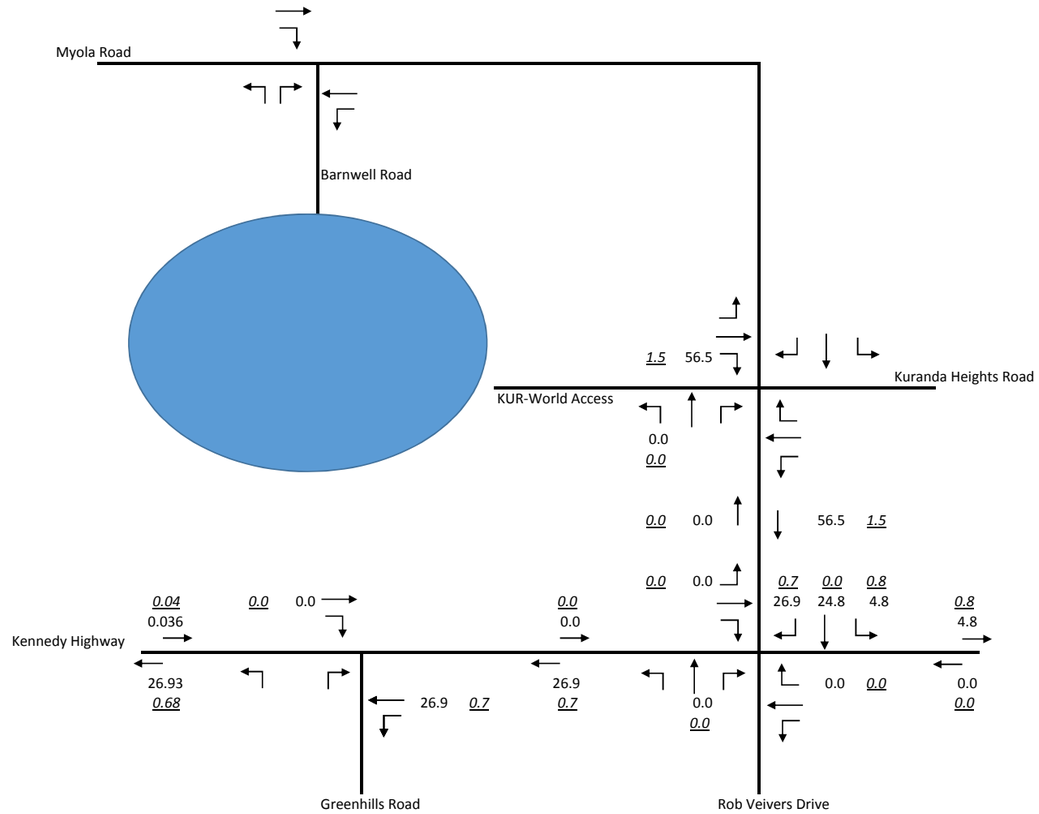

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Figure B22: Stage 3 PM Constuction Traffic

Stage 3 Construction 2 Years Days per Week 5 days January 24- December 26

100 Weeks

Material		Units		Truck	Truck Capacity			Loaded Trips	Unloaded Trips	Car Equivalent	PCE Trips (Total)	Daily Trips	Peak Percentage	Peak Trips
Concrete (Max)	1555	m^3		Four Axle Truck	6.5	m^3		239	239	2	957	0.9569	10%	0.096
Reinforcment	563	t		Six Axle Articulated	20	t		28	28	3	169	0.1126	10%	0.011
Timber (Max)	113	t		Six Axle Articulated	20	t		6	6	3	34	0.0226	10%	0.002
Steel (Max)	761	t		Six Axle Articulated	20	t		38	38	3	228	0.1522	10%	0.015
Gravel	800	m^3		Six Axle Articulated	15	m^3	Assuming 1.3t/m^3 and 20t Capacity	53	53	3	320	0.2133	10%	0.021
Pavement Seal	96	m^3		Six Axle Articulated	15	m^3	Assuming 1.3t/m^3 and 20t Capacity	6	6	3	38	0.0256	10%	0.003
Glazing	227	m^2		Four Axle Truck	333	m^2	Assuming 15kg/m^2 and 5t Capacity	1	1	2	3	0.0027	10%	0.000
Roof Sheeting	2645	m^2		Six Axle Articulated	2667	m^2	Assuming 7.5kg/m^2 and 20t Capacity	1	1	3	6	0.0040	10%	0.000
							Total Trips	372	372		1755	1.4899		0.149
							Average Trips Per Day	0.7	0.7		3.5 vpd			
									1.5 vpd					

Construction Workforce				Private Vehicle	Shuttle	PV Occupar	Shuttle Occupancy	PV Trips	Shuttle Trips	AM Peak	PM Peak	AM PV Trip	AM Shuttle T	PM PV Trip	PM Shuttle
Cairns Based		112	persons	30%	70%	1.2	35	28	2.24	5%	35%	1.4	0.112	9.8	0.784
Kuranda Based		85	persons	100%	0%	1.2	35	70.8333333	0	5%	35%	3.541667	0	24.79167	0
Kuranda Was Cairns		20	persons	100%	0%	1.2	35	-16.6666667	0	5%	35%	-0.83333	0	-5.83333	0
Tablelands		150	persons	60%	40%	1.2	35	75	1.7142857	5%	35%	3.75	0.0857143	26.25	0.6
Total								157.166667	3.9542857			7.858333	0.1977143	55.00833	1.384

			Private Vehicle					Heavy Vehicle					
Usage		Origin	Daily Volume	AM Peak In	AM Peak O	PM Peak In	PM Peak Out	Daily Volume	AM Peak In	AM Peak Out	PM Peak In	PM Peak Out	
Concrete (Max)		Tablelands						0.96	0.07	0.03	0.03	0.07	
Reinforcment		Cairns						0.11	0.01	0.00	0.00	0.01	
Timber (Max)		Tablelands						0.02	0.00	0.00	0.00	0.00	Assumed 30% coming from Cairns
Steel (Max)		Cairns						0.15	0.01	0.00	0.00	0.01	
Gravel		Tablelands						0.21	0.01	0.01	0.01	0.01	
Pavement Seal		Tablelands						0.03	0.00	0.00	0.00	0.00	Assumed 30% coming from Cairns
Glazing		Cairns						0.00	0.00	0.00	0.00	0.00	
Roof Sheeting		Cairns						0.00	0.00	0.00	0.00	0.00	
Cairns Based		Cairns	28.00	1.40	0.00	0.00	9.80	2.24	0.11	0.00	0.00	0.78	
Kuranda Based		Kuranda	70.83	3.54	0.00	0.00	24.79	0.00	0.00	0.00	0.00	0.00	
Kuranda Was Cairns		Cairns	-16.67	-0.83	0.00	0.00	-5.83	0.00	0.00	0.00	0.00	0.00	
Tablelands		Tablelands	75.00	3.75	0.00	0.00	26.25	1.71	0.09	0.00	0.00	0.60	
Totals			157.17	7.86	0.00	0.00	55.01	5.44	0.30	0.04	0.04	1.49	

Totals

Cairns		11.33	0.57	0.00	0.00	3.97	2.53	0.13	0.01	0.01	0.80
Kuranda		70.83	3.54	0.00	0.00	24.79	0.00	0.00	0.00	0.00	0.00
Tablelands		75.00	3.75	0.00	0.00	26.25	2.92	0.17	0.04	0.04	0.68
		157.17	7.86	0.00	0.00	55.01	5.44	0.30	0.04	0.04	1.49

KUR-World

Appendix 13k

Traffic Generation of Each Stage

Environmental Impact Statement

Stage One Traffic Generation

Use	Daily Traffic Generation Rate	Number		Average Persons Per Room	Private Vehicle Occupancy	Private Coach Occupancy		Origin/Destination: Cairns Private Vehicle (Trips)	Cairns Private Coach	Cairns Skyrail/Scenic Rail (Persons)	Kuranda Private Vehicle (Trips)	Kuranda Private Coach	Wider Tablelands Private Vehicle (Trips)	Wider Tablelands Private Coach	Local Roads Private Vehicle (Trips)	Local Roads Private Coach
Stage One																
Farmstay Accomodation	2	110	Beds		2.5	35.00	Direction S	9.0%	36.0%		10.0%	40.0%	1.0%	4.0%		
							Traffic Gen	7.9	2.3		8.8	2.5	0.9	0.3		
Lifestyle Lots Tourist Accommodation	3	61	Dwellings	3.0	3.0	35.0	Direction S	30.0%	16.0%	4.0%	20.0%	20.0%	5.0%	5.0%		
							Traffic Gen	54.9	2.5	22.0	36.6	3.1	9.2	0.8		
Owner Occupied Lifestyle Lots	8.5	16	Dwellings			35.0	Direction S	31.0%	17.2%		17.2%		6.9%		27.6%	
							Traffic Gen	42.2	0.67		23.4		9.4		37.5	
Leisure Hotel	2.5	60	Rooms	3.0	3.0	35.0	Direction S	20.0%	24.0%	6.0%	10.0%	15.0%	10.0%	15.0%		
							Traffic Gen	30.0	3.1	27.3	15.0	1.9	15.0	1.9		
Rainforest Education Centre	1.5	350	Beds		2.5	35.0	Direction S	9.0%	36.0%		10.0%	40.0%	1.0%	4.0%		
							Traffic Gen	18.9	5.4		21	6	2.1	0.6		
Glamping Experience	2.5	25	Tents	2.5	2.5	35.0	Direction S	20.0%	24.0%	6.0%	10.0%	15.0%	10.0%	15.0%		
							Traffic Gen	12.5	1.1	9.4	6.3	0.7	6.3	0.7		
Premium Villas	3	31	Dwellings	3.0	3.0	35.0	Direction S	17.8%	21.3%	5.3%	13.3%	20.0%	8.9%	13.3%		
							Traffic Gen	16.5	1.7	14.9	12.4	1.6	8.3	1.1		
Premium Villas Owner Occupied	8.5	8	Dwellings			35.00	Direction S	31.0%	17.2%		17.2%	0%	6.9%	0%	27.6%	0%
							Traffic Gen	21.1	0.33		11.7	0.0	4.7	0.0	18.8	0
Unique Day Guests	2	1090	Guests		3.0	35.0	Direction S	9.4%	50.9%	33.9%	0.3%	2.6%	0.3%	2.6%		
							Traffic Gen	68.5	31.7	740.0	2.1	1.6	2.1	1.6		
Cairns Staff	1.5	188	Employees		1.5	35.0	Direction S	56.5%	37.7%	0.0%	0.0%	0.0%	0.0%	0.0%		
							Traffic Gen	106.2	3.0	0.0	0.0	0.0	0.0	0.0		
Kuranda Staff	1.5	283	Employees		1.5	35.0	Direction S	0.0%	0.0%	0.0%	74.0%	18.5%	0.0%	0.0%		
							Traffic Gen	0.0	0.0	0.0	209.5	2.2	0.0	0.0		
Kuranda Staff (Cairns Reduction)	1.5	114	Employees		1.5	35.0	Direction S	N/A	N/A							
							Traffic Gen	-91.2	-1.0							
Wider Tableland Staff	1.5	162	Employees		1.5	35.0	Direction S	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%		
							Traffic Gen	0.0	0.0	0.0	0.0	0.0	162.0	0.0		
Total Stage One								287.6	50.8	813.4	346.8	19.7	219.8	6.9	56.3	0.0
									338.42			389.76		226.71		56.28

Stage One A Traffic Generation

Use	Daily Traffic Generation Rate	Number		Average Persons Per Room	Private Vehicle Occupancy	Private Coach Occupancy		Origin/Destination: Cairns Private Vehicle (Trips)	Cairns Private Coach	Cairns Skyrail/Scenic Rail (Persons)	Kuranda Private Vehicle (Trips)	Kuranda Private Coach	Wider Tablelands Private Vehicle (Trips)	Wider Tablelands Private Coach	Local Roads Private Vehicle (Trips)	Local Roads Private Coach
Stage One																
Glamping Experience	2.5	15	Rooms	2.5	2.5	35.0	Direction S	20.0%	24.0%	6.0%	10.0%	15.0%	10.0%	15.0%		
							Traffic Gen	7.5	0.6	5.6	3.8	0.4	3.8	0.4		
Lifestyle Lots Tourist Accommodation	3	16	Dwellings	3.0	3.0	35.0	Direction S	30.0%	16.0%	4.0%	20.0%	20.0%	5.0%	5.0%		
							Traffic Gen	14.4	0.7	5.8	9.6	0.8	2.4	0.2		
Owner Occupied Lifestyle Lots	8.5	5	Dwellings			35.0	Direction S	31.0%	17.2%		17.2%		6.9%		27.6%	
							Traffic Gen	13.2	0.21		7.3		2.9		11.7	
Unique Day Guests	2	650	Guests		3.0	35.0	Direction S	9.4%	50.9%	33.9%	0.3%	2.6%	0.3%	2.6%		
							Traffic Gen	40.9	18.9	441.3	1.2	1.0	1.2	1.0		
Cairns Staff	1.5	67	Employees		1.5	35.0	Direction S	56.5%	37.7%	0.0%	0.0%	0.0%	0.0%	0.0%		
							Traffic Gen	37.9	1.1	0.0	0.0	0.0	0.0	0.0		
Kuranda Staff	1.5	100	Employees		1.5	35.0	Direction S	0.0%	0.0%	0.0%	74.0%	18.5%	0.0%	0.0%		
							Traffic Gen	0.0	0.0	0.0	74.0	0.8	0.0	0.0		
ıda Staff (Cairns Reduc	1.5	41	Employees		1.5	35.0	Direction S	N/A	N/A							
							Traffic Gen	-32.8	-0.4							
Wider Tableland Staff	1.5	57	Employees		1.5	35.0	Direction S	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%		
							Traffic Gen	0.0	0.0	0.0	0.0	0.0	57.0	0.0		
Total Stage 1A								81.0	21.2	452.6	95.9	3.0	67.3	1.6	11.7	0.0
									102.15			111.85		68.88		11.72

Stage Two Traffic Generation

Use	Daily Traffic Generation Rate	Number		Average Persons Per Room	Private Vehicle Occupancy	Private Coach Occupancy		Origin/Destination: Cairns Private Vehicle (Trips)	Cairns Private Coach	Cairns Skyrail/Scenic Rail (Persons)	Kuranda Private Vehicle (Trips)	Kuranda Private Coach	Wider Tablelands Private Vehicle (Trips)	Wider Tablelands Private Coach	Local Roads Private Vehicle (Trips)	Local Roads Private Coach
Stage One																
Leisure Hotel	2.5	210	Rooms	3.0	3.0	35.0	Direction S	20.0%	24.0%	6.0%	10.0%	15.0%	10.0%	15.0%		
							Traffic Gen	105.0	10.9	95.4	52.5	6.8	52.5	6.8		
Golf Course	2	100	Persons		1.5	35.0	Direction S	51%	0%	0%	21%	0%	27%	0%		
							Traffic Gen	68.6	0.0	0.0	28.6	0.0	36.2	0.0		
Premium Villas	3	162	Dwellings	3.0	3.0	35.0	Direction S	17.8%	21.3%	5.3%	13.3%	20.0%	8.9%	13.3%		
							Traffic Gen	86.4	8.9	77.8	64.8	8.3	43.2	5.6		
Premium Villas Owner Occupied	8.5	31	Dwellings			35.00	Direction S	31.0%	17.2%		17.2%	0%	6.9%	0%	27.6%	0%
							Traffic Gen	81.8	1.30		45.4	0.0	18.2	0.0	72.7	0
Premium Villa Units	2.5	60	Units	3.0	3.0	35.0	Direction S	20.0%	24.0%	6.0%	10.0%	15.0%	10.0%	15.0%		
							Traffic Gen	30.0	3.1	27.0	15.0	1.9	15.0	1.9		
Function/Retail/Dining Unique Guests	2	55	Guests		2.5	35.0	Direction S	41%	0%	0%	30%	0%	29%	0%		
							Traffic Gen	18.2	0.0	0.0	13.2	0.0	12.6	0.0		
Unique Day Guests	2	45	Guests		3.0	35.0	Direction S	9.4%	50.9%	33.9%	0.3%	2.6%	0.3%	2.6%		
							Traffic Gen	2.8	1.3	30.5	0.1	0.1	0.1	0.1		
Cairns Staff	1.5	73	Employees		1.5	35.0	Direction S	56.5%	37.7%	0.0%	0.0%	0.0%	0.0%	0.0%		
							Traffic Gen	41.2	1.2	0.0	0.0	0.0	0.0	0.0		
Kuranda Staff	1.5	109	Employees		1.5	35.0	Direction S	0.0%	0.0%	0.0%	74.0%	18.5%	0.0%	0.0%		
							Traffic Gen	0.0	0.0	0.0	80.7	0.9	0.0	0.0		
Kuranda Staff (Cairns Reduction)	1.5	44	Employees		1.5	35.0	Direction S	N/A	N/A							
							Traffic Gen	-35.2	-0.4							
Wider Tableland Staff	1.5	62	Employees		1.5	35.0	Direction S	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%		
							Traffic Gen	0.0	0.0	0.0	0.0	0.0	62.0	0.0		
Total Stage Two								398.8	26.3	230.7	300.3	18.0	239.7	14.4	72.7	0.0
									425.13			324.88		254.09		72.69

Stage 3 Traffic Generation

Use	Daily Traffic Generation Rate	Number		Average Persons Per Room	Private Vehicle Occupancy	Private Coach Occupancy		Origin/Destination: Cairns Private Vehicle (Trips)	Cairns Private Coach	Cairns Skyrail/Scenic Rail (Persons)	Kuranda Private Vehicle (Trips)	Kuranda Private Coach	Wider Tablelands Private Vehicle (Trips)	Wider Tablelands Private Coach	Local Roads Private Vehicle (Trips)	Local Roads Private Coach
Stage One																
							Direction S	17.8%	21.3%	5.3%	13.3%	20.0%	8.9%	13.3%		
Premium Villas	3	75	Dwellings	3.0	3.0	35.0	Traffic Gen	40.0	4.1	36.0	30.0	3.9	20.0	2.6		
Health and							Direction S	48.0%	12.0%	0.0%	16.0%	4.0%	16.0%	4.0%		
Wellbeing Retreat	2	5	Persons		2.5	35.00	Traffic Gen	1.9	0.0	0.0	0.6	0.0	0.6	0.0		
Health and							Direction S	31.1%	47%	0%	9%	13%	0%	0%		
Wellbeing Retreat	1.5	60	Rooms	1.3	1.3	35.0	Traffic Gen	28.0	1.6	0.0	8.0	0.4	0.0	0.0		
Premium Villas							Direction S	31.0%	17.2%		17.2%	0%	6.9%	0%	27.6%	0%
Owner Occupied	8.5	18	Dwellings			35.00	Traffic Gen	47.5	0.75		26.4	0.0	10.6	0.0	42.2	0
							Direction S	20.0%	24.0%	6.0%	10.0%	15.0%	10.0%	15.0%		
Five Star Resort	2.5	200	Rooms	1.8	1.8	35.0	Traffic Gen	100.0	6.2	54.0	50.0	3.9	50.0	3.9		
KUR Campus Student							Direction S	20%	40.0%		20.0%	20.0%	0%	0%		
Accommodation	2.5	300	Rooms	1.0	1.8	35.0	Traffic Gen	83.3	8.6		83.3	4.3	0.0	0.0		
KUR Campus Day							Direction S	13.5%	40.5%		4.1%	12.2%	7.4%	22.3%		
Students	1.2	300	Students		1.8	35.0	Traffic Gen	27.0	4.2		8.1	1.3	14.9	2.3		
							Direction S	56.5%	37.7%	0.0%	0.0%	0.0%	0.0%	0.0%		
Cairns Staff	1.5	145	Employees		1.5	35.0	Traffic Gen	81.9	2.3	0.0	0.0	0.0	0.0	0.0		
							Direction S	0.0%	0.0%	0.0%	74.0%	18.5%	0.0%	0.0%		
Kuranda Staff	1.5	217	Employees		1.5	35.0	Traffic Gen	0.0	0.0	0.0	160.6	1.7	0.0	0.0		
Kuranda Staff (Cairns							Direction S	N/A	N/A							
Reduction)	1.5	88	Employees		1.5	35.0	Traffic Gen	-70.4	-0.8							
Wider Tableland							Direction S	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%		
Staff	1.5	124	Employees		1.5	35.0	Traffic Gen	0.0	0.0	0.0	0.0	0.0	124.0	0.0		
Total Stage Three								339.3	27.0	90.0	367.1	15.4	220.1	8.7	42.2	0.0
									366.24			385.11		228.79		42.21

KUR-World

Appendix 13l

Strategic Modelling Tech Note

Environmental Impact Statement

Technical Note

ARUP

To	KUR-World Environmental Impact Statement	Date	5 December 2017
Copies		Reference number	
From	Jordan Evans	File reference	
Subject	KUR-World Transport Modelling Methodology		

1 Introduction

Arup is helping R&O (the developer) prepare parts of the Environmental Impact Statement (EIS) for the proposed KUR-World Resort (the development). Assessment of the traffic impacts associated with this development forms an important component of the EIS. The Traffic Generation Development Tech Memo documents the calculation of development traffic generation associated with the KUR-World Resort. This technical note details the strategic traffic modelling that has been undertaken, which incorporates the KUR-World traffic generation totals, in order to assess the potential traffic impacts on the wider road network. At the request of the project, the Cairns Strategic Transport Model (CSTM) has been provided by TMR to support the assessment.

2 Methodology

The modelling methodology adopted to identify the impacts of KUR-World development traffic on the wider road network is summarised as follows:

1. Estimate trip generation for the development (detailed within the Traffic Generation Development Tech Note in Appendix H) and update CSTM model trip matrices;
2. Modify the CSTM model network and zone structure to include the KUR-World development;
3. Perform opening years (2021, 2024 and 2027) and horizon year (2037) CSTM model runs with and without the development; and
4. Identify links and intersections which show more than a five percent increase in traffic levels in the horizon year.

3 Cairns Strategic Transport Model

The Cairns Strategic Transport Model (CSTM) is a strategic travel demand forecasting tool that is used to inform strategic transport planning and infrastructure and policy testing by Department of Transport and Main Roads (DTMR).

The CSTM is a classical four-step transport model that takes demographic and network data as key inputs (see Figure 1). These inputs drive the amount of traffic within the model area and how this traffic traverses the network. The demographic and network data are supported by different specifications, these include three time periods (AM Period – 7:00 to 9:00, PM Period – 16:00 to 18:00, and Off-Peak Period – rest of the day), ten trip purposes, eight household segmentations and three levels of car availability.

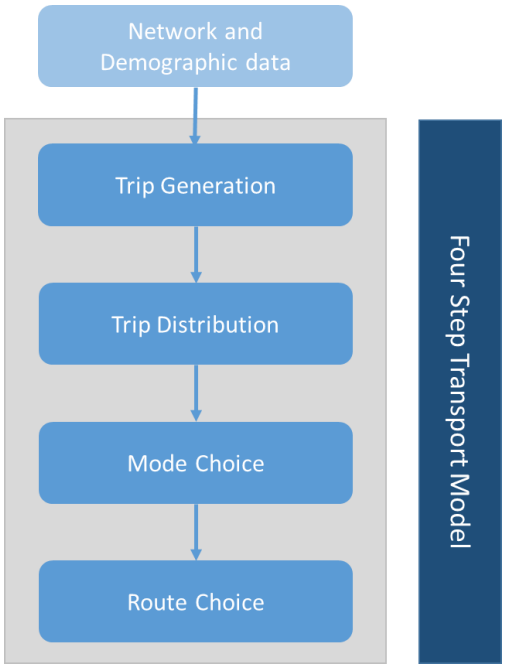

Figure 1: Classical four-step transport model

The most recent version of the CSTM is estimated and calibrated from 2014 Cairns Household Travel Survey data and Visitor Travel Survey data, these two surveys are supported by ABS 2011 Journey to Work and household data. Model validation was undertaken with traffic count surveys collected between 2013 and 2015 and travel time surveys collected between 2014 and 2015. The CSTM forecast model years are 2021 and 2036 which correspond to available demographic and network inputs.

4 Development Traffic

4.1 CSTM modifications

For the purpose of this project, the existing CSTM model was modified to include the KUR-World development. This was represented in the model by adding six new zones for the three development

stages (i.e. two zones for each stage, reflecting traffic entering the network via Barnwell Rd or the KUR-World main entrance to the east) as detailed by R&O:

- Stage 1 includes type of development complete in 2021
- Stage 2 includes type of development complete in 2024; and
- Stage 3 includes type of development complete in 2027.

With only 2021 and 2036 CSTM demographics and road networks being available, 2024 and 2027 horizon demographics were linearly interpolated from the existing 2021 and 2036 demographic inputs. The 2024 and 2027 road networks were assumed to be identical to the 2021 network. The 2037 development horizon was assumed to be equal to the 2036 demographic input and 2036 road network.

4.2 Trip generation

The first stage of a four-step transport model involves the estimation of the total number of person trips generated from and attracted to individual zones. Due to the uniqueness of the proposed KUR-World Eco-Resort, the varied uses, occupancy rates, location and target cliental, the use of standard trip generation rates is considered inappropriate as it is likely to inaccurately represent the proposed traffic generated by the development.

An alternative method to estimate the traffic generation of the proposed uses was developed in order to establish a realistic estimate of the traffic generated by the development. This methodology is detailed in the Traffic Generation Development Technical Note provided in Appendix H and is based on estimating the traffic generation through first principles methodology.

4.3 Trip distribution, mode choice and time period splitting

Following the trip generation step, whereby an estimation of the number of trips produced by the development and the number of trips attracted to the development were calculated, the expected destination of these trips was determined. The assumed origin/destination of trips was based on the three trip directions possible from the KUR-World site. These directions include to/from:

- Cairns and surrounds;
- the Wider Tablelands; and
- Kuranda.

These origin/destination locations accommodate all major external trips likely to be generated by the KUR-World development, including access to the resort from the Cairns International Airport and other Cairns accommodation, access to the Reef Fleet Terminal for day trips to the Great Barrier Reef (GBR) and day trips to the wider Atherton Tablelands and Kuranda Village.

Having determined the origin/destination locations for major external trips (i.e. Inner Cairns, Kuranda, Wider Tablelands and Cairns Airport), these locations were then aggregated to the model zone system. Private vehicles were distributed to all zones while private coaches were distributed to specific points of interest (i.e. Kuranda Station, Wider Tablelands, Cairns Airport and Cairns Station). The distribution of these cars and coaches are highlighted in Figure 2. Appendix H further

details the relevant assumptions made for distributing car and coach trips for the KUR-World development.

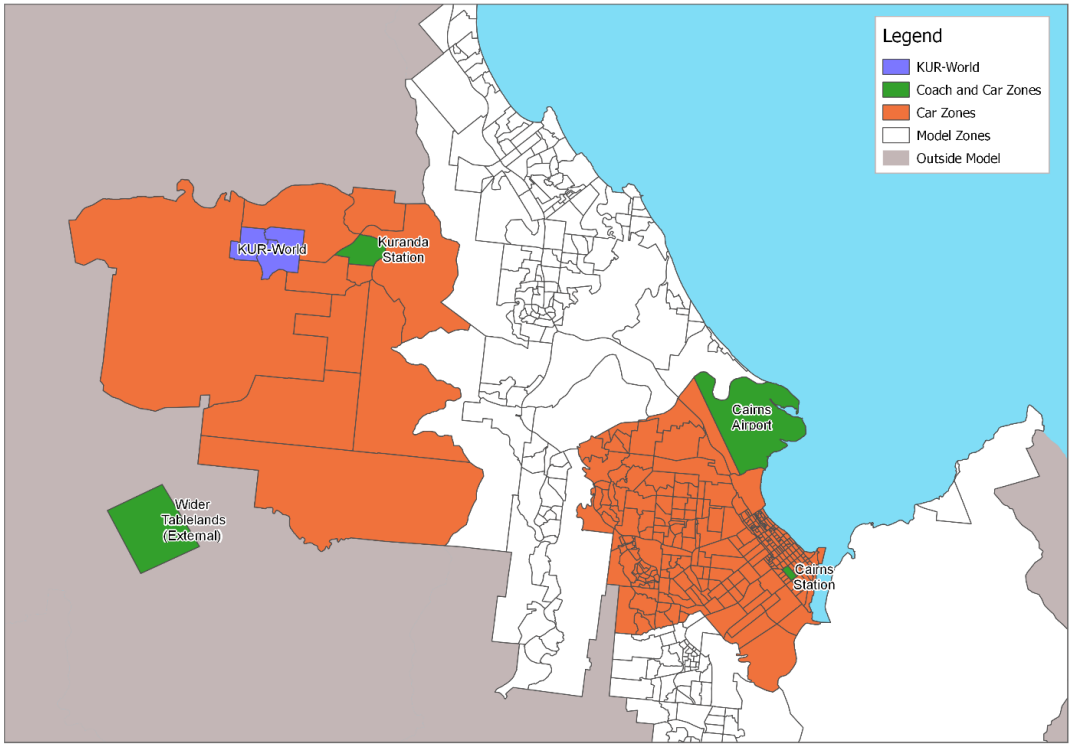

Figure 2: KUR-World trip attractors and producers.

Following the distribution and mode choice of KUR-World related trips, these trips were then split into the three different time periods (AM Period, Off-Peak Period and PM Period) based on a proportional rate of the standard peak hour traffic generation for each use. This rational for the assignment of the peak hour traffic is detailed in the Traffic Generation Development Technical Note provided in Appendix H.

4.4 Results

Having calculated the trip generation, distribution and mode choice steps for the proposed development, the traffic generated by the development was then assigned to the model road network for all three time periods. These traffic volumes were then aggregated to a daily time period with the respective results being compared to the 2021, 2024, 2027 and 2037 base traffic volumes.

For the 2021 and 2024 development cases, roads with a greater than five percent increase in traffic volumes over the entire day (compared to the respective base scenarios) are displayed in Figure 3. For the 2027 and 2037 development cases, roads with a greater than five percent increase in traffic volumes are displayed in Figure 4. For all scenarios, the Kennedy Highway – from the edge of the model to the intersection with the Captain Cook Highway – have traffic increases of more than five percent. For the 2027 and 2037 development cases, the Captain Cook Highway till Yorkeys Knob Road also has an increase of more than five percent.

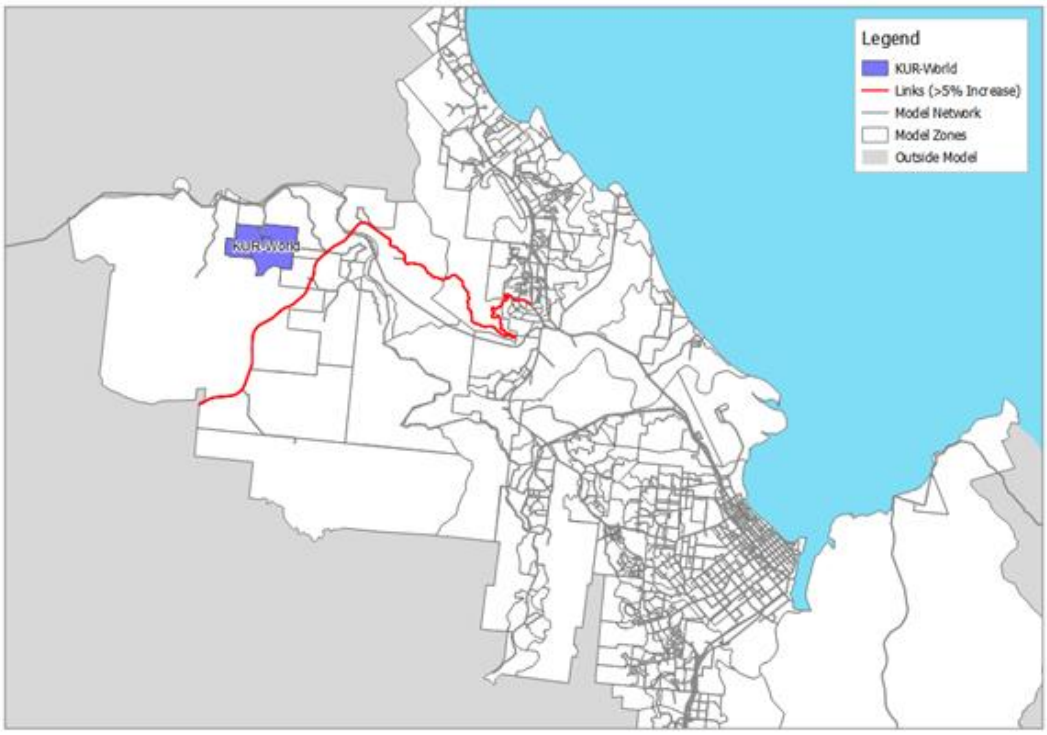

Figure 3: 2021 and 2027 CSTM road links with >5% increase in traffic due to KUR-World development.

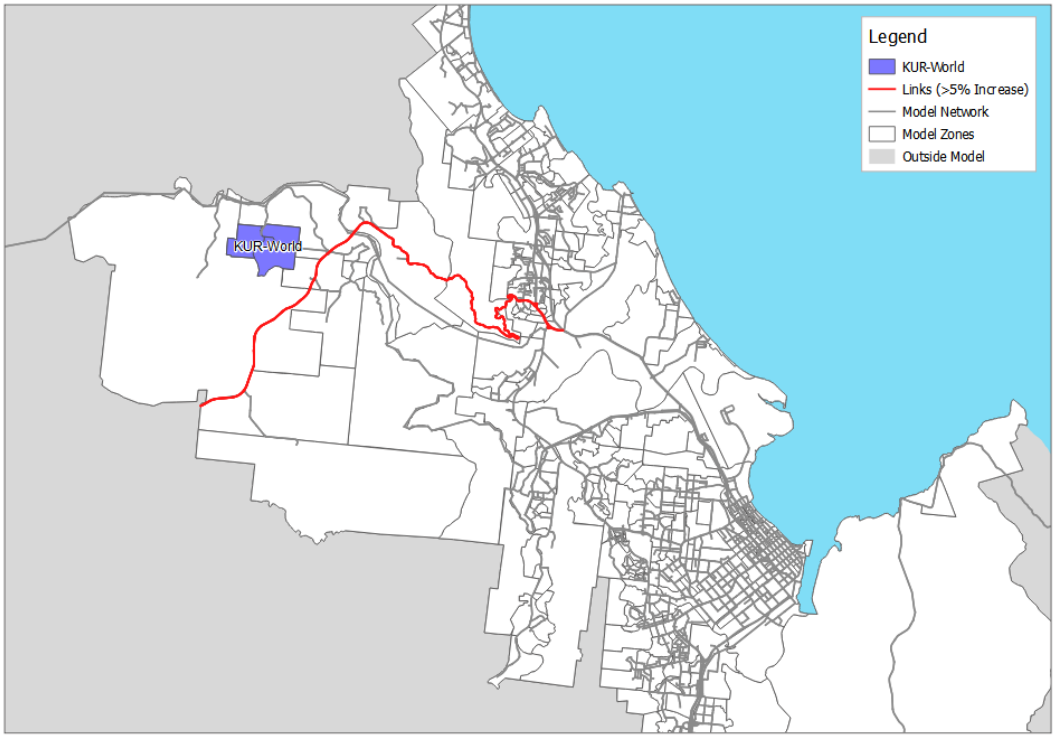

Figure 4: 2027 and 2037 CSTM road links with >5% increase in traffic due to KUR-World development.

Following the identification of road links with traffic increases of greater than five percent, a performance assessment was completed on the links identified. Intersection performance will be established using SIDRA and link performance will be undertaken using Austroads and Highway Capacity Manual based guidelines. Impact will be assessed with reference to the requirements in the Guidelines for Assessment of Road Impacts of Development. These results are detailed in Appendix XX.

4.5 Conclusion

This technical note has detailed the strategic modelling process of assessing the traffic impacts associated with the KUR-World Resort development. The Cairns Strategic Transport Model (CSTM) was used to assess these impacts and hence identify road links that would be affected by the development. Following bespoke traffic generation, distribution and mode choice calculations, the estimated number of trips generated by the development were assigned to scenarios aligned with the KUR-World development staging in 2021, 2024, 2027 and a 2037 development horizon. The results highlight road impacts along the Kennedy Highway – from the edge of the model to the intersection with the Captain Cook Highway – and the Captain Cook Highway till Yorkeys Knob Road.

KUR-World

Appendix 13m

SIDRA Movement Summaries

Environmental Impact Statement

MOVEMENT SUMMARY

Site: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2017AM Base]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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: Rob Veivers Drive											
1	L2	40	5.3	0.035	7.3	LOS A	0.2	1.7	0.32	0.61	52.7
2	T1	47	4.4	0.212	27.4	LOS C	1.3	9.7	0.94	0.70	41.4
3	R2	44	0.0	0.200	33.0	LOS C	1.2	8.7	0.94	0.73	38.4
Approach		132	3.2	0.212	23.2	LOS C	1.3	9.7	0.75	0.68	43.1
East: Kennedy Highway (East)											
4	L2	96	2.2	0.081	8.9	LOS A	0.5	3.6	0.33	0.67	63.2
5	T1	189	12.2	0.366	19.1	LOS B	4.6	35.3	0.84	0.69	56.5
6	R2	58	9.1	0.142	18.4	LOS B	1.0	7.4	0.79	0.73	52.2
Approach		343	8.9	0.366	16.1	LOS B	4.6	35.3	0.69	0.69	57.4
North: Myola Road											
7	L2	59	7.1	0.361	16.8	LOS B	2.0	14.3	0.87	0.73	48.5
8	T1	83	0.0	0.361	11.2	LOS B	2.0	14.3	0.87	0.73	49.2
9	R2	43	4.9	0.244	34.5	LOS C	1.3	9.2	0.96	0.73	37.7
Approach		185	3.4	0.361	18.4	LOS B	2.0	14.3	0.89	0.73	45.7
West: Kennedy Highway (West)											
10	L2	73	7.2	0.054	8.4	LOS A	0.3	2.2	0.25	0.65	62.2
11	T1	281	6.7	0.526	20.1	LOS C	7.1	52.9	0.89	0.75	55.6
12	R2	78	2.7	0.160	17.9	LOS B	1.3	9.5	0.75	0.73	54.3
Approach		432	6.1	0.526	17.7	LOS B	7.1	52.9	0.76	0.73	56.4
All Vehicles		1092	6.2	0.526	18.0	LOS B	7.1	52.9	0.76	0.71	52.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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
P3	North Full Crossing	53	23.5	LOS C	0.1	0.1	0.89	0.89
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	23.9	LOS C			0.89	0.89

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2017PM Base]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	71	1.5	0.063	8.1	LOS A	0.5	3.8	0.38	0.64	52.2
2	T1	55	0.0	0.208	26.3	LOS C	1.5	10.5	0.93	0.69	41.9
3	R2	145	7.2	0.604	34.3	LOS C	4.4	32.4	0.99	0.82	37.7
Approach		271	4.3	0.604	25.9	LOS C	4.4	32.4	0.82	0.75	41.6
East: Kennedy Highway (East)											
4	L2	87	9.6	0.072	8.8	LOS A	0.5	3.4	0.30	0.66	61.2
5	T1	283	4.1	0.553	21.1	LOS C	7.4	53.4	0.91	0.76	54.8
6	R2	55	7.7	0.131	18.7	LOS B	1.0	7.1	0.79	0.73	52.3
Approach		425	5.7	0.553	18.2	LOS B	7.4	53.4	0.77	0.74	55.7
North: Myola Road											
7	L2	62	8.5	0.281	15.8	LOS B	1.8	13.6	0.82	0.70	48.8
8	T1	65	3.2	0.281	10.1	LOS B	1.8	13.6	0.82	0.70	49.7
9	R2	49	8.5	0.287	34.8	LOS C	1.5	10.9	0.96	0.74	37.5
Approach		177	6.5	0.287	19.0	LOS B	1.8	13.6	0.86	0.71	45.3
West: Kennedy Highway (West)											
10	L2	44	7.1	0.033	8.3	LOS A	0.2	1.3	0.25	0.65	62.2
11	T1	236	10.7	0.480	20.6	LOS C	6.0	45.9	0.89	0.74	55.2
12	R2	36	5.0	0.089	18.9	LOS B	0.6	4.5	0.79	0.71	53.0
Approach		316	9.6	0.480	18.7	LOS B	6.0	45.9	0.79	0.72	55.8
All Vehicles		1188	6.5	0.604	20.2	LOS C	7.4	53.4	0.80	0.73	50.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	24.4	LOS C			0.90	0.90

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2018AM Base]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	41	5.1	0.036	7.6	LOS A	0.3	1.9	0.34	0.62	52.5
2	T1	48	4.3	0.217	27.5	LOS C	1.4	9.9	0.94	0.70	41.4
3	R2	45	2.3	0.208	33.1	LOS C	1.3	9.1	0.94	0.73	38.3
Approach		135	3.9	0.217	23.3	LOS C	1.4	9.9	0.76	0.68	43.0
East: Kennedy Highway (East)											
4	L2	98	2.2	0.082	8.9	LOS A	0.5	3.7	0.33	0.67	63.2
5	T1	194	12.0	0.374	19.1	LOS B	4.7	36.1	0.85	0.69	56.5
6	R2	59	8.9	0.146	18.4	LOS B	1.0	7.5	0.79	0.73	52.2
Approach		351	8.7	0.374	16.1	LOS B	4.7	36.1	0.69	0.69	57.4
North: Myola Road											
7	L2	44	4.8	0.377	18.1	LOS B	2.0	14.6	0.91	0.74	47.9
8	T1	85	1.2	0.377	12.4	LOS B	2.0	14.6	0.91	0.74	48.6
9	R2	60	7.0	0.345	35.0	LOS D	1.8	13.2	0.97	0.75	37.5
Approach		189	3.9	0.377	20.9	LOS C	2.0	14.6	0.93	0.74	44.3
West: Kennedy Highway (West)											
10	L2	74	7.1	0.055	8.4	LOS A	0.3	2.2	0.26	0.65	62.2
11	T1	286	6.6	0.535	20.2	LOS C	7.3	54.1	0.90	0.75	55.5
12	R2	79	2.7	0.164	18.1	LOS B	1.4	9.7	0.76	0.73	54.1
Approach		439	6.0	0.535	17.8	LOS B	7.3	54.1	0.76	0.73	56.3
All Vehicles		1114	6.2	0.535	18.5	LOS B	7.3	54.1	0.77	0.72	52.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	23.5	LOS C	0.1	0.1	0.89	0.89
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	23.9	LOS C			0.89	0.89

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2018AM Post Dev]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	41	5.1	0.036	7.6	LOS A	0.3	1.9	0.34	0.62	52.5
2	T1	69	6.1	0.314	27.9	LOS C	2.0	14.7	0.95	0.72	41.2
3	R2	45	2.3	0.208	33.1	LOS C	1.3	9.1	0.94	0.73	38.3
Approach		156	4.7	0.314	24.1	LOS C	2.0	14.7	0.79	0.70	42.7
East: Kennedy Highway (East)											
4	L2	98	2.2	0.082	8.9	LOS A	0.5	3.6	0.33	0.67	63.2
5	T1	194	12.0	0.374	19.1	LOS B	4.7	36.1	0.85	0.69	56.5
6	R2	75	11.3	0.187	18.6	LOS B	1.3	9.9	0.80	0.74	51.6
Approach		366	9.2	0.374	16.3	LOS B	4.7	36.1	0.70	0.70	57.0
North: Myola Road											
7	L2	43	12.2	0.411	18.6	LOS B	2.1	15.3	0.92	0.74	47.6
8	T1	91	2.3	0.411	12.9	LOS B	2.1	15.3	0.92	0.74	48.5
9	R2	65	4.8	0.369	35.1	LOS D	1.9	14.1	0.97	0.75	37.5
Approach		199	5.3	0.411	21.4	LOS C	2.1	15.3	0.94	0.74	44.1
West: Kennedy Highway (West)											
10	L2	88	7.1	0.067	8.5	LOS A	0.4	3.0	0.28	0.66	62.1
11	T1	286	6.6	0.535	20.2	LOS C	7.3	54.1	0.90	0.75	55.5
12	R2	79	2.7	0.164	18.1	LOS B	1.4	9.7	0.76	0.73	54.1
Approach		454	6.0	0.535	17.5	LOS B	7.3	54.1	0.75	0.73	56.5
All Vehicles		1175	6.7	0.535	18.7	LOS B	7.3	54.1	0.77	0.72	51.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	23.5	LOS C	0.1	0.1	0.89	0.89
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	23.9	LOS C			0.89	0.89

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2018PM Base]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	72	1.5	0.065	8.1	LOS A	0.5	3.9	0.38	0.64	52.2
2	T1	56	1.9	0.215	26.3	LOS C	1.5	10.9	0.93	0.69	41.9
3	R2	148	7.1	0.617	34.5	LOS C	4.5	33.2	0.99	0.83	37.7
Approach		276	4.6	0.617	26.0	LOS C	4.5	33.2	0.82	0.75	41.5
East: Kennedy Highway (East)											
4	L2	89	9.4	0.074	8.8	LOS A	0.5	3.5	0.30	0.66	61.2
5	T1	288	4.0	0.563	21.1	LOS C	7.5	54.6	0.91	0.77	54.7
6	R2	56	7.5	0.135	18.7	LOS B	1.0	7.3	0.79	0.73	52.3
Approach		434	5.6	0.563	18.3	LOS B	7.5	54.6	0.77	0.74	55.6
North: Myola Road											
7	L2	63	8.3	0.285	15.8	LOS B	1.9	13.8	0.82	0.70	48.8
8	T1	66	3.2	0.285	10.1	LOS B	1.9	13.8	0.82	0.70	49.7
9	R2	51	8.3	0.293	34.8	LOS C	1.5	11.1	0.96	0.74	37.5
Approach		180	6.4	0.293	19.0	LOS B	1.9	13.8	0.86	0.71	45.3
West: Kennedy Highway (West)											
10	L2	45	7.0	0.034	8.3	LOS A	0.2	1.3	0.25	0.65	62.3
11	T1	240	11.0	0.489	20.7	LOS C	6.1	47.0	0.89	0.74	55.1
12	R2	37	2.9	0.091	18.8	LOS B	0.6	4.5	0.79	0.71	53.5
Approach		322	9.5	0.489	18.7	LOS B	6.1	47.0	0.79	0.72	55.8
All Vehicles		1212	6.5	0.617	20.3	LOS C	7.5	54.6	0.80	0.73	50.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	24.4	LOS C			0.90	0.90

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2018PM Post Dev]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	72	1.5	0.066	8.4	LOS A	0.6	4.1	0.40	0.64	52.0
2	T1	64	3.3	0.250	26.5	LOS C	1.8	12.8	0.93	0.71	41.8
3	R2	148	7.1	0.617	34.5	LOS C	4.5	33.2	0.99	0.83	37.7
Approach		284	4.8	0.617	26.1	LOS C	4.5	33.2	0.83	0.75	41.5
East: Kennedy Highway (East)											
4	L2	89	9.4	0.076	9.0	LOS A	0.5	3.5	0.33	0.67	61.0
5	T1	288	4.0	0.601	22.2	LOS C	7.7	56.0	0.93	0.78	53.9
6	R2	55	9.6	0.140	19.4	LOS B	1.0	7.5	0.81	0.73	51.4
Approach		433	5.8	0.601	19.1	LOS B	7.7	56.0	0.79	0.75	54.9
North: Myola Road											
7	L2	83	11.4	0.461	17.3	LOS B	3.3	24.3	0.89	0.75	48.1
8	T1	114	3.7	0.461	11.5	LOS B	3.3	24.3	0.89	0.75	49.0
9	R2	80	7.9	0.396	34.1	LOS C	2.3	17.5	0.97	0.76	37.8
Approach		277	7.2	0.461	19.8	LOS B	3.3	24.3	0.91	0.75	44.9
West: Kennedy Highway (West)											
10	L2	52	8.2	0.039	8.4	LOS A	0.2	1.5	0.25	0.65	61.9
11	T1	240	10.5	0.521	21.7	LOS C	6.3	48.0	0.91	0.76	54.3
12	R2	37	2.9	0.096	19.5	LOS B	0.6	4.7	0.81	0.71	53.0
Approach		328	9.3	0.521	19.3	LOS B	6.3	48.0	0.80	0.73	55.2
All Vehicles		1322	6.8	0.617	20.8	LOS C	7.7	56.0	0.83	0.75	49.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	24.4	LOS C			0.90	0.90

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2021AM Base]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	43	4.9	0.038	7.6	LOS A	0.3	2.0	0.34	0.62	52.5
2	T1	52	4.1	0.230	27.5	LOS C	1.5	10.6	0.94	0.70	41.4
3	R2	47	2.2	0.218	33.1	LOS C	1.3	9.5	0.94	0.73	38.3
Approach		142	3.7	0.230	23.3	LOS C	1.5	10.6	0.76	0.69	43.0
East: Kennedy Highway (East)											
4	L2	104	2.0	0.088	8.9	LOS A	0.5	3.9	0.34	0.67	63.2
5	T1	205	12.3	0.397	19.3	LOS B	5.0	38.7	0.85	0.70	56.3
6	R2	63	8.3	0.160	18.7	LOS B	1.1	8.1	0.81	0.73	52.2
Approach		373	8.8	0.397	16.3	LOS B	5.0	38.7	0.70	0.70	57.3
North: Myola Road											
7	L2	46	4.5	0.401	18.2	LOS B	2.2	15.6	0.91	0.74	47.9
8	T1	91	1.2	0.401	12.5	LOS B	2.2	15.6	0.91	0.74	48.6
9	R2	64	6.6	0.368	35.1	LOS D	1.9	14.1	0.97	0.75	37.5
Approach		201	3.7	0.401	21.1	LOS C	2.2	15.6	0.93	0.75	44.2
West: Kennedy Highway (West)											
10	L2	79	6.7	0.058	8.4	LOS A	0.3	2.4	0.26	0.66	62.3
11	T1	304	6.6	0.568	20.4	LOS C	7.9	58.1	0.91	0.76	55.3
12	R2	84	2.5	0.178	18.1	LOS B	1.4	10.3	0.77	0.74	54.1
Approach		467	5.9	0.568	18.0	LOS B	7.9	58.1	0.77	0.74	56.2
All Vehicles		1183	6.1	0.568	18.6	LOS B	7.9	58.1	0.77	0.72	52.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	23.5	LOS C	0.1	0.1	0.89	0.89
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	23.9	LOS C			0.89	0.89

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2021AM Post Dev]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	43	4.9	0.039	7.8	LOS A	0.3	2.2	0.36	0.62	52.3
2	T1	104	6.1	0.471	28.6	LOS C	3.1	22.6	0.98	0.76	40.8
3	R2	47	2.2	0.218	33.1	LOS C	1.3	9.5	0.94	0.73	38.3
Approach		195	4.9	0.471	25.1	LOS C	3.1	22.6	0.83	0.72	42.2
East: Kennedy Highway (East)											
4	L2	104	2.0	0.090	9.1	LOS A	0.5	3.9	0.35	0.68	63.1
5	T1	205	12.3	0.422	20.2	LOS C	5.1	39.7	0.87	0.72	55.5
6	R2	106	10.9	0.287	19.9	LOS B	1.9	14.8	0.86	0.76	50.8
Approach		416	9.4	0.422	17.3	LOS B	5.1	39.7	0.74	0.72	55.9
North: Myola Road											
7	L2	53	14.0	0.507	21.3	LOS C	2.9	21.1	0.93	0.78	46.0
8	T1	121	3.5	0.507	15.6	LOS B	2.9	21.1	0.93	0.78	46.9
9	R2	83	3.8	0.400	34.1	LOS C	2.4	17.5	0.97	0.76	37.9
Approach		257	5.7	0.507	22.7	LOS C	2.9	21.1	0.94	0.78	43.4
West: Kennedy Highway (West)											
10	L2	117	7.2	0.092	9.1	LOS A	0.7	5.0	0.34	0.68	61.5
11	T1	304	6.6	0.604	21.4	LOS C	8.1	59.6	0.93	0.78	54.5
12	R2	84	2.5	0.186	18.8	LOS B	1.5	10.7	0.79	0.74	53.6
Approach		505	6.0	0.604	18.1	LOS B	8.1	59.6	0.77	0.75	55.8
All Vehicles		1373	6.8	0.604	19.7	LOS B	8.1	59.6	0.80	0.74	50.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	24.4	LOS C			0.90	0.90

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2021PM Base]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	77	1.4	0.071	8.4	LOS A	0.6	4.5	0.40	0.64	52.0
2	T1	59	1.8	0.227	26.4	LOS C	1.6	11.6	0.93	0.70	41.9
3	R2	157	7.4	0.653	34.9	LOS C	4.8	35.6	1.00	0.85	37.5
Approach		293	4.7	0.653	26.2	LOS C	4.8	35.6	0.83	0.76	41.4
East: Kennedy Highway (East)											
4	L2	95	10.0	0.078	8.8	LOS A	0.5	3.8	0.30	0.67	61.0
5	T1	306	4.1	0.599	21.4	LOS C	8.1	58.7	0.93	0.78	54.5
6	R2	59	7.1	0.145	19.0	LOS B	1.0	7.7	0.81	0.73	52.2
Approach		460	5.7	0.599	18.5	LOS B	8.1	58.7	0.78	0.75	55.4
North: Myola Road											
7	L2	67	7.8	0.301	16.0	LOS B	2.1	15.3	0.83	0.71	48.7
8	T1	71	3.0	0.301	10.3	LOS B	2.1	15.3	0.83	0.71	49.5
9	R2	54	7.8	0.310	34.9	LOS C	1.6	11.8	0.96	0.74	37.5
Approach		192	6.0	0.310	19.2	LOS B	2.1	15.3	0.87	0.72	45.2
West: Kennedy Highway (West)											
10	L2	47	6.7	0.035	8.3	LOS A	0.2	1.4	0.25	0.65	62.3
11	T1	255	10.7	0.519	20.9	LOS C	6.6	50.2	0.90	0.75	55.0
12	R2	39	2.7	0.099	19.1	LOS B	0.7	4.8	0.81	0.71	53.3
Approach		341	9.3	0.519	18.9	LOS B	6.6	50.2	0.80	0.73	55.7
All Vehicles		1285	6.5	0.653	20.5	LOS C	8.1	58.7	0.81	0.74	50.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	24.4	LOS C			0.90	0.90

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2021PM Post Dev]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	77	1.4	0.075	9.0	LOS A	0.7	5.0	0.44	0.65	51.5
2	T1	88	3.6	0.394	28.3	LOS C	2.6	18.5	0.97	0.74	41.0
3	R2	157	7.4	0.746	37.5	LOS D	5.0	37.5	1.00	0.90	36.5
Approach		322	4.9	0.746	28.2	LOS C	5.0	37.5	0.86	0.80	40.6
East: Kennedy Highway (East)											
4	L2	95	10.0	0.082	9.1	LOS A	0.5	3.8	0.33	0.67	60.9
5	T1	306	4.1	0.684	24.4	LOS C	8.8	63.5	0.97	0.84	52.2
6	R2	56	11.3	0.156	20.4	LOS C	1.0	8.0	0.84	0.73	50.3
Approach		457	6.2	0.684	20.7	LOS C	8.8	63.5	0.82	0.79	53.5
North: Myola Road											
7	L2	124	10.2	0.525	17.7	LOS B	4.7	35.2	0.87	0.78	47.7
8	T1	147	5.0	0.525	11.9	LOS B	4.7	35.2	0.87	0.78	48.6
9	R2	111	6.7	0.422	32.2	LOS C	3.1	23.1	0.95	0.77	38.6
Approach		382	7.2	0.525	19.6	LOS B	4.7	35.2	0.90	0.78	45.0
West: Kennedy Highway (West)											
10	L2	68	6.2	0.051	8.5	LOS A	0.3	2.3	0.27	0.66	62.4
11	T1	255	10.7	0.593	23.0	LOS C	6.9	52.9	0.94	0.78	53.3
12	R2	39	2.7	0.110	20.4	LOS C	0.7	5.1	0.85	0.71	52.3
Approach		362	9.0	0.593	20.0	LOS B	6.9	52.9	0.80	0.75	54.7
All Vehicles		1523	6.8	0.746	21.9	LOS C	8.8	63.5	0.84	0.78	48.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	24.4	LOS C			0.90	0.90

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2024AM Base]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	46	4.5	0.041	7.6	LOS A	0.3	2.2	0.34	0.62	52.5
2	T1	55	3.8	0.244	27.6	LOS C	1.5	11.2	0.94	0.71	41.3
3	R2	51	2.1	0.232	33.2	LOS C	1.4	10.2	0.94	0.73	38.3
Approach		152	3.5	0.244	23.3	LOS C	1.5	11.2	0.76	0.69	43.0
East: Kennedy Highway (East)											
4	L2	111	1.9	0.095	9.1	LOS A	0.6	4.6	0.36	0.68	63.0
5	T1	218	12.1	0.421	19.4	LOS B	5.4	41.4	0.86	0.71	56.2
6	R2	66	9.5	0.174	18.8	LOS B	1.1	8.6	0.81	0.74	51.8
Approach		395	8.8	0.421	16.4	LOS B	5.4	41.4	0.71	0.71	57.1
North: Myola Road											
7	L2	49	10.6	0.429	18.5	LOS B	2.4	17.7	0.92	0.75	47.6
8	T1	96	1.1	0.429	12.8	LOS B	2.4	17.7	0.92	0.75	48.5
9	R2	67	3.1	0.377	35.1	LOS D	2.0	14.4	0.97	0.75	37.5
Approach		213	4.0	0.429	21.2	LOS C	2.4	17.7	0.94	0.75	44.2
West: Kennedy Highway (West)											
10	L2	83	7.6	0.062	8.4	LOS A	0.3	2.5	0.26	0.66	62.0
11	T1	323	6.8	0.605	20.7	LOS C	8.5	62.7	0.92	0.78	55.1
12	R2	89	2.4	0.192	18.2	LOS B	1.5	11.0	0.77	0.74	54.1
Approach		496	6.2	0.605	18.2	LOS B	8.5	62.7	0.78	0.75	56.0
All Vehicles		1255	6.3	0.605	18.8	LOS B	8.5	62.7	0.78	0.73	52.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	23.5	LOS C	0.1	0.1	0.89	0.89
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	23.9	LOS C			0.89	0.89

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2024AM Post-Dev]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	46	4.5	0.043	8.1	LOS A	0.3	2.5	0.38	0.63	52.2
2	T1	137	6.2	0.619	29.7	LOS C	4.2	30.7	1.00	0.82	40.4
3	R2	51	2.1	0.232	33.2	LOS C	1.4	10.2	0.94	0.73	38.3
Approach		234	5.0	0.619	26.2	LOS C	4.2	30.7	0.86	0.76	41.7
East: Kennedy Highway (East)											
4	L2	111	1.9	0.096	9.3	LOS A	0.6	4.2	0.37	0.68	62.9
5	T1	218	12.1	0.477	21.4	LOS C	5.6	43.6	0.90	0.74	54.5
6	R2	138	9.2	0.401	21.1	LOS C	2.6	20.0	0.91	0.78	50.3
Approach		466	8.8	0.477	18.4	LOS B	5.6	43.6	0.78	0.74	54.9
North: Myola Road											
7	L2	80	11.8	0.579	22.5	LOS C	4.0	29.8	0.94	0.82	45.2
8	T1	152	4.2	0.579	16.7	LOS B	4.0	29.8	0.94	0.82	46.0
9	R2	105	4.0	0.444	33.2	LOS C	3.0	22.0	0.96	0.77	38.2
Approach		337	5.9	0.579	23.3	LOS C	4.0	29.8	0.95	0.81	43.1
West: Kennedy Highway (West)											
10	L2	145	5.1	0.116	9.3	LOS A	0.9	6.8	0.36	0.68	61.9
11	T1	323	6.8	0.685	23.7	LOS C	9.2	67.9	0.96	0.84	52.8
12	R2	89	2.4	0.211	19.7	LOS B	1.6	11.7	0.82	0.74	52.9
Approach		558	5.7	0.685	19.3	LOS B	9.2	67.9	0.78	0.78	54.9
All Vehicles		1595	6.5	0.685	20.9	LOS C	9.2	67.9	0.83	0.77	49.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	24.4	LOS C			0.90	0.90

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2024PM Base]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	81	1.3	0.076	8.4	LOS A	0.7	4.7	0.40	0.64	52.0
2	T1	63	1.7	0.243	26.5	LOS C	1.7	12.4	0.93	0.70	41.9
3	R2	167	6.9	0.695	35.6	LOS D	5.2	38.5	1.00	0.87	37.3
Approach		312	4.4	0.695	26.7	LOS C	5.2	38.5	0.83	0.78	41.2
East: Kennedy Highway (East)											
4	L2	100	9.5	0.083	8.8	LOS A	0.5	4.0	0.30	0.67	61.2
5	T1	325	4.2	0.636	21.9	LOS C	8.8	63.6	0.94	0.80	54.2
6	R2	63	8.3	0.161	19.1	LOS B	1.1	8.3	0.81	0.73	51.9
Approach		488	5.8	0.636	18.8	LOS B	8.8	63.6	0.79	0.76	55.2
North: Myola Road											
7	L2	72	8.8	0.317	15.8	LOS B	2.3	16.7	0.82	0.71	48.8
8	T1	75	2.8	0.317	10.1	LOS B	2.3	16.7	0.82	0.71	49.6
9	R2	57	9.3	0.331	35.0	LOS D	1.7	12.7	0.97	0.74	37.4
Approach		203	6.7	0.331	19.1	LOS B	2.3	16.7	0.86	0.72	45.2
West: Kennedy Highway (West)											
10	L2	51	6.3	0.038	8.3	LOS A	0.2	1.5	0.25	0.65	62.5
11	T1	271	10.9	0.551	21.1	LOS C	7.1	54.0	0.91	0.76	54.8
12	R2	41	2.6	0.108	19.1	LOS B	0.7	5.0	0.81	0.71	53.3
Approach		362	9.3	0.551	19.1	LOS B	7.1	54.0	0.81	0.74	55.6
All Vehicles		1365	6.6	0.695	20.7	LOS C	8.8	63.6	0.81	0.75	49.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	24.4	LOS C			0.90	0.90

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2024PM Post-Dev]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	81	1.3	0.082	9.8	LOS A	0.8	5.9	0.48	0.66	51.0
2	T1	114	3.7	0.506	28.8	LOS C	3.4	24.2	0.98	0.77	40.8
3	R2	167	6.9	0.798	38.9	LOS D	5.5	41.0	1.00	0.95	36.0
Approach		362	4.7	0.798	29.2	LOS C	5.5	41.0	0.88	0.83	40.2
East: Kennedy Highway (East)											
4	L2	100	9.5	0.088	9.2	LOS A	0.5	4.0	0.35	0.68	60.9
5	T1	325	4.2	0.783	28.0	LOS C	10.2	73.7	1.00	0.93	49.6
6	R2	83	10.1	0.251	21.7	LOS C	1.6	12.4	0.89	0.75	49.7
Approach		508	6.2	0.783	23.3	LOS C	10.2	73.7	0.86	0.85	51.5
North: Myola Road											
7	L2	160	9.9	0.628	20.6	LOS C	6.3	46.6	0.90	0.85	46.0
8	T1	185	5.1	0.628	14.8	LOS B	6.3	46.6	0.90	0.85	46.7
9	R2	146	5.0	0.720	33.7	LOS C	4.4	31.9	0.95	0.88	38.0
Approach		492	6.6	0.720	22.3	LOS C	6.3	46.6	0.92	0.86	43.5
West: Kennedy Highway (West)											
10	L2	85	6.2	0.065	8.9	LOS A	0.5	3.5	0.31	0.67	62.0
11	T1	271	10.9	0.679	25.2	LOS C	7.8	60.0	0.97	0.84	51.6
12	R2	41	2.6	0.127	21.4	LOS C	0.8	5.5	0.88	0.72	51.6
Approach		397	9.0	0.679	21.3	LOS C	7.8	60.0	0.82	0.79	53.5
All Vehicles		1759	6.6	0.798	23.8	LOS C	10.2	73.7	0.87	0.83	46.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	24.4	LOS C			0.90	0.90

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2027AM Base]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	48	4.3	0.044	7.8	LOS A	0.3	2.5	0.36	0.62	52.4
2	T1	58	3.6	0.258	27.6	LOS C	1.6	11.9	0.95	0.71	41.3
3	R2	54	2.0	0.246	33.2	LOS C	1.5	10.8	0.95	0.74	38.2
Approach		160	3.3	0.258	23.5	LOS C	1.6	11.9	0.77	0.69	42.9
East: Kennedy Highway (East)											
4	L2	117	1.8	0.100	9.1	LOS A	0.7	4.8	0.36	0.68	63.0
5	T1	231	12.3	0.446	19.6	LOS B	5.7	44.2	0.87	0.72	56.0
6	R2	71	9.0	0.191	19.1	LOS B	1.2	9.1	0.83	0.74	51.7
Approach		418	8.8	0.446	16.6	LOS B	5.7	44.2	0.72	0.71	57.0
North: Myola Road											
7	L2	53	10.0	0.452	18.9	LOS B	2.7	19.6	0.93	0.76	47.3
8	T1	101	1.0	0.452	13.2	LOS B	2.7	19.6	0.93	0.76	48.2
9	R2	72	2.9	0.400	35.2	LOS D	2.1	15.3	0.98	0.75	37.5
Approach		225	3.7	0.452	21.5	LOS C	2.7	19.6	0.94	0.76	44.0
West: Kennedy Highway (West)											
10	L2	88	7.1	0.066	8.4	LOS A	0.4	2.7	0.26	0.66	62.2
11	T1	342	6.8	0.640	21.1	LOS C	9.1	67.6	0.93	0.80	54.7
12	R2	95	2.2	0.207	18.4	LOS B	1.6	11.7	0.79	0.74	54.0
Approach		525	6.0	0.640	18.5	LOS B	9.1	67.6	0.79	0.76	55.7
All Vehicles		1328	6.2	0.640	19.0	LOS B	9.1	67.6	0.79	0.74	51.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	23.5	LOS C	0.1	0.1	0.89	0.89
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	23.9	LOS C			0.89	0.89

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2027AM Post Dev]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	48	4.3	0.046	8.4	LOS A	0.4	2.8	0.39	0.63	51.9
2	T1	181	5.2	0.833	34.4	LOS C	6.1	44.6	1.00	0.98	38.4
3	R2	54	2.0	0.246	33.2	LOS C	1.5	10.8	0.95	0.74	38.2
Approach		283	4.5	0.833	29.7	LOS C	6.1	44.6	0.89	0.87	40.2
East: Kennedy Highway (East)											
4	L2	117	1.8	0.107	9.7	LOS A	0.7	4.9	0.41	0.69	62.5
5	T1	231	12.3	0.583	23.7	LOS C	6.3	49.0	0.95	0.78	52.7
6	R2	182	8.7	0.613	23.7	LOS C	3.9	29.2	0.98	0.81	48.6
Approach		529	8.7	0.613	20.6	LOS C	6.3	49.0	0.84	0.77	53.0
North: Myola Road											
7	L2	113	10.3	0.667	24.8	LOS C	6.4	46.8	0.95	0.89	43.9
8	T1	202	3.6	0.667	19.1	LOS B	6.4	46.8	0.95	0.89	44.7
9	R2	126	4.2	0.427	31.2	LOS C	3.5	25.4	0.94	0.78	39.1
Approach		441	5.5	0.667	24.0	LOS C	6.4	46.8	0.94	0.86	42.7
West: Kennedy Highway (West)											
10	L2	177	4.8	0.147	10.1	LOS B	1.4	10.5	0.43	0.70	61.1
11	T1	342	6.8	0.837	30.8	LOS C	11.4	84.3	1.00	0.98	47.8
12	R2	95	2.2	0.253	21.2	LOS C	1.9	13.2	0.86	0.75	51.9
Approach		614	5.5	0.837	23.4	LOS C	11.4	84.3	0.81	0.87	51.7
All Vehicles		1867	6.3	0.837	23.7	LOS C	11.4	84.3	0.86	0.84	47.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	24.4	LOS C			0.90	0.90

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2027PM Base]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	86	1.2	0.081	8.7	LOS A	0.8	5.4	0.42	0.65	51.8
2	T1	66	1.6	0.227	25.3	LOS C	1.8	12.7	0.92	0.70	42.4
3	R2	177	7.1	0.661	34.1	LOS C	5.3	39.6	0.99	0.85	37.8
Approach		329	4.5	0.661	25.7	LOS C	5.3	39.6	0.83	0.77	41.7
East: Kennedy Highway (East)											
4	L2	106	9.9	0.088	8.8	LOS A	0.6	4.2	0.30	0.67	61.1
5	T1	345	4.0	0.719	24.4	LOS C	10.0	72.6	0.97	0.87	52.2
6	R2	66	7.9	0.182	20.0	LOS C	1.2	9.0	0.85	0.74	51.3
Approach		518	5.7	0.719	20.7	LOS C	10.0	72.6	0.82	0.81	53.7
North: Myola Road											
7	L2	76	8.3	0.344	16.4	LOS B	2.5	18.5	0.84	0.72	48.4
8	T1	80	2.6	0.344	10.7	LOS B	2.5	18.5	0.84	0.72	49.2
9	R2	60	8.8	0.349	35.1	LOS D	1.8	13.4	0.97	0.75	37.4
Approach		216	6.3	0.349	19.5	LOS B	2.5	18.5	0.88	0.73	45.0
West: Kennedy Highway (West)											
10	L2	54	7.8	0.040	8.5	LOS A	0.2	1.8	0.27	0.65	61.9
11	T1	287	10.6	0.624	22.6	LOS C	7.8	59.8	0.94	0.80	53.6
12	R2	43	2.4	0.123	20.1	LOS C	0.8	5.5	0.85	0.72	52.6
Approach		384	9.3	0.624	20.3	LOS C	7.8	59.8	0.84	0.77	54.5
All Vehicles		1447	6.5	0.719	21.5	LOS C	10.0	72.6	0.83	0.78	49.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	24.4	LOS C			0.90	0.90

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2027PM Post Dev]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	86	1.2	0.090	10.2	LOS B	0.9	6.6	0.50	0.67	50.7
2	T1	162	3.2	0.720	31.1	LOS C	5.1	36.8	1.00	0.88	39.8
3	R2	177	7.1	0.893	44.5	LOS D	6.4	47.6	1.00	1.07	34.2
Approach		425	4.5	0.893	32.4	LOS C	6.4	47.6	0.90	0.92	38.8
East: Kennedy Highway (East)											
4	L2	106	9.9	0.088	8.8	LOS A	0.6	4.3	0.30	0.67	61.0
5	T1	345	4.0	0.899	37.1	LOS D	12.7	92.2	1.00	1.06	44.2
6	R2	113	9.3	0.370	22.7	LOS C	2.3	17.5	0.93	0.77	49.1
Approach		564	6.2	0.899	28.9	LOS C	12.7	92.2	0.85	0.93	47.7
North: Myola Road											
7	L2	201	8.4	0.673	21.2	LOS C	7.7	57.3	0.90	0.88	45.5
8	T1	208	5.6	0.673	15.5	LOS B	7.7	57.3	0.90	0.88	46.3
9	R2	152	4.9	0.725	32.9	LOS C	4.5	32.5	0.94	0.88	38.4
Approach		561	6.4	0.725	22.2	LOS C	7.7	57.3	0.91	0.88	43.6
West: Kennedy Highway (West)											
10	L2	105	5.0	0.083	9.4	LOS A	0.7	5.2	0.35	0.68	61.8
11	T1	287	10.6	0.780	28.8	LOS C	9.1	69.1	1.00	0.93	49.1
12	R2	43	2.4	0.147	22.5	LOS C	0.8	6.0	0.92	0.72	50.9
Approach		436	8.5	0.780	23.5	LOS C	9.1	69.1	0.84	0.85	51.9
All Vehicles		1986	6.4	0.899	26.6	LOS C	12.7	92.2	0.88	0.89	45.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	24.4	LOS C			0.90	0.90

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2037AM Base]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	59	5.4	0.056	8.4	LOS A	0.5	3.5	0.40	0.64	51.9
2	T1	71	4.5	0.316	27.9	LOS C	2.0	14.7	0.95	0.72	41.2
3	R2	65	1.6	0.298	33.5	LOS C	1.9	13.3	0.95	0.75	38.2
Approach		195	3.8	0.316	23.9	LOS C	2.0	14.7	0.79	0.70	42.7
East: Kennedy Highway (East)											
4	L2	142	2.2	0.130	10.0	LOS B	1.0	7.1	0.44	0.70	62.0
5	T1	281	12.4	0.544	20.3	LOS C	7.2	55.8	0.90	0.75	55.5
6	R2	86	8.5	0.264	20.3	LOS C	1.5	11.2	0.89	0.75	51.0
Approach		509	8.9	0.544	17.4	LOS B	7.2	55.8	0.77	0.74	56.3
North: Myola Road											
7	L2	64	9.8	0.551	23.3	LOS C	3.6	26.3	0.95	0.82	44.8
8	T1	123	0.9	0.551	17.6	LOS B	3.6	26.3	0.95	0.82	45.5
9	R2	87	3.6	0.490	35.6	LOS D	2.6	19.0	0.99	0.76	37.3
Approach		275	3.8	0.551	24.7	LOS C	3.6	26.3	0.96	0.80	42.4
West: Kennedy Highway (West)											
10	L2	108	6.8	0.081	8.5	LOS A	0.5	3.8	0.28	0.66	62.2
11	T1	418	6.8	0.782	25.2	LOS C	12.7	94.1	0.98	0.92	51.6
12	R2	116	2.7	0.276	18.9	LOS B	2.0	14.6	0.82	0.76	53.5
Approach		642	6.1	0.782	21.2	LOS C	12.7	94.1	0.83	0.85	53.5
All Vehicles		1621	6.3	0.782	20.9	LOS C	12.7	94.1	0.83	0.79	50.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	23.5	LOS C	0.1	0.1	0.89	0.89
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	23.9	LOS C			0.89	0.89

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2037AM Post Dev]

New Site
Signals - Fixed Time Isolated Cycle Time = 90 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	59	5.4	0.057	9.4	LOS A	0.7	5.2	0.36	0.63	51.2
2	T1	194	5.4	0.874	51.0	LOS D	9.7	71.0	1.00	1.02	32.7
3	R2	65	1.6	0.261	44.6	LOS D	2.7	18.9	0.94	0.75	34.2
Approach		318	4.6	0.874	42.0	LOS D	9.7	71.0	0.87	0.89	35.4
East: Kennedy Highway (East)											
4	L2	142	2.2	0.133	10.9	LOS B	1.3	9.3	0.42	0.70	61.1
5	T1	281	12.4	0.630	33.4	LOS C	11.3	87.2	0.95	0.80	46.3
6	R2	197	8.6	0.664	30.8	LOS C	6.0	44.7	0.99	0.82	44.4
Approach		620	8.8	0.664	27.4	LOS C	11.3	87.2	0.84	0.78	48.4
North: Myola Road											
7	L2	124	10.2	0.790	39.3	LOS D	12.4	91.3	0.92	0.97	37.4
8	T1	224	3.3	0.790	33.6	LOS C	12.4	91.3	0.92	0.97	38.0
9	R2	142	3.7	0.918	63.7	LOS E	7.5	54.0	0.88	1.07	29.0
Approach		491	5.2	0.918	43.8	LOS D	12.4	91.3	0.91	1.00	34.7
West: Kennedy Highway (West)											
10	L2	196	4.8	0.156	10.8	LOS B	2.2	16.3	0.38	0.70	60.5
11	T1	418	6.8	0.906	50.2	LOS D	22.2	164.3	1.00	1.06	38.2
12	R2	116	2.7	0.298	26.7	LOS C	3.2	23.1	0.86	0.77	48.0
Approach		729	5.6	0.906	35.9	LOS D	22.2	164.3	0.81	0.91	44.0
All Vehicles		2158	6.3	0.918	36.1	LOS D	22.2	164.3	0.85	0.89	41.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	33.9	LOS D	0.1	0.1	0.87	0.87
P4	West Full Crossing	53	39.3	LOS D	0.1	0.1	0.94	0.94
All Pedestrians		105	36.6	LOS D			0.90	0.90

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2037PM Base]

New Site
Signals - Fixed Time Isolated Cycle Time = 60 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	105	1.0	0.106	10.2	LOS B	1.2	8.2	0.50	0.67	50.7
2	T1	81	1.3	0.277	25.6	LOS C	2.2	15.7	0.93	0.71	42.3
3	R2	216	7.3	0.863	40.9	LOS D	7.5	55.7	1.00	1.04	35.3
Approach		402	4.5	0.863	29.8	LOS C	7.5	55.7	0.85	0.88	39.8
East: Kennedy Highway (East)											
4	L2	129	9.8	0.099	8.2	LOS A	0.4	3.2	0.23	0.66	61.5
5	T1	421	4.0	0.877	33.0	LOS C	14.9	107.8	1.00	1.04	46.5
6	R2	81	7.8	0.249	20.8	LOS C	1.5	11.1	0.89	0.75	50.7
Approach		632	5.7	0.877	26.4	LOS C	14.9	107.8	0.83	0.92	49.5
North: Myola Road											
7	L2	93	8.0	0.417	18.1	LOS B	3.6	26.7	0.87	0.74	47.4
8	T1	97	3.3	0.417	12.4	LOS B	3.6	26.7	0.87	0.74	48.1
9	R2	74	8.6	0.428	35.4	LOS D	2.2	16.6	0.98	0.76	37.3
Approach		263	6.4	0.428	20.9	LOS C	3.6	26.7	0.90	0.75	44.3
West: Kennedy Highway (West)											
10	L2	65	6.5	0.049	8.5	LOS A	0.3	2.2	0.27	0.66	62.3
11	T1	351	10.8	0.762	25.9	LOS C	10.6	81.2	0.98	0.91	51.1
12	R2	54	2.0	0.174	21.2	LOS C	1.0	6.8	0.91	0.73	51.9
Approach		469	9.2	0.762	23.0	LOS C	10.6	81.2	0.88	0.85	52.5
All Vehicles		1766	6.4	0.877	25.4	LOS C	14.9	107.8	0.86	0.87	46.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
P4	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		105	24.4	LOS C			0.90	0.90

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2037PM Post Dev]

New Site
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	105	1.0	0.119	14.4	LOS B	2.6	18.5	0.41	0.66	48.0
2	T1	177	3.6	0.886	75.7	LOS E	13.6	98.3	0.95	0.96	26.8
3	R2	216	7.3	0.986	114.4	LOS F	20.4	151.7	0.98	1.07	20.7
Approach		498	4.7	0.986	79.5	LOS E	20.4	151.7	0.85	0.95	25.9
East: Kennedy Highway (East)											
4	L2	129	9.8	0.100	9.2	LOS A	1.4	10.4	0.21	0.66	60.8
5	T1	421	4.0	0.993	105.1	LOS F	40.9	296.4	1.00	1.17	24.3
6	R2	127	9.1	0.657	53.0	LOS D	7.1	53.7	1.00	0.80	34.9
Approach		678	6.1	0.993	77.0	LOS E	40.9	296.4	0.85	1.00	29.3
North: Myola Road											
7	L2	218	8.7	0.720	40.4	LOS D	20.5	152.0	0.82	0.88	36.8
8	T1	226	5.1	0.720	34.7	LOS C	20.5	152.0	0.82	0.88	37.2
9	R2	165	5.7	0.998	123.0	LOS F	15.5	113.8	0.75	1.07	19.7
Approach		609	6.6	0.998	60.7	LOS E	20.5	152.0	0.80	0.93	29.9
West: Kennedy Highway (West)											
10	L2	118	5.4	0.085	10.2	LOS B	1.6	11.4	0.26	0.67	61.0
11	T1	351	10.8	0.939	85.2	LOS F	30.4	232.6	1.00	1.06	28.0
12	R2	54	2.0	0.364	52.4	LOS D	2.9	20.7	0.98	0.74	36.0
Approach		522	8.7	0.939	64.9	LOS E	30.4	232.6	0.83	0.94	32.8
All Vehicles		2307	6.5	0.998	70.5	LOS E	40.9	296.4	0.83	0.96	29.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	53.9	LOS E	0.2	0.2	0.85	0.85
P4	West Full Crossing	53	58.2	LOS E	0.2	0.2	0.88	0.88
All Pedestrians		105	56.0	LOS E			0.87	0.87

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: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2037AM Post Dev - With Upgrades]

New Site
Signals - Fixed Time Isolated Cycle Time = 70 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	59	5.4	0.058	9.2	LOS A	0.6	4.4	0.40	0.64	51.4
2	T1	194	5.4	0.792	37.0	LOS D	7.3	53.2	1.00	0.94	37.4
3	R2	65	1.6	0.271	36.8	LOS D	2.1	15.0	0.94	0.75	36.9
Approach		318	4.6	0.792	31.8	LOS C	7.3	53.2	0.88	0.84	39.3
East: Kennedy Highway (East)											
4	L2	142	2.2	0.123	10.0	LOS A	1.2	8.9	0.38	0.69	62.0
5	T1	281	12.4	0.568	24.3	LOS C	8.5	65.8	0.91	0.77	52.3
6	R2	197	8.6	0.710	27.1	LOS C	4.9	36.8	1.00	0.85	46.8
Approach		620	8.8	0.710	21.9	LOS C	8.5	65.8	0.82	0.77	52.2
North: Myola Road											
7	L2	124	10.2	0.124	10.2	LOS B	1.5	11.4	0.46	0.66	50.5
8	T1	224	3.3	0.754	33.0	LOS C	7.9	57.1	0.99	0.90	38.9
9	R2	142	3.7	0.465	35.1	LOS D	4.6	33.1	0.95	0.79	37.5
Approach		491	5.2	0.754	27.8	LOS C	7.9	57.1	0.84	0.81	40.9
West: Kennedy Highway (West)											
10	L2	196	4.8	0.163	10.5	LOS B	1.8	13.3	0.42	0.70	60.8
11	T1	418	6.8	0.816	31.1	LOS C	15.3	113.1	1.00	0.96	47.7
12	R2	116	2.7	0.315	22.7	LOS C	2.6	18.3	0.86	0.76	50.7
Approach		729	5.6	0.816	24.2	LOS C	15.3	113.1	0.82	0.86	51.1
All Vehicles		2158	6.3	0.816	25.5	LOS C	15.3	113.1	0.83	0.82	46.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	26.6	LOS C	0.1	0.1	0.87	0.87
P4	West Full Crossing	53	29.3	LOS C	0.1	0.1	0.92	0.92
All Pedestrians		105	28.0	LOS C			0.89	0.89

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.

Project: J:\253000\253251-00 KURWorld EIS Infrastructure\Work\Internal\Site\Transport\SIDRA\Kennedy Highway Myola Road Intersection Filtered Rights.sip7

MOVEMENT SUMMARY

Site: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2037PM Post Dev - With Upgrades]

New Site
Signals - Fixed Time Isolated Cycle Time = 70 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	105	1.0	0.115	11.5	LOS B	1.4	10.2	0.51	0.68	49.8
2	T1	177	3.6	0.643	32.7	LOS C	6.1	44.0	0.99	0.83	39.1
3	R2	216	7.3	0.848	44.9	LOS D	8.5	63.1	1.00	0.99	34.0
Approach		498	4.7	0.848	33.5	LOS C	8.5	63.1	0.89	0.87	38.4
East: Kennedy Highway (East)											
4	L2	129	9.8	0.108	9.5	LOS A	1.0	7.5	0.33	0.67	60.4
5	T1	421	4.0	0.853	34.4	LOS C	16.3	117.7	1.00	1.00	45.7
6	R2	127	9.1	0.433	24.7	LOS C	2.9	22.2	0.94	0.78	48.1
Approach		678	6.1	0.853	27.8	LOS C	16.3	117.7	0.86	0.89	48.4
North: Myola Road											
7	L2	218	8.7	0.236	12.4	LOS B	3.4	25.3	0.56	0.70	49.1
8	T1	226	5.1	0.796	34.6	LOS C	8.3	60.3	0.99	0.94	38.3
9	R2	165	5.7	0.549	35.6	LOS D	5.4	39.8	0.96	0.80	37.3
Approach		609	6.6	0.796	26.9	LOS C	8.3	60.3	0.83	0.82	41.2
West: Kennedy Highway (West)											
10	L2	118	5.4	0.093	9.7	LOS A	0.9	6.8	0.35	0.68	61.5
11	T1	351	10.8	0.740	28.4	LOS C	11.9	91.1	0.98	0.88	49.4
12	R2	54	2.0	0.193	24.2	LOS C	1.2	8.3	0.92	0.73	49.8
Approach		522	8.7	0.740	23.7	LOS C	11.9	91.1	0.83	0.82	51.7
All Vehicles		2307	6.5	0.853	27.9	LOS C	16.3	117.7	0.85	0.85	44.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	27.5	LOS C	0.1	0.1	0.89	0.89
P4	West Full Crossing	53	29.3	LOS C	0.1	0.1	0.92	0.92
All Pedestrians		105	28.4	LOS C			0.90	0.90

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.

Project: J:\253000\253251-00 KURWorld EIS Infrastructure\Work\Internal\Site\Transport\SIDRA\Kennedy Highway Myola Road Intersection Filtered Rights.sip7

MOVEMENT SUMMARY

Site: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2037AM Post Dev - With Upgrades + No Right Filter]

New Site
Signals - Fixed Time Isolated Cycle Time = 70 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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: Rob Veivers Drive											
1	L2	59	5.4	0.058	9.2	LOS A	0.6	4.4	0.40	0.64	51.4
2	T1	194	5.4	0.891	43.5	LOS D	8.0	58.5	1.00	1.06	35.0
3	R2	65	1.6	0.305	38.0	LOS D	2.2	15.4	0.96	0.75	36.4
Approach		318	4.6	0.891	36.0	LOS D	8.0	58.5	0.88	0.92	37.5
East: Kennedy Highway (East)											
4	L2	142	2.2	0.116	10.1	LOS B	1.3	9.5	0.38	0.69	61.8
5	T1	281	12.4	0.568	24.3	LOS C	8.5	65.8	0.91	0.77	52.3
6	R2	197	8.6	0.875	49.3	LOS D	8.0	60.3	1.00	0.99	36.4
Approach		620	8.8	0.875	29.0	LOS C	8.5	65.8	0.82	0.82	47.4
North: Myola Road											
7	L2	124	10.2	0.122	10.6	LOS B	1.6	11.9	0.47	0.67	50.2
8	T1	224	3.3	0.830	37.0	LOS D	8.5	61.1	1.00	0.98	37.3
9	R2	142	3.7	0.508	36.2	LOS D	4.7	33.8	0.96	0.79	37.1
Approach		491	5.2	0.830	30.1	LOS C	8.5	61.1	0.85	0.85	39.9
West: Kennedy Highway (West)											
10	L2	196	4.8	0.169	11.2	LOS B	2.2	15.7	0.44	0.71	60.0
11	T1	418	6.8	0.861	35.3	LOS D	16.4	121.5	1.00	1.01	45.2
12	R2	116	2.7	0.545	40.8	LOS D	4.0	28.6	0.99	0.79	40.5
Approach		729	5.6	0.861	29.7	LOS C	16.4	121.5	0.85	0.89	47.5
All Vehicles		2158	6.3	0.891	30.5	LOS C	16.4	121.5	0.85	0.86	43.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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
P3	North Full Crossing	53	27.5	LOS C	0.1	0.1	0.89	0.89
P4	West Full Crossing	53	29.3	LOS C	0.1	0.1	0.92	0.92
All Pedestrians		105	28.4	LOS C			0.90	0.90

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.

Project: J:\253000\253251-00 KURWorld EIS Infrastructure\Work\Internal\Site\Transport\SIDRA\Kennedy Highway Myola Road Intersection Filtered Rights.sip7

MOVEMENT SUMMARY

Site: 101 [Kennedy Highway / Myola Road / Rob Veivers Drive - 2037PM Post Dev - With Upgrades + No Right Filter]

New Site
Signals - Fixed Time Isolated Cycle Time = 70 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rob Veivers Drive											
1	L2	105	1.0	0.114	11.5	LOS B	1.4	10.1	0.51	0.68	49.8
2	T1	177	3.6	0.643	32.7	LOS C	6.1	44.0	0.99	0.83	39.1
3	R2	216	7.3	0.848	44.9	LOS D	8.5	63.1	1.00	0.99	34.0
Approach		498	4.7	0.848	33.5	LOS C	8.5	63.1	0.89	0.87	38.4
East: Kennedy Highway (East)											
4	L2	129	9.8	0.106	9.7	LOS A	1.1	8.1	0.34	0.68	60.2
5	T1	421	4.0	0.808	30.5	LOS C	15.2	109.9	0.99	0.95	48.0
6	R2	127	9.1	0.852	49.5	LOS D	5.1	38.5	1.00	0.94	36.3
Approach		678	6.1	0.852	30.1	LOS C	15.2	109.9	0.87	0.89	47.0
North: Myola Road											
7	L2	218	8.7	0.238	12.4	LOS B	3.4	25.4	0.56	0.71	49.1
8	T1	226	5.1	0.878	40.8	LOS D	9.1	66.3	1.00	1.05	36.0
9	R2	165	5.7	0.599	37.1	LOS D	5.6	41.0	0.98	0.82	36.7
Approach		609	6.6	0.878	29.6	LOS C	9.1	66.3	0.84	0.86	40.0
West: Kennedy Highway (West)											
10	L2	118	5.4	0.095	10.1	LOS B	1.0	7.7	0.37	0.68	61.0
11	T1	351	10.8	0.702	26.4	LOS C	11.4	87.3	0.96	0.84	50.7
12	R2	54	2.0	0.335	42.0	LOS D	1.9	13.2	0.98	0.74	40.1
Approach		522	8.7	0.702	24.3	LOS C	11.4	87.3	0.83	0.80	51.3
All Vehicles		2307	6.5	0.878	29.4	LOS C	15.2	109.9	0.86	0.86	43.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	26.6	LOS C	0.1	0.1	0.87	0.87
P4	West Full Crossing	53	29.3	LOS C	0.1	0.1	0.92	0.92
All Pedestrians		105	28.0	LOS C			0.89	0.89

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.

Project: J:\253000\253251-00 KURWorld EIS Infrastructure\Work\Internal\Site\Transport\SIDRA\Kennedy Highway Myola Road Intersection Filtered Rights.sip7

MOVEMENT SUMMARY

Site: 101 [Myola Road / Kuranda Heights Road Intersection - 2017 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Myola Road (South)											
2	T1	101	5.0	0.054	0.0	LOS A	0.0	0.3	0.03	0.03	59.4
3a	R1	6	5.0	0.054	5.0	LOS A	0.0	0.3	0.03	0.03	56.9
Approach		107	5.0	0.054	0.3	NA	0.0	0.3	0.03	0.03	59.2
NorthEast: Kuranda Heights Road											
24a	L1	9	5.0	0.011	5.5	LOS A	0.0	0.3	0.23	0.56	49.1
26b	R3	4	5.0	0.011	7.1	LOS A	0.0	0.3	0.23	0.56	52.5
Approach		14	5.0	0.011	6.0	LOS A	0.0	0.3	0.23	0.56	50.4
North: Myola Road (North)											
7b	L3	2	5.0	0.067	6.5	LOS A	0.0	0.0	0.00	0.01	58.4
8	T1	128	5.0	0.067	0.0	LOS A	0.0	0.0	0.00	0.01	59.8
Approach		131	5.0	0.067	0.1	NA	0.0	0.0	0.00	0.01	59.8
All Vehicles		252	5.0	0.067	0.5	NA	0.0	0.3	0.03	0.05	58.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Kuranda Heights Road Intersection - 2017 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Myola Road (South)											
2	T1	139	5.0	0.073	0.0	LOS A	0.0	0.3	0.02	0.02	59.5
3a	R1	6	5.0	0.073	4.9	LOS A	0.0	0.3	0.02	0.02	57.0
Approach		145	5.0	0.073	0.2	NA	0.0	0.3	0.02	0.02	59.4
NorthEast: Kuranda Heights Road											
24a	L1	6	5.0	0.009	5.4	LOS A	0.0	0.2	0.21	0.56	49.1
26b	R3	4	5.0	0.009	7.2	LOS A	0.0	0.2	0.21	0.56	52.5
Approach		11	5.0	0.009	6.1	LOS A	0.0	0.2	0.21	0.56	50.7
North: Myola Road (North)											
7b	L3	4	5.0	0.058	6.5	LOS A	0.0	0.0	0.00	0.03	58.3
8	T1	108	5.0	0.058	0.0	LOS A	0.0	0.0	0.00	0.03	59.6
Approach		113	5.0	0.058	0.2	NA	0.0	0.0	0.00	0.03	59.6
All Vehicles		268	5.0	0.073	0.5	NA	0.0	0.3	0.02	0.05	59.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Kuranda Heights Road Intersection - 2018 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Myola Road (South)											
2	T1	175	6.0	0.093	0.1	LOS A	0.1	0.5	0.03	0.02	59.6
3a	R1	6	33.3	0.093	5.8	LOS A	0.1	0.5	0.03	0.02	55.3
Approach		181	7.0	0.093	0.3	NA	0.1	0.5	0.03	0.02	59.5
NorthEast: Kuranda Heights Road											
24a	L1	9	11.1	0.013	5.8	LOS A	0.0	0.4	0.30	0.57	48.4
26b	R3	4	25.0	0.013	8.3	LOS A	0.0	0.4	0.30	0.57	51.5
Approach		14	15.4	0.013	6.6	LOS A	0.0	0.4	0.30	0.57	49.6
North: Myola Road (North)											
7b	L3	2	0.0	0.097	6.5	LOS A	0.0	0.0	0.00	0.01	58.7
8	T1	189	3.3	0.097	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
Approach		192	3.3	0.097	0.1	NA	0.0	0.0	0.00	0.01	59.9
All Vehicles		386	5.4	0.097	0.4	NA	0.1	0.5	0.03	0.03	59.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Kuranda Heights Road Intersection Post Dev - 2018 AM]

New Site
Giveway / Yield (Two-Way)

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: Myola Road (South)											
2	T1	227	7.4	0.121	0.0	LOS A	0.1	0.5	0.03	0.01	59.7
3a	R1	6	33.3	0.121	5.9	LOS A	0.1	0.5	0.03	0.01	55.3
Approach		234	8.1	0.121	0.2	NA	0.1	0.5	0.03	0.01	59.6
NorthEast: Kuranda Heights Road											
24a	L1	9	11.1	0.013	5.8	LOS A	0.0	0.4	0.31	0.58	48.3
26b	R3	4	25.0	0.013	8.8	LOS A	0.0	0.4	0.31	0.58	51.4
Approach		14	15.4	0.013	6.7	LOS A	0.0	0.4	0.31	0.58	49.5
North: Myola Road (North)											
7b	L3	2	0.0	0.104	6.5	LOS A	0.0	0.0	0.00	0.01	58.7
8	T1	202	4.2	0.104	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
Approach		204	4.1	0.104	0.1	NA	0.0	0.0	0.00	0.01	59.9
All Vehicles		452	6.5	0.121	0.3	NA	0.1	0.5	0.02	0.03	59.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Kuranda Heights Road Intersection - 2018 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Myola Road (South)											
2	T1	151	4.9	0.080	0.0	LOS A	0.1	0.4	0.03	0.02	59.5
3a	R1	6	16.7	0.080	5.4	LOS A	0.1	0.4	0.03	0.02	56.3
Approach		157	5.4	0.080	0.3	NA	0.1	0.4	0.03	0.02	59.4
NorthEast: Kuranda Heights Road											
24a	L1	6	16.7	0.010	5.8	LOS A	0.0	0.3	0.29	0.57	47.8
26b	R3	4	25.0	0.010	8.1	LOS A	0.0	0.3	0.29	0.57	51.4
Approach		11	20.0	0.010	6.7	LOS A	0.0	0.3	0.29	0.57	49.6
North: Myola Road (North)											
7b	L3	4	25.0	0.093	6.8	LOS A	0.0	0.0	0.00	0.02	57.4
8	T1	176	6.0	0.093	0.0	LOS A	0.0	0.0	0.00	0.02	59.8
Approach		180	6.4	0.093	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		347	6.4	0.093	0.4	NA	0.1	0.4	0.02	0.03	59.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Kuranda Heights Road Intersection Post Dev - 2018 PM]

New Site
Giveway / Yield (Two-Way)

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: Myola Road (South)											
2	T1	164	5.8	0.088	0.1	LOS A	0.1	0.4	0.04	0.02	59.5
3a	R1	6	16.7	0.088	5.9	LOS A	0.1	0.4	0.04	0.02	56.2
Approach		171	6.2	0.088	0.3	NA	0.1	0.4	0.04	0.02	59.4
NorthEast: Kuranda Heights Road											
24a	L1	6	16.7	0.011	6.3	LOS A	0.0	0.3	0.38	0.60	47.4
26b	R3	4	25.0	0.011	8.9	LOS A	0.0	0.3	0.38	0.60	51.0
Approach		11	20.0	0.011	7.3	LOS A	0.0	0.3	0.38	0.60	49.2
North: Myola Road (North)											
7b	L3	4	25.0	0.144	6.8	LOS A	0.0	0.0	0.00	0.01	57.4
8	T1	273	6.9	0.144	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
Approach		277	7.2	0.144	0.1	NA	0.0	0.0	0.00	0.01	59.8
All Vehicles		458	7.1	0.144	0.3	NA	0.1	0.4	0.02	0.03	59.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Kuranda Heights Road Intersection - 2021 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Myola Road (South)											
2	T1	185	6.3	0.099	0.1	LOS A	0.1	0.5	0.03	0.02	59.6
3a	R1	6	33.3	0.099	5.8	LOS A	0.1	0.5	0.03	0.02	55.3
Approach		192	7.1	0.099	0.2	NA	0.1	0.5	0.03	0.02	59.5
NorthEast: Kuranda Heights Road											
24a	L1	11	10.0	0.014	5.8	LOS A	0.0	0.4	0.31	0.57	48.4
26b	R3	4	25.0	0.014	8.5	LOS A	0.0	0.4	0.31	0.57	51.5
Approach		15	14.3	0.014	6.6	LOS A	0.0	0.4	0.31	0.57	49.5
North: Myola Road (North)											
7b	L3	2	0.0	0.103	6.5	LOS A	0.0	0.0	0.00	0.01	58.7
8	T1	201	3.1	0.103	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
Approach		203	3.1	0.103	0.1	NA	0.0	0.0	0.00	0.01	59.9
All Vehicles		409	5.4	0.103	0.4	NA	0.1	0.5	0.03	0.03	59.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Rd / Kuranda Heights Rd / Access Intersection Post Dev - 2021 AM]

New Site
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: Myola Road (South)											
1	L2	133	8.7	0.197	4.0	LOS A	1.3	9.7	0.06	0.42	52.6
2	T1	188	6.1	0.197	4.2	LOS A	1.3	9.7	0.06	0.42	54.9
3	R2	6	33.3	0.197	9.1	LOS A	1.3	9.7	0.06	0.42	53.0
Approach		327	7.7	0.197	4.2	LOS A	1.3	9.7	0.06	0.42	53.9
East: Kuranda Heights Road											
4	L2	11	10.0	0.015	5.1	LOS A	0.1	0.5	0.40	0.53	49.8
5	T1	1	0.0	0.015	5.1	LOS A	0.1	0.5	0.40	0.53	54.8
6	R2	4	25.0	0.015	10.3	LOS B	0.1	0.5	0.40	0.53	53.7
Approach		16	13.3	0.015	6.5	LOS A	0.1	0.5	0.40	0.53	51.5
North: Myola Road (North)											
7	L2	2	0.0	0.154	4.2	LOS A	0.9	6.8	0.23	0.41	54.4
8	T1	205	3.6	0.154	4.5	LOS A	0.9	6.8	0.23	0.41	53.5
9	R2	1	0.0	0.154	9.1	LOS A	0.9	6.8	0.23	0.41	55.7
Approach		208	3.5	0.154	4.5	LOS A	0.9	6.8	0.23	0.41	53.5
West: Development Access											
10	L2	4	0.0	0.052	4.9	LOS A	0.3	2.0	0.38	0.61	51.3
11	T1	1	0.0	0.052	5.1	LOS A	0.3	2.0	0.38	0.61	52.4
12	R2	52	12.2	0.052	10.0	LOS B	0.3	2.0	0.38	0.61	48.3
Approach		57	11.1	0.052	9.5	LOS A	0.3	2.0	0.38	0.61	48.7
All Vehicles		608	6.7	0.197	4.9	LOS A	1.3	9.7	0.16	0.44	53.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101 [Myola Road / Kuranda Heights Road Intersection - 2021 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Myola Road (South)											
2	T1	160	5.3	0.086	0.1	LOS A	0.1	0.4	0.03	0.02	59.6
3a	R1	6	33.3	0.086	5.8	LOS A	0.1	0.4	0.03	0.02	55.2
Approach		166	6.3	0.086	0.3	NA	0.1	0.4	0.03	0.02	59.4
NorthEast: Kuranda Heights Road											
24a	L1	6	16.7	0.010	5.9	LOS A	0.0	0.3	0.31	0.58	47.8
26b	R3	4	25.0	0.010	8.2	LOS A	0.0	0.3	0.31	0.58	51.4
Approach		11	20.0	0.010	6.8	LOS A	0.0	0.3	0.31	0.58	49.5
North: Myola Road (North)											
7b	L3	4	25.0	0.099	6.8	LOS A	0.0	0.0	0.00	0.01	57.4
8	T1	187	6.2	0.099	0.0	LOS A	0.0	0.0	0.00	0.01	59.8
Approach		192	6.6	0.099	0.2	NA	0.0	0.0	0.00	0.01	59.7
All Vehicles		368	6.9	0.099	0.4	NA	0.1	0.4	0.02	0.03	59.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Rd / Kuranda Heights Rd / Access Intersection Post Dev - 2021 PM]

New Site
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: Myola Road (South)											
1	L2	42	10.0	0.131	4.0	LOS A	0.8	5.8	0.07	0.41	52.4
2	T1	163	5.2	0.131	4.2	LOS A	0.8	5.8	0.07	0.41	54.7
3	R2	6	16.7	0.131	9.0	LOS A	0.8	5.8	0.07	0.41	53.8
Approach		212	6.5	0.131	4.3	LOS A	0.8	5.8	0.07	0.41	54.2
East: Kuranda Heights Road											
4	L2	6	16.7	0.012	5.9	LOS A	0.1	0.5	0.49	0.57	48.5
5	T1	1	0.0	0.012	5.7	LOS A	0.1	0.5	0.49	0.57	54.0
6	R2	4	25.0	0.012	11.0	LOS B	0.1	0.5	0.49	0.57	53.0
Approach		12	18.2	0.012	7.7	LOS A	0.1	0.5	0.49	0.57	51.0
North: Myola Road (North)											
7	L2	4	25.0	0.182	5.6	LOS A	1.1	8.2	0.44	0.51	52.7
8	T1	191	6.1	0.182	5.4	LOS A	1.1	8.2	0.44	0.51	51.8
9	R2	4	0.0	0.182	9.9	LOS A	1.1	8.2	0.44	0.51	54.6
Approach		199	6.3	0.182	5.5	LOS A	1.1	8.2	0.44	0.51	51.9
West: Development Access											
10	L2	1	0.0	0.164	4.9	LOS A	0.9	6.9	0.39	0.63	50.9
11	T1	1	0.0	0.164	5.1	LOS A	0.9	6.9	0.39	0.63	52.1
12	R2	186	7.9	0.164	9.9	LOS A	0.9	6.9	0.39	0.63	48.2
Approach		188	7.8	0.164	9.9	LOS A	0.9	6.9	0.39	0.63	48.3
All Vehicles		611	7.1	0.182	6.5	LOS A	1.1	8.2	0.30	0.51	51.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101 [Myola Road / Kuranda Heights Road Intersection - 2024 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Myola Road (South)											
2	T1	197	5.9	0.105	0.1	LOS A	0.1	0.5	0.03	0.02	59.6
3a	R1	7	28.6	0.105	5.8	LOS A	0.1	0.5	0.03	0.02	55.5
Approach		204	6.7	0.105	0.3	NA	0.1	0.5	0.03	0.02	59.4
NorthEast: Kuranda Heights Road											
24a	L1	11	10.0	0.015	5.9	LOS A	0.1	0.4	0.32	0.58	48.3
26b	R3	5	20.0	0.015	8.5	LOS A	0.1	0.4	0.32	0.58	51.6
Approach		16	13.3	0.015	6.7	LOS A	0.1	0.4	0.32	0.58	49.7
North: Myola Road (North)											
7b	L3	2	0.0	0.109	6.5	LOS A	0.0	0.0	0.00	0.01	58.7
8	T1	213	3.5	0.109	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
Approach		215	3.4	0.109	0.1	NA	0.0	0.0	0.00	0.01	59.9
All Vehicles		435	5.3	0.109	0.4	NA	0.1	0.5	0.03	0.03	59.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Rd / Kuranda Heights Rd / Access Intersection Post Dev - 2024 AM]

New Site
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: Myola Road (South)											
1	L2	214	6.4	0.252	3.9	LOS A	1.8	13.2	0.08	0.43	52.7
2	T1	199	6.3	0.252	4.2	LOS A	1.8	13.2	0.08	0.43	54.8
3	R2	7	28.6	0.252	9.1	LOS A	1.8	13.2	0.08	0.43	53.2
Approach		420	6.8	0.252	4.2	LOS A	1.8	13.2	0.08	0.43	53.7
East: Kuranda Heights Road											
4	L2	11	10.0	0.017	5.5	LOS A	0.1	0.6	0.46	0.56	49.4
5	T1	1	0.0	0.017	5.5	LOS A	0.1	0.6	0.46	0.56	54.4
6	R2	5	20.0	0.017	10.6	LOS B	0.1	0.6	0.46	0.56	53.5
Approach		17	12.5	0.017	7.1	LOS A	0.1	0.6	0.46	0.56	51.3
North: Myola Road (North)											
7	L2	2	0.0	0.183	4.6	LOS A	1.1	8.2	0.36	0.46	53.8
8	T1	218	3.4	0.183	4.9	LOS A	1.1	8.2	0.36	0.46	52.6
9	R2	2	0.0	0.183	9.5	LOS A	1.1	8.2	0.36	0.46	55.1
Approach		222	3.3	0.183	5.0	LOS A	1.1	8.2	0.36	0.46	52.7
West: Development Access											
10	L2	9	0.0	0.117	5.0	LOS A	0.6	4.8	0.41	0.63	51.1
11	T1	1	0.0	0.117	5.3	LOS A	0.6	4.8	0.41	0.63	52.3
12	R2	119	8.8	0.117	10.1	LOS B	0.6	4.8	0.41	0.63	48.4
Approach		129	8.1	0.117	9.7	LOS A	0.6	4.8	0.41	0.63	48.7
All Vehicles		788	6.1	0.252	5.4	LOS A	1.8	13.2	0.22	0.47	52.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101 [Myola Road / Kuranda Heights Road Intersection - 2024 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Myola Road (South)											
2	T1	169	5.0	0.090	0.1	LOS A	0.1	0.5	0.04	0.02	59.5
3a	R1	7	14.3	0.090	5.5	LOS A	0.1	0.5	0.04	0.02	56.4
Approach		177	5.4	0.090	0.3	NA	0.1	0.5	0.04	0.02	59.4
NorthEast: Kuranda Heights Road											
24a	L1	7	14.3	0.012	5.9	LOS A	0.0	0.3	0.32	0.58	47.9
26b	R3	5	20.0	0.012	8.2	LOS A	0.0	0.3	0.32	0.58	51.5
Approach		13	16.7	0.012	6.9	LOS A	0.0	0.3	0.32	0.58	49.7
North: Myola Road (North)											
7b	L3	5	20.0	0.105	6.7	LOS A	0.0	0.0	0.00	0.02	57.6
8	T1	198	5.9	0.105	0.0	LOS A	0.0	0.0	0.00	0.02	59.8
Approach		203	6.2	0.105	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		393	6.2	0.105	0.4	NA	0.1	0.5	0.03	0.04	59.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Rd / Kuranda Heights Rd / Access Intersection Post Dev - 2024 PM]

New Site
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: Myola Road (South)											
1	L2	100	7.4	0.175	4.0	LOS A	1.1	8.2	0.10	0.42	52.4
2	T1	173	4.9	0.175	4.2	LOS A	1.1	8.2	0.10	0.42	54.6
3	R2	7	14.3	0.175	9.0	LOS A	1.1	8.2	0.10	0.42	53.8
Approach		280	6.0	0.175	4.3	LOS A	1.1	8.2	0.10	0.42	53.8
East: Kuranda Heights Road											
4	L2	7	14.3	0.016	6.5	LOS A	0.1	0.6	0.56	0.60	48.0
5	T1	1	0.0	0.016	6.3	LOS A	0.1	0.6	0.56	0.60	53.5
6	R2	5	20.0	0.016	11.5	LOS B	0.1	0.6	0.56	0.60	52.7
Approach		14	15.4	0.016	8.4	LOS A	0.1	0.6	0.56	0.60	50.6
North: Myola Road (North)											
7	L2	5	20.0	0.217	6.3	LOS A	1.4	10.0	0.55	0.58	52.3
8	T1	201	6.3	0.217	6.1	LOS A	1.4	10.0	0.55	0.58	51.1
9	R2	9	0.0	0.217	10.6	LOS B	1.4	10.0	0.55	0.58	54.1
Approach		216	6.3	0.217	6.3	LOS A	1.4	10.0	0.55	0.58	51.3
West: Development Access											
10	L2	2	0.0	0.247	5.0	LOS A	1.5	11.2	0.43	0.64	50.8
11	T1	1	0.0	0.247	5.3	LOS A	1.5	11.2	0.43	0.64	51.9
12	R2	284	6.7	0.247	10.0	LOS B	1.5	11.2	0.43	0.64	48.2
Approach		287	6.6	0.247	10.0	LOS A	1.5	11.2	0.43	0.64	48.2
All Vehicles		797	6.5	0.247	7.0	LOS A	1.5	11.2	0.35	0.55	50.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101 [Myola Road / Kuranda Heights Road Intersection - 2027 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Myola Road (South)											
2	T1	209	6.0	0.112	0.1	LOS A	0.1	0.5	0.03	0.02	59.6
3a	R1	7	28.6	0.112	5.9	LOS A	0.1	0.5	0.03	0.02	55.5
Approach		217	6.8	0.112	0.3	NA	0.1	0.5	0.03	0.02	59.4
NorthEast: Kuranda Heights Road											
24a	L1	12	9.1	0.016	5.9	LOS A	0.1	0.4	0.33	0.59	48.4
26b	R3	5	20.0	0.016	8.6	LOS A	0.1	0.4	0.33	0.59	51.6
Approach		17	12.5	0.016	6.7	LOS A	0.1	0.4	0.33	0.59	49.6
North: Myola Road (North)											
7b	L3	2	0.0	0.116	6.5	LOS A	0.0	0.0	0.00	0.01	58.7
8	T1	226	3.3	0.116	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
Approach		228	3.2	0.116	0.1	NA	0.0	0.0	0.00	0.01	59.9
All Vehicles		462	5.2	0.116	0.4	NA	0.1	0.5	0.03	0.03	59.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Rd / Kuranda Heights Rd / Access Intersection Post Dev - 2027AM]

New Site
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: Myola Road (South)											
1	L2	321	5.6	0.321	3.9	LOS A	2.5	18.4	0.09	0.43	52.7
2	T1	212	6.0	0.321	4.2	LOS A	2.5	18.4	0.09	0.43	54.8
3	R2	7	28.6	0.321	9.1	LOS A	2.5	18.4	0.09	0.43	53.2
Approach		540	6.0	0.321	4.1	LOS A	2.5	18.4	0.09	0.43	53.5
East: Kuranda Heights Road											
4	L2	12	9.1	0.019	6.1	LOS A	0.1	0.8	0.53	0.59	49.1
5	T1	1	0.0	0.019	6.1	LOS A	0.1	0.8	0.53	0.59	54.1
6	R2	5	20.0	0.019	11.2	LOS B	0.1	0.8	0.53	0.59	53.3
Approach		18	11.8	0.019	7.6	LOS A	0.1	0.8	0.53	0.59	51.0
North: Myola Road (North)											
7	L2	3	0.0	0.218	5.3	LOS A	1.4	10.0	0.49	0.53	53.2
8	T1	231	3.7	0.218	5.6	LOS A	1.4	10.0	0.49	0.53	51.8
9	R2	2	0.0	0.218	10.1	LOS B	1.4	10.0	0.49	0.53	54.5
Approach		236	3.6	0.218	5.6	LOS A	1.4	10.0	0.49	0.53	51.8
West: Development Access											
10	L2	14	0.0	0.204	5.2	LOS A	1.2	8.9	0.45	0.65	51.0
11	T1	1	0.0	0.204	5.5	LOS A	1.2	8.9	0.45	0.65	52.1
12	R2	212	7.0	0.204	10.3	LOS B	1.2	8.9	0.45	0.65	48.3
Approach		226	6.5	0.204	9.9	LOS A	1.2	8.9	0.45	0.65	48.5
All Vehicles		1020	5.7	0.321	5.8	LOS A	2.5	18.4	0.27	0.51	51.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101 [Myola Road / Kuranda Heights Road Intersection - 2027 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Myola Road (South)											
2	T1	180	5.3	0.096	0.1	LOS A	0.1	0.5	0.03	0.02	59.5
3a	R1	7	14.3	0.096	5.5	LOS A	0.1	0.5	0.03	0.02	56.4
Approach		187	5.6	0.096	0.3	NA	0.1	0.5	0.03	0.02	59.4
NorthEast: Kuranda Heights Road											
24a	L1	7	14.3	0.013	5.9	LOS A	0.0	0.4	0.33	0.59	47.8
26b	R3	5	20.0	0.013	8.4	LOS A	0.0	0.4	0.33	0.59	51.5
Approach		13	16.7	0.013	6.9	LOS A	0.0	0.4	0.33	0.59	49.7
North: Myola Road (North)											
7b	L3	5	20.0	0.112	6.7	LOS A	0.0	0.0	0.00	0.02	57.6
8	T1	211	6.0	0.112	0.0	LOS A	0.0	0.0	0.00	0.02	59.8
Approach		216	6.3	0.112	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		416	6.3	0.112	0.4	NA	0.1	0.5	0.03	0.04	59.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Rd / Kuranda Heights Rd / Access Intersection Post Dev - 2027PM]

New Site
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: Myola Road (South)											
1	L2	189	5.6	0.237	4.0	LOS A	1.7	12.2	0.13	0.42	52.4
2	T1	183	5.2	0.237	4.2	LOS A	1.7	12.2	0.13	0.42	54.5
3	R2	7	14.3	0.237	9.0	LOS A	1.7	12.2	0.13	0.42	53.7
Approach		380	5.5	0.237	4.2	LOS A	1.7	12.2	0.13	0.42	53.4
East: Kuranda Heights Road											
4	L2	7	14.3	0.017	7.0	LOS A	0.1	0.7	0.60	0.62	47.6
5	T1	1	0.0	0.017	6.8	LOS A	0.1	0.7	0.60	0.62	53.1
6	R2	5	20.0	0.017	12.1	LOS B	0.1	0.7	0.60	0.62	52.3
Approach		14	15.4	0.017	8.9	LOS A	0.1	0.7	0.60	0.62	50.2
North: Myola Road (North)											
7	L2	5	20.0	0.247	6.8	LOS A	1.6	11.7	0.61	0.63	52.0
8	T1	214	5.9	0.247	6.6	LOS A	1.6	11.7	0.61	0.63	50.7
9	R2	14	0.0	0.247	11.1	LOS B	1.6	11.7	0.61	0.63	53.8
Approach		233	5.9	0.247	6.9	LOS A	1.6	11.7	0.61	0.63	51.0
West: Development Access											
10	L2	3	0.0	0.299	5.1	LOS A	1.9	14.3	0.46	0.65	50.7
11	T1	1	0.0	0.299	5.4	LOS A	1.9	14.3	0.46	0.65	51.9
12	R2	343	6.4	0.299	10.2	LOS B	1.9	14.3	0.46	0.65	48.0
Approach		347	6.4	0.299	10.1	LOS B	1.9	14.3	0.46	0.65	48.1
All Vehicles		974	6.1	0.299	7.0	LOS A	1.9	14.3	0.37	0.56	50.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101 [Myola Road / Kuranda Heights Road Intersection - 2037 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Myola Road (South)											
2	T1	255	6.2	0.137	0.1	LOS A	0.1	0.8	0.04	0.02	59.5
3a	R1	9	33.3	0.137	6.4	LOS A	0.1	0.8	0.04	0.02	55.2
Approach		264	7.2	0.137	0.3	NA	0.1	0.8	0.04	0.02	59.4
NorthEast: Kuranda Heights Road											
24a	L1	14	7.7	0.021	6.1	LOS A	0.1	0.6	0.37	0.61	48.2
26b	R3	6	16.7	0.021	9.2	LOS A	0.1	0.6	0.37	0.61	51.5
Approach		20	10.5	0.021	7.1	LOS A	0.1	0.6	0.37	0.61	49.5
North: Myola Road (North)											
7b	L3	3	0.0	0.141	6.5	LOS A	0.0	0.0	0.00	0.01	58.7
8	T1	276	3.4	0.141	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
Approach		279	3.4	0.141	0.1	NA	0.0	0.0	0.00	0.01	59.8
All Vehicles		563	5.4	0.141	0.4	NA	0.1	0.8	0.03	0.03	59.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Rd / Kuranda Heights Rd / Access Intersection Post Dev - 2037AM]

New Site
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: Myola Road (South)											
1	L2	321	5.6	0.351	4.0	LOS A	2.8	20.9	0.10	0.43	52.6
2	T1	257	6.1	0.351	4.2	LOS A	2.8	20.9	0.10	0.43	54.7
3	R2	9	33.3	0.351	9.2	LOS A	2.8	20.9	0.10	0.43	52.8
Approach		587	6.3	0.351	4.1	LOS A	2.8	20.9	0.10	0.43	53.5
East: Kuranda Heights Road											
4	L2	14	7.7	0.023	6.3	LOS A	0.1	0.9	0.56	0.60	49.0
5	T1	1	0.0	0.023	6.3	LOS A	0.1	0.9	0.56	0.60	53.9
6	R2	6	16.7	0.023	11.5	LOS B	0.1	0.9	0.56	0.60	53.2
Approach		21	10.0	0.023	7.9	LOS A	0.1	0.9	0.56	0.60	50.8
North: Myola Road (North)											
7	L2	3	0.0	0.264	5.3	LOS A	1.8	12.6	0.51	0.54	53.1
8	T1	280	3.4	0.264	5.7	LOS A	1.8	12.6	0.51	0.54	51.6
9	R2	3	0.0	0.264	10.2	LOS B	1.8	12.6	0.51	0.54	54.4
Approach		286	3.3	0.264	5.7	LOS A	1.8	12.6	0.51	0.54	51.7
West: Development Access											
10	L2	14	0.0	0.213	5.5	LOS A	1.3	9.3	0.50	0.67	50.8
11	T1	1	0.0	0.213	5.8	LOS A	1.3	9.3	0.50	0.67	51.9
12	R2	212	7.0	0.213	10.6	LOS B	1.3	9.3	0.50	0.67	48.1
Approach		226	6.5	0.213	10.3	LOS B	1.3	9.3	0.50	0.67	48.4
All Vehicles		1121	5.6	0.351	5.9	LOS A	2.8	20.9	0.29	0.51	51.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101 [Myola Road / Kuranda Heights Road Intersection - 2037 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Myola Road (South)											
2	T1	219	4.8	0.117	0.1	LOS A	0.1	0.6	0.04	0.02	59.5
3a	R1	9	11.1	0.117	5.7	LOS A	0.1	0.6	0.04	0.02	56.6
Approach		228	5.1	0.117	0.3	NA	0.1	0.6	0.04	0.02	59.3
NorthEast: Kuranda Heights Road											
24a	L1	9	11.1	0.017	6.1	LOS A	0.1	0.5	0.37	0.61	47.8
26b	R3	6	16.7	0.017	8.8	LOS A	0.1	0.5	0.37	0.61	51.4
Approach		16	13.3	0.017	7.2	LOS A	0.1	0.5	0.37	0.61	49.6
North: Myola Road (North)											
7b	L3	6	16.7	0.136	6.7	LOS A	0.0	0.0	0.00	0.02	57.8
8	T1	257	6.1	0.136	0.0	LOS A	0.0	0.0	0.00	0.02	59.8
Approach		263	6.4	0.136	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		507	6.0	0.136	0.5	NA	0.1	0.6	0.03	0.04	59.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Rd / Kuranda Heights Rd / Access Intersection Post Dev - 2037PM]

New Site
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: Myola Road (South)											
1	L2	189	5.6	0.263	4.0	LOS A	1.9	13.9	0.14	0.42	52.4
2	T1	223	5.2	0.263	4.3	LOS A	1.9	13.9	0.14	0.42	54.4
3	R2	9	11.1	0.263	9.0	LOS A	1.9	13.9	0.14	0.42	53.9
Approach		422	5.5	0.263	4.2	LOS A	1.9	13.9	0.14	0.42	53.5
East: Kuranda Heights Road											
4	L2	9	11.1	0.021	7.3	LOS A	0.1	0.9	0.63	0.64	47.6
5	T1	1	0.0	0.021	7.1	LOS A	0.1	0.9	0.63	0.64	53.0
6	R2	6	16.7	0.021	12.3	LOS B	0.1	0.9	0.63	0.64	52.3
Approach		17	12.5	0.021	9.2	LOS A	0.1	0.9	0.63	0.64	50.0
North: Myola Road (North)											
7	L2	6	16.7	0.299	6.8	LOS A	2.0	14.8	0.64	0.65	52.0
8	T1	260	6.1	0.299	6.8	LOS A	2.0	14.8	0.64	0.65	50.5
9	R2	14	0.0	0.299	11.2	LOS B	2.0	14.8	0.64	0.65	53.7
Approach		280	6.0	0.299	7.0	LOS A	2.0	14.8	0.64	0.65	50.8
West: Development Access											
10	L2	3	0.0	0.315	5.5	LOS A	2.0	15.1	0.51	0.67	50.6
11	T1	1	0.0	0.315	5.7	LOS A	2.0	15.1	0.51	0.67	51.7
12	R2	343	6.4	0.315	10.5	LOS B	2.0	15.1	0.51	0.67	47.8
Approach		347	6.4	0.315	10.5	LOS B	2.0	15.1	0.51	0.67	47.9
All Vehicles		1066	6.0	0.315	7.1	LOS A	2.0	15.1	0.40	0.57	50.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101 [Myola Road / Barnwell Road Intersection - 2017 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	3	33.3	0.010	6.4	LOS A	0.0	0.3	0.26	0.57	51.5
3	R2	7	14.3	0.010	6.6	LOS A	0.0	0.3	0.26	0.57	51.8
Approach		11	20.0	0.010	6.5	LOS A	0.0	0.3	0.26	0.57	51.7
East: Myola Road (East)											
4	L2	7	14.3	0.066	5.7	LOS A	0.0	0.0	0.00	0.04	57.4
5	T1	117	6.3	0.066	0.0	LOS A	0.0	0.0	0.00	0.04	59.7
Approach		124	6.8	0.066	0.3	NA	0.0	0.0	0.00	0.04	59.5
West: Myola Road (West)											
11	T1	124	3.4	0.066	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	2	0.0	0.066	5.8	LOS A	0.0	0.1	0.01	0.01	57.6
Approach		126	3.3	0.066	0.1	NA	0.0	0.1	0.01	0.01	59.8
All Vehicles		261	5.6	0.066	0.5	NA	0.0	0.3	0.02	0.04	59.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2017 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	2	50.0	0.005	6.6	LOS A	0.0	0.2	0.25	0.56	50.9
3	R2	3	33.3	0.005	6.9	LOS A	0.0	0.2	0.25	0.56	51.0
Approach		5	40.0	0.005	6.8	LOS A	0.0	0.2	0.25	0.56	51.0
East: Myola Road (East)											
4	L2	9	11.1	0.063	5.7	LOS A	0.0	0.0	0.00	0.05	57.4
5	T1	109	4.8	0.063	0.0	LOS A	0.0	0.0	0.00	0.05	59.6
Approach		119	5.3	0.063	0.5	NA	0.0	0.0	0.00	0.05	59.4
West: Myola Road (West)											
11	T1	102	6.2	0.055	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	1	0.0	0.055	5.8	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		103	6.1	0.055	0.1	NA	0.0	0.1	0.01	0.01	59.9
All Vehicles		227	6.5	0.063	0.4	NA	0.0	0.2	0.01	0.04	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2018 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	3	33.3	0.010	6.4	LOS A	0.0	0.3	0.26	0.57	51.5
3	R2	7	14.3	0.010	6.6	LOS A	0.0	0.3	0.26	0.57	51.8
Approach		11	20.0	0.010	6.6	LOS A	0.0	0.3	0.26	0.57	51.7
East: Myola Road (East)											
4	L2	7	14.3	0.067	5.7	LOS A	0.0	0.0	0.00	0.03	57.4
5	T1	119	6.2	0.067	0.0	LOS A	0.0	0.0	0.00	0.03	59.7
Approach		126	6.7	0.067	0.3	NA	0.0	0.0	0.00	0.03	59.6
West: Myola Road (West)											
11	T1	126	3.3	0.067	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	2	0.0	0.067	5.9	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		128	3.3	0.067	0.1	NA	0.0	0.1	0.01	0.01	59.8
All Vehicles		265	5.6	0.067	0.5	NA	0.0	0.3	0.01	0.04	59.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2018 AM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	3	33.3	0.029	6.4	LOS A	0.1	0.8	0.31	0.61	51.4
3	R2	23	22.7	0.029	7.0	LOS A	0.1	0.8	0.31	0.61	51.3
Approach		26	24.0	0.029	6.9	LOS A	0.1	0.8	0.31	0.61	51.3
East: Myola Road (East)											
4	L2	61	13.8	0.099	5.7	LOS A	0.0	0.0	0.00	0.20	56.1
5	T1	119	6.2	0.099	0.0	LOS A	0.0	0.0	0.00	0.20	58.3
Approach		180	8.8	0.099	1.9	NA	0.0	0.0	0.00	0.20	57.5
West: Myola Road (West)											
11	T1	126	3.3	0.067	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	2	0.0	0.067	6.0	LOS A	0.0	0.1	0.01	0.01	57.6
Approach		128	3.3	0.067	0.1	NA	0.0	0.1	0.01	0.01	59.8
All Vehicles		335	7.9	0.099	1.6	NA	0.1	0.8	0.03	0.16	57.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2018 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	2	50.0	0.005	6.6	LOS A	0.0	0.2	0.25	0.56	50.9
3	R2	3	33.3	0.005	6.9	LOS A	0.0	0.2	0.25	0.56	51.0
Approach		5	40.0	0.005	6.8	LOS A	0.0	0.2	0.25	0.56	51.0
East: Myola Road (East)											
4	L2	9	11.1	0.064	5.7	LOS A	0.0	0.0	0.00	0.05	57.4
5	T1	112	4.7	0.064	0.0	LOS A	0.0	0.0	0.00	0.05	59.6
Approach		121	5.2	0.064	0.4	NA	0.0	0.0	0.00	0.05	59.4
West: Myola Road (West)											
11	T1	104	6.1	0.056	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	1	0.0	0.056	5.8	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		105	6.0	0.056	0.1	NA	0.0	0.1	0.01	0.01	59.9
All Vehicles		232	6.4	0.064	0.4	NA	0.0	0.2	0.01	0.04	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2018 PM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	2	50.0	0.104	6.7	LOS A	0.4	2.7	0.30	0.62	50.8
3	R2	101	10.4	0.104	6.6	LOS A	0.4	2.7	0.30	0.62	51.9
Approach		103	11.2	0.104	6.6	LOS A	0.4	2.7	0.30	0.62	51.8
East: Myola Road (East)											
4	L2	26	16.0	0.074	5.7	LOS A	0.0	0.0	0.00	0.11	56.7
5	T1	112	4.7	0.074	0.0	LOS A	0.0	0.0	0.00	0.11	59.1
Approach		138	6.9	0.074	1.1	NA	0.0	0.0	0.00	0.11	58.6
West: Myola Road (West)											
11	T1	104	6.1	0.056	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	1	0.0	0.056	5.9	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		105	6.0	0.056	0.1	NA	0.0	0.1	0.01	0.01	59.9
All Vehicles		346	7.9	0.104	2.4	NA	0.4	2.7	0.09	0.23	56.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2021 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	3	33.3	0.012	6.4	LOS A	0.0	0.3	0.27	0.58	51.5
3	R2	8	12.5	0.012	6.7	LOS A	0.0	0.3	0.27	0.58	51.8
Approach		12	18.2	0.012	6.6	LOS A	0.0	0.3	0.27	0.58	51.7
East: Myola Road (East)											
4	L2	8	12.5	0.072	5.7	LOS A	0.0	0.0	0.00	0.04	57.4
5	T1	126	6.7	0.072	0.0	LOS A	0.0	0.0	0.00	0.04	59.7
Approach		135	7.0	0.072	0.4	NA	0.0	0.0	0.00	0.04	59.5
West: Myola Road (West)											
11	T1	135	3.1	0.071	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	2	0.0	0.071	5.9	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		137	3.1	0.071	0.1	NA	0.0	0.1	0.01	0.01	59.8
All Vehicles		283	5.6	0.072	0.5	NA	0.0	0.3	0.02	0.05	59.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2021 AM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	3	33.3	0.017	6.4	LOS A	0.1	0.4	0.28	0.59	51.5
3	R2	14	7.7	0.017	6.6	LOS A	0.1	0.4	0.28	0.59	52.0
Approach		17	12.5	0.017	6.5	LOS A	0.1	0.4	0.28	0.59	51.9
East: Myola Road (East)											
4	L2	11	10.0	0.073	5.7	LOS A	0.0	0.0	0.00	0.05	57.5
5	T1	126	6.7	0.073	0.0	LOS A	0.0	0.0	0.00	0.05	59.6
Approach		137	6.9	0.073	0.4	NA	0.0	0.0	0.00	0.05	59.4
West: Myola Road (West)											
11	T1	135	3.1	0.071	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	2	0.0	0.071	5.9	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		137	3.1	0.071	0.1	NA	0.0	0.1	0.01	0.01	59.8
All Vehicles		291	5.4	0.073	0.6	NA	0.1	0.4	0.02	0.06	59.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2021 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	2	50.0	0.005	6.6	LOS A	0.0	0.2	0.26	0.56	50.9
3	R2	3	33.3	0.005	7.0	LOS A	0.0	0.2	0.26	0.56	51.0
Approach		5	40.0	0.005	6.8	LOS A	0.0	0.2	0.26	0.56	50.9
East: Myola Road (East)											
4	L2	11	10.0	0.068	5.7	LOS A	0.0	0.0	0.00	0.05	57.5
5	T1	119	4.4	0.068	0.0	LOS A	0.0	0.0	0.00	0.05	59.6
Approach		129	4.9	0.068	0.5	NA	0.0	0.0	0.00	0.05	59.4
West: Myola Road (West)											
11	T1	111	5.7	0.059	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	1	0.0	0.059	5.9	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		112	5.7	0.059	0.1	NA	0.0	0.1	0.01	0.01	59.9
All Vehicles		246	6.0	0.068	0.4	NA	0.0	0.2	0.01	0.04	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2021 PM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	2	50.0	0.009	6.6	LOS A	0.0	0.2	0.27	0.57	50.9
3	R2	6	16.7	0.009	6.6	LOS A	0.0	0.2	0.27	0.57	51.7
Approach		8	25.0	0.009	6.6	LOS A	0.0	0.2	0.27	0.57	51.5
East: Myola Road (East)											
4	L2	15	7.1	0.070	5.6	LOS A	0.0	0.0	0.00	0.07	57.4
5	T1	119	4.4	0.070	0.0	LOS A	0.0	0.0	0.00	0.07	59.4
Approach		134	4.7	0.070	0.6	NA	0.0	0.0	0.00	0.07	59.2
West: Myola Road (West)											
11	T1	111	5.7	0.059	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	1	0.0	0.059	5.9	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		112	5.7	0.059	0.1	NA	0.0	0.1	0.01	0.01	59.9
All Vehicles		254	5.8	0.070	0.6	NA	0.0	0.2	0.01	0.06	59.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2024 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	3	33.3	0.012	6.5	LOS A	0.0	0.3	0.28	0.58	51.5
3	R2	8	12.5	0.012	6.8	LOS A	0.0	0.3	0.28	0.58	51.8
Approach		12	18.2	0.012	6.7	LOS A	0.0	0.3	0.28	0.58	51.7
East: Myola Road (East)											
4	L2	8	12.5	0.076	5.7	LOS A	0.0	0.0	0.00	0.03	57.4
5	T1	135	6.3	0.076	0.0	LOS A	0.0	0.0	0.00	0.03	59.7
Approach		143	6.6	0.076	0.3	NA	0.0	0.0	0.00	0.03	59.5
West: Myola Road (West)											
11	T1	143	3.7	0.076	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	2	0.0	0.076	5.9	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		145	3.6	0.076	0.1	NA	0.0	0.1	0.01	0.01	59.8
All Vehicles		300	5.6	0.076	0.5	NA	0.0	0.3	0.02	0.04	59.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2024 AM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	3	33.3	0.017	6.5	LOS A	0.1	0.4	0.29	0.59	51.5
3	R2	14	7.7	0.017	6.7	LOS A	0.1	0.4	0.29	0.59	52.0
Approach		17	12.5	0.017	6.6	LOS A	0.1	0.4	0.29	0.59	51.9
East: Myola Road (East)											
4	L2	11	10.0	0.077	5.7	LOS A	0.0	0.0	0.00	0.04	57.5
5	T1	135	6.3	0.077	0.0	LOS A	0.0	0.0	0.00	0.04	59.6
Approach		145	6.5	0.077	0.4	NA	0.0	0.0	0.00	0.04	59.4
West: Myola Road (West)											
11	T1	143	3.7	0.076	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	2	0.0	0.076	5.9	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		145	3.6	0.076	0.1	NA	0.0	0.1	0.01	0.01	59.8
All Vehicles		307	5.5	0.077	0.6	NA	0.1	0.4	0.02	0.06	59.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2024 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	2	50.0	0.006	6.7	LOS A	0.0	0.2	0.27	0.56	50.8
3	R2	3	33.3	0.006	7.0	LOS A	0.0	0.2	0.27	0.56	50.9
Approach		5	40.0	0.006	6.9	LOS A	0.0	0.2	0.27	0.56	50.9
East: Myola Road (East)											
4	L2	11	10.0	0.072	5.7	LOS A	0.0	0.0	0.00	0.05	57.5
5	T1	125	5.0	0.072	0.0	LOS A	0.0	0.0	0.00	0.05	59.6
Approach		136	5.4	0.072	0.4	NA	0.0	0.0	0.00	0.05	59.4
West: Myola Road (West)											
11	T1	117	6.3	0.062	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	1	0.0	0.062	5.9	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		118	6.3	0.062	0.1	NA	0.0	0.1	0.01	0.01	59.9
All Vehicles		259	6.5	0.072	0.4	NA	0.0	0.2	0.01	0.04	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2024 PM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	2	50.0	0.010	6.7	LOS A	0.0	0.3	0.28	0.58	50.8
3	R2	7	14.3	0.010	6.6	LOS A	0.0	0.3	0.28	0.58	51.8
Approach		9	22.2	0.010	6.6	LOS A	0.0	0.3	0.28	0.58	51.5
East: Myola Road (East)											
4	L2	16	6.7	0.074	5.6	LOS A	0.0	0.0	0.00	0.07	57.5
5	T1	125	5.0	0.074	0.0	LOS A	0.0	0.0	0.00	0.07	59.4
Approach		141	5.2	0.074	0.6	NA	0.0	0.0	0.00	0.07	59.2
West: Myola Road (West)											
11	T1	117	6.3	0.062	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	1	0.0	0.062	5.9	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		118	6.3	0.062	0.1	NA	0.0	0.1	0.01	0.01	59.9
All Vehicles		268	6.3	0.074	0.6	NA	0.0	0.3	0.01	0.06	59.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2027 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	4	25.0	0.014	6.4	LOS A	0.0	0.4	0.29	0.58	51.8
3	R2	9	11.1	0.014	6.8	LOS A	0.0	0.4	0.29	0.58	51.8
Approach		14	15.4	0.014	6.7	LOS A	0.0	0.4	0.29	0.58	51.8
East: Myola Road (East)											
4	L2	9	11.1	0.081	5.7	LOS A	0.0	0.0	0.00	0.04	57.5
5	T1	142	6.7	0.081	0.0	LOS A	0.0	0.0	0.00	0.04	59.7
Approach		152	6.9	0.081	0.4	NA	0.0	0.0	0.00	0.04	59.5
West: Myola Road (West)											
11	T1	152	3.5	0.080	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	2	0.0	0.080	5.9	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		154	3.4	0.080	0.1	NA	0.0	0.1	0.01	0.01	59.9
All Vehicles		319	5.6	0.081	0.5	NA	0.0	0.4	0.02	0.05	59.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2027 AM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	4	25.0	0.019	6.4	LOS A	0.1	0.5	0.30	0.59	51.8
3	R2	15	7.1	0.019	6.7	LOS A	0.1	0.5	0.30	0.59	52.0
Approach		19	11.1	0.019	6.6	LOS A	0.1	0.5	0.30	0.59	52.0
East: Myola Road (East)											
4	L2	12	9.1	0.082	5.7	LOS A	0.0	0.0	0.00	0.04	57.5
5	T1	142	6.7	0.082	0.0	LOS A	0.0	0.0	0.00	0.04	59.6
Approach		154	6.8	0.082	0.4	NA	0.0	0.0	0.00	0.04	59.4
West: Myola Road (West)											
11	T1	152	3.5	0.080	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	2	0.0	0.080	6.0	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		154	3.4	0.080	0.1	NA	0.0	0.1	0.01	0.01	59.9
All Vehicles		326	5.5	0.082	0.6	NA	0.1	0.5	0.02	0.06	59.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2027 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	2	50.0	0.007	6.7	LOS A	0.0	0.2	0.28	0.57	50.8
3	R2	4	25.0	0.007	6.9	LOS A	0.0	0.2	0.28	0.57	51.3
Approach		6	33.3	0.007	6.9	LOS A	0.0	0.2	0.28	0.57	51.1
East: Myola Road (East)											
4	L2	12	9.1	0.077	5.7	LOS A	0.0	0.0	0.00	0.05	57.5
5	T1	134	4.7	0.077	0.0	LOS A	0.0	0.0	0.00	0.05	59.6
Approach		145	5.1	0.077	0.5	NA	0.0	0.0	0.00	0.05	59.4
West: Myola Road (West)											
11	T1	124	5.9	0.066	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	1	0.0	0.066	5.9	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		125	5.9	0.066	0.1	NA	0.0	0.1	0.01	0.01	59.9
All Vehicles		277	6.1	0.077	0.4	NA	0.0	0.2	0.01	0.04	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2027 PM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	2	50.0	0.010	6.7	LOS A	0.0	0.3	0.29	0.58	50.8
3	R2	7	14.3	0.010	6.7	LOS A	0.0	0.3	0.29	0.58	51.7
Approach		9	22.2	0.010	6.7	LOS A	0.0	0.3	0.29	0.58	51.5
East: Myola Road (East)											
4	L2	16	6.7	0.079	5.6	LOS A	0.0	0.0	0.00	0.06	57.5
5	T1	134	4.7	0.079	0.0	LOS A	0.0	0.0	0.00	0.06	59.4
Approach		149	4.9	0.079	0.6	NA	0.0	0.0	0.00	0.06	59.2
West: Myola Road (West)											
11	T1	124	5.9	0.066	0.0	LOS A	0.0	0.1	0.01	0.01	59.9
12	R2	1	0.0	0.066	5.9	LOS A	0.0	0.1	0.01	0.01	57.7
Approach		125	5.9	0.066	0.1	NA	0.0	0.1	0.01	0.01	59.9
All Vehicles		284	5.9	0.079	0.6	NA	0.0	0.3	0.01	0.05	59.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2037 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	4	25.0	0.016	6.5	LOS A	0.1	0.4	0.33	0.60	51.6
3	R2	11	10.0	0.016	7.1	LOS A	0.1	0.4	0.33	0.60	51.7
Approach		15	14.3	0.016	6.9	LOS A	0.1	0.4	0.33	0.60	51.7
East: Myola Road (East)											
4	L2	11	10.0	0.098	5.7	LOS A	0.0	0.0	0.00	0.03	57.6
5	T1	174	6.1	0.098	0.0	LOS A	0.0	0.0	0.00	0.03	59.7
Approach		184	6.3	0.098	0.3	NA	0.0	0.0	0.00	0.03	59.6
West: Myola Road (West)											
11	T1	184	3.4	0.098	0.0	LOS A	0.0	0.2	0.01	0.01	59.9
12	R2	3	0.0	0.098	6.1	LOS A	0.0	0.2	0.01	0.01	57.6
Approach		187	3.4	0.098	0.1	NA	0.0	0.2	0.01	0.01	59.8
All Vehicles		386	5.2	0.098	0.5	NA	0.1	0.4	0.02	0.04	59.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2037 AM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	4	25.0	0.023	6.5	LOS A	0.1	0.6	0.34	0.62	51.5
3	R2	17	12.5	0.023	7.2	LOS A	0.1	0.6	0.34	0.62	51.5
Approach		21	15.0	0.023	7.1	LOS A	0.1	0.6	0.34	0.62	51.5
East: Myola Road (East)											
4	L2	14	15.4	0.100	5.7	LOS A	0.0	0.0	0.00	0.04	57.2
5	T1	174	6.1	0.100	0.0	LOS A	0.0	0.0	0.00	0.04	59.6
Approach		187	6.7	0.100	0.4	NA	0.0	0.0	0.00	0.04	59.4
West: Myola Road (West)											
11	T1	184	3.4	0.098	0.0	LOS A	0.0	0.2	0.01	0.01	59.8
12	R2	3	0.0	0.098	6.1	LOS A	0.0	0.2	0.01	0.01	57.6
Approach		187	3.4	0.098	0.1	NA	0.0	0.2	0.01	0.01	59.8
All Vehicles		396	5.6	0.100	0.6	NA	0.1	0.6	0.02	0.06	59.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2037 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	3	33.3	0.008	6.6	LOS A	0.0	0.2	0.30	0.57	51.4
3	R2	4	25.0	0.008	7.3	LOS A	0.0	0.2	0.30	0.57	51.2
Approach		7	28.6	0.008	7.0	LOS A	0.0	0.2	0.30	0.57	51.3
East: Myola Road (East)											
4	L2	14	7.7	0.093	5.6	LOS A	0.0	0.0	0.00	0.05	57.6
5	T1	163	4.5	0.093	0.0	LOS A	0.0	0.0	0.00	0.05	59.6
Approach		177	4.8	0.093	0.4	NA	0.0	0.0	0.00	0.05	59.4
West: Myola Road (West)											
11	T1	152	6.3	0.081	0.0	LOS A	0.0	0.1	0.00	0.00	59.9
12	R2	1	0.0	0.081	6.0	LOS A	0.0	0.1	0.00	0.00	57.7
Approach		153	6.2	0.081	0.0	NA	0.0	0.1	0.00	0.00	59.9
All Vehicles		337	5.9	0.093	0.4	NA	0.0	0.2	0.01	0.04	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Myola Road / Barnwell Road Intersection - 2037 PM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Barnwell Road											
1	L2	3	33.3	0.013	6.6	LOS A	0.0	0.4	0.32	0.59	51.3
3	R2	8	25.0	0.013	7.3	LOS A	0.0	0.4	0.32	0.59	51.1
Approach		12	27.3	0.013	7.1	LOS A	0.0	0.4	0.32	0.59	51.1
East: Myola Road (East)											
4	L2	19	11.1	0.096	5.7	LOS A	0.0	0.0	0.00	0.06	57.3
5	T1	163	4.5	0.096	0.0	LOS A	0.0	0.0	0.00	0.06	59.5
Approach		182	5.2	0.096	0.6	NA	0.0	0.0	0.00	0.06	59.2
West: Myola Road (West)											
11	T1	152	6.3	0.081	0.0	LOS A	0.0	0.1	0.00	0.00	59.9
12	R2	1	0.0	0.081	6.1	LOS A	0.0	0.1	0.00	0.00	57.7
Approach		153	6.2	0.081	0.0	NA	0.0	0.1	0.00	0.00	59.9
All Vehicles		346	6.4	0.096	0.6	NA	0.0	0.4	0.01	0.05	59.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2017 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	433	6.3	0.171	0.0	LOS A	0.0	0.1	0.00	0.00	60.0
3	R2	1	0.0	0.171	6.9	LOS A	0.0	0.1	0.00	0.00	57.9
Approach		434	6.3	0.171	0.0	NA	0.0	0.1	0.00	0.00	60.0
East: Greenhills Road											
4	L2	3	33.3	0.054	7.5	LOS A	0.2	1.4	0.60	0.80	47.5
6	R2	19	5.6	0.054	13.4	LOS B	0.2	1.4	0.60	0.80	48.4
Approach		22	9.5	0.054	12.5	LOS B	0.2	1.4	0.60	0.80	48.3
North: Kennedy Highway (North)											
7	L2	8	12.5	0.005	5.7	LOS A	0.0	0.0	0.00	0.57	53.1
8	T1	265	10.7	0.144	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		274	10.8	0.144	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		729	8.1	0.171	0.5	NA	0.2	1.4	0.02	0.03	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2017 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	307	3.8	0.124	0.1	LOS A	0.1	0.5	0.02	0.01	59.8
3	R2	4	25.0	0.124	8.8	LOS A	0.1	0.5	0.03	0.01	56.4
Approach		312	4.1	0.124	0.2	NA	0.1	0.5	0.02	0.01	59.8
East: Greenhills Road											
4	L2	4	25.0	0.033	8.3	LOS A	0.1	0.9	0.60	0.77	47.9
6	R2	9	11.1	0.033	14.3	LOS B	0.1	0.9	0.60	0.77	48.3
Approach		14	15.4	0.033	12.4	LOS B	0.1	0.9	0.60	0.77	48.2
North: Kennedy Highway (North)											
7	L2	19	5.6	0.011	5.6	LOS A	0.0	0.0	0.00	0.57	53.4
8	T1	408	2.3	0.210	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		427	2.5	0.210	0.3	NA	0.0	0.0	0.00	0.03	59.6
All Vehicles		753	3.4	0.210	0.5	NA	0.1	0.9	0.02	0.03	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2018 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	441	6.4	0.175	0.0	LOS A	0.0	0.1	0.00	0.00	60.0
3	R2	1	0.0	0.175	7.0	LOS A	0.0	0.1	0.00	0.00	57.9
Approach		442	6.4	0.175	0.0	NA	0.0	0.1	0.00	0.00	60.0
East: Greenhills Road											
4	L2	3	33.3	0.055	7.6	LOS A	0.2	1.5	0.61	0.81	47.4
6	R2	19	5.6	0.055	13.6	LOS B	0.2	1.5	0.61	0.81	48.2
Approach		22	9.5	0.055	12.8	LOS B	0.2	1.5	0.61	0.81	48.1
North: Kennedy Highway (North)											
7	L2	8	12.5	0.005	5.7	LOS A	0.0	0.0	0.00	0.57	53.1
8	T1	271	10.9	0.147	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		279	10.9	0.147	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		743	8.2	0.175	0.5	NA	0.2	1.5	0.02	0.03	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2018 AM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	456	6.5	0.180	0.0	LOS A	0.0	0.1	0.00	0.00	60.0
3	R2	1	0.0	0.180	7.0	LOS A	0.0	0.1	0.00	0.00	57.9
Approach		457	6.5	0.180	0.0	NA	0.0	0.1	0.00	0.00	60.0
East: Greenhills Road											
4	L2	3	33.3	0.057	7.6	LOS A	0.2	1.5	0.62	0.82	47.2
6	R2	19	5.6	0.057	14.0	LOS B	0.2	1.5	0.62	0.82	48.0
Approach		22	9.5	0.057	13.1	LOS B	0.2	1.5	0.62	0.82	47.9
North: Kennedy Highway (North)											
7	L2	8	12.5	0.005	5.7	LOS A	0.0	0.0	0.00	0.57	53.1
8	T1	276	10.7	0.150	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		284	10.7	0.150	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		763	8.1	0.180	0.5	NA	0.2	1.5	0.02	0.03	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2018 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	314	3.7	0.126	0.1	LOS A	0.1	0.5	0.02	0.01	59.8
3	R2	4	25.0	0.126	8.9	LOS A	0.1	0.5	0.03	0.01	56.4
Approach		318	4.0	0.126	0.2	NA	0.1	0.5	0.02	0.01	59.8
East: Greenhills Road											
4	L2	4	25.0	0.034	8.3	LOS A	0.1	0.9	0.61	0.78	47.8
6	R2	9	11.1	0.034	14.6	LOS B	0.1	0.9	0.61	0.78	48.2
Approach		14	15.4	0.034	12.7	LOS B	0.1	0.9	0.61	0.78	48.0
North: Kennedy Highway (North)											
7	L2	19	5.6	0.011	5.6	LOS A	0.0	0.0	0.00	0.57	53.4
8	T1	417	2.3	0.215	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		436	2.4	0.215	0.3	NA	0.0	0.0	0.00	0.02	59.6
All Vehicles		767	3.3	0.215	0.5	NA	0.1	0.9	0.02	0.03	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2018 PM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	320	3.9	0.129	0.1	LOS A	0.1	0.5	0.02	0.01	59.8
3	R2	4	25.0	0.129	9.3	LOS A	0.1	0.5	0.03	0.01	56.4
Approach		324	4.2	0.129	0.2	NA	0.1	0.5	0.02	0.01	59.8
East: Greenhills Road											
4	L2	4	25.0	0.036	8.6	LOS A	0.1	1.0	0.64	0.80	47.3
6	R2	9	11.1	0.036	15.5	LOS C	0.1	1.0	0.64	0.80	47.7
Approach		14	15.4	0.036	13.4	LOS B	0.1	1.0	0.64	0.80	47.6
North: Kennedy Highway (North)											
7	L2	19	5.6	0.011	5.6	LOS A	0.0	0.0	0.00	0.57	53.4
8	T1	446	2.6	0.230	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		465	2.7	0.230	0.3	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		803	3.5	0.230	0.5	NA	0.1	1.0	0.02	0.03	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2021 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	468	6.3	0.185	0.0	LOS A	0.0	0.1	0.00	0.00	60.0
3	R2	1	0.0	0.185	7.1	LOS A	0.0	0.1	0.00	0.00	57.9
Approach		469	6.3	0.185	0.0	NA	0.0	0.1	0.00	0.00	60.0
East: Greenhills Road											
4	L2	3	33.3	0.062	7.7	LOS A	0.2	1.6	0.64	0.83	46.9
6	R2	20	5.3	0.062	14.5	LOS B	0.2	1.6	0.64	0.83	47.7
Approach		23	9.1	0.062	13.6	LOS B	0.2	1.6	0.64	0.83	47.6
North: Kennedy Highway (North)											
7	L2	9	11.1	0.006	5.7	LOS A	0.0	0.0	0.00	0.57	53.2
8	T1	287	10.6	0.156	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		297	10.6	0.156	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		789	8.0	0.185	0.5	NA	0.2	1.6	0.02	0.03	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2021 AM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	506	6.4	0.200	0.0	LOS A	0.0	0.1	0.00	0.00	60.0
3	R2	1	0.0	0.200	7.3	LOS A	0.0	0.1	0.00	0.00	57.9
Approach		507	6.4	0.200	0.0	NA	0.0	0.1	0.00	0.00	60.0
East: Greenhills Road											
4	L2	3	33.3	0.069	7.8	LOS A	0.2	1.8	0.67	0.85	46.2
6	R2	20	5.3	0.069	15.9	LOS C	0.2	1.8	0.67	0.85	47.0
Approach		23	9.1	0.069	14.8	LOS B	0.2	1.8	0.67	0.85	46.9
North: Kennedy Highway (North)											
7	L2	9	11.1	0.006	5.7	LOS A	0.0	0.0	0.00	0.57	53.2
8	T1	306	10.7	0.166	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		316	10.7	0.166	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		846	8.1	0.200	0.5	NA	0.2	1.8	0.02	0.03	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2021 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	333	3.8	0.134	0.1	LOS A	0.1	0.5	0.02	0.01	59.8
3	R2	4	25.0	0.134	9.2	LOS A	0.1	0.5	0.03	0.01	56.4
Approach		337	4.1	0.134	0.2	NA	0.1	0.5	0.02	0.01	59.8
East: Greenhills Road											
4	L2	4	25.0	0.040	8.6	LOS A	0.1	1.1	0.64	0.81	47.2
6	R2	11	10.0	0.040	15.5	LOS C	0.1	1.1	0.64	0.81	47.6
Approach		15	14.3	0.040	13.5	LOS B	0.1	1.1	0.64	0.81	47.5
North: Kennedy Highway (North)											
7	L2	20	5.3	0.011	5.6	LOS A	0.0	0.0	0.00	0.58	53.4
8	T1	442	2.4	0.228	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		462	2.5	0.228	0.3	NA	0.0	0.0	0.00	0.02	59.6
All Vehicles		814	3.4	0.228	0.5	NA	0.1	1.1	0.02	0.03	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2021 PM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	353	3.9	0.142	0.1	LOS A	0.1	0.6	0.02	0.01	59.8
3	R2	4	25.0	0.142	10.0	LOS A	0.1	0.6	0.03	0.01	56.4
Approach		357	4.1	0.142	0.2	NA	0.1	0.6	0.02	0.01	59.8
East: Greenhills Road											
4	L2	4	25.0	0.046	9.1	LOS A	0.2	1.2	0.69	0.85	46.2
6	R2	11	10.0	0.046	17.7	LOS C	0.2	1.2	0.69	0.85	46.6
Approach		15	14.3	0.046	15.2	LOS C	0.2	1.2	0.69	0.85	46.5
North: Kennedy Highway (North)											
7	L2	20	5.3	0.011	5.6	LOS A	0.0	0.0	0.00	0.58	53.4
8	T1	499	2.7	0.258	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		519	2.8	0.258	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		891	3.5	0.258	0.5	NA	0.2	1.2	0.02	0.03	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2024 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	497	6.4	0.197	0.0	LOS A	0.0	0.1	0.00	0.00	60.0
3	R2	1	0.0	0.197	7.3	LOS A	0.0	0.1	0.00	0.00	57.9
Approach		498	6.3	0.197	0.0	NA	0.0	0.1	0.00	0.00	60.0
East: Greenhills Road											
4	L2	3	33.3	0.074	7.8	LOS A	0.3	1.9	0.67	0.85	46.3
6	R2	22	4.8	0.074	15.5	LOS C	0.3	1.9	0.67	0.85	47.1
Approach		25	8.3	0.074	14.6	LOS B	0.3	1.9	0.67	0.85	47.0
North: Kennedy Highway (North)											
7	L2	9	11.1	0.006	5.7	LOS A	0.0	0.0	0.00	0.57	53.2
8	T1	304	10.7	0.165	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		314	10.7	0.165	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		837	8.1	0.197	0.5	NA	0.3	1.9	0.02	0.03	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2024 AM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	559	5.8	0.220	0.0	LOS A	0.0	0.1	0.00	0.00	60.0
3	R2	1	0.0	0.220	7.6	LOS A	0.0	0.1	0.00	0.00	57.9
Approach		560	5.8	0.220	0.0	NA	0.0	0.1	0.00	0.00	60.0
East: Greenhills Road											
4	L2	3	33.3	0.087	8.2	LOS A	0.3	2.2	0.73	0.87	45.0
6	R2	22	4.8	0.087	18.1	LOS C	0.3	2.2	0.73	0.87	45.8
Approach		25	8.3	0.087	16.9	LOS C	0.3	2.2	0.73	0.87	45.7
North: Kennedy Highway (North)											
7	L2	9	11.1	0.006	5.7	LOS A	0.0	0.0	0.00	0.57	53.2
8	T1	342	10.2	0.185	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		352	10.2	0.185	0.2	NA	0.0	0.0	0.00	0.02	59.8
All Vehicles		937	7.5	0.220	0.5	NA	0.3	2.2	0.02	0.03	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2024 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	353	3.9	0.143	0.1	LOS A	0.1	0.7	0.03	0.01	59.8
3	R2	5	20.0	0.143	9.3	LOS A	0.1	0.7	0.03	0.01	56.6
Approach		358	4.1	0.143	0.2	NA	0.1	0.7	0.03	0.01	59.7
East: Greenhills Road											
4	L2	5	20.0	0.045	8.6	LOS A	0.2	1.2	0.66	0.82	47.1
6	R2	11	10.0	0.045	16.8	LOS C	0.2	1.2	0.66	0.82	47.3
Approach		16	13.3	0.045	14.1	LOS B	0.2	1.2	0.66	0.82	47.2
North: Kennedy Highway (North)											
7	L2	22	4.8	0.012	5.6	LOS A	0.0	0.0	0.00	0.58	53.4
8	T1	469	2.2	0.242	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		492	2.4	0.242	0.3	NA	0.0	0.0	0.00	0.03	59.6
All Vehicles		865	3.3	0.242	0.5	NA	0.2	1.2	0.02	0.03	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2024 PM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	387	3.8	0.157	0.2	LOS A	0.1	0.8	0.03	0.01	59.7
3	R2	5	20.0	0.157	10.6	LOS B	0.1	0.8	0.04	0.01	56.5
Approach		393	4.0	0.157	0.3	NA	0.1	0.8	0.03	0.01	59.7
East: Greenhills Road											
4	L2	5	20.0	0.056	9.5	LOS A	0.2	1.4	0.73	0.87	45.3
6	R2	11	10.0	0.056	20.8	LOS C	0.2	1.4	0.73	0.87	45.5
Approach		16	13.3	0.056	17.0	LOS C	0.2	1.4	0.73	0.87	45.5
North: Kennedy Highway (North)											
7	L2	22	4.8	0.012	5.6	LOS A	0.0	0.0	0.00	0.58	53.4
8	T1	558	2.5	0.288	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		580	2.5	0.288	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		988	3.3	0.288	0.5	NA	0.2	1.4	0.02	0.03	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2027 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	527	6.4	0.209	0.0	LOS A	0.0	0.1	0.00	0.00	60.0
3	R2	1	0.0	0.209	7.5	LOS A	0.0	0.1	0.00	0.00	57.9
Approach		528	6.4	0.209	0.0	NA	0.0	0.1	0.00	0.00	60.0
East: Greenhills Road											
4	L2	4	25.0	0.085	7.7	LOS A	0.3	2.2	0.69	0.85	46.1
6	R2	23	4.5	0.085	16.8	LOS C	0.3	2.2	0.69	0.85	46.6
Approach		27	7.7	0.085	15.4	LOS C	0.3	2.2	0.69	0.85	46.6
North: Kennedy Highway (North)											
7	L2	11	10.0	0.006	5.7	LOS A	0.0	0.0	0.00	0.57	53.2
8	T1	323	10.7	0.175	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		334	10.7	0.175	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		889	8.0	0.209	0.6	NA	0.3	2.2	0.02	0.03	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2027 AM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	617	5.8	0.243	0.0	LOS A	0.0	0.1	0.00	0.00	60.0
3	R2	1	0.0	0.243	8.0	LOS A	0.0	0.1	0.00	0.00	57.9
Approach		618	5.8	0.243	0.0	NA	0.0	0.1	0.00	0.00	60.0
East: Greenhills Road											
4	L2	4	25.0	0.110	8.2	LOS A	0.4	2.7	0.77	0.89	44.0
6	R2	23	4.5	0.110	21.1	LOS C	0.4	2.7	0.77	0.89	44.5
Approach		27	7.7	0.110	19.2	LOS C	0.4	2.7	0.77	0.89	44.4
North: Kennedy Highway (North)											
7	L2	11	10.0	0.006	5.7	LOS A	0.0	0.0	0.00	0.57	53.2
8	T1	380	9.7	0.205	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		391	9.7	0.205	0.2	NA	0.0	0.0	0.00	0.02	59.8
All Vehicles		1036	7.3	0.243	0.6	NA	0.4	2.7	0.02	0.03	59.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2027 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	375	3.7	0.151	0.1	LOS A	0.1	0.7	0.03	0.01	59.8
3	R2	5	20.0	0.151	9.7	LOS A	0.1	0.7	0.03	0.01	56.6
Approach		380	3.9	0.151	0.3	NA	0.1	0.7	0.03	0.01	59.7
East: Greenhills Road											
4	L2	5	20.0	0.052	8.9	LOS A	0.2	1.4	0.69	0.84	46.4
6	R2	12	9.1	0.052	18.1	LOS C	0.2	1.4	0.69	0.84	46.6
Approach		17	12.5	0.052	15.3	LOS C	0.2	1.4	0.69	0.84	46.5
North: Kennedy Highway (North)											
7	L2	23	4.5	0.013	5.6	LOS A	0.0	0.0	0.00	0.58	53.4
8	T1	498	2.3	0.257	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		521	2.4	0.257	0.3	NA	0.0	0.0	0.00	0.03	59.6
All Vehicles		918	3.2	0.257	0.5	NA	0.2	1.4	0.02	0.03	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2027 PM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	427	3.7	0.173	0.2	LOS A	0.1	0.9	0.03	0.01	59.7
3	R2	5	20.0	0.173	11.1	LOS B	0.1	0.9	0.04	0.01	56.5
Approach		433	3.9	0.173	0.3	NA	0.1	0.9	0.03	0.01	59.7
East: Greenhills Road											
4	L2	5	20.0	0.069	9.9	LOS A	0.2	1.7	0.77	0.89	44.2
6	R2	12	9.1	0.069	23.4	LOS C	0.2	1.7	0.77	0.89	44.4
Approach		17	12.5	0.069	19.2	LOS C	0.2	1.7	0.77	0.89	44.3
North: Kennedy Highway (North)											
7	L2	23	4.5	0.013	5.6	LOS A	0.0	0.0	0.00	0.58	53.4
8	T1	591	2.3	0.304	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		614	2.4	0.304	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		1063	3.2	0.304	0.6	NA	0.2	1.7	0.02	0.03	59.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2037 AM Base]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	643	6.4	0.254	0.0	LOS A	0.0	0.1	0.00	0.00	60.0
3	R2	1	0.0	0.254	8.2	LOS A	0.0	0.1	0.00	0.00	57.9
Approach		644	6.4	0.254	0.0	NA	0.0	0.1	0.00	0.00	60.0
East: Greenhills Road											
4	L2	4	25.0	0.144	8.4	LOS A	0.5	3.5	0.80	0.91	43.1
6	R2	28	3.7	0.144	22.7	LOS C	0.5	3.5	0.80	0.91	43.6
Approach		33	6.5	0.144	20.9	LOS C	0.5	3.5	0.80	0.91	43.5
North: Kennedy Highway (North)											
7	L2	13	8.3	0.007	5.6	LOS A	0.0	0.0	0.00	0.57	53.3
8	T1	394	10.7	0.214	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		406	10.6	0.214	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		1083	8.0	0.254	0.7	NA	0.5	3.5	0.03	0.03	59.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2037 AM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	732	5.9	0.288	0.0	LOS A	0.0	0.1	0.00	0.00	60.0
3	R2	1	0.0	0.288	9.0	LOS A	0.0	0.1	0.00	0.00	57.9
Approach		733	5.9	0.288	0.0	NA	0.0	0.1	0.00	0.00	60.0
East: Greenhills Road											
4	L2	4	25.0	0.191	9.6	LOS A	0.6	4.6	0.85	0.94	40.1
6	R2	28	3.7	0.191	29.9	LOS D	0.6	4.6	0.85	0.94	40.5
Approach		33	6.5	0.191	27.3	LOS D	0.6	4.6	0.85	0.94	40.5
North: Kennedy Highway (North)											
7	L2	13	8.3	0.007	5.6	LOS A	0.0	0.0	0.00	0.57	53.3
8	T1	451	9.8	0.243	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		463	9.8	0.243	0.2	NA	0.0	0.0	0.00	0.02	59.7
All Vehicles		1228	7.4	0.288	0.8	NA	0.6	4.6	0.02	0.03	59.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2037 PM Base]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	457	3.7	0.185	0.2	LOS A	0.2	1.1	0.03	0.01	59.7
3	R2	6	16.7	0.185	11.3	LOS B	0.2	1.1	0.04	0.01	56.7
Approach		463	3.9	0.185	0.3	NA	0.2	1.1	0.03	0.01	59.6
East: Greenhills Road											
4	L2	6	16.7	0.088	10.0	LOS A	0.3	2.1	0.79	0.91	43.6
6	R2	14	7.7	0.088	25.2	LOS D	0.3	2.1	0.79	0.91	43.8
Approach		20	10.5	0.088	20.4	LOS C	0.3	2.1	0.79	0.91	43.7
North: Kennedy Highway (North)											
7	L2	28	3.7	0.016	5.6	LOS A	0.0	0.0	0.00	0.58	53.5
8	T1	607	2.3	0.313	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		636	2.3	0.313	0.3	NA	0.0	0.0	0.00	0.03	59.6
All Vehicles		1119	3.1	0.313	0.7	NA	0.3	2.1	0.03	0.03	59.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101 [Kennedy Highway / Greenhills Road - 2037 PM Post Dev]

New Site
Giveway / Yield (Two-Way)

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: Kennedy Highway (South)											
2	T1	509	3.7	0.207	0.3	LOS A	0.2	1.4	0.03	0.01	59.6
3	R2	6	16.7	0.207	13.2	LOS B	0.2	1.4	0.05	0.01	56.6
Approach		516	3.9	0.207	0.4	NA	0.2	1.4	0.03	0.01	59.6
East: Greenhills Road											
4	L2	6	16.7	0.120	11.3	LOS B	0.4	2.8	0.85	0.94	40.6
6	R2	14	7.7	0.120	33.5	LOS D	0.4	2.8	0.85	0.94	40.8
Approach		20	10.5	0.120	26.5	LOS D	0.4	2.8	0.85	0.94	40.7
North: Kennedy Highway (North)											
7	L2	28	3.7	0.016	5.6	LOS A	0.0	0.0	0.00	0.58	53.5
8	T1	700	2.4	0.361	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		728	2.5	0.361	0.3	NA	0.0	0.0	0.00	0.02	59.6
All Vehicles		1264	3.2	0.361	0.7	NA	0.4	2.8	0.03	0.03	59.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road 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: 101v [Captain Cook Highway Kennedy Highway Roundabout 2024AM - Pre Dev]

Captain Cook Highway / Kennedy Highway / Mount Milman Drive Roundabout With Bypass
2024 AM Traffic Volumes
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: Captain Cook Highway (South)											
1	L2	380	9.1	0.300	1.8	LOS A	2.0	14.7	0.04	0.22	60.2
2	T1	606	3.0	0.300	2.3	LOS A	2.0	14.7	0.05	0.26	61.2
3	R2	53	8.0	0.300	9.4	LOS A	1.9	14.0	0.05	0.27	68.7
Approach		1039	5.5	0.300	2.5	LOS A	2.0	14.7	0.05	0.24	61.2
East: Mount Milman Drive											
4	L2	15	50.0	0.019	5.7	LOS A	0.1	1.0	0.77	0.65	56.0
5	T1	1	0.0	0.002	5.5	LOS A	0.0	0.1	0.82	0.56	54.4
6	R2	1	0.0	0.002	12.6	LOS B	0.0	0.1	0.82	0.56	60.9
Approach		17	43.8	0.019	6.1	LOS A	0.1	1.0	0.78	0.64	56.2
North: Captain Cook Highway (North)											
7	L2	18	5.9	0.477	3.6	LOS A	3.0	22.5	0.66	0.42	55.9
8	T1	1091	6.5	0.477	4.5	LOS A	3.0	22.5	0.67	0.48	57.3
9	R2	2	0.0	0.477	12.1	LOS B	2.9	21.3	0.69	0.55	64.8
Approach		1111	6.4	0.477	4.5	LOS A	3.0	22.5	0.67	0.48	57.3
West: Kennedy Highway											
10	L2	106	4.0	0.302	3.5	LOS A	1.6	11.6	0.55	0.65	53.4
11	T1	11	10.0	0.302	4.0	LOS A	1.6	11.6	0.55	0.65	54.7
12	R2	631	5.3	0.302	11.5	LOS B	1.6	11.6	0.57	0.70	59.9
Approach		747	5.2	0.302	10.2	LOS B	1.6	11.6	0.56	0.69	58.8
All Vehicles		2914	6.0	0.477	5.3	LOS A	3.0	22.5	0.42	0.45	59.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101v [Captain Cook Highway Kennedy Highway Roundabout 2024AM - Post Dev]

Captain Cook Highway / Kennedy Highway / Mount Milman Drive Roundabout With Bypass
2024 AM Traffic Volumes
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: Captain Cook Highway (South)											
1	L2	380	9.7	0.301	1.8	LOS A	2.0	14.8	0.04	0.22	60.2
2	T1	606	3.0	0.301	2.3	LOS A	2.0	14.8	0.05	0.26	61.2
3	R2	53	8.0	0.301	9.4	LOS A	1.9	14.0	0.05	0.27	68.7
Approach		1039	5.7	0.301	2.5	LOS A	2.0	14.8	0.05	0.24	61.2
East: Mount Milman Drive											
4	L2	15	50.0	0.019	5.7	LOS A	0.1	1.0	0.77	0.65	56.0
5	T1	1	0.0	0.002	5.5	LOS A	0.0	0.1	0.82	0.56	54.3
6	R2	1	0.0	0.002	12.6	LOS B	0.0	0.1	0.82	0.56	60.8
Approach		17	43.8	0.019	6.1	LOS A	0.1	1.0	0.78	0.64	56.2
North: Captain Cook Highway (North)											
7	L2	18	5.9	0.477	3.6	LOS A	3.0	22.5	0.66	0.42	55.9
8	T1	1091	6.5	0.477	4.5	LOS A	3.0	22.5	0.67	0.48	57.3
9	R2	2	0.0	0.477	12.1	LOS B	2.9	21.3	0.69	0.55	64.8
Approach		1111	6.4	0.477	4.5	LOS A	3.0	22.5	0.67	0.48	57.3
West: Kennedy Highway											
10	L2	106	4.0	0.302	3.5	LOS A	1.6	11.7	0.55	0.65	53.4
11	T1	11	10.0	0.302	4.0	LOS A	1.6	11.7	0.55	0.65	54.7
12	R2	631	5.7	0.302	11.5	LOS B	1.6	11.7	0.57	0.70	59.9
Approach		747	5.5	0.302	10.2	LOS B	1.6	11.7	0.56	0.69	58.8
All Vehicles		2914	6.1	0.477	5.3	LOS A	3.0	22.5	0.42	0.45	59.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101v [Captain Cook Highway Kennedy Highway Roundabout 2024PM - Pre Dev]

Captain Cook Highway / Kennedy Highway / Mount Milman Drive Roundabout With Bypass
2024 PM Traffic Volumes
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: Captain Cook Highway (South)											
1	L2	596	4.2	0.439	1.9	LOS A	3.6	26.2	0.10	0.22	59.8
2	T1	899	2.5	0.439	2.3	LOS A	3.6	26.2	0.11	0.24	61.1
3	R2	23	13.6	0.439	9.5	LOS A	3.6	25.7	0.11	0.24	68.7
Approach		1518	3.3	0.439	2.2	LOS A	3.6	26.2	0.11	0.23	60.7
East: Mount Milman Drive											
4	L2	61	10.3	0.050	3.6	LOS A	0.2	1.8	0.61	0.44	57.1
5	T1	11	0.0	0.011	4.1	LOS A	0.0	0.3	0.60	0.45	57.2
6	R2	1	0.0	0.011	11.2	LOS B	0.0	0.3	0.60	0.45	64.5
Approach		73	8.7	0.050	3.8	LOS A	0.2	1.8	0.61	0.44	57.2
North: Captain Cook Highway (North)											
7	L2	6	0.0	0.284	2.7	LOS A	1.5	11.1	0.51	0.33	56.9
8	T1	729	3.9	0.284	3.4	LOS A	1.5	11.1	0.52	0.35	58.3
9	R2	1	0.0	0.284	10.7	LOS B	1.4	10.4	0.54	0.38	66.2
Approach		737	3.9	0.284	3.4	LOS A	1.5	11.1	0.52	0.35	58.3
West: Kennedy Highway											
10	L2	103	3.1	0.245	4.1	LOS A	1.3	9.9	0.63	0.69	53.4
11	T1	4	0.0	0.245	4.5	LOS A	1.3	9.9	0.63	0.69	54.8
12	R2	433	6.6	0.245	12.3	LOS B	1.3	9.9	0.64	0.75	59.7
Approach		540	5.8	0.245	10.7	LOS B	1.3	9.9	0.64	0.74	58.4
All Vehicles		2867	4.1	0.439	4.2	LOS A	3.6	26.2	0.33	0.36	59.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101v [Captain Cook Highway Kennedy Highway Roundabout 2024PM - Post Dev]

Captain Cook Highway / Kennedy Highway / Mount Milman Drive Roundabout With Bypass
2024 PM Traffic Volumes
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: Captain Cook Highway (South)											
1	L2	596	4.6	0.439	1.9	LOS A	3.6	26.3	0.10	0.22	59.8
2	T1	899	2.5	0.439	2.3	LOS A	3.6	26.3	0.11	0.24	61.1
3	R2	23	13.6	0.439	9.5	LOS A	3.6	25.7	0.11	0.24	68.7
Approach		1518	3.5	0.439	2.2	LOS A	3.6	26.3	0.11	0.23	60.7
East: Mount Milman Drive											
4	L2	61	10.3	0.050	3.6	LOS A	0.2	1.8	0.61	0.44	57.1
5	T1	11	0.0	0.011	4.1	LOS A	0.0	0.3	0.60	0.45	57.2
6	R2	1	0.0	0.011	11.2	LOS B	0.0	0.3	0.60	0.45	64.5
Approach		73	8.7	0.050	3.8	LOS A	0.2	1.8	0.61	0.44	57.2
North: Captain Cook Highway (North)											
7	L2	6	0.0	0.284	2.7	LOS A	1.5	11.2	0.51	0.33	56.9
8	T1	729	3.9	0.284	3.4	LOS A	1.5	11.2	0.52	0.35	58.3
9	R2	1	0.0	0.284	10.7	LOS B	1.4	10.4	0.54	0.38	66.2
Approach		737	3.9	0.284	3.4	LOS A	1.5	11.2	0.52	0.35	58.3
West: Kennedy Highway											
10	L2	103	3.1	0.246	4.1	LOS A	1.4	10.0	0.63	0.69	53.4
11	T1	4	0.0	0.246	4.5	LOS A	1.4	10.0	0.63	0.69	54.8
12	R2	433	7.5	0.246	12.3	LOS B	1.4	10.0	0.64	0.75	59.7
Approach		540	6.6	0.246	10.7	LOS B	1.4	10.0	0.64	0.74	58.4
All Vehicles		2867	4.3	0.439	4.2	LOS A	3.6	26.3	0.33	0.36	59.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101v [Captain Cook Highway Kennedy Highway Roundabout 2027AM - Pre Dev]

Captain Cook Highway / Kennedy Highway / Mount Milman Drive Roundabout With Bypass
2027 AM Traffic Volumes
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: Captain Cook Highway (South)											
1	L2	403	9.1	0.319	1.8	LOS A	2.2	16.1	0.04	0.22	60.2
2	T1	644	2.9	0.319	2.3	LOS A	2.2	16.1	0.05	0.26	61.2
3	R2	56	9.4	0.319	9.4	LOS A	2.1	15.4	0.05	0.27	68.7
Approach		1103	5.5	0.319	2.5	LOS A	2.2	16.1	0.05	0.24	61.2
East: Mount Milman Drive											
4	L2	16	53.3	0.022	6.2	LOS A	0.1	1.2	0.80	0.68	55.8
5	T1	1	0.0	0.002	6.1	LOS A	0.0	0.1	0.86	0.57	54.2
6	R2	1	0.0	0.002	13.2	LOS B	0.0	0.1	0.86	0.57	60.6
Approach		18	47.1	0.022	6.6	LOS A	0.1	1.2	0.81	0.67	56.0
North: Captain Cook Highway (North)											
7	L2	19	5.6	0.517	3.9	LOS A	3.6	26.2	0.69	0.47	55.7
8	T1	1157	6.5	0.517	4.9	LOS A	3.6	26.2	0.70	0.53	57.1
9	R2	2	0.0	0.517	12.5	LOS B	3.3	24.5	0.72	0.61	64.5
Approach		1178	6.4	0.517	4.9	LOS A	3.6	26.2	0.70	0.53	57.1
West: Kennedy Highway											
10	L2	113	4.7	0.325	3.6	LOS A	1.7	12.8	0.57	0.67	53.2
11	T1	11	10.0	0.325	4.2	LOS A	1.7	12.8	0.57	0.67	54.6
12	R2	668	5.4	0.325	11.6	LOS B	1.7	12.8	0.59	0.71	59.8
Approach		792	5.3	0.325	10.4	LOS B	1.7	12.8	0.58	0.71	58.7
All Vehicles		3091	6.1	0.517	5.4	LOS A	3.6	26.2	0.44	0.47	58.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101v [Captain Cook Highway Kennedy Highway Roundabout 2027AM - Post Dev]

Captain Cook Highway / Kennedy Highway / Mount Milman Drive Roundabout With Bypass
2027 AM Traffic Volumes
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: Captain Cook Highway (South)											
1	L2	516	9.0	0.352	1.8	LOS A	2.5	18.6	0.05	0.22	60.2
2	T1	644	2.9	0.352	2.3	LOS A	2.5	18.6	0.05	0.26	61.2
3	R2	56	9.4	0.352	9.4	LOS A	2.5	17.8	0.05	0.27	68.7
Approach		1216	5.8	0.352	2.4	LOS A	2.5	18.6	0.05	0.24	61.1
East: Mount Milman Drive											
4	L2	16	53.3	0.023	6.6	LOS A	0.1	1.3	0.82	0.69	55.7
5	T1	1	0.0	0.002	6.5	LOS A	0.0	0.1	0.89	0.58	54.0
6	R2	1	0.0	0.002	13.6	LOS B	0.0	0.1	0.89	0.58	60.4
Approach		18	47.1	0.023	7.0	LOS A	0.1	1.3	0.82	0.68	55.9
North: Captain Cook Highway (North)											
7	L2	19	5.6	0.535	4.2	LOS A	3.8	28.3	0.73	0.51	55.5
8	T1	1157	6.5	0.535	5.2	LOS A	3.8	28.3	0.73	0.57	56.9
9	R2	2	0.0	0.535	12.9	LOS B	3.5	26.1	0.75	0.66	64.2
Approach		1178	6.4	0.535	5.2	LOS A	3.8	28.3	0.73	0.57	56.9
West: Kennedy Highway											
10	L2	113	4.7	0.355	3.8	LOS A	2.0	14.8	0.59	0.69	53.0
11	T1	11	10.0	0.355	4.4	LOS A	2.0	14.8	0.59	0.69	54.4
12	R2	732	5.8	0.355	11.8	LOS B	2.0	14.8	0.61	0.73	59.6
Approach		855	5.7	0.355	10.7	LOS B	2.0	14.8	0.61	0.72	58.6
All Vehicles		3266	6.2	0.535	5.6	LOS A	3.8	28.3	0.45	0.49	58.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101v [Captain Cook Highway Kennedy Highway Roundabout 2027PM - Pre Dev]

Captain Cook Highway / Kennedy Highway / Mount Milman Drive Roundabout With Bypass
2027 PM Traffic Volumes
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: Captain Cook Highway (South)											
1	L2	632	4.3	0.466	1.9	LOS A	4.0	29.2	0.11	0.22	59.8
2	T1	955	2.5	0.466	2.3	LOS A	4.0	29.2	0.12	0.24	61.1
3	R2	25	12.5	0.466	9.5	LOS A	4.0	28.6	0.12	0.24	68.6
Approach		1612	3.4	0.466	2.3	LOS A	4.0	29.2	0.11	0.23	60.7
East: Mount Milman Drive											
4	L2	65	11.3	0.055	3.8	LOS A	0.3	2.1	0.63	0.46	56.9
5	T1	11	0.0	0.011	4.2	LOS A	0.0	0.3	0.63	0.46	57.1
6	R2	1	0.0	0.011	11.3	LOS B	0.0	0.3	0.63	0.46	64.3
Approach		77	9.6	0.055	3.9	LOS A	0.3	2.1	0.63	0.46	57.0
North: Captain Cook Highway (North)											
7	L2	7	0.0	0.306	2.8	LOS A	1.7	12.3	0.53	0.33	56.7
8	T1	774	3.8	0.306	3.5	LOS A	1.7	12.3	0.54	0.36	58.2
9	R2	1	0.0	0.306	10.8	LOS B	1.6	11.4	0.56	0.39	66.0
Approach		782	3.8	0.306	3.5	LOS A	1.7	12.3	0.54	0.36	58.2
West: Kennedy Highway											
10	L2	109	2.9	0.266	4.3	LOS A	1.5	11.0	0.66	0.71	53.3
11	T1	5	0.0	0.266	4.7	LOS A	1.5	11.0	0.66	0.71	54.7
12	R2	459	6.4	0.266	12.5	LOS B	1.5	11.0	0.67	0.77	59.6
Approach		574	5.7	0.266	10.9	LOS B	1.5	11.0	0.66	0.75	58.3
All Vehicles		3044	4.1	0.466	4.2	LOS A	4.0	29.2	0.34	0.37	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101v [Captain Cook Highway Kennedy Highway Roundabout 2027PM - Post Dev]

Captain Cook Highway / Kennedy Highway / Mount Milman Drive Roundabout With Bypass
2027 PM Traffic Volumes
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: Captain Cook Highway (South)											
1	L2	680	4.8	0.481	1.9	LOS A	4.3	31.3	0.11	0.22	59.8
2	T1	955	2.5	0.481	2.3	LOS A	4.3	31.3	0.12	0.24	61.0
3	R2	25	12.5	0.481	9.5	LOS A	4.3	30.5	0.12	0.24	68.6
Approach		1660	3.6	0.481	2.2	LOS A	4.3	31.3	0.12	0.23	60.7
East: Mount Milman Drive											
4	L2	65	11.3	0.057	4.1	LOS A	0.3	2.3	0.67	0.50	56.7
5	T1	11	0.0	0.011	4.4	LOS A	0.1	0.4	0.66	0.47	56.8
6	R2	1	0.0	0.011	11.5	LOS B	0.1	0.4	0.66	0.47	64.1
Approach		77	9.6	0.057	4.2	LOS A	0.3	2.3	0.67	0.49	56.8
North: Captain Cook Highway (North)											
7	L2	7	0.0	0.327	3.0	LOS A	1.9	13.5	0.59	0.36	56.3
8	T1	774	3.8	0.327	3.8	LOS A	1.9	13.5	0.61	0.39	57.7
9	R2	1	0.0	0.327	11.2	LOS B	1.7	12.4	0.62	0.43	65.4
Approach		782	3.8	0.327	3.8	LOS A	1.9	13.5	0.61	0.39	57.7
West: Kennedy Highway											
10	L2	109	2.9	0.329	4.5	LOS A	2.0	14.3	0.69	0.74	52.8
11	T1	5	0.0	0.329	4.9	LOS A	2.0	14.3	0.69	0.74	54.2
12	R2	587	6.8	0.329	12.8	LOS B	2.0	14.3	0.69	0.79	59.2
Approach		702	6.1	0.329	11.4	LOS B	2.0	14.3	0.69	0.78	58.1
All Vehicles		3221	4.3	0.481	4.7	LOS A	4.3	31.3	0.37	0.40	59.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101v [Captain Cook Highway Kennedy Highway Roundabout 2037AM - Pre Dev]

Captain Cook Highway / Kennedy Highway / Mount Milman Drive Roundabout With Bypass
2037 AM Traffic Volumes
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: Captain Cook Highway (South)											
1	L2	492	9.2	0.389	1.8	LOS A	3.0	22.1	0.06	0.22	60.1
2	T1	784	3.0	0.389	2.3	LOS A	3.0	22.1	0.06	0.26	61.1
3	R2	68	7.7	0.389	9.4	LOS A	2.9	21.1	0.06	0.27	68.6
Approach		1344	5.5	0.389	2.5	LOS A	3.0	22.1	0.06	0.24	61.1
East: Mount Milman Drive											
4	L2	19	55.6	0.036	9.6	LOS A	0.2	2.4	0.93	0.79	53.7
5	T1	1	0.0	0.003	9.5	LOS A	0.0	0.2	1.00	0.61	52.5
6	R2	1	0.0	0.003	16.6	LOS B	0.0	0.2	1.00	0.61	58.8
Approach		21	50.0	0.036	9.9	LOS A	0.2	2.4	0.94	0.77	53.9
North: Captain Cook Highway (North)											
7	L2	23	4.5	0.691	5.7	LOS A	6.4	47.1	0.83	0.72	54.9
8	T1	1411	6.4	0.691	7.0	LOS A	6.4	47.1	0.84	0.81	56.2
9	R2	3	0.0	0.691	15.0	LOS B	5.7	42.2	0.85	0.94	63.3
Approach		1437	6.4	0.691	7.0	LOS A	6.4	47.1	0.84	0.81	56.2
West: Kennedy Highway											
10	L2	137	3.8	0.417	4.2	LOS A	2.4	17.8	0.65	0.72	52.9
11	T1	13	8.3	0.417	4.7	LOS A	2.4	17.8	0.65	0.72	54.2
12	R2	815	5.3	0.417	12.5	LOS B	2.4	17.8	0.67	0.78	59.3
Approach		964	5.1	0.417	11.2	LOS B	2.4	17.8	0.66	0.77	58.3
All Vehicles		3766	6.0	0.691	6.5	LOS A	6.4	47.1	0.52	0.60	58.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101v [Captain Cook Highway Kennedy Highway Roundabout 2037AM - Post Dev]

Captain Cook Highway / Kennedy Highway / Mount Milman Drive Roundabout With Bypass
2037 AM Traffic Volumes
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: Captain Cook Highway (South)											
1	L2	604	9.1	0.422	1.8	LOS A	3.4	25.3	0.06	0.22	60.1
2	T1	784	3.0	0.422	2.3	LOS A	3.4	25.3	0.06	0.26	61.1
3	R2	68	7.7	0.422	9.4	LOS A	3.3	24.1	0.07	0.27	68.6
Approach		1457	5.7	0.422	2.4	LOS A	3.4	25.3	0.06	0.24	61.0
East: Mount Milman Drive											
4	L2	19	55.6	0.038	10.6	LOS B	0.3	2.6	0.95	0.81	53.0
5	T1	1	0.0	0.003	10.4	LOS B	0.0	0.2	1.00	0.61	52.0
6	R2	1	0.0	0.003	17.5	LOS B	0.0	0.2	1.00	0.61	58.1
Approach		21	50.0	0.038	10.9	LOS B	0.3	2.6	0.96	0.79	53.2
North: Captain Cook Highway (North)											
7	L2	23	4.5	0.719	6.3	LOS A	7.0	51.7	0.87	0.80	54.7
8	T1	1411	6.4	0.719	7.7	LOS A	7.0	51.7	0.87	0.90	56.0
9	R2	3	0.0	0.719	15.8	LOS B	6.2	45.6	0.88	1.04	63.0
Approach		1437	6.4	0.719	7.7	LOS A	7.0	51.7	0.87	0.90	56.0
West: Kennedy Highway											
10	L2	137	3.8	0.452	4.6	LOS A	2.9	21.4	0.68	0.77	52.7
11	T1	13	8.3	0.452	5.2	LOS A	2.9	21.4	0.68	0.77	54.0
12	R2	878	5.6	0.452	13.0	LOS B	2.9	21.4	0.70	0.83	59.1
Approach		1027	5.4	0.452	11.8	LOS B	2.9	21.4	0.69	0.82	58.1
All Vehicles		3942	6.1	0.719	6.8	LOS A	7.0	51.7	0.53	0.64	58.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101v [Captain Cook Highway Kennedy Highway Roundabout 2037PM - Pre Dev]

Captain Cook Highway / Kennedy Highway / Mount Milman Drive Roundabout With Bypass
2037 PM Traffic Volumes
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: Captain Cook Highway (South)											
1	L2	771	4.4	0.569	1.9	LOS A	6.0	43.3	0.14	0.22	59.6
2	T1	1163	2.4	0.569	2.3	LOS A	6.0	43.3	0.15	0.24	60.8
3	R2	31	13.8	0.569	9.6	LOS A	6.0	42.9	0.16	0.25	68.3
Approach		1964	3.4	0.569	2.3	LOS A	6.0	43.3	0.15	0.23	60.5
East: Mount Milman Drive											
4	L2	80	10.5	0.075	4.4	LOS A	0.4	3.2	0.73	0.55	56.4
5	T1	13	0.0	0.013	4.7	LOS A	0.1	0.5	0.72	0.50	56.5
6	R2	1	0.0	0.013	11.8	LOS B	0.1	0.5	0.72	0.50	63.7
Approach		94	9.0	0.075	4.6	LOS A	0.4	3.2	0.73	0.54	56.5
North: Captain Cook Highway (North)											
7	L2	8	0.0	0.398	3.0	LOS A	2.4	17.5	0.62	0.36	56.1
8	T1	943	3.8	0.398	3.8	LOS A	2.4	17.5	0.63	0.39	57.6
9	R2	1	0.0	0.398	11.2	LOS B	2.2	16.0	0.65	0.43	65.2
Approach		953	3.8	0.398	3.8	LOS A	2.4	17.5	0.63	0.39	57.6
West: Kennedy Highway											
10	L2	129	3.3	0.356	5.3	LOS A	2.2	16.4	0.76	0.80	52.8
11	T1	5	0.0	0.356	5.7	LOS A	2.2	16.4	0.76	0.80	54.2
12	R2	559	6.4	0.356	13.8	LOS B	2.2	16.4	0.76	0.85	58.9
Approach		694	5.8	0.356	12.2	LOS B	2.2	16.4	0.76	0.84	57.6
All Vehicles		3704	4.1	0.569	4.6	LOS A	6.0	43.3	0.40	0.40	59.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.

MOVEMENT SUMMARY

Site: 101v [Captain Cook Highway Kennedy Highway Roundabout 2037PM - Post Dev]

Captain Cook Highway / Kennedy Highway / Mount Milman Drive Roundabout With Bypass
2037 PM Traffic Volumes
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: Captain Cook Highway (South)											
1	L2	818	4.8	0.584	1.9	LOS A	6.4	46.6	0.15	0.22	59.5
2	T1	1163	2.4	0.584	2.4	LOS A	6.4	46.6	0.16	0.24	60.8
3	R2	31	13.8	0.584	9.6	LOS A	6.4	46.1	0.17	0.24	68.2
Approach		2012	3.6	0.584	2.3	LOS A	6.4	46.6	0.16	0.23	60.4
East: Mount Milman Drive											
4	L2	80	10.5	0.081	5.0	LOS A	0.5	3.6	0.78	0.62	56.1
5	T1	13	0.0	0.013	5.3	LOS A	0.1	0.6	0.78	0.55	56.0
6	R2	1	0.0	0.013	12.4	LOS B	0.1	0.6	0.78	0.55	63.2
Approach		94	9.0	0.081	5.2	LOS A	0.5	3.6	0.78	0.61	56.2
North: Captain Cook Highway (North)											
7	L2	8	0.0	0.427	3.3	LOS A	2.7	19.6	0.69	0.39	55.7
8	T1	943	3.8	0.427	4.2	LOS A	2.7	19.6	0.70	0.44	57.2
9	R2	1	0.0	0.427	11.8	LOS B	2.5	18.2	0.71	0.51	64.6
Approach		953	3.8	0.427	4.2	LOS A	2.7	19.6	0.70	0.44	57.1
West: Kennedy Highway											
10	L2	129	3.3	0.428	5.9	LOS A	3.0	22.1	0.79	0.87	52.4
11	T1	5	0.0	0.428	6.3	LOS A	3.0	22.1	0.79	0.87	53.7
12	R2	687	6.7	0.428	14.6	LOS B	3.0	22.1	0.79	0.91	58.2
Approach		822	6.1	0.428	13.2	LOS B	3.0	22.1	0.79	0.91	57.2
All Vehicles		3880	4.3	0.584	5.1	LOS A	6.4	46.6	0.44	0.44	58.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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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Appendix 13n

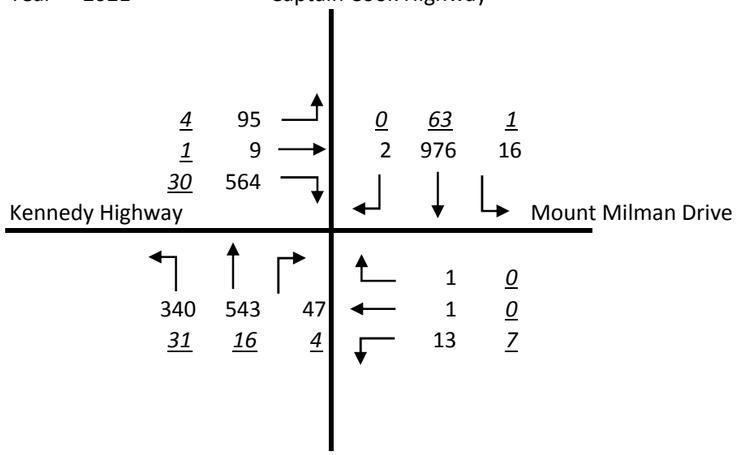
Captain Cook CSTM Volumes

Environmental Impact Statement

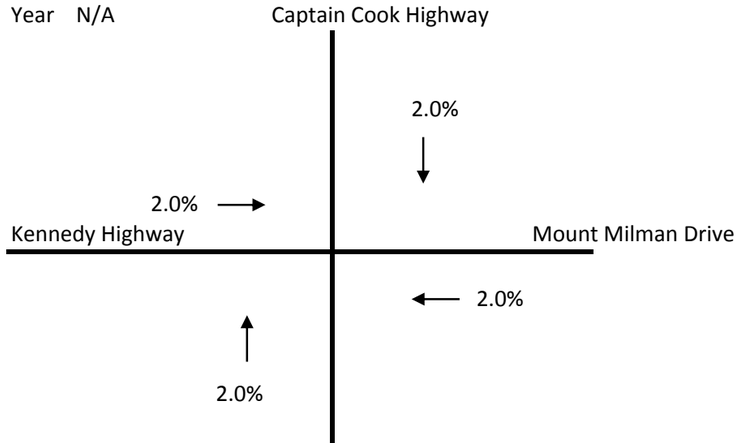
Intersection of Captain Cook Highway/Kennedy Highway/Mount Milman Drive Traffic Volume Total Vehicles

XX *XX*
XX *XX*
Heavy Vehicles

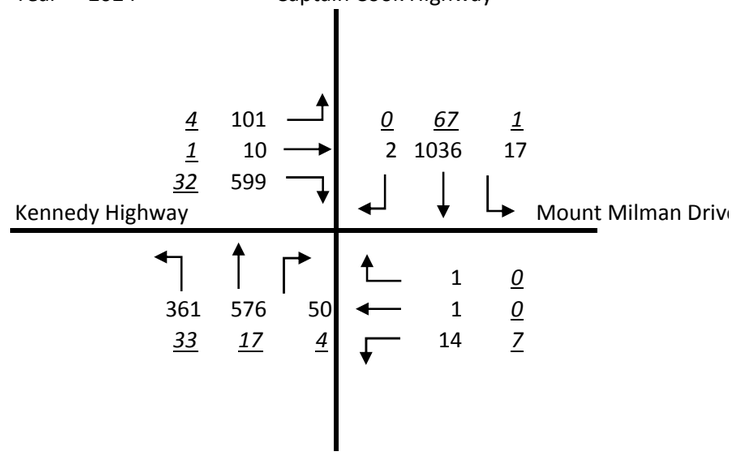
Period AM Peak
Year 2021



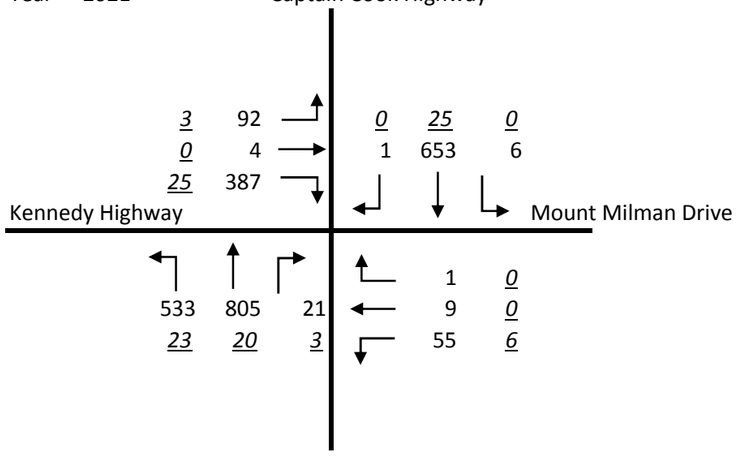
Growth Rate
Year N/A



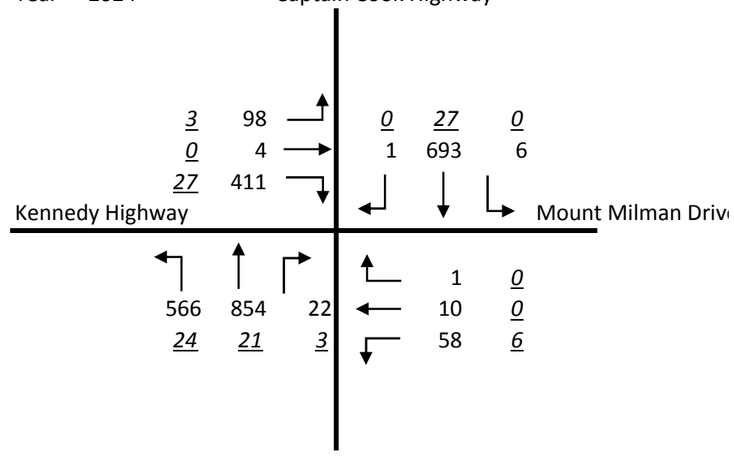
Period AM Peak
Year 2024



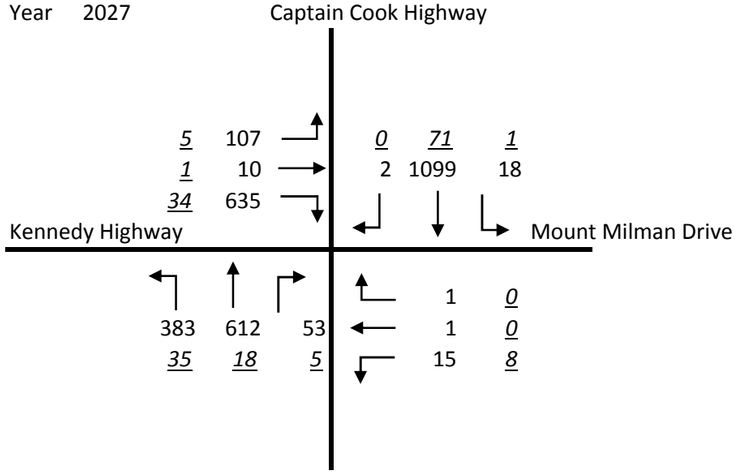
Period PM Peak
Year 2021



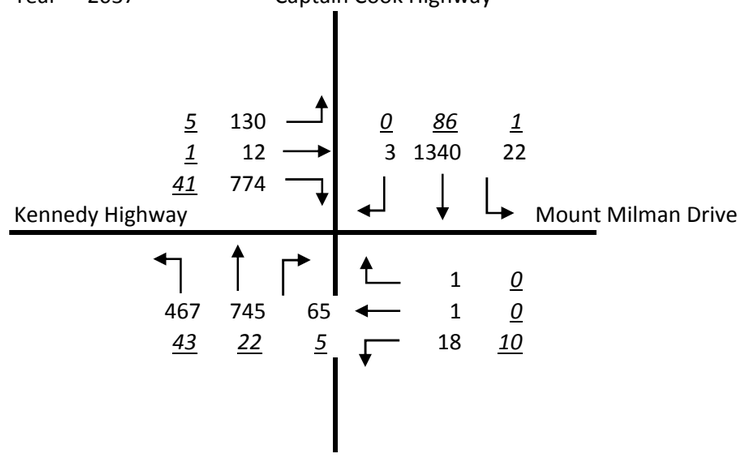
Period PM Peak
Year 2024



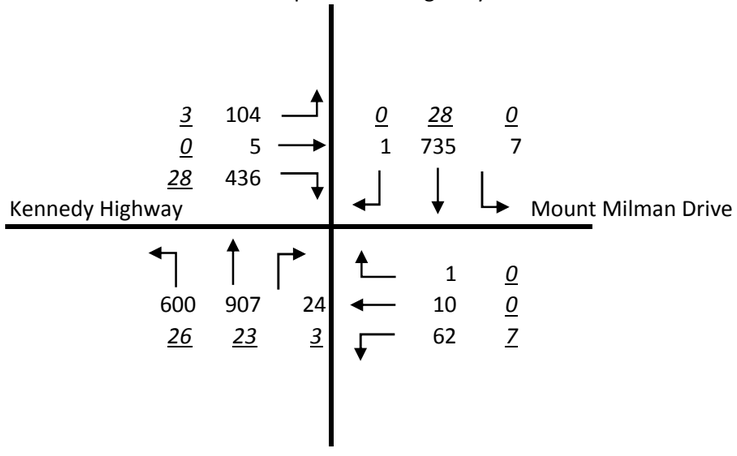
Period AM Peak
Year 2027



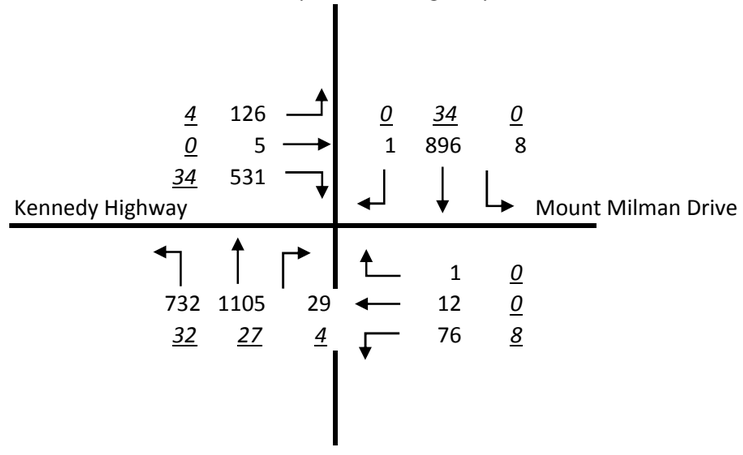
Period AM Peak
Year 2037



Period PM Peak
Year 2027



Period PM Peak
Year 2037



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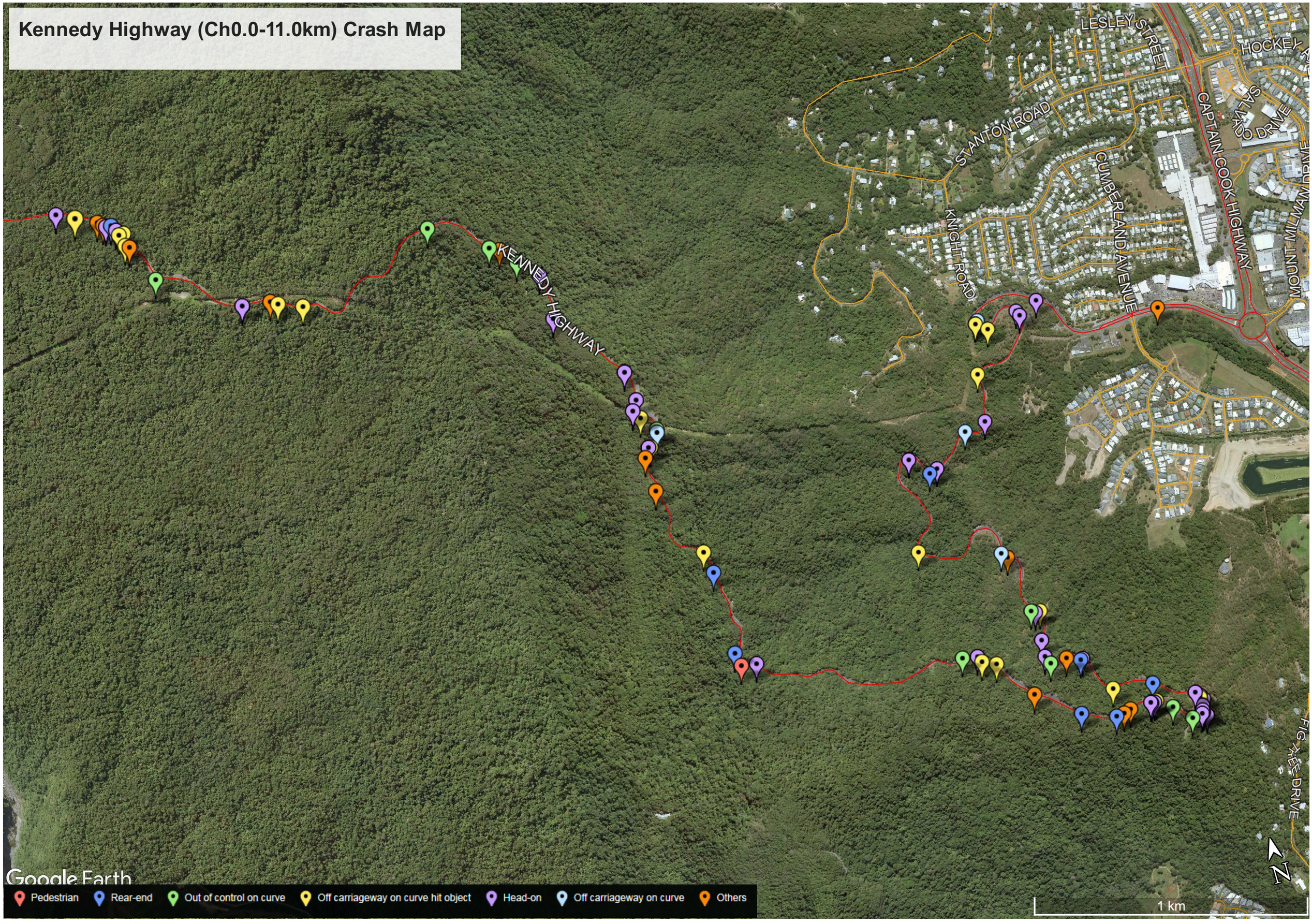
Appendix 13o

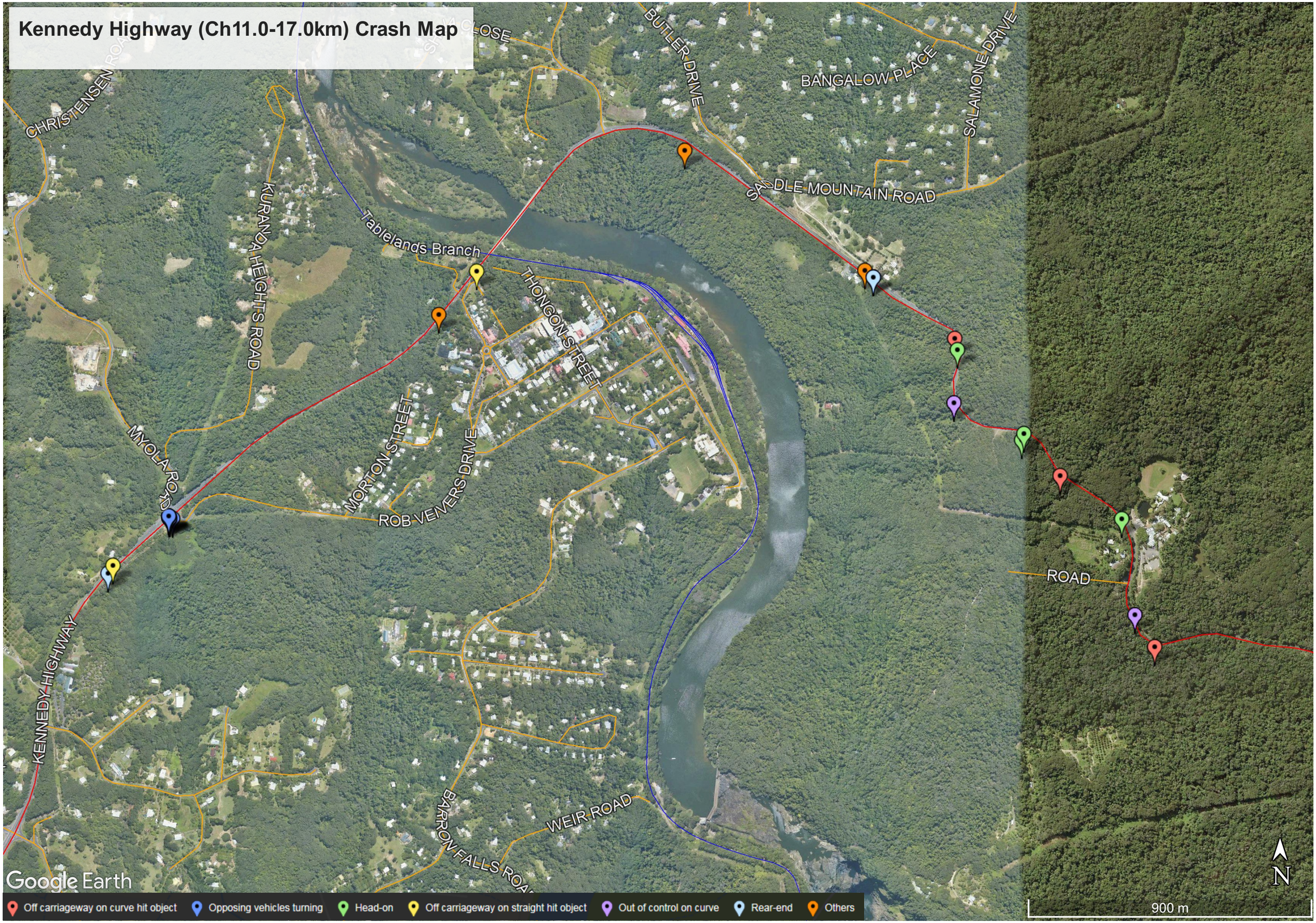
Crash Locations

Environmental Impact Statement

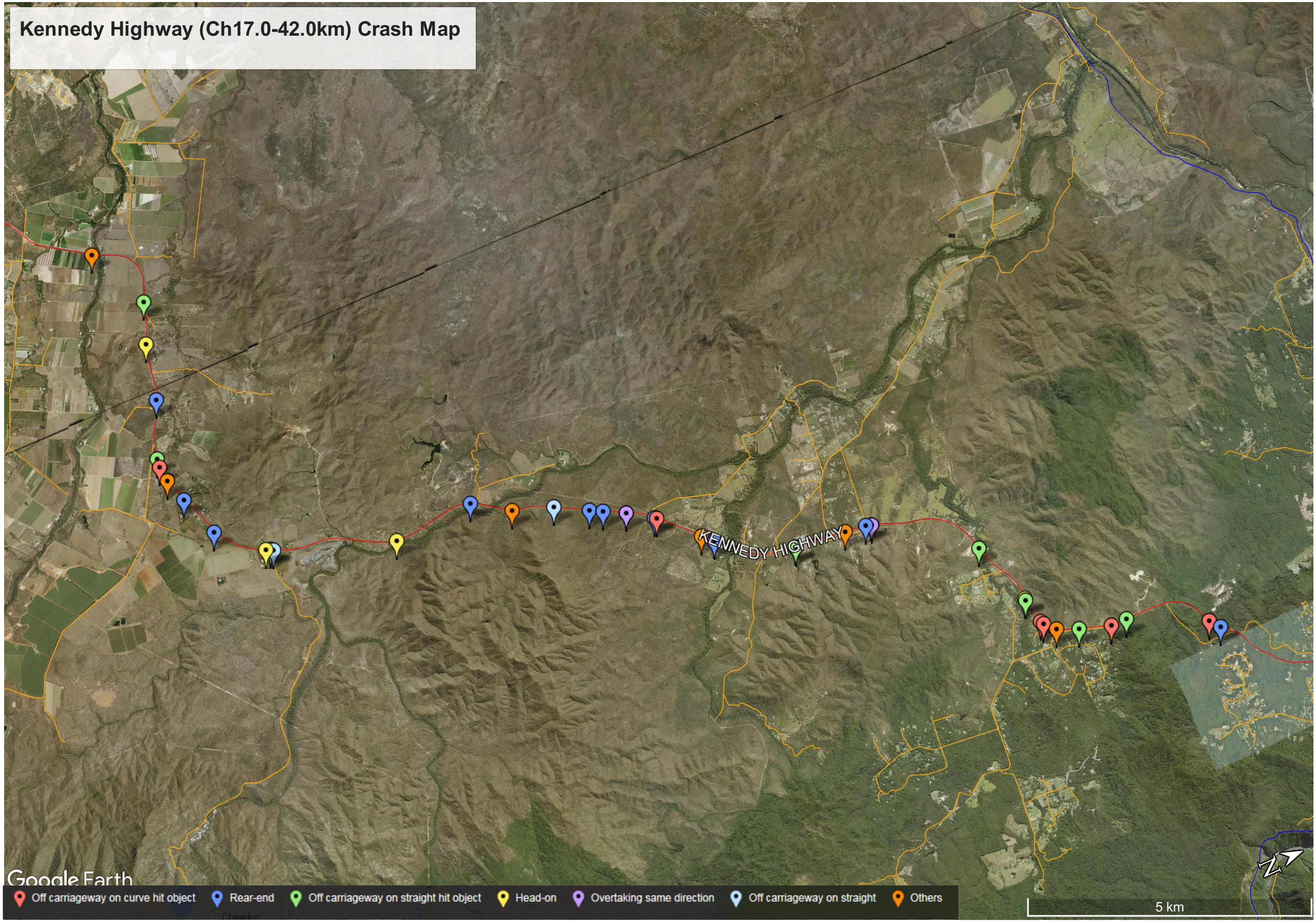
Kennedy Highway (Ch0.0-11.0km) Crash Map



Kennedy Highway (Ch11.0-17.0km) Crash Map



Kennedy Highway (Ch17.0-42.0km) Crash Map



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Appendix 13p

Crash Mitigation Calculations

Environmental Impact Statement

CRASH MITIGATION CALCULATIONS

Kennedy Highway (Ch0.0-11.0km) Crash Mitigation

Crash reduction calculations are provided in Table 1 below. The reduction in crashes are based on the proposed safety improvements (VSL) and the expected reduction in crashes that would have occurred under a reduced speed limit in accordance with the currently proposed speed reductions.

Table 1 Crash Reduction Factors and Eligible Crashes under the Proposed VSL System for Kennedy Highway Ch0.0 to Ch11.0km.

Expected Crash Reduction	**40%**	**20%**	**10%**	**0%**	**Total**
Crashes Eligible for Reduction	17	26	11	35	89
Expected Reduction in Crashes	6.8	5.2	1.1	0	13.1
Crashes Remaining	10.2	20.8	9.9	35	75.9
			Expected % Crash Reduction		14.7%

Kennedy Highway (Ch11.0-17.0km) Crash Mitigation

Crash reduction calculations are provided in Table 2 below. The reduction in crashes are based on the proposed safety improvements (VSL) and the expected reduction in crashes that would have occurred under a reduced speed limit in accordance with the currently proposed speed reductions.

Table 2 Crash Reduction Factors and Eligible Crashes under the Proposed VSL System for Kennedy Highway Ch11.0 to Ch17.0km.

Expected Crash Reduction	**40%**	**20%**	**10%**	**0%**	**Total**
Crashes Eligible for Reduction	3	3	1	10	17
Expected Reduction in Crashes	1.2	0.6	0.1	0	1.9
Crashes Remaining	1.8	2.4	0.9	10	15.1
			Expected % Crash Reduction		11.2%

Kennedy Highway (Ch17.0-42.0km) Crash Mitigation

Crash reduction calculations are provided in Table 3 below. The reduction in crashes are based on the proposed safety improvements and the expected reduction in crashes that would have occurred with these mitigation measures implemented.

Table 3 Crash Reduction Factors and Eligible Crashes under the proposed safety improvements for Kennedy Highway Ch17.0 to Ch42.0km.

DCA Code	Frequency	Proposed Reduction Method	Reduction Factor	% Already Introduced	Proposed Scale of Improvements	Secondary Treatment	Reduction Factor	% Already Introduced	Proposed Scale of Improvements	Crash Reduction
104	1									
201	4	Centreline Audiotactile Linemarking	-20%	15%	50%					-0.4
202	1	Centreline Audiotactile Linemarking	-20%	15%	50%					-0.1
301	7	Guide Signs	-10%	50%						-0.35
303	3	Guide Signs	-10%	50%						-0.15
404	1									
406	1									

502	1	Centreline Audiotactile Linemarking	-10%	15%	50%	Wire Rope Barrier	-85%	50%	18%	-0.206188
503	1	Centreline Audiotactile Linemarking	-5%	15%	50%					-0.025
506	1	Centreline Audiotactile Linemarking	-5%	15%	50%					-0.025
609	1									
702	1	Centreline Audiotactile Linemarking	-10%	15%	50%	Wire Rope Barrier	-85%	50%	18%	-0.206188
703	5	Centreline Audiotactile Linemarking	-10%	15%	50%	Wire Rope Barrier	-90%	50%	18%	-1.076875
704	3	Centreline Audiotactile Linemarking	-10%	15%	50%	Wire Rope Barrier	-90%	50%	18%	-0.646125
705	1	Centreline Audiotactile Linemarking	-10%	15%	50%					-0.05

803	4	Centreline Audiotactile Linemarking	-10%	15%	50%	Wire Rope Barrier	-90%	50%	18%	-0.8615
804	2	Centreline Audiotactile Linemarking	-10%	15%	50%	Wire Rope Barrier	-90%	50%	18%	-0.43075
805	1	Centreline Audiotactile Linemarking	-10%	15%	50%					-0.05
Total	39							Reduction in Crashes		-4.577625
								% Reduction in Crashes		-11.7%

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Appendix 13q

Crash Reduction Factors

Environmental Impact Statement

Crash Reduction Factors (CRFs) Matrix

				Multi Vehicle Crashes																								Single Vehicle Crashes											
	DCA Group			1		2		3		4		5		6		7		8		9		10		11			12		13		14		15		16		17		18	
	DCA Codes			100 Intersection, adjacent		200 Head on		300 Opposing Vehicles Turning		400 Rear end		500 Lane change		600 Parallel lanes turning		700 U-turn		800 Entering roadway		900 Overtaking, same direction		1000 Hit parked vehicle		1100 Hit railway train			1200 Hit pedestrian		1300 Permanent obstruction		1400 Hit animal		1500 Off carriageway on straight		1600 Off carriageway on straight		1700 Out of control, on straight		1800 Off carriageway, on curve	
No.	Description	Primary Cr	Treatment	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High		Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
	Speed Environment *(Low: <80km/h; High ≥80km/h)*																																						
1.01	Bridges (Widen or Replace)	All	Bridges			-40	-40													-40	-40						-40	-40	-40	-40			-40	-40	-40	-40	-40	-40	-40	-40
1.02	Alignment - Change Horizontal & Vert	All	Road Geometry			-50	-50			-40	-40					-15	-15			-20	-20			-60	-60		-40	-40	-20	-20	-20	-20							-25	-35
1.03	Alignment - Change Vertical	All	Road Geometry			-15	-5			-15	-5					-10	-5			-15	-15			-45	-45		-20	-20	-20	-20	-20	-20								
1.04	Duplicate Road	All	Road Geometry	-30	-30	-100	-100			-30	-30					-30	-30	-50	-50	-80	-50	-15	-15				-50	-50						-10		-10		-10		-10
1.05	Route Traffic Calming Scheme	All	Road Geometry	-40		-40		-40		-40		-40		-40		-40		-25		-40		-40					-30		-40		-40		-25		-25		-25		-40	
1.06	Install New Seal on Poor Surface(wet surface crashes only)	All	Road Surface			-5	-5			-20	-20													-10	-10								-5	-5	-5	-5	-5	-5	-10	-10
1.07	Install New Signing - Guide Signs	All	Signs							-10	-10	-10	-10	-10	-10					-10	-10																			
1.08	Install New Signing - Warning Signs	All	Signs			-5	-5			-10	-5																		-10	-5									
1.09	Install VAS Speed Roundel Signs	All	Signs	-35	-30			-30										-30	-30														-30	-30	-30	-30	-30	-30	-30	-30
1.10	Install VAS Warning Signs	All	Signs	-35	-35			-35										-35	-35														-35	-35	-35	-35	-35	-35	-35	-35
1.11	Reduce Speed Limit to 80/90 km/h(reduced speed limit by 10km/h))	All	Speed Limit Management	-20	-15	-20	-15	-20	-15	-20	-15			-20	-15	-20	-15	-20	-15			-20	-15	-20	-15		-20	-20	-20	-15	-20	-15	-10	-10	-10	-10	-10	-10	-10	-10
1.12	Install Street Lighting (night time crashes only)	All	Street Lighting	-20	-25	-20	-25	-20	-25	-20	-25	-20	-25	-20	-25	-20	-25	-10	-10								-20	-25	-25	-25	-25	-25	-25	-30	-25	-30			-25	-30
2.01	Install Audio Tactile Line Marking (ATLM) Centreline	Head On	Linemarking			-20	-20	-20	-20											-5	-5												-10	-10	-10	-10	-10	-10	-10	-10
2.02	Install Central line or Barrier Line Marking	Head On	Linemarking			-10	-10													-35	-35																		
2.03	Install wide centre line treatment with ATLM	Head On	Linemarking			-60	-60													-15	-15						-10	-10					-40	-40	-40	-40	-15	-15	-10	-10
2.04	Install wide centre line treatment with out ATLM	Head On	Linemarking			-30	-30													-15	-15						-10	-10							-10	-10				
2.05	Install painted median with Wire rope safety barrier	Head On	Linemarking			-95	-95	-20	-20											-50	-50												-40	-40	-40	-40	-25	-25	-40	-40
2.06	Install RRPM's on Centre Line Only (night time crashes only)	Head On	Linemarking			-5	-5													-5	-5												-5	-5	-5	-5			-10	-15
2.07	Overtake/Climbing Lanes	Head On	Road Geometry			-25	-25													-40	-40												-15	-30	-15	-30				
2.08	Install w-beam guardrail on Median, Dual Carriageway	Head On	Safety Barriers and Cushions	-20	-20	-90	-90									-100	-100	-50	-50	-100	-100												-50	-50	-65	-65			-50	-50
2.09	Install wire rope barrier on median from no existing barrier	Head On	Safety Barriers and Cushions	-20	-20	-95	-95									-100	-100	-50	-50	-100	-100												-85	-85	-90	-90			-85	-85
2.10	Install concrete barrier on median from no existing barrier	Head On	Safety Barriers and Cushions	-20	-20	-95	-95									-100	-100	-50	-50	-100	-100												-50	-50	-65	-65			-50	-50
2.11	Replace w-beam on median with wire rope barrier	Head On	Safety Barriers and Cushions																																-65	-65				
2.12	Replace concrete barrier on median with wire rope barrier	Head On	Safety Barriers and Cushions																																-65	-65				
3.01	Roundabout 1 lane	Intersection	Intersection Layout	-85	-85	-70	-70	-85	-85	20	20					-50	-50										30	30												
3.02	Roundabout 2 lane	Intersection	Intersection Layout	-85	-85	-70	-70	-85	-85	20	20	20	20	20	20	-50	-50										30	30												
3.03	Street closure - one leg of x intersection	Intersection	Intersection Layout	-70	-70			-70	-70	-50	-50																-30	-30												
3.04	Street closure - T intersection (close stem of Tee)	Intersection	Intersection Layout	-100	-100			-100	-100	-75	-75			-100	-100												-50	-50												
3.05	Grade separation of intersection	Intersection	Intersection Layout	-100	-100			-100	-100					-50													-70	-70												
3.06	Median closure (extended median through intersection)	Intersection	Intersection Layout	-100	-100	-30	-20	-100	-100	-50	-50			-50	-50	-100	-100			-100	-100						-40	-30												
3.07	Stagger x intersection (x into staggered T,L/R configuration)	Intersection	Intersection Layout	-100	-100					10	10																													
3.08	Seagull island without acceleration lane, raised island	Intersection	Intersection Layout	-10	-10	-30	-20	-40	-40	-60	-60	-40	-40	-10	-10	-15	-15			-100	-100						-25	-25												
3.09	Seagull island with acceleration lane, raised island	Intersection	Intersection Layout	-20	-20	-30	-20	-40	-40	-60	-60	-40	-40	-40	-40	-15	-15			-100	-100						-25	-25												
3.10	Seagull island without acceleration lane, painted island	Intersection	Intersection Layout	-10	-10			-40	-40	-60	-60	-40	-40	-10	-10	-15	-15			-70	-70						-15	-15												
3.11	Seagull island with acceleration lane, painted island	Intersection	Intersection Layout	-20	-20			-40	-40	-60	-60	-40	-40	-40	-40	-15	-15			-70	-70						-15	-15												
3.12	Left turn acceleration lane	Intersection	Intersection Layout	-80	-80					-40	-40	-40	-40					-10	-10																				
3.13	Separate left turn deceleration lane, painted or channelised	Intersection	Intersection Layout	-15	-15					-40	-40			-40	-40			-10	-10								-10	-10												
3.14	Move Limit Forward Using Kerb Extensions on Priority Road	Intersection	Intersection Layout	-15	-15													-15	-15			-20	-20				-20	-20												

3.15	Upgrade T junction from no existing treatment to Channelised right turn treatment (CHR),pavement widening with a right turn lane	Intersection	Intersection Layout	-20	-20					-70	-70									-70	-70						-10	-10												
3.16	Upgrading T junction from Basic Right Turn(BAR) to CHR	Intersection	Intersection Layout	-10	-10					-40	-40									-40	-40						-10	-10												
3.17	Upgrading T junction from Auxiliary Right Turn (AUR) to CHR	Intersection	Intersection Layout	-5	-5					-30	-30									-30	-30						-10	-10												
3.18	Changing slip lane from low entry angle to high entry angle	Intersection	Intersection Layout							-50	-50																														
3.19	Move Limit Lines Forward Using Paint Markings	Intersection	Linemarking	-10	-10																																				
3.20	Install Transverse Rumble strips on approaches	Intersection	Linemarking							-70	-70																														
3.21	Install Raised Threshold at Crossing Point	Intersection	Pedestrians, Cyclists, Motorcyclists	-30				-30		10						-30											-80														
3.22	Main Street Treatment (Kerb Extension/Median)	Intersection	Road Geometry	-30																							-50														
3.23	Improve Sight Distance: Remove Impediments on Main Road	Intersection	Road Geometry	-15	-15			-15	-15									-30	-30								-15	-15												
3.24	Install New Seal on Unsealed Approach to Sealed Road	Intersection	Road Surface	-15	-15	-15				-30	-30																														
3.25	Install New signing - Stop sign at T intersection	Intersection	Signs	-20	-20																						-10	-10												
3.26	Install New signing - Stop sign at X intersection	Intersection	Signs	-25	-25			-20	-20																		-15	-15												
3.27	Install New signing - Give Way sign at T intersection	Intersection	Signs	-15	-15																						-10	-10												
3.28	Install New signing - Give Way sign at X intersection	Intersection	Signs	-20	-20			-15	-15																		-15	-15												
3.29	Install New signing - Prohibit Right Turn and/or U-turn - Priority controlled	Intersection	Signs	-15	-15			-40	-40	-60	-60			-50	-50	-60	-60																								
3.30	New signing - Prohibit Right Turn and/or U-turn - Signalised	Intersection	Signs	-15	-15			-40	-40	-30	-30			-50	-50																										
3.31	Install New Signing - Intersection Warning (can including flashing lights with sign)	Intersection	Signs	-10	-10			-20	-20	-25	-25	-10	-10																												
3.32	Install additional Priority Signs on Median Islands	Intersection	Signs	-30	-20			-10	-10	-20	-20									-20	-20						-25	-25												
3.33	Install Lighting - Intersection, night time crashes only	Intersection	Street Lighting	-15	-20			-15	-20	-15	-20	-15	-20	-15	-20	-15	-20	-15	-20								-15	-20	-15	-20	-15	-20								
3.34	Install New traffic signals: filter turns allowed	Intersection	Traffic Signals	-70	-70			30	30	20	20																-5	-5												
3.35	Install New traffic signals: No filter turns allowed	Intersection	Traffic Signals	-70	-70			-70	-70	20	20																-30	-30												
3.36	Install Fully control right turn with arrows	Intersection	Traffic Signals					-80	-80							-80	-80										-30	-30												
3.37	Introduce right turn phase while leaving filter	Intersection	Traffic Signals					-5	-5																		-5	-5												
3.38	Upgrade signal display (mast arm/additional lanterns)	Intersection	Traffic Signals	-10	-10			-10	-10	-25	-25																-10	-10												
3.39	S lane treatment - protected	Intersection				-10	-10			-60	-60			-40	-40					-60	-60																				
3.40	S lane treatment - painted	Intersection								-60	-60			-40	-40					-70	-70																				
3.41	Install Extended Length of Raised Median	Intersection	Road Geometry			-30	-30											-20	-20	-90	-90						-50	-50					-30	-30					-30	-30
3.42	Upgrade T junction from no existing treatment to Channelised right turn treatment (CHR),pavement widening with a right turn lane (only right turn rear end crashes)	Intersection	Intersection Layout	-20	-20					-80	-80									-70	-70						-10	-10												
3.43	Upgrading T junction from Basic Right Turn(BAR) to CHR (only right turn rear end crashes)	Intersection	Intersection Layout	-10	-10					-80	-80									-40	-40						-10	-10												
3.44	Upgrading T junction from Auxiliary Right Turn (AUR) to CHR (only right turn rear end crashes)	Intersection	Intersection Layout	-5	-5					-80	-80									-30	-30						-10	-10												
4.01	Install Painted Line to Separate Through & Parking Lane, reinforced with Kerb Ext.	Other	Linemarking															-20				-60					-20					-5		-5				-5		
4.02	Install Painted Line to Separate Through and Parking Lane	Other	Linemarking															-20	-20			-40	-40									-5	-5	-5	-5			-5	-5	
4.03	Install Marked Pedestrian Crossing	Other	Pedestrians, Cyclists, Motorcyclists							10																	-5													
4.04	Install Pedestrian - Guard Rail/ Fencing (median)	Other	Pedestrians, Cyclists, Motorcyclists			-100										-100				-100							-50													
4.05	Install Pedestrian - Kerb Extensions, Marked Pedestrian Crossing	Other	Pedestrians, Cyclists, Motorcyclists			-10				10												-50					-20													
4.06	Install Pedestrian - Kerb Extensions, No Crossing Marked	Other	Pedestrians, Cyclists, Motorcyclists			-10																-50					-10													
4.07	Install Pedestrian - Mid-block Signals	Other	Pedestrians, Cyclists, Motorcyclists							20	20																-50	-50												

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-10	-10	-10	-10		7
					10
					10
-30	-30	-30	-30		10
-35	-35	-35	-35		10
-10	-10	-10	-10		10
-25	-30	-25	-30		10
-10	-10	-10	-10		5
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-10	-10	-15	-15		5
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-40	-40	-25	-25		5
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-15	-30				15
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-15	-15	-5	-5	3
-20	-40	-20	-20	5
-5	-10	-15	-15	5
-20	-70	-20	-20	20
-25	-50	-25	-25	20
-5	-5	-5	-5	20
-45	-45	-45	-45	20
-30	-30	-30	-30	20
-20	-20	-20	-20	20
-35	-35	-35	-35	20
-90	-90			20
-60	-40			20
-90	-90	-60	-60	20
-90	-90			20
-90	-90	-60	-60	20
-90	-90			20
-40				15
-80	-80			15
				10
-65	-65			15
-90	-90			20
-65	-65			20
-65	-65	-5	-5	20
-65	-65	-5	-5	20
-10	-20			5
-15	-45	-15	-15	10
-10	-25	-10	-10	10
-25	-20	-25	-20	5

KUR-World

Appendix 13r

Cairns Airport Arrivals and Departures

Environmental Impact Statement

Cairns International Terminal

Yearly Summary Schedules

(All Dates & Times Are Local Based)

Schedules Valid as of **16/11/2017**

International Arrivals

Carrier	Flight No	Date From	Date To	M	T	W	T	F	S	S	STA	City Pair	Via	Aircraft	Codeshare
IU	IU0951	03/09/2014	31/12/2018	M		W		F			17:15	HGU		AT4	
QT	QT0942	07/11/2014	13/08/2017			W		F			09:15	LNV		AT4	
CG	CG7951	14/08/2017	31/07/2018			W		F			09:00	LNV		AT7	
CG	CG7955	14/08/2017	31/07/2018	M							11:00	POM		AT7	
HX	HX0016	08/11/2017	21/03/2018			W					12:20	OOL		333	/VA5986
JQ	JQ0025	08/11/2017	29/11/2017			W					11:05	SYD		788	/QF249/JL5080
PX	PX0090	08/11/2017	21/03/2018		Tu	W					10:55	POM		F70	
PX	PX0098	08/11/2017	21/03/2018	M	Tu	W					18:25	POM		F70	
PX	PX0401	08/11/2017	21/03/2018			W					10:20	MXH		DH3	
CX	CX0147	09/11/2017	22/03/2018				Th				06:45	HKG		333	/AY5833/LH7031/LX9531/QR5814 /BA4557
JQ	JQ0016	09/11/2017	18/12/2017	M	Tu		Th		Sa	Su	05:15	KIX		788	/QF242/JL5083
JQ	JQ0026	09/11/2017	30/11/2017		Tu		Th				04:40	NRT		788	/QF250/JL5089
MI	MI0811	09/11/2017	24/03/2018	M			Th		Sa		10:00	SIN		738	/LH7198/LX4800/SQ5271/VA5899
PR	PR0218	09/11/2017	05/12/2017	M	Tu		Th	F			07:30	MNL		320	
PR	PR0219	09/11/2017	05/12/2017	M	Tu		Th	F			22:00	AKL		320	
PX	PX0098	09/11/2017	23/03/2018				Th	F		Su	18:25	POM		100	
PX	PX0090	09/11/2017	24/03/2018	M			Th	F	Sa	Su	10:55	POM		100	
HX	HX0016	10/11/2017	23/03/2018					F		Su	12:20	OOL		333	/VA5986
JQ	JQ0026	10/11/2017	18/12/2017	M		W		F	Sa	Su	04:40	NRT		788	/QF250/JL5089
JQ	JQ0025	10/11/2017	01/12/2017					F			10:45	MEL		788	/QF249/JL5080
JQ	JQ0093	10/11/2017	23/03/2018					F			07:40	DPS		320	

International Arrivals

Carrier	Flight No	Date From	Date To	M	T	W	T	F	S	S	STA	City Pair	Via	Aircraft	Codeshare
CX	CX0147	11/11/2017	24/03/2018						Sa		06:45	HKG		333	/AY5833/LH7031/LX9531/QR5814 /BA4557
JQ	JQ0091	11/11/2017	24/03/2018	M		W			Sa		05:45	DPS		320	/QF254
CX	CX0147	12/11/2017	18/03/2018							Su	06:45	HKG		333	/AY5833/LH7031/LX9531/OS8083 /QR5814/BA4557
MI	MI0813	15/11/2017	03/01/2018			W		F			17:20	SIN		738	/LH7212/LX4820/SQ5339/VA5903
HX	HX0016	05/12/2017	05/12/2017		Tu						12:20	OOL		333	/VA5986
JQ	JQ0026	05/12/2017	22/03/2018		Tu		Th				04:40	NRT		788	/QF250/JL5089
HX	HX0016	09/12/2017	24/03/2018		Tu				Sa		12:20	OOL		333	/VA5986
JQ	JQ0016	19/12/2017	01/02/2018	M	Tu	W	Th	F	Sa	Su	05:15	KIX		788	/QF242/JL5083
HU	HU0745	20/12/2017	25/03/2018			W				Su	08:30	SZX		332	
JQ	JQ0026	20/12/2017	31/01/2018	M		W			Sa		04:40	NRT		788	/QF250/JL5089
JQ	JQ0026	22/12/2017	28/01/2018					F		Su	04:40	NRT		788	/QF250/JL5089
JQ	JQ0025	22/12/2017	28/01/2018					F		Su	10:45	MEL		788	/QF249/JL5080
LJ	LJ0659	23/12/2017	31/01/2018			W			Sa		06:10	ICN		772	/KE5785
MI	MI0813	05/01/2018	19/01/2018					F			17:20	SIN		738	/LH7212/LX4820/SQ5339/VA5903
TO	TOM925	05/01/2018	05/01/2018					F			14:10	APW		75W	
MI	MI0813	10/01/2018	24/01/2018			W					17:20	SIN		738	/LH7212/LX4820/SQ5339/VA5903
MI	MI0813	26/01/2018	23/03/2018			W		F			17:20	SIN		738	/LH7212/LX4820/SQ5339/VA5903
TO	TOM926	31/01/2018	31/01/2018			W					14:10	APW		75W	
HX	HX0016	01/02/2018	01/03/2018				Th				12:20	OOL		333	/VA5986
JQ	JQ0025	01/02/2018	01/02/2018				Th				10:45	MEL		788	/QF249/JL5080
JQ	JQ0016	02/02/2018	25/03/2018	M	Tu	W		F	Sa	Su	05:15	KIX		788	/QF242/JL5083
JQ	JQ0026	02/02/2018	02/02/2018	M				F	Sa	Su	04:40	NRT		788	/QF250/JL5089
JQ	JQ0026	03/02/2018	03/02/2018						Sa		04:40	NRT		788	/QF250/JL5089
JQ	JQ0025	03/02/2018	03/02/2018						Sa		10:45	MEL		788	/QF249/JL5080
MU	MU0751	03/02/2018	24/02/2018		Tu		Th		Sa		08:40	PVG		332	
JQ	JQ0026	04/02/2018	26/02/2018	M				F	Sa	Su	04:40	NRT		788	/QF250/JL5089
JQ	JQ0026	07/02/2018	21/03/2018			W					04:40	NRT		788	/QF250/JL5089

International Arrivals

Carrier	Flight No	Date From	Date To	M	T	W	T	F	S	S	STA	City Pair	Via	Aircraft	Codeshare
JQ	JQ0025	08/02/2018	22/03/2018				Th				10:45	MEL		788	/QF249/JL5080
JQ	JQ0025	02/03/2018	02/03/2018					F			10:45	OOL		788	/QF249/JL5080
JQ	JQ0026	02/03/2018	02/03/2018					F			04:40	NRT		788	/QF250/JL5089
JQ	JQ0026	03/03/2018	25/03/2018	M				F	Sa	Su	04:40	NRT		788	/QF250/JL5089
CX	CX0147	25/03/2018	25/03/2018							Su	06:45	HKG		333	/AY5833/LH7031/LX9531/OS8083 /QR5814/BA4557
HX	HX0016	25/03/2018	25/03/2018							Su	12:20	OOL		333	/VA5986
NZ	NZ0775	25/03/2018	25/03/2018							Su	09:35	AKL		320	/VA7457/CA5107/SQ4233/UA678 7
JQ	JQ0091	26/03/2018	31/08/2018	M		W		F	Sa		07:40	DPS		320	/QF254
JQ	JQ0016	26/03/2018	09/04/2018	M	Tu	W	Th	F	Sa	Su	05:15	KIX		788	/QF242/JL5083
JQ	JQ0026	26/03/2018	09/04/2018	M	Tu	W	Th	F	Sa	Su	04:50	NRT		788	/QF250/JL5089
MI	MI0811	26/03/2018	27/10/2018	M			Th		Sa		10:25	SIN		738	/LH7198/LX4800/SQ5271/VA5899
HX	HX0016	27/03/2018	23/10/2018		Tu						12:40	OOL		333	/VA5986
CX	CX0146	28/03/2018	29/04/2018			W	Th		Sa	Su	13:40	BNE		333	/AY5860/BA4556
CX	CX0103	28/03/2018	28/03/2018			W					06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531 /QR5814/OS8083
HU	HU0745	28/03/2018	28/10/2018			W				Su	08:30	SZX		333	
HX	HX0016	28/03/2018	24/10/2018			W				Su	12:15	OOL		333	/VA5986
MI	MI0813	28/03/2018	26/10/2018			W		F			17:10	SIN		738	/LH7212/LX4820/SQ5339/VA5903
CX	CX0103	29/03/2018	29/03/2018				Th				06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531 /QR5814/OS8083
NZ	NZ0775	29/03/2018	31/03/2018				Th		Sa		11:45	AKL		320	/VA7457/CA5107/SQ4233/UA678 7
HX	HX0016	30/03/2018	26/10/2018					F			12:15	OOL		333	/VA5986
CX	CX0103	31/03/2018	07/04/2018						Sa		06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531 /QR5814
HX	HX0016	31/03/2018	27/10/2018						Sa		12:40	OOL		333	/VA5986
CX	CX0103	01/04/2018	01/04/2018							Su	06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531 /QR5814/OS8083

International Arrivals

Carrier	Flight No	Date From	Date To	M	T	W	T	F	S	S	STA	City Pair	Via	Aircraft	Codeshare
NZ	NZ0775	01/04/2018	24/06/2018							Su	10:35	AKL		320	/VA7457/CA5107/SQ4233/UA6787
CX	CX0103	04/04/2018	11/04/2018			W					06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531/QR5814/OS8083
CX	CX0103	05/04/2018	05/04/2018				Th				06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531/QR5814/OS8083
NZ	NZ0775	05/04/2018	10/05/2018				Th		Sa		12:45	AKL		320	/VA7457/CA5107/SQ4233/UA6787
CX	CX0103	08/04/2018	08/04/2018							Su	06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531/QR5814/OS8083
JQ	JQ0026	10/04/2018	25/04/2018	M	Tu	W		F	Sa	Su	04:50	NRT		788	/QF250/JL5089
JQ	JQ0016	10/04/2018	26/04/2018	M	Tu		Th		Sa	Su	05:15	KIX		788	/QF242/JL5083
CX	CX0103	12/04/2018	12/04/2018				Th				06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531/QR5814/OS8083
CX	CX0103	14/04/2018	14/04/2018						Sa		06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531/QR5814/OS8083
CX	CX0103	15/04/2018	15/04/2018							Su	06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531/QR5814/OS8083
CX	CX0103	18/04/2018	02/05/2018			W					06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531/QR5814/OS8083
CX	CX0103	19/04/2018	26/04/2018				Th				06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531/QR5814/OS8083
CX	CX0103	21/04/2018	28/04/2018						Sa		06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531/QR5814/OS8083
CX	CX0103	22/04/2018	29/04/2018							Su	06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531/QR5814/OS8083
JQ	JQ0016	27/04/2018	08/05/2018	M	Tu	W	Th	F	Sa	Su	05:15	KIX		788	/QF242/JL5083
JQ	JQ0026	27/04/2018	08/05/2018	M	Tu	W	Th	F	Sa	Su	04:50	NRT		788	/QF250/JL5089
CX	CX0146	02/05/2018	25/10/2018			W	Th		Sa	Su	13:40	BNE		333	/AY5860/BA4556
CX	CX0103	03/05/2018	03/05/2018				Th				06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531/QR5814/OS8083
CX	CX0103	05/05/2018	27/10/2018						Sa		06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531/QR5814/OS8083

International Arrivals

Carrier	Flight No	Date From	Date To	M	T	W	T	F	S	S	STA	City Pair	Via	Aircraft	Codeshare
CX	CX0103	06/05/2018	06/05/2018							Su	06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531 /QR5814/OS8083
CX	CX0103	09/05/2018	24/10/2018			W					06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531 /QR5814/OS8083
JQ	JQ0026	09/05/2018	21/07/2018	M		W		F	Sa	Su	04:50	NRT		788	/QF250/JL5089
CX	CX0103	10/05/2018	18/10/2018				Th				06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531 /QR5814/OS8083
JQ	JQ0016	10/05/2018	21/07/2018	M	Tu		Th		Sa	Su	05:15	KIX		788	/QF242/JL5083
CX	CX0103	13/05/2018	21/10/2018							Su	06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531 /QR5814/OS8083
NZ	NZ0775	17/05/2018	21/06/2018				Th				12:45	AKL		320	/VA7457/CA5107/SQ4233/UA678 7
NZ	NZ0165	28/06/2018	27/09/2018				Th				12:45	AKL		789	/VA7457/CA5107/SQ4233/UA678 7
NZ	NZ0775	29/06/2018	27/07/2018			W		F			10:35	AKL		320	/VA7457/CA5107/SQ4233/UA678 7
NZ	NZ0775	30/06/2018	29/09/2018						Sa		12:45	AKL		320	/VA7457/CA5107/SQ4233/UA678 7
NZ	NZ0165	01/07/2018	23/09/2018							Su	10:35	AKL		789	/VA7457/CA5107/SQ4233/UA678 7
JQ	JQ0016	22/07/2018	01/09/2018	M	Tu	W	Th	F	Sa	Su	05:15	KIX		788	/QF242/JL5083
JQ	JQ0026	22/07/2018	01/09/2018	M	Tu	W	Th	F	Sa	Su	04:50	NRT		788	/QF250/JL5089
NZ	NZ0775	03/08/2018	28/09/2018					F			10:35	AKL		320	/VA7457/CA5107/SQ4233/UA678 7
NZ	NZ0165	30/09/2018	28/10/2018							Su	09:35	AKL		789	/VA7457/CA5107/SQ4233/UA678 7
NZ	NZ0165	04/10/2018	11/10/2018				Th				11:45	AKL		789	/VA7457/CA5107/SQ4233/UA678 7
NZ	NZ0775	05/10/2018	12/10/2018					F			09:35	AKL		320	/VA7457/CA5107/SQ4233/UA678 7
NZ	NZ0775	06/10/2018	13/10/2018						Sa		11:45	AKL		320	/VA7457/CA5107/SQ4233/UA678 7
NZ	NZ0775	18/10/2018	25/10/2018				Th				11:45	AKL		320	/VA7457/CA5107/SQ4233/UA678 7

CX	CX0103	25/10/2018	25/10/2018				Th			06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531 /QR5814/OS8083
CX	CX0146	27/10/2018	27/10/2018						Sa	13:40	BNE		333	/AY5860/BA4556
CX	CX0146	28/10/2018	28/10/2018							Su 13:40	BNE		333	/BA4556/AY5860
CX	CX0103	28/10/2018	28/10/2018							Su 06:30	HKG		333	/AY5833/BA4557/LH7031/LX9531 /QR5814/OS8083
HX	HX0016	28/10/2018	04/11/2018							Su 12:20	OOL		333	
HX	HX0016	30/10/2018	06/11/2018	Tu					Sa	12:20	OOL		333	
HX	HX0016	31/10/2018	07/11/2018		W					12:20	OOL		333	
CX	CX0147	01/11/2018	08/11/2018				Th		Sa	06:45	HKG		333	
HX	HX0016	02/11/2018	02/11/2018					F		12:20	OOL		333	
CX	CX0147	04/11/2018	04/11/2018						Su	06:45	HKG		333	

Cairns International Terminal

Yearly Summary Schedules

(All Dates & Times Are Local Based)

Schedules Valid as of **16/11/2017**

International Departures

Carrier	Flight No	Date From	Date To	M	T	W	T	F	S	S	STA	City Pair	Via	Aircraft	Codeshare
IU	IU0950	03/09/2014	31/12/2018		Tu		Th			Su	06:30	HGU		AT4	
QT	QT0941	07/11/2014	13/08/2017	M		W					13:45	LNV		AT4	
CG	CG7950	14/08/2017	31/07/2018	M		W					13:30	LNV		AT7	
CG	CG7954	14/08/2017	31/07/2018					F			10:25	LNV	POM-RAB	AT7	
HX	HX0016	08/11/2017	21/03/2018			W					13:50	HKG		333	/VA5986
JQ	JQ0015	08/11/2017	17/12/2017	M		W		F	Sa	Su	13:00	KIX		788	/QF241/JL5084
JQ	JQ0025	08/11/2017	29/11/2017			W					12:15	NRT		788	/QF249/JL5080
PX	PX0091	08/11/2017	22/03/2018		Tu	W	Th				06:30	POM		F70	
PX	PX0093	08/11/2017	21/03/2018		Tu	W					11:45	POM		F70	
PX	PX0400	08/11/2017	21/03/2018			W					13:30	MXH		DH3	
CX	CX0146	09/11/2017	21/12/2017				Th				08:45	HKG		333	/LH7030/LX9530/QR5815/BA4556 /AY5106
JQ	JQ0025	09/11/2017	03/12/2017	M	Tu		Th		Sa	Su	12:15	NRT		788	/QF249/JL5080
JQ	JQ0090	09/11/2017	22/03/2018				Th				21:45	DPS		320	/QF255
JQ	JQ0026	09/11/2017	30/11/2017		Tu		Th				07:10	MEL		788	
MI	MI0812	09/11/2017	24/03/2018	M			Th		Sa		10:55	SIN		738	/LH7199/LX4801/SQ5272/VA5898
PR	PR0218	09/11/2017	05/12/2017	M	Tu		Th	F			08:30	AKL		320	
PR	PR0219	09/11/2017	05/12/2017	M	Tu		Th	F			23:00	MNL		320	
PX	PX0093	09/11/2017	24/03/2018	M			Th	F	Sa	Su	11:45	POM		100	
HX	HX0016	10/11/2017	23/03/2018					F		Su	13:50	HKG		333	/VA5986
JQ	JQ0090	10/11/2017	23/03/2018		Tu			F		Su	18:50	DPS		320	/QF255
JQ	JQ0025	10/11/2017	01/12/2017					F			12:15	NRT		788	/QF249/JL5080
PX	PX0091	10/11/2017	24/03/2018	M				F	Sa		06:30	POM		100	

International Departures

Carrier	Flight No	Date From	Date To	M	T	W	T	F	S	S	STA	City Pair	Via	Aircraft	Codeshare
CX	CX0146	11/11/2017	23/12/2017						Sa		08:05	HKG		333	/LH7030/LX9530/QR5815/BA4556 /AY5106
CX	CX0146	12/11/2017	17/12/2017							Su	08:05	HKG		333	/LH7030/LX9530/QR5815/BA4556 /AY5106
MI	MI0814	15/11/2017	23/03/2018			W		F			18:10	SIN		738	/LH7213/LX4821/SQ5340/VA5902
JQ	JQ0025	04/12/2017	17/12/2017	M	Tu	W	Th	F	Sa	Su	12:15	NRT		788	/QF249/JL5080
HX	HX0016	05/12/2017	05/12/2017		Tu						13:50	HKG		333	/VA5986
HX	HX0016	09/12/2017	24/03/2018		Tu				Sa		13:50	HKG		333	/VA5986
JQ	JQ0025	18/12/2017	30/01/2018	M	Tu	W	Th		Sa		12:15	NRT		788	/QF249/JL5080
JQ	JQ0015	18/12/2017	31/01/2018	M	Tu	W	Th	F	Sa	Su	13:00	KIX		788	/QF241/JL5084
HU	HU0746	20/12/2017	21/03/2018			W				Su	10:30	SZX		332	
JQ	JQ0026	22/12/2017	28/01/2018					F		Su	07:10	MEL		788	/QF250/JL5089
JQ	JQ0025	22/12/2017	28/01/2018					F		Su	12:15	NRT		788	/QF249/JL5080
LJ	LJ0660	23/12/2017	27/01/2018						Sa		07:20	ICN		772	/KE5786
CX	CX0146	24/12/2017	24/12/2017							Su	08:05	HKG		333	/LH7030/LX9530/QR5815/BA4556 /AY5106
LJ	LJ0660	27/12/2017	31/01/2018			W					07:20	ICN		772	/KE5786
CX	CX0146	28/12/2017	28/12/2017				Th				08:45	HKG		333	/LH7030/LX9530/QR5815/BA4556 /AY5106
CX	CX0146	30/12/2017	30/12/2017						Sa		08:05	HKG		333	/LH7030/LX9530/QR5815/BA4556 /AY5106
CX	CX0146	31/12/2017	31/12/2017							Su	08:05	HKG		333	/LH7030/LX9530/QR5815/BA4556 /AY5106
CX	CX0146	04/01/2018	15/02/2018				Th				08:45	HKG		333	/LH7030/LX9530/QR5815/BA4556 /AY5106
CX	CX0146	06/01/2018	06/01/2018						Sa		08:05	HKG		333	/LH7030/LX9530/QR5815/BA4556 /AY5106
CX	CX0146	07/01/2018	18/02/2018							Su	08:05	HKG		333	/LH7030/LX9530/QR5815/BA4556 /AY5106
TO	TOM925	07/01/2018	07/01/2018							Su	11:00	REP		75W	
CX	CX0146	13/01/2018	24/03/2018						Sa		08:05	HKG		333	/LH7030/LX9530/QR5815/BA4556 /AY5106

International Departures

Carrier	Flight No	Date From	Date To	M	T	W	T	F	S	S	STA	City Pair	Via	Aircraft	Codeshare
JQ	JQ0025	31/01/2018	02/02/2018	M	Tu	W		F	Sa	Su	12:15	NRT		788	/QF249/JL5080
HX	HX0016	01/02/2018	01/03/2018				Th				13:50	HKG		333	/VA5986
JQ	JQ0025	01/02/2018	01/02/2018				Th				12:15	NRT		788	/QF249/JL5080
JQ	JQ0015	01/02/2018	24/03/2018	M	Tu		Th	F	Sa	Su	13:00	KIX		788	/QF241/JL5084
TO	TOM926	02/02/2018	02/02/2018					F			11:00	REP		75W	
JQ	JQ0026	03/02/2018	03/02/2018						Sa		06:55	OOL		788	
JQ	JQ0025	03/02/2018	03/02/2018						Sa		12:15	NRT		788	/QF249/JL5080
MU	MU0752	03/02/2018	24/02/2018		Tu		Th		Sa		11:00	PVG		332	
JQ	JQ0025	04/02/2018	28/02/2018	M	Tu	W		F	Sa	Su	12:15	NRT		788	/QF249/JL5080
JQ	JQ0026	07/02/2018	21/03/2018			W					07:10	MEL		788	
JQ	JQ0025	08/02/2018	22/03/2018				Th				12:15	NRT		788	/QF249/JL5080
CX	CX0146	22/02/2018	22/02/2018				Th				08:45	HKG		333	/LH7030/LX9530/QR5815/BA4556 /AY5106
CX	CX0146	25/02/2018	18/03/2018							Su	08:05	HKG		333	/LH7030/LX9530/QR5815/BA4556 /AY5106
CX	CX0146	01/03/2018	22/03/2018				Th				08:45	HKG		333	/LH7030/LX9530/QR5815/BA4556 /AY5106
JQ	JQ0025	02/03/2018	02/03/2018					F			12:15	NRT		788	/QF249/JL5089
JQ	JQ0026	02/03/2018	02/03/2018					F			07:10	MEL		788	
JQ	JQ0025	03/03/2018	24/03/2018	M	Tu	W		F	Sa	Su	12:15	NRT		788	/QF249/JL5080
CX	CX0146	25/03/2018	25/03/2018							Su	08:05	HKG		333	/LH7030/LX9530/QR5815/BA4556 /AY5860
HU	HU0746	25/03/2018	24/10/2018			W				Su	10:30	SZX		333	
HX	HX0016	25/03/2018	25/03/2018							Su	13:50	HKG		333	/VA5986
JQ	JQ0015	25/03/2018	08/04/2018	M	Tu	W	Th	F	Sa	Su	13:00	KIX		788	/QF241/JL5084
JQ	JQ0025	25/03/2018	08/04/2018	M	Tu	W	Th	F	Sa	Su	12:00	NRT		788	/QF249/JL5080
JQ	JQ0090	25/03/2018	31/08/2018		Tu		Th	F		Su	21:45	DPS		320	/QF255
NZ	NZ0776	25/03/2018	25/03/2018							Su	10:50	AKL		320	/VA7456/CA5108/SQ4234/UA6786
MI	MI0812	26/03/2018	27/10/2018	M			Th		Sa		11:15	SIN		738	/LH7199/LX4801/SQ5272/VA5898

International Departures

Carrier	Flight No	Date From	Date To	M	T	W	T	F	S	S	STA	City Pair	Via	Aircraft	Codeshare
HX	HX0016	27/03/2018	23/10/2018		Tu						14:30	HKG		333	/VA5986
CX	CX0146	28/03/2018	29/04/2018			W	Th		Sa	Su	14:50	HKG		333	/AY5860/BA4556/LH7030/LX9530 /QR5815
CX	CX0103	28/03/2018	28/03/2018			W					07:45	BNE		333	/AY5833/BA4557
HX	HX0016	28/03/2018	24/10/2018			W				Su	13:50	HKG		333	/VA5986
MI	MI0814	28/03/2018	26/10/2018			W		F			18:00	SIN		738	/LH7213/LX4821/SQ5340/VA5902
CX	CX0103	29/03/2018	29/03/2018				Th				07:45	BNE		333	/AY5833/BA4557
NZ	NZ0776	29/03/2018	31/03/2018				Th		Sa		13:00	AKL		320	/VA7456/CA5108/SQ4234/UA678 6
HX	HX0016	30/03/2018	26/10/2018					F			13:45	HKG		333	/VA5986
CX	CX0103	31/03/2018	07/04/2018						Sa		07:45	BNE		333	/AY5833/BA4557
HX	HX0016	31/03/2018	27/10/2018						Sa		15:20	HKG		333	/VA5986
CX	CX0103	01/04/2018	01/04/2018							Su	07:45	BNE		333	/AY5833/BA4557
NZ	NZ0776	01/04/2018	24/06/2018							Su	11:50	AKL		320	/VA7456/CA5108/SQ4234/UA678 6
CX	CX0103	04/04/2018	11/04/2018			W					07:45	BNE		333	/AY5833/BA4557
CX	CX0103	05/04/2018	05/04/2018				Th				07:45	BNE		333	/AY5833/BA4557
NZ	NZ0776	05/04/2018	10/05/2018				Th		Sa		14:00	AKL		320	/VA7456/CA5108/SQ4234/UA678 6
CX	CX0103	08/04/2018	08/04/2018							Su	07:45	BNE		333	/AY5833/BA4557
JQ	JQ0015	09/04/2018	25/04/2018	M		W		F	Sa	Su	13:00	KIX		788	/QF241/JL5084
JQ	JQ0025	09/04/2018	24/04/2018	M	Tu		Th	F	Sa	Su	12:00	NRT		788	/QF249/JL5080
CX	CX0103	12/04/2018	12/04/2018				Th				07:45	BNE		333	/AY5833/BA4557
CX	CX0103	14/04/2018	14/04/2018						Sa		07:45	BNE		333	/AY5833/BA4557
CX	CX0103	15/04/2018	15/04/2018							Su	07:45	BNE		333	/AY5833/BA4557
CX	CX0103	18/04/2018	02/05/2018			W					07:45	BNE		333	/AY5833/BA4557
CX	CX0103	19/04/2018	26/04/2018				Th				07:45	BNE		333	/AY5833/BA4557
CX	CX0103	21/04/2018	28/04/2018						Sa		07:45	BNE		333	/AY5833/BA4557
CX	CX0103	22/04/2018	29/04/2018							Su	07:45	BNE		333	/AY5833/BA4557
JQ	JQ0025	26/04/2018	07/05/2018	M	Tu	W	Th	F	Sa	Su	12:00	NRT		788	/QF249/JL5080

International Departures

Carrier	Flight No	Date From	Date To	M	T	W	T	F	S	S	STA	City Pair	Via	Aircraft	Codeshare
JQ	JQ0015	26/04/2018	07/05/2018	M	Tu	W	Th	F	Sa	Su	13:00	KIX		788	/QF241/JL5084
CX	CX0146	02/05/2018	25/10/2018			W	Th		Sa	Su	14:50	HKG		333	/AY5860/BA4556/LH7030/LX9530 /QR5815
CX	CX0103	03/05/2018	03/05/2018				Th				07:45	BNE		333	/AY5833/BA4557
CX	CX0103	05/05/2018	27/10/2018						Sa		07:45	BNE		333	/AY5833/BA4557
CX	CX0103	06/05/2018	06/05/2018							Su	07:45	BNE		333	/AY5833/BA4557
JQ	JQ0025	08/05/2018	20/07/2018		Tu		Th	F	Sa	Su	12:00	NRT		788	/QF249/JL5080
CX	CX0103	09/05/2018	24/10/2018			W					07:45	BNE		333	/AY5833/BA4557
JQ	JQ0015	09/05/2018	20/07/2018	M		W		F	Sa	Su	13:00	KIX		788	/QF241/JL5084
CX	CX0103	10/05/2018	18/10/2018				Th				07:45	BNE		333	/AY5833/BA4557
CX	CX0103	13/05/2018	21/10/2018							Su	07:45	BNE		333	/AY5833/BA4557
NZ	NZ0776	17/05/2018	21/06/2018				Th				14:00	AKL		320	/VA7456/CA5108/SQ4234/UA6786
NZ	NZ0166	28/06/2018	27/09/2018				Th				14:00	AKL		789	/VA7456/CA5108/SQ4234/UA6786
NZ	NZ0776	29/06/2018	27/07/2018			W		F			11:50	AKL		320	/VA7456/CA5108/SQ4234/UA6786
NZ	NZ0776	30/06/2018	29/09/2018						Sa		14:00	AKL		320	/VA7456/CA5108/SQ4234/UA6786
NZ	NZ0166	01/07/2018	23/09/2018							Su	11:50	AKL		789	/VA7456/CA5108/SQ4234/UA6786
JQ	JQ0015	21/07/2018	31/08/2018	M	Tu	W	Th	F	Sa	Su	13:00	KIX		788	/QF241/JL5084
JQ	JQ0025	21/07/2018	31/08/2018	M	Tu	W	Th	F	Sa	Su	12:00	NRT		788	/QF249/JL5080
NZ	NZ0776	03/08/2018	28/09/2018					F			11:50	AKL		320	/VA7456/CA5108/SQ4234/UA6786
NZ	NZ0166	30/09/2018	28/10/2018							Su	10:50	AKL		789	/VA7456/CA5108/SQ4234/UA6786
NZ	NZ0166	04/10/2018	11/10/2018				Th				13:00	AKL		789	/VA7456/CA5108/SQ4234/UA6786
NZ	NZ0776	05/10/2018	12/10/2018					F			10:50	AKL		320	/VA7456/CA5108/SQ4234/UA6786

NZ	NZ0776	06/10/2018	13/10/2018					Sa		13:00	AKL		320	/VA7456/CA5108/SQ4234/UA6786
NZ	NZ0776	18/10/2018	25/10/2018				Th			13:00	AKL		320	/VA7456/CA5108/SQ4234/UA6786
CX	CX0103	25/10/2018	25/10/2018				Th			07:45	BNE		333	/AY5833/BA4557
CX	CX0146	27/10/2018	27/10/2018					Sa		14:50	HKG		333	/AY5860/BA4556/LH7030/LX9530/QR5815
CX	CX0146	28/10/2018	28/10/2018						Su	14:50	HKG		333	/BA4556/LH7030/LX9530/QR5815/AY5860
CX	CX0103	28/10/2018	28/10/2018						Su	07:45	BNE		333	/AY5833/BA4557
HX	HX0016	28/10/2018	04/11/2018						Su	13:50	HKG		333	
HX	HX0016	30/10/2018	06/11/2018	Tu				Sa		13:50	HKG		333	
HX	HX0016	31/10/2018	07/11/2018		W					13:50	HKG		333	
CX	CX0146	01/11/2018	08/11/2018				Th			08:45	HKG		333	/LH7030/LX9530/QR5815/BA4556/AY5860
HX	HX0016	02/11/2018	02/11/2018					F		13:50	HKG		333	
CX	CX0146	03/11/2018	04/11/2018					Sa	Su	08:05	HKG		333	/LH7030/LX9530/QR5815/BA4556/AY5860

KUR-World

Appendix 13s

Air Transport Report

Environmental Impact Statement

KUR-WORLD RESORT

CLASS C AIRSPACE LL 2500ft

CLASS C AIRSPACE LL 3500ft

CLASS C AIRSPACE LL 4500ft

CLASS C AIRSPACE LL 1500ft

CAIRNS INTERNATIONAL AIRPORT

CAIRNS CTR SFC - 1500ft

TO MOORE REEF

TO MAREEBA AIRPORT

MAREEBA AIRPORT

TRUE NORTH MAG. NORTH VAR 07 DEG E

LEGEND

INDICATIVE HELICOPTER FLIGHT CORRIDOR

CONTROLLED AIRSPACE STEPS

TRACKING POINTS

0 5km 10km

FOR INFORMATION ONLY 5 DEC 2017

PRELIMINARY 5 DEC 2017

Project: KUR-WOOD INTEGRATED ECO-RESORT
ENVIRONMENTAL IMPACT
AVIATION SERVICES

Client: ARUP PTY LTD

Title: PROPOSED HELICOPTER FLIGHT PATHS SERVICING KUR-WORLD ECO-RESORT

REHBEIN Airport Consulting
The Association of Consulting Engineers Australia
CBD HOUSE, Level 3
120 WICKHAM STREET
FORTITUDE VALLEY QLD 4006
A C N 126 939 768
TELEPHONE (07) 3250 9000
FACSIMILE (07) 3250 9001
EMAIL mail@arc.net.au

Drawn EF | Checked NB | Approved BJH

Rev 0 | Date 05.12.17

Figure No: B17029-01

Scale 1:40,000 | A3

File Ref: B17029 | Sheet Size

REHBEIN Airport Consulting

28 November, 2017
Our File Ref: B17029AL001
Contact: Nick Borley

Senior Project Manager
Arup Pty Ltd
Level 10, 15 Lake Street
CAIRNS QLD 4870

Attention: Nathan Lee Long

RE: KUR-WORLD INTEGRATED ECO-RESORT ENVIROMENTAL IMPACT STATEMENT – AVIATION SERVICES

1. INTRODUCTION

REHBEIN Airport Consulting was commissioned by ARUP Pty Ltd to provide specialist aviation advice in relation to the "air aspects" of the KUR-World Integrated Eco-Resort (KUR-World) EIS terms of reference. This initial assessment of impacts has been provided for the purpose of further consultation and input into the EIS process. The initial assessment has focused on the following aviation aspects in the context of the EIS terms of reference:

- Identification of aircraft types;
- Identification of potential noise sensitive areas;
- Determination of flightpaths, passenger loads, and service frequency; and
- Analysis of existing airspace constraints and compliance with air traffic and flight planning procedures.

This assessment considers the servicing of the proposed KUR-World via helicopter transfer flights to and from Cairns International Airport and Mareeba aerodrome. Additional tourist flights from the resort and via Cairns Airport will service the Great Barrier Reef (GBR) Moore Reef helicopter pontoons.

No site visit was conducted by REHBEIN Airport Consulting personnel in relation to this project however; input from relevant stakeholders was sought and applied to the construction of flightpaths.

2. AIRCRAFT SELECTION AND FLIGHT FREQUENCY

The proponent (via ARUP) has advised that the helicopters likely to be utilised to service the proposed KUR World are expected to be sourced from local Cairns helicopter operators.

A review of helicopter operating bases at Cairns International Airport by REHBEIN Airport Consulting indicated that incumbent helicopter types vary from small personal 2-seat helicopters through to large transport style aircraft with seating capacities of up to 19 passengers. In consultation with ARUP it was determined that the most typical

helicopters likely to service the desired routes would be a 6-seat turbine-powered “air taxi” style helicopter such as an Aerospatiale AS350-B “Squirrel” or Bell B206 “Jetranger”.

In addition to regular passenger transfer flights a need to accommodate medical evacuation aircraft has also been identified. Emergency Management Queensland (EMQ) Helicopter Rescue operates helicopter types such as the Bell 412 and Augusta Westland AW139 from its Cairns base servicing the north Queensland area with air ambulance and rescue functions. Although regular flights to the resort by this type of aircraft are not envisaged, their operation has been considered in the construction of flightpaths, procedures and potential environmental impacts. The AW139 represents the heaviest helicopter likely to be used on routes servicing the KUR World.

Helicopter flight schedules at KUR World are likely to be closely linked to the arrival and departure schedules of airlines servicing Cairns International Airport. In general terms helicopter movements are anticipated during daylight hours, with up to 10 flights per day estimated as being adequate to service the resort’s helicopter transfer requirements.

Flight operations are expected to be spread across the day with peak periods occurring between the hours of 07:00am – 10:00am and 2:00pm – 6:00pm. **Table 1** presents an indicative schedule of daily helicopter operations.

Table 1: Indicative Helicopter Operations Schedule

Period	Route:	Aircraft Type:	Number of flights:	% of Daily Movements:
07:00am – 10:00am	Cairns - KUR World	B206 / AS350	2	20%
07:00am – 10:00am	KUR World – Cairns – GBR	B206 / AS350	2	20%
10-00am – 02:00pm	KUR World – Cairns – GBR	B206 / AS350	1	10%
10:00am – 02:00pm	GBR – Cairns – KUR World	B206 / AS350	1	10%
02:00pm – 06:00pm	KUR World – Cairns	B206 / AS350	2	20%
02:00pm - 06:00pm	GBR – Cairns – KUR World	B206 / AS350	2	20%
Total:			**10**	**100%**

3. PROPOSED FLIGHT PATH CORRIDORS

Indicative helicopter routes to service the KUR World have been developed in consideration of the relevant flight rules, existing airspace procedures, terrain, performance characteristics typical of the anticipated types and a preference to minimise noise impacts on residential areas.

Consultation with Airservices Australia (Cairns Air Traffic Control) was undertaken to determine the processing of helicopter traffic on the proposed routes within controlled airspace. Flights operating outside controlled airspace are less restricted and where possible are planned as direct flights to the applicable destination. The parameters considered in the determination of likely flight tracks and procedures are expanded on in the following subsections.

3.1 Operational Planning Requirements

The primary rules set applied to the development of flight paths is the Visual Flight Rules (VFR). Operations under the VFR require that flights be conducted in

Visual Meteorological Conditions (VMC) and navigation of the aircraft is confirmed through position fixing of the aircraft relative to topographic features along the desired route. The pilot must ensure specific obstacle clearance from both terrain and no-visual conditions to ensure the safe operation of the flight.

Along with operational aerodrome information, most Australian airports publish procedures so as to manage the safe and orderly flow of air traffic in the vicinity of the airport. These procedures are published in the Aeronautical Information Package – En-Route Supplement Australia (AIP-ERSA) and are supported by topographical charting. Aerodrome procedures such as preferred departure and approach tracks, mandatory reporting points, transiting flight routes and radio procedures are typical of such entries and are used by the pilot during the flight planning stages.

Cairns International Airport has a number of published procedures which include two preferred VFR flight corridors to facilitate the processing and sequencing of VFR traffic. The operational requirements published in the AIP-ERSA have been considered in the development of indicative helicopter routes to service the KUR World and to integrate with existing airport operations.

Populated areas in the vicinity of airports such as Cairns are sometimes exposed to concentrations of air traffic movements. Consequently, “fly neighbourly procedures” are often developed in consultation with stakeholders so as to minimise potential impacts on local communities. These procedures are advisory in nature and may be either general or specific but do not override the relevant regulations on the safe operation of aircraft. The premise on which fly neighbourly procedures are based is to limit exposure of air traffic on populated areas either by altitude or distance. This concept has been considered and applied in the development of routes to service the KUR World and in particular the township of Kuranda located to the north east of the resort.

3.2 Traffic Processing Requirements (ATC)

Each Air Traffic Control (ATC) unit has a set of local operating instructions to facilitate the processing of traffic in, out and through the volume of airspace for which they are responsible. These local procedures are closely linked to the documented procedures available to pilots and published in the various operational documents. The KUR World and the proposed flight path corridors servicing the resort, Cairns International Airport and the GBR will require interaction with ATC through the portions of airspace that are under ATC control. This assessment identified that up to two (2) ATC units may be required to interact with helicopter crews in order to undertake the portion of the proposed flight in controlled airspace. These are Cairns Tower and Cairns Approach (which also manage departures).

Cairns Tower is responsible for the processing of arriving and departing traffic and ground movements. In order for the system to work efficiently some coordination is required between the aircraft, the tower, approach and in some

cases adjoining airspace volumes. The coordination process allows for the timely planning of flights and controller workload. Therefore, and as stated in the AIP-ERSA, departing helicopters need to advise Cairns Tower of their intended departure point (i.e. which helicopter site on the airport they will be departing from) and their destination. This provides the controller with adequate information to plan and where necessary coordinate with Cairns Approach on how to accommodate the proposed flight with the existing traffic scenario safely.

Cairns Approach is responsible for sequencing and processing of traffic in the airspace immediately adjoining the airport. Due to the relative close proximity of the KUR World to Cairns International Airport all departing flights intending to land or transit Cairns airspace will be required to communicate their intentions with Cairns Approach so as their flight can be coordinated with existing traffic and other ATC units.

Consultation with Airservices Australia indicated that the proposed routes should be able to be accommodated under the existing procedures. A flight thread analysis is discussed in the following sections.

4. ROUTE DESCRIPTION AND FLIGHT PROCEDURES

All of the proposed flight routes have been developed as two-way routes. **Figure 1** illustrates the proposed route structure and has been developed in accordance with the Visual Flight Rules, local operating procedures, and consultation with Cairns ATC.

4.1 Cairns – KUR World – Cairns Flights

Two routes are available for Cairns – KUR World flights. The high terrain immediately to the west of Cairns has potential for weather patterns that are non-conducive to VFR flight therefore, two potential flight routes are proposed so as to provide greater flexibility to the pilot to undertake the flight safely.

The following example “flight threads” document how the flight would normally take place.

4.1.1 Cairns – KUR World “Flight Thread”

- [Pilot] Initial contact with Cairns Tower advising departure point and intended destination;
- [ATC] Departure instructions in consideration of duty runway, traffic and coordination with approach if the aircraft’s planned level will require entry to that volume of airspace. Anticipated clearance in this case is assumed Cairns – Stoney Creek – KUR World, or Cairns – Barron Gorge – KUR World.
- [Pilot] Acknowledgement of cleared route.
- [ATC] Depending on aircraft level at Barron Gorge or Stoney Creek the aircraft will be transferred to Cairns Approach or the local area frequency.

- [Pilot] Frequency transfer and preparation for descent and landing at KUR World.

4.1.2 KUR World – Cairns "Flight Thread"

- [Pilot] Initial contact* with Cairns Approach for arrival instructions and clearance;
- [ATC] Clearance issued after assessment of traffic and coordination with Cairns Tower if required. Anticipated routes are via Stoney Creek or Barron Gorge;
- [Pilot] Acknowledgement of cleared route and proceeding accordingly;
- [ATC] Frequency transfer to Cairns Tower for descent and arrival instructions;
- [Pilot] Frequency transfer and advice of aerodrome information;
- [ATC] Descent, pattern joining instruction and clearance to land;
- [Pilot] Instructions acknowledged and executed accordingly.

* It is unknown if VHF radio communication with Cairns Approach is available on the ground at the KUR Resort. Initial contact may be delayed until the aircraft becomes airborne, however entry to controlled airspace is not permitted until in receipt of a clearance.

4.2 KUR World – Mareeba – KUR World

The route developed between the KUR World and Mareeba aerodrome can be potentially undertaken in non-controlled airspace. However, should the aircraft conduct this flight at an initial altitude in excess of 2500 feet above mean sea level (AMSL), clearance through Cairns Approaches airspace will be required. The flight process is essentially the same but the appropriate ATC frequency will differ.

4.2.1 KUR World – Mareeba "Flight Thread"

- [Pilot] Initial contact with ATC for departure instructions or broadcast of intentions on appropriate area frequency;
- [ATC] Clearance issued for transit of airspace;
- [Pilot] Acknowledgement of clearance;
- [ATC] If in controlled airspace and dependent on aircraft altitude, aircraft transferred to area frequency.
- [Pilot] Acknowledgment of transfer;
- [Pilot] Broadcasts intention on appropriate frequency; and
- [Pilot] Manages own descent, traffic pattern joining and landing

4.2.2 Mareeba – KUR World "Flight Thread"

- [Pilot] Broadcast of intentions on appropriate area frequency;
- [Pilot] Dependent of aircraft altitude* ATC request for clearance;
- [ATC] After traffic assessment clearance issued;

- [Pilot] Acknowledgement of clearance;
- [Pilot] Request for descent if in controlled airspace, otherwise self-managed;
- [ATC] If in controlled airspace descent instructions and frequency transferred issued.
- [Pilot] Acknowledgment of transfer; and
- [Pilot] Manages own descent, traffic pattern joining and landing.

* The position at which the aircraft requests a clearance through controlled airspace is a function of the aircraft altitude. Should the aircraft remain outside controlled airspace no clearance is required.

4.3 KUR World – Moore Reef GBR

Flights from KUR World to Moore Reef (GBR) will need to transit the Cairns control zone. Direct tracking is unlikely to be available as the direct route will cross the approach path for Runway 15 and the missed approach or departure path for Runway 33. Therefore, routes have been developed to track via and overhead Cairns Airport. The slight deviation in tracking will add some additional track miles however, this is necessary for the efficient processing of all traffic within the Cairns control zone. On occasion when direct tracking is available ATC will advise accordingly.

The initial part of the flight thread to Moore Reef is the same as the KUR World – Cairns flight thread but has been included in the following for completeness.

- [Pilot] Initial contact* with Cairns Approach for instructions and clearance;
- [ATC] Clearance issued after assessment of traffic and coordination with Cairns Tower if required. Anticipated routes are via Stoney Creek or Barron Gorge thence Cairns, False Cape, and Moore Reef;
- [Pilot] Acknowledgement of cleared route and proceeds accordingly;
- [ATC] Frequency transfer to Cairns Tower if required otherwise aircraft will remain with approach;
- [ATC] Dependent on aircraft level frequency transfer instructions issued. Some descent may be undertaken in controlled airspace prior to transfer OCTA;
- [Pilot] Acknowledgment of transfer;
- [Pilot] Broadcasts intentions on appropriate area or CTAF; and
- [Pilot] Manages descent, pattern joining and landing.

* It is unknown if VHF radio communication with Cairns Approach is available on the ground at the KUR World. Initial contact may be delayed until the aircraft becomes airborne; however entry to controlled airspace is not permitted until in receipt of a clearance.

4.4 Moore Reef GBR – KUR Resort

- [Pilot] Broadcast of intentions on appropriate area frequency;
- [Pilot] Dependent of aircraft altitude* request for clearance to transit Cairns control zone;
- [ATC] After traffic assessment and required coordination, clearance issued. Anticipated route clearance is via False Cape, Cairns, Stoney Creek or Barron Gorge thence KUR World;
- [Pilot] Acknowledgement and adherence to clearance;
- [Pilot] Request for descent if in controlled airspace, otherwise self-managed;
- [ATC] If in controlled airspace descent instructions and frequency transferred issued.
- [Pilot] Acknowledgment of transfer;
- [Pilot] Broadcast intentions on appropriate frequency; and
- [Pilot] Manages descent, traffic pattern joining and landing.

Note: Routes from KUR World to Moore Reef and return track via Cairns Airport. Scope exists for a potential interim landing point at Cairns should it be required. In such cases the continuation of the flight would be conducted via the previously listed flight routes.

5. ANEF NOISE FORECAST

Australian Noise Exposure Forecast (ANEF) contours are produced to assist in the planning of land use associated with land in the vicinity of airports. Cairns International Airport has produced and published an ANEF for the existing and future operations at the airport.[1] A desktop assessment of the proposed KUR World helicopter routes has been undertaken against the published ANEF contours to ascertain if there is likely to be an additional impact as a result of the proposed routes and flight frequencies. The outcome of this assessment indicated the following:

- Departure and approach tracks are likely to be captured within the existing noise contours;
- Increased flight activity and frequency is unlikely to be an issue as proposed flights will be provided by existing operators resident at Cairns Airport and would have been included in future traffic forecasts;
- Local operator knowledge, existing ATC procedures and fly neighbourly procedures provide further protection from community exposure to unnecessary aircraft noise; and
- Should a potential noise issue be identified during the planning stages of this project the Cairns Airport Environmental Consultative Committee (AECC) meets every three months and provides a forum for stakeholders to address environmental issues.

[1] http://www.cairns.qld.gov.au/__data/assets/pdf_file/0003/162633/Airport_Environs.pdf

6. IMPACTS ON EXISTING OPERATIONS

A preliminary assessment of impacts the proposed additional flight operations may have on existing operations at Cairns International Airport has been undertaken. The findings of this preliminary assessment noted that there is unlikely to be additional impacts for the following reasons;

- No change is required to existing airspace architecture and procedures to accommodate the proposed routes and associated operations;
- Flights will be conducted by existing operators at Cairns Airport and are included in forecasting data applicable to the airport;
- A maximum of 10 flights per day undertaken by low capacity helicopters is unlikely to impact on existing infrastructure or air traffic resources; and
- Route design has been developed based on rules of the air, existing ATC procedures, airspace constraints and helicopter fly neighbourly procedures.

We trust that the information contained in this assessment meets your requirements however should you have any further questions please do not hesitate to contact the undersigned.

Yours faithfully
For and on behalf of
LAMBERT & REHBEIN (SEQ) PTY LTD

NICK BORLEY
PRINCIPAL AVIATION CONSULTANT

KUR-World

Appendix 13t

Regional Supply Capacity

Environmental Impact Statement

THIRKELL
CONSULTING ENGINEERS & BUILDING DESIGN

Report to

Cummings Economics

RE: Environmental Impact Study: Economic Impact &

Construction Phase - Regional Supply Capacity

for proposed development of

KUR-World
Great Barrier Reef

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Attachment A: Structural materials and other critical building elements

Attachment B: Building Capacity Survey Summary

Thirkell Consulting Engineers
George Thirkell B.Eng RPEQ 7279 MIEAUST
A trading name of Redgate Building Solutions PL ABN 35144589426

38 Grafton Street, Cairns, QLD 4870
PO Box 952, Edge Hill, QLD 4870
Phone: 07 40325335
Email: admin@thirkell.com.au WWW: Thirkell.com.au

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Date	Revision No.	Reason for Issue	Author	Reviewer	Approved Name	Signature	RPEQ
18/5/18	B	Client Report	GT	ET	George Thirkell		7279

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1.0 INTRODUCTION AND INSTRUCTION

The construction phase of the KUR-World project economic impact and the calculation of "flow-on" effects of the original expenditure is under study. We are instructed to analyse and report on the degree to which the necessary inputs can be supplied from within the Cairns region and any potential supply constraints given the volumes required.

The analysis considers:

- An estimate of the likely quantities required of key inputs into the construction phase.
- The likely supply capacity in the Cairns region, in relation to the inputs needed and advise of:
  - What quantities are likely to be supplied locally and what imported.
  - Any supply constraints likely to develop because of the potential extent of the demand.

For the purposes of the analysis it is assumed that there is likely to be a heightened level of building construction taking place compared with current conditions.

As part of the economic impact process, business opportunities are noted that might be worth exploring.

In relation to supply capacity, supply from the Tablelands region is reported as it mitigates use of the Kuranda Range Road. There is also a policy preference for Tableland suppliers as opposed to those from Cairns.

Because of the capacity constraints of the Kuranda Range Road, likely traffic movements during the construction phase will be modeled in the project plan and this analyse will assist in identifying the volumes.

A survey conducted by telephone and face-to-face interviews of regional suppliers of construction materials was conducted to determine capacity to supply and determine constraints, opportunities and freight logistics. A summary of the results is provided in Appendix 2.

The 'Structural materials and other critical building elements' tables in Appendix 1 outlines selected materials that may be critical to manage in respect to the manufacturing and supply capacity from the local region. This report focuses on the proposed developments buildings and not civil infrastructure.

This significant project aims to showcase sustainable building principles that will consider local materials and resources wherever possible. The integration of accredited sustainable local materials into the project will be essential to achieving recognition along with other principles such as environmental controls of civil works, water sensitive urban design, energy use and generation, reuse of grey water and so on.

This analyse also considers options for reducing traffic movements on the Kuranda Range Road which cannot accommodate B-doubles and has a capacity of 15m length truck trailers for the transportation of building materials.

The estimation of structural materials is based on traditional construction methods of the local region which has a significant underlying capacity that has not been fulfilled post-GFC period. Comments have been received to how these manufacturers and suppliers have been well under-utilised in the last ten years and many have spare unused plant that was planned to efficiently supply a sooner and inevitable growth of the region.

The author has a wide range of experience in the engineering and design of the built environment and has applied this experience and judgement in a brief document that will assist in value engineering tasks and will assist the developer in making correct early decisions for formulating key design considerations and specifications to achieve a successful and sustainable development that positively contributes to the local region.

2.0 ENGINEERS ANALYSIS OF SURVEYED MATERIALS

The major structural materials have been reviewed in this report to provide an indication of how the project will fair over its build period. Glass has been considered in this review being a (usually) significant cost in commercial projects.

2.1 Building types

The buildings outlined in the master concept plans have been categorised for calculation purposes into the following being:

1. Building type 1 - residential (mostly) - timber wall frames throughout and roof truss construction
2. Building type 2 – residential and small public spaces - blockwork external walls, timber internal partitions and timber roof truss construction
3. Building type 3 – commercial - one storey - blockwork external walls and steel roof construction
4. Building type 4 - commercial – two and three storey - steelwork construction
5. Building type 5 – accommodation and education - two and three storey - reinforced concrete construction

2.2 Construction material elements capacity to supply

Some building types can be built with timber frame or blockwork such as the villas which are detached buildings. The table in Appendix 1 'Structural materials and other critical building elements' calculate a minimum and maximum material amount based on the building type selected for that stage and that scenario.

Building types 3 and 4 commercial buildings will most likely require long spanning structures and it is envisaged to consist of primary steelwork structure and concrete (and glass) wall surfaces being tilt-up concrete panels or concrete filled blockwork or other innovative methods such as insulated concrete panels for example. To fulfil its green-build status the final selection of material will be based on design intent and the cost, time and quality considerations at the time.

Structurally insulated panels (SIPS) have not been considered in detail due to the product not being manufactured locally. It is anticipated that it will be used for their aesthetic and insulation value to buildings.

Most building material suppliers have capacity to deliver product to the project site from the town of Mareeba, to the west of the Kuranda. Each major material type is either produced in the Atherton Tablelands region, the Cairns region and cities further south. The components of the material dictate source and freight modes, and these are described below.

2.2.1 Civil Materials

There is capacity to supply civil materials for road pavement construction from local and national companies with operations on the Atherton Tablelands. Quarry material may be soured from Tichum Creek quarry, off the Kennedy Highway between Kuranda and Mareeba. There are also quarries at the base of the Gillies Highway and the Palmerston Highway. In addition, sand quarries are located behind Mareeba on the Walsh river, and in Cairns.

Ashphalt and bitumen products and services are also supplied from the operators based on the Atherton Tablelands.

Transportation of civil material from the region west of Kuranda mitigates freight on the Kuranda Range Road. Further supply is available via the Gillies and Palmerstone range roads.

2.2.2 Concrete

Concrete materials have been selected for building type 5 accommodation and education buildings due to their overall structural, fire and acoustic qualities. Alternative systems may be considered in the future though is not an objective of this review.

Generally there is no concern regarding the supply of raw materials or concrete to site. Concrete can be delivered to site at up to 1,000 cubic metres per day by three of our largest concrete producers in Mareeba and Malanda. Stage 2 has an estimated maximum concrete volume of 27,733 cubic metres and the supply of this volume can be catered for in 28 days of a program extending 2 or so years. There is no problem with the supply of concrete or its raw materials.

The aggregate content can be supplied locally from Tichum Creek quarry located on the Kennedy Highway between Kuranda and Mareeba. Two of the largest concrete suppliers in the region own or operate from Tichum Creek. There are also quarries at the base of the Gillies Highway and the Palmerston Highway. In addition, sand quarries are located behind Mareeba on the Walsh river, and in Cairns.

Transportation of aggregate from the region west of Kuranda mitigates freight on the Kuranda Range Road. Further supply is available via the Gillies and Palmerstone range roads.

The cement content of the total estimated concrete use of the total project represents near 1 percent of Gladstone Cement Plant's capacity. In light of a construction program the project's concrete requirements are an estimated 10% of the two major concrete plant's capacity and are envisaged to cause no extraordinary measures by the plants to meet this demand. It is anticipated that the supply and cost of concrete will be competitive. A further benefit to the use of this material is that there is no traffic generated on the Kuranda Range Road as the supply is from Mareeba and Malanda.

Concrete blockwork can be supplied by the tableland local supplier which will manufacture the blocks in Cairns. At capacity, they can manufacture up to 16,000 blocks or 1,280 square metres per day. The scenario of having a maximum use of blockwork for external walls would pose serious construction program constraints. In the event that both major blockwork suppliers in the Cairns region were contracted and supplied 1,920 square metres of blocks it would be short of an anticipated 2,230 square metres. The capacity could be increased to meet the demand by the supply of blocks from Townsville and south of it. It is likely that the cost of blocks would not be competitive and that the labour force will be difficult to procure with a heavy reliance placed on mobile workforces in the country particular from the southern states.

Transportation of blockwork from Cairns to Kuranda in large quantities is an issue to be carefully considered. The volumes of blocks required to be transported requires a number of trucks and

trailers to carry a meaningful load which the Kuranda Range Road cannot accommodate. The requirement for this local supplier to use the Palmerston Highway will most likely mean that they will source their supply from outside the region in Townsville and south of it. Supply from Cairns which incur additional transportation costs and the cost per block will increase. It would appear that there is adequate capacity to produce blocks though an inadequate capacity to transport them efficiently in the volumes this project requires.

2.2.3 Steel reinforcing

An estimated 11,646 tonnes of reinforcement is required for the total project and stage 2 will require the bulk of this at 7, 151 tonnes. There are 2 major suppliers in Cairns that can supply a combined estimated of 2,000 tonnes per month. This represents a significant portion of the reinforcement supplier's capacity at an estimated 40% of their capacity on a monthly basis. This means that any other major projects in the region at this time will impact on the supply by way of time and cost. It is anticipated that the cost of reinforcement will be high and there will be minimum competition to supply this product.

Reinforcement is likely to be obtained from outside the region to ensure its supply and be transported inland from outside the region from . This ensures a competitive supply of reinforcement for the abundant concrete supply in the Tablelands and will limit the local supply travelling on the Kuranda Range Road.

2.2.4 Timber

It is estimated that 3,355 tonnes of timber will be required and most likely consist of pine softwood. The largest requirement of timber will be in Stage 2 and require 1,895 tonnes. The local Tableland timber suppliers can supply up to 200 cubic metres or 120 tonne per week to date though we are advised that this can be doubled by expanding the mills in the Tablelands and providing further local employment opportunities. With regards to the construction program it is estimated to account for 30% of these timber supplier's capacities. This indicates an impact to supply and cost though it would appear manageable by way of additional supplies from the Cairns region and Brisbane suppliers.

The transport of timber on the Kuranda Range Road can be limited due to local supply on the Tablelands that can be doubled. The direct supply of timber from near to the site is a sustainable solution. There can be pine softwood timber supply transported from Brisbane to the Tablelands via the inland freight route. This will alleviate traffic movements on the Kuranda Range Road and other range roads.

2.2.5 Structural Steel

Steelwork capability in the tablelands would appear low though it may be feasible for local suppliers to contribute to the smaller and peripheral structures such as stables, bush kitchens, arena stands and railings and the like. The estimated mass for these smaller structures is 110 tonnes over the total duration of the project which can easily be catered for locally by a company that can produce up to 15 tonnes of steelwork per week.

The larger steelwork structures amounts to 651 tonnes and stage 1 is critical in this analysis for structural steelwork at 355 tonnes. There are a number of companies that can supply this nominal tonnage of steelwork and one particular company can process up to 150 tonnes per week. Structural steelwork in this analysis has been under-utilised and requires more consideration to its use and in particular composite steel and concrete structures.

Cairns has a good capacity to produce structural steelwork though transportation to Kuranda requires some consideration. The lengths of members is anticipated to be within the limits for transporting on the Kuranda Range Road though requires consideration to the number of movements needed to transport the tonnage. It may be more appropriate to design the buildings using smaller members in larger numbers than larger members in smaller numbers due to the efficiency of packing, loading and transporting as much as possible in a movement.

Although demand for steel can be supplied locally, steel suppliers part of national chains can draw on supplies from nearby cities. Steel freight can travel via the inland route thereby mitigating use of the Kuranda Range road, other range roads and coastal towns.

2.2.6 Glazing

Glazing has been estimated as 28,589 square metres and stage 2 is critical with a requirement of 17,539 square metres. One major glazing company has plant that is capable of producing 604 square metres of glazing per week with stage 2 of the project requiring over 50% of this capability. There are other suppliers of glazing that may contribute to make this element cost competitive with particular reference to the residential glazing products. There may be a supply issue with the glass component of the glazing item and much of it is likely to be transported from Townsville and other cities. It is likely that the cost of this element will be on the higher end though anticipate that the developer can manage this building element locally.

Transport of glazing will need to be via the Kuranda Range Road for economy. To ease the burden on the Kuranda Range we consider more easily packaged elements such as glazing could be transported in larger B-doubles for the longer journey via the Palmerston Highway. A longer trip requires an adequate pay-load to be feasible. Further review is required.

2.2.7 Roof Sheeting

A major supplier of metal roof sheeting can supply stage 2 quantities of 59,426 square metres and be at 23% of their capacity. Cairns is competitive in regard to this element and there is no problem meeting this demand and obtaining competitive tenders. Transportation of this product will need to be considered up the Palmerston highway though it is expected to be manageable. The transport of this product may be as per the glazing above, in that larger pay-loads are transported over a longer route to ease traffic on the Kuranda Range. It is advised that the design specifies profiles that can be manufactured locally to ensure cost and time efficiencies.

There is the possibility to re-locate dormant metal roofing plant and roof truss fabrication table to the Tablelands that will allow local employment and supply of these building elements. This will alleviate traffic movements on the Kuranda Range Road and Palmerston Highway.

3.0 CONCLUSION AND RECOMMENDATIONS

It is understood that this development will comply with Enviro Development National Technical Standards (EDNTS) as part of its conditions. The compliance with this standard has not been reviewed as part of this report and will be required to be managed by the developer, their designers by way of documentation and specifications and co-ordinated with the main contractor. It is our opinion that this will be manageable and the structure will for example use supplementary cement materials and/or recycled content in steel and/or Australian Forestry Standard (AFS) accredited timber or others listed in the EDNTS document.

Civil material is supplied from operations based on the Atherton Tablelands and there is no impediment on the capacity meet the needs of the project.

The abundance of concrete supply in the local area would appear restrained by the supply of reinforcement which will likely need to be complemented by additional supply from Townsville. It would appear a preferred choice of material if the reinforcement transport and its costs can be contained and the labour force acquired.

Tilt up concrete is an efficient option and the development's building designs would need to integrate and innovatively connect to a system that could be applied to as many of the building types as possible. The developer's brief is important to the success of the project by way of value engineering in association with the design intent.

Blockwork is a difficult material in large volumes to adopt for this project. It would appear a more favourable outcome to use the more than adequate capacity of concrete supply and resolve the reinforcement issues locally and from outside the region. The fact that reinforcement is likely to travel up from Townsville on the inland road and be complemented by a local supply is a benefit for the Kuranda Range Road traffic volumes.

More innovative blockwork solutions maybe reviewed such as mortarless blockwork which is manufactured in the major cities. We were advised that it may be feasible to upgrade the Cairns local plant to manufacture mortarless blocks. Further review is required to understand the dynamics of upgrading from the traditional to the new form of concrete masonry construction.

Cairns is well placed in its capability to supply structural steel. The Tablelands is well placed to service the many smaller periphery structures within the development and limit the traffic movements on the Kuranda Range Road.

This analysis sees that the structural steelwork has been under-utilised and it is recommended that alternative engineering designs are carried out and reviewed to provide competitive costing and supply. An example of this may be the possible benefit of providing composite steel and concrete structures which will provide more structural steel sections that can be adequately supplied and reduce the reinforcement required in the concrete structures. This composite structure was popular in the 1980s and has been popular in the UK for the past 20 years. It is making its way back into mainstream in the major cities likely due to its speed and efficiency of materials. This type of building may provide a feasible and optimum design option for commercial buildings of this development.

It is recommended that timber be an integral part of the building structure and envelope as it is understood that much of this supply will be transported from the capital city and its surrounds. There is opportunity to meet the requirements of the EDNTS by way of AFS accredited timber and there is adequate supply of this material. Carpentry labour supply is to be considered and reviewed in detail in the future.

Prefabricated steel wall frames are an option on this project where practical and can be obtained locally and regionally. The incorporation of this element within the whole design scheme may balance the use of various materials and minimise the likelihood of supply bottlenecks and provide competitive costing outcomes.

Though SIPs cladding has not been reviewed in detail it is recognised that they will form part of the project due to their aesthetic and insulation value to buildings. It is anticipated that the quantity will not be an issue (based on the above project principles of using local materials) and there is sufficient competition in the region to suggest that costs will be reasonable.

A possible solution to overcoming the heavy traffic travelling with the general public on the Kuranda Range Road is to agree the transport of reinforcement, steelwork and other important elements produced in Cairns is out of normal hours. The cities transport major pieces of plant and equipment during the night and early mornings and the route to this proposed site is via highways.

A further consideration to alleviating the traffic movements to the Kuranda Range Road is the increasing of pay-loads on B-doubles for the longer travel on the Palmerston Highway. Maybe it can be made feasible for this project where there are considerable materials to be transported. Designers and industry need to engage, innovate and resolve this issue which has significant benefits to industry and the reduced use of the Kuranda Range Road.

The possibility that plant can be re-located to the Tablelands and timber mills can be expanded brings opportunity to the Tablelands capacity to supply and local employment. This would also considerably reduce traffic movements on the Kuranda Range Road and the Palmerston Highway.

The development consists of many buildings and various building types that provide for an aesthetically dynamic modern village which adopts a balance of light and heavy materials. The diversification of building materials specifications to suit the region's capabilities provides for the distribution of opportunity locally that will result in an economic and socially sustainable outcome. Refining the building design to be flexible in choice of structural or building envelope materials allows agility that may be of benefit for this project's long-term build where cyclones and flooding of our transport routes can happen. The more locals that can be part of this project the more integrated the development will be with the locals.

It is recommended that this document be expanded in the future and integrated with more refined building design requirements to substantiate these quantitative findings and more accurately define the building envelopes and other materials.

ATTACHMENT A

KUR-World – Summary of Construction Material Quantities Required by Years

Year	Concrete Footings (m3)	Concrete Walls Including Block (m3)	Concrete Susp Floor Slab (m3)	Reinf Footings & GND slab (t)	Reinf Walls (t)	Reinf Susp Floor Slab (t)	Timber Wall Ext. (t)	Timber Walls Int. (t)	Timber Roof (t)	Steelwork Frames (t)	Steelwork Floor Framing (t)	Steelwork Roof Framing (t)	Glazing (m2)	Roof Metal Sheeting (m2)	Total
18/19	1,325	855	720	211	53	0	76	399	46	146	58	28	2,368	9,414	**15,699**
19/20	2,297	4,580	1,545	1,093	177	1,082	128	98	99	0	0	0	6,712	13,668	**31,478**
20/21	2,008	3,587	1,425	833	134	761	132	254	78	34	27	13	4,908	13,152	**27,346**
21/22	1,558	2,588	1,058	538	92	425	127	293	59	45	36	18	3,339	11,316	**21,491**
22/23	1,288	2,453	720	496	92	425	127	125	59	11	9	4	3,339	10,346	**19,493**
23/24	1,539	2,566	1,753	851	92	925	69	283	32	55	35	17	2,339	11,238	**21,792**
24/25	1,810	2,933	2,068	972	103	1,045	78	364	36	73	46	22	2,642	13,102	**25,294**
25/26	1,114	1,892	932	482	68	458	78	189	36	36	22	11	2,190	8,568	**16,076**
26/27	325	570	205	118	21	97	29	48	13	9	5	3	752	2,604	**4,799**
Total	**13,263**	**22,023**	**10,425**	**5,594**	**833**	**5,219**	**843**	**2,054**	**458**	**408**	**238**	**116**	**28,589**	**93,408**	**183,469**

ATTACHMENT B: KUR-World Building material capacity survey July 2017

		Questions & Answers				
Product Category	**Location**	**1. What would be your capacity to supply at this point in time to regular customers?**	**2. In current conditions, are you likely to expand your capacity over the next few years? Are there projects that you have on your books that will increase demand?**	**3. If you had prior advice of additional supplies needed, could you quickly expand your capacity**	**4. What freight route is most commonly used to supply your business?**	**5. Could this change in the future if also considering volumes and timing?**
Concrete	**Atherton Tablelands**	1. All supply is currently re-sales from Cairns & Mackay, sometimes imported. Landscaping supplies i.e. paving has demand.	2. We used to manufacture although this was shut down and now plant is old. The business has the capacity to re-ignite manufacturing although it would require a solid commitement for the product to make that sustainable. We also have morteless concrete and other new technology.	3. We could expand and locally manufacture although we would need to invest in new plant. The aggregate supply in the tablelands district is not a problem.	4. Currently blocks come via Kuranda or the Gillies. Loads from Mackay can take the inland route.	5. Given sustainable volumes and a satisfactory lead in time, we can manufacture on the Tablelands to save haulage.
Concrete & Civil materials	**Cairns and Atherton Tablelands**	1. Commercial in confidence	2. Nothing major just the windmill projects	3. Straight away and up to 500 m3 per day easily.	4. We are also based in Innisfail. Can be Cairns & Kuranda range road or Innisfail and Palmerston. Quarries are at the bottom of the Palmerston Highway near Innisfail and Edmonton, where the Gillies range is used to freight to the Tablelands.	5. Yes, but not a problem for us as the bulk is aggregates and there is plenty of supply on the tablelands.
Concrete & Civil materials	**Cairns and Atherton Tablelands**	1. Commercial in confidence	2. No, no plans	3. Can quickly expand Mareeba plant	4. All agregate supply can be from the Tablelands region. The main quarry is Tichum Creek and sand is from the Walsh river.	5. Liklihood to supply from Cairns is very low. Aggregate supply is good on the Tablelands. Course sand from Redlynch is stockpiled at the Cairns plant and can also be moved to Mareeba via the Gillies Highway. Also own Mountain View quarry at the bottom of the Gillies Highway.
Concrete & Civil materials	**Cairns and Atherton Tablelands**	1. Commercial in confidence	2. No, nothing major that we cannot handle.	3. Yes, we currently have latent, under-used resources and spare capacity	4. We own Tichum Creek quarry on the Kennedy highway between Mareeba and Kuranda.	5. We also operate out of Atherton and have quarries at Redlynch and Holloways Beach in Cairns.
Steel reinforcing	**Cairns**	1. Commercial in confidence	2. In the process for upgrading plant and machinery to increase production. To increase capacity they can easily increase shift times. Currently there is surplus capacity.	3. Yes and can call upon Townsville, Rockhampton and Brisbane	4. Kuranda range road is most commonly used to supply Kuranda and the Tablelands. It may not make economic sense to go any other way.	5. The customer can pay an increased cost to go the Gillies or the Palmerston - quicker to go up the Kuranda range, even if coming from Townsville.
Steel reinforcing	**Cairns**	1. Commercial in confidence	2. No, not sure about big new projects.	3. Can quickly increase capacity by introducing double shifts. We can also call on supply from Townsvile, Mackay and Brisbane.	4. Kuranda range road is used.	5. Can also use Gillies highway or Palmerston, especially if supplying from down south.
Steel	**Cairns**	1. Commercial in confidence	2. We have the largest stock pile in Cairns as well as a state of the art Laser cutting machine and plasma cutting facilities.	3. In addition in Atherton have just installed a 6 tonne gantry and are increasing storage capacity in anticipation of some major projects in the pipeline.	4. We are bringing our freight up to the Tablelands via the Kuranda range and also the Gillies range	5. I do not believe we would bring freight up on another route unless it was full slings from one of our southern suppliers and that would possibly come via the inland road.
Timber	**Atherton Tablelands**	1. About 80% of the timber can be milled locally (Ravenshoe) but scheduling will determine supply volumes. Trusses: Have a surplus truss plant and can re-locate it for this project. But must design trusses to suit the truss bed.	2. Maybe.	3. If they are organised to supply well in advance, they wil increase capacity to manufacture as much as they can from the Tablelands.	4. All freight routes are currently used.	5. If supplying from Cairns, we can use the Palmerston.
Timber	**Atherton Tablelands**	1. Mills in Brisbane with unlimited capacity.	2. No, there are no projects that we know of that will increase our current capacity.	3. Mill out Brisbane: access up to four mills. Additional 45 suppliers for trimmings and carpentary. Yes, unlimited access to supply at short notice: but limited by freight times etc. Southern timbers better for construction. Spotted gums and ironbarks are best for contruction and best from down south. Also all timbers need treatment these days and there is no access to good treatment facilites on the Tablelands.	4. We cart everything ourselves. We have semi-trailer and B-double loads. We use the Palmerston highway. We don't use Kuranda range road.	5. The freight contractor carts every week with the ability to move massive volumes. We don't use rail. Road freight from Brisbane.
Timber	**Atherton Tablelands**	1. We are a retailer only. Majority of supply comes from Brisbane and some is sourced locally from Ravenshoe.	2. Hoping so, and there are two projects that are reasonably big.	3. Yes. There is no limit save freight constraints and weather.	4. Bruce and Palmerston highways.	5. Bruce and Palmerston highways, but for bigger planned loads can also use the inland road through Mount Garnet.
Timber	**Atherton Tablelands**	1. Re-supplying about 100 cubic metres a month. All supply is from South East Queensland.	2. No, we don't have any plans to expand and no big projects on the books.	3. We have plenty of spare capacity at the moment. We can ramp up quickly. We have two truss beds in Innisfail. One is laying dorment. People in the industry are looking for work. No problem to supply from Brisbane and Sydney. Pine framing is from South Australia.	4. Bruce highway and Palmerston mostly. Sometimes Kuranda. It is all road freight.	5. If demand increases, we will continue to bring freight up the Bruce and Palmerston Highways.
Glass	**Cairns**	1. Can only manufacture in Cairns but can bulk freight in shipping containers to Mareeba storage and then feed in smaller volumes back to construction site.	2. Maybe.	3. If they are organised to supply well in advance, they wil increase capacity to manufacture as much as they can from the Tablelands.	4. All freight routes are currently used.	5. Can find a way to limit the amount of freight transport on the Kuranda Range Road by using larger single shipping containers and bulk storage capacity in Mareeba i.e. less movements, but each larger.

ATTACHMENT B: KUR-World Building material capacity survey July 2017

		Questions & Answers				
Product Category	**Location**	**1. What would be your capacity to supply at this point in time to regular customers?**	**2. In current conditions, are you likely to expand your capacity over the next few years? Are there projects that you have on your books that will increase demand?**	**3. If you had prior advice of additional supplies needed, could you quickly expand your capacity**	**4. What freight route is most commonly used to supply your business?**	**5. Could this change in the future if also considering volumes and timing?**
Glass	**Cairns**	1. Because there are so many components to door and window manufacture it is too difficult to supply volumes. In 2010 off the back of the GFC we had 75 staff. We were looking to expand into a larger factory. We have 4000 sqm of factory floorspace but we were looking for 10,000 sqm to build a 6000 sqm factory. Now, we are down to 44 staff and sales have halved from 2010.	2. We hope so.	3. We have plenty of latent capacity to expand. It would not take too long to get back to 2010 production levels. We will gear up and grow locally from Cairns.	4. All aluminium extrustions and glass comes from Brisbane by road and rail. Our manufacturing base is in Cairns and we use the Kuranda range road to supply re-sellers on the Atherton Tablelands. Queensland rail may take load for a really large project in the Kuranda district.	5. Can also manufacture and supply from Townsville, but we will gear up in Cairns for a large project.
Glass	**Cairns**	1. Supplied cut to size in Townsville. They don't work in volumes, they work on units. 1 unit is 1 minute. As an example a set of sliding glass doors is about 90 units to make. This is because of the number of components that go into manufacture. Currently employ 30 staff in Cairns.	2. No, there are no curent plans to expand and no large projects for them in the wings.	3. Yes, can expand quickly. Also have a branch in Townsvillea and is a national company. We have no licenced re-sellers on the Tablelands at the moment. It is all supplied from Cairns.	4. Components are rail/ road freighted into Cairns from Townsville. We use the Kuranda range road to service Tablelands customers. We do the loop, go up Kuranda range, and down the Gillies. We run own fleet of trucks.	5. Palmerston Highway may be used if coming straight from Townsville.
Roof sheeting	**Cairns and Atherton Tablelands**	1. Capacity to possibly manufacture roof sheeting in Atherton by moving accross surplus plant from Innisfail. But it will only roll corrugated sheeting.	2. Maybe.	3. If they are organised to supply well in advance, they wil increase capacity to manufacture as much as they can from the Tablelands.	4. All freight routes are currently used.	5. Can find a way to limit the amount of freight transport on the Kuranda Range Road by using larger single shipping containers and bulk storage capacity in Mareeba i.e. less movements, but each larger.
Roof sheeting	**Cairns**	1. We are set up for cyclones that cause peak demand. We can roll quicker than any one. Some profiles are manfactured in Cairns and some come out of Townsville. We manufacture purlins in Cairns. 59,500 sqm would take 2 weeks to produce.	2. No, because we can increase capacity very quickly with our current set-up.	3. Steel rolls come from Brisbane with 5 days order and up to two weeks freight time for standard colours. Special colours take 12 weeks. We carry 26 standard colours in stock. Capacity is often limited by the construction sites ability to handle load deliveries. A semi can carry 20 tonnes at a time. For the bigger projects it's handling it off the truck and onto the roofs with cranes on-site and laying the product constraining production processes. We gennerally roll a month ahead of delivery. If extra labour is required it is easy to run a second shift.	4. Depends on lengths and getting it up the range. Trays are 12.8 m and can put 13 metres on them. We are at Edmonton, and we can use the Palmerston.	5. Palmerston Highway may be used if coming straight from Townsville.
Roof sheeting	**Cairns**	1. If the maximum production for the largest stage is 60,000 sqm of roof sheeting, we can produce that in 10-12 weeks although that will vary, depending on the product. Some sheet profiles have a slower rolling time. There are four main companies in Cairns producing roof sheeting. Not all of us are making the same profiles. Normally the project goes with the same company for that part of the project. Therefore it is individual capacity, not group capacity.	2. Capacity is sufficient for current market given there are four in town. We have the option of going to second shifts or 24 hours operations for peak demand. At the moment we are on one shift.	3. Our scale-up lead in time is 3 to 6 months to expand and train employee's.	4. We don't make everything here in Cairns. Other profiles as well as purlins are made in Townsville. Kuranda Range Road has a limit of 15 metres in length.	5. Product can be road freighted via the Palmerston highway. Freight routes are also dependent on length. The longer travel up the Palmerston increases costs.
Roof Sheeting	**Cairns**	1. All coil bought from Brisbane and rail freighted. Costs less to manufacture in Cairns. Constraint in length to 15 metres. 1 sqm = 5.5 kg @ .42 guage at any given time 20 tonnes one colour. And we would have the biggest on-ground supply in Cairns. For about 60,000 sqm there would be at least 9 days of production time, from landing to getting it rolled.	2. No - not in FNQ	3. Yes	4. Using Kuranda range road quicker. If long-load then Palmerston. 10m length on Gillies.	5. Capacity to supply from Townsville

KUR-World

Appendix 13u

HCM Analysis

Environmental Impact Statement

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Kennedy Highway HCM Class One Highway Capacity Analysis Scenario: Kennedy Highway 2017 AM Pre-Development

ARUP

Step One (Input Data)

Road	Kennedy Highway			Year	2017						
Peak Period	AM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	244	veh	24	10%	v_{vph}	287.1	
Peak Hour Flow	507	vph		Mareeba E	263	veh	26	10%	v_{vph}	309.4	
PHF	0.85		v_{vph}	596							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound		Direction of Analysis - Mareeba Bound			Downgrade					Upgrade			
						Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	378.8748	pc/h	399.1938	pc/h										
Demand Volume	244.0	veh/h	263.0	veh/h										
Grade Adjustment Fac	0.82		0.836588		Okay	300	0.83	200	0.75	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustm	0.92		0.93											
PHF	0.85		0.85											
Proportion of Trucks	0.07		0.07											
Proportion of RVs	0.03		0.03											
Passenger Car Equivale	2.1		2.1		Okay	300	2.1	200	2.3	Okay	400	2	300	2.1
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	60.70856	60.60697	Interpolati									
Adjustment Factor for	2.30	2.41	Okay	400	2.3	200	3.3	Okay	400	2.3	200	3.3
ATS LoS	A	A										

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound											
Demand Flow Rate for	357.2901	379.5096											
Flow (i) or (o)	244	263		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient	
PHF (assumed)	0.85	0.85											
Grade Adjustment for	0.843529	0.85	Okay	300	0.85	200	0.8	Okay	400	0.9	300	0.85	
Heavy Vehicle Adjustm	1.0	1.0											
Proportion of Trucks	0.07	0.07											
Proportion of RVs	0.03	0.03											
Passenger Car Equivale	1.712941	1.7	Okay	300	1.7	200	1.8	Okay	400	1.6	300	1.7	
Passenger Car Equivale	1	1											

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	50.1%	53.2%										
Base Percent Time Fol	29.4	31.1	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	42.73841	42.73841	Okay	800	40.4	600	47.8					
Coefficeint A	-0.00212	-0.00212	Okay	400	-0.0022	200	-0.0014	Okay	400	-0.0022	200	-0.0014
Coefficient B	0.928123	0.928281	Okay	400	0.923	200	0.973	Okay	400	0.923	200	0.973
LOS	C	C										

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Kennedy Highway HCM Class One Highway Capacity Analysis Scenario: Kennedy Highway 2017 PM Pre-Development

ARUP

Step One (Input Data)

Road	Kennedy Highway			Year	2017						
Peak Period	PM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	274	veh	12	4%	v_{vph}	322.4	
Peak Hour Flow	538	vph		Mareeba E	264	veh	9	3%	v_{vph}	310.6	
PHF	0.85		v_{vph}	633							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Downgrade					Upgrade			
				Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	393.8957 pc/h	379.3426 pc/h										
Demand Volume	274.0 veh/h	264.0 veh/h										
Grade Adjustment Fac	0.845647	0.837412	Okay	400	0.9	300	0.83	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustm	0.97	0.98										
PHF	0.85	0.85										
Proportion of Trucks	0.03	0.02										
Proportion of RVs	0.01	0.01										
Passenger Car Equivale	2.1	2.1	Okay	400	2	300	2.1	Okay	400	2	300	2.1
Passenger Car Equivale	1.1	1.1										

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	60.66744	60.72566	Interpolati									
Adjustment Factor for	2.38	2.32	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3
ATS LoS	A	A										

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound										
Demand Flow Rate for	381.9266	368.1432										
Flow (i) or (o)	274	264		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.861	0.86	Okay	400	0.9	300	0.85	Okay	400	0.9	300	0.85
Heavy Vehicle Adjustm	0.98	0.99										
Proportion of Trucks	0.03	0.02										
Proportion of RVs	0.01	0.01										
Passenger Car Equivale	1.68	1.69	Okay	400	1.6	300	1.7	Okay	400	1.6	300	1.7
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound									
Percent Time Followin	53.5%	52.1%									
Base Percent Time Fol	32.0	31.4	Interpolati	Volume	Coefficient	Volume	Coefficient				
No Passing Zone Adjus	42.24742	42.24742	Okay	800	40.4	600	47.8				
Coefficeint A	-0.00207	-0.00218	Okay	400	-0.0022	200	-0.0014	Okay	400	-0.0022	200	-0.0014
Coefficient B	0.930964	0.924526	Okay	400	0.923	200	0.973	Okay	400	0.923	200	0.973
LOS	C	C										

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Kennedy Highway HCM Class One Highway Capacity Analysis Scenario: Kennedy Highway 2018 AM Pre-Development

ARUP

Step One (Input Data)

Road	Kennedy Highway			Year	2018						
Peak Period	AM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	249	veh	24	10%	v_{vph}	292.9	
Peak Hour Flow	517	vph		Mareeba E	268	veh	27	10%	v_{vph}	315.3	
PHF	0.85		v_{vph}	608							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Downgrade					Upgrade			
				Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	384.1388 pc/h	404.6363 pc/h										
Demand Volume	249.0 veh/h	268.0 veh/h										
Grade Adjustment Fac	0.824	0.841	Okay	300	0.83	200	0.75	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustm	0.93	0.93										
PHF	0.85	0.85										
Proportion of Trucks	0.07	0.07										
Proportion of RVs	0.03	0.03										
Passenger Car Equivale	2.1	2.1	Okay	300	2.1	200	2.3	Okay	400	2	300	2.1
Passenger Car Equivale	1.1	1.1										

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound									
			Interpolati	Volume	Coefficient	Volume	Coefficient				
Average Travel Speed	60.65269	60.5502									
Adjustment Factor for	2.28	2.38	Change	400	2.3	200	3.3	Okay	400	2.3	200	3.3
ATS LoS	A	A									

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound											
Demand Flow Rate for	363.2023	385.247											
Flow (i) or (o)	249	268		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient	
PHF (assumed)	0.85	0.85											
Grade Adjustment for	0.846	0.86	Okay	300	0.85	200	0.8	Okay	400	0.9	300	0.85	
Heavy Vehicle Adjustm	1.0	1.0											
Proportion of Trucks	0.07	0.07											
Proportion of RVs	0.03	0.03											
Passenger Car Equivale	1.707059	1.7	Okay	300	1.7	200	1.8	Okay	400	1.6	300	1.7	
Passenger Car Equivale	1	1											

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	50.5%	53.4%										
Base Percent Time Fol	29.9	31.7	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	42.30738	42.30738	Okay	800	40.4	600	47.8					
Coefficeint A	-0.00214	-0.00214	Okay	400	-0.0022	200	-0.0014	Okay	400	-0.0022	200	-0.0014
Coefficient B	0.926688	0.926965	Okay	400	0.923	200	0.973	Okay	400	0.923	200	0.973
LOS	C	C										

Job: KUR-World Environmental Impact Assessment
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Step One (Input Data)

Road	Kennedy Highway			Year	2018						
Peak Period	PM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	279	veh	12	4%	v_{vph}	328.2	
Peak Hour Flow	548	vph		Mareeba E	269	veh	9	3%	v_{vph}	316.5	
PHF	0.85		v_{vph}	645							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound		Direction of Analysis - Mareeba Bound			Downgrade					Upgrade			
						Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	399.072	pc/h	384.5916	pc/h										
Demand Volume	279.0	veh/h	269.0	veh/h										
Grade Adjustment Fac	0.849765		0.841529		Okay	400	0.9	300	0.83	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustm	0.97		0.98											
PHF	0.85		0.85											
Proportion of Trucks	0.03		0.02											
Proportion of RVs	0.01		0.01											
Passenger Car Equivale	2.1		2.1		Okay	400	2	300	2.1	Okay	400	2	300	2.1
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound			Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	60.60754	60.66546	Interpolati	Volume	Coefficient	Volume	Coefficient						
Adjustment Factor for	2.36	2.30	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3	
ATS LoS	A	A											

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	387.5053	373.7867										
Flow (i) or (o)	279	269										
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.864118	0.86	Okay	400	0.9	300	0.85	Okay	400	0.9	300	0.85
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.03	0.02										
Proportion of RVs	0.01	0.01										
Passenger Car Equivale	1.671765	1.7	Okay	400	1.6	300	1.7	Okay	400	1.6	300	1.7
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	53.8%	52.5%										
Base Percent Time Fol	32.5	31.9	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	41.8322	41.8322	Okay	800	40.4	600	47.8					
Coefficeint A	-0.0021	-0.0022	Okay	400	-0.0022	200	-0.0014	Okay	400	-0.0022	200	-0.0014
Coefficient B	0.929553	0.923232	Okay	400	0.923	200	0.973	Okay	400	0.923	200	0.973
LOS	C	C										

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
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Step One (Input Data)

Road	Kennedy Highway			Year	2018						
Peak Period	AM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	259	veh	26	10%	v_{vph}	304.7	
Peak Hour Flow	533	vph		Mareeba E	274	veh	27	10%	v_{vph}	322.4	
PHF	0.85		v_{vph}	627							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound		Direction of Analysis - Mareeba Bound			Downgrade					Upgrade			
						Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	394.797	pc/h	411.0897	pc/h										
Demand Volume	259.0	veh/h	274.0	veh/h										
Grade Adjustment Fac	0.833294		0.845647		Okay	400	0.9	300	0.83	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustm	0.93		0.93											
PHF	0.85		0.85											
Proportion of Trucks	0.07		0.07											
Proportion of RVs	0.03		0.03											
Passenger Car Equivale	2.1		2.1		Okay	400	2	300	2.1	Okay	400	2	300	2.1
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	60.54108	60.47071	Interpolati									
Adjustment Factor for	2.26	2.33	Okay	600	1.5	400	2.3	Okay	400	2.3	200	3.3
ATS LoS	A	A										

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	374.8871	392.0728										
Flow (i) or (o)	259	274										
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.852353	0.86	Okay	400	0.9	300	0.85	Okay	400	0.9	300	0.85
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.07	0.07										
Proportion of RVs	0.03	0.03										
Passenger Car Equivale	1.695294	1.7	Okay	400	1.6	300	1.7	Okay	400	1.6	300	1.7
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	51.3%	53.6%										
Base Percent Time Fol	30.9	32.3	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	41.62249	41.62249	Okay	800	40.4	600	47.8					
Coefficeint A	-0.00217	-0.00218	Okay	400	-0.0022	200	-0.0014	Okay	400	-0.0022	200	-0.0014
Coefficient B	0.924982	0.924301	Okay	400	0.923	200	0.973	Okay	400	0.923	200	0.973
LOS	C	C										

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Step One (Input Data)

Road	Kennedy Highway			Year	2018						
Peak Period	PM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	286	veh	14	5%	v_{vph}	336.5	
Peak Hour Flow	584	vph		Mareeba E	298	veh	11	4%	v_{vph}	350.6	
PHF	0.85		v_{vph}	687							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Downgrade					Upgrade				
				Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient	
Demand Flow Rate for	406.6242 pc/h	418.2704 pc/h											
Demand Volume	286.0 veh/h	298.0 veh/h											
Grade Adjustment Fac	0.855529	0.865412	Okay	400	0.9	300	0.83	Okay	400	0.9	300	0.83	
Heavy Vehicle Adjustm	0.97	0.97											
PHF	0.85	0.85											
Proportion of Trucks	0.03	0.03											
Proportion of RVs	0.02	0.01											
Passenger Car Equivale	2.1	2.0	Okay	400	2	300	2.1	Okay	400	2	300	2.1	
Passenger Car Equivale	1.1	1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient	
Average Travel Speed	60.4223	60.37572	Interpolati										
Adjustment Factor for	2.23	2.27	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3	
ATS LoS	A	A											

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	395.2481	408.341										
Flow (i) or (o)	286	298										
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.868	0.88	Okay	400	0.9	300	0.85	Okay	400	0.9	300	0.85
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.03	0.03										
Proportion of RVs	0.02	0.01										
Passenger Car Equivale	1.663529	1.6	Okay	400	1.6	300	1.7	Okay	400	1.6	300	1.7
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	53.5%	55.0%										
Base Percent Time Fol	33.7	34.5	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	40.3007	40.3007	Okay	1400	23.8	800	40.4					
Coefficeint A	-0.00225	-0.00223	Okay	600	-0.0033	400	-0.0022	Okay	400	-0.0022	200	-0.0014
Coefficient B	0.92079	0.921344	Okay	600	0.87	400	0.923	Okay	400	0.923	200	0.973
LOS	C	C										

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Step One (Input Data)

Road	Kennedy Highway			Year	2021						
Peak Period	AM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	264	veh	26	10%	v_{vph}	310.6	
Peak Hour Flow	549	vph		Mareeba E	285	veh	28	10%	v_{vph}	335.3	
PHF	0.85		v_{vph}	646							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound		Direction of Analysis - Mareeba Bound			Rolling					Rolling			
Demand Flow Rate for	400.2871	pc/h	422.706	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	264.0	veh/h	285.0	veh/h										
Grade Adjustment Fac	0.837412		0.854706		Okay	400	0.9	300	0.83	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustm	0.93		0.93											
PHF	0.85		0.85											
Proportion of Trucks	0.07		0.07											
Proportion of RVs	0.03		0.03											
Passenger Car Equivale	2.1		2.1		Okay	400	2	300	2.1	Okay	400	2	300	2.1
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound			Rolling					Rolling			
Average Travel Speed	60.4548	60.36513	Interpolati	Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Adjustment Factor for	2.21	2.30	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3
ATS LoS	A	A										

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound										
Demand Flow Rate for	380.6607	404.4215										
Flow (i) or (o)	264	285		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.855294	0.87	Okay	400	0.9	300	0.85	Okay	400	0.9	300	0.85
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.07	0.07										
Proportion of RVs	0.03	0.03										
Passenger Car Equivale	1.689412	1.7	Okay	400	1.6	300	1.7	Okay	400	1.6	300	1.7
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	51.5%	54.5%										
Base Percent Time Fol	31.6	33.4	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	40.95196	40.95196	Okay	800	40.4	600	47.8					
Coefficeint A	-0.00222	-0.0022	Okay	600	-0.0033	400	-0.0022	Okay	400	-0.0022	200	-0.0014
Coefficient B	0.921828	0.922928	Okay	600	0.87	400	0.923	Okay	400	0.923	200	0.973
LOS	C	C										

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Step One (Input Data)

Road	Kennedy Highway			Year	2017						
Peak Period	PM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	297	veh	13	4%	v_{vph}	349.4	
Peak Hour Flow	583	vph		Mareeba E	286	veh	10	3%	v_{vph}	336.5	
PHF	0.85		v_{vph}	686							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Downgrade					Upgrade			
				Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	417.2782 pc/h	402.0481 pc/h										
Demand Volume	297.0 veh/h	286.0 veh/h										
Grade Adjustment Fac	0.864588	0.855529	Okay	400	0.9	300	0.83	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustm	0.97	0.98										
PHF	0.85	0.85										
Proportion of Trucks	0.03	0.02										
Proportion of RVs	0.01	0.01										
Passenger Car Equivale	2.1	2.1	Okay	400	2	300	2.1	Okay	400	2	300	2.1
Passenger Car Equivale	1.1	1.1										

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	60.40062	60.46154	Interpolati									
Adjustment Factor for	2.29	2.23	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3
ATS LoS	A	A										

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound											
Demand Flow Rate for	407.2586	392.6767											
Flow (i) or (o)	297	286		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient	
PHF (assumed)	0.85	0.85											
Grade Adjustment for	0.874706	0.868	Okay	400	0.9	300	0.85	Okay	400	0.9	300	0.85	
Heavy Vehicle Adjustm	1.0	1.0											
Proportion of Trucks	0.03	0.02											
Proportion of RVs	0.01	0.01											
Passenger Car Equivale	1.650588	1.7	Okay	400	1.6	300	1.7	Okay	400	1.6	300	1.7	
Passenger Car Equivale	1	1											

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	54.9%	53.7%										
Base Percent Time Fol	34.3	33.9	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	40.40179	40.40179	Okay	1400	23.8	800	40.4					
Coefficeint A	-0.00217	-0.0023	Okay	400	-0.0022	200	-0.0014	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.924831	0.918421	Okay	400	0.923	200	0.973	Okay	600	0.87	400	0.923
LOS	C	C										

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ARUP

Step One (Input Data)

Road	Kennedy Highway			Year	2017						
Peak Period	AM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	296	veh	28	9%	v_{vph}	348.2	
Peak Hour Flow	599	vph		Mareeba E	303	veh	29	10%	v_{vph}	356.5	
PHF	0.85		v_{vph}	705							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Downgrade					Upgrade			
				Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	433.6483 pc/h	441.1342 pc/h										
Demand Volume	296.0 veh/h	303.0 veh/h										
Grade Adjustment Fac	0.863765	0.869529	Okay	400	0.9	300	0.83	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustm	0.93	0.93										
PHF	0.85	0.85										
Proportion of Trucks	0.07	0.07										
Proportion of RVs	0.02	0.03										
Passenger Car Equivale	2.1	2.0	Okay	400	2	300	2.1	Okay	400	2	300	2.1
Passenger Car Equivale	1.1	1.1										

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	60.12663	60.09669	Interpolati									
Adjustment Factor for	2.14	2.17	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3
ATS LoS	A	A										

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	416.5607	424.1785										
Flow (i) or (o)	296	303										
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.874118	0.88	Okay	400	0.9	300	0.85	Okay	400	0.9	300	0.85
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.07	0.07										
Proportion of RVs	0.02	0.03										
Passenger Car Equivale	1.651765	1.6	Okay	400	1.6	300	1.7	Okay	400	1.6	300	1.7
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound									
Percent Time Followin	54.4%	55.6%									
Base Percent Time Fol	34.9	35.7	Interpolati	Volume	Coefficient	Volume	Coefficient				
No Passing Zone Adjus	39.27288	39.27288	Okay	1400	23.8	800	40.4				
Coefficeint A	-0.00233	-0.00239	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.916593	0.914083	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	C									

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Step One (Input Data)

Road	Kennedy Highway			Year	2017						
Peak Period	PM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	316	veh	15	5%	v_{vph}	371.8	
Peak Hour Flow	656	vph		Mareeba E	340	veh	13	4%	v_{vph}	400.0	
PHF	0.85		v_{vph}		772						
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Downgrade					Upgrade			
				Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	436.2198 pc/h	458.2222 pc/h										
Demand Volume	316.0 veh/h	340.0 veh/h										
Grade Adjustment Fac	0.880235	0.9	Okay	400	0.9	300	0.83	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustm	0.97	0.97										
PHF	0.85	0.85										
Proportion of Trucks	0.03	0.03										
Proportion of RVs	0.02	0.01										
Passenger Car Equivale	2.0	2.0	Okay	400	2	300	2.1	Okay	400	2	300	2.1
Passenger Car Equivale	1.1	1.1										

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	60.04242	59.95441	Interpolati									
Adjustment Factor for	2.07	2.16	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3
ATS LoS	A	A										

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	427.564	452.4444										
Flow (i) or (o)	316	340										
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.885882	0.90	Okay	400	0.9	300	0.85	Okay	400	0.9	300	0.85
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.03	0.03										
Proportion of RVs	0.02	0.01										
Passenger Car Equivale	1.628235	1.6	Okay	400	1.6	300	1.7	Okay	400	1.6	300	1.7
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	55.8%	58.5%										
Base Percent Time Fol	37.3	38.9	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	38.18643	38.18643	Okay	1400	23.8	800	40.4					
Coefficeint A	-0.00249	-0.0024	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.909102	0.913402	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	C										

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Step One (Input Data)

Road	Kennedy Highway			Year	2024						
Peak Period	AM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	280	veh	28	10%	v_{vph}	329.4	
Peak Hour Flow	582	vph		Mareeba E	302	veh	30	10%	v_{vph}	355.3	
PHF	0.85		v_{vph}	685							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound		Direction of Analysis - Mareeba Bound			Rolling					Rolling			
Demand Flow Rate for	417.4599	pc/h	440.1288	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	280.0	veh/h	302.0	veh/h										
Grade Adjustment Fac	0.850588		0.868706		Okay	400	0.9	300	0.83	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustm	0.93		0.93											
PHF	0.85		0.85											
Proportion of Trucks	0.07		0.07											
Proportion of RVs	0.03		0.03											
Passenger Car Equivale	2.1		2.0		Okay	400	2	300	2.1	Okay	400	2	300	2.1
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Rolling					Rolling			
Average Travel Speed	60.25603	60.16536	Interpolati	Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Adjustment Factor for	2.14	2.23	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3
ATS LoS	A	A										

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound										
Demand Flow Rate for	398.8347	423.0953										
Flow (i) or (o)	280	302		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.864706	0.88	Okay	400	0.9	300	0.85	Okay	400	0.9	300	0.85
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.07	0.07										
Proportion of RVs	0.03	0.03										
Passenger Car Equivale	1.670588	1.6	Okay	400	1.6	300	1.7	Okay	400	1.6	300	1.7
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	52.8%	55.5%										
Base Percent Time Fol	33.5	35.0	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	39.79327	39.79327	Okay	1400	23.8	800	40.4					
Coefficeint A	-0.00233	-0.00227	Okay	600	-0.0033	400	-0.0022	Okay	400	-0.0022	200	-0.0014
Coefficient B	0.91688	0.918635	Okay	600	0.87	400	0.923	Okay	400	0.923	200	0.973
LOS	C	C										

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Step One (Input Data)

Road	Kennedy Highway			Year	2017						
Peak Period	PM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	315	veh	14	4%	v_{vph}	370.6	
Peak Hour Flow	618	vph		Mareeba E	303	veh	10	3%	v_{vph}	356.5	
PHF	0.85		v_{vph}	727							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Downgrade					Upgrade				
				Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient	
Demand Flow Rate for	434.8401 pc/h	418.9241 pc/h											
Demand Volume	315.0 veh/h	303.0 veh/h											
Grade Adjustment Fac	0.879412	0.869529	Okay	400	0.9	300	0.83	Okay	400	0.9	300	0.83	
Heavy Vehicle Adjustm	0.97	0.98											
PHF	0.85	0.85											
Proportion of Trucks	0.03	0.02											
Proportion of RVs	0.01	0.01											
Passenger Car Equivale	2.0	2.0	Okay	400	2	300	2.1	Okay	400	2	300	2.1	
Passenger Car Equivale	1.1	1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Downgrade					Upgrade				
				Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient	
Average Travel Speed	60.20089	60.26455	Interpolati	Volume	Coefficient	Volume	Coefficient						
Adjustment Factor for	2.22	2.16	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3	
ATS LoS	A	A											

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	426.5089	411.1183										
Flow (i) or (o)	315	303										
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.885294	0.88	Okay	400	0.9	300	0.85	Okay	400	0.9	300	0.85
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.03	0.02										
Proportion of RVs	0.01	0.01										
Passenger Car Equivale	1.629412	1.6	Okay	400	1.6	300	1.7	Okay	400	1.6	300	1.7
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	56.3%	55.1%										
Base Percent Time Fol	36.2	35.8	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	39.35898	39.35898	Okay	1400	23.8	800	40.4					
Coefficeint A	-0.00226	-0.00239	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.920054	0.913767	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	C										

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Step One (Input Data)

Road	Kennedy Highway			Year	2024						
Peak Period	AM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	334	veh	29	9%	v_{vph}	392.9	
Peak Hour Flow	672	vph		Mareeba E	338	veh	31	9%	v_{vph}	397.6	
PHF	0.85		v_{vph}	791							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Downgrade					Upgrade			
				Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	466.8552 pc/h	470.5889 pc/h										
Demand Volume	334.0 veh/h	338.0 veh/h										
Grade Adjustment Fac	0.895059	0.898353	Okay	400	0.9	300	0.83	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustm	0.94	0.94										
PHF	0.85	0.85										
Proportion of Trucks	0.06	0.06										
Proportion of RVs	0.03	0.03										
Passenger Car Equivale	2.0	2.0	Okay	400	2	300	2.1	Okay	400	2	300	2.1
Passenger Car Equivale	1.1	1.1										

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	59.75819	59.74326	Interpolati									
Adjustment Factor for	2.02	2.03	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3
ATS LoS	A	A										

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	454.2854	458.3975										
Flow (i) or (o)	334	338										
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.896471	1	Okay	400	0.9	300	0.85	Okay	400	0.9	300	0.85
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.06	0.06										
Proportion of RVs	0.03	0.03										
Passenger Car Equivale	1.607059	1.6	Okay	400	1.6	300	1.7	Okay	400	1.6	300	1.7
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	57.4%	58.1%										
Base Percent Time Fol	38.9	39.3	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	37.28244	37.28244	Okay	1400	23.8	800	40.4					
Coefficeint A	-0.00252	-0.00257	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.907525	0.905283	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	C										

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Step One (Input Data)

Road	Kennedy Highway			Year	2024						
Peak Period	PM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	348	veh	16	5%	v_{vph}	409.4	
Peak Hour Flow	736	vph		Mareeba E	388	veh	13	3%	v_{vph}	456.5	
PHF	0.85		v_{vph}	866							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound		Direction of Analysis - Mareeba Bound			Downgrade					Upgrade			
						Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	470.749	pc/h	500.9779	pc/h										
Demand Volume	348.0	veh/h	388.0	veh/h										
Grade Adjustment Fac	0.904706		0.928235		Okay	500	0.95	400	0.9	Okay	500	0.95	400	0.9
Heavy Vehicle Adjustm	0.96		0.98											
PHF	0.85		0.85											
Proportion of Trucks	0.04		0.02											
Proportion of RVs	0.01		0.01											
Passenger Car Equivale	2.0		1.9		Okay	500	1.8	400	2	Okay	500	1.8	400	2
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	59.61371	59.4928	Interpolati									
Adjustment Factor for	1.90	2.02	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3
ATS LoS	A	A										

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	462.5747	493.5495										
Flow (i) or (o)	348	388										
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.905647	0.93	Okay	500	0.96	400	0.9	Okay	500	0.96	400	0.9
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.04	0.02										
Proportion of RVs	0.01	0.01										
Passenger Car Equivale	1.581176	1.5	Okay	500	1.4	400	1.6	Okay	500	1.4	400	1.6
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	58.0%	61.9%										
Base Percent Time Fol	40.6	43.3	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	36.08057	36.08057	Okay	1400	23.8	800	40.4					
Coefficeint A	-0.00271	-0.00259	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.898209	0.904252	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	C										

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Step One (Input Data)

Road	Kennedy Highway			Year	2027						
Peak Period	AM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	297	veh	29	10%	v_{vph}	349.4	
Peak Hour Flow	618	vph		Mareeba E	321	veh	32	10%	v_{vph}	377.6	
PHF	0.85		v_{vph}	727							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound		Direction of Analysis - Mareeba Bound			Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	435.0697	pc/h	458.8736	pc/h										
Demand Volume	297.0	veh/h	321.0	veh/h										
Grade Adjustment Fac	0.864588		0.884353		Okay	400	0.9	300	0.83	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustm	0.93		0.93											
PHF	0.85		0.85											
Proportion of Trucks	0.07		0.07											
Proportion of RVs	0.03		0.03											
Passenger Car Equivale	2.1		2.0		Okay	400	2	300	2.1	Okay	400	2	300	2.1
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	60.0489	59.95368	Interpolati	Volume	Coefficient	Volume	Coefficient					
Adjustment Factor for	2.06	2.16	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3
ATS LoS	A	A										

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound										
Demand Flow Rate for	417.654	443.3941										
Flow (i) or (o)	297	321		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.874706	0.89	Okay	400	0.9	300	0.85	Okay	400	0.9	300	0.85
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.07	0.07										
Proportion of RVs	0.03	0.03										
Passenger Car Equivale	1.650588	1.6	Okay	400	1.6	300	1.7	Okay	400	1.6	300	1.7
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	54.2%	57.2%										
Base Percent Time Fol	35.4	37.3	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	38.711	38.711	Okay	1400	23.8	800	40.4					
Coefficeint A	-0.00244	-0.00239	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.911501	0.913707	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	C										

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Step One (Input Data)

Road	Kennedy Highway			Year	2027						
Peak Period	PM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	334	veh	15	4%	v_{vph}	392.9	
Peak Hour Flow	656	vph		Mareeba E	322	veh	11	3%	v_{vph}	378.8	
PHF	0.85		v_{vph}	772							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound		Direction of Analysis - Mareeba Bound			Downgrade					Upgrade			
						Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	452.7139	pc/h	437.1323	pc/h										
Demand Volume	334.0	veh/h	322.0	veh/h										
Grade Adjustment Fac	0.895059		0.885176		Okay	400	0.9	300	0.83	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustm	0.97		0.98											
PHF	0.85		0.85											
Proportion of Trucks	0.03		0.02											
Proportion of RVs	0.01		0.01											
Passenger Car Equivale	2.0		2.0		Okay	400	2	300	2.1	Okay	400	2	300	2.1
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	59.99373	60.05605	Interpolati	600	1.5	400	2.3	Okay	600	1.5	400	2.3
Adjustment Factor for	2.15	2.09	Okay									
ATS LoS	A	A										

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	446.3028	431.2174										
Flow (i) or (o)	334	322										
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.896471	0.89	Okay	400	0.9	300	0.85	Okay	400	0.9	300	0.85
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.03	0.02										
Proportion of RVs	0.01	0.01										
Passenger Car Equivale	1.607059	1.6	Okay	400	1.6	300	1.7	Okay	400	1.6	300	1.7
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	57.7%	56.6%										
Base Percent Time Fol	38.3	37.8	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	38.25527	38.25527	Okay	1400	23.8	800	40.4					
Coefficeint A	-0.00237	-0.00249	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.914727	0.909031	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	C										

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Kennedy Highway HCM Class One Highway Capacity Analysis Scenario: Kennedy Highway 2027 AM Post-Development

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Step One (Input Data)

Road	Kennedy Highway			Year	2027						
Peak Period	AM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	376	veh	31	8%	v_{vph}	442.4	
Peak Hour Flow	749	vph		Mareeba E	373	veh	34	9%	v_{vph}	438.8	
PHF	0.85		v_{vph}	881							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound		Direction of Analysis - Mareeba Bound			Downgrade					Upgrade			
						Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	503.6214	pc/h	505.1328	pc/h										
Demand Volume	376.0	veh/h	373.0	veh/h										
Grade Adjustment Fac	0.921176		0.919412		Okay	500	0.95	400	0.9	Okay	500	0.95	400	0.9
Heavy Vehicle Adjustm	0.95		0.94											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.06											
Proportion of RVs	0.03		0.03											
Passenger Car Equival	1.9		1.9		Okay	500	1.8	400	2	Okay	500	1.8	400	2
Passenger Car Equival	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Downgrade					Upgrade			
				Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	59.343	59.33696	Interpolati	Volume	Coefficient	Volume	Coefficient					
Adjustment Factor for	1.88	1.89	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3
ATS LoS	A	A										

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound										
Demand Flow Rate for	490.3223	490.1762										
Flow (i) or (o)	376	373		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.925412	0.92	Okay	500	0.96	400	0.9	Okay	500	0.96	400	0.9
Heavy Vehicle Adjustm	0.97	0.97										
Proportion of Trucks	0.05	0.06										
Proportion of RVs	0.03	0.03										
Passenger Car Equivale	1.515294	1.5	Okay	500	1.4	400	1.6	Okay	500	1.4	400	1.6
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	60.4%	60.4%										
Base Percent Time Fol	42.7	42.7	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	35.40621	35.40621	Okay	1400	23.8	800	40.4					
Coefficeint A	-0.0027	-0.00277	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.899103	0.89554	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	C										

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Kennedy Highway HCM Class One Highway Capacity Analysis Scenario: Kennedy Highway 2027 PM Post-Development

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Step One (Input Data)

Road	Kennedy Highway			Year	2027						
Peak Period	PM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	384	veh	17	4%	v_{vph}	451.8	
Peak Hour Flow	793	vph		Mareeba E	409	veh	13	3%	v_{vph}	481.2	
PHF	0.85		v_{vph}	933							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Downgrade					Upgrade				
				Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient	
Demand Flow Rate for	501.5392 pc/h	520.6516 pc/h											
Demand Volume	384.0 veh/h	409.0 veh/h											
Grade Adjustment Fac	0.925882	0.940588	Okay	500	0.95	400	0.9	Okay	500	0.95	400	0.9	
Heavy Vehicle Adjustm	0.97	0.98											
PHF	0.85	0.85											
Proportion of Trucks	0.03	0.02											
Proportion of RVs	0.01	0.01											
Passenger Car Equivale	1.9	1.8	Okay	500	1.8	400	2	Okay	500	1.8	400	2	
Passenger Car Equivale	1.1	1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Interpolati	Volume	Coefficient	Volume	Coefficient					
Average Travel Speed	59.30081	59.22436											
Adjustment Factor for	1.82	1.89	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3	
ATS LoS	A	A											

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	492.4429	511.6319										
Flow (i) or (o)	384	409										
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.931059	0.95	Okay	500	0.96	400	0.9	Okay	500	0.96	400	0.9
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.03	0.02										
Proportion of RVs	0.01	0.01										
Passenger Car Equivale	1.496471	1.4	Okay	500	1.4	400	1.6	Okay	500	1.4	400	1.6
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	60.7%	63.0%										
Base Percent Time Fol	43.6	45.3	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	34.75393	34.75393	Okay	1400	23.8	800	40.4					
Coefficeint A	-0.00281	-0.00276	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.893418	0.896092	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	C										

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Kennedy Highway HCM Class One Highway Capacity Analysis Scenario: Kennedy Highway 2027 PM Post-Development Post-Upgrade

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Step One (Input Data)

Road	Kennedy Highway			Year	2027						
Peak Period	PM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	384	veh	17	4%	v_{vph}	451.8	
Peak Hour Flow	793	vph		Mareeba E	409	veh	13	3%	v_{vph}	481.2	
PHF	0.85		v_{vph}	933							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	20%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound		Direction of Analysis - Mareeba Bound			Rolling					Rolling			
Demand Flow Rate for	502.0271	pc/h	520.6516	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	384.0	veh/h	409.0	veh/h										
Grade Adjustment Fac	0.925882		0.940588		Okay	500	0.95	400	0.9	Okay	500	0.95	400	0.9
Heavy Vehicle Adjustm	0.97		0.98											
PHF	0.85		0.85											
Proportion of Trucks	0.03		0.02											
Proportion of RVs	0.02		0.01											
Passenger Car Equival	1.9		1.8		Okay	500	1.8	400	2	Okay	500	1.8	400	2
Passenger Car Equival	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound										
Average Travel Speed	59.63507	59.61644	Interpolati	Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Adjustment Factor for	1.48	1.50	Okay	600	1.4	400	1.6	Okay	600	1.4	400	1.6
ATS LoS	A	A										

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	492.4429	511.6319										
Flow (i) or (o)	384	409										
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.931059	0.95	Okay	500	0.96	400	0.9	Okay	500	0.96	400	0.9
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.03	0.02										
Proportion of RVs	0.01	0.01										
Passenger Car Equivale	1.496471	1.4	Okay	500	1.4	400	1.6	Okay	500	1.4	400	1.6
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	57.9%	60.2%										
Base Percent Time Fol	43.6	45.3	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	29.10628	29.10628	Okay	1400	20	800	33.8					
Coefficeint A	-0.00281	-0.00276	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.893418	0.895963	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	C										

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Step One (Input Data)

Road	Kennedy Highway			Year	2037						
Peak Period	AM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	363	veh	36	10%	v_{vph}	427.1	
Peak Hour Flow	754	vph		Mareeba E	391	veh	39	10%	v_{vph}	460.0	
PHF	0.85		v_{vph}	887							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound		Direction of Analysis - Mareeba Bound			Rolling					Rolling			
Demand Flow Rate for	499.8376	pc/h	526.5763	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	363.0	veh/h	391.0	veh/h										
Grade Adjustment Fac	0.913529		0.93		Okay	500	0.95	400	0.9	Okay	500	0.95	400	0.9
Heavy Vehicle Adjustm	0.94		0.94											
PHF	0.85		0.85											
Proportion of Trucks	0.07		0.07											
Proportion of RVs	0.03		0.03											
Passenger Car Equivale	1.9		1.9		Okay	500	1.8	400	2	Okay	500	1.8	400	2
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound										
Average Travel Speed	59.29174	59.18478	Interpolati	Volume	Coefficient	Volume	Coefficient					
Adjustment Factor for	1.79	1.90	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3
ATS LoS	A	A										

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound										
Demand Flow Rate for	483.9123	507.9658										
Flow (i) or (o)	363	391		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.916235	0.94	Okay	500	0.96	400	0.9	Okay	500	0.96	400	0.9
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.07	0.07										
Proportion of RVs	0.03	0.03										
Passenger Car Equivale	1.545882	1.5	Okay	500	1.4	400	1.6	Okay	500	1.4	400	1.6
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	59.1%	62.0%										
Base Percent Time Fol	42.0	44.0	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	35.09137	35.09137	Okay	1400	23.8	800	40.4					
Coefficeint A	-0.00279	-0.00275	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.894389	0.896543	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	C										

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Step One (Input Data)

Road	Kennedy Highway			Year	2037						
Peak Period	PM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	407	veh	18	4%	v_{vph}	478.8	
Peak Hour Flow	799	vph		Mareeba E	392	veh	13	3%	v_{vph}	461.2	
PHF	0.85		v_{vph}	940							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Downgrade					Upgrade				
				Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient	
Demand Flow Rate for	523.096 pc/h	504.7696 pc/h											
Demand Volume	407.0 veh/h	392.0 veh/h											
Grade Adjustment Fac	0.939412	0.930588	Okay	500	0.95	400	0.9	Okay	500	0.95	400	0.9	
Heavy Vehicle Adjustm	0.97	0.98											
PHF	0.85	0.85											
Proportion of Trucks	0.03	0.02											
Proportion of RVs	0.01	0.01											
Passenger Car Equivale	1.8	1.9	Okay	500	1.8	400	2	Okay	500	1.8	400	2	
Passenger Car Equivale	1.1	1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Downgrade					Upgrade				
				Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient	
Average Travel Speed	59.19325	59.26655	Interpolati	Volume	Coefficient	Volume	Coefficient						
Adjustment Factor for	1.88	1.81	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3	
ATS LoS	A	A											

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	512.1723	497.0419										
Flow (i) or (o)	407	392										
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.947294	0.94	Okay	500	0.96	400	0.9	Okay	500	0.96	400	0.9
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.03	0.02										
Proportion of RVs	0.01	0.01										
Passenger Car Equivale	1.442353	1.5	Okay	500	1.4	400	1.6	Okay	500	1.4	400	1.6
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	62.7%	61.4%										
Base Percent Time Fol	45.1	44.3	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	34.61174	34.61174	Okay	1400	23.8	800	40.4					
Coefficeint A	-0.00273	-0.00288	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.897284	0.89038	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	C										

Job: KUR-World Environmental Impact Assessment
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ARUP

Step One (Input Data)

Road	Kennedy Highway			Year	2037						
Peak Period	AM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	440	veh	38	9%	v_{vph}	517.6	
Peak Hour Flow	883	vph		Mareeba E	443	veh	41	9%	v_{vph}	521.2	
PHF	0.85		v_{vph}	1039							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Downgrade					Upgrade			
				Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	569.9866 pc/h	573.3327 pc/h										
Demand Volume	440.0 veh/h	443.0 veh/h										
Grade Adjustment Fac	0.953529	0.954235	Okay	600	0.97	500	0.95	Okay	600	0.97	500	0.95
Heavy Vehicle Adjustm	0.95	0.95										
PHF	0.85	0.85										
Proportion of Trucks	0.06	0.06										
Proportion of RVs	0.03	0.03										
Passenger Car Equivale	1.8	1.8	Okay	600	1.7	500	1.8	Okay	600	1.7	500	1.8
Passenger Car Equivale	1.1	1.1										

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound									
				Volume	Coefficient	Volume	Coefficient				
Average Travel Speed	58.57158	58.55819	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for	1.61	1.62	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3
ATS LoS	A	A									

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	550.004	553.3214										
Flow (i) or (o)	440	443										
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.961765	0.96	Okay	600	0.97	500	0.96	Okay	600	0.97	500	0.96
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.06	0.06										
Proportion of RVs	0.03	0.03										
Passenger Car Equivale	1.364706	1.4	Okay	600	1.2	500	1.4	Okay	600	1.2	500	1.4
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	64.0%	64.4%										
Base Percent Time Fol	48.0	48.3	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	32.008	32.008	Okay	1400	23.8	800	40.4					
Coefficeint A	-0.00304	-0.00313	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.88237	0.877954	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	C										

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Kennedy Highway HCM Class One Highway Capacity Analysis Scenario: Kennedy Highway 2037 PM Post-Development

ARUP

Step One (Input Data)

Road	Kennedy Highway			Year	2027						
Peak Period	PM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	458	veh	21	5%	v_{vph}	538.8	
Peak Hour Flow	937	vph		Mareeba E	479	veh	16	3%	v_{vph}	563.5	
PHF	0.85		v_{vph}	1102							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	40%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Downgrade					Upgrade			
				Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	576.5564 pc/h	594.5673 pc/h										
Demand Volume	458.0 veh/h	479.0 veh/h										
Grade Adjustment Fac	0.957765	0.962706	Okay	600	0.97	500	0.95	Okay	600	0.97	500	0.95
Heavy Vehicle Adjustm	0.98	0.98										
PHF	0.85	0.85										
Proportion of Trucks	0.03	0.02										
Proportion of RVs	0.02	0.01										
Passenger Car Equivale	1.8	1.7	Okay	600	1.7	500	1.8	Okay	600	1.7	500	1.8
Passenger Car Equivale	1.1	1.1										

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound									
				Volume	Coefficient	Volume	Coefficient				
Average Travel Speed	58.44075	58.36871	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for	1.52	1.59	Okay	600	1.5	400	2.3	Okay	600	1.5	400	2.3
ATS LoS	A	A									

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	564.4198	586.334										
Flow (i) or (o)	458	479										
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.963882	0.97	Okay	600	0.97	500	0.96	Okay	600	0.97	500	0.96
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.03	0.02										
Proportion of RVs	0.01	0.01										
Passenger Car Equivale	1.322353	1.3	Okay	600	1.2	500	1.4	Okay	600	1.2	500	1.4
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	64.4%	66.4%										
Base Percent Time Fol	49.4	50.7	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	30.69581	30.69581	Okay	1400	23.8	800	40.4					
Coefficeint A	-0.00322	-0.00317	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.873621	0.876213	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	D										

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Kennedy Highway HCM Class One Highway Capacity Analysis Scenario: Kennedy Highway 2037 PM Post-Development Post-Upgrade

ARUP

Step One (Input Data)

Road	Kennedy Highway			Year	2027						
Peak Period	PM										
Speed Limit	100	km/h	62.2	mi/h			HVs	HV %			
AADT	5980	vpd		Kuranda B	458	veh	21	5%	v_{vph}	538.8	
Peak Hour Flow	937	vph		Mareeba E	479	veh	16	3%	v_{vph}	563.5	
PHF	0.85		v_{vph}	1102							
Lane Width	3.7	m	12.136	ft							
Shoulder Width	1	m	3.28	ft							
Access Point Density	3.2	access poi	2.0	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	20%										

Step Two (Free Flow Speed)

Base Free Flow Speed	72.2	mi/h
Free Flow Speed	69.1	mi/h
Adjustment for Lane/S	2.6	
Adjustment for Access	0.5	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Kuranda Bound		Direction of Analysis - Mareeba Bound			Downgrade					Upgrade			
						Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	576.5564	pc/h	594.5673	pc/h										
Demand Volume	458.0	veh/h	479.0	veh/h										
Grade Adjustment Fac	0.957765		0.962706		Okay	600	0.97	500	0.95	Okay	600	0.97	500	0.95
Heavy Vehicle Adjustm	0.98		0.98											
PHF	0.85		0.85											
Proportion of Trucks	0.03		0.02											
Proportion of RVs	0.02		0.01											
Passenger Car Equivale	1.8		1.7		Okay	600	1.7	500	1.8	Okay	600	1.7	500	1.8
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	58.55705	58.53904	Interpolati									
Adjustment Factor for	1.41	1.42	Okay	600	1.4	400	1.6	Okay	600	1.4	400	1.6
ATS LoS	A	A										

Step 5 Demand Adjustement for PTSF

	Rolling Direction of Analysis - Kuranda Bound	Rolling Direction of Analysis - Mareeba Bound										
Demand Flow Rate for	564.4198	586.334										
Flow (i) or (o)	458	479		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
PHF (assumed)	0.85	0.85										
Grade Adjustment for	0.963882	0.97	Okay	600	0.97	500	0.96	Okay	600	0.97	500	0.96
Heavy Vehicle Adjustm	1.0	1.0										
Proportion of Trucks	0.03	0.02										
Proportion of RVs	0.01	0.01										
Passenger Car Equivale	1.322353	1.3	Okay	600	1.2	500	1.4	Okay	600	1.2	500	1.4
Passenger Car Equivale	1	1										

Step 6: Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Followin	62.0%	63.8%										
Base Percent Time Fol	49.4	50.7	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjus	25.73266	25.73266	Okay	1400	20	800	33.8					
Coefficeint A	-0.00322	-0.00317	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.873621	0.876213	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	C										

Job:	KUR-World Environmental Impact Assessment																					
Job Number:	253251-00																					
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 0.0-11.0km			2017	AM		Pre-Development									

ARUP

Step One (Input Data)

Road	Kennedy Highway (0.0km - 11.0km)				Year	2017																
Peak Period	AM																					
Speed Limit	60	km/h	37.3	mi/h							HVs	HV %										
AADT	8838	vpd			Cairns Bou	350	veh				24.4	7%	v_{vph}	411.8								
Peak Hour Flow	676	vph			Kuranda B	326	veh				30.8	9%	v_{vph}	383.5								
PHF	0.85		v_{vph}	795																		
Lane Width	3.75	m	12.3	ft																		
Shoulder Width	0.75	m	2.46	ft																		
Access Point Density	1	access poi	0.6	access points/mi																		
Terrain Type	Rolling																					
Percentage No Passing	80%																					

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3
Free Flow Speed	44.5
Adjustment for Lane/Shoulde	2.6
Adjustment for Access Point D	0.15

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade													
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound													
Demand Flow Rate for PTSF	413.5813	457.9251													
Flow (i) or (o)	350	326			Downgrade						Upgrade				
PHF (assumed)	0.85	0.85			Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient	
Grade Adjustment for PTSF	1	1	Okay	500	1	400	1	Okay		400	1	300	1		
Heavy Vehicle Adjustment Fac	1.0	0.8													
Proportion of Trucks	0.05	0.06													
Proportion of RVs	0.02	0.03													
Passenger Car Equivalents (Tr	1.088235	4.2	Okay	500	1	400	1.1	Okay		400	4.2	300	4.4		
Passenger Car Equivalents (RV	1	1													

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound													
Percent Time Following	60.4	59.6													
Base Percent Time Following	40.1	37.2	Interpolati	Volume	Coefficient	Volume	Coefficient								
No Passing Zone Adjustment	42.72631	42.72631	Okay	1400	27.4	800	44.8								
Coefficeint A	-0.00252	-0.00227	Okay	600	-0.0033	400	-0.0022	Okay		600	-0.0033	400	-0.0022		
Coefficient B	0.90765	0.919401	Okay	600	0.87	400	0.923	Okay		600	0.87	400	0.923		
LOS	C	C													

Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for ATS	417.699	pc/h	1408.17	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	350.0	veh/h	326.0	veh/h										
Grade Adjustment Factor	1		0.511765		Okay	500	1	400	1	Okay	400	0.52	300	0.47
Heavy Vehicle Adjustment Fac	0.99		0.53											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.06											
Proportion of RVs	0.02		0.03											
Passenger Car Equivalents (Tr	1.3		15.4		Okay	500	1.2	400	1.3	Okay	400	15.4	300	15.4
Passenger Car Equivalents (RV	1		1.5											

Step Four (Estimate the ATS)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound											
Average Travel Speed	29.9715		27.94229		Interpolati	Volume	Coefficient	Volume	Coefficient					
Adjustment Factor for No Pas	0.40		2.43		Okay	1600	0.4	1400	0.6	Okay	600	1.7	400	2.5
ATS LoS	A		A											
	48.2		45.0											

Job:	KUR-World Environmental Impact Assessment																					
Job Number:	253251-00																					
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 0.0-11.0km				2017	PM		Pre-Development								

ARUP

Step One (Input Data)

Road	Kennedy Highway (0.0km - 11.0km)				Year	2017																
Peak Period	PM																					
Speed Limit	60	km/h	37.3	mi/h							HVs	HV %										
AADT	8838	vpd			Cairns Bou	421	veh				39	9%	v_{vph}	495.3								
Peak Hour Flow	825	vph			Kuranda B	404	veh				23	6%	v_{vph}	475.3								
PHF	0.85		v_{vph}	971																		
Lane Width	3.75	m	12.3	ft																		
Shoulder Width	0.75	m	2.46	ft																		
Access Point Density	1	access poi	0.6	access points/mi																		
Terrain Type	Rolling																					
Percentage No Passing	80%																					

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3
Free Flow Speed	44.5
Adjustment for Lane/Shoulde	2.6
Adjustment for Access Point D	0.15

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade													
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound													
Demand Flow Rate for PTSF	495.434	523.2485													
Flow (i) or (o)	421	404			Downgrade					Upgrade					
PHF (assumed)	0.85	0.85			Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient		
Grade Adjustment for PTSF	1	1	Okay		500	1	400	1	Okay	500	1	400	1		
Heavy Vehicle Adjustment Fac	1.0	0.9													
Proportion of Trucks	0.06	0.04													
Proportion of RVs	0.03	0.02													
Passenger Car Equivalents (Tr	1.004706	3.5	Okay		500	1	400	1.1	Okay	500	3.3	400	4.2		
Passenger Car Equivalents (RV	1	1													

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound													
Percent Time Following	65.2	64.6													
Base Percent Time Following	46.5	44.9	Interpolati	Volume	Coefficient	Volume	Coefficient								
No Passing Zone Adjustment	38.45821	38.45821	Okay	1400	27.4	800	44.8								
Coefficeint A	-0.00288	-0.00272	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022			
Coefficient B	0.890339	0.89771	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923			
LOS	C	C													

Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for ATS	500.3636	pc/h	1358.026	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	421.0	veh/h	404.0	veh/h										
Grade Adjustment Factor	1		0.655529		Okay	500	1	400	1	Okay	500	0.7	400	0.52
Heavy Vehicle Adjustment Fac	0.99		0.53											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.06											
Proportion of RVs	0.02		0.03											
Passenger Car Equivalents (Tr	1.2		15.3		Okay	500	1.2	400	1.3	Okay	500	15.3	400	15.4
Passenger Car Equivalents (RV	1		1.5											

Step Four (Estimate the ATS)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound											
Average Travel Speed	29.71914		28.02059		Interpolati	Volume	Coefficient	Volume	Coefficient					
Adjustment Factor for No Pas	0.40		2.10		Okay	1400	0.6	1200	0.7	Okay	600	1.7	400	2.5
ATS LoS	A		A											
	47.8		45.1											

Job:	KUR-World Environmental Impact Assessment																					
Job Number:	253251-00																					
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 11.0-14.0km			2017	AM		Pre-Development									

ARUP

Step One (Input Data)

Road	Kennedy Highway (11.0km - 14.0km)					Year	2017															
Peak Period	AM																					
Speed Limit	80	km/h	49.7	mi/h								HVs	HV %									
AADT	8838	vpd				Cairns Bou	350	veh				24.4	7%	v_{vph}	411.8							
Peak Hour Flow	676	vph				Kuranda B	326	veh				30.8	9%	v_{vph}	383.5							
PHF	0.85			v_{vph}	795																	
Lane Width	3.5	m	11.48	ft																		
Shoulder Width	1	m	3.28	ft																		
Access Point Density	4	access poi	2.5	access points/mi																		
Terrain Type	Rolling	Assumed All Terrain is Rolling																				
Percentage No Passing	80%																					

Step Two (Free Flow Speed)

Base Free Flow Speed	59.7
Free Flow Speed	56.1
Adjustment for Lane/Shoulde	3
Adjustment for Access Point D	0.625

Step 5 Demand Adjustement for PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound												
Demand Flow Rate for PTSF	467.0405	445.987												
Flow (i) or (o)	350	326		Rolling						Rolling				
PHF (assumed)	0.85	0.85		Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient	
Grade Adjustment for PTSF	0.907059	1	Okay	500	0.96	400	0.9	Okay		400	0.9	300	0.85	
Heavy Vehicle Adjustment Fac	1.0	1.0												
Proportion of Trucks	0.05	0.06												
Proportion of RVs	0.02	0.03												
Passenger Car Equivalents (Tr	1.576471	1.6	Okay	500	1.4	400	1.6	Okay		400	1.6	300	1.7	
Passenger Car Equivalents (RV	1	1												

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound												
Percent Time Following	61.1	58.6												
Base Percent Time Following	39.9	38.4	Interpolati	Volume	Coefficient	Volume	Coefficient							
No Passing Zone Adjustment	41.5222	41.5222	Okay	1400	27.4	800	44.8							
Coefficeint A	-0.00245	-0.00257	Okay	600	-0.0033	400	-0.0022	Okay		600	-0.0033	400	-0.0022	
Coefficient B	0.910813	0.905234	Okay	600	0.87	400	0.923	Okay		600	0.87	400	0.923	
LOS	C	C												

Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound											
Demand Flow Rate for ATS	477.6471	pc/h	456.2791	pc/h		Rolling					Rolling			
Demand Volume	350.0	veh/h	326.0	veh/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Grade Adjustment Factor	0.905882		0.888471		Okay	500	0.95	400	0.9	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustment Fac	0.95		0.95											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.06											
Proportion of RVs	0.02		0.03											
Passenger Car Equivalents (Tr	2.0		1.9		Okay	500	1.8	400	2	Okay	400	2	300	2.1
Passenger Car Equivalents (RV	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound								
Average Travel Speed	46.40131	46.49747	Interpolati	Volume	Coefficient	Volume	Coefficient					
Adjustment Factor for No Pas	2.45	2.35	Okay	600	1.8	400	2.7	Okay	600	1.8	400	2.7
ATS LoS	A	A										
	74.7	74.8										

Job:	KUR-World Environmental Impact Assessment														
Job Number:	253251-00														
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis			Scenario:	Ch 11.0-14.0km		2017	PM		Pre-Development					

ARUP

Step One (Input Data)

Road	Kennedy Highway (11.0km - 14.0km)			Year	2017										
Peak Period	PM														
Speed Limit	80	km/h	49.7	mi/h					HVs	HV %					
AADT	8838	vpd		Cairns Bou	421	veh			39	9%	v_{vph}	495.3			
Peak Hour Flow	825	vph		Kuranda B	404	veh			23	6%	v_{vph}	475.3			
PHF	0.85		v_{vph}	971											
Lane Width	3.5	m	11.48	ft											
Shoulder Width	1	m	3.28	ft											
Access Point Density	4	access poi	2.5	access points/mi											
Terrain Type	Rolling	Assumed All Terrain is Rolling													
Percentage No Passing	80%														

Step Two (Free Flow Speed)

Base Free Flow Speed	59.7
Free Flow Speed	56.1
Adjustment for Lane/Shoulde	3
Adjustment for Access Point D	0.625

Step 5 Demand Adjustement for PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for PTSF	530.1644	511.9025										
Flow (i) or (o)	421	404										
PHF (assumed)	0.85	0.85										
Grade Adjustment for PTSF	0.957176	1	Okay	500	0.96	400	0.9	Okay	500	0.96	400	0.9
Heavy Vehicle Adjustment Fac	1.0	1.0										
Proportion of Trucks	0.06	0.04										
Proportion of RVs	0.03	0.02										
Passenger Car Equivalents (Tr	1.409412	1.4	Okay	500	1.4	400	1.6	Okay	500	1.4	400	1.6
Passenger Car Equivalents (RV	1	1										

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound		Interpolati Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Percent Time Following	65.5	63.9										
Base Percent Time Following	46.3	45.3										
No Passing Zone Adjustment	37.78006	37.78006	Okay	1400	27.4	800	44.8					
Coefficeint A	-0.00282	-0.00292	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.893346	0.888506	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	C										

Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound												
Demand Flow Rate for ATS	544.8543	pc/h	532.7528	pc/h		Rolling					Rolling				
Demand Volume	421.0	veh/h	404.0	veh/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient	
Grade Adjustment Factor	0.947647		0.937647		Okay	500	0.95	400	0.9	Okay	500	0.95	400	0.9	
Heavy Vehicle Adjustment Fac	0.96		0.95												
PHF	0.85		0.85												
Proportion of Trucks	0.05		0.06												
Proportion of RVs	0.02		0.03												
Passenger Car Equivalents (Tr	1.8		1.8		Okay	500	1.8	400	2	Okay	500	1.8	400	2	
Passenger Car Equivalents (RV	1.1		1.1												

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound								
Average Travel Speed	45.63048	45.68494	Interpolati	Volume	Coefficient	Volume	Coefficient			
Adjustment Factor for No Pas	2.10	2.05	Okay	600	1.8	400	2.7	Okay	600	1.8	400	2.7
ATS LoS	A	A										
	73.4	73.5										

Job:	KUR-World Environmental Impact Assessment																				
Job Number:	253251-00																				
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 0.0-11.0km			2018	AM		Pre-Development								

ARUP

Step One (Input Data)

Road	Kennedy Highway (0.0km - 11.0km)				Year	2018															
Peak Period	AM																				
Speed Limit	60	km/h	37.3	mi/h							HVs	HV %									
AADT	9015	vpd			Cairns Bou	357	veh				24.4	7%	v_{vph}	420.0							
Peak Hour Flow	689	vph			Kuranda B	332	veh				30.8	9%	v_{vph}	390.6							
PHF	0.85		v_{vph}		811																
Lane Width	3.75	m	12.3	ft																	
Shoulder Width	0.75	m	2.46	ft																	
Access Point Density	1	access poi	0.6	access points/mi																	
Terrain Type	Rolling																				
Percentage No Passing	80%																				

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3
Free Flow Speed	44.5
Adjustment for Lane/Shoulde	2.6
Adjustment for Access Point D	0.15

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound
Demand Flow Rate for PTSF	421.68	466.0223
Flow (i) or (o)	357	332
PHF (assumed)	0.85	0.85
Grade Adjustment for PTSF	1	1
Heavy Vehicle Adjustment Fac	1.0	0.8
Proportion of Trucks	0.05	0.06
Proportion of RVs	0.02	0.03
Passenger Car Equivalents (Tr	1.08	4.2
Passenger Car Equivalents (RV	1	1

	Downgrade				Upgrade			
	Volume	Coefficient	Volume	Coefficient	Volume	Coefficient	Volume	Coefficient
	500	1	400	1	400	1	300	1
	500	1	400	1.1	400	4.2	300	4.4

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound
Percent Time Following	60.9	60.1
Base Percent Time Following	40.8	37.9
No Passing Zone Adjustment	42.25663	42.25663
Coefficeint A	-0.00256	-0.00232
Coefficient B	0.905504	0.917255
LOS	C	C

	Interpolati	Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
	Okay	1400	27.4	800	44.8					
	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923

Job:	KUR-World Environmental Impact Assessment																					
Job Number:	253251-00																					
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 0.0-11.0km			2018	PM		Pre-Development									

ARUP

Step One (Input Data)

Road	Kennedy Highway (0.0km - 11.0km)				Year	2018																
Peak Period	PM																					
Speed Limit	60	km/h	37.3	mi/h							HVs	HV %										
AADT	9015	vpd			Cairns Bou	429	veh				39	9%	v_{vph}	504.7								
Peak Hour Flow	841	vph			Kuranda B	412	veh				23	6%	v_{vph}	484.7								
PHF	0.85		v_{vph}	989																		
Lane Width	3.75	m	12.3	ft																		
Shoulder Width	0.75	m	2.46	ft																		
Access Point Density	1	access poi	0.6	access points/mi																		
Terrain Type	Rolling																					
Percentage No Passing	80%																					

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3
Free Flow Speed	44.5
Adjustment for Lane/Shoulde	2.6
Adjustment for Access Point D	0.15

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade													
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound													
Demand Flow Rate for PTSF	504.7059	531.9676													
Flow (i) or (o)	429	412			Downgrade						Upgrade				
PHF (assumed)	0.85	0.85			Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient	
Grade Adjustment for PTSF	1	1	Okay	600	1	500	1	Okay		500	1	400	1		
Heavy Vehicle Adjustment Fac	1.0	0.9													
Proportion of Trucks	0.06	0.04													
Proportion of RVs	0.03	0.02													
Passenger Car Equivalents (Tr	1	3.4	Okay	600	1	500	1	Okay		500	3.3	400	4.2		
Passenger Car Equivalents (RV	1	1													

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound													
Percent Time Following	65.6	65.1													
Base Percent Time Following	47.1	45.6	Interpolati	Volume	Coefficient	Volume	Coefficient								
No Passing Zone Adjustment	37.93647	37.93647	Okay	1400	27.4	800	44.8								
Coefficeint A	-0.00293	-0.00278	Okay	600	-0.0033	400	-0.0022	Okay		600	-0.0033	400	-0.0022		
Coefficient B	0.888029	0.895253	Okay	600	0.87	400	0.923	Okay		600	0.87	400	0.923		
LOS	C	C													

Job:	KUR-World Environmental Impact Assessment																									
Job Number:	253251-00																									
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 11.0-14.0km			2018	AM		Pre-Development													
Step One (Input Data)																										
Road	Kennedy Highway (11.0km - 14.0km)					Year	2018																			
Peak Period	AM																									
Speed Limit	80	km/h	49.7	mi/h								HVs	HV %													
AADT	9015	vpd				Cairns Bou	357	veh		23.5	7%	v_{vph}	420.0													
Peak Hour Flow	689	vph				Kuranda B	332	veh		29.6	9%	v_{vph}	390.6													
PHF	0.85			v_{vph}	811																					
Lane Width	3.5	m	11.48	ft																						
Shoulder Width	1	m	3.28	ft																						
Access Point Density	4	access poi	2.5	access points/mi																						
Terrain Type	Rolling	Assumed All Terrain is Rolling																								
Percentage No Passing	80%																									
Step Two (Free Flow Speed)																										
Base Free Flow Speed	59.7																									
Free Flow Speed	56.1																									
Adjustment for Lane/Shoulde	3																									
Adjustment for Access Point D	0.625																									
Step 5 Demand Adjustement for PTSF																										
	Downgrade					Upgrade																				
	Direction of Analysis - Cairns Bound					Direction of Analysis - Kuranda Bound																				
Demand Flow Rate for PTSF	473.4211					452.2201																				
Flow (i) or (o)	357					332										Rolling						Rolling			
PHF (assumed)	0.85					0.85										Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient	
Grade Adjustment for PTSF	0.912					1									Okay	500	0.96	400	0.9	Okay		400	0.9	300	0.85	
Heavy Vehicle Adjustment Fac	1.0					1.0																				
Proportion of Trucks	0.05					0.06																				
Proportion of RVs	0.02					0.03																				
Passenger Car Equivalents (Tr	1.56					1.6									Okay	500	1.4	400	1.6	Okay		400	1.6	300	1.7	
Passenger Car Equivalents (RV	1					1																				
Estimate the PTSF																										
	Direction of Analysis - Cairns Bound					Direction of Analysis - Kuranda Bound																				
Percent Time Following	61.6					59.1																				
Base Percent Time Following	40.6					39.0									Interpolati	Volume	Coefficient	Volume	Coefficient							
No Passing Zone Adjustment	41.15641					41.15641									Okay	1400	27.4	800	44.8							
Coefficeint A	-0.00249					-0.0026									Okay	600	-0.0033	400	-0.0022	Okay		600	-0.0033	400	-0.0022	
Coefficient B	0.909162					0.903543									Okay	600	0.87	400	0.923	Okay		600	0.87	400	0.923	
LOS	C					C																				

Job:	KUR-World Environmental Impact Assessment													ARUP
Job Number:	253251-00													
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis			Scenario:	Ch 11.0-14.0km		2018	PM		Pre-Development				

Step One (Input Data)

Road	Kennedy Highway (11.0km - 14.0km)			Year	2018							
Peak Period	PM											
Speed Limit	80	km/h	49.7	mi/h			HVs	HV %				
AADT	9015	vpd		Cairns Bou	429	veh	40	9%	v_{vph}	504.7		
Peak Hour Flow	841	vph		Kuranda B	412	veh	24	6%	v_{vph}	484.7		
PHF	0.85		v_{vph}	989								
Lane Width	3.5	m	11.48	ft								
Shoulder Width	1	m	3.28	ft								
Access Point Density	4	access poi	2.5	access points/mi								
Terrain Type	Rolling	Assumed All Terrain is Rolling										
Percentage No Passing	80%											

Step Two (Free Flow Speed)

Base Free Flow Speed	59.7
Free Flow Speed	56.1
Adjustment for Lane/Shoulde	3
Adjustment for Access Point D	0.625

Step 5 Demand Adjustement for PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for PTSF	537.7924	518.5549										
Flow (i) or (o)	429	412										
PHF (assumed)	0.85	0.85										
Grade Adjustment for PTSF	0.960471	1	Okay	600	0.97	500	0.96	Okay	500	0.96	400	0.9
Heavy Vehicle Adjustment Fac	1.0	1.0										
Proportion of Trucks	0.06	0.04										
Proportion of RVs	0.03	0.02										
Passenger Car Equivalents (Tr	1.390588	1.4	Okay	600	1.2	500	1.4	Okay	500	1.4	400	1.6
Passenger Car Equivalents (RV	1	1										

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Following	66.0	64.3										
Base Percent Time Following	47.0	45.9	Interpolati	Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
No Passing Zone Adjustment	37.36593	37.36593	Okay	1400	27.4	800	44.8					
Coefficeint A	-0.00285	-0.00296	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.891583	0.886485	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	C										

Job:	KUR-World Environmental Impact Assessment																					
Job Number:	253251-00																					
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 0.0-11.0km			2018	AM		Post-Development									

ARUP

Step One (Input Data)

Road	Kennedy Highway (0.0km - 11.0km)				Year	2018																
Peak Period	AM																					
Speed Limit	60	km/h	37.3	mi/h							HVs	HV %										
AADT	9161	vpd			Cairns Bou	356	veh				24	7%	v_{vph}	418.8								
Peak Hour Flow	704	vph			Kuranda B	348	veh				32	9%	v_{vph}	409.4								
PHF	0.85		v_{vph}	828																		
Lane Width	3.75	m	12.3	ft																		
Shoulder Width	0.75	m	2.46	ft																		
Access Point Density	1	access poi	0.6	access points/mi																		
Terrain Type	Rolling																					
Percentage No Passing	80%																					

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3
Free Flow Speed	44.5
Adjustment for Lane/Shoulde	2.6
Adjustment for Access Point D	0.15

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade													
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound													
Demand Flow Rate for PTSF	420.5235	485.938													
Flow (i) or (o)	356	348			Downgrade					Upgrade					
PHF (assumed)	0.85	0.85			Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient		
Grade Adjustment for PTSF	1	1	Okay		500	1	400	1	Okay	500	1	400	1		
Heavy Vehicle Adjustment Fac	1.0	0.8													
Proportion of Trucks	0.05	0.06													
Proportion of RVs	0.02	0.03													
Passenger Car Equivalents (Tr	1.081176	4.1	Okay		500	1	400	1.1	Okay	500	3.3	400	4.2		
Passenger Car Equivalents (RV	1	1													

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound													
Percent Time Following	60.5	61.5													
Base Percent Time Following	41.1	39.2	Interpolati	Volume	Coefficient	Volume	Coefficient								
No Passing Zone Adjustment	41.71262	41.71262	Okay	1400	27.4	800	44.8								
Coefficeint A	-0.00267	-0.00231	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022			
Coefficient B	0.900226	0.917561	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923			
LOS	C	C													

Job:	KUR-World Environmental Impact Assessment													
Job Number:	253251-00													
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis			Scenario:	Ch 0.0-11.0km		2018	PM		Post-Development				

ARUP

Step One (Input Data)

Road	Kennedy Highway (0.0km - 11.0km)			Year	2018									
Peak Period	PM													
Speed Limit	60	km/h	37.3	mi/h				HVs	HV %					
AADT	9161	vpd		Cairns Bou	447	veh		43	10%	v_{vph}	525.9			
Peak Hour Flow	858	vph		Kuranda B	411	veh		24	6%	v_{vph}	483.5			
PHF	0.85		v_{vph}	1009										
Lane Width	3.75	m	12.3	ft										
Shoulder Width	0.75	m	2.46	ft										
Access Point Density	1	access poi	0.6	access points/mi										
Terrain Type	Rolling													
Percentage No Passing	80%													

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3
Free Flow Speed	44.5
Adjustment for Lane/Shoulde	2.6
Adjustment for Access Point D	0.15

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound
Demand Flow Rate for PTSF	525.8824	517.7285
Flow (i) or (o)	447	411
PHF (assumed)	0.85	0.85
Grade Adjustment for PTSF	1	1
Heavy Vehicle Adjustment Fac	1.0	1.0
Proportion of Trucks	0.07	0.04
Proportion of RVs	0.03	0.02
Passenger Car Equivalents (Tr	1	1.4
Passenger Car Equivalents (RV	1	1

		Downgrade					Upgrade			
		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Grade Adjustment for PTSF	Okay	600	1	500	1	Okay	500	0.96	400	0.9
Passenger Car Equivalents (Tr	Okay	600	1	500	1	Okay	500	1.4	400	1.6

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound
Percent Time Following	67.2	64.5
Base Percent Time Following	48.2	45.8
No Passing Zone Adjustment	37.73528	37.73528
Coefficeint A	-0.00285	-0.00289
Coefficient B	0.891802	0.889641
LOS	C	C

	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjustment	Okay	1400	27.4	800	44.8					
Coefficeint A	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923

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Job:	KUR-World Environmental Impact Assessment													
Job Number:	253251-00													
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis			Scenario:	Ch 11.0-14.0km		2018	PM		Post-Development				

ARUP

Step One (Input Data)

Road	Kennedy Highway (11.0km - 14.0km)			Year	2018							
Peak Period	PM											
Speed Limit	80	km/h	49.7	mi/h			HVs	HV %				
AADT	9015	vpd		Cairns Bou	447	veh	42	9%	v_{vph}	525.9		
Peak Hour Flow	857	vph		Kuranda B	410	veh	24	6%	v_{vph}	482.4		
PHF	0.85		v_{vph}		1008							
Lane Width	3.5	m	11.48	ft								
Shoulder Width	1	m	3.28	ft								
Access Point Density	4	access poi	2.5	access points/mi								
Terrain Type	Rolling	Assumed All Terrain is Rolling										
Percentage No Passing	80%											

Step Two (Free Flow Speed)

Base Free Flow Speed	59.7
Free Flow Speed	56.1
Adjustment for Lane/Shoulde	3
Adjustment for Access Point D	0.625

Step 5 Demand Adjustement for PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for PTSF	557.7361	516.9006										
Flow (i) or (o)	447	410										
PHF (assumed)	0.85	0.85										
Grade Adjustment for PTSF	0.962588	1	Okay	600	0.97	500	0.96	Okay	500	0.96	400	0.9
Heavy Vehicle Adjustment Fac	1.0	1.0										
Proportion of Trucks	0.06	0.04										
Proportion of RVs	0.03	0.02										
Passenger Car Equivalents (Tr	1.348235	1.4	Okay	600	1.2	500	1.4	Okay	500	1.4	400	1.6
Passenger Car Equivalents (RV	1	1										

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound										
Percent Time Following	67.3	63.7										
Base Percent Time Following	48.2	46.0	Interpolati	Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
No Passing Zone Adjustment	36.83553	36.83553	Okay	1400	27.4	800	44.8					
Coefficeint A	-0.00284	-0.00307	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	0.892021	0.8812	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
LOS	C	C										

Job:	KUR-World Environmental Impact Assessment												
Job Number:	253251-00												
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis			Scenario:	Ch 0.0-11.0km		2021	AM		Pre-Development			

ARUP

Step One (Input Data)

Road	Kennedy Highway (0.0km - 11.0km)			Year	2021								
Peak Period	AM												
Speed Limit	60	km/h	37.3	mi/h				HVs	HV %				
AADT	9567	vpd		Cairns Bou	379	veh		25	7%	v_{vph}	445.9		
Peak Hour Flow	731	vph		Kuranda B	352	veh		31	9%	v_{vph}	414.1		
PHF	0.85		v_{vph}		860								
Lane Width	3.75	m	12.3	ft									
Shoulder Width	0.75	m	2.46	ft									
Access Point Density	1	access poi	0.6	access points/mi									
Terrain Type	Rolling												
Percentage No Passing	80%												

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3
Free Flow Speed	44.5
Adjustment for Lane/Shoulde	2.6
Adjustment for Access Point D	0.15

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade											
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound											
Demand Flow Rate for PTSF	447.0889	490.4712											
Flow (i) or (o)	379	352			Downgrade					Upgrade			
PHF (assumed)	0.85	0.85			Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Grade Adjustment for PTSF	1	1	Okay	500	1	400	1	Okay	500	1	400	1	
Heavy Vehicle Adjustment Fac	1.0	0.8											
Proportion of Trucks	0.05	0.06											
Proportion of RVs	0.02	0.03											
Passenger Car Equivalents (Tr	1.054118	4	Okay	500	1	400	1.1	Okay	500	3.3	400	4.2	
Passenger Car Equivalents (RV	1	1											

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound											
Percent Time Following	62.4	61.4											
Base Percent Time Following	43.0	40.1	Interpolati	Volume	Coefficient	Volume	Coefficient						
No Passing Zone Adjustment	40.81076	40.81076	Okay	1400	27.4	800	44.8						
Coefficeint A	-0.0027	-0.00246	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022	
Coefficient B	0.899025	0.910521	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923	
LOS	C	C											

Job:	KUR-World Environmental Impact Assessment																								
Job Number:	253251-00																								
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 0.0-11.0km			2021	PM		Pre-Development												

ARUP

Step One (Input Data)

Road	Kennedy Highway (0.0km - 11.0km)					Year	2021																		
Peak Period	PM																								
Speed Limit	60	km/h	37.3	mi/h								HVs	HV %												
AADT	9567	vpd				Cairns Bou	456	veh				42	9%	v_{vph}	536.5										
Peak Hour Flow	893	vph				Kuranda B	437	veh				25	6%	v_{vph}	514.1										
PHF	0.85		v_{vph}	1051																					
Lane Width	3.75	m	12.3	ft																					
Shoulder Width	0.75	m	2.46	ft																					
Access Point Density	1	access poi	0.6	access points/mi																					
Terrain Type	Rolling																								
Percentage No Passing	80%																								

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3
Free Flow Speed	44.5
Adjustment for Lane/Shoulde	2.6
Adjustment for Access Point D	0.15

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound
Demand Flow Rate for PTSF	538.7562	560.8358
Flow (i) or (o)	456	437
PHF (assumed)	0.85	0.85
Grade Adjustment for PTSF	0.995758	1
Heavy Vehicle Adjustment Fac	1.0	0.9
Proportion of Trucks	0.06	0.04
Proportion of RVs	0.03	0.02
Passenger Car Equivalents (Tr	1	3.3
Passenger Car Equivalents (RV	1	1

		Downgrade					Upgrade			
		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
	Okay	600	1	1	0.96	Okay	600	1	500	1
	Okay	600	1	500	1	Okay	600	3.1	500	3.3

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound
Percent Time Following	66.8	66.1
Base Percent Time Following	49.1	47.7
No Passing Zone Adjustment	36.11183	36.11183
Coefficeint A	-0.00308	-0.00296
Coefficient B	0.880379	0.88623
LOS	C	C

	Interpolati	Volume	Coefficient	Volume	Coefficient				
No Passing Zone Adjustment	Okay	1400	27.4	800	44.8				
Coefficeint A	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923

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Job:	KUR-World Environmental Impact Assessment																						
Job Number:	253251-00																						
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 11.0-14.0km			2021	PM		Pre-Development										
Step One (Input Data)																							
Road	Kennedy Highway (11.0km - 14.0km)					Year	2021																
Peak Period	PM																						
Speed Limit	80	km/h	49.7	mi/h								HVs	HV %										
AADT	9567	vpd				Cairns Bou	456	veh				42	9%	v_{vph}	536.5								
Peak Hour Flow	893	vph				Kuranda B	437	veh				25	6%	v_{vph}	514.1								
PHF	0.85			v_{vph}	1051																		
Lane Width	3.5	m	11.48	ft																			
Shoulder Width	1	m	3.28	ft																			
Access Point Density	4	access poi	2.5	access points/mi																			
Terrain Type	Rolling	Assumed All Terrain is Rolling																					
Percentage No Passing	80%																						
Step Two (Free Flow Speed)																							
Base Free Flow Speed	59.7																						
Free Flow Speed	56.1																						
Adjustment for Lane/Shoulde	3																						
Adjustment for Access Point D	0.625																						
Step 5 Demand Adjustement for PTSF																							
	Direction of Analysis - Cairns Bound					Direction of Analysis - Kuranda Bound																	
Demand Flow Rate for PTSF	567.6332					542.7049																	
Flow (i) or (o)	456					437							Rolling						Rolling				
PHF (assumed)	0.85					0.85							Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient	
Grade Adjustment for PTSF	0.963647					1						Okay	600	0.97	500	0.96	Okay		600	0.97	500	0.96	
Heavy Vehicle Adjustment Fac	1.0					1.0																	
Proportion of Trucks	0.06					0.04																	
Proportion of RVs	0.03					0.02																	
Passenger Car Equivalents (Tr	1.327059					1.4						Okay	600	1.2	500	1.4	Okay		600	1.2	500	1.4	
Passenger Car Equivalents (RV	1					1																	
Estimate the PTSF																							
	Direction of Analysis - Cairns Bound					Direction of Analysis - Kuranda Bound																	
Percent Time Following	67.3					65.4						Interpolati	Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient	
Base Percent Time Following	49.0					47.9						Okay	1400	27.4	800	44.8							
No Passing Zone Adjustment	35.8002					35.8002						Okay	600	-0.0033	400	-0.0022	Okay		600	-0.0033	400	-0.0022	
Coefficeint A	-0.00298					-0.00312						Okay	600	0.87	400	0.923	Okay		600	0.87	400	0.923	
Coefficient B	0.885183					0.878577																	
LOS	C					C																	

Job:	KUR-World Environmental Impact Assessment																									
Job Number:	253251-00																									
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 0.0-11.0km				2021	AM		Post-Development												

ARUP

Step One (Input Data)

Road	Kennedy Highway (0.0km - 11.0km)				Year	2021																				
Peak Period	AM																									
Speed Limit	60	km/h	37.3	mi/h								HVs	HV %													
AADT	9818	vpd			Cairns Bou	385	veh					28	7%	v_{vph}	452.9											
Peak Hour Flow	779	vph			Kuranda B	394	veh					37	9%	v_{vph}	463.5											
PHF	0.85		v_{vph}	916																						
Lane Width	3.75	m	12.3	ft																						
Shoulder Width	0.75	m	2.46	ft																						
Access Point Density	1	access poi	0.6	access points/mi																						
Terrain Type	Rolling																									
Percentage No Passing	80%																									

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3
Free Flow Speed	44.5
Adjustment for Lane/Shoulde	2.6
Adjustment for Access Point D	0.15

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound
Demand Flow Rate for PTSF	454.0069	536.6253
Flow (i) or (o)	385	394
PHF (assumed)	0.85	0.85
Grade Adjustment for PTSF	1	1
Heavy Vehicle Adjustment Fac	1.0	0.9
Proportion of Trucks	0.05	0.06
Proportion of RVs	0.02	0.03
Passenger Car Equivalents (Tr	1.047059	4
Passenger Car Equivalents (RV	1	1

		Downgrade					Upgrade			
		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
	Okay	500	1	400	1	Okay	500	1	400	1
	Okay	500	1	400	1.1	Okay	500	3.3	400	4.2

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound
Percent Time Following	62.0	64.7
Base Percent Time Following	44.0	43.5
No Passing Zone Adjustment	39.27167	39.27167
Coefficeint A	-0.00295	-0.0025
Coefficient B	0.886794	0.908688
LOS	C	C

	Interpolati	Volume	Coefficient	Volume	Coefficient					
	Okay	1400	27.4	800	44.8					
	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923

Job:	KUR-World Environmental Impact Assessment																								
Job Number:	253251-00																								
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 0.0-11.0km			2021	PM		Post-Development												
Step One (Input Data)																									
Road	Kennedy Highway (0.0km - 11.0km)					Year	2021																		
Peak Period	PM																								
Speed Limit	60	km/h	37.3	mi/h								HVs	HV %												
AADT	9818	vpd				Cairns Bou	509	veh				49	10%	v_{vph}	598.8										
Peak Hour Flow	943	vph				Kuranda B	434	veh				27	6%	v_{vph}	510.6										
PHF	0.85		v_{vph}	1109																					
Lane Width	3.75	m	12.3	ft																					
Shoulder Width	0.75	m	2.46	ft																					
Access Point Density	1	access poi	0.6	access points/mi																					
Terrain Type	Rolling																								
Percentage No Passing	80%																								
Step Two (Free Flow Speed)																									
Base Free Flow Speed	47.3																								
Free Flow Speed	44.5																								
Adjustment for Lane/Shoulde	2.6																								
Adjustment for Access Point D	0.15																								
Step 5 Demand Adjustement for PTSF																									
	Downgrade					Upgrade																			
	Direction of Analysis - Cairns Bound					Direction of Analysis - Kuranda Bound																			
Demand Flow Rate for PTSF	598.8706					557.1299																			
Flow (i) or (o)	509					434											Downgrade						Upgrade		
PHF (assumed)	0.85					0.85											Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient
Grade Adjustment for PTSF	0.999921					1										Okay	600	1	1	0.96	Okay		600	1	500	1
Heavy Vehicle Adjustment Fac	1.0					0.9																			
Proportion of Trucks	0.07					0.04																			
Proportion of RVs	0.03					0.02																			
Passenger Car Equivalents (Tr	1					3.3										Okay	600	1	500	1	Okay		600	3.1	500	3.3
Passenger Car Equivalents (RV	1					1																			
Estimate the PTSF																									
	Direction of Analysis - Cairns Bound					Direction of Analysis - Kuranda Bound																			
Percent Time Following	70.4					64.4																			
Base Percent Time Following	52.5					47.8										Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjustment	34.47599					34.47599										Okay	1400	27.4	800	44.8					
Coefficeint A	-0.00306					-0.00329										Okay	600	-0.0033	400	-0.0022	Okay		600	-0.0033	400	-0.0022
Coefficient B	0.881361					0.870299										Okay	600	0.87	400	0.923	Okay		600	0.87	400	0.923
LOS	D					C																			

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Job:	KUR-World Environmental Impact Assessment																					
Job Number:	253251-00																					
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 11.0-14.0km			2021	PM		Post-Development									

ARUP

Step One (Input Data)

Road	Kennedy Highway (11.0km - 14.0km)				Year	2021																
Peak Period	PM																					
Speed Limit	80	km/h	49.7	mi/h								HVs	HV %									
AADT	9818	vpd			Cairns Bou	509	veh					49	10%	v_{vph}	598.8							
Peak Hour Flow	943	vph			Kuranda B	434	veh					27	6%	v_{vph}	510.6							
PHF	0.85			v_{vph}	1109																	
Lane Width	3.5	m	11.48	ft																		
Shoulder Width	1	m	3.28	ft																		
Access Point Density	4	access poi	2.5	access points/mi																		
Terrain Type	Rolling	Assumed All Terrain is Rolling																				
Percentage No Passing	80%																					

Step Two (Free Flow Speed)

Base Free Flow Speed	59.7
Free Flow Speed	56.1
Adjustment for Lane/Shoulde	3
Adjustment for Access Point D	0.625

Step 5 Demand Adjustement for PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound												
Demand Flow Rate for PTSF	626.1643	539.3272												
Flow (i) or (o)	509	434			Rolling						Rolling			
PHF (assumed)	0.85	0.85			Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient
Grade Adjustment for PTSF	0.969882	1	Okay		600	0.97	500	0.96	Okay		600	0.97	500	0.96
Heavy Vehicle Adjustment Fac	1.0	1.0												
Proportion of Trucks	0.07	0.04												
Proportion of RVs	0.03	0.02												
Passenger Car Equivalents (Tr	1.202353	1.4	Okay		600	1.2	500	1.4	Okay		600	1.2	500	1.4
Passenger Car Equivalents (RV	1	1												

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound												
Percent Time Following	70.8	64.2												
Base Percent Time Following	52.4	48.4	Interpolati	Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient	
No Passing Zone Adjustment	34.20075	34.20075	Okay	1400	27.4	800	44.8							
Coefficeint A	-0.00297	-0.00346	Okay	600	-0.0033	400	-0.0022	Okay		800	-0.0045	600	-0.0033	
Coefficient B	0.886078	0.86516	Okay	600	0.87	400	0.923	Okay		800	0.833	600	0.87	
LOS	D	C												

Job:	KUR-World Environmental Impact Assessment																									
Job Number:	253251-00																									
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 0.0-11.0km				2024	AM		Pre-Development												

ARUP

Step One (Input Data)

Road	Kennedy Highway (0.0km - 11.0km)					Year	2024																			
Peak Period	AM																									
Speed Limit	60	km/h	37.3	mi/h									HVs	HV %												
AADT	10152	vpd				Cairns Bou	402	veh					26	6%	v_{vph}	472.9										
Peak Hour Flow	776	vph				Kuranda B	374	veh					33	9%	v_{vph}	440.0										
PHF	0.85		v_{vph}	913																						
Lane Width	3.75	m	12.3	ft																						
Shoulder Width	0.75	m	2.46	ft																						
Access Point Density	1	access poi	0.6	access points/mi																						
Terrain Type	Rolling																									
Percentage No Passing	80%																									

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3
Free Flow Speed	44.5
Adjustment for Lane/Shoulde	2.6
Adjustment for Access Point D	0.15

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade													
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound													
Demand Flow Rate for PTSF	473.581	514.976													
Flow (i) or (o)	402	374			Downgrade					Upgrade					
PHF (assumed)	0.85	0.85			Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient		
Grade Adjustment for PTSF	1	1	Okay	500	1	400	1	Okay		500	1	400	1		
Heavy Vehicle Adjustment Fac	1.0	0.9													
Proportion of Trucks	0.05	0.06													
Proportion of RVs	0.02	0.03													
Passenger Car Equivalents (Tr	1.027059	4	Okay	500	1	400	1.1	Okay		500	3.3	400	4.2		
Passenger Car Equivalents (RV	1	1													

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound													
Percent Time Following	63.8	62.8													
Base Percent Time Following	45.0	42.3	Interpolati	Volume	Coefficient	Volume	Coefficient								
No Passing Zone Adjustment	39.33185	39.33185	Okay	1400	27.4	800	44.8								
Coefficeint A	-0.00283	-0.0026	Okay	600	-0.0033	400	-0.0022	Okay		600	-0.0033	400	-0.0022		
Coefficient B	0.892531	0.903501	Okay	600	0.87	400	0.923	Okay		600	0.87	400	0.923		
LOS	C	C													

Job:	KUR-World Environmental Impact Assessment																									
Job Number:	253251-00																									
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 0.0-11.0km				2024	PM		Pre-Development												

ARUP

Step One (Input Data)

Road	Kennedy Highway (0.0km - 11.0km)				Year	2024																				
Peak Period	PM																									
Speed Limit	60	km/h	37.3	mi/h									HVs	HV %												
AADT	10152	vpd			Cairns Bou	484	veh						45	9%	v_{vph}	569.4										
Peak Hour Flow	948	vph			Kuranda B	464	veh						26	6%	v_{vph}	545.9										
PHF	0.85		v_{vph}	1115																						
Lane Width	3.75	m	12.3	ft																						
Shoulder Width	0.75	m	2.46	ft																						
Access Point Density	1	access poi	0.6	access points/mi																						
Terrain Type	Rolling																									
Percentage No Passing	80%																									

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3
Free Flow Speed	44.5
Adjustment for Lane/Shoulde	2.6
Adjustment for Access Point D	0.15

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound
Demand Flow Rate for PTSF	569.4118	594.0998
Flow (i) or (o)	484	464
PHF (assumed)	0.85	0.85
Grade Adjustment for PTSF	1	1
Heavy Vehicle Adjustment Fac	1.0	0.9
Proportion of Trucks	0.06	0.04
Proportion of RVs	0.03	0.02
Passenger Car Equivalents (Tr	1	3.2
Passenger Car Equivalents (RV	1	1

		Downgrade					Upgrade			
		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Grade Adjustment for PTSF	Okay	600	1	500	1	Okay	600	1	500	1
Passenger Car Equivalents (Tr	Okay	600	1	500	1	Okay	600	3.1	500	3.3

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound
Percent Time Following	67.8	67.2
Base Percent Time Following	51.1	49.7
No Passing Zone Adjustment	34.25816	34.25816
Coefficeint A	-0.00327	-0.00313
Coefficient B	0.871564	0.878106
LOS	C	C

	Interpolati	Volume	Coefficient	Volume	Coefficient					
No Passing Zone Adjustment	Okay	1400	27.4	800	44.8					
Coefficeint A	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficient B	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923

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Job:	KUR-World Environmental Impact Assessment																									
Job Number:	253251-00																									
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 11.0-14.0km				2024	PM		Pre-Development												

ARUP

Step One (Input Data)

Road	Kennedy Highway (11.0km - 14.0km)					Year	2024																			
Peak Period	PM																									
Speed Limit	80	km/h	49.7	mi/h									HVs	HV %												
AADT	10152	vpd				Cairns Bou	484	veh					45	9%	v_{vph}	569.4										
Peak Hour Flow	948	vph				Kuranda B	464	veh					26	6%	v_{vph}	545.9										
PHF	0.85			v_{vph}	1115																					
Lane Width	3.5	m	11.48	ft																						
Shoulder Width	1	m	3.28	ft																						
Access Point Density	4	access poi	2.5	access points/mi																						
Terrain Type	Rolling	Assumed All Terrain is Rolling																								
Percentage No Passing	80%																									

Step Two (Free Flow Speed)

Base Free Flow Speed	59.7
Free Flow Speed	56.1
Adjustment for Lane/Shoulde	3
Adjustment for Access Point D	0.625

Step 5 Demand Adjustement for PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound		Rolling Volume	Coefficient	Volume	Coefficient		Rolling Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for PTSF	598.1075	572.9002										
Flow (i) or (o)	484	464										
PHF (assumed)	0.85	0.85										
Grade Adjustment for PTSF	0.966941	1	Okay	600	0.97	500	0.96	Okay	600	0.97	500	0.96
Heavy Vehicle Adjustment Fac	1.0	1.0										
Proportion of Trucks	0.06	0.04										
Proportion of RVs	0.03	0.02										
Passenger Car Equivalents (Tr	1.261176	1.3	Okay	600	1.2	500	1.4	Okay	600	1.2	500	1.4
Passenger Car Equivalents (RV	1	1										

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Percent Time Following	68.4	66.5										
Base Percent Time Following	51.0	49.8	Interpolati	1400	27.4	800	44.8					
No Passing Zone Adjustment	34.04078	34.04078	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022
Coefficeint A	-0.00315	-0.00329	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923
Coefficient B	0.877181	0.870502										
LOS	C	C										

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Job:	KUR-World Environmental Impact Assessment																					
Job Number:	253251-00																					
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 0.0-11.0km			2024	PM		Post-Development									

ARUP

Step One (Input Data)

Road	Kennedy Highway (0.0km - 11.0km)				Year	2024																
Peak Period	PM																					
Speed Limit	60	km/h	37.3	mi/h							HVs	HV %										
AADT	10697	vpd			Cairns Bou	567	veh				54	10%	v_{vph}	667.1								
Peak Hour Flow	1049	vph			Kuranda B	482	veh				29	6%	v_{vph}	567.1								
PHF	0.85		v_{vph}	1234																		
Lane Width	3.75	m	12.3	ft																		
Shoulder Width	0.75	m	2.46	ft																		
Access Point Density	1	access poi	0.6	access points/mi																		
Terrain Type	Rolling																					
Percentage No Passing	80%																					

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3
Free Flow Speed	44.5
Adjustment for Lane/Shoulde	2.6
Adjustment for Access Point D	0.15

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade												
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound												
Demand Flow Rate for PTSF	667.0588	616.1861												
Flow (i) or (o)	567	482			Downgrade					Upgrade				
PHF (assumed)	0.85	0.85			Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient	
Grade Adjustment for PTSF	1	1		Okay	700	1	600	1	Okay	600	1	500	1	
Heavy Vehicle Adjustment Fac	1.0	0.9												
Proportion of Trucks	0.06	0.04												
Proportion of RVs	0.03	0.02												
Passenger Car Equivalents (Tr	1	3.2		Okay	700	1	600	1	Okay	600	3.1	500	3.3	
Passenger Car Equivalents (RV	1	1												

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound							
Percent Time Following	72.3	67.1							
Base Percent Time Following	56.3	52.3		Interpolati	Volume	Coefficient	Volume	Coefficient	
No Passing Zone Adjustment	30.7859	30.7859		Okay	1400	27.4	800	44.8	
Coefficeint A	-0.0034	-0.0037		Okay	800	-0.0045	600	-0.0033	Okay
Coefficient B	0.867006	0.857594		Okay	800	0.833	600	0.87	Okay
LOS	D	C							

Okay	800	-0.0045	600
Okay	800	0.833	600

-0.0033	Okay	800	-0.0045
0.87	Okay	800	0.833

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Job:	KUR-World Environmental Impact Assessment																						
Job Number:	253251-00																						
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 11.0-14.0km			2024	PM		Post-Development										
Step One (Input Data)																							
Road	Kennedy Highway (11.0km - 14.0km)					Year	2024																
Peak Period	PM																						
Speed Limit	80	km/h	49.7	mi/h						HVs	HV %												
AADT	10697	vpd				Cairns Bou	567	veh		54	10%	v_{vph}	667.1										
Peak Hour Flow	1049	vph				Kuranda B	482	veh		29	6%	v_{vph}	567.1										
PHF	0.85			v_{vph}	1234																		
Lane Width	3.5	m	11.48	ft																			
Shoulder Width	1	m	3.28	ft																			
Access Point Density	4	access poi	2.5	access points/mi																			
Terrain Type	Rolling	Assumed All Terrain is Rolling																					
Percentage No Passing	80%																						
Step Two (Free Flow Speed)																							
Base Free Flow Speed	59.7																						
Free Flow Speed	56.1																						
Adjustment for Lane/Shoulde	3																						
Adjustment for Access Point D	0.625																						
Step 5 Demand Adjustement for PTSF																							
	Direction of Analysis - Cairns Bound					Direction of Analysis - Kuranda Bound																	
Demand Flow Rate for PTSF	681.439					592.8273																	
Flow (i) or (o)	567					482						Rolling						Rolling					
PHF (assumed)	0.85					0.85						Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient		
Grade Adjustment for PTSF	0.983412					1					Okay	700	0.99	600	0.97	Okay		600	0.97	500	0.96		
Heavy Vehicle Adjustment Fac	1.0					1.0																	
Proportion of Trucks	0.07					0.04																	
Proportion of RVs	0.03					0.02																	
Passenger Car Equivalents (Tr	1.065882					1.3					Okay	700	1	600	1.2	Okay		600	1.2	500	1.4		
Passenger Car Equivalents (RV	1					1																	
Estimate the PTSF																							
	Direction of Analysis - Cairns Bound					Direction of Analysis - Kuranda Bound																	
Percent Time Following	72.6					67.0																	
Base Percent Time Following	56.0					52.5					Interpolati	Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient		
No Passing Zone Adjustment	31.04628					31.04628					Okay	1400	27.4	800	44.8								
Coefficeint A	-0.00326					-0.00379					Okay	600	-0.0033	400	-0.0022	Okay		800	-0.0045	600	-0.0033		
Coefficient B	0.871901					0.854934					Okay	600	0.87	400	0.923	Okay		800	0.833	600	0.87		
LOS	D					C																	

Job:	KUR-World Environmental Impact Assessment													
Job Number:	253251-00													
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis			Scenario:	Ch 0.0-11.0km		2027	AM		Pre-Development				

ARUP

Step One (Input Data)

Road	Kennedy Highway (0.0km - 11.0km)			Year	2027									
Peak Period	AM													
Speed Limit	60	km/h	37.3	mi/h				HVs	HV %					
AADT	10774	vpd		Cairns Bou	427	veh		28	7%	v_{vph}	502.4			
Peak Hour Flow	824	vph		Kuranda B	397	veh		35	9%	v_{vph}	467.1			
PHF	0.85		v_{vph}	969										
Lane Width	3.75	m	12.3	ft										
Shoulder Width	0.75	m	2.46	ft										
Access Point Density	1	access poi	0.6	access points/mi										
Terrain Type	Rolling													
Percentage No Passing	80%													

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3
Free Flow Speed	44.5
Adjustment for Lane/Shoulde	2.6
Adjustment for Access Point D	0.15

Step 5 Demand Adjustement for PTSF

	Upgrade	Downgrade											
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound											
Demand Flow Rate for PTSF	502.3529	539.8211											
Flow (i) or (o)	427	397			Downgrade					Upgrade			
PHF (assumed)	0.85	0.85			Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Grade Adjustment for PTSF	1	1	Okay	600	1	500	1	Okay	500	1	400	1	
Heavy Vehicle Adjustment Fac	1.0	0.9											
Proportion of Trucks	0.05	0.06											
Proportion of RVs	0.02	0.03											
Passenger Car Equivalents (Tr	1	4	Okay	600	1	500	1	Okay	500	3.3	400	4.2	
Passenger Car Equivalents (RV	1	1											

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound											
Percent Time Following	65.2	64.0											
Base Percent Time Following	47.0	44.5	Interpolati	Volume	Coefficient	Volume	Coefficient						
No Passing Zone Adjustment	37.77695	37.77695	Okay	1400	27.4	800	44.8						
Coefficeint A	-0.00297	-0.00276	Okay	600	-0.0033	400	-0.0022	Okay	600	-0.0033	400	-0.0022	
Coefficient B	0.885947	0.895876	Okay	600	0.87	400	0.923	Okay	600	0.87	400	0.923	
LOS	C	C											

Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for ATS	507.3174	pc/h	1365.371	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	427.0	veh/h	397.0	veh/h										
Grade Adjustment Factor	1		0.640706		Okay	600	1	500	1	Okay	500	0.7	400	0.52
Heavy Vehicle Adjustment Fac	0.99		0.53											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.06											
Proportion of RVs	0.02		0.03											
Passenger Car Equivalents (Tr	1.2		15.3		Okay	600	1.1	500	1.2	Okay	500	15.3	400	15.3
Passenger Car Equivalents (RV	1		1.5											

Step Four (Estimate the ATS)

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound							
Average Travel Speed	29.60818	27.93745	Interpolati	Volume	Coefficient	Volume	Coefficient		
Adjustment Factor for No Pas	0.40	2.07	Okay	1600	0.4	1400	0.6	Okay	600	1.7	400	2.5
ATS LoS	A	A							
	47.6	45.0							

Job:	KUR-World Environmental Impact Assessment																					
Job Number:	253251-00																					
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 0.0-11.0km				2027	PM		Pre-Development								

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Step One (Input Data)

Road	Kennedy Highway (0.0km - 11.0km)				Year	2027																
Peak Period	PM																					
Speed Limit	60	km/h	37.3	mi/h							HVs	HV %										
AADT	10774	vpd			Cairns Bou	513	veh				47	9%	v_{vph}	603.5								
Peak Hour Flow	1005	vph			Kuranda B	492	veh				28	6%	v_{vph}	578.8								
PHF	0.85		v_{vph}	1182																		
Lane Width	3.75	m	12.3	ft																		
Shoulder Width	0.75	m	2.46	ft																		
Access Point Density	1	access poi	0.6	access points/mi																		
Terrain Type	Rolling																					
Percentage No Passing	80%																					

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3
Free Flow Speed	44.5
Adjustment for Lane/Shoulde	2.6
Adjustment for Access Point D	0.15

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound
Demand Flow Rate for PTSF	603.5294	628.4253
Flow (i) or (o)	513	492
PHF (assumed)	0.85	0.85
Grade Adjustment for PTSF	1	1
Heavy Vehicle Adjustment Fac	1.0	0.9
Proportion of Trucks	0.06	0.04
Proportion of RVs	0.03	0.02
Passenger Car Equivalents (Tr	1	3.1
Passenger Car Equivalents (RV	1	1

		Downgrade					Upgrade			
		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Okay	700	1	600	1	Okay	600	1	500	1	
Okay	700	1	600	1	Okay	600	3.1	500	3.3	

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound
Percent Time Following	69.3	68.1
Base Percent Time Following	53.5	51.7
No Passing Zone Adjustment	32.27331	32.27331
Coefficeint A	-0.00347	-0.00332
Coefficient B	0.864741	0.869347
LOS	C	C

Interpolati	Volume	Coefficient	Volume	Coefficient	
Okay	1400	27.4	800	44.8	
Okay	800	-0.0045	600	-0.0033	Okay
Okay	800	0.833	600	0.87	Okay

800	-0.0045	600	-0.0033
800	0.833	600	0.87

Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for ATS	606.5471	pc/h	1498.156	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	513.0	veh/h	492.0	veh/h										
Grade Adjustment Factor	1		0.723647		Okay	700	1	600	1	Okay	600	0.73	500	0.7
Heavy Vehicle Adjustment Fac	1.00		0.53											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.06											
Proportion of RVs	0.02		0.03											
Passenger Car Equivalents (Tr	1.1		15.3		Okay	700	1.1	600	1.1	Okay	600	15.3	500	15.3
Passenger Car Equivalents (RV	1		1.5											

Step Four (Estimate the ATS)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound											
Average Travel Speed	27.80774		26.52738		Interpolati	Volume	Coefficient	Volume	Coefficient					
Adjustment Factor for No Pas	0.40		1.68		Okay	1600	0.4	1400	0.6	Okay	800	1.1	600	1.7
ATS LoS	A		A											
	44.7		42.7											

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Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound												
Demand Flow Rate for ATS	550.6669	pc/h	519.8273	pc/h		Rolling					Rolling				
Demand Volume	427.0	veh/h	397.0	veh/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient	
Grade Adjustment Factor	0.950471		0.933529		Okay	600	0.97	500	0.95	Okay	500	0.95	400	0.9	
Heavy Vehicle Adjustment Fac	0.96		0.96												
PHF	0.85		0.85												
Proportion of Trucks	0.05		0.06												
Proportion of RVs	0.02		0.03												
Passenger Car Equivalents (Tr	1.8		1.6		Okay	600	1.7	500	1.8	Okay	500	1.8	400	2	
Passenger Car Equivalents (RV	1.1		1.1												

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound								
Average Travel Speed	45.62751	45.76629	Interpolati	Volume	Coefficient	Volume	Coefficient			
Adjustment Factor for No Pas	2.16	2.02	Okay	600	1.8	400	2.7	Okay	600	1.8	400	2.7
ATS LoS	A	A										
	73.4	73.6										

Job:	KUR-World Environmental Impact Assessment																															
Job Number:	253251-00																															
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis							Scenario:	Ch 11.0-14.0km					2027	PM		Pre-Development															

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Step One (Input Data)

Road	Kennedy Highway (11.0km - 14.0km)							Year	2027																							
Peak Period	PM																															
Speed Limit	80	km/h	49.7	mi/h														HVs	HV %													
AADT	10774	vpd						Cairns Bou	513	veh								47	9%	v_{vph}	603.5											
Peak Hour Flow	1006	vph						Kuranda B	493	veh								28	6%	v_{vph}	580.0											
PHF	0.85			v_{vph}	1184																											
Lane Width	3.5	m	11.48	ft																												
Shoulder Width	1	m	3.28	ft																												
Access Point Density	4	access poi	2.5	access points/mi																												
Terrain Type	Rolling	Assumed All Terrain is Rolling																														
Percentage No Passing	80%																															

Step Two (Free Flow Speed)

Base Free Flow Speed	59.7
Free Flow Speed	56.1
Adjustment for Lane/Shoulde	3
Adjustment for Access Point D	0.625

Step 5 Demand Adjustement for PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound													
Demand Flow Rate for PTSF	628.9404	604.9256													
Flow (i) or (o)	513	493			Rolling						Rolling				
PHF (assumed)	0.85	0.85			Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient	
Grade Adjustment for PTSF	0.970706	1		Okay	700	0.99	600	0.97	Okay		600	0.97	500	0.96	
Heavy Vehicle Adjustment Fac	1.0	1.0													
Proportion of Trucks	0.06	0.04													
Proportion of RVs	0.03	0.02													
Passenger Car Equivalents (Tr	1.192941	1.2		Okay	700	1	600	1.2	Okay		600	1.2	500	1.4	
Passenger Car Equivalents (RV	1	1													

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound													
Percent Time Following	69.4	67.4													
Base Percent Time Following	53.0	51.6		Interpolati	Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient	
No Passing Zone Adjustment	32.21789	32.21789		Okay	1400	27.4	800	44.8							
Coefficeint A	-0.00333	-0.00346		Okay	800	-0.0045	600	-0.0033	Change		600	-0.0033	400	-0.0022	
Coefficient B	0.869089	0.862331		Okay	800	0.833	600	0.87	Change		600	0.87	400	0.923	
LOS	C	C													

Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound											
Demand Flow Rate for ATS	644.8721	pc/h	623.8302	pc/h		Rolling					Rolling			
Demand Volume	513.0	veh/h	493.0	veh/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Grade Adjustment Factor	0.970353		0.966		Okay	700	0.98	600	0.97	Okay	600	0.97	500	0.95
Heavy Vehicle Adjustment Fac	0.96		0.96											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.06											
Proportion of RVs	0.02		0.03											
Passenger Car Equivalents (Tr	1.7		1.6		Okay	700	1.6	600	1.7	Okay	600	1.7	500	1.8
Passenger Car Equivalents (RV	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound									
Average Travel Speed	44.52168	44.58481	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for No Pas	1.73	1.67	Okay	800	1.2	600	1.8	Okay	800	1.2	600	1.8
ATS LoS	A	A									
	71.6	71.7									

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Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for ATS	573.1297	pc/h	1523.478	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	484.0	veh/h	503.0	veh/h										
Grade Adjustment Factor	1		0.727529		Okay	600	1	500	1	Okay	600	0.73	500	0.7
Heavy Vehicle Adjustment Fac	0.99		0.53											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.06											
Proportion of RVs	0.02		0.03											
Passenger Car Equivalents (Tr	1.1		15.3		Okay	600	1.1	500	1.2	Okay	600	15.3	500	15.3
Passenger Car Equivalents (RV	1		1.5											

Step Four (Estimate the ATS)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound											
Average Travel Speed	27.87056		26.46308		Interpolati	Volume	Coefficient	Volume	Coefficient					
Adjustment Factor for No Pas	0.40		1.81		Okay	1600	0.4	1400	0.6	Okay	600	1.7	400	2.5
ATS LoS	A		A											
	44.8		42.6											

| | | |

Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for ATS	748.4294	pc/h	1591.263	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	633.0	veh/h	536.0	veh/h										
Grade Adjustment Factor	1		0.742235		Okay	800	1	700	1	Okay	700	0.77	600	0.73
Heavy Vehicle Adjustment Fac	1.00		0.53											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.06											
Proportion of RVs	0.02		0.03											
Passenger Car Equivalents (Tr	1.1		15.3		Okay	800	1.1	700	1.1	Okay	700	15.3	600	15.3
Passenger Car Equivalents (RV	1		1.5											

Step Four (Estimate the ATS)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound											
Average Travel Speed	25.98423		25.12952		Interpolati	Volume	Coefficient	Volume	Coefficient					
Adjustment Factor for No Pas	0.40		1.25		Okay	1600	0.4	1400	0.6	Okay	800	1.1	600	1.7
ATS LoS	A		A											
	41.8		40.4											

Job:	KUR-World Environmental Impact Assessment																									
Job Number:	253251-00																									
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 11.0-14.0km			2027	AM		Post-Development													

ARUP

Step One (Input Data)

Road	Kennedy Highway (11.0km - 14.0km)					Year	2027																			
Peak Period	AM																									
Speed Limit	80	km/h	49.7	mi/h								HVs	HV %													
AADT	10774	vpd				Cairns Bou	484	veh		34	7%	v_{vph}	569.4													
Peak Hour Flow	987	vph				Kuranda B	503	veh		44	9%	v_{vph}	591.8													
PHF	0.85			v_{vph}	1161																					
Lane Width	3.5	m	11.48	ft																						
Shoulder Width	1	m	3.28	ft																						
Access Point Density	4	access poi	2.5	access points/mi																						
Terrain Type	Rolling	Assumed All Terrain is Rolling																								
Percentage No Passing	80%																									

Step Two (Free Flow Speed)

Base Free Flow Speed	59.7
Free Flow Speed	56.1
Adjustment for Lane/Shoulde	3
Adjustment for Access Point D	0.625

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade												
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound												
Demand Flow Rate for PTSF	596.5695	618.5155												
Flow (i) or (o)	484	503			Rolling						Rolling			
PHF (assumed)	0.85	0.85			Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient
Grade Adjustment for PTSF	0.966941	1	Okay	600	0.97	500	0.96	Okay		600	0.97	500	0.96	
Heavy Vehicle Adjustment Fac	1.0	1.0												
Proportion of Trucks	0.05	0.06												
Proportion of RVs	0.02	0.03												
Passenger Car Equivalents (Tr	1.261176	1.2	Okay	600	1.2	500	1.4	Okay		600	1.2	500	1.4	
Passenger Car Equivalents (RV	1	1												

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound												
Percent Time Following	67.6	68.9												
Base Percent Time Following	51.5	52.3	Interpolati	Volume	Coefficient	Volume	Coefficient							
No Passing Zone Adjustment	32.76253	32.76253	Okay	1400	27.4	800	44.8							
Coefficeint A	-0.00341	-0.00328	Okay	800	-0.0045	600	-0.0033	Okay		600	-0.0033	400	-0.0022	
Coefficient B	0.866575	0.870909	Okay	800	0.833	600	0.87	Okay		600	0.87	400	0.923	
LOS	C	C												

Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound											
Demand Flow Rate for ATS	613.5094	pc/h	638.6041	pc/h		Rolling					Rolling			
Demand Volume	484.0	veh/h	503.0	veh/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Grade Adjustment Factor	0.963882		0.968353		Okay	600	0.97	500	0.95	Okay	600	0.97	500	0.95
Heavy Vehicle Adjustment Fac	0.96		0.96											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.06											
Proportion of RVs	0.02		0.03											
Passenger Car Equivalents (Tr	1.7		1.7		Okay	600	1.7	500	1.8	Okay	600	1.7	500	1.8
Passenger Car Equivalents (RV	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound								
Average Travel Speed	44.69474	44.61945	Interpolati	Volume	Coefficient	Volume	Coefficient					
Adjustment Factor for No Pas	1.68	1.76	Okay	800	1.2	600	1.8	Okay	800	1.2	600	1.8
ATS LoS	A	A										
	71.9	71.8										

Job:	KUR-World Environmental Impact Assessment																									
Job Number:	253251-00																									
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 11.0-14.0km				2027	PM		Post-Development												
Step One (Input Data)																										
Road	Kennedy Highway (11.0km - 14.0km)					Year	2027																			
Peak Period	PM																									
Speed Limit	80	km/h	49.7	mi/h								HVs	HV %													
AADT	10774	vpd				Cairns Bou	633	veh				58	9%	v_{vph}	744.7											
Peak Hour Flow	1169	vph				Kuranda B	536	veh				33	6%	v_{vph}	630.6											
PHF	0.85			v_{vph}	1375																					
Lane Width	3.5	m	11.48	ft																						
Shoulder Width	1	m	3.28	ft																						
Access Point Density	4	access poi	2.5	access points/mi																						
Terrain Type	Rolling	Assumed All Terrain is Rolling																								
Percentage No Passing	80%																									
Step Two (Free Flow Speed)																										
Base Free Flow Speed	59.7																									
Free Flow Speed	56.1																									
Adjustment for Lane/Shoulde	3																									
Adjustment for Access Point D	0.625																									
Step 5 Demand Adjustement for PTSF																										
	Direction of Analysis - Cairns Bound					Direction of Analysis - Kuranda Bound																				
Demand Flow Rate for PTSF	748.8466					649.6039																				
Flow (i) or (o)	633					536											Rolling						Rolling			
PHF (assumed)	0.85					0.85											Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient
Grade Adjustment for PTSF	0.994471					1										Okay	800	1	700	0.99	Okay		700	0.99	600	0.97
Heavy Vehicle Adjustment Fac	1.0					1.0																				
Proportion of Trucks	0.06					0.04																				
Proportion of RVs	0.03					0.02																				
Passenger Car Equivalents (Tr	1					1.1										Okay	800	1	700	1	Okay		700	1	600	1.2
Passenger Car Equivalents (RV	1					1																				
Estimate the PTSF																										
	Direction of Analysis - Cairns Bound					Direction of Analysis - Kuranda Bound																				
Percent Time Following	75.1					69.9																				
Base Percent Time Following	60.5					57.2										Interpolati	Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient
No Passing Zone Adjustment	27.42376					27.42376										Okay	2000	18.2	1400	27.4						
Coefficeint A	-0.0036					-0.00421										Okay	800	-0.0045	600	-0.0033	Okay		800	-0.0045	400	-0.0022
Coefficient B	0.860823					0.84451										Okay	800	0.833	600	0.87	Okay		800	0.833	400	0.923
LOS	D					C																				

Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound											
Demand Flow Rate for ATS	777.2779	pc/h	669.433	pc/h		Rolling					Rolling			
Demand Volume	633.0	veh/h	536.0	veh/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Grade Adjustment Factor	0.984471		0.973059		Okay	800	0.99	700	0.98	Okay	700	0.98	600	0.97
Heavy Vehicle Adjustment Fac	0.97		0.97											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.06											
Proportion of RVs	0.02		0.03											
Passenger Car Equivalents (Tr	1.5		1.5		Okay	800	1.4	700	1.6	Okay	700	1.6	600	1.7
Passenger Car Equivalents (RV	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound								
Average Travel Speed	43.27715	43.60068	Interpolati	Volume	Coefficient	Volume	Coefficient			
Adjustment Factor for No Pas	1.59	1.27	Okay	800	1.2	600	1.8	Okay	800	1.2	600	1.8
ATS LoS	A	A										
	69.6	70.2										

Job:	KUR-World Environmental Impact Assessment																					
Job Number:	253251-00																					
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 0.0-11.0km				2037	AM		Pre-Development								

ARUP

Step One (Input Data)

Road	Kennedy Highway (0.0km - 11.0km)				Year	2037																
Peak Period	AM																					
Speed Limit	60	km/h	37.3	mi/h							HVs	HV %										
AADT	13133	vpd			Cairns Bou	520	veh				34	7%	v_{vph}	611.8								
Peak Hour Flow	1004	vph			Kuranda B	484	veh				43	9%	v_{vph}	569.4								
PHF	0.85		v_{vph}	1181																		
Lane Width	3.75	m	12.3	ft																		
Shoulder Width	0.75	m	2.46	ft																		
Access Point Density	1	access poi	0.6	access points/mi																		
Terrain Type	Rolling																					
Percentage No Passing	80%																					

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3
Free Flow Speed	44.5
Adjustment for Lane/Shoulde	2.6
Adjustment for Access Point D	0.15

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade												
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound												
Demand Flow Rate for PTSF	611.7647	643.2477												
Flow (i) or (o)	520	484			Downgrade						Upgrade			
PHF (assumed)	0.85	0.85			Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient
Grade Adjustment for PTSF	1	1		Okay	700	1	600	1	Okay		600	1	500	1
Heavy Vehicle Adjustment Fac	1.0	0.9												
Proportion of Trucks	0.05	0.06												
Proportion of RVs	0.02	0.03												
Passenger Car Equivalents (Tr	1.00	3.16		Okay	700	1	600	1	Okay		600	3.1	500	3.3
Passenger Car Equivalents (RV	1	1												

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound												
Percent Time Following	69.6	67.6												
Base Percent Time Following	54.2	51.4		Interpolati	Volume	Coefficient	Volume	Coefficient						
No Passing Zone Adjustment	31.60464	31.60464		Okay	1400	27.4	800	44.8						
Coefficeint A	-0.00356	-0.00337		Okay	800	-0.0045	600	-0.0033	Okay		800	-0.0045	600	-0.0033
Coefficient B	0.861999	0.867824		Okay	800	0.833	600	0.87	Okay		800	0.833	600	0.87
LOS	C	C												

Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for ATS	614.8235	pc/h	1479.569	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	520.0	veh/h	484.0	veh/h										
Grade Adjustment Factor	1		0.720824		Okay	700	1	600	1	Okay	600	0.73	500	0.7
Heavy Vehicle Adjustment Fac	1.00		0.53											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.06											
Proportion of RVs	0.02		0.03											
Passenger Car Equivalents (Tr	1.1		15.3		Okay	700	1.1	600	1.1	Okay	600	15.3	500	15.3
Passenger Car Equivalents (RV	1		1.5											

Step Four (Estimate the ATS)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound											
Average Travel Speed	27.76732		26.63223		Interpolati	Volume	Coefficient	Volume	Coefficient					
Adjustment Factor for No Pas	0.52		1.66		Okay	1600	0.4	1400	0.6	Okay	800	1.1	600	1.7
ATS LoS	A		A											
	44.7		42.9											

Job:	KUR-World Environmental Impact Assessment																					
Job Number:	253251-00																					
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis				Scenario:	Ch 0.0-11.0km			2037	PM		Pre-Development										

ARUP

Step One (Input Data)

Road	Kennedy Highway (0.0km - 11.0km)				Year	2037																
Peak Period	PM																					
Speed Limit	60	km/h	37.3	mi/h							HVs	HV %										
AADT	13133	vpd			Cairns Bou	626	veh				58	9%	v_{vph}	736.5								
Peak Hour Flow	1226	vph			Kuranda B	600	veh				34	6%	v_{vph}	705.9								
PHF	0.85		v_{vph}	1442																		
Lane Width	3.75	m	12.3	ft																		
Shoulder Width	0.75	m	2.46	ft																		
Access Point Density	1	access poi	0.6	access points/mi																		
Terrain Type	Rolling																					
Percentage No Passing	80%																					

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3
Free Flow Speed	44.5
Adjustment for Lane/Shoulde	2.6
Adjustment for Access Point D	0.15

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade													
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound													
Demand Flow Rate for PTSF	736.4706	759.1972													
Flow (i) or (o)	626	600			Downgrade					Upgrade					
PHF (assumed)	0.85	0.85			Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient		
Grade Adjustment for PTSF	1	1	Okay		800	1	700	1	Okay	800	1	700	1		
Heavy Vehicle Adjustment Fac	1.0	0.9													
Proportion of Trucks	0.06	0.04													
Proportion of RVs	0.03	0.02													
Passenger Car Equivalents (Tr	1	2.9	Okay		800	1	700	1	Okay	800	2.7	700	2.9		
Passenger Car Equivalents (RV	1	1													

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound													
Percent Time Following	74.3	73.1													
Base Percent Time Following	61.5	60.0	Interpolati	Volume	Coefficient	Volume	Coefficient								
No Passing Zone Adjustment	25.93309	25.93309	Okay	2000	18.2	1400	27.4								
Coefficeint A	-0.00426	-0.00412	Okay	800	-0.0045	600	-0.0033	Okay	800	-0.0045	600	-0.0033			
Coefficient B	0.840549	0.844753	Okay	800	0.833	600	0.87	Okay	800	0.833	600	0.87			
LOS	D	D													

Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for ATS	740.8894	pc/h	1429.478	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	626.0	veh/h	600.0	veh/h										
Grade Adjustment Factor	1		0.778235		Okay	800	1	700	1	Okay	800	0.91	700	0.77
Heavy Vehicle Adjustment Fac	0.99		0.63											
PHF	0.85		0.85											
Proportion of Trucks	0.06		0.04											
Proportion of RVs	0.03		0.02											
Passenger Car Equivalents (Tr	1.1		15.2		Okay	800	1.1	700	1.1	Okay	800	15.2	700	15.3
Passenger Car Equivalents (RV	1		1.4											

Step Four (Estimate the ATS)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound											
Average Travel Speed	27.12767		26.42086		Interpolati	Volume	Coefficient	Volume	Coefficient					
Adjustment Factor for No Pas	0.57		1.28		Okay	1600	0.4	1400	0.6	Okay	800	1.1	600	1.7
ATS LoS	A		A											
	43.6		42.5											

Job:	KUR-World Environmental Impact Assessment																					
Job Number:	253251-00																					
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 11.0-14.0km			2037	AM		Pre-Development									

ARUP

Step One (Input Data)

Road	Kennedy Highway (11.0km - 14.0km)				Year	2037																
Peak Period	AM																					
Speed Limit	80	km/h	49.7	mi/h						HVs	HV %											
AADT	13133	vpd			Cairns Bou	520	veh			34	7%	v_{vph}	611.8									
Peak Hour Flow	1004	vph			Kuranda B	484	veh			43	9%	v_{vph}	569.4									
PHF	0.85			v_{vph}	1181																	
Lane Width	3.5	m	11.48	ft																		
Shoulder Width	1	m	3.28	ft																		
Access Point Density	4	access poi	2.5	access points/mi																		
Terrain Type	Rolling	Assumed All Terrain is Rolling																				
Percentage No Passing	80%																					

Step Two (Free Flow Speed)

Base Free Flow Speed	59.7
Free Flow Speed	56.1
Adjustment for Lane/Shoulde	3
Adjustment for Access Point D	0.625

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade		Downgrade					Upgrade			
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for PTSF	634.7105	598.1075										
Flow (i) or (o)	520	484										
PHF (assumed)	0.85	0.85										
Grade Adjustment for PTSF	0.972353	1	Okay	700	0.99	600	0.97	Okay	600	0.97	500	0.96
Heavy Vehicle Adjustment Fac	1.0	1.0										
Proportion of Trucks	0.05	0.06										
Proportion of RVs	0.02	0.03										
Passenger Car Equivalents (Tr	1.176471	1.3	Okay	700	1	600	1.2	Okay	600	1.2	500	1.4
Passenger Car Equivalents (RV	1	1										

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound									
Percent Time Following	69.9	67.5									
Base Percent Time Following	53.3	51.8	Interpolati	Volume	Coefficient	Volume	Coefficient				
No Passing Zone Adjustment	32.24828	32.24828	Okay	1400	27.4	800	44.8				
Coefficeint A	-0.00329	-0.00351	Okay	600	-0.0033	400	-0.0022	Okay	800	-0.0045	600	-0.0033
Coefficient B	0.870502	0.863579	Okay	600	0.87	400	0.923	Okay	800	0.833	600	0.87
LOS	C	C									

Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for ATS	652.8578	pc/h	613.7874	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	520.0	veh/h	484.0	veh/h										
Grade Adjustment Factor	0.971176		0.963882		Okay	700	0.98	600	0.97	Okay	600	0.97	500	0.95
Heavy Vehicle Adjustment Fac	0.96		0.96											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.06											
Proportion of RVs	0.02		0.03											
Passenger Car Equivalents (Tr	1.7		1.6		Okay	700	1.6	600	1.7	Okay	600	1.7	500	1.8
Passenger Car Equivalents (RV	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound									
Average Travel Speed	44.50752	44.62473	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for No Pas	1.76	1.64	Okay	800	1.2	600	1.8	Okay	800	1.2	600	1.8
ATS LoS	A	A									
	71.6	71.8									

Job:	KUR-World Environmental Impact Assessment														
Job Number:	253251-00														
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis			Scenario:	Ch 11.0-14.0km		2037	PM		Pre-Development					

ARUP

Step One (Input Data)

Road	Kennedy Highway (11.0km - 14.0km)			Year	2037										
Peak Period	PM														
Speed Limit	80	km/h	49.7	mi/h					HVs	HV %					
AADT	13133	vpd		Cairns Bou	626	veh			58	9%	v_{vph}	736.5			
Peak Hour Flow	1226	vph		Kuranda B	600	veh			34	6%	v_{vph}	705.9			
PHF	0.85		v_{vph}	1442											
Lane Width	3.5	m	11.48	ft											
Shoulder Width	1	m	3.28	ft											
Access Point Density	4	access poi	2.5	access points/mi											
Terrain Type	Rolling	Assumed All Terrain is Rolling													
Percentage No Passing	80%														

Step Two (Free Flow Speed)

Base Free Flow Speed	59.7
Free Flow Speed	56.1
Adjustment for Lane/Shoulde	3
Adjustment for Access Point D	0.625

Step 5 Demand Adjustement for PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound											
Demand Flow Rate for PTSF	741.1793	712.5891											
Flow (i) or (o)	626	600			Rolling					Rolling			
PHF (assumed)	0.85	0.85			Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Grade Adjustment for PTSF	0.993647	1	Okay		800	1	700	0.99	Okay	800	1	700	0.99
Heavy Vehicle Adjustment Fac	1.0	1.0											
Proportion of Trucks	0.06	0.04											
Proportion of RVs	0.03	0.02											
Passenger Car Equivalents (Tr	1	1.0	Okay		800	1	700	1	Okay	800	1	700	1
Passenger Car Equivalents (RV	1	1											

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound											
Percent Time Following	74.6	73.0											
Base Percent Time Following	61.0	60.0	Interpolati	Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient	
No Passing Zone Adjustment	26.57555	26.57555	Okay	2000	18.2	1400	27.4						
Coefficeint A	-0.00398	-0.00415	Okay	800	-0.0045	600	-0.0033	Okay	800	-0.0045	600	-0.0033	
Coefficient B	0.849171	0.843882	Okay	800	0.833	600	0.87	Okay	800	0.833	600	0.87	
LOS	D	D											

Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for ATS	774.6374	pc/h	732.8134	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	626.0	veh/h	600.0	veh/h										
Grade Adjustment Factor	0.983647		0.980588		Okay	800	0.99	700	0.98	Okay	800	0.99	700	0.98
Heavy Vehicle Adjustment Fac	0.97		0.98											
PHF	0.85		0.85											
Proportion of Trucks	0.06		0.04											
Proportion of RVs	0.03		0.02											
Passenger Car Equivalents (Tr	1.5		1.4		Okay	800	1.4	700	1.6	Okay	800	1.4	700	1.6
Passenger Car Equivalents (RV	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound								
Average Travel Speed	42.99595	43.15946	Interpolati	Volume	Coefficient	Volume	Coefficient			
Adjustment Factor for No Pas	1.40	1.24	Okay	800	1.2	600	1.8	Okay	1000	0.9	800	1.2
ATS LoS	A	A								
	69.2	69.4								

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Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for ATS	683.4	pc/h	1693.594	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	578.0	veh/h	590.0	veh/h										
Grade Adjustment Factor	1		0.767647		Okay	700	1	600	1	Okay	700	0.77	600	0.73
Heavy Vehicle Adjustment Fa	1.00		0.53											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.06											
Proportion of RVs	0.02		0.03											
Passenger Car Equivalents (Tr	1.1		15.3		Okay	700	1.1	600	1.1	Okay	700	15.3	600	15.3
Passenger Car Equivalents (RV	1		1.5											

Step Four (Estimate the ATS)

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound								
Average Travel Speed	25.69477	24.64497	Interpolati	Volume	Coefficient	Volume	Coefficient			
Adjustment Factor for No Pas	0.40	1.45	Change	1600	0.4	1400	0.6	Okay	800	1.1	600	1.7
ATS LoS	A	A								
	41.3	39.7								

Job:	KUR-World Environmental Impact Assessment												
Job Number:	253251-00												
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis			Scenario:	Ch 0.0-11.0km		2037	AM		Post-Development			

ARUP

Step One (Input Data)

Road	Kennedy Highway (0.0km - 11.0km)			Year	2037								
Peak Period	PM												
Speed Limit	60	km/h	37.3	mi/h				HVs	HV %				
AADT	13133	vpd		Cairns Bou	745	veh		68	9%	v_{vph}	876.5		
Peak Hour Flow	1389	vph		Kuranda B	644	veh		39	6%	v_{vph}	757.6		
PHF	0.85		v_{vph}	1634									
Lane Width	3.75	m	12.3	ft									
Shoulder Width	0.75	m	2.46	ft									
Access Point Density	1	access poi	0.6	access points/mi									
Terrain Type	Rolling												
Percentage No Passing	80%												

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3
Free Flow Speed	44.5
Adjustment for Lane/Shoulde	2.6
Adjustment for Access Point D	0.15

Step 5 Demand Adjustement for PTSF

	Downgrade	Upgrade
	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound
Demand Flow Rate for PTSF	876.4706	811.7341
Flow (i) or (o)	745	644
PHF (assumed)	0.85	0.85
Grade Adjustment for PTSF	1	1
Heavy Vehicle Adjustment Fac	1.0	0.9
Proportion of Trucks	0.06	0.04
Proportion of RVs	0.03	0.02
Passenger Car Equivalents (Tr	1	2.8
Passenger Car Equivalents (RV	1	1

		Downgrade					Upgrade			
		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Okay	900	1	800	1	Okay	800	1	700	1	
Okay	900	1	800	1	Okay	800	2.7	700	2.9	

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound
Percent Time Following	79.1	74.5
Base Percent Time Following	67.2	63.5
No Passing Zone Adjustment	22.98086	22.98086
Coefficeint A	-0.00452	-0.00465
Coefficient B	0.832765	0.831471
LOS	D	D

Interpolati	Volume	Coefficient	Volume	Coefficient					
Okay	2000	18.2	1400	27.4					
Okay	1000	-0.0049	800	-0.0045	Okay	1000	-0.0049	800	-0.0045
Okay	1000	0.829	800	0.833	Okay	1000	0.829	800	0.833

Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for ATS	898.2273	pc/h	1394.695	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	745.0	veh/h	644.0	veh/h										
Grade Adjustment Factor	0.997647		0.850706		Okay	900	1	800	0.99	Okay	800	0.91	700	0.77
Heavy Vehicle Adjustment Fac	0.98		0.64											
PHF	0.85		0.85											
Proportion of Trucks	0.06		0.04											
Proportion of RVs	0.03		0.02											
Passenger Car Equivalents (Tr	1.3		15.1		Okay	900	1.3	800	1.4	Okay	800	15.2	700	15.3
Passenger Car Equivalents (RV	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound									
Average Travel Speed	26.14186	25.69628	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for No Pas	0.61	1.05	Okay	1600	0.4	1400	0.6	Okay	1000	1	800	1.1
ATS LoS	A	A									
	42.1	41.3									

Job:	KUR-World Environmental Impact Assessment																									
Job Number:	253251-00																									
Description:	Kennedy Highway HCM Class Two Highway Capacity Analysis					Scenario:	Ch 11.0-14.0km			2037	AM		Post-Development													

ARUP

Step One (Input Data)

Road	Kennedy Highway (11.0km - 14.0km)					Year	2037																			
Peak Period	AM																									
Speed Limit	80	km/h	49.7	mi/h								HVs	HV %													
AADT	13133	vpd				Cairns Bou	578	veh				40	7%	v_{vph}	680.0											
Peak Hour Flow	1168	vph				Kuranda B	590	veh				52	9%	v_{vph}	694.1											
PHF	0.85			v_{vph}	1374																					
Lane Width	3.5	m	11.48	ft																						
Shoulder Width	1	m	3.28	ft																						
Access Point Density	4	access poi	2.5	access points/mi																						
Terrain Type	Rolling	Assumed All Terrain is Rolling																								
Percentage No Passing	80%																									

Step Two (Free Flow Speed)

Base Free Flow Speed	59.7																									
Free Flow Speed	56.1																									
Adjustment for Lane/Shoulde	3																									
Adjustment for Access Point D	0.625																									

Step 5 Demand Adjustement for PTSF

	Downgrade		Upgrade																	
	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound																	
Demand Flow Rate for PTSF	691.0345		702.4586																	
Flow (i) or (o)	578		590				Downgrade						Upgrade							
PHF (assumed)	0.85		0.85				Volume	Coefficient	Volume	Coefficient			Volume	Coefficient	Volume	Coefficient				
Grade Adjustment for PTSF	0.986		1		Okay	700	0.99	600	0.97	Okay		700	0.99	600	0.97					
Heavy Vehicle Adjustment Fac	1.0		1.0																	
Proportion of Trucks	0.05		0.06																	
Proportion of RVs	0.02		0.03																	
Passenger Car Equivalents (Tr	1.04		1.0		Okay	700	1	600	1.2	Okay		700	1	600	1.2					
Passenger Car Equivalents (RV	1		1																	

Estimate the PTSF

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound																
Percent Time Following	72.1	72.8																
Base Percent Time Following	58.4	58.9		Interpolati	Volume	Coefficient	Volume	Coefficient										
No Passing Zone Adjustment	27.5887	27.5887		Okay	1400	27.4	800	44.8										
Coefficeint A	-0.00391	-0.00385		Okay	800	-0.0045	600	-0.0033	Okay		800	-0.0045	600	-0.0033				
Coefficient B	0.851045	0.853159		Okay	800	0.833	600	0.87	Okay		800	0.833	600	0.87				
LOS	D	D																

Step Three (ATS demand Adjustment)

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for ATS	718.2413	pc/h	736.3483	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	578.0	veh/h	590.0	veh/h										
Grade Adjustment Factor	0.978		0.979412		Okay	700	0.98	600	0.97	Okay	700	0.98	600	0.97
Heavy Vehicle Adjustment Fac	0.97		0.96											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.06											
Proportion of RVs	0.02		0.03											
Passenger Car Equivalents (Tr	1.6		1.6		Okay	700	1.6	600	1.7	Okay	700	1.6	600	1.7
Passenger Car Equivalents (RV	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Kuranda Bound	Direction of Analysis - Mareeba Bound								
Average Travel Speed	43.41675	43.36243	Interpolati	Volume	Coefficient	Volume	Coefficient					
Adjustment Factor for No Pas	1.39	1.45	Okay	800	1.2	600	1.8	Okay	800	1.2	600	1.8
ATS LoS	A	A										
	69.9	69.8										

| | | |

	Direction of Analysis - Cairns Bound		Direction of Analysis - Kuranda Bound											
Demand Flow Rate for ATS	898.2273	pc/h	776.274	pc/h		Downgrade					Upgrade			
Demand Volume	745.0	veh/h	644.0	veh/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Grade Adjustment Factor	0.997647		0.985765		Okay	900	1	800	0.99	Okay	800	0.99	700	0.98
Heavy Vehicle Adjustment Fa	0.98		0.99											
PHF	0.85		0.85											
Proportion of Trucks	0.06		0.04											
Proportion of RVs	0.03		0.02											
Passenger Car Equivalents (Tr	1.3		1.2		Okay	900	1.3	800	1.4	Okay	800	1.4	700	1.6
Passenger Car Equivalents (RV	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Cairns Bound	Direction of Analysis - Kuranda Bound						
Average Travel Speed	41.83001	42.04853	Interpolati	Volume	Coefficient	Volume	Coefficient	
Adjustment Factor for No Pas	1.27	1.05	Okay	800	1.2	600	1.8	Okay
ATS LoS	A	A						
	67.3	67.7						

Upgrade				
Volume	Coefficient	Volume	Coefficient	
1000	0.9	800	1.2	

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2017 AM Pre-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2017						
Peak Period	AM										
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %			
AADT	2400	vpd		Site Bound	167	veh	11	7%	v_{vph}	196.5	
Peak Hour Flow	345	vph		Kuranda B	178	veh	6	3%	v_{vph}	209.4	
PHF	0.85		v_{vph}	406							
Lane Width	3.5	m	11.48	ft							
Shoulder Width	0.5	m	1.64	ft							
Access Point Density	12	access poi	7.5	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	60%										

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound			Downgrade					Upgrade			
Demand Flow Rate for	280.754	pc/h	283.8003	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	167.0	veh/h	178.0	veh/h										
Grade Adjustment Fac	0.747176		0.757529		Okay	200	0.75	100	0.67	Okay	300	0.83	200	0.75
Heavy Vehicle Adjustm	0.94		0.97											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.02											
Proportion of RVs	0.02		0.01											
Passenger Car Equivale	2.3		2.3		Okay	200	2.3	100	2.7	Okay	300	2.1	200	2.3
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	33.21489	33.28607	Interpolati									
Adjustment Factor for	3.12	3.05	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	81.6%	81.8%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1189.653	1254.403	2444.057

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2017 PM Pre-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2017						
Peak Period	PM										
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %			
AADT	2400	vpd		Site Bound	144	veh	8	6%	v_{vph}	169.4	
Peak Hour Flow	312	vph		Kuranda B	168	veh	11	7%	v_{vph}	197.6	
PHF	0.85		v_{vph}	367							
Lane Width	3.5	m	11.48	ft							
Shoulder Width	0.5	m	1.64	ft							
Access Point Density	12	access poi	7.5	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	60%										

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound			Downgrade					Upgrade			
Demand Flow Rate for	250.5739	pc/h	282.0177	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	144.0	veh/h	168.0	veh/h										
Grade Adjustment Fac	0.725529		0.748118		#REF!	200	0.75	100	0.67	#REF!	200	0.75	100	0.67
Heavy Vehicle Adjustm	0.93		0.94											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.05											
Proportion of RVs	0.02		0.02											
Passenger Car Equivale	2.4		2.3		#REF!	200	2.3	100	2.7	#REF!	200	2.3	100	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound			Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	33.3141	33.46939	Interpolati										
Adjustment Factor for	3.27	3.11	#REF!	400	2	200	3.1	#REF!	400	2	200	3.1	

Step Seven (Estimate PFFS)

PFFS	81.8%	82.2%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1149.361	1191.415	2340.776

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2018 AM Pre-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2018						
Peak Period	AM										
Speed Limit	60	km/h	37.3 mi/h			HVs	HV %				
AADT	2400	vpd		Site Bound	170	veh	11	6%	v_{vph}	200.0	
Peak Hour Flow	352	vph		Kuranda B	182	veh	6	3%	v_{vph}	214.1	
PHF	0.85		v_{vph}	414							
Lane Width	3.5	m	11.48 ft								
Shoulder Width	0.5	m	1.64 ft								
Access Point Density	12	access poi	7.5 access points/mi								
Terrain Type	Rolling										
Percentage No Passing	60%										

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound		Downgrade					Upgrade			
Demand Flow Rate for	281.0667 pc/h	288.6899 pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	170.0 veh/h	182.0 veh/h										
Grade Adjustment Fac	0.75	0.761294	Okay	200	0.75	100	0.67	Okay	300	0.83	200	0.75
Heavy Vehicle Adjustm	0.95	0.97										
PHF	0.85	0.85										
Proportion of Trucks	0.04	0.02										
Proportion of RVs	0.02	0.01										
Passenger Car Equivale	2.3	2.3	Okay	200	2.3	100	2.7	Okay	300	2.1	200	2.3
Passenger Car Equivale	1.1	1.1										

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound									
Average Travel Speed	33.19393	33.27158	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for	3.10	3.02	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	81.5%	81.7%	
LOS	B	B	
Step Eight (LOS and Capacity)			
Capacity	1209.677	1260.869	2470.546

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2018 PM Pre-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2017						
Peak Period	PM										
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %			
AADT	2400	vpd		Site Bound	147	veh	8	5%	v_{vph}	172.9	
Peak Hour Flow	318	vph		Kuranda B	171	veh	11	6%	v_{vph}	201.2	
PHF	0.85		v_{vph}	374							
Lane Width	3.5	m	11.48	ft							
Shoulder Width	0.5	m	1.64	ft							
Access Point Density	12	access poi	7.5	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	60%										

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound			Downgrade					Upgrade			
Demand Flow Rate for	247.9475	pc/h	282.3404	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	147.0	veh/h	171.0	veh/h										
Grade Adjustment Fac	0.728353		0.750941		Okay	200	0.75	100	0.67	Okay	300	0.83	200	0.75
Heavy Vehicle Adjustm	0.96		0.95											
PHF	0.85		0.85											
Proportion of Trucks	0.03		0.04											
Proportion of RVs	0.02		0.02											
Passenger Car Equivale	2.4		2.3		Okay	200	2.3	100	2.7	Okay	300	2.1	200	2.3
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	33.35138	33.50668	Interpolati									
Adjustment Factor for	3.25	3.09	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	81.9%	82.3%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1185.735	1211.304	2397.038

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2018 AM Post-Development

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Step One (Input Data)

Road	Myola Road			Year	2018						
Peak Period	AM										
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %			
AADT	2400	vpd		Site Bound	220	veh	17	8%	v_{vph}	258.8	
Peak Hour Flow	414	vph		Kuranda B	194	veh	8	4%	v_{vph}	228.2	
PHF	0.85		v_{vph}	487							
Lane Width	3.5	m	11.48	ft							
Shoulder Width	0.5	m	1.64	ft							
Access Point Density	12	access poi	7.5	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	60%										

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound											
Demand Flow Rate for	344.8943	pc/h	306.7327	pc/h		Rolling					Rolling			
Demand Volume	220.0	veh/h	194.0	veh/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Grade Adjustment Fac	0.797059		0.772588		Okay	300	0.83	200	0.75	Okay	300	0.83	200	0.75
Heavy Vehicle Adjustm	0.94		0.96											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.03											
Proportion of RVs	0.03		0.01											
Passenger Car Equivale	2.2		2.2		Okay	300	2.1	200	2.3	Okay	300	2.1	200	2.3
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound							
Average Travel Speed	32.88215	32.71391	Interpolati	Volume	Coefficient	Volume	Coefficient		
Adjustment Factor for	2.78	2.94	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	80.8%	80.3%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1275.753	1264.945	2540.698

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2018 PM Post-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2017							
Peak Period	PM											
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %				
AADT	2400	vpd		Site Bound	160	veh	10	6%	v_{vph}	188.2		
Peak Hour Flow	423	vph		Kuranda B	263	veh	19	7%	v_{vph}	309.4		
PHF	0.85		v_{vph}	498								
Lane Width	3.5	m	11.48	ft								
Shoulder Width	0.5	m	1.64	ft								
Access Point Density	12	access poi	7.5	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	60%											

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound			Rolling					Rolling			
Demand Flow Rate for	268.3736	pc/h	390.7569	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	160.0	veh/h	263.0	veh/h										
Grade Adjustment Fac	0.740588		0.836588		Okay	200	0.75	100	0.67	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustm	0.95		0.95											
PHF	0.85		0.85											
Proportion of Trucks	0.04		0.05											
Proportion of RVs	0.02		0.02											
Passenger Car Equivale	2.3		2.1		Okay	200	2.3	100	2.7	Okay	400	2	300	2.1
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound									
Average Travel Speed	32.43568	33.10215	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for	3.16	2.50	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	79.7%	81.3%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1192.368	1346.105	2538.473

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2021 AM Pre-Development

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Step One (Input Data)

Road	Myola Road			Year	2018							
Peak Period	AM											
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %				
AADT	2400	vpd		Site Bound	181	veh	12	7%	v_{vph}	212.9		
Peak Hour Flow	374	vph		Kuranda B	193	veh	6	3%	v_{vph}	227.1		
PHF	0.85		v_{vph}	440								
Lane Width	3.5	m	11.48	ft								
Shoulder Width	0.5	m	1.64	ft								
Access Point Density	12	access poi	7.5	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	60%											

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound			Downgrade					Upgrade			
Demand Flow Rate for	298.457	pc/h	301.8785	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	181.0	veh/h	193.0	veh/h										
Grade Adjustment Fac	0.760353		0.771647		Okay	300	0.83	200	0.75	Okay	300	0.83	200	0.75
Heavy Vehicle Adjustm	0.94		0.97											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.02											
Proportion of RVs	0.02		0.01											
Passenger Car Equivale	2.3		2.2		Okay	300	2.1	200	2.3	Okay	300	2.1	200	2.3
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	33.02782	33.10546	Interpolati									
Adjustment Factor for	3.03	2.95	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	81.1%	81.3%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1212.905	1278.66	2491.565

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2021 PM Pre-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2017							
Peak Period	PM											
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %				
AADT	2400	vpd		Site Bound	156	veh	9	6%	v_{vph}	183.5		
Peak Hour Flow	338	vph		Kuranda B	182	veh	12	7%	v_{vph}	214.1		
PHF	0.85		v_{vph}	398								
Lane Width	3.5	m	11.48	ft								
Shoulder Width	0.5	m	1.64	ft								
Access Point Density	12	access poi	7.5	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	60%											

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound			Downgrade					Upgrade			
Demand Flow Rate for	263.1887	pc/h	299.7018	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	156.0	veh/h	182.0	veh/h										
Grade Adjustment Fac	0.736824		0.761294		Okay	200	0.75	100	0.67	Okay	300	0.83	200	0.75
Heavy Vehicle Adjustm	0.95		0.94											
PHF	0.85		0.85											
Proportion of Trucks	0.04		0.05											
Proportion of RVs	0.02		0.02											
Passenger Car Equivale	2.4		2.3		Okay	200	2.3	100	2.7	Okay	300	2.1	200	2.3
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	33.15662	33.32486	Interpolati									
Adjustment Factor for	3.19	3.02	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	81.4%	81.8%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1185.461	1214.54	2400.002

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2021 AM Post-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2018						
Peak Period	AM										
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %			
AADT	2400	vpd		Site Bound	187	veh	12	6%	v_{vph}	220.0	
Peak Hour Flow	385	vph		Kuranda B	198	veh	7	4%	v_{vph}	232.9	
PHF	0.85		v_{vph}	453							
Lane Width	3.5	m	11.48	ft							
Shoulder Width	0.5	m	1.64	ft							
Access Point Density	12	access poi	7.5	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	60%										

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound											
Demand Flow Rate for	302.2559	pc/h	311.4542	pc/h		Rolling					Rolling			
Demand Volume	187.0	veh/h	198.0	veh/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Grade Adjustment Fac	0.766		0.776353		Okay	300	0.83	200	0.75	Okay	300	0.83	200	0.75
Heavy Vehicle Adjustm	0.95		0.96											
PHF	0.85		0.85											
Proportion of Trucks	0.04		0.03											
Proportion of RVs	0.02		0.01											
Passenger Car Equivale	2.3		2.2		Okay	300	2.1	200	2.3	Okay	300	2.1	200	2.3
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound							
Average Travel Speed	32.96285	33.03403	Interpolati	Volume	Coefficient	Volume	Coefficient		
Adjustment Factor for	2.99	2.92	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	81.0%	81.1%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1237.362	1271.455	2508.817

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2021 PM Post-Development

ARUP

Class III Capacity Assessment

Step One (Input Data)

Road	Myola Road			Year	2017						
Peak Period	PM										
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %			
AADT	2400	vpd		Site Bound	160	veh	9	6%	v_{vph}	188.2	
Peak Hour Flow	348	vph		Kuranda B	188	veh	12	6%	v_{vph}	221.2	
PHF	0.85		v_{vph}		409						
Lane Width	3.5	m	11.48	ft							
Shoulder Width	0.5	m	1.64	ft							
Access Point Density	12	access poi	7.5	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	60%										

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound			Downgrade					Upgrade			
Demand Flow Rate for	268.3736	pc/h	303.4722	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	160.0	veh/h	188.0	veh/h										
Grade Adjustment Fac	0.740588		0.766941		Okay	200	0.75	100	0.67	Okay	300	0.83	200	0.75
Heavy Vehicle Adjustm	0.95		0.95											
PHF	0.85		0.85											
Proportion of Trucks	0.04		0.04											
Proportion of RVs	0.02		0.02											
Passenger Car Equivale	2.3		2.3		Okay	200	2.3	100	2.7	Okay	300	2.1	200	2.3
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound									
Average Travel Speed	33.11301	33.29419	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for	3.16	2.98	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)			
PFFS	81.3%	81.8%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1192.368	1238.993	2431.361

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2024 AM Pre-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2018						
Peak Period	AM										
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %			
AADT	2400	vpd		Site Bound	192	veh	12	6%	v_{vph}	225.9	
Peak Hour Flow	396	vph		Kuranda B	204	veh	7	3%	v_{vph}	240.0	
PHF	0.85		v_{vph}	466							
Lane Width	3.5	m	11.48	ft							
Shoulder Width	0.5	m	1.64	ft							
Access Point Density	12	access poi	7.5	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	60%										

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound			Downgrade					Upgrade			
Demand Flow Rate for	308.3048	pc/h	314.7008	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	192.0	veh/h	204.0	veh/h										
Grade Adjustment Fac	0.770706		0.782		Okay	300	0.83	200	0.75	Okay	300	0.83	200	0.75
Heavy Vehicle Adjustm	0.95		0.98											
PHF	0.85		0.85											
Proportion of Trucks	0.04		0.02											
Proportion of RVs	0.02		0.01											
Passenger Car Equivale	2.2		2.2		Okay	300	2.1	200	2.3	Okay	300	2.1	200	2.3
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	32.92307	33.00072	Interpolati									
Adjustment Factor for	2.96	2.88	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	80.9%	81.1%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1245.521	1296.47	2541.991

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2024 PM Pre-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2017						
Peak Period	PM										
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %			
AADT	2400	vpd		Site Bound	156	veh	9	6%	v_{vph}	183.5	
Peak Hour Flow	338	vph		Kuranda B	182	veh	12	7%	v_{vph}	214.1	
PHF	0.85		v_{vph}	398							
Lane Width	3.5	m	11.48	ft							
Shoulder Width	0.5	m	1.64	ft							
Access Point Density	12	access poi	7.5	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	60%										

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound			Downgrade					Upgrade			
Demand Flow Rate for	263.1887	pc/h	299.7018	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	156.0	veh/h	182.0	veh/h										
Grade Adjustment Fac	0.736824		0.761294		Okay	200	0.75	100	0.67	Okay	300	0.83	200	0.75
Heavy Vehicle Adjustm	0.95		0.94											
PHF	0.85		0.85											
Proportion of Trucks	0.04		0.05											
Proportion of RVs	0.02		0.02											
Passenger Car Equivale	2.4		2.3		Okay	200	2.3	100	2.7	Okay	300	2.1	200	2.3
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	33.15662	33.32486	Interpolati									
Adjustment Factor for	3.19	3.02	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	81.4%	81.8%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1185.461	1214.54	2400.002

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2024 AM Post-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2018							
Peak Period	AM											
Speed Limit	60	km/h	37.3	mi/h				HVs	HV %			
AADT	2400	vpd		Site Bound	203	veh		13	6%	v_{vph}	238.8	
Peak Hour Flow	414	vph		Kuranda B	211	veh		7	3%	v_{vph}	248.2	
PHF	0.85		v_{vph}	487								
Lane Width	3.5	m	11.48	ft								
Shoulder Width	0.5	m	1.64	ft								
Access Point Density	12	access poi	7.5	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	60%											

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound											
Demand Flow Rate for	321.3308	pc/h	322.6763	pc/h		Rolling					Rolling			
Demand Volume	203.0	veh/h	211.0	veh/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Grade Adjustment Fac	0.781059		0.788588		Okay	300	0.83	200	0.75	Okay	300	0.83	200	0.75
Heavy Vehicle Adjustm	0.95		0.98											
PHF	0.85		0.85											
Proportion of Trucks	0.04		0.02											
Proportion of RVs	0.02		0.01											
Passenger Car Equivale	2.2		2.2		Okay	300	2.1	200	2.3	Okay	300	2.1	200	2.3
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound								
Average Travel Speed	32.83128	32.88304	Interpolati	Volume	Coefficient	Volume	Coefficient			
Adjustment Factor for	2.89	2.83	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	80.6%	80.8%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1263.496	1307.812	2571.308

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2024 PM Post-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2017						
Peak Period	PM										
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %			
AADT	2400	vpd		Site Bound	171	veh	9	5%	v_{vph}	201.2	
Peak Hour Flow	376	vph		Kuranda B	205	veh	13	6%	v_{vph}	241.2	
PHF	0.85		v_{vph}	442							
Lane Width	3.5	m	11.48	ft							
Shoulder Width	0.5	m	1.64	ft							
Access Point Density	12	access poi	7.5	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	60%										

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound											
Demand Flow Rate for	278.8641	pc/h	323.6585	pc/h		Rolling					Rolling			
Demand Volume	171.0	veh/h	205.0	veh/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Grade Adjustment Fac	0.750941		0.782941		Okay	300	0.83	200	0.75	Okay	300	0.83	200	0.75
Heavy Vehicle Adjustm	0.96		0.95											
PHF	0.85		0.85											
Proportion of Trucks	0.03		0.04											
Proportion of RVs	0.02		0.02											
Passenger Car Equivale	2.3		2.2		Okay	300	2.1	200	2.3	Okay	300	2.1	200	2.3
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound							
Average Travel Speed	32.94614	33.16614	Interpolati	Volume	Coefficient	Volume	Coefficient		
Adjustment Factor for	3.09	2.87	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	80.9%	81.5%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1226.404	1266.767	2493.171

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2027 AM Pre-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2018						
Peak Period	AM										
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %			
AADT	2400	vpd		Site Bound	204	veh	12	6%	v_{vph}	240.0	
Peak Hour Flow	421	vph		Kuranda B	217	veh	7	3%	v_{vph}	255.3	
PHF	0.85		v_{vph}	495							
Lane Width	3.5	m	11.48	ft							
Shoulder Width	0.5	m	1.64	ft							
Access Point Density	12	access poi	7.5	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	60%										

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound			Downgrade					Upgrade			
Demand Flow Rate for	322.4962	pc/h	329.4016	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	204.0	veh/h	217.0	veh/h										
Grade Adjustment Fac	0.782		0.794235		Okay	300	0.83	200	0.75	Okay	300	0.83	200	0.75
Heavy Vehicle Adjustm	0.95		0.98											
PHF	0.85		0.85											
Proportion of Trucks	0.04		0.02											
Proportion of RVs	0.02		0.01											
Passenger Car Equivale	2.2		2.2		Okay	300	2.1	200	2.3	Okay	300	2.1	200	2.3
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	32.77652	32.86063	Interpolati									
Adjustment Factor for	2.88	2.80	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	80.5%	80.7%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1265.131	1317.54	2582.672

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2027 PM Pre-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2017						
Peak Period	PM										
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %			
AADT	2400	vpd		Site Bound	176	veh	10	6%	v_{vph}	207.1	
Peak Hour Flow	381	vph		Kuranda B	205	veh	13	6%	v_{vph}	241.2	
PHF	0.85		v_{vph}	448							
Lane Width	3.5	m	11.48	ft							
Shoulder Width	0.5	m	1.64	ft							
Access Point Density	12	access poi	7.5	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	60%										

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound			Downgrade					Upgrade			
Demand Flow Rate for	288.6573	pc/h	327.4093	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	176.0	veh/h	205.0	veh/h										
Grade Adjustment Fac	0.755647		0.782941		Okay	300	0.83	200	0.75	Okay	300	0.83	200	0.75
Heavy Vehicle Adjustm	0.95		0.94											
PHF	0.85		0.85											
Proportion of Trucks	0.04		0.05											
Proportion of RVs	0.02		0.02											
Passenger Car Equivale	2.3		2.2		Okay	300	2.1	200	2.3	Okay	300	2.1	200	2.3
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound		Downgrade					Upgrade			
Average Travel Speed	32.87339	33.06104	Interpolati	Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Adjustment Factor for	3.06	2.87	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	80.7%	81.2%	
LOS	B	B	
Step Eight (LOS and Capacity)			
Capacity	1219.439	1252.255	2471.694

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2027 AM Post-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2018						
Peak Period	AM										
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %			
AADT	2400	vpd		Site Bound	219	veh	14	6%	v_{vph}	257.6	
Peak Hour Flow	444	vph		Kuranda B	225	veh	8	4%	v_{vph}	264.7	
PHF	0.85		v_{vph}	522							
Lane Width	3.5	m	11.48	ft							
Shoulder Width	0.5	m	1.64	ft							
Access Point Density	12	access poi	7.5	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	60%										

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound			Rolling					Rolling			
Demand Flow Rate for	339.6129	pc/h	342.0785	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	219.0	veh/h	225.0	veh/h										
Grade Adjustment Fac	0.796118		0.801765		Okay	300	0.83	200	0.75	Okay	300	0.83	200	0.75
Heavy Vehicle Adjustm	0.95		0.97											
PHF	0.85		0.85											
Proportion of Trucks	0.04		0.03											
Proportion of RVs	0.02		0.01											
Passenger Car Equivale	2.2		2.2		Okay	300	2.1	200	2.3	Okay	300	2.1	200	2.3
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound							
Average Travel Speed	32.64238	32.6812	Interpolati	Volume	Coefficient	Volume	Coefficient		
Adjustment Factor for	2.78	2.74	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	80.2%	80.3%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1289.704	1315.488	2605.191

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2027 PM Post-Development

ARUP

Step One (Input Data)

Road	Myola Road				Year	2017						
Peak Period	PM											
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %				
AADT	2400	vpd			Site Bound	182	veh	10	5%	v_{vph}	214.1	
Peak Hour Flow	403	vph			Kuranda B	221	veh	14	6%	v_{vph}	260.0	
PHF	0.85		v_{vph}		474							
Lane Width	3.5	m	11.48	ft								
Shoulder Width	0.5	m	1.64	ft								
Access Point Density	12	access poi	7.5	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	60%											

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound			Rolling					Rolling			
Demand Flow Rate for	292.548	pc/h	341.8446	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	182.0	veh/h	221.0	veh/h										
Grade Adjustment Fac	0.761294		0.798		Okay	300	0.83	200	0.75	Okay	300	0.83	200	0.75
Heavy Vehicle Adjustm	0.96		0.95											
PHF	0.85		0.85											
Proportion of Trucks	0.03		0.04											
Proportion of RVs	0.02		0.02											
Passenger Car Equivale	2.3		2.2		Okay	300	2.1	200	2.3	Okay	300	2.1	200	2.3
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound		Rolling					Rolling			
Average Travel Speed	32.77	33.02236	Interpolati	Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Adjustment Factor for	3.02	2.77	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	80.5%	81.1%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1244.24	1292.985	2537.225

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2037 AM Pre-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2018						
Peak Period	AM										
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %			
AADT	2400	vpd		Site Bound	248	veh	16	6%	v_{vph}	291.8	
Peak Hour Flow	513	vph		Kuranda B	265	veh	9	3%	v_{vph}	311.8	
PHF	0.85		v_{vph}	604							
Lane Width	3.5	m	11.48	ft							
Shoulder Width	0.5	m	1.64	ft							
Access Point Density	12	access poi	7.5	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	60%										

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound			Downgrade					Upgrade			
						Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	370.8693	pc/h	380.3967	pc/h										
Demand Volume	248.0	veh/h	265.0	veh/h										
Grade Adjustment Fac	0.823412		0.838235		Okay	300	0.83	200	0.75	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustm	0.96		0.98											
PHF	0.85		0.85											
Proportion of Trucks	0.04		0.02											
Proportion of RVs	0.02		0.01											
Passenger Car Equivale	2.1		2.1		Okay	300	2.1	200	2.3	Okay	400	2	300	2.1
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound							
				Volume	Coefficient	Volume	Coefficient		
Average Travel Speed	32.29012	32.40012	Interpolati	Volume	Coefficient	Volume	Coefficient		
Adjustment Factor for	2.60	2.49	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	79.3%	79.6%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1337.399	1393.282	2730.681

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2037 PM Pre-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2017						
Peak Period	PM										
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %			
AADT	2400	vpd		Site Bound	214	veh	11	5%	v_{vph}	251.8	
Peak Hour Flow	464	vph		Kuranda B	250	veh	16	6%	v_{vph}	294.1	
PHF	0.85		v_{vph}	546							
Lane Width	3.5	m	11.48	ft							
Shoulder Width	0.5	m	1.64	ft							
Access Point Density	12	access poi	7.5	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	60%										

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound			Downgrade					Upgrade			
						Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	330.1759	pc/h	372.9403	pc/h										
Demand Volume	214.0	veh/h	250.0	veh/h										
Grade Adjustment Fac	0.791412		0.825294		Okay	300	0.83	200	0.75	Okay	300	0.83	200	0.75
Heavy Vehicle Adjustm	0.96		0.96											
PHF	0.85		0.85											
Proportion of Trucks	0.03		0.04											
Proportion of RVs	0.02		0.02											
Passenger Car Equivale	2.2		2.1		Okay	300	2.1	200	2.3	Okay	300	2.1	200	2.3
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound							
				Volume	Coefficient	Volume	Coefficient				
Average Travel Speed	32.44377	32.67671	Interpolati								
Adjustment Factor for	2.82	2.58	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	79.7%	80.3%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1296.279	1340.697	2636.976

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2037 AM Post-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2018						
Peak Period	AM										
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %			
AADT	2400	vpd		Site Bound	263	veh	16	6%	v_{vph}	309.4	
Peak Hour Flow	535	vph		Kuranda B	272	veh	9	3%	v_{vph}	320.0	
PHF	0.85		v_{vph}	629							
Lane Width	3.5	m	11.48	ft							
Shoulder Width	0.5	m	1.64	ft							
Access Point Density	12	access poi	7.5	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	60%										

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound											
Demand Flow Rate for	386.7234	pc/h	387.7156	pc/h		Rolling					Rolling			
Demand Volume	263.0	veh/h	272.0	veh/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Grade Adjustment Fac	0.836588		0.844		Okay	400	0.9	300	0.83	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustm	0.96		0.98											
PHF	0.85		0.85											
Proportion of Trucks	0.04		0.02											
Proportion of RVs	0.02		0.01											
Passenger Car Equivale	2.1		2.1		Okay	400	2	300	2.1	Okay	400	2	300	2.1
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound							
Average Travel Speed	32.20736	32.2656	Interpolati	Volume	Coefficient	Volume	Coefficient		
Adjustment Factor for	2.50	2.44	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	79.1%	79.2%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1360.145	1403.09	2763.236

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Myola Road HCM Class Three Highway Capacity Analysis Scenario: Myola Road 2037 PM Post-Development

ARUP

Step One (Input Data)

Road	Myola Road			Year	2017						
Peak Period	PM										
Speed Limit	60	km/h	37.3	mi/h			HVs	HV %			
AADT	2400	vpd		Site Bound	221	veh	12	5%	v_{vph}	260.0	
Peak Hour Flow	486	vph		Kuranda B	265	veh	16	6%	v_{vph}	311.8	
PHF	0.85		v_{vph}	572							
Lane Width	3.5	m	11.48	ft							
Shoulder Width	0.5	m	1.64	ft							
Access Point Density	12	access poi	7.5	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	60%										

Step Two (Free Flow Speed)

Base Free Flow Speed	47.3	mi/h
Free Flow Speed	40.7	
Adjustment for Lane/S	4.7	
Adjustment for Access	1.875	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Northbound		Direction of Analysis - Southbound			Downgrade					Upgrade			
Demand Flow Rate for	338	pc/h	388.8636	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	221.0	veh/h	265.0	veh/h										
Grade Adjustment Fac	0.798		0.838235		Okay	300	0.83	200	0.75	Okay	400	0.9	300	0.83
Heavy Vehicle Adjustm	0.96		0.96											
PHF	0.85		0.85											
Proportion of Trucks	0.03		0.04											
Proportion of RVs	0.02		0.02											
Passenger Car Equivale	2.2		2.1		Okay	300	2.1	200	2.3	Okay	400	2	300	2.1
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Northbound	Direction of Analysis - Southbound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	32.30478	32.58949	Interpolati									
Adjustment Factor for	2.77	2.49	Okay	400	2	200	3.1	Okay	400	2	200	3.1

Step Seven (Estimate PFFS)

PFFS	79.3%	80.0%	
LOS	C	C	
Step Eight (LOS and Capacity)			
Capacity	1307.692	1362.946	2670.638

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2017 AM Pre-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h				HVs	HV %			
AADT	200	vpd		Site Bound	9	veh		1	11%	v_{vph}	10.6	
Peak Hour Flow	19	vph		Kuranda B	10	veh		2	20%	v_{vph}	11.8	
PHF	0.85		v_{vph}	22								
Lane Width	2.5	m	8.2	ft	8							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for	17.74715	pc/h	22.12467	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	9	veh/h	10	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.890472		0.793651											
PHF	0.85		0.85											
Proportion of Trucks	0.07		0.15											
Proportion of RVs	0.04		0.05											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound		Downgrade					Upgrade			
Average Travel Speed	30.3658	30.3658	Interpolati	Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Adjustment Factor for	2.40	2.40	Okay	100	2.4	0	2.4	Okay	100	2.4	0	2.4

Step Seven (Estimate PFFS)

PFFS	91.8%	91.8%	
LOS	A	A	
Step Eight (LOS and Capacity)			
Capacity	1014.248	903.9683	1918.216

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2017 PM Pre-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h				HVs	HV %			
AADT	200	vpd		Site Bound	10	veh		1	10%	v_{vph}	11.8	
Peak Hour Flow	15	vph		Kuranda B	5	veh		2	40%	v_{vph}	5.9	
PHF	0.85		v_{vph}	18								
Lane Width	2.5	m	8.2	ft	6							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for	19.98244	pc/h	13.34504	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	10	veh/h	5	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.878735		0.657895											
PHF	0.85		0.85											
Proportion of Trucks	0.08		0.3											
Proportion of RVs	0.02		0.1											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	30.41658	30.41658	Interpolati									
Adjustment Factor for	2.40	2.40	Okay	100	2.4	0	2.4	Okay	100	2.4	0	2.4

Step Seven (Estimate PFFS)

PFFS	92.0%	92.0%	
LOS	A	A	
Step Eight (LOS and Capacity)			
Capacity	1000.879	749.3421	1750.221

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2018 AM Pre-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h			HVs	HV %				
AADT	200	vpd		Site Bound	9	veh	1	11%	v_{vph}	10.6		
Peak Hour Flow	19	vph		Kuranda B	10	veh	2	20%	v_{vph}	11.8		
PHF	0.85		v_{vph}	22								
Lane Width	2.5	m	8.2	ft	8							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for	17.74715	pc/h	22.12467	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	9	veh/h	10	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.890472		0.793651											
PHF	0.85		0.85											
Proportion of Trucks	0.07		0.15											
Proportion of RVs	0.04		0.05											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	30.3658	30.3658	Interpolati									
Adjustment Factor for	2.40	2.40	Okay	100	2.4	0	2.4	Okay	100	2.4	0	2.4

Step Seven (Estimate PFFS)

PFFS	91.8%	91.8%	
LOS	A	A	
Step Eight (LOS and Capacity)			
Capacity	1014.248	903.9683	1918.216

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2018 PM Pre-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h				HVs	HV %			
AADT	200	vpd		Site Bound	10	veh		1	10%	v_{vph}	11.8	
Peak Hour Flow	15	vph		Kuranda B	5	veh		2	40%	v_{vph}	5.9	
PHF	0.85		v_{vph}	18								
Lane Width	2.5	m	8.2	ft	6							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for	19.98244	pc/h	13.34504	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	10	veh/h	5	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.878735		0.657895											
PHF	0.85		0.85											
Proportion of Trucks	0.08		0.3											
Proportion of RVs	0.02		0.1											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	30.41658	30.41658	Interpolati									
Adjustment Factor for	2.40	2.40	Okay	100	2.4	0	2.4	Okay	100	2.4	0	2.4

Step Seven (Estimate PFFS)

PFFS	92.0%	92.0%	
LOS	A	A	
Step Eight (LOS and Capacity)			
Capacity	1000.879	749.3421	1750.221

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2018 AM Post-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h			HVs	HV %				
AADT	200	vpd		Site Bound	60	veh	8	13%	v_{vph}	70.6		
Peak Hour Flow	85	vph		Kuranda B	25	veh	6	24%	v_{vph}	29.4		
PHF	0.85		v_{vph}	100								
Lane Width	2.5	m	8.2	ft	34							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound											
Demand Flow Rate for	123.5821	pc/h	58.99912	pc/h		Rolling					Rolling			
Demand Volume	60	veh/h	25	veh/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.852515		0.744048											
PHF	0.85		0.85											
Proportion of Trucks	0.1		0.2											
Proportion of RVs	0.03		0.04											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound									
Average Travel Speed	29.25837	29.02308	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for	2.40	2.64	Okay	100	2.4	0	2.4	Okay	200	4	0	2.4

Step Seven (Estimate PFFS)

PFFS	88.5%	87.7%	
LOS	B	B	
Step Eight (LOS and Capacity)			
Capacity	971.0145	847.4702	1818.485

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2018 PM Post-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h				HVs	HV %			
AADT	200	vpd		Site Bound	26	veh		4	15%	v_{vph}	30.6	
Peak Hour Flow	124	vph		Kuranda B	98	veh		11	11%	v_{vph}	115.3	
PHF	0.85		v_{vph}	146								
Lane Width	2.5	m	8.2	ft	50							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound											
						Downgrade					Upgrade			
Demand Flow Rate for	53.64355	pc/h	191.6578	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	26	veh/h	98	veh/h										
Grade Adjustment Fac	0.67		0.682235		Okay	100	0.67	0	0.67	Okay	200	0.75	100	0.67
Heavy Vehicle Adjustm	0.851064		0.881752											
PHF	0.85		0.85											
Proportion of Trucks	0.1		0.08											
Proportion of RVs	0.05		0.03											
Passenger Car Equivale	2.7		2.6		Okay	100	2.7	0	2.7	Okay	200	2.3	100	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound									
Average Travel Speed	28.52696	28.77166	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for	2.64	2.40	Okay	200	4	0	2.4	Okay	100	2.4	0	2.4

Step Seven (Estimate PFFS)

PFFS	86.2%	87.0%	
LOS	B	B	
Step Eight (LOS and Capacity)			
Capacity	969.3617	1022.656	1992.018

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2021 AM Pre-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h			HVs	HV %				
AADT	200	vpd		Site Bound	10	veh	1	10%	v_{vph}	11.8		
Peak Hour Flow	21	vph		Kuranda B	11	veh	2	18%	v_{vph}	12.9		
PHF	0.85		v_{vph}	25								
Lane Width	2.5	m	8.2	ft	8							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for	19.70149	pc/h	24.29851	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	10	veh/h	11	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.891266		0.794913											
PHF	0.85		0.85											
Proportion of Trucks	0.07		0.15											
Proportion of RVs	0.03		0.03											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound									
Average Travel Speed	30.33376	30.33376	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for	2.40	2.40	Okay	100	2.4	0	2.4	Okay	100	2.4	0	2.4

Step Seven (Estimate PFFS)

PFFS	91.7%	91.7%	
LOS	A	A	
Step Eight (LOS and Capacity)			
Capacity	1015.152	905.4054	1920.557

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2021 PM Pre-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h				HVs	HV %			
AADT	200	vpd		Site Bound	11	veh		1	9%	v_{vph}	12.9	
Peak Hour Flow	16	vph		Kuranda B	5	veh		2	40%	v_{vph}	5.9	
PHF	0.85		v_{vph}		19							
Lane Width	2.5	m	8.2	ft	6							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound			Downgrade					Upgrade			
						Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	21.65233	pc/h	13.34504	pc/h										
Demand Volume	11	veh/h	5	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.892061		0.657895											
PHF	0.85		0.85											
Proportion of Trucks	0.07		0.3											
Proportion of RVs	0.02		0.1											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	30.40362	30.40362	Interpolati									
Adjustment Factor for	2.40	2.40	Okay	100	2.4	0	2.4	Okay	100	2.4	0	2.4

Step Seven (Estimate PFFS)

PFFS	91.9%	91.9%	
LOS	A	A	
Step Eight (LOS and Capacity)			
Capacity	1016.057	749.3421	1765.399

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2021 AM Post-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h			HVs	HV %				
AADT	200	vpd		Site Bound	12	veh	1	8%	v_{vph}	14.1		
Peak Hour Flow	28	vph		Kuranda B	16	veh	2	13%	v_{vph}	18.8		
PHF	0.85		v_{vph}	33								
Lane Width	2.5	m	8.2	ft	11							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for	23.26251	pc/h	32.95522	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	12	veh/h	16	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.905797		0.852515											
PHF	0.85		0.85											
Proportion of Trucks	0.06		0.1											
Proportion of RVs	0.02		0.03											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound									
Average Travel Speed	30.23895	30.08836	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for	2.40	2.55	Okay	100	2.4	0	2.4	Okay	200	4	0	2.4

Step Seven (Estimate PFFS)

PFFS	91.4%	91.0%	
LOS	B	B	
Step Eight (LOS and Capacity)			
Capacity	1031.703	971.0145	2002.717

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2021 PM Post-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h				HVs	HV %			
AADT	200	vpd		Site Bound	15	veh		1	7%	v_{vph}	17.6	
Peak Hour Flow	23	vph		Kuranda B	8	veh		2	25%	v_{vph}	9.4	
PHF	0.85		v_{vph}	27								
Lane Width	2.5	m	8.2	ft	9							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound											
						Downgrade					Upgrade			
Demand Flow Rate for	28.63038	pc/h	18.89377	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	15	veh/h	8	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.919963		0.743494											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.2											
Proportion of RVs	0.02		0.05											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound									
Average Travel Speed	30.16524	30.30641	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for	2.54	2.40	Okay	200	4	0	2.4	Okay	100	2.4	0	2.4

Step Seven (Estimate PFFS)

PFFS	91.2%	91.6%	
LOS	B	B	
Step Eight (LOS and Capacity)			
Capacity	1047.838	846.8401	1894.678

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2024 AM Pre-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h			HVs	HV %				
AADT	200	vpd		Site Bound	10	veh	1	10%	v_{vph}	11.8		
Peak Hour Flow	21	vph		Kuranda B	11	veh	2	18%	v_{vph}	12.9		
PHF	0.85		v_{vph}	25								
Lane Width	2.5	m	8.2	ft	8							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for	19.70149	pc/h	24.29851	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	10	veh/h	11	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.891266		0.794913											
PHF	0.85		0.85											
Proportion of Trucks	0.07		0.15											
Proportion of RVs	0.03		0.03											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound									
Average Travel Speed	30.33376	30.33376	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for	2.40	2.40	Okay	100	2.4	0	2.4	Okay	100	2.4	0	2.4

Step Seven (Estimate PFFS)

PFFS	91.7%	91.7%	
LOS	A	A	
Step Eight (LOS and Capacity)			
Capacity	1015.152	905.4054	1920.557

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2024 PM Pre-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017						
Peak Period	AM										
Speed Limit	50	km/h	31.1	mi/h			HVs	HV %			
AADT	200	vpd		Site Bound	11	veh	1	9%	v_{vph}	12.9	
Peak Hour Flow	16	vph		Kuranda B	5	veh	2	40%	v_{vph}	5.9	
PHF	0.85		v_{vph}	19							
Lane Width	2.5	m	8.2	ft	6						
Shoulder Width	0	m	0	ft							
Access Point Density	10	access poi	6.2	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	100%										

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for	21.65233	pc/h	13.34504	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	11	veh/h	5	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.892061		0.657895											
PHF	0.85		0.85											
Proportion of Trucks	0.07		0.3											
Proportion of RVs	0.02		0.1											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	30.40362	30.40362	Interpolati									
Adjustment Factor for	2.40	2.40	Okay	100	2.4	0	2.4	Okay	100	2.4	0	2.4

Step Seven (Estimate PFFS)

PFFS	91.9%	91.9%	
LOS	A	A	
Step Eight (LOS and Capacity)			
Capacity	1016.057	749.3421	1765.399

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2024 AM Post-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h			HVs	HV %				
AADT	200	vpd		Site Bound	12	veh	1	8%	v_{vph}	14.1		
Peak Hour Flow	28	vph		Kuranda B	16	veh	2	13%	v_{vph}	18.8		
PHF	0.85		v_{vph}	33								
Lane Width	2.5	m	8.2	ft	11							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for	23.26251	pc/h	32.95522	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	12	veh/h	16	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.905797		0.852515											
PHF	0.85		0.85											
Proportion of Trucks	0.06		0.1											
Proportion of RVs	0.02		0.03											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound									
Average Travel Speed	30.23895	30.08836	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for	2.40	2.55	Okay	100	2.4	0	2.4	Okay	200	4	0	2.4

Step Seven (Estimate PFFS)

PFFS	91.4%	91.0%	
LOS	B	B	
Step Eight (LOS and Capacity)			
Capacity	1031.703	971.0145	2002.717

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2024 PM Post-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h				HVs	HV %			
AADT	200	vpd		Site Bound	16	veh		1	6%	v_{vph}	18.8	
Peak Hour Flow	25	vph		Kuranda B	9	veh		2	22%	v_{vph}	10.6	
PHF	0.85		v_{vph}		29							
Lane Width	2.5	m	8.2	ft	10							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for	30.06146	pc/h	20.70237	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	16	veh/h	9	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.934579		0.763359											
PHF	0.85		0.85											
Proportion of Trucks	0.04		0.18											
Proportion of RVs	0.02		0.04											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound									
Average Travel Speed	30.13069	30.28127	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for	2.55	2.40	Okay	200	4	0	2.4	Okay	100	2.4	0	2.4

Step Seven (Estimate PFFS)

PFFS	91.1%	91.6%	
LOS	B	B	
Step Eight (LOS and Capacity)			
Capacity	1064.486	869.4656	1933.952

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2027 AM Pre-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h			HVs	HV %				
AADT	200	vpd		Site Bound	11	veh	1	9%	v_{vph}	12.9		
Peak Hour Flow	24	vph		Kuranda B	13	veh	2	15%	v_{vph}	15.3		
PHF	0.85		v_{vph}	28								
Lane Width	2.5	m	8.2	ft	10							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for	21.65233	pc/h	27.55224	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	11	veh/h	13	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.892061		0.8285											
PHF	0.85		0.85											
Proportion of Trucks	0.07		0.12											
Proportion of RVs	0.02		0.03											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound									
Average Travel Speed	30.29337	30.29337	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for	2.40	2.40	Okay	100	2.4	0	2.4	Okay	100	2.4	0	2.4

Step Seven (Estimate PFFS)

PFFS	91.6%	91.6%	
LOS	B	B	
Step Eight (LOS and Capacity)			
Capacity	1016.057	943.662	1959.719

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2027 PM Pre-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017						
Peak Period	AM										
Speed Limit	50	km/h	31.1	mi/h			HVs	HV %			
AADT	200	vpd		Site Bound	12	veh	1	8%	v_{vph}	14.1	
Peak Hour Flow	18	vph		Kuranda B	6	veh	2	33%	v_{vph}	7.1	
PHF	0.85		v_{vph}		21						
Lane Width	2.5	m	8.2	ft	7						
Shoulder Width	0	m	0	ft							
Access Point Density	10	access poi	6.2	access points/mi							
Terrain Type	Rolling										
Percentage No Passing	100%										

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound			Downgrade					Upgrade			
						Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Flow Rate for	23.26251	pc/h	15.9403	pc/h										
Demand Volume	12	veh/h	6	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.905797		0.660939											
PHF	0.85		0.85											
Proportion of Trucks	0.06		0.3											
Proportion of RVs	0.02		0.03											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound									
					Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	30.37099	30.37099	Interpolati										
Adjustment Factor for	2.40	2.40	Okay	100	2.4	0	2.4	Okay	100	2.4	0	2.4	

Step Seven (Estimate PFFS)

PFFS	91.8%	91.8%	
LOS	A	A	
Step Eight (LOS and Capacity)			
Capacity	1031.703	752.809	1784.512

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2027 AM Post-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h				HVs	HV %			
AADT	200	vpd		Site Bound	13	veh		1	8%	v_{vph}	15.3	
Peak Hour Flow	31	vph		Kuranda B	18	veh		2	11%	v_{vph}	21.2	
PHF	0.85		v_{vph}	36								
Lane Width	2.5	m	8.2	ft	12							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound											
						Downgrade					Upgrade			
Demand Flow Rate for	25.20105	pc/h	36	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	13	veh/h	18	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.905797		0.877963											
PHF	0.85		0.85											
Proportion of Trucks	0.06		0.08											
Proportion of RVs	0.02		0.03											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound							
Average Travel Speed	30.20028	30.03087	Interpolati	Volume	Coefficient	Volume	Coefficient		
Adjustment Factor for	2.40	2.57	Okay	100	2.4	0	2.4	Okay	200	4	0	2.4

Step Seven (Estimate PFFS)

PFFS	91.3%	90.8%	
LOS	B	B	
Step Eight (LOS and Capacity)			
Capacity	1031.703	1000	2031.703

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2027 PM Post-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h				HVs	HV %			
AADT	200	vpd		Site Bound	16	veh		1	6%	v_{vph}	18.8	
Peak Hour Flow	25	vph		Kuranda B	9	veh		2	22%	v_{vph}	10.6	
PHF	0.85		v_{vph}		29							
Lane Width	2.5	m	8.2	ft	10							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound											
						Downgrade					Upgrade			
Demand Flow Rate for	30.06146	pc/h	20.70237	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	16	veh/h	9	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.934579		0.763359											
PHF	0.85		0.85											
Proportion of Trucks	0.04		0.18											
Proportion of RVs	0.02		0.04											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound									
Average Travel Speed	30.13069	30.28127	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for	2.55	2.40	Okay	200	4	0	2.4	Okay	100	2.4	0	2.4

Step Seven (Estimate PFFS)

PFFS	91.1%	91.6%	
LOS	B	B	
Step Eight (LOS and Capacity)			
Capacity	1064.486	869.4656	1933.952

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2037 AM Pre-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h			HVs	HV %				
AADT	200	vpd		Site Bound	13	veh	1	8%	v_{vph}	15.3		
Peak Hour Flow	27	vph		Kuranda B	14	veh	2	14%	v_{vph}	16.5		
PHF	0.85		v_{vph}	32								
Lane Width	2.5	m	8.2	ft	11							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound											
						Downgrade					Upgrade			
Demand Flow Rate for	25.20105	pc/h	29.25373	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	13	veh/h	14	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.905797		0.840336											
PHF	0.85		0.85											
Proportion of Trucks	0.06		0.11											
Proportion of RVs	0.02		0.03											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound									
Average Travel Speed	30.25263	30.25263	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for	2.40	2.40	Okay	100	2.4	0	2.4	Okay	100	2.4	0	2.4

Step Seven (Estimate PFFS)

PFFS	91.5%	91.5%	
LOS	B	B	
Step Eight (LOS and Capacity)			
Capacity	1031.703	957.1429	1988.846

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2037 PM Pre-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h				HVs	HV %			
AADT	200	vpd		Site Bound	14	veh		1	7%	v_{vph}	16.5	
Peak Hour Flow	21	vph		Kuranda B	7	veh		2	29%	v_{vph}	8.2	
PHF	0.85		v_{vph}	25								
Lane Width	2.5	m	8.2	ft	8							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for	26.72169	pc/h	17.76119	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	14	veh/h	7	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.919963		0.692042											
PHF	0.85		0.85											
Proportion of Trucks	0.05		0.26											
Proportion of RVs	0.02		0.03											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	30.33001	30.33001	Interpolati									
Adjustment Factor for	2.40	2.40	Okay	100	2.4	0	2.4	Okay	100	2.4	0	2.4

Step Seven (Estimate PFFS)

PFFS	91.7%	91.7%	
LOS	A	A	
Step Eight (LOS and Capacity)			
Capacity	1047.838	788.2353	1836.073

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2037 AM Post-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h			HVs	HV %				
AADT	200	vpd		Site Bound	16	veh	2	13%	v_{vph}	18.8		
Peak Hour Flow	36	vph		Kuranda B	20	veh	3	15%	v_{vph}	23.5		
PHF	0.85		v_{vph}	42								
Lane Width	2.5	m	8.2	ft	14							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound											
						Downgrade					Upgrade			
Demand Flow Rate for	32.95522	pc/h	41.82616	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	16	veh/h	20	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.852515		0.839631											
PHF	0.85		0.85											
Proportion of Trucks	0.1		0.11											
Proportion of RVs	0.03		0.04											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound									
Average Travel Speed	30.0949	29.90666	Interpolati	Volume	Coefficient	Volume	Coefficient				
Adjustment Factor for	2.40	2.59	Okay	100	2.4	0	2.4	Okay	200	4	0	2.4

Step Seven (Estimate PFFS)

PFFS	91.0%	90.4%	
LOS	B	B	
Step Eight (LOS and Capacity)			
Capacity	971.0145	956.3392	1927.354

Job: KUR-World Environmental Impact Assessment
Job Number: 253251-00
Description: Barnwell Road HCM Class Three Highway Capacity Analysis Scenario: Barnwell Road 2037 PM Post-Development

ARUP

Step One (Input Data)

Road	Barnwell Road			Year	2017							
Peak Period	AM											
Speed Limit	50	km/h	31.1	mi/h			HVs	HV %				
AADT	200	vpd		Site Bound	19	veh	2	11%	v_{vph}	22.4		
Peak Hour Flow	30	vph		Kuranda B	11	veh	3	27%	v_{vph}	12.9		
PHF	0.85		v_{vph}	35								
Lane Width	2.5	m	8.2	ft	12							
Shoulder Width	0	m	0	ft								
Access Point Density	10	access poi	6.2	access points/mi								
Terrain Type	Rolling											
Percentage No Passing	100%											

Step Two (Free Flow Speed)

Base Free Flow Speed	41.1	mi/h
Free Flow Speed	33.1	
Adjustment for Lane/S	6.4	
Adjustment for Access	1.6	

Step Three (ATS demand Adjustment)

	Direction of Analysis - Site Bound		Direction of Analysis -Kuranda Bound			Downgrade					Upgrade			
Demand Flow Rate for	38	pc/h	26.63565	pc/h		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Demand Volume	19	veh/h	11	veh/h										
Grade Adjustment Fac	0.67		0.67		Okay	100	0.67	0	0.67	Okay	100	0.67	0	0.67
Heavy Vehicle Adjustm	0.877963		0.725163											
PHF	0.85		0.85											
Proportion of Trucks	0.08		0.22											
Proportion of RVs	0.03		0.05											
Passenger Car Equivale	2.7		2.7		Okay	100	2.7	0	2.7	Okay	100	2.7	0	2.7
Passenger Car Equivale	1.1		1.1											

Step Four (Estimate the ATS)

	Direction of Analysis - Site Bound	Direction of Analysis -Kuranda Bound		Volume	Coefficient	Volume	Coefficient		Volume	Coefficient	Volume	Coefficient
Average Travel Speed	29.99481	30.17363	Interpolati									
Adjustment Factor for	2.58	2.40	Okay	200	4	0	2.4	Okay	100	2.4	0	2.4

Step Seven (Estimate PFFS)

PFFS	90.7%	91.2%	
LOS	B	B	
Step Eight (LOS and Capacity)			
Capacity	1000	825.9608	1825.961