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

9 November 2020 Reference: 200649.01FA

PMDL 17/124 Walker Street, North Sydney, NSW 2060 Australia Attention: Kim Le Gras

SUPPLEMENTARY TRAFFIC MODELLING FOR THE PROPOSED SAINTS PETER AND PAUL ASSYRIAN PRIMARY SCHOOL AT 17 - 19 KOSOVICH PLACE, CECIL PARK, 2178

Dear Kim,

Reference is made to your request to provide supplementary traffic modelling of the traffic associated with the proposed Saints Peter and Paul Assyrian Primary School following the receipt of the Traffic Impact Assessment Peer Review by Bitzios Consulting dated 10 June 2020. This letter presents the results of supplementary traffic modelling with the view to providing a response to the items in the Peer Review. Specific responses to each of the items in the peer review are provided in Section 1, with the revised traffic modelling presented in detail in Section 2.

1 Response to Peer Review

The following sub-sections respond to each of the items in the peer review. The relevant sections have been quoted in italics and responded to below.

1.1 AM and PM Peak Hours

The AM and PM peak hours assessed in SIDRA have not been stipulated.

The revised modelling presented in Section 0 is based on an AM peak of 8:00 AM - 9:00 AM and a PM peak of 2:45 PM - 3:45 PM, which are the peaks most affected by the traffic travelling to and from a primary school.

1.2 Traffic Generation

The directional Stage 1 student traffic generation in Tables 4 and 5 does not equal the total trips and should be rounded up to the nearest whole number. Thus, the estimated student traffic generation for the AM and PM peaks should be 114 trips in and 114 trips out.

This relates to a minor typographical error in the text of the report which did not translate to the modelling. The volumes modelled are 113 IN and 113 OUT.



1.3 Growth Volumes

If negative growth rates were applied to calculate the 2028 turning volumes, then the 2018 volumes should be retained to avoid misinterpretation and maintain robust volumes. Technical rationale would be required to justify negative growth rates. In the absence of any reasonable rational, Sydney Strategic forecast model should be used to assist with the forecast volumes in the surrounding road network for the future year

Revised STM growth rates have been obtained from TfNSW which have been used in the updated traffic modelling as detailed in Section 0. The updated STM growth rates are provided in ANNEXURE for reference and now include only one negative growth rate.

1.4 Operation of Car Parking Areas

The staff parking spaces will conflict with parents/carers using the pick-up/drop-off spaces and as such, a separate staff parking area should be provided.

Pick-up/drop-off spaces 3, 4, 16 and 17 should not encroach the adjacent crossing to maintain drivers' sightlines to pedestrians and vice-versa. If these spaces cannot be relocated/resized, then these will need to be removed. Additionally, there should be 20-metre and 10-metre No Stopping zones before and after the crossing respectively in both directions of travel.

The proposed location of the southern crossing is adjacent to the "Keep Clear" area where multiple, conflicting vehicle movements will be made and drivers leaving the queueing area and U-turning will have little sight distance. One of the following alternatives should be considered:

- 1. Relocate the southern crossing further north along the driveway and comply with the above No Stopping zone requirements. Adjacent pick-up/drop-off spaces will need to be removed if they cannot be relocated/resized. An additional staff member ("7") will be required to fulfil the same role as Staff Member "2" at the relocated southern crossing.
- 2. They will need to work with Staff Member "3" to ensure efficient traffic operations 2. As per Option 1, but also ban the U-turn arrangement. This will require drivers leaving pick-up/drop-off spaces 15 to 28 to exit the school either via the circulating loop or a bypass lane
- 3. Remove the northern and southern crossings and provide one crossing in the middle of the driveway. This would be managed by Staff Member "2".

1.4.1 Staff Parking

With regards to the obstruction of the staff spaces, it is accepted that staff parking spaces will be temporarily obstructed during peak drop-off and pick-up hours. Only staff will be affected by this for approximately 15 minutes during the pick-up operations every afternoon, which is acceptable.

1.4.2 Operation of Crossings and Kiss and Drop Facility

The proposed crossings are not on a public road and the car parking does not need to be restricted as such. Parents will be travelling at low speed and with special care when within the school grounds. Further, the crossings are proposed to be staffed such that traffic will be stopped at each of the crossings when children are crossing.



The kiss and drop facility will operate under an operational plan of management, which is to be regularly reviewed based on the performance of the facility. The comments provided in the Peer Review will be taken into consideration on the first performance review of the facility after operating for 6 months.

1.5 SIDRA Geometric Modelling Parameters

3.1.1 General

All Approach Distances, Lane and Circulating Widths, Island Diameters and Strip Islands should be confirmed using aerial imagery (i.e. Google Maps, Google Earth, Nearmap etc.) and the Wallgrove Road/Kosovich Place intersection concept plan, and applied to the models where necessary.

3.1.2 The Horsley Drive / Wallgrove Road

Lane 1 on the Wallgrove Road south approach should be 25 metres.

3.1.3 Wallgrove Road / Kosovich Place

The Approach Distance for the Wallgrove Road north leg should be 85 metres.

The Approach Distance for the Kosovich Place west leg should be 330 metres.

3.1.4 Wallgrove Road / Villiers Road

The Approach Distance for the Wallgrove Road south leg should be 85 metres.

Each of the above changes has been made as part of the revised traffic modelling which is presented in Section 2.

1.6 SIDRA Input Parameters - General

The Approach and Exit Cruise Speeds for all turning movements should be the same as the respective speed limit in all models.

It is not clear why the Total & % Volume Data Method was used in any of the models. The Separate Volume Data Method should be used in all models and the growth rates in Annexure C of the traffic and parking impact assessment report should be applied to the 2018 turning volumes to calculate the 2028 volumes.

The approach speeds, exit speeds and data input methods have been modified as per the above.

1.7 SIDRA Input Parameters – Pedestrian Crossing Priority- Elizabeth Drive/Wallgrove Road/M7 Off-Ramp

All pedestrian crossings should have priority over the conflicting turning movement in all models.

The pedestrian crossings have been given priority as per the above.

1.8 SIDRA Input Parameters – Arrival Type – The Horsley Drive/Wallgrove Road

The Horsley Drive/Wallgrove Road and The Horsley Drive/M7 Interchange intersections have been modelled as a network and the corresponding arrival types reset to "Program".



1.9 SIDRA Input Parameters – Approach and Exit Speeds– Kosovich Place/Wallgrove Road

The Exit Cruise Speed for all turning movements into and out of Kosovich Place should be 50km/h in the existing and existing+10-year growth models.

The Approach and Exit Cruise Speeds for all turning movements into and out of Kosovich Place should be 40km/h in the "with development" models.

The approach and exit cruise speeds have been adjusted as per the above.

1.10 Model Calibration/Validation

There is no evidence showing that the models have been properly calibrated based on actual signal phasing/timings derived from the Transport for NSW Intersection Diagnostic Monitor (IDM) data and SIDRA Environmental Factors or validated based on back-of-queue survey data and site observations.

There is no comparison between the model vs. observed queue data and IDM data vs. SIDRA phase times. Hence, the models cannot be verified.

The calibration and validation of the SIDRA models should be detailed in a modelling report and considered together with any assumptions to verify the modelling results.

The calibration of the models as part of the revised modelling is detailed in Section 2.4. It is noted that at the time of writing of this report (November 2020), COVID-19 was affecting traffic volumes and additional surveys to ascertain queue lengths etc. could not be reliably undertaken.

1.11 Signal Timing - General

The existing models should use User-Given Phase Times incorporating the Transport for NSW IDM data to reflect actual traffic conditions. The existing+10-year growth and "with development" models can use Practical or Optimal Cycle Time where necessary.

The intergreen times used in all models need to be checked against either the Transport for NSW LX file or site observations.

The calibration of the models as part of the revised modelling is detailed in Section 2.4.

1.12 Filter Turns at The Horsley Drive/Wallgrove Road

Site visits were undertaken on 5 November 2020 during the AM and PM peaks as outlined in Section 1.1. It was confirmed that right "filter" turns operate on both The Horsley Drive approaches during the AM and PM peak hours at the intersection, with an inter-green period of approximately 5 seconds. This finding has been applied to the models.

2 Revised Traffic Modelling

2.1 Traffic Generation

The traffic generation of the site used in the revised traffic modelling is consistent with the volumes provided in the Traffic and Parking Impact Assessment Report by M^CLaren Traffic Engineering dated 4 September 2018 lodged with the application. The volumes are reproduced in **Table 1** for reference.



TABLE 1: ESTIMATED TRAFFIC GENERATION

Peak Hour	IN	OUT	Total								
Stage 1 (210 Students)											
AM	AM 125 113 238										
PM	113	125	238								
	Final Developme	nt (630 Students)									
AM	307	272	579								
PM	272	307	579								

2.2 Traffic Distribution

The traffic distribution used in the revised traffic modelling is consistent with that provided in the Traffic and Parking Impact Assessment Report by M^CLaren Traffic Engineering dated 4 September 2018 lodged with the application and is reproduced below.

2.2.1 AM Traffic to the Site

- 30% from the north via The Horsley Drive:
 - o 20% from the east;
 - o 10% from the west.
- 70% from the south via Elizabeth Drive:
 - o 50% from the east;
 - o 10% from the west:
 - o 10% from the south (via the M7 exit).

2.2.2 AM Traffic from the Site

- 40% to the north:
 - 35% to the east at The Horsley Drive;
 - o 5% to the west at The Horsley Drive.
- 60% to the south
 - 55% to the east at Elizabeth Drive;
 - 5% to the west at Elizabeth Drive.

2.3 Background Growth

Updated growth plots were provided by TfNSW to inform the revised traffic modelling. These growth plots are provided in **Annexure A** for reference.

The growth percentages provided on the plots were applied to all movements on each approach. Whilst this does not provide a completely accurate representation of the predicted growth of each individual movement, the STM outputs do not provide enough information for a more accurate assumption to be made.

The volumes used in the analysis, including the growth scenarios, are provided in **Annexure B** for reference.



2.4 Calibration

2.4.1 Wallgrove Road/Elizabeth Drive

Intersection Diagnostic Monitor (IDM) data for 25 July 2018 (the date of the survey) was obtained from TfNSW to assist with the calibration of the model. The phase timing for each of the relevant peak hours is provided in **Annexure C** for reference and summarised in **Table** 2.

It is noted that the intersection only ran phases "A" through "D" and that the LX file indicated that the "E" phase was not used by the signal controller.

TABLE 2: ELIZABETH DR/WALLGROVE RD INTERSECTION PHASING ON 25/07/2018

Phase	8:00AM -	- 9:00AM	2:45PM - 3:45PM			
Filase	Minimum Maximum		Minimum	Maximum		
A phase	16	64	13	54		
B phase	12	36	12	28		
C phase	12	22	13	33		
D phase	17	26	17	31		
Nominal cycle length	64	120	60	120		

The intersection phasing run by SIDRA 8.0 for the "Existing" AM and PM scenarios is summarised in **Table 3**.

TABLE 3: ELIZABETH DR/WALLGROVE RD INTERSECTION PHASING – SIDRA EXISTING

		8:00AM - 9:00AM	2:45PM - 3:45PM				
Phase	Phase Time			Consistent with Real Operation? ⁽¹⁾			
A phase	41	Yes	31	Yes			
B phase	33	Yes	18	Yes			
C phase	14	Yes	23	Yes			
D phase	23	Yes	20	Yes			
Cycle Length	111	Yes	92	Yes			

Notes:

2.4.2 Wallgrove Road/The Horsley Drive

Intersection Diagnostic Monitor (IDM) data for 25 July 2018 (the date of the survey) was obtained from TfNSW to assist with the calibration of the model. The phase timing for each of the relevant peak hours is provided in **Annexure D** for reference and summarised in **Table** 2.

It is noted that the intersection only ran phases "A", "D", "E" and "G" and that the LX file indicated that no other phases were used by the signal controller. The LX file indicated that the intersections of Wallgrove Road/The Horsley Drive and M7 Interchange/The Horsley Drive run on Subsystem 2 with a 0-second offset. This offset was used in the network analysis.

⁽¹⁾ If the phase/cycle time is within the minimum and maximum bounds outlined in the IDM data, it is deemed consistent.



TABLE 4: THE HORSLEY DR/WALLGROVE RD INTERSECTION PHASING ON 25/07/2018

Dhaoa	8:00AM -	- 9:00AM	2:45PM - 3:45PM			
Phase	Minimum	Maximum	Minimum	Maximum		
A phase	14	83	15	66		
D phase	14	38	14	39		
E phase	21	38	22	38		
G phase	14	28	14	26		
Nominal cycle length	78	120	71	120		

The intersection phasing run by SIDRA 8.0 for the "Existing" AM and PM scenarios is summarised in **Table 3**.

TABLE 5: THE HORSLEY DR/WALLGROVE RD INTERSECTION PHASING – SIDRA EXISTING

	li .	8:00AM - 9:00AM	2:45PM – 3:45PM				
Phase	Phase Time	Consistent with Real Operation? ⁽¹⁾	Phase Time	Consistent with Real Operation? ⁽¹⁾			
A phase	20	Yes	21	Yes			
D phase	25	Yes	23	Yes			
E phase	19	Yes	22	Yes			
G phase	14	Yes	14	Yes			
Cycle Length	78	Yes	80	Yes			

Notes:

2.4.3 M7 Interchange/The Horsley Drive

Intersection Diagnostic Monitor (IDM) data for 25 July 2018 (the date of the survey) was obtained from TfNSW to assist with the calibration of the model. The phase timing for each of the relevant peak hours is provided in **Annexure E** for reference and summarised in **Table** 2.

It is noted that the intersection only ran phases "A", "C" and "F" in the AM peak hour and "A", "C", "D" and "F" during the PM peak hour. The LX file indicates that only one of the signal controller's "plans" includes these phases and that phase "E" was available to run if required. The LX file indicated that the intersections of Wallgrove Road/The Horsley Drive and M7 Interchange/The Horsley Drive run on Subsystem 2 with a 0-second offset. This offset was used in the network analysis.

⁽¹⁾ If the phase/cycle time is within the minimum and maximum bounds outlined in the IDM data, it is deemed consistent.



TABLE 6: THE HORSLEY DR/WALLGROVE RD INTERSECTION PHASING ON 25/07/2018

Phase	8:00AM -	- 9:00AM	2:45PM - 3:45PM			
Phase	Minimum	Maximum	Minimum	Maximum		
A phase	20	46	19	56		
C phase	N/A	N/A	19	23		
D phase	23	40	19	38		
F phase	22	57	19	63		
Nominal cycle length	78	120	71	120		

The intersection phasing run by SIDRA 8.0 for the "Existing" AM and PM scenarios is summarised in **Table 3**.

TABLE 7: THE HORSLEY DR/M7 INTERCHANGE INTERSECTION PHASING – SIDRA EXISTING

		B:00AM - 9:00AM	2:45PM – 3:45PM				
Phase	Phase Time	Consistent with Real Operation? ⁽¹⁾	Phase Time	Consistent with Real Operation? ⁽¹⁾			
A phase	30	Yes	23	Yes			
C phase	N/A	Yes	19	Yes			
D phase	23	Yes	19	Yes			
F phase	25	Yes	19	Yes			
Nominal cycle length	78	Yes	80	Yes			

Notes:

2.5 Proposed Kosovich Place/Wallgrove Road Intersection Treatment

Consistent with the previous submissions supporting the proposed Saints Peter and Paul Assyrian Primary School, it is proposed that the intersection of Kosovich Place/Wallgrove Road be modified to provide the following facilities:

- A 26.6m long auxiliary lane providing for the storage of vehicles waiting to turn right from Wallgrove Road into Kosovich Place:
 - o It is noted that this does not include the taper length of 18m.
 - This length is the longest lane length that can be accommodated considering the proximity of the roundabout to the north and the narrow culvert across Ropes Creek.
 - A 26.6 long lane is sufficient to accommodate the 98th percentile queue predicted by SIDRA analysis sensitivity testing and can accommodate two 12.5m long Heavy Rigid Vehicles.

⁽²⁾ If the phase/cycle time is within the minimum and maximum bounds outlined in the IDM data, it is deemed consistent.



o It should be noted that traffic exiting the roundabout travels significantly slower than the 80km/h speed restriction and deceleration facilities are not required. Southbound vehicles intending to enter Kosovich Place will not significantly accelerate after exiting the roundabout and will have ample room in which to brake safely for the right turn. As depicted in Error! Reference source not found., vehicles exiting the roundabout will have a clear vision of vehicles ahead intending to turn right into Kosovich Place.



FIGURE 1: DRIVERS VIEWPOINT - EXITING THE ROUNDABOUT SOUTHBOUND

- A 100m long (including taper) auxiliary lane providing for the deceleration of vehicles turning left into Kosovich Place.
- "No Right Turn" and "Left Only" signage, complemented by a concrete island, restricting right turns out of Kosovich Place.
- Lane and shoulder widths generally matching the existing geometry of Wallgrove Road;
- All intersection turns designed to accommodate a 12.5m long Heavy Rigid Vehicle.

The proposed layout is illustrated in **Figure 2.** It is proposed that the upgrade be constructed prior to the opening of Stage 1 of the school and has been used in both the Stage 1 and Final Development modelling scenarios.





FIGURE 2: PROPOSED INTERSECTION LAYOUT

2.6 Results

2.6.1 Existing (2018)

The intersection performance results outputted by the model for the existing (2018) traffic volumes are summarised in **Table 8**. This the base case against which the "Stage 1" development will be compared. Each of the intersections is reflected to perform at a satisfactory Level of Service (LoS) of "C" or better.



TABLE 8: INTERSECTION PERFORMANCE – EXISTING SIDRA 8.0

Intersection	Peak Hour	Delay,		Control Type	Worst Movement	95th Percentile Queue	
			EXI	STING PERF	FORMANCE		
Wallgrove	AM	0.95	37.4	С		LT from The Horsely	9.6 veh (71.1m)
Road / The	7 (14)	0.00			Signals	Drive (W)	The Horsely Drive (W)
Horsley Drive	PM	0.73	29	С	Oignais	RT from Wallgrove	6.1 veh (46m)
Drive	1 101	0.73				Road (S)	Wallgrove Road (N)
	AM	0.60	27.3	В		RT from M7 (S)	6.3 veh (46m)
M7 / The	7 (17)	0.00			Signals	Ter from Wir (6)	The Horsley Dr (E)
Horsley Dr	PM	0.70	20.9	В	Oignais	RT from M7 (S)	6.4 veh (47.1m)
	1 101	0.70				Ter nonrum (6)	The Horsley Dr (W)
Wallgrove	AM	0.87	35.5	С		RT from Wallgrove	26.1 veh (198.7m)
Road /	Aivi	0.87			Signals	Road	Elizabeth Drive
Elizabeth	DM	0.04	34.3	С	Signais	LT frame MZ Fisit	18.1 veh (139.3m)
Drive	PM	0.84				LT from M7 Exit	Elizabeth Drive
			0.1	N/A		RT from Kosovich	0 veh (0.2m)
Wallgrove Road /	AM	0.41	(Worst: 14.3)	(Worst: A)	Give Way	Place (E)	Wallgrove Road (S)
Kosovich Place			0.1	N/A	Give way	RT from Kosovich	0 veh (0.2m)
Place	PM	0.45	(Worst: 15.3)	(Worst: B)		Place (E)	Wallgrove Road (S)
			5	Α		UT from Wallgrove	1.4 veh (10.8m)
Wallgrove Road /	AM	0.46	(Worst: 11.1)	(Worst: A)	Roundabout	Road (S)	Wallgrove Road (N)
Equestrian			5.7	Α	Nouridabout	UT from Wallgrove	4.2 veh (31.3m)
Centre	PM	0.49	(Worst: 11.1)	(Worst: A)		Road (S)	Wallgrove Road (N)

NOTES:

2.6.2 Existing Plus Stage 1 Development

The intersection performance results outputted by the model for the existing (2018) traffic volumes plus the "Stage 1" are summarised in **Table 9**.

The results reflect that the Stage 1 traffic volumes will have no significant impact on the performance of any of the intersections modelled. All intersections retain their existing LoS, with only a minor increase in delays predicted at each.

⁽¹⁾ The Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
(2) The average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged
movement.

⁽³⁾ The Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets. (4) No overall Level of Service is provided for Give Way and Stop controlled intersections as the low delays associated with the dominant movements skew the average delay of the intersection. The Level of Service of the worst approach is an indicator of the operation of the intersection, with a worse Level of Service corresponding to long delays and reduced safety outcomes for that approach.



TABLE 9: INTERSECTION PERFORMANCE – EXISTING+ STAGE 1 DEVELOPMENT SIDRA 8.0

Intersection	Peak Hour	Degree of Saturation ⁽¹⁾	aturation ⁽¹⁾ (sec/vehicle) Service ⁽³⁾ Type			Worst Movement	95th Percentile Queue	
		E	XISTING + STAC	GE 1 DEVEL	OPMENT PERF	FORMANCE		
Wallgrove Road / The	AM	0.95	38.3	С	Signals	LT from The Horsely Drive (W)	9.6 veh (71.1m) The Horsely Drive (W)	
Horsley Drive	PM	0.73	29.8	С	Signais	RT from Wallgrove Road (S)	5.9 veh (45.5m) The Horsley Drive (E)	
M7 / The	AM	0.61	26.8	В	Cianala	RT from M7 (S)	6 veh (44m) The Horsley Dr (E)	
Horsley Dr	PM	0.73	21.2	В	Signals	RT from M7 (S)	6.9 veh (50.5m) The Horsley Dr (W)	
Wallgrove Road /	AM	0.92	33.1	С	0:	LT from M7 Exit	23.4 veh (178.1m) Elizabeth Drive	
Elizabeth Drive	PM	0.88	35.9	С	Signals	LT from M7 Exit	19.7 veh (145.9m) Wallgrove Road	
Wallgrove Road /	АМ	0.41	1.6 (Worst: 11.1)	N/A (Worst: A)	O're Mere	RT from Wallgrove Road (N)	1 veh (6.7m) Kosovich Place (E)	
Kosovich Place	РМ	0.49	1.2 (Worst: 7.6)	N/A (Worst: A)	Give Way	LT from Wallgrove Road (S)	0.5 veh (3.3m) Kosovich Place (E)	
Wallgrove Road /	АМ	0.52	5.5 (Worst: 11.1)	A (Worst: A)	Roundabout	UT from Wallgrove Road (S)	2 veh (15.4m) Wallgrove Road (N)	
Equestrian Centre	PM	0.62	6.5 (Worst: 11.1)	A (Worst: A)	Noundabout	UT from Wallgrove Road (S)	6.3 veh (46.8m) Wallgrove Road (N)	

NOTES:

2.6.3 Ten-Year Growth (2028)

The intersection performance results outputted by the model for the future (2028) traffic volumes are summarised in **Table 10**.

The results reflect that the intersections of Wallgrove Road/The Horsley Drive and Wallgrove Road/Elizabeth Drive both reach their practical capacity under the 2028 volume scenario. Both intersections exhibit degrees of saturation of above 1.0, which indicates that the intersection is at capacity.

The other intersections retain an acceptable level of performance in the 2028 volume scenario.

⁽¹⁾ The Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
(2) The average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged
movement.

⁽³⁾ The Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets. (4) No overall Level of Service is provided for Give Way and Stop controlled intersections as the low delays associated with the dominant movements skew the average delay of the intersection. The Level of Service of the worst approach is an indicator of the operation of the intersection, with a worse Level of Service corresponding to long delays and reduced safety outcomes for that approach.



TABLE 10: INTERSECTION PERFORMANCE – EXISTING + 10-YEAR GROWTH SIDRA 8.0

Intersection	Peak Hour	Degree of Saturation ⁽¹⁾	Average Delay ⁽²⁾ (sec/vehicle)	Level of Service ⁽³⁾	Control Type	Worst Movement	95th Percentile Queue	
			FUTU	JRE 2028 PE	RFORMANCE			
Wallgrove Road / The			60.6	E	Signals	LT from The Horsely Drive (W)	20.8 veh (153.5m) The Horsely Drive (W)	
Horsley Drive	PM	0.84	36.5	С	Signals	RT from Wallgrove Road (S)	9.6 veh (72.3m) Wallgrove Road (N)	
M7 / The	AM	0.81	33.4	С	Cimanla	RT from M7 (S)	10.4 veh (75.9m) The Horsley Dr (E)	
Horsley Dr	PM	0.70	22.7	В	Signals	RT from The Horsley Dr (W)	10.2 veh (74.4m) The Horsley Dr (W)	
Wallgrove Road /	AM	1.04	58	E		RT from Wallgrove Road	45.5 veh (346.1m) Elizabeth Drive	
Elizabeth Drive	PM	1.16	125.3	F	Signals	LT from M7 Exit	97.2 veh (720.6m) Wallgrove Road	
Wallgrove Road /	AM	0.43	0.1 (Worst: 15.3)	N/A (Worst: B)	O're Were	RT from Kosovich Place (E)	0 veh (0.2m) Wallgrove Road (S)	
Kosovich Place	PM	0.48	0.1 (Worst: 18.1)	N/A (Worst: B)	Give Way	RT from Kosovich Place (E)	0 veh (0.2m) Wallgrove Road (S)	
Wallgrove Road /	АМ	0.47	5 (Worst: 11.1)	A (Worst: A)	Roundabout	UT from Wallgrove Road (S)	1.5 veh (11.8m) Wallgrove Road (N)	
Equestrian Centre	PM	0.53	5.7 (Worst: 11.1)	A (Worst: A)	Roundabout	UT from Wallgrove Road (S)	4.8 veh (36m) Wallgrove Road (N)	

NOTES:

2.6.4 Ten Year Growth + Final Development

The intersection performance results outputted by the model for the future (2028) traffic plus final development volumes are summarised in **Table 11**.

The results indicate that, consistent with the 2028 scenario, the intersections of Wallgrove Road/The Horsley Drive and Wallgrove Road/Elizabeth Drive are at capacity, with degrees of saturation of above 1.0.

The other intersections retain an acceptable level of performance in the 2028 volume scenario.

⁽¹⁾ The Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
(2) The average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged
movement.

⁽³⁾ The Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets. (4) No overall Level of Service is provided for Give Way and Stop controlled intersections as the low delays associated with the dominant movements skew the average delay of the intersection. The Level of Service of the worst approach is an indicator of the operation of the intersection, with a worse Level of Service corresponding to long delays and reduced safety outcomes for that approach.



TABLE 11: INTERSECTION PERFORMANCE – EXISTING + 10-YEAR GROWTH + FINAL DEVELOPMENT SIDRA 8.0

Intersection	Peak Hour	Delay.		Control Type	Worst Movement	95th Percentile Queue	
			2028 + FINAL	DEVELOPN	MENT PERFOR	MANCE	
Wallgrove Road / The	AM	1.16	84.9	F	Signals	LT from The Horsely Drive (W)	25.8 veh (190.3m) The Horsely Drive (W)
Horsley Drive	PM	0.98	46.2	D	Signals	T from Wallgrove Road (N)	13 veh (97.9m) Wallgrove Road (N)
M7 / The	AM	0.95	42.6	D	Signals	LT from M7 (N)	12.5 veh (90.6m) The Horsley Dr (E)
Horsley Dr	PM	0.69	22.9	В	Signals	RT from The Horsley Dr (W)	10.3 veh (75m) The Horsley Dr (W)
Wallgrove Road /	AM	1.12	90.4	F	0: 1	RT from Wallgrove Road	58.6 veh (441.2m) Elizabeth Road
Elizabeth Drive	PM	1.33	189.7	F	Signals	LT from M7 Exit	152 veh (1115.3m) Wallgrove Road
Wallgrove Road /	АМ	0.60	3.4 (Worst: 14.8)	N/A (Worst: B)	O'rea Weer	LT from Kosovich Place (E)	3.6 veh (24.9m) Kosovich Place (E)
Kosovich Place	PM	0.59	1.9 (Worst: 7)	N/A (Worst: A)	Give Way	LT from Wallgrove Road (S)	1.6 veh (11m) Kosovich Place (E)
Wallgrove Road /	AM	0.63	6.1 (Worst: 11.1)	A (Worst: A)	Roundabout	UT from Wallgrove Road (S)	2.9 veh (22.4m) Wallgrove Road (N)
Equestrian Centre	PM	0.81	8.7 (Worst: 11.1)	A (Worst: A)	Noundabout	UT from Wallgrove Road (S)	13.3 veh (98.6m) Wallgrove Road (N)

NOTES:

2.7 Discussion

Considering the results presented in Section 2.6, the following outcomes are relevant to note:

- The proposed, upgraded intersection of Wallgrove Road/Kosovich Place and the intersection of Wallgrove Road/Equestrian Centre will retain a good level of service in the future under both development traffic volume scenarios tested.
- The intersection of Elizabeth Drive/Wallgrove Road reaches its practical capacity in the 2028 base case based on background traffic flow growth and will need to be upgraded by TfNSW prior to 2028 in order to operate satisfactorily. It is expected that the future upgraded intersection will have ample capacity to serve the traffic associated with the school.
 - The previous modelling undertaken by M^CLaren Traffic Engineering indicated that in the 2028 scenario, the intersection would continue to operate satisfactorily and that the development traffic would trigger the requirement for upgrades to the intersection.

⁽¹⁾ The Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
(2) The average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged
movement.

⁽³⁾ The Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets. (4) No overall Level of Service is provided for Give Way and Stop controlled intersections as the low delays associated with the dominant movements skew the average delay of the intersection. The Level of Service of the worst approach is an indicator of the operation of the intersection, with a worse Level of Service corresponding to long delays and reduced safety outcomes for that approach.



- The revised modelling, which has been based on newer growth data provided by TfNSW, reflects that the intersection will require upgrade irrespective of the development. It is the responsibility of TfNSW to undertake the upgrades of this intersection between two State Classified Main Roads to provide for the necessary capacity to serve future traffic flows, including those related to the subject application.
- The TfNSW website indicates that the Elizabeth Drive corridor is to be upgraded to cater for projected growth in the Western Sydney Region. It is anticipated that the upgrades will include the intersection of Wallgrove Road/Elizabeth Drive, which is key to the connection between the M7 and Elizabeth Drive.
- The intersection of Wallgrove Road/The Horsley Drive reaches its practical capacity in the 2028 base case based on background traffic flow growth and will need to be upgraded by TfNSW prior to 2028 in order to operate satisfactorily. It is expected that the future upgraded intersection will have ample capacity to serve the traffic associated with the school.
 - The upgrade of the Horsley Drive corridor is currently in the concept design stages and includes upgrades to the intersection of Wallgrove Road and The Horsley Drive.
 The TfNSW does not provide an estimated date for completion of the upgrade works.
 - It is expected that the upgraded intersection of Wallgrove Road/The Horsley Drive would provide ample capacity to serve the traffic associated with the school.

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

Yours faithfully

McLaren Traffic Engineering

Tom Steal

Senior Traffic Engineer
BE Civil AMAITPM MIEAust

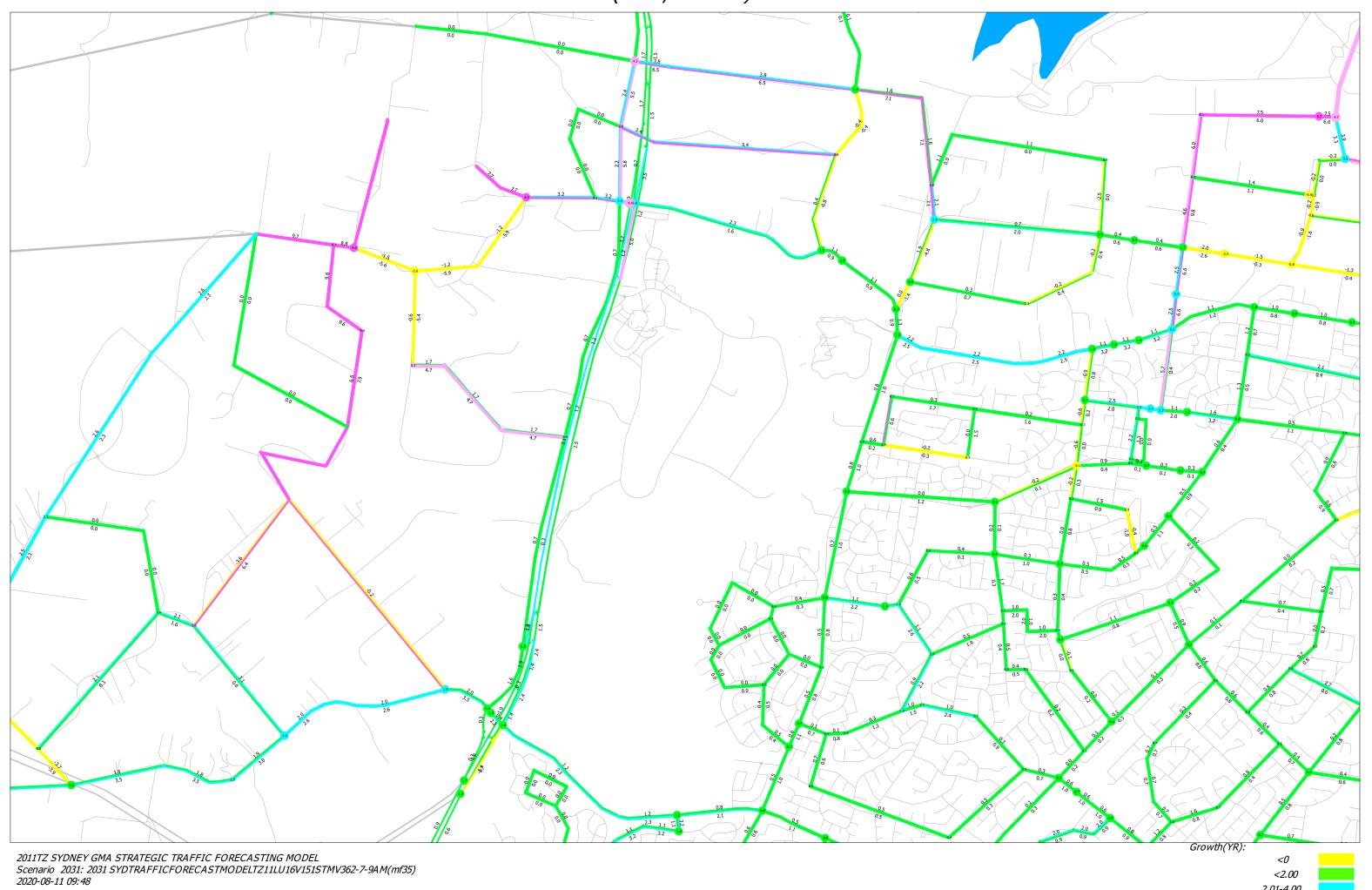
RMS Accredited Level 1 Road Safety Auditor

RMS Accredited Work Zone Traffic Management Plan Designer and Inspector



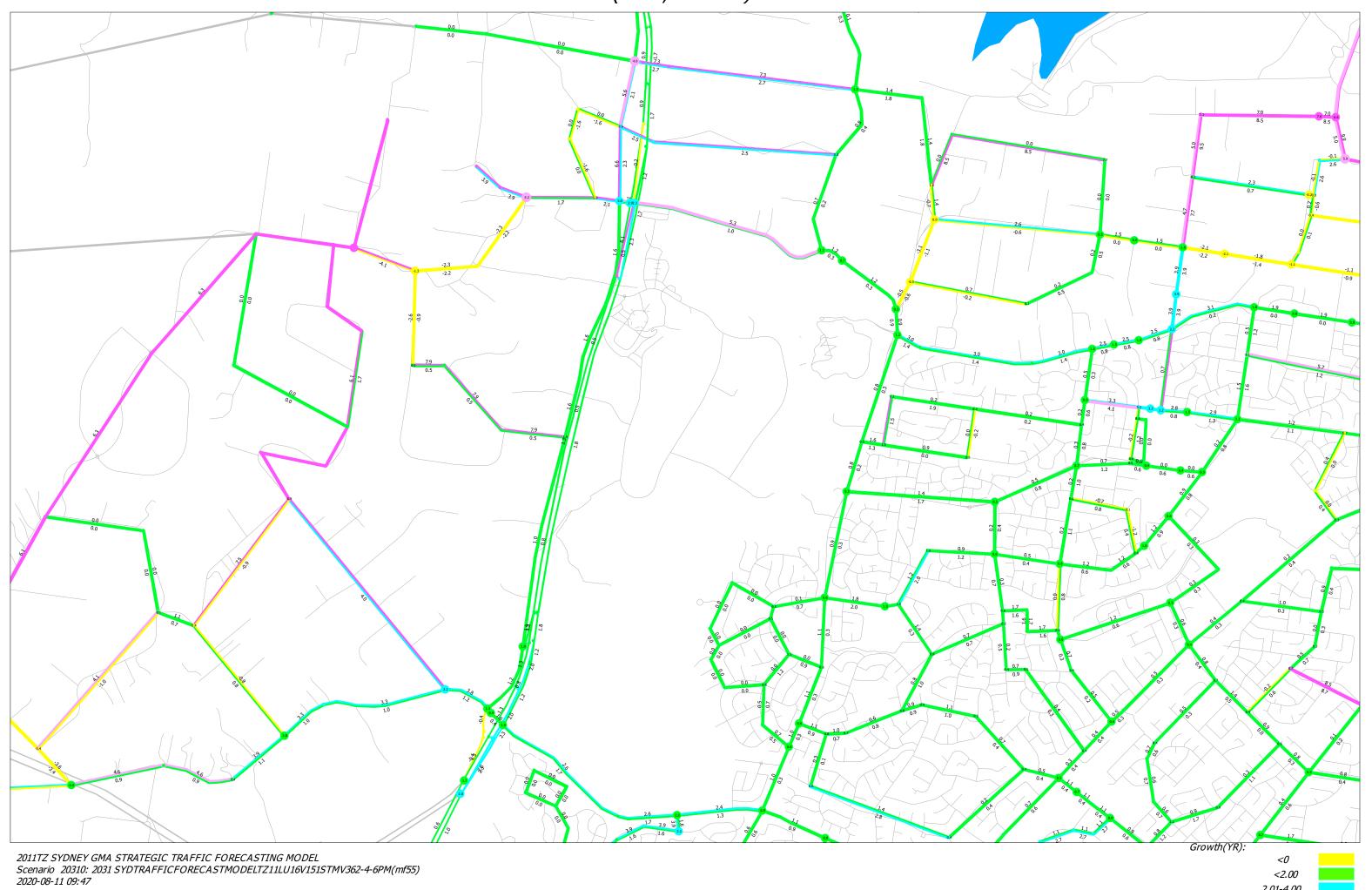
ANNEXURE A: STM GROWTH PLOTS 2028 (2 SHEETS)

ROAD TRAFFIC GROWTH (%YR, 2HRSPK) LINKS & INTERSECTIONS



2.01-4.00 4.01-6.00 >6.00 New Links=999

ROAD TRAFFIC GROWTH (%YR, 2HRSPK) LINKS & INTERSECTIONS



2.01-4.00 4.01-6.00 >6.00 New Links=999



ANNEXURE B: TRAFFIC VOLUMES (5 SHEETS)

The Horsley DR/Wallgrove Road

									Light Veh	icles								
	Peak	Time	North	n Approac	n Wallgrove	e Rd	East	Approach	The Horsl	ey Dr	Sout	h Approac	h Wallgrov	e Rd	West	Approach	The Horsl	ey Dr
	Period Start	Period End	J	R	SB	L	U	R	WB	L	J	R	NB	L	J	R	EB	L
	8:00	9:00	0	33	195	156	0	313	204	21	0	93	464	74	0	37	230	54
	14:45	15:45	0	52	380	197	0	204	113	69	0	38	164	30	0	35	120	24
Existing							•		Heavy Vel									
	Peak				n Wallgrov	e Rd			The Horsl	ey Dr		h Approac		e Rd		Approach		ey Dr
	Period Start		U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00	0	6	39	70	0	77	18	9	0	11	50	1	0	8	15	4
	14:45	15:45	0	8	37	54	0	56	18	11	0	6	26	3	0	3	20	3
	Peak	Timo	North	Annroad	n Wallgrove	o Dd	East	Annroach	Growth R		Sout	h Approac	h Wallarov	o Pd	Wost	Approach	The Herel	ov Dr
	Period Start		U	R	SB	e nu	U	R	WB	ey Di	U	R	NB	e nu	U	R	EB	ey Di
	8:00	9:00	0.058	0.058	0.058	0.058	0.016	0.016	0.016	0.016	0.007	0.007	0.007	0.007	0.032	0.032	0.032	0.032
	14:45	15:45	0.023	0.023	0.023	0.023	0.01	0.01	0.01	0.01	0.016	0.016	0.016	0.016	0.06	0.06	0.06	0.06
Growth			0.000		0.000	0.000			Heavy Vel					5.525				0.00
Rates	Peak	Time	North	h Approac	า Wallgrov	e Rd	East	Approach	The Horsl		Sout	h Approac	h Wallgrov	e Rd	West	Approach	The Horsl	ey Dr
	Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00	0.058	0.058	0.058	0.058	0.016	0.016	0.016	0.016	0.007	0.007	0.007	0.007	0.032	0.032	0.032	0.032
	14:45	15:45	0.023	0.023	0.023	0.023	0.01	0.01	0.01	0.01	0.016	0.016	0.016	0.016	0.06	0.06	0.06	0.06
									ear Growth									
	Peak				n Wallgrov	e Rd			The Horsl	ey Dr		h Approac				Approach		
	Period Start		U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
10 Year	8:00 14:45	9:00 15:45	0	52 64	308 467	246 242	0	363 224	237 124	24 76	0	100 44	496 190	79 35	0	49 56	304 192	71 38
Growth	14.45	13.43	U	04	407	242	U	224	Heavy Vel		U	44	190	33	U	30	192	50
Volumes	Peak	Time	North	h Approac	n Wallgrove	e Rd	East	Approach	The Horsi		Sout	h Approac	h Wallgrov	e Rd	West	Approach	The Horsi	ey Dr
	Period Start	_	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00	0	9	62	111	0	89	21	10	0	12	54	1	0	11	20	5
	14:45	15:45	0	10	46	66	0	62	20	12	0	7	30	3	0	5	32	5
							ı		Developme									
	Peak				1 Wallgrov	e Rd			The Horse	ey Dr		h Approac		e Rd		Approach		ey Dr
	Period Start		U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00 14:45	9:00 15:45								0.2 0.35						0.1		
Developm	14.43	15.45							Heavy Vel			ļ	ļ			0.03		
ent % IN	Peak	Time	North	n Approac	n Wallgrove	e Rd	East	Approach	The Horsl		Sout	h Approac	h Wallgrov	e Rd	West	Approach	The Horsl	ey Dr
	Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00																
	14:45	15:45																
	Dook	Time	N a mil	h Annyana	- Wallaway	- Dd	Foot		evelopmen		C	h Annuana	h Wallaway	a Dal	Wood	Annyasah	The Heyel	ou De
	Peak Period Start	_	U	R	n Wallgrove SB	e nu	U	R	The Horsl	ey Dr	U	h Approac R	NB	e nu	U	Approach R	EB	ey Dr
	8:00	9:00	U	Π	SD	L	U	Π	VVD	L	U	0.35	IND	0.05	U	n	ED	L
Developm		15:45										0.2		0.1				
•		l																
ent %									Heavy Vel	nicles		0.2		0.1				<u> </u>
ent % OUT	Peak	Time	North	n Approac	n Wallgrove	e Rd	East	Approach	Heavy Vel		Sout	h Approac	h Wallgrov		West	Approach	The Horsl	ey Dr
	Period Start	Period End	Norti U	n Approac l	n Wallgrove SB	e Rd L	East	Approach			Sout	I	h Wallgrov		West	Approach	The Horsl	ey Dr
	Period Start 8:00	Period End 9:00				e Rd L			The Horsl			h Approac						ey Dr
	Period Start	Period End				e Rd L		R	WB	ey Dr L	U	h Approac						ey Dr
	8:00 14:45	9:00 15:45	U	R	SB	L	U	R Stage 2	WB Developm	ey Dr L L nent Volume	U	h Approac R	NB	e Rd	U	R	EB	L
	8:00 14:45	9:00 15:45	U Norti	R Approac	SB 1 Wallgrove	L	U East	R Stage 2	WB Developm The Horsle	ey Dr L L nent Volume	U es Sout	h Approac R	NB h Wallgrov	e Rd	U West	R Approach	EB The Horsi	L
OUT	Period Start 8:00 14:45 Peak Period Start	9:00 15:45 Time Period End	U North U	R Approacl	SB 1 Wallgrove SB	e Rd	East	Stage :	The Horsi WB Developm The Horsi WB	ey Dr L nent Volume ey Dr L	U es Sout	h Approac R h Approac	NB h Wallgrov	e Rd	U West	R Approach	EB The Horsl EB	ey Dr
OUT Stage 1	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	9:00 15:45	U Norti	R Approac	SB 1 Wallgrove	L	U East	R Stage 2	WB Developm The Horsle	ey Dr L L nent Volume	U es Sout	h Approac R	NB h Wallgrov	e Rd	U West	R Approach	EB The Horsi	L
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OUT Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak	9:00 15:45 Time Period End 9:00 15:45	North U 0 0	R 1 Approach R 0 0	SB Naligrove SB O O Wallgrove	E Rd L 0 0	East U 0	Stage 2 Approach R 0	The Horsi WB Developm The Horsi WB 0 0 Heavy Ver	ey Dr L nent Volume ey Dr L 25 44 nicles	Sout U 0 0 Sout	h Approac R h Approac R 40	h Wallgrov NB 0 0	e Rd L 6 11	West U 0 0 West	Approach R 13	The Horsl BB 0 0 The Horsl	ey Dr L 0 0
OUT Stage 1 Developm	Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start	9:00 15:45 Time Period End 9:00 15:45 Time Period End	Norti U 0 0 Norti	R Approacl R 0 0 Approacl	SB O O Wallgrove SB O O Wallgrove SB	E Rd	East U 0 East U	Stage : Approach R 0 0 Approach R	The Horsi WB Developm The Horsi WB 0 0 Heavy Vel The Horsi WB	ey Dr L eent Volume ey Dr L 25 44 nicles ey Dr L	Sout U 0 0 Sout U	h Approac R h Approac R 40 23 h Approac	NB h Wallgrov NB 0 0 h Wallgrov NB	e Rd L e Rd L 6 11	West U 0 0 West U	Approach R 13 6 Approach R	The Horsi EB 0 0 The Horsi EBE	ey Dr L 0 0 ey Dr L
OUT Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start 8:00	9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45	Norti U 0 0 Norti U 0	R Approacl R 0 0 Approacl R 0 0	SB O Wallgrove SB O Wallgrove SB O O	E Rd	East U 0 0 East U 0	Stage: Approach R 0 0 Approach R 0	The Horsi WB Developm The Horsi WB 0 0 Heavy Vel The Horsi WB 0	ey Dr L L 25 44 nicles ey Dr L 0	Sout U 0 0 Sout U 0	h Approac R Approac R 40 23 h Approac R 0	NB NB NB O O h Wallgrov NB O O	e Rd L 6 11 ee Rd L 0	West U 0 0 West U 0	Approach R 13 6 Approach R 0	The Horsl EB 0 0 The Horsl EB 0	ey Dr L 0 0 L L 0 0
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Stage 1 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45	Norti U 0 0 Norti U 0 Norti U 0 0	R Approacl R 0 1 Approacl R 0 1 Approacl R R R	SB O O Wallgrove SB O O Wallgrove SB O O Wallgrove SB	E Rd	U	Stage : Approach R 0 0 Approach R 0 cxisting + St	The Horsi WB Developm The Horsi WB 0 0 Heavy Vel The Horsi WB 0 0 age 1 Deve WB 204 113	ey Dr L leent Volume ey Dr L 25 44 nicles ey Dr L 0 0 clopment Volume ey Dr L 46 113	Sout U 0 0 Sout U 0 0 Sout U 0 0 V 0 U 0 U 0 U 0 U 0 U 0 U 0 U 0 U	h Approac R 40 23 h Approac R 0 0 h Approac R R	NB h Wallgrov NB 0 0 h Wallgrov NB 0 0 h Wallgrov NB	e Rd	West U 0 0 West U 0 West U 0 U 0	Approach R 13 6 Approach R 0 0 Approach R	The Horsl EB 0 0 The Horsl EB 0 0 The Horsl	ey Dr L 0 0 ey Dr L 0 0 ey Dr L 0 0
Stage 1 Developm ent Volumes Existing + Stage 1 Developm	Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45	U	R Approacl R 0 0 Approacl R 0 0 Approacl R 33 52	SB O O Wallgrow SB O O Wallgrow SB O O Wallgrow SB O O N Wallgrow SB O O N N SB O O N N N SB O O N N SB O O N N N N N N N N N N N	E Rd L 0 0 e Rd L 0 0 e Rd L 156 197	U	R Stage: Approach R 0 0 Approach R 0 Cxisting + St Approach R 313 204	The Horsi WB Developm The Horsi WB 0 0 Heavy Vel The Horsi WB 0 0 age 1 Deve The Horsi WB 204 113 Heavy Vel	ey Dr L 25 44 nicles ey Dr L 0 0 clopment Vo	Sout U 0 0 Sout U 0 0 Sout U 0 0 0 Sout U 0 0 0 O O O O O O O O O O O O O O O O	h Approac R 40 23 h Approac R 0 0 h Approac R 133 61	NB NB NB O NB O NB O NB O NB Add NB Add Add Add Add Add	e Rd	West U 0 0 West U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Approach R 13 6 Approach R 0 0 Approach R 41	The Horsl EB 0 0 The Horsl EB 230 120	ey Dr L 0 0 0 ey Dr L 0 0 0 ey Dr L 54 24
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Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U	R O O Approacl R O O Approacl R O O Approacl R 33 52 Approacl R 6	SB O O O N Wallgrove SB O O O N Wallgrove SB 195 380 N Wallgrove SB 195 380 N Wallgrove SB 39	E Rd L 0 0 0 E Rd L 0 0 0 E Rd L 156 197 E Rd L 70	Cast U O O East U O O Cast U O O Cast U O Cast	R Stage: Approach R 0 0 Approach R 0 0 existing + St Approach R 313 204 Approach R 77	The Horsi WB Developm The Horsi WB O O Heavy Vel The Horsi WB O O age 1 Deve The Horsi WB 204 113 Heavy Vel The Horsi WB	nent Volume ey Dr L 25 44 nicles ey Dr L 0 0 clopment Vo ey Dr L 46 113 nicles ey Dr L 9	Sout U 0 0 0 Sout U 0 0 0 Sout U 0 0 Sout U 0 0 0 Sout U 0 0	h Approac R 40 23 h Approac R 0 0 h Approac R 133 61 h Approac R 111	h Wallgrov NB 0 0 NB 0 NB 0 NB 0 NB 0 NB 0 NB	e Rd L 6 11 e Rd L 0 0 1 e Rd L 1 e Rd L 1	U	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 8	The Horsl EB 0 0 The Horsl EB 230 120 The Horsl EB	ey Dr L 0 0 0 ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U	R n Approach R 0 0 1 Approach R 0 0 1 Approach R 33 52 1 Approach R	SB O O O N Wallgrove SB O O O N Wallgrove SB O O N Wallgrove SB 195 380 N Wallgrove SB	E Rd L 0 0 E Rd L 0 0 E Rd L 156 197	U	R Stage: Approach R 0 0 Approach R 0 0 Existing + St Approach R 313 204 Approach R 77 56	The Horsi WB Developm The Horsi WB O O Heavy Vel The Horsi WB O O age 1 Deve The Horsi WB 204 113 Heavy Vel The Horsi WB 18 18	nent Volume ey Dr L 25 44 nicles ey Dr L 0 0 clopment Vo ey Dr L 46 113 nicles ey Dr L L 46	U O O O O O O O O O	h Approac R 40 23 h Approac R 0 0 h Approac R 133 61 h Approac R	NB h Wallgrov NB 0 0 h Wallgrov NB 0 0 h Wallgrov NB 464 164 h Wallgrov NB	e Rd L 6 11 e Rd L 0 0 1 e Rd L 0 1 e Rd L 0 0 te Rd L 80 41	U	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R	The Horsl EB 0 0 The Horsl EB 230 120 The Horsl EB	ey Dr L 0 0 0 ey Dr L 0 0 0 ey Dr L 24 ey Dr L 54 24
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U	R O O O Approach R O O Approach R O O Approach R 33 52 Approach R 6 8	SB O O O N Wallgrove SB O O O N Wallgrove SB 195 380 N Wallgrove SB 195 380 N Wallgrove SB 39	E Rd L 0 0 0 e Rd L 156 197 e Rd L 70 54	Cast U	R Stage: Approach R 0 0 Approach R 0 0 Existing + St Approach R 313 204 Approach R 77 56 Stage:	The Horsi WB Developm The Horsi WB O O Heavy Vel The Horsi WB O O age 1 Deve The Horsi WB 204 113 Heavy Vel The Horsi WB 18 18	nent Volume ey Dr L 25 44 nicles ey Dr L 0 0 lopment Voey Dr L 46 113 nicles ey Dr L 9 11 nent Volume	U O O O O O O O O O	h Approac R 40 23 h Approac R 0 0 h Approac R 133 61 h Approac R 111	NB NB NB O O NB O NB O O NB O NB O NB A64 164 h Wallgrov NB 50 26	e Rd L 6 11 e Rd L 0 0 e Rd L 1 80 41	West U 0 0 0 West U 0 0 0 West U 0 0 0	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 8	The Horsi EB 0 0 The Horsi EB 230 120 The Horsi EB 230 20	ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4 3
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U	R O O O Approach R O O Approach R O O Approach R 33 52 Approach R 6 8	SB O O O N Wallgrove SB O O O N Wallgrove SB 195 380 N Wallgrove SB 39 37	E Rd L 0 0 0 e Rd L 156 197 e Rd L 70 54	Cast U	R Stage: Approach R 0 0 Approach R 0 0 Existing + St Approach R 313 204 Approach R 77 56 Stage:	The Horsi WB Developm The Horsi WB O O Heavy Vei The Horsi WB O O age 1 Deve The Horsi WB 204 113 Heavy Vei The Horsi WB 204 113 Developm 18 18 2 Developm	nent Volume ey Dr L 25 44 nicles ey Dr L 0 0 lopment Voey Dr L 46 113 nicles ey Dr L 9 11 nent Volume	U O O O O O O O O O	h Approac R 40 23 h Approac R 0 0 h Approac R 133 61 h Approac R 111 6	NB NB NB O O NB O NB O O NB O NB O NB A64 164 h Wallgrov NB 50 26	e Rd L 6 11 e Rd L 0 0 e Rd L 1 80 41	West U 0 0 0 West U 0 0 0 West U 0 0 0	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 8 3	The Horsi EB 0 0 The Horsi EB 230 120 The Horsi EB 230 20	ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4 3
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	V	R n Approach R 0 0 n Approach R 0 0 n Approach R 33 52 n Approach R 6 8	SB O O Wallgrove SB O O Wallgrove SB 195 380 Wallgrove SB 39 37 Wallgrove SB 39 0 0	E Rd L 0 0 0 e Rd L 0 0 e Rd L 156 197 e Rd L 70 54	Cast U O O Cast U O	R Stage: Approach R 0 0 Approach R 0 0 Existing + St Approach R 313 204 Approach R 77 56 Stage: Approach R 0 0	The Horsi WB Developm The Horsi WB O O Heavy Ver The Horsi WB O O age 1 Deve The Horsi WB 204 113 Heavy Ver The Horsi WB 18 18 18 Developm The Horsi WB 0 O O O O O O O O O O O O O O O O O O	ey Dr L 25 44 nicles ey Dr L 0 0 clopment Volume 46 113 nicles ey Dr L 46 113 nicles ey Dr L 9 11 nent Volume ey Dr L 61	U U O O Sout U O O O Sout U O O O O O O O O O	h Approac R 40 23 h Approac R 0 0 h Approac R 133 61 h Approac R 111 6 h Approac R 95	NB NB NB NB O O NB O NB O NB O NB O NB A64 164 NB S0 26 h Wallgrov NB NB O O NB O O NB O O NB O O O NB O O O O O O O O O O O O O	e Rd	U	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 8 3 Approach R 8 3	The Horsl EB 0 0 The Horsl EB 230 120 The Horsl EB 25 EB 15 20 The Horsl EB 0	ey Dr L 0 0 0 ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4 3
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U	R n Approach R 0 0 n Approach R 0 0 n Approach R 33 52 n Approach R 6 8	SB O O O N Wallgrove SB O O O N Wallgrove SB 195 380 N Wallgrove SB 39 37 N Wallgrove SB 39 37	E Rd L 0 0 e Rd L 0 0 e Rd L 156 197 e Rd L 70 54 e Rd L	Cast U	R Stage: Approach R 0 0 Approach R 0 0 Existing + St Approach R 313 204 Approach R 77 56 Stage 2 Approach R	The Horsi WB Developm The Horsi WB O O Heavy Vet The Horsi WB O O age 1 Deve The Horsi WB 204 113 Heavy Vet The Horsi WB 18 18 18 Developm The Horsi WB 0 O O O O O O	ey Dr L 25 44 nicles ey Dr L 0 0 clopment Volume ey Dr L 46 113 nicles ey Dr L 46 113 nicles ey Dr L 9 11 nent Volume ey Dr L 61 107	Sout U 0 0 0 Sout U 0 0 0 Sout U 0 0 Sout	h Approac R 40 23 h Approac R 0 0 h Approac R 133 61 h Approac R 111 6 h Approac R	NB NB NB NB O O NB O NB O NB O NB A64 164 NB S0 26 h Wallgrov NB NB	e Rd L 6 11 e Rd L 0 0 0 e Rd L 80 41 e Rd L 1 3	U	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 8 3 Approach R	The Horsl EB 0 0 The Horsl EB 230 120 The Horsl EB 230 The Horsl EB 15 20 The Horsl	ey Dr L 0 0 0 ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4 3 ey Dr L
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U	R n Approach R 0 0 n Approach R 33 52 n Approach R 6 8 n Approach R 0 0	SB O O O N Wallgrove SB O O O N Wallgrove SB 195 380 O N Wallgrove SB 39 37 O N Wallgrove SB 0 O O O O O O O O O O O O O O O O O O	E Rd L 0 0 0 e Rd L 156 197 e Rd L 70 54 e Rd L 0 0	Cast U O O O O O Cast U O O O O O O O O O	R Stage: Approach R 0 0 Approach R 0 0 Existing + St Approach R 313 204 Approach R 77 56 Stage: Approach R 0 0 0	The Horsi WB Developm The Horsi WB O O Heavy Vet The Horsi WB O O age 1 Deve The Horsi WB 204 113 Heavy Vet The Horsi WB 18 18 18 Developm The Horsi WB O O Heavy Vet The Horsi O O Heavy Vet	ey Dr L 25 44 nicles ey Dr L 0 0 clopment Volume ey Dr L 46 113 nicles ey Dr L 46 113 nicles ey Dr L 9 11 nent Volume ey Dr L 61 107 nicles	U U O O Sout U O O O Sout U O O O O Sout U O O O O Sout U O O O O O O O O O	h Approac R 40 23 h Approac R 0 0 h Approac R 133 61 h Approac R 111 6 h Approac R 95 54	NB NB NB O O NB O NB O NB O NB O NB A64 A64 A64 A 164 C NB NB SO 26 C NB O O O O O O O O O O O O O	e Rd L e Rd L 6 11 e Rd L 0 0 0 e Rd L 80 41 e Rd L 1 3	U	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 8 3 Approach R 15	The Horsi EB 0 0 The Horsi EB 230 120 The Horsi EB 250 The Horsi EB 0 0 The Horsi	ey Dr L 0 0 0 ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4 3 ey Dr L 0 0 0
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U	R O O O Approacl R O O Approacl R 33 52 Approacl R 6 8 Approacl R 0 O O Approacl R O O O O Approacl R O O O	SB O O O N Wallgrove SB O O O N Wallgrove SB 195 380 N Wallgrove SB 39 37 N Wallgrove SB O O O O N Wallgrove SB O O O O O O O O O O O O O O O O O O	E Rd L 0 0 0 e Rd L 156 197 e Rd L 70 54 e Rd L 0 0	Cast U	R Stage: Approach R 0 0 Approach R 0 0 ixisting + St Approach R 313 204 Approach R 77 56 Stage: Approach R 0 0 Approach O Approach R 0 0	The Horsi WB Developm The Horsi WB O O Heavy Vel The Horsi WB 204 113 Heavy Vel The Horsi WB 204 113 Heavy Vel The Horsi WB 18 18 Developm The Horsi WB O O O Heavy Vel The Horsi	ey Dr L 25 44 nicles ey Dr L 0 0 clopment Volume ey Dr L 46 113 nicles ey Dr L 46 113 nicles ey Dr L 9 11 nent Volume ey Dr L 61 107 nicles	U O O Sout U O O O O O O O O O	h Approac R h Approac R 40 23 h Approac R 0 0 h Approac R 133 61 h Approac R 111 6 h Approac R 95 54	h Wallgrov NB 0 0 h Wallgrov NB 0 0 h Wallgrov NB 464 164 h Wallgrov NB 50 26 h Wallgrov NB 0 0	e Rd L e Rd L 6 11 e Rd L 0 0 0 e Rd L 80 41 e Rd L 1 3	U	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 8 3 Approach R 8 31 15	The Horsi EB 0 0 The Horsi EB 0 0 The Horsi EB 230 120 The Horsi EB 15 20 The Horsi EB 0 0 The Horsi	ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4 3 ey Dr L 0 0 0 ey Dr C C C C C C C C C C C C C C C C C C C
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U	R n Approach R 0 0 n Approach R 33 52 n Approach R 6 8 n Approach R 0 0	SB O O O N Wallgrove SB O O O N Wallgrove SB 195 380 O N Wallgrove SB 39 37 O N Wallgrove SB 0 O O O O O O O O O O O O O O O O O O	E Rd L 0 0 0 e Rd L 156 197 e Rd L 70 54 e Rd L 0 0	Cast U O O O O O Cast U O O O O O O O O O	R Stage: Approach R 0 0 Approach R 0 0 Existing + St Approach R 313 204 Approach R 77 56 Stage: Approach R 0 0 0	The Horsi WB Developm The Horsi WB O O Heavy Vet The Horsi WB O O age 1 Deve The Horsi WB 204 113 Heavy Vet The Horsi WB 18 18 18 Developm The Horsi WB O O Heavy Vet The Horsi O O Heavy Vet	ey Dr L 25 44 nicles ey Dr L 0 0 clopment Volume ey Dr L 46 113 nicles ey Dr L 46 113 nicles ey Dr L 9 11 nent Volume ey Dr L 61 107 nicles	U U O O Sout U O O O Sout U O O O O Sout U O O O O Sout U O O O O O O O O O	h Approac R 40 23 h Approac R 0 0 h Approac R 133 61 h Approac R 111 6 h Approac R 95 54	NB NB NB O O NB O NB O NB O NB O NB A64 A64 A64 A 164 C NB NB SO 26 C NB O O O O O O O O O O O O O	e Rd L e Rd L 6 11 e Rd L 0 0 0 e Rd L 80 41 e Rd L 1 3	U	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 8 3 Approach R 15	The Horsi EB 0 0 The Horsi EB 230 120 The Horsi EB 25 EB 0 0 The Horsi EB 0 0 0 The Horsi	ey Dr L 0 0 0 ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4 3 ey Dr L 0 0 0
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U	R O O O Approach R O O O Approach R S S S Approach R S O O Approach R O O O Approach R	SB O O O N Wallgrove SB O O O N Wallgrove SB 195 380 N Wallgrove SB 39 37 N Wallgrove SB O O O N Wallgrove SB	E Rd L 0 0 0 e Rd L 156 197 e Rd L 70 54 e Rd L 0 0	Cast U	R Stage: Approach R 0 0 Approach R 0 0 Existing + St Approach R 313 204 Approach R 77 56 Stage: Approach R 0 0 Approach R R R R R R R R R R R R R R R R R R R	The Horsi WB Developm The Horsi WB O O Heavy Vel The Horsi WB 204 113 Heavy Vel The Horsi WB 204 113 Heavy Vel The Horsi WB 18 18 Developm The Horsi WB O O O Heavy Vel The Horsi WB	nent Volume ey Dr L 25 44 nicles ey Dr L 0 0 lopment Volume ey Dr L 46 113 nicles ey Dr L 9 11 nent Volume ey Dr L 107 nicles ey Dr L 61 107	U O O O O O O O O O	h Approac R 40 23 h Approac R 0 0 h Approac R 133 61 h Approac R 111 6 h Approac R 95 54 h Approac	h Wallgrov NB 0 0 h Wallgrov NB 0 0 h Wallgrov NB 464 164 h Wallgrov NB 50 26 h Wallgrov NB 0 0	e Rd L 6 11 e Rd L 0 0 0 e Rd L 80 41 e Rd L 1 3	U	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 8 3 Approach R 8 31 15 Approach R	The Horsi EB 0 0 The Horsi EB 230 120 The Horsi EB 250 The Horsi EB 0 0 The Horsi EB 0 The Horsi EB 15 20 The Horsi EB 0 The Horsi EB	ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4 3 ey Dr L 0 0 0 ey Dr L 4 3
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	V	R O O O Approach R O O O Approach R S S S Approach R S O O Approach R O O	SB O O O N Wallgrove SB O O O N Wallgrove SB 195 380 N Wallgrove SB 39 37 N Wallgrove SB O O O N Wallgrove SB O O O N Wallgrove SB O O O O N Wallgrove SB O O O O O O O O O O O O O O O O O O	E Rd L 0 0 0 e Rd L 156 197 e Rd L 70 54 e Rd L 0 0	Cast U	R Stage: Approach R 0 0 Approach R 0 0 Existing + St Approach R 313 204 Approach R 77 56 Stage: Approach R 0 0 Approach R 0 0 O Approach R 0 0	The Horsi WB Developm The Horsi WB O O Heavy Vei The Horsi WB O O age 1 Deve The Horsi WB 204 113 Heavy Vei The Horsi WB 18 18 Developm The Horsi WB O O O Heavy Vei The Horsi WB O O O O O O O O O O O O O O O O O O	nent Volume ey Dr L 25 44 nicles ey Dr L 0 0 lopment Volume ey Dr L 46 113 nicles ey Dr L 9 11 nent Volume ey Dr L 61 107 nicles ey Dr L 0	U O O O O O O O O O	h Approac	h Wallgrov NB 0 0 NB 0 0 h Wallgrov NB 0 0 h Wallgrov NB 464 164 h Wallgrov NB 50 26 h Wallgrov NB 0 0 NB 0 0	e Rd L 6 11 e Rd L 0 0 0 e Rd L 80 41 e Rd L 1 3 e Rd L 1 27	U	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 8 3 Approach R 31 15 Approach R 0 0	The Horsi EB 0 0 The Horsi EB 230 120 The Horsi EB 250 The Horsi EB 0 0	ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4 3 ey Dr L 0 0 0 ey Dr L 4 0 0 0
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	V	R Approacl R O Approacl R Approacl R Approacl R Approacl R Approacl R O O Approacl R	SB O O O SB O O O O O O O O O O O O O O	E Rd L 0 0 0 e Rd L 156 197 e Rd L 70 54 e Rd L 0 0	Cast U	R Stage: Approach R 0 0 Approach R 0 0 Existing + St Approach R 313 204 Approach R 77 56 Stage: Approach R 0 0 Approach R 0 0 Carrier of the company of the	The Horsi WB Developm The Horsi WB O O Heavy Ver The Horsi WB 204 113 Heavy Ver The Horsi WB 18 18 2 Developm The Horsi WB O O The Horsi WB O The Horsi WB O The Horsi	ey Dr L 25 44 nicles ey Dr L 0 0 clopment Volume ey Dr L 46 113 nicles ey Dr L 9 11 nent Volume ey Dr L 61 107 nicles ey Dr L 0 0 0 Development	U U O O O Sout U O O O O O O O O O	h Approac R 40 23 h Approac R 0 0 0 h Approac R 133 61 h Approac R 111 6 h Approac R 95 54 h Approac R 95 54 h Approac R 0 0 0	h Wallgrov NB 0 0 h Wallgrov NB 0 0 h Wallgrov NB 464 164 h Wallgrov NB 50 26 h Wallgrov NB 0 0 h Wallgrov NB 0 0 h Wallgrov NB 0 0 h Wallgrov	e Rd L 6 11 e Rd L 0 0 0 e Rd L 3 e Rd L 1 3 e Rd L 1 27	U	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 8 3 Approach R 31 15 Approach R 0 0	The Horsi EB 0 0 The Horsi EB 230 120 The Horsi EB 15 20 The Horsi EB 0 0 The Horsi EB 0 0 The Horsi EB 0 0 The Horsi EB 0 The Horsi	ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4 3 ey Dr L 0 0 0
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U	R n Approach R 0 0 n Approach R 33 52 n Approach R 6 8 n Approach R 0 0 n Approach R R R R R R R R R R R R R R R R R R R	SB O O Wallgrove SB O O Wallgrove SB 195 380 Wallgrove SB 39 37 Wallgrove SB O O O Wallgrove SB O O O Wallgrove SB O O O Wallgrove SB O O O Wallgrove SB O O O Wallgrove SB SB O O SB SB O O O Wallgrove SB	E Rd L 0 0 e Rd L 0 0 e Rd L 156 197 e Rd L 70 54 e Rd L 0 0 0 e Rd L 70 54	Cast U	R Stage: Approach R 0 0 Approach R 0 0 Existing + St Approach R 313 204 Approach R 77 56 Stage: Approach R 0 0 Approach R 0 0 Approach R 0 0 Approach R R R R R R R R R R R R R R R R R R R	The Horsi WB Developm The Horsi WB O O Heavy Ver The Horsi WB 204 113 Heavy Ver The Horsi WB 18 18 2 Developm The Horsi WB O O Heavy Ver The Horsi WB O O The Horsi WB	ey Dr L 25 44 nicles ey Dr L 0 0 clopment Volume ey Dr L 46 113 nicles ey Dr L 46 113 nicles ey Dr L 9 11 nent Volume ey Dr L 61 107 nicles ey Dr L 0 0 covelopmer ey Dr L 107 nicles	U U O O Sout U O O O Sout U O O O O Sout U O O O O Sout U O O O O O O O O O	h Approac R 40 23 h Approac R 0 0 0 h Approac R 133 61 h Approac R 111 6 h Approac R 95 54 h Approac R 95 54 h Approac R 95	NB NB NB NB O O NB O NB O NB O NB A64 A64 A64 A64 A64 A Mallgrov NB O O NB O NB O O NB O NB O NB O O NB O NB O O H Wallgrov NB O O NB NB O O H Wallgrov NB O NB O NB NB NB NB NB NB	e Rd L e Rd L 6 11 e Rd L 0 0 0 e Rd L 11 se Rd L 11 e Rd L 11 ce Rd L 0 0 0 ce Rd L 10 0 ce Rd L 10 0 ce Rd L 10 10 ce Rd L	U	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 8 3 Approach R 31 15 Approach R 0 0 Approach R R R R R R R R R R R R R R R R R R R	The Horsi EB 0 0 The Horsi EB 230 120 The Horsi EB 0 0 The Horsi EB 0 The Horsi EB	ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4 3 ey Dr L 0 0 0 ey Dr L 4 0 0 0 ey Dr L 0 0 ey Dr
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U	R n Approach R 0 0 n Approach R 33 52 n Approach R 6 8 n Approach R 0 0 n Approach R 0 0 n Approach R 52	SB O O O N Wallgrove SB O O O N Wallgrove SB 195 380 O N Wallgrove SB 39 37 O N Wallgrove SB O O O O N Wallgrove SB O O O O O N Wallgrove SB O O O O O O O O O O O O O O O O O O	E Rd L 0 0 0 e Rd L 156 197 e Rd L 70 54 e Rd L 0 0 0	Cast U	R Stage: Approach R 0 0 Approach R 0 0 Existing + St Approach R 313 204 Approach R 77 56 Stage: Approach R 0 0 Approach R 0 0 Approach R 313 204	The Horsi WB Developm The Horsi WB O O Heavy Vet The Horsi WB 204 113 Heavy Vet The Horsi WB 18 18 18 Developm The Horsi WB O O Heavy Vet The Horsi WB O O The Horsi WB O O The Horsi	ey Dr L 25 44 nicles ey Dr L 0 0 clopment Volume ey Dr L 46 113 nicles ey Dr L 46 113 nicles ey Dr L 9 11 nent Volume ey Dr L 61 107 nicles ey Dr L 0 0 0 0 0 0 0 0 0 0 0 0	U U O O Sout U O O Sout U O O O Sout U O O O Sout U O O O Sout U O O O O Sout U O O O O O O O O O	h Approac R 40 23 h Approac R 0 0 0 h Approac R 133 61 h Approac R 111 6 h Approac R 95 54 h Approac R 95 54 h Approac R 95 54	h Wallgrov NB 0 0 h Wallgrov NB 0 0 h Wallgrov NB 464 164 h Wallgrov NB 50 26 h Wallgrov NB 0 0	e Rd L e Rd L 6 11 e Rd L 0 0 0 e Rd L 11 se Rd L 11 a 80 41 be Rd L 14 27 ce Rd L 14 27 ce Rd L 14 27	U	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 8 3 Approach R 0 0 Approach R 8 31 15 Approach R 0 0 Approach R 8 31 15	The Horsi EB 0 0 The Horsi EB 0 0 The Horsi EB 230 120 The Horsi EB 0 0 The Horsi EB 304	ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4 3 ey Dr L 0 0 0 ey Dr L 71
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U	R n Approach R 0 0 n Approach R 33 52 n Approach R 6 8 n Approach R 0 0 n Approach R R R R R R R R R R R R R R R R R R R	SB O O Wallgrove SB O O Wallgrove SB 195 380 Wallgrove SB 39 37 Wallgrove SB O O O Wallgrove SB O O O Wallgrove SB O O O Wallgrove SB O O O Wallgrove SB O O O Wallgrove SB SB O O SB SB O O O Wallgrove SB	E Rd L 0 0 e Rd L 0 0 e Rd L 156 197 e Rd L 70 54 e Rd L 0 0 0 e Rd L 70 54	Cast U	R Stage: Approach R 0 0 Approach R 0 0 Existing + St Approach R 313 204 Approach R 77 56 Stage: Approach R 0 0 Approach R 0 0 Approach R 0 0 Approach R R R R R R R R R R R R R R R R R R R	The Horsi WB Developm The Horsi WB O O Heavy Vet The Horsi WB 204 113 Heavy Vet The Horsi WB 204 117 Heavy Vet The Horsi WB 18 18 18 Developm The Horsi WB O O The Horsi WB O O The Horsi WB O O Heavy Vet The Horsi WB O The Horsi WB O O The Horsi WB O O The Horsi WB O O The Horsi	ey Dr L ent Volume ey Dr L 25 44 nicles ey Dr L 0 0 clopment Vo ey Dr L 46 113 nicles ey Dr L 9 11 ent Volume ey Dr L 61 107 nicles ey Dr L 0 0 0 clopment Volume ey Dr L 81 107 107 107 108 109 100 100 100 100 100 100	U U O O Sout U O O O Sout U O O O O Sout U O O O O Sout U O O O O O O O O O	h Approac R 40 23 h Approac R 0 0 0 h Approac R 133 61 h Approac R 111 6 h Approac R 95 54 h Approac R 95 54 h Approac R 95	NB h Wallgrov NB 0 0 h Wallgrov NB 464 164 h Wallgrov NB 50 26 h Wallgrov NB 0 0 h Wallgrov NB 50 26 h Wallgrov NB 0 0 h Wallgrov NB 0 0 h Wallgrov NB NB NB NB NB NB NB NB NB N	e Rd L e Rd L 6 11 e Rd L 0 0 0 e Rd L 11 se Rd L 11 e Rd L 11 ce Rd L 0 0 0 ce Rd L 10 0 ce Rd L 10 0 ce Rd L 10 10 ce Rd L	U	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 8 3 Approach R 31 15 Approach R 0 0 Approach R R R R R R R R R R R R R R R R R R R	The Horsi EB 0 0 The Horsi EB 230 120 The Horsi EB 0 0 The Horsi EB 0 The Horsi EB	ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4 3 ey Dr L 0 0 0 ey Dr L 4 0 0 0 ey Dr L 0 0 ey Dr
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U	R O O O Approach R O O Approach R 33 52 Approach R 6 8 O O Approach R O O	SB O O O N Wallgrove SB O O O N Wallgrove SB 195 380 N Wallgrove SB 39 37 N Wallgrove SB O O O	E Rd L 0 0 0 E Rd L 156 197 E Rd L 70 54 E Rd L 0 0 0 E Rd L 246 242	Cast U	R Stage: Approach R 0 0 Approach R 0 0 Existing + St Approach R 313 204 Approach R 77 56 Stage: Approach R 0 0 Approach R 0 0 Approach R 10 Approa	The Horsi WB Developm The Horsi WB O O Heavy Ver The Horsi WB 204 113 Heavy Ver The Horsi WB 204 113 Heavy Ver The Horsi WB 18 18 Developm The Horsi WB O O The Horsi WB O The Horsi WB O The Horsi WB Heavy Ver The Horsi WB Heavy Ver The Horsi WB O Heavy Ver The Horsi	ey Dr L 25 44 nicles ey Dr L 0 0 clopment Volume ey Dr L 46 113 nicles ey Dr L 46 113 nicles ey Dr L 9 11 nent Volume ey Dr L 61 107 nicles ey Dr L 0 0 Development ey Dr L 85 183 nicles	U	h Approac R 40 23 h Approac R 0 0 h Approac R 133 61 h Approac R 111 6 h Approac R 95 54 h Approac R 95 54	h Wallgrov NB 0 0 NB 0 0 h Wallgrov NB 0 0 h Wallgrov NB 464 164 h Wallgrov NB 50 26 h Wallgrov NB 0 0 0 h Wallgrov NB 100 0	e Rd L 6 11 e Rd L 0 0 0 e Rd L 13 e Rd L 14 27 e Rd L 14 27	U	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 8 3 Approach R 0 0 Approach R 8 31 15 Approach R 31 15 Approach R 31 15	The Horsi EB 0 0 The Horsi EB 0 0 The Horsi EB 230 120 The Horsi EB 0 0 The Horsi EB 0 0 The Horsi EB 0 0 The Horsi EB 0 15 20 The Horsi EB 15 20 120 The Horsi EB 15 20 20 The Horsi EB 15 20 20 The Horsi EB 20 20 The Horsi EB 20 20 The Horsi	ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4 3 ey Dr L 0 0 0 ey Dr L 4 3 ey Dr L 0 0 0 ey Dr L 1 3 ey Dr 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes 10 Year Growth + Stage 2 Developm ent ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U	R O O O Approach R O O Approach R S S S Approach R O O Approach R Approach	SB O O O O O O O O O O O O O O O O O O	E Rd L 0 0 0 e Rd L 156 197 e Rd L 70 54 e Rd L 0 0 0 e Rd L 246 242 e Rd	Cast U	R Stage: Approach R 0 0 Approach R 0 0 existing + St Approach R 313 204 Approach R 77 56 Stage: Approach R 0 0 Approach R 0 0 Approach R 0 Approach R 2 Approach R 0 Approach Approach R 0 Approach Approach R Approach R 0 Approach Approach	The Horsi WB Developm The Horsi WB O O Heavy Ver The Horsi WB 204 113 Heavy Ver The Horsi WB 18 18 18 Developm The Horsi WB O O Heavy Ver The Horsi WB O The Horsi	ey Dr L 25 44 nicles ey Dr L 0 0 clopment Volume ey Dr L 46 113 nicles ey Dr L 9 11 nent Volume ey Dr L 61 107 nicles ey Dr L 61 107 nicles ey Dr L 85 183 nicles ey Dr	U O O O O O O O O O	h Approac R 40 23 h Approac R 0 0 h Approac R 133 61 h Approac R 111 6 h Approac R 95 54 h Approac R 95 54 h Approac R 95 54	h Wallgrov NB 0 0 NB 0 0 h Wallgrov NB 464 164 h Wallgrov NB 50 26 h Wallgrov NB 0 0 0 h Wallgrov NB 190 h Wallgrov NB 0 0 h Wallgrov NB 0 0 h Wallgrov NB 0 0 h Wallgrov	e Rd L 6 11 e Rd L 0 0 0 e Rd L 3 e Rd L 1 3 e Rd L 1 27 e Rd L 1 9 0 0 e Rd L 1 4 27	U	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 8 3 Approach R 31 15 Approach R 0 0 0 Approach R 31 15 Approach R 0 0 1 Approach R 0 0 Approach R 0 0 Approach R 0 0	EB The Horsi EB 0 0 The Horsi EB 230 120 The Horsi EB 30 15 20 The Horsi EB 0 0 The Horsi EB 15 20 The Horsi EB 15 20 The Horsi EB 15 15 15 15 15 15 15 15 16 17 The Horsi EB 17 The Horsi EB 18 19 The Horsi	ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4 3 ey Dr L 0 0 0 ey Dr L 4 3 ey Dr L 0 0 0 ey Dr L 1 3 ey Dr 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes 10 Year Growth + Stage 2 Developm	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U	R O O O Approach R O O Approach R 33 52 Approach R 6 8 O O Approach R O O	SB O O O N Wallgrove SB O O O N Wallgrove SB 195 380 N Wallgrove SB 39 37 N Wallgrove SB O O O	E Rd L 0 0 0 E Rd L 156 197 E Rd L 70 54 E Rd L 0 0 0 E Rd L 246 242	Cast U	R Stage: Approach R 0 0 Approach R 0 0 Existing + St Approach R 313 204 Approach R 77 56 Stage: Approach R 0 0 Approach R 0 0 Approach R 10 Approa	The Horsi WB Developm The Horsi WB O O Heavy Ver The Horsi WB 204 113 Heavy Ver The Horsi WB 204 113 Heavy Ver The Horsi WB 18 18 Developm The Horsi WB O O The Horsi WB O The Horsi WB O The Horsi WB Heavy Ver The Horsi WB Heavy Ver The Horsi WB O Heavy Ver The Horsi	ey Dr L 25 44 nicles ey Dr L 0 0 clopment Volume ey Dr L 46 113 nicles ey Dr L 46 113 nicles ey Dr L 9 11 nent Volume ey Dr L 61 107 nicles ey Dr L 0 0 Development ey Dr L 85 183 nicles	U	h Approac R 40 23 h Approac R 0 0 h Approac R 133 61 h Approac R 111 6 h Approac R 95 54 h Approac R 95 54	h Wallgrov NB 0 0 NB 0 0 h Wallgrov NB 0 0 h Wallgrov NB 464 164 h Wallgrov NB 50 26 h Wallgrov NB 0 0 0 h Wallgrov NB 100 0	e Rd L 6 11 e Rd L 0 0 0 e Rd L 13 e Rd L 14 27 e Rd L 14 27	U	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 8 3 Approach R 8 31 15 Approach R 31 15 Approach R 31 17 Approach R 17 Approach R 18 19 10 10 10 10 10 10 10 10 10 10 10 10 10	The Horsi EB 0 0 The Horsi EB 0 0 The Horsi EB 230 120 The Horsi EB 0 0 The Horsi EB 0 0 The Horsi EB 0 0 The Horsi EB 0 15 20 The Horsi EB 15 20 120 The Horsi EB 15 20 20 The Horsi EB 15 20 20 The Horsi EB 20 20 The Horsi EB 20 20 The Horsi	ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4 3 ey Dr L 0 0 0 ey Dr L 4 3 ey Dr L 0 0 0 ey Dr L 3 ey Dr L 0 0 0 ey Dr L 0 0 0 ey Dr
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes 10 Year Growth + Stage 2 Developm ent ent Stage 2	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U	R O O O Approach R O O O Approach R S S S Approach R S O O Approach R S Approach R S R O O Approach R S R S R Approach R R R R R R R R R R R R R R R R R R R	SB O O O O O O O O O O O O O O O O O O	E Rd E Rd L 0 0 0 E Rd L 156 197 E Rd L 70 54 E Rd L 0 0 E Rd L 246 242 E Rd L	Cast U	R Stage: Approach R 0 0 Approach R 0 0 Existing + St Approach R 313 204 Approach R 77 56 Stage: Approach R 0 0 Approach R 0 0 Approach R 0 Approach R 0 Approach R R R R R R R R R R R R R R R R R R R	The Horsi WB Developm The Horsi WB O O Heavy Ver The Horsi WB 204 113 Heavy Ver The Horsi WB 18 18 2 Developm The Horsi WB 0 O O Heavy Ver The Horsi WB 18 18 18 Developm The Horsi WB 0 O Heavy Ver The Horsi WB WB O O Heavy Ver The Horsi WB	ey Dr L 25 44 nicles ey Dr L 0 0 clopment Volume ey Dr L 46 113 nicles ey Dr L 9 11 nent Volume ey Dr L 61 107 nicles ey Dr L 61 107 nicles ey Dr L 81 107 nicles ey Dr L 107 nicles ey Dr L 107 nicles ey Dr L 108 1107 nicles ey Dr L 109 1107 nicles ey Dr L 1007 nicles ey Dr L 1008 1108 1109 1108 1109 1108 1109 1108 1109 1108 1109 1108 1109 1108 1109 1108	U O O O O O O O O O	h Approac R 40 23 h Approac R 40 23 h Approac R 133 61 h Approac R 111 6 h Approac R 95 54 h Approac R 95 54 h Approac R 95 54	h Wallgrov NB 0 0 NB 0 0 h Wallgrov NB 464 164 h Wallgrov NB 50 26 h Wallgrov NB 0 0 h Wallgrov NB 10 10 h Wallgrov	e Rd L 6 11 e Rd L 0 0 0 e Rd L 80 41 e Rd L 1 3 e Rd L 1 27 e Rd L 1 9 0 0 e Rd L 1 1 4 27	U	Approach R 13 6 Approach R 0 0 Approach R 50 41 Approach R 31 15 Approach R 0 0 Approach R 31 15 Approach R 71 Approach R 80 71	EB The Horsi EB 0 0 The Horsi EB 230 120 The Horsi EB 15 20 The Horsi EB 0 0 The Horsi EB 15 20 The Horsi EB 15 20 The Horsi EB 15 20 The Horsi EB 15 20 The Horsi EB 15 20 The Horsi EB 15 20 The Horsi EB 15 20 The Horsi EB 15 20 The Horsi EB 15 20 The Horsi EB 20 The Horsi EB 304 192 The Horsi EB	ey Dr L 0 0 0 ey Dr L 54 24 ey Dr L 4 3 ey Dr L 0 0 0 ey Dr L 4 3 ey Dr L 0 0 0 ey Dr L 3 ey Dr L 0 0 0 ey Dr L 0 0 ey Dr L 0 0 0

The Horsley DR/M7 Light Vehicles

									Light Veh									
	Peak	Time		North App	proach M7		East	Approach	The Horsl	ey Dr		South App	roach M7		West	Approach	The Horsl	ey Dr
	Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00	0	29	0	455	0	200	512	194	0	363	0	71	0	33	491	40
	14:45	15:45	0	38	0	228	0	200	502	378	0	210	0	64	0	52	485	48
Existing		!			l l				Heavy Vel	nicles	l .							•
Ü	Peak	Time		North Apr	proach M7		East	Approach	The Horsl			South App	roach M7		West	Approach	The Horsl	ev Dr
	Period Start		U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00	0	1	0	24	0	20	27	10	0	19	0	4	0	2	26	2
	14:45	15:45	0	2	0	12	0	20	26	20	0	11	0	3	0	3	26	2
	21.13	13.13							Growth R					J				
	Peak	Time		North Ani	proach M7		Fast	Approach	The Horsl			South App	roach M7		West	Approach	The Horsl	ev Dr
	Period Start		U	R	SB	L	U	R	WB	·,	U	R	NB	ı	U	R	EB	1
	8:00	9:00	0.035	0.035	0.035	0.035	0.016	0.016	0.016	0.016	0.037	0.037	0.037	0.037	0.032	0.032	0.032	0.032
	14:45	15:45	0.012	0.012	0.012	0.033	0.01	0.01	0.01	0.01	0.005	0.005	0.005	0.005	0.052	0.05	0.052	0.052
Growth	14.43	15.45	0.012	0.012	0.012	0.012	0.01	0.01	Heavy Vel		0.003	0.003	0.003	0.003	0.03	0.03	0.03	0.03
Rates	Peak	Time		North Ani	proach M7		Fact	Annroach	The Horsi			South App	roach M7		West	Approach	The Horel	ev Dr
	Period Start		U	R	SB	1	U	R	WB	еу Бі	U	R	NB	1	U	R	EB	ey Di
			0.035			0.035	0.016			0.016	0.037	0.037		0.037	0.032	0.032		0.022
	8:00	9:00 15:45	0.033	0.035 0.012	0.035	0.035	0.016	0.016 0.01	0.016 0.01	0.016	0.037	1	0.037	0.037	0.032	0.032	0.032	0.032
	14:45	15.45	0.012	0.012	0.012	0.012	0.01				0.005	0.005	0.005	0.005	0.05	0.05	0.05	0.05
	Dook	Time		Morth Any	wasah M7		Foot		ear Growtl			Courth Ann	wasah M7		Wood	Annuasah	The Herel	ov Dr
	Peak				proach M7				The Horsl	1		South App				Approach		
	Period Start		U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00	0	39	0	614	0	232	594	225	0	497	0	97	0	44	648	53
10 Year	14:45	15:45	0	43	0	255	0	220	552	416	0	221	0	67	0	78	728	72
Growth	Peak	Time		North A	aroock 1		F	Approx - 1	Heavy Vel			Court to	roock Mar		147	April -	The Use	01/ D::
Volumes			U		oroach M7		U		The Horsl	ey Di	U	South App		1	U	Approach		_
	Period Start		_	R	SB	L	_	R	WB	12	_	R	NB	L		R	EB 24	L
	8:00	9:00	0	1	0	32	0	23	31	12	0	26	0	5	0	3	34	3
	14:45	15:45	0	2	0	13	0	22	29	22	0	12	0	3	0	5	39	3
		Time -		Ment			_		Developme			Carrel	was - 1 P ==		147	A	The	av D::
	Peak Deviced Start		11		oroach M7				The Horsl	ey Dr	U	South App				Approach		ey of
	Period Start 8:00	9:00	U	R	SB	L	U	R	0.2	L	U	R	NB	L	U	R	EB	L
	14.45	15:45		 					0.2	<u> </u>								
Developm	14.43	15.45			ļ				Heavy Vel	l hicles								<u> </u>
ent % IN	Peak	Time		North Apr	proach M7		East	Approach	The Horsi			South App	roach M7		West	Approach	The Horsl	ev Dr
	Period Start		U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00									-				-			
	14:45	15:45																
								D	evelopmen	t % OUT	•		•	•			•	
	Peak	Time		North App	proach M7		East	Approach	The Horsl	ey Dr		South App	roach M7		West	Approach	The Horsl	ey Dr
	Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00															0.35	
Developm	14:45	15:45															0.2	
ent %																		
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OUT	Peak			North App					The Horsl			South App				Approach		ey Dr
	Period Start	Period End	U	North App	SB	L	East	Approach			U	South App	oroach M7 NB	L	West	Approach	The Horsl	ey Dr
	Period Start 8:00	Period End 9:00	U			L			The Horsl		U			L				ey Dr
	Period Start	Period End	U			L		R	The HorsI	ey Dr L	_			L				ey Dr
	8:00 14:45	9:00 15:45	U	R	SB	L	U	R Stage 2	The Horsl WB L Developm	ey Dr L L nent Volume	_	R	NB	L	U	R	EB	L
	8:00 14:45 Peak	9:00 15:45	-	R North App	SB Sporoach M7	L	U East	R Stage 2	WB L Developm The Horsi	ey Dr L L nent Volume	es	R South App	NB proach M7	L	U West	R	EB The Horsl	L
	Period Start 8:00 14:45 Peak Period Start	9:00 15:45 Time Period End	U	North App	SB oroach M7 SB	L	East	Stage 2 Approach	The Horsl WB L Developm The Horsl WB	ey Dr L nent Volume ey Dr L	es U	South App	NB proach M7	L	U West	R Approach	The Horsl	ey Dr
OUT Stage 1	Period Start 8:00 14:45 Peak Period Start 8:00	9:00 15:45 Time Period End 9:00	U	North App	SB oroach M7 SB 0	L 0	East U 0	Stage 2 Approach R 0	The Horsl WB Developm The Horsl WB 25	ey Dr L nent Volume ey Dr L 0	es U 0	South App	NB proach M7 NB 0	L 0	West U	Approach R 0	The Horsl EB 40	ey Dr L 0
OUT Stage 1 Developm	Period Start 8:00 14:45 Peak Period Start	9:00 15:45 Time Period End	U	North App	SB oroach M7 SB	L 0 0	East	Stage 2 Approach	The Horsl WB L Developm The Horsl WB	ey Dr L nent Volume ey Dr L 0 0	es U	South App	NB proach M7	L 0 0	U West	R Approach	The Horsl	ey Dr
OUT Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00	9:00 15:45 Time Period End 9:00 15:45	U	North App	SB Droach M7 SB 0 0		East U 0	Stage 2 Approach R 0	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel	ey Dr L nent Volume ey Dr L 0 0 nnicles	es U 0	South App	NB Proach M7 NB 0 0		West U 0	R Approach R 0	The Horsl EB 40 23	ey Dr L 0
OUT Stage 1 Developm	Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak	Period End 9:00 15:45 Time Period End 9:00 15:45 Time	U	North App	SB oroach M7 SB 0		East U 0	Stage 2 Approach R 0	The Horsi WB Developm The Horsi WB 25 44	ey Dr L nent Volume ey Dr L 0 0 nnicles	es U 0	South App	NB Proach M7 NB 0 0		West U 0	Approach R 0	The Horsl EB 40 23	ey Dr L 0
OUT Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start	9:00 15:45 Time Period End 9:00 15:45 Time Period End	U 0 0	North App R 0 0 North App	SB oroach M7 SB 0 0 oroach M7		East U 0	Stage 2 Approach R 0 0 Approach	The Horsi WB L Developm The Horsi WB 25 44 Heavy Vel The Horsi WB	ey Dr L nent Volume ey Dr L 0 0 nicles ey Dr L	es U O O	South App R 0 0 South App	NB Proach M7 NB 0 0 proach M7 NB NB NB	0 L	West U 0 0 West U	R Approach R 0 0	The Horsl EB 40 23 The Horsl EB	ey Dr L 0 0 ey Dr L L
OUT Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak	9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45	U 0 0 0	North App R 0 0 North App R R	SB Oroach M7 SB O Oroach M7 SB SF SF SF SF SF SF SF SF SF	0 L	East U 0 East U	Stage 2 Approach R 0 0 Approach R	The Horsi WB L Developm The Horsi WB 25 44 Heavy Vel The Horsi	ey Dr L nent Volume ey Dr L 0 0 nnicles	U 0 0 U	South App R 0 0 South App	NB Proach M7 NB 0 0 oroach M7		West U 0 0 West	R Approach R 0 0 Approach R	The Horsl EB 40 23 The Horsl	ey Dr L 0
OUT Stage 1 Developm ent	Period Start	9:00 15:45 Time Period End 9:00 15:45 Time Period End	U 0 0 0 U 0	North App R 0 0 North App R 0	SB Oroach M7 SB O O O Oroach M7 SB O O O O O O O O O O O O O O O O O O	0 L 0	U	Stage 2 Approach R 0 0 Approach R 0 0	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0	ey Dr L nent Volume ey Dr L 0 0 nicles ey Dr L 0	U 0 0 0 U 0 0 0	South App R 0 0 South App R 0	NB Oroach M7 NB 0 0 Oroach M7 NB 0 Oroach M7	0 L 0	West U 0 0 West U 0	R Approach R 0 0 Approach R 0	The Horsl EB 40 23 The Horsl EB 0	ey Dr L 0 0 Ey Dr L 0 0
OUT Stage 1 Developm ent	Period Start	Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45	U 0 0 0 U 0	North App R 0 0 North App R 0 0	SB Oroach M7 SB O O O Oroach M7 SB O O O O O O O O O O O O O O O O O O	0 L 0	East U 0 0 0 East U 0	R Stage 2 Approach R 0 0 Approach R 0 0 Existing + St	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0	nent Volume ey Dr L 0 0 nicles ey Dr L 0 0 clopment Volume	U 0 0 0 U 0 0 0	South App R 0 0 South App R 0	NB oroach M7 NB 0 0 oroach M7 NB 0 0	0 L 0	West U 0 0 0 West U 0	R Approach R 0 0 Approach R 0	The Horsi EB 40 23 The Horsi EB 0	ey Dr L 0 0 Ey Dr L 0 0
OUT Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45 Time Time Period End 9:00 15:45	U 0 0 0 U 0	North App R 0 0 North App R 0 0	SB Oroach M7 SB O Oroach M7 SB O O Oroach M7	0 L 0	East U 0 0 0 East U 0	R Stage 2 Approach R 0 0 Approach R 0 0 Existing + St	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0 age 1 Developm	nent Volume ey Dr L 0 0 nicles ey Dr L 0 0 clopment Volume	U 0 0 0 U 0 0 0	South App R 0 0 South App R 0 0 0	NB oroach M7 NB 0 0 oroach M7 NB 0 0	0 L 0	West U 0 0 0 West U 0	Approach R 0 0 Approach R 0 0	The Horsi EB 40 23 The Horsi EB 0	ey Dr L 0 0 Ey Dr L 0 0
OUT Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak	Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45 Time Time Period End 9:00 15:45	U 0 0 0 U 0 0 0	North App R 0 0 North App R 0 0 North App	SB Oroach M7 SB O Oroach M7 SB O Oroach M7	0 L 0	U	R Stage 2 Approach R 0 0 Approach R 0 contact a contact	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0 age 1 Deve	nent Volume ey Dr L 0 0 nicles ey Dr L 0 0 clopment Volume	U O O O O O O O O O O O O O O O O O O O	South App R 0 0 South App R 0 0 South App	NB Oroach M7 NB Oroach M7 NB O Oroach M7	0 L 0	West U 0 0 0 West U 0 0 West	Approach R 0 0 Approach R 0 Approach R 0 0	The Horsi EB 40 23 The Horsi EB 0 0	ey Dr L 0 0 Ey Dr L 0 0
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Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent	Period Start	Period End 9:00 15:45 Time Period End 9:00 15:45	U 0 0 0 0 U 0 0 0 0 0 0 0 0 0 0 0 0 0 0	North App R 0 0 North App R 0 0 North App R 29 38	SB Oroach M7 SB O Oroach M7 SB O O Oroach M7 SB O O Oroach M7	0 L 0 0	U	R Stage 2 Approach R 0 0 Approach R 0 0 Existing + St Approach R 200 200 Approach	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0 age 1 Deve The Horsi WB 537 546 Heavy Vel The Horsi	ey Dr L O O nicles ey Dr L O O clopment Vo ey Dr L A A A A A B A B B B B B B	U O O O O O O O O O O O O O O O O O O O	South App R 0 0 South App R 0 0 South App R 210 South App	NB Oroach M7 NB O Oroach M7 NB O O Oroach M7 NB O Oroach M7	0 L 0 0	U	Approach R 0 0 Approach R 0 0 Approach R 33 52 Approach	The Horsl EB 40 23 The Horsl EB 0 0 The Horsl EB 531 508	ey Dr L 0 0 0 ey Dr L 0 0 0 ey Dr L 40 48
Stage 1 Developm ent Volumes Existing + Stage 1 Developm	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U 0 0 0 0 U 0 0 U U U U U U U U U U U U	North App R 0 0 North App R 0 0 North App R 29 38 North App	SB Oroach M7 SB O Oroach M7 SB O SB O O Oroach M7	L 0 0 0 L 455 228	U	R Stage 2 Approach R 0 0 Approach R 0 0 Existing + St Approach R 200 200 Approach R	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0 age 1 Deve The Horsi WB 537 546 Heavy Vel The Horsi WB	ey Dr L nent Volume ey Dr L 0 0 0 nicles ey Dr L 0 0 lopment Vo ey Dr L 194 378 nicles ey Dr L L 194 L 194 L 194 L L L L L L L L L L L L L L L L L L L	U O O O O O O O O O O O O O O O O O O O	South App R 0 0 South App R 0 0 South App R 363 210 South App R	NB Oroach M7 NB Oroach M7 NB O Oroach M7 NB O Oroach M7 NB O Oroach M7 NB NB	0 0 0 0 L 71 64	U	R O O Approach R O O Approach R O O Approach R 33 52 Approach R	The Horsl EB 40 23 The Horsl EB 0 0 The Horsl EB 531 508 The Horsl	ey Dr L 0 0 0 ey Dr L 0 0 40 48 ey Dr L
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U 0 0 0 0 U 0 0 U 0 0 0	North App R 0 0 North App R 0 0 North App R 29 38 North App R 1	SB Oroach M7 SB O Oroach M7 SB O O Oroach M7	L 0 0 0 L 455 228 L 24	Cast U O O East U O O Cast U O O Cast U O Cast	R Stage 2 Approach R 0 0 Approach R 0 0 existing + St Approach R 200 200 Approach R 200	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0 age 1 Deve The Horsi WB 537 546 Heavy Vel The Horsi WB	nent Volume ey Dr L 0 0 0 nicles ey Dr L 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	U O O O O O O O O O O O O O O O O O O O	South App R 0 0 South App R 0 0 South App R 210 South App R 363 210 South App	NB Oroach M7 NB Oroach M7 NB O Oroach M7 NB O Oroach M7 NB O Oroach M7 NB O Oroach M7	0 0 0 0 L 71 64	West U 0 0 0 West U 0 0 0 West U 0 0 0	R O O Approach R O O Approach R 33 52 Approach R 32	EB 40 23 The Horsl EB 0 0 The Horsl EB 531 508 The Horsl EB 26	ey Dr L 0 0 0 ey Dr L 40 48 ey Dr L 2
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U 0 0 0 0 U 0 0 U U U U U U U U U U U U	North App R 0 0 North App R 0 0 North App R 29 38 North App	SB Oroach M7 SB O Oroach M7 SB O SB O O Oroach M7	L 0 0 0 L 455 228	U	R Stage 2 Approach R 0 0 Approach R 0 0 existing + St Approach R 200 200 Approach R 20 20	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0 age 1 Deve The Horsi WB 537 546 Heavy Vel The Horsi WB 27 26	ey Dr L 0 0 0 incles ey Dr L 0 0 0 slopment Vo ey Dr L 194 378 incles ey Dr L 10 20	U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	South App R 0 0 South App R 0 0 South App R 363 210 South App R	NB Oroach M7 NB Oroach M7 NB O Oroach M7 NB O Oroach M7 NB O Oroach M7 NB NB	0 0 0 0 L 71 64	U	Approach R 0 0 Approach R 0 0 Approach R 33 52 Approach R	The Horsl EB 40 23 The Horsl EB 0 0 The Horsl EB 531 508 The Horsl	ey Dr L 0 0 0 ey Dr L 0 0 40 48 ey Dr L 40 48
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U 0 0 0 0 U 0 0 U 0 0 0	North App R 0 0 North App R 0 0 North App R 29 38 North App R 1 2	SB Oroach M7 SB O Oroach M7 SB O O Oroach M7	L 0 0 0 L 455 228 L 24	Cast U	R Stage 2 Approach R 0 0 Approach R 0 0 Existing + St Approach R 200 200 Approach R 20 20 Stage 2	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0 age 1 Deve The Horsi WB 537 546 Heavy Vel The Horsi WB 27 26 Developm	nent Volume ey Dr L 0 0 nicles ey Dr L 0 0 elopment Volume ey Dr L 194 378 nicles ey Dr L 10 20 nent Volume	U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	R	NB Oroach M7 NB Oroach M7 NB O Oroach M7 NB O Oroach M7 NB O O Oroach M7 NB O O Oroach M7	0 0 0 0 L 71 64	West U 0 0 0 West U 0 0 0 West U 0 0 0	R O O Approach R O O Approach R 33 52 Approach R 33 52	EB 40 23 The Horsl EB 0 0 The Horsl EB 531 508 The Horsl EB 26 26	ey Dr L 0 0 0 ey Dr L 40 48 ey Dr L 2 2
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Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U 0 0 0 0 U 0 0 0 U U 0 0 U U U U U U U	North App R 0 0 North App R 0 0 North App R 29 38 North App R 1 2 North App R 1	SB Oroach M7 SB O Oroach M7 SB O SB O O Oroach M7 SB	L 0 0 0 L 455 228 L 24 12	Cast U	R Stage 2 Approach R 0 0 Approach R 0 0 Existing + St Approach R 200 200 Approach R 20 Approach R 20 R 20 R R R R R R R R R R R R R R R	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0 age 1 Deve The Horsi WB 537 546 Heavy Vel The Horsi WB 27 26 Developm The Horsi WB	ey Dr L O O O clopment Vo ey Dr L O O clopment Vo ey Dr L 194 378 nicles ey Dr L 10 20 nent Volume ey Dr L 10 L	U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	R	NB Oroach M7 NB O Oroach M7 NB NB NB NB NB NB NB NB NB N	L 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	U West U 0 0 0 West U 0 0 West U 0 0 West U 0 0 West U 0 0	R Approach R 0 0 Approach R 0 0 Approach R 33 52 Approach R 2 3	EB The Horsl EB 40 23 The Horsl EB 0 0 The Horsl EB 531 508 The Horsl EB 26 26 The Horsl EB	ey Dr L 0 0 0 ey Dr L 40 48 ey Dr L 2 2
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Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U 0 0 0 0 U 0 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 U 0 0 U 0	R	SB	L 0 0 0 L 455 228 L 24 12 L 0 0	Cast U	R Stage 2 Approach R 0 0 Approach R 0 0 Existing + St Approach R 200 200 Approach R 20 20 Approach R 0 0 Approach R 0 0 Approach R 0 0 O	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0 age 1 Developm The Horsi WB 537 546 Heavy Vel The Horsi WB 27 26 Developm The Horsi WB 61 107 Heavy Vel The Horsi WB 0 0	nent Volume ey Dr L 0 0 0 nicles ey Dr L 194 378 nicles ey Dr L 10 20 nent Volume ey Dr L 0 0 0 10 0 10 0 10 0 10 0 10 0 10 0	U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	R	NB Oroach M7 NB O Oroach M7	L 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	U	R O O Approach R O O Approach R 33 52 Approach R 2 3 Approach R O O Approach R O O Approach R O O Approach R O O	The Horsi EB 40 23 The Horsi EB 0 0 The Horsi EB 531 508 The Horsi EB 26 26 The Horsi EB 95 54 The Horsi EB 95 54	ey Dr L 0 0 0 ey Dr L 40 48 ey Dr L 2 2 ey Dr L 0 0 0
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Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U 0 0 0 0 U 0 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 U 0 0 U 0	R	SB	L 0 0 0 L 455 228 L 24 12 L 0 0 0 L L 0 L L 0 L L L L L D D D D D	Cast U	R Stage 2 Approach R 0 0 Approach R 0 0 Existing + St Approach R 200 200 Approach R 0 0 Approach R 0 0 Approach R 0 0 Approach R 0 0 Approach R R R R R R R R R R R R R R R R R R R	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0 age 1 Developm The Horsi WB 537 546 Heavy Vel The Horsi WB 27 26 Developm The Horsi WB 61 107 Heavy Vel The Horsi WB 0 0 100 Heavy Vel The Horsi WB	ey Dr L onicles ey Dr L onicles ey Dr L onicles ey Dr L onicles ey Dr L 194 378 nicles ey Dr L 10 20 nent Volume ey Dr L onicles ey Dr	U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	R	NB Oroach M7 NB O O Oroach M7	L 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	U	R O O Approach R O O Approach R 33 52 Approach R 2 3 Approach R O O Approach R O O O	The Horsi EB 40 23 The Horsi EB 0 0 The Horsi EB 531 508 The Horsi EB 26 26 The Horsi EB 95 54 The Horsi EB 0 0 The Horsi EB 95 54	ey Dr L 0 0 0 ey Dr L 40 48 ey Dr L 2 2 ey Dr L 0 0 0 ey Dr L 2 2 ey Dr L 0 0 0 ey Dr L 1 0 0 0 ey Dr L 0 0 0 ey Dr L 1 0 0 0
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U 0 0 0 0 U 0 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 U 0 0 U	R O O North App R O O O North App R O O O O North App R O O O O O O O O O	SB	L 0 0 0 L 455 228 L 24 12 L 0 0 0 L 614	Cast U	R Stage 2 Approach R 0 0 Approach R 0 0 Existing + St Approach R 200 200 Approach R 0 0 Approach R 0 0 Approach R 0 0 Stage 2 Approach R 0 0 Approach R 0 0 Approach R 0 0	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0 age 1 Developm The Horsi WB 537 546 Heavy Vel The Horsi WB 27 26 Developm The Horsi WB 61 107 Heavy Vel The Horsi WB 655	ey Dr L 0 0 0 clopment Volume ey Dr L 0 0 lopment Volume ey Dr L 194 378 nicles ey Dr L 0 0 clopment Volume ey Dr L 0 0 clopment Volume ey Dr L 0 clopment Volume ey Dr L 225	U O O O O O O O O O O O O O O O O O O O	R	NB Oroach M7 NB O Oroach M7	L 0 0 0 0 L 4 3 0 0 0 C L 0 0 0 C L 97	U	Approach R 0 0 Approach R 0 0 Approach R 33 52 Approach R 2 3 Approach R 0 0 Approach R 0 0 Approach R 44	EB	ey Dr L 0 0 0 ey Dr L 40 48 ey Dr L 2 2 ey Dr L 0 0 0 ey Dr L 2 2 ey Dr L 0 0 0 ey Dr L 53
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U 0 0 0 0 U 0 0 0 U U 0 0 0 U U 0 0 U	North App R 0 0 North App R 0 0 North App R 29 38 North App R 1 2 North App R 0 0 North App R 0 R	SB	L 0 0 0 L 455 228 L 24 12 L 0 0 0 L L 0 L L 0 L L L L L D D D D D	Cast U	R Stage 2 Approach R 0 0 Approach R 0 0 Existing + St Approach R 200 200 Approach R 0 0 Approach R 0 0 Approach R 0 0 Approach R 0 0 Approach R R R R R R R R R R R R R R R R R R R	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0 age 1 Developm The Horsi WB 537 546 Heavy Vel The Horsi WB 27 26 Developm The Horsi WB 61 107 Heavy Vel The Horsi WB 61 107 Heavy Vel The Horsi WB 61 107 Heavy Vel The Horsi WB 65 655 659	ey Dr L 0 0 0 clopment Volume ey Dr L 0 0 194 378 nicles ey Dr L 10 20 cent Volume ey Dr L 0 0 0 cey Dr L 10 20 cent Volume ey Dr L 0 0 0 cey Dr L 10 20 cent Volume ey Dr L 0 0 0 cey Dr L 10 20 cent Volume ey Dr L 0 0 0 cey Dr L 10 20 cey Dr L 10 20 cey Dr L 0 0 cey Dr	U O O O O O O O O O O O O O O O O O O O	R	NB Oroach M7 NB O Oroach M7 NB	L 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	U	Approach R 0 0 Approach R 33 52 Approach R 2 3 Approach R 0 0 Approach R 0 0 Approach R 0 0 Approach R 0 0 Approach R 0 R	The Horsi EB 40 23 The Horsi EB 0 0 The Horsi EB 531 508 The Horsi EB 26 26 The Horsi EB 95 54 The Horsi EB 0 0 The Horsi EB 95 54	ey Dr L 0 0 0 ey Dr L 40 48 ey Dr L 2 2 ey Dr L 0 0 0 ey Dr L 2 2 ey Dr L 0 0 0 ey Dr L 1 0 0 0 ey Dr L 0 0 0 ey Dr
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes 10 Year Growth + Stage 2	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U 0 0 0 0 U 0 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 U 0 0 U	R	SB	L 0 0 0 L 455 228 L 24 12 L 0 0 0 L 614	Cast U	R Stage 2 Approach R 0 0 Approach R 0 0 Existing + St Approach R 200 200 Approach R 0 0 Stage 2 Approach R 0 0 O Approach R 0 0 Stage 2 Approach R 0 0 Company of the stage 2 Approach R 0 0 Company of the stage 2 Approach R 0 0 Company of the stage 2 Approach R 0 0 Company of the stage 2 Approach R 0 0 Company of the stage 2 Approach R 0 0 Company of the stage 2 Approach R 0 0 Company of the stage 2 Approach R 0 0 Company of the stage 2 Approach R 0 0 Company of the stage 2 Approach R 0 0 Company of the stage 2 Approach R 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0 age 1 Developm The Horsi WB 537 546 Heavy Vel The Horsi WB 27 26 Developm The Horsi WB 61 107 Heavy Vel The Horsi WB 65 61 Heavy Vel The Horsi WB 0 0 Heavy Vel The Horsi	ey Dr L 0 0 0 clopment Volume ey Dr L 194 378 nicles ey Dr L 100 20 nent Volume ey Dr L 0 0 clopment Volume ey Dr L 10 20 clopment Volume ey Dr L 0 0 clopment Volume ey Dr L 0 clopment Volume ey Dr	U O O O O O O O O O O O O O O O O O O O	R	NB Oroach M7 NB O Oroach M7	L 0 0 0 0 L 4 3 0 0 0 C L 0 0 0 C L 97	U	Approach R 0 0 Approach R 0 0 Approach R 33 52 Approach R 2 3 Approach R 0 0 Approach R 44 78	The Horsi EB 40 23 The Horsi EB 0 0 The Horsi EB 531 508 The Horsi EB 26 26 The Horsi EB 95 54 The Horsi EB 95 54	ey Dr L 0 0 0 ey Dr L 40 48 ey Dr L 2 2 ey Dr L 0 0 0 ey Dr L 2 2 2
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes 10 Year Growth + Stage 2 Developm	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U 0 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 0 U 0 0 0 0 U 0 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 U 0 0 U 0	R	SB	L 0 0 0 L 455 228 L 24 12 L 0 0 0 L 614	Cast U	R Stage 2 Approach R 0 0 Approach R 0 0 existing + St Approach R 200 200 Approach R 20 20 Stage 2 Approach R 0 0 Approach R 0 Approach R 20 20 Stage 2 Approach R 0 Approach R 20 Approach R 0 Approach R 0 Approach R 0 Approach R 0 Approach Approach R Approach R Approach R	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0 age 1 Deve The Horsi WB 537 546 Heavy Vel The Horsi WB 27 26 Developm The Horsi WB 61 107 Heavy Vel The Horsi WB 0 0 + Stage 2 I The Horsi WB 655 659 Heavy Vel The Horsi	ey Dr L 0 0 0 clopment Volume ey Dr L 194 378 nicles ey Dr L 100 20 nent Volume ey Dr L 0 0 clopment Volume ey Dr L 10 20 clopment Volume ey Dr L 0 0 clopment Volume ey Dr L 0 clopment Volume ey Dr	U O O O O O O O O O O O O O O O O O O O	R	NB Oroach M7 NB O Oroach M7	L 0 0 0 0 L 4 3 0 0 0 C L 0 0 0 C L 97	U	Approach R 0 0 Approach R 0 0 Approach R 33 52 Approach R 2 3 Approach R 0 0 Approach R 2 3 Approach R 7 Approach R 0 Approach R	The Hors EB	ey Dr L 0 0 0 ey Dr L 40 48 ey Dr L 2 2 ey Dr L 0 0 0 ey Dr L 2 2 ey Dr L 0 0 0 ey Dr L 0 0 ey Dr C C C C C C C C C C C C C C C C C C C
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes 10 Year Growth + Stage 2 Developm ent ent Stage 2	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U 0 0 0 0 U 0 0 0 U U 0 0 0 U U 0 0 0 U	R	SB	L 0 0 0 L 455 228 L 24 12 L 0 0 0 L 614 255 L L	Cast U	R Stage 2 Approach R 0 0 Consisting + St Approach R 200 200 Approach R 20 20 Stage 2 Approach R 0 0 Approach R 20 20 Stage 2 Approach R 20 Approach R 20 Approach R R R R R R R R R R R R R R R R R R R	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0 age 1 Deve The Horsi WB 537 546 Heavy Vel The Horsi WB 27 26 Developm The Horsi WB 61 107 Heavy Vel The Horsi WB 61 107 Heavy Vel The Horsi WB 61 107 Heavy Vel The Horsi WB 0 0 + Stage 2 I The Horsi WB 655 659 Heavy Vel The Horsi WB	ey Dr L 0 0 0 incles ey Dr L 0 0 0 elopment Vo ey Dr L 194 378 incles ey Dr L 10 20 incles ey Dr L 0 0 0 celopment Volume ey Dr L 10 20 incles ey Dr L 10 10 10 10 10 10 10 10 10 10 10 10 10	U O O O O O O O O O O O O O O O O O O O	R	NB Oroach M7 NB O Oroach M7	L 0 0 0 0 L 0 0 0 L 0 0 0 C L 0 0 C C C C	U	Approach R 0 0 Approach R 0 0 Approach R 33 52 Approach R 2 3 Approach R 0 0 Approach R 0 0 Approach R 78 Approach R 0 R 0 R 0 Approach R R R R R R R R R	The Hors EB	ey Dr L 0 0 0 ey Dr L 40 48 ey Dr L 2 2 ey Dr L 0 0 0 ey Dr L 2 2 ey Dr L 0 0 0 ey Dr L 1 0 0 0 ey Dr L 0 0 0 ey Dr L 0 0 cey Dr L 0 0 0 ey Dr L 0 0 0
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes 10 Year Growth + Stage 2 Developm	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U 0 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 0 U 0 0 0 0 U 0 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 U 0 0 U 0	R	SB	L 0 0 0 L 24 12 L 0 0 0 L 614 255 L 32	Cast U	R Stage 2 Approach R 0 0 Contact of the stage 2 Approach R 200 200 Approach R 200 200 Approach R 0 0 Approach R 0 0 Approach R 0 Approach R 0 Approach R 0 Approach R 0 R 232 220 Approach R 232	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0 age 1 Developm The Horsi WB 537 546 Heavy Vel The Horsi WB 27 26 Developm The Horsi WB 61 107 Heavy Vel The Horsi WB 61 107 Heavy Vel The Horsi WB 0 0 + Stage 2 E The Horsi WB 655 659 Heavy Vel The Horsi WB 31	ey Dr L 0 0 0 incles ey Dr L 194 378 incles ey Dr L 10 20 incles ey Dr L 10 10 10 10 10 10 10 10 10 10 10 10 10	U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	R	NB Oroach M7 NB O Oroach M7	0	U	R O O Approach R O O Approach R 33 52 Approach R 2 3 Approach R O O	The Hors EB	ey Dr L 0 0 0 ey Dr L 40 48 ey Dr L 2 2 ey Dr L 0 0 0 ey Dr L 2 2 ey Dr L 0 0 0 ey Dr L 3
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes 10 Year Growth + Stage 2 Developm ent ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	U 0 0 0 0 U 0 0 0 U U 0 0 0 U U 0 0 0 U	R	SB	L 0 0 0 L 455 228 L 24 12 L 0 0 0 L 614 255 L L	Cast U	R Stage 2 Approach R 0 0 Consisting + St Approach R 200 200 Approach R 20 20 Stage 2 Approach R 0 0 Approach R 20 20 Stage 2 Approach R 20 Approach R 20 Approach R R R R R R R R R R R R R R R R R R R	The Horsi WB Developm The Horsi WB 25 44 Heavy Vel The Horsi WB 0 0 age 1 Deve The Horsi WB 537 546 Heavy Vel The Horsi WB 27 26 Developm The Horsi WB 61 107 Heavy Vel The Horsi WB 61 107 Heavy Vel The Horsi WB 61 107 Heavy Vel The Horsi WB 0 0 + Stage 2 I The Horsi WB 655 659 Heavy Vel The Horsi WB	ey Dr L 0 0 0 incles ey Dr L 0 0 0 elopment Vo ey Dr L 194 378 incles ey Dr L 10 20 incles ey Dr L 0 0 0 celopment Volume ey Dr L 10 20 incles ey Dr L 10 10 10 10 10 10 10 10 10 10 10 10 10	U O O O O O O O O O O O O O O O O O O O	R	NB Oroach M7 NB O Oroach M7 NB O Oroach M7 NB O Oroach M7 NB O O Oroach M7 NB	L 0 0 0 0 L 0 0 0 L 0 0 0 C L 0 0 C C C C	U	Approach R 0 0 Approach R 0 0 Approach R 33 52 Approach R 2 3 Approach R 0 0 Approach R 0 0 Approach R 78 Approach R 0 R 0 R 0 Approach R R R R R R R R R	The Hors EB	ey Dr L 0 0 0 ey Dr L 40 48 ey Dr L 2 2 ey Dr L 0 0 0 ey Dr L 2 2 ey Dr L 0 0 0 ey Dr L 1 0 0 0 ey Dr L 0 0 L 0 0

Wallgrove Road/Elizabeth Drive

Light Vehicles

									Light Veh									
	Peak			rth Approa	ach Wallgro	ove		st Approac	h Elizabeth	n Dr		South App				st Approac		
	Period Start		U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00	0	75	0	183	0	561	559	0	0	17	55	63	0	0	817	327
	14:45	15:45	0	216	0	394	0	272	608	0	0	22	33	93	0	0	665	152
Existing									Heavy Vel									
	Peak	_			ach Wallgro	ove			h Elizabeth	n Dr		South App				st Approac		h Dr
	Period Start		U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00	0	21	0	23	0	38	99	0	0	7	10	56	0	0	91	79
	14:45	15:45	0	33	0	29	0	30	108 Growth R		0	2	8	73	0	0	86	44
	Peak	Time	No	rth Annros	ach Wallgro	nva	Fac	et Annroac	h Elizabeth			South App	oroach M7		Was	st Approac	h Flizahet	h Dr
	Period Start		U	R	SB	L	U	R	WB	1 1	U	R	NB	ı	U	R	EB	ı
	8:00	9:00	0.03	0.03	0.03	0.03	0.022	0.022	0.022	0.022	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02
	14:45	15:45	0.08	0.08	0.08	0.08	0.004	0.004	0.004	0.004	-0.004	-0.004	-0.004	-0.004	0.038	0.038	0.038	0.038
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Rates	Peak	Time	No	rth Approa	ach Wallgro	ove	Eas	st Approac	h Elizabeth	n Dr		South App	oroach M7		Wes	st Approac	h Elizabet	h Dr
	Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00	0.03	0.03	0.03	0.03	0.022	0.022	0.022	0.022	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02
	14:45	15:45	0.08	0.08	0.08	0.08	0.004	0.004	0.004	0.004	-0.004	-0.004	-0.004	-0.004	0.038	0.038	0.038	0.038
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40.1/	8:00	9:00	0	98	0	238	0	684	682	0	0	22	72	82	0	0	980	392
10 Year	14:45	15:45	0	389	0	709	0	283	632	0	0	21	32	89	0	0	918	210
Growth Volumes	Peak	Time	No	rth Approx	ach Wallgro	ove	Fac	st Approac	Heavy Veh h Elizabeth			South App	oroach M7		Wes	st Approac	h Flizabeti	h Dr
• JIGITIES	Period Start	_	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00	0	27	0	30	0	46	121	0	0	9	13	73	0	0	109	95
	14:45	15:45	0	59	0	52	0	31	112	0	0	2	8	70	0	0	119	61
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	8:00	9:00						0.5				ļ	0.1					0.1
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	Period Start	_	U	R R	sB	L	U	R R	h Elizabeth WB	ווי	U	South App	NB	ı	U	st Approac	EB	L
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	Period Start 8:00	Period End 9:00							h Elizabeth		U			L				h Dr
	Period Start	Period End						R	h Elizabeth	Dr L				L				h Dr
	Period Start 8:00	9:00 15:45	U	R		L	U	R Stage 2	h Elizabeth WB	L L ent Volum			NB	L	U		EB	L
	Period Start 8:00 14:45	9:00 15:45	U	R	SB	L	U	R Stage 2	WB Understand WB Developm	L L ent Volum		R	NB	L	U	R	EB	L
ОИТ	Period Start 8:00 14:45 Peak Period Start 8:00	9:00 15:45 Time Period End 9:00	No U 0	rth Approa	SB ach Wallgro	L Cove L 62	East U	Stage 2 st Approac R 63	h Elizabeth WB L Developm h Elizabeth WB 0	ent Volume Dr L 0	es U 0	South App	NB oroach M7 NB 13	L L O	Wes	st Approac	EB h Elizabeti EB 0	h Dr L 13
OUT Stage 1	Period Start 8:00 14:45 Peak Period Start	9:00 15:45 Time Period End	U No U	rth Approa	SB ach Wallgro	L ove L	U Eas	Stage 2	h Elizabeth WB L Developm h Elizabeth WB 0 0	n Dr L ent Volume Dr L 0 0	es U	South App	NB oroach M7 NB	L 0 0	U Wes	R st Approac	EB h Elizabeti EB	h Dr
ОИТ	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	9:00 15:45 Time Period End 9:00 15:45	No U 0 0	R rth Approa	SB ach Wallgro SB 0 0	L 62 68	East U 0 0	Stage 2 St Approac R 63	h Elizabeth WB L Developm h Elizabeth WB 0 0 Heavy Veh	n Dr L ent Volume Dr L 0 0 onicles	es U 0	South App R 0 0	NB proach M7 NB 13 13		Wes	R st Approac R 0	EB h Elizabeti EB 0 0	h Dr L 13 6
OUT Stage 1 Developm	Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak	Period End 9:00 15:45 Time Period End 9:00 15:45 Time	No U 0 0 No	rth Approa R 6 11	SB ach Wallgro SB 0 0 ach Wallgro	L 62 68	U Eas U 0 0 0	Stage 2 Stage 2 R 63 69 St Approac	h Elizabeth WB L Developm h Elizabeth WB 0 0 Heavy Veh	n Dr L ent Volume Dr L 0 0 onicles	es U O O	South App R 0 0 South App	NB proach M7 NB 13 13 proach M7		Wes U 0 0	st Approac R 0 0	EB h Elizabeti EB 0 0	h Dr L 13 6
OUT Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start	Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End	U	R rth Approa R 6 11 rth Approa	SB ach Wallgro SB 0 0 ach Wallgro SB	L 62 68 0ve	U	Stage 2 St Approac R 63 69 St Approac R	h Elizabeth WB L Developm h Elizabeth WB 0 0 Heavy Vel h Elizabeth WB	n Dr L L O O O nicles Dr L	es U O O U	South App R 0 0 South App	NB Proach M7 NB 13 13 Proach M7 NB	0 L	Wes U	st Approac R 0 0 st Approac	EB h Elizabeti EB 0 0 h Elizabeti EB EB	h Dr L 13 6
OUT Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start 8:00	Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00	U	R rth Approa R 6 11 rth Approa R 0	SB O O Ch Wallgro SB O SB O O Ch Wallgro SB O O	L 62 68 0ve L 0	U	Stage 2 Stage 2 R 63 69 St Approac	h Elizabeth WB L Developm h Elizabeth WB 0 0 Heavy Ver h Elizabeth WB 0	n Dr L L O O O nicles D Dr L O O O O O O O O O O O O O O O O O O	es U 0 0 0 U U 0	South App R 0 0 South App R 0	NB Oroach M7 NB 13 13 Oroach M7 NB 0	0 L 0	Wes U 0 0 U 0 0	st Approac R 0 0 st Approac R 0	EB h Elizabeti EB 0 0 h Elizabeti EB 0	h Dr
OUT Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start	Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End	U	R rth Approa R 6 11 rth Approa	SB ach Wallgro SB 0 0 ach Wallgro SB	L 62 68 0ve	U	Stage 2 St Approac R 63 69 St Approac R 0 0	h Elizabeth WB L Developm h Elizabeth WB 0 0 Heavy Vel h Elizabeth WB	n Dr L L O O O nicles D O O O	U 0 0 0 U 0 0 0	South App R 0 0 South App	NB Proach M7 NB 13 13 Proach M7 NB	0 L	Wes U	st Approac R 0 0 st Approac	EB h Elizabeti EB 0 0 h Elizabeti EB EB	h Dr L 13 6
OUT Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start 8:00	Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45	No U 0 0 U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	R rth Approa	SB O O Ch Wallgro SB O SB O O Ch Wallgro SB O O	L 62 68 DVe L 0 0	Eas U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Stage 2 St Approac R 63 69 St Approac R 0 0 Existing + St	h Elizabeth WB L Developm h Elizabeth WB 0 0 Heavy Ver h Elizabeth WB 0 0	n Dr L nent Volume n Dr L 0 0 icles n Dr L 0 0 icles n Dr L 0 0 lopment Volume	U 0 0 0 U 0 0 0	South App R 0 0 South App R 0	NB oroach M7 NB 13 13 NB Oroach M7 NB 0 0	0 L 0	Wes U 0 0 0 Wes	st Approac R 0 0 st Approac R 0	H Elizabeti EB 0 0 h Elizabeti EB 0 0	h Dr 13 6 h Dr L 0 0
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Stage 1 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45	No U 0 0 0 No U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0 0 U 0	R rth Approa R 6 11 rth Approa R 0 0 rth Approa R 81	SB O O O O O O O O O O O O O O O O O O O	L 62 68 00ve L 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Eas U 0 0 0 Eas U 0 0 0 0 Eas U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Stage 2 Stage 2 R 63 69 St Approac R 0 0 Existing + St st Approac R 624	h Elizabeth WB L Developm h Elizabeth WB 0 0 Heavy Veh h Elizabeth WB 0 0 cage 1 Deve h Elizabeth WB 559	n Dr L leent Volume n Dr L 0 0 nicles n Dr L 0 0 lopment Vo	es U O O O O O O O O O O O O O O O O O O	South App R 0 0 South App R 0 0 South App R 17	NB Droach M7 NB 13 13 Droach M7 NB 0 0 Droach M7 NB 68	0 L 0 0	Wes U 0 0 0 Wes U 0 0 0	st Approac R 0 0 st Approac R 0 0 st Approac	EB h Elizabeti EB 0 h Elizabeti EB 0 h Elizabeti EB 817	h Dr L 13 6 h Dr L 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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Stage 1 Developm ent Volumes Existing + Stage 1 Developm	Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45	No	rth Approa R 6 11 rth Approa R 0 0 orth Approa R 81 227	SB O O O O O O O O O O O O O O O O O O O	L 62 68 0ve L 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Eas U 0 0 0 Eas U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Stage 2 St Approac R 63 69 St Approac R 0 0 Existing + St St Approac R 624 341	h Elizabeth WB L Developm h Elizabeth WB 0 0 Heavy Veh h Elizabeth WB 0 0 cage 1 Deve h Elizabeth WB 559 608 Heavy Veh	n Dr L lent Volume Dr L 0 0 nicles Dr L 0 0 lopment Volume L 0 0 lopment Volume Dr L 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	es U O O O O O O O O O O O O O O O O O O	South App R 0 0 South App R 0 0 South App R 17 22	NB Oroach M7 NB 13 13 Oroach M7 NB 0 0 NB 68 46	0 L 0 0	Wes U 0 0 0 Wes U 0 0 0 0	st Approac R 0 0 st Approac R 0 0 st Approac R 0 0 o	EB h Elizabet EB 0 h Elizabet EB 0 h Elizabet EB 817 665	h Dr L 13 6 h Dr L 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45	U	rth Approa R 6 11 rth Approa R 0 0 rth Approa R 227	SB O O O O O O O O O O O O O O O O O O O	L 62 68	Eas U 0 0 0 0 0 Eas C U 0 0 0 0 0 Eas C U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Stage 2 St Approac R 63 69 St Approac R 0 0 Existing + St st Approac R 624 341	h Elizabeth WB L Developm h Elizabeth WB 0 0 Heavy Ver h Elizabeth WB 0 0 age 1 Deve h Elizabeth WB 559 608 Heavy Ver h Elizabeth	n Dr L lent Volume Dr L 0 0 nicles Dr L 0 0 lopment Volume L 0 0 lopment Volume Dr L 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	es U O O O O O O O O O O O O O O O O O O	South App R 0 0 South App R 0 0 South App R 17 22 South App	NB oroach M7 NB 13 13 oroach M7 NB 0 0 oroach M7 NB 68 46 oroach M7	0 L 0 0 L 63 93	Wes U 0 0 0 Wes U 0 0 0 Wes	st Approac R 0 0 st Approac R 0 0 st Approac R 0 0 st Approac	H Elizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB 817 665	h Dr L 13 6 h Dr L 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45	U	rth Approa R 6 11 rth Approa R 0 0 rth Approa R 227	SB O O O O O O O O O O O O O O O O O O O	L 62 68	Eas U 0 0 0 0 0 Eas C U 0 0 0 0 0 Eas C U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Stage 2 St Approac R 63 69 St Approac R 0 0 Existing + St st Approac R 624 341	h Elizabeth WB L Developm h Elizabeth WB 0 0 Heavy Ver h Elizabeth WB 0 0 age 1 Deve h Elizabeth WB 559 608 Heavy Ver h Elizabeth	n Dr L lent Volume Dr L 0 0 nicles Dr L 0 0 lopment Volume L 0 0 lopment Volume Dr L 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	es U O O O O O O O O O O O O O O O O O O	South App R 0 0 South App R 0 0 South App R 17 22 South App	NB oroach M7 NB 13 13 oroach M7 NB 0 0 oroach M7 NB 68 46 oroach M7	0 L 0 0 L 63 93	Wes U 0 0 0 Wes U 0 0 0 Wes	st Approac R 0 0 st Approac R 0 0 st Approac R 0 0 st Approac	H Elizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB 817 665	h Dr L 13 6 h Dr L 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	No	rth Approa R 6 11 rth Approa R 0 0 rth Approa R 81 227 rth Approa R 21 33	sB 0 0 0 ach Wallgro SB 0 0 ach Wallgro SB 0 0 ach Wallgro SB 0 0 sch Wallgro SB 0 0	L 62 68	Eas U 0 0 0 Eas U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Stage 2 St Approac R 63 69 St Approac R 0 Existing + St St Approac R 624 341 St Approac R 38 30 Stage 2	h Elizabeth WB Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB O O age 1 Deve h Elizabeth WB 559 608 Heavy Ver h Elizabeth WB 99 108	n Dr L O O nicles Dr L O O O nicles Dr L O O O Iopment Vo	U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	South App R 0 0 South App R 0 0 South App R 17 22 South App R 7	NB oroach M7 NB 13 13 oroach M7 NB 0 0 oroach M7 NB 68 46 oroach M7 NB 8	0 0 0 0 L 63 93	Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0	st Approac R 0 0	HEIIZABET BEB O O HEIIZABET EB O O HEIIZABET EB 817 665 HEIIZABET EB 91 86	h Dr L 13 6 h Dr L 0 0 158 h Dr L 340 158
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	No	rth Approa R 6 11 rth Approa R 0 0 rth Approa R 81 227 rth Approa R 21 33	SB O O O O O O O O O O O O O O O O O O	L 62 68	Eas U 0 0 0 Eas U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Stage 2 St Approac R 63 69 St Approac R 0 Existing + St St Approac R 624 341 St Approac R 38 30 Stage 2	h Elizabeth WB L Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB O O age 1 Dever h Elizabeth WB 559 608 Heavy Ver h Elizabeth WB 99 108	n Dr L O O nicles Dr L O O O nicles Dr L O O O Iopment Vo	U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	South App R 0 0 South App R 0 0 South App R 17 22 South App R 7 2	NB oroach M7 NB 13 13 oroach M7 NB 0 0 oroach M7 NB 68 46 oroach M7 NB 8	0 0 0 0 L 63 93	Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0	st Approac R 0 0	HEIIZABET BEB O O HEIIZABET EB O O HEIIZABET EB 817 665 HEIIZABET EB 91 86	h Dr L 13 6 h Dr L 0 0 158 h Dr L 340 158
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	No	rth Approa R 6 11 rth Approa R 0 0 rth Approa R 81 227 rth Approa R 21 33 rth Approa	SB O O O O O O O O O O O O O O O O O O O	L 62 68 0ve L 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Eas U 0 0 0 0 Eas U 0 0 0 0 Eas C 0 0 0 0 0 Eas C 0 0 0 0 0 Eas C 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Stage 2 Stage 2 St Approac R 63 69 St Approac R 0 0 Existing + St St Approac R 624 341 St Approac R 38 30 Stage 2 St Approac	h Elizabeth WB L Developm h Elizabeth WB O O Heavy Veh h Elizabeth WB O O cage 1 Deve h Elizabeth WB 559 608 Heavy Veh h Elizabeth WB 99 108 2 Developm h Elizabeth WB	ent Volument	U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	R	NB Oroach M7 NB 13 13 Droach M7 NB 0 0 Oroach M7 NB 68 46 Droach M7 NB 10 8 Droach M7 NB 10 8	0 L 0 0 0 L 63 93 L 56 73	Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 Wes U 0 0 0	st Approac R 0 0 st Approac	EB h Elizabet EB 0 0 h Elizabet EB 0 0 h Elizabet EB 817 665 h Elizabet EB 91 86	h Dr L 13 6 h Dr L 0 0 0 h Dr L 340 158 h Dr L 79 44
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	No	rth Approa R 6 11 rth Approa R 0 0 orth Approa R 81 227 rth Approa R 21 33	SB O O O O O O O O O O O O O O O O O O O	L 62 68 0ve L 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Eas U 0 0 0 0 0 0 0 Eas U 0 0 0 0 Eas U 0 0 0 0 0 Eas U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Stage 2 st Approac R 63 69 st Approac R 0 0 Existing + St st Approac R 624 341 st Approac R 38 30 Stage 2 st Approac	h Elizabeth WB L Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB O O cage 1 Dever h Elizabeth WB 559 608 Heavy Ver h Elizabeth WB 99 108 2 Developm h Elizabeth WB O O O O O	ent Volume Dr L 0 0 onicles Dr L 0 onicles Dr	es U 0 0 0 U 0 0 columes U 0 0 0 0 columes U 0 0 0 U 0 0 U 0 0 U 0 U 0 U 0 U 0 U	South App R 0 0 South App R 0 0 South App R 17 22 South App R 7 2	NB Oroach M7 NB 13 13 Droach M7 NB 0 0 Oroach M7 NB 68 46 Droach M7 NB 10 8	0 L 0 0 63 93 L 56 73	Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 Wes U 0 0 U 0 U 0 U 0 U 0 U 0 U 0 U 0 U 0	st Approac R 0 0 st Approac	EB h Elizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB 817 665 h Elizabeti EB 91 86 h Elizabeti EB	h Dr L 13 6 h Dr L 0 0 158 h Dr L 340 158
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	No	rth Approa R 6 11 rth Approa R 0 0 rth Approa R 81 227 rth Approa R 21 33 rth Approa R 14 27	SB O O O O O O O O O O O O O O O O O O O	L 62 68	East U 0 0 0 East U 0 0 0 0 East U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Stage 2 st Approac R 63 69 st Approac R 0 0 existing + St st Approac R 624 341 st Approac R 38 30 Stage 2 st Approac R 154 169	h Elizabeth WB L Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB O O cage 1 Dever h Elizabeth WB 559 608 Heavy Ver h Elizabeth WB 99 108 Developm h Elizabeth WB O O Heavy Ver h Elizabeth	ent Volume Dr L 0 0 onicles Dr L 0 onicles	U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	South App R 0 0 South App R 0 0 South App R 17 22 South App R 7 2 South App R 0 0 0	NB oroach M7 NB 13 13 oroach M7 NB 0 0 oroach M7 NB 68 46 oroach M7 NB 10 8 oroach M7 NB 10 10 10 10 10 10 10 10 10 1	0 L 0 0 0 L 63 93 L 56 73	Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0 Wes	st Approac R 0 0	Helizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB 817 665 h Elizabeti EB 91 86 h Elizabeti EB 0 0	h Dr L 13 6 h Dr L 0 0 158 h Dr L 340 158 h Dr L 79 44
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	No	rth Approa R 6 11 rth Approa R 0 0 rth Approa R 81 227 rth Approa R 21 33 rth Approa R 14 27	sB 0 0 ach Wallgro	L 62 68	Eas U 0 0 0 0 Eas U 0 0 0 Eas U 0 0 0 Eas U 0 0 Eas Eas	Stage 2 Stage 2 St Approac R 63 69 St Approac R 0 0 Existing + St St Approac R 624 341 St Approac R 38 30 Stage 2 St Approac R 154 169	h Elizabeth WB Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB S59 608 Heavy Ver h Elizabeth WB 99 108 Developm h Elizabeth WB 99 108 Developm h Elizabeth Heavy Ver h Elizabeth	ent Volume Dr L 0 0 onicles Dr L 0 onicles	U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	South App R 0 0 0 South App R 0 0 South App R 17 22 South App R 7 2 South App R 0 0 South App R 7 2 South App R 0 0 South App R 7 2	NB oroach M7 NB 13 13 oroach M7 NB 0 0 oroach M7 NB 68 46 oroach M7 NB 10 8 oroach M7 NB 10 8 oroach M7	0 L 0 0 0 L 63 93 L 56 73	Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 Wes U 0 0 Wes U 0 0 Wes	st Approac R 0 0 st Approac	h Elizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB 817 665 h Elizabeti EB 91 86 h Elizabeti EB 0 0	h Dr L 13 6 h Dr L 0 0 158 h Dr L 340 158 h Dr L 79 44 h Dr L 31 15
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45	No	rth Approa R 6 11 rth Approa R 0 0 rth Approa R 81 227 rth Approa R 21 33 rth Approa R 21 33 rth Approa R 14 27 rth Approa	SB O O O O O O O O O O O O O O O O O O O	L	Eas U 0 0 0 0 Eas U 0 0 U 0 Eas	Stage 2 St Approac R 63 69 St Approac R 0 0 Existing + St St Approac R 624 341 St Approac R 38 30 Stage 2 St Approac R 154 169 St Approac R	h Elizabeth WB Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB S59 608 Heavy Ver h Elizabeth WB 99 108 Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB WB WB WB WB WB WB Developm H Elizabeth WB O O Heavy Ver h Elizabeth WB	n Dr L O O O nicles Dr L O O O O O O O O O O O O O O O O O O	U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	South App R 0 0 South App R 0 0 South App R 17 22 South App R 7 2 South App R 0 0 South App R 7 2 South App R 7 2	NB oroach M7 NB 13 13 oroach M7 NB 0 0 oroach M7 NB 68 46 oroach M7 NB 10 8 oroach M7 NB 10 8 oroach M7 NB 10 NB 10 NB NB NB NB NB NB NB NB NB N	0 0 0 0 L 63 93 L 56 73	Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 Wes U 0 0 Wes U 0 0 U 0 U 0 U 0 U 0 U 0 U 0 U 0 U 0	st Approac R 0 0	h Elizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB 817 665 h Elizabeti EB 91 86 h Elizabeti EB 0 0 h Elizabeti EB	h Dr L 13 6 h Dr L 0 0 158 h Dr L 340 158 h Dr L 79 44 h Dr L 31 15
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	No	rth Approa R 6 11 rth Approa R 0 0 rth Approa R 81 227 rth Approa R 21 33 rth Approa R 14 27 rth Approa R 0 0	SB O O Ch Wallgro SB O O	L	Eas U 0 0 0 0 Eas U 0 0 0 Eas U 0 0 0 Eas U 0 0 Eas Eas	Stage 2 Stage 2 St Approac R 63 69 St Approac R 0 0 Existing + St St Approac R 624 341 St Approac R 38 30 Stage 2 St Approac R 154 169	h Elizabeth WB Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB O O age 1 Deve h Elizabeth WB 559 608 Heavy Ver h Elizabeth WB 99 108 Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB O O O O O O O O O O O O O O O O O O	n Dr L O O O nicles Dr L O O O O Iolopment Volume D O O O O O Iolopment Volume D O O O O O O O O O O O O O O O O O O	U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	South App R 0 0 0 South App R 17 22 South App R 7 2 South App R 0 0 South App R 7 2 South App R 7 2	NB oroach M7 NB 13 13 oroach M7 NB 0 0 oroach M7 NB 68 46 oroach M7 NB 10 8 oroach M7 NB 10 8 oroach M7 NB 10 NB 10	L 63 93 L 56 73 L 0 0	Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 Wes U 0 0 Wes U 0 0 Wes	st Approac R 0 0	h Elizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB 817 665 h Elizabeti EB 91 86 h Elizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB 0 0	h Dr L 13 6 h Dr L 340 158 h Dr L 340 158 h Dr L 79 44 h Dr L 31 15
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45	No	rth Approa R 6 11 rth Approa R 0 0 rth Approa R 81 227 rth Approa R 21 33 rth Approa R 21 33 rth Approa R 14 27 rth Approa	SB O O O O O O O O O O O O O O O O O O O	L	Eas U 0 0 0 0 Eas U 0 0 0 0 Eas U 0 0 0 Eas U 0 0 0 Eas U 0 0 0	Stage 2 St Approac R 63 69 St Approac R 0 0 Existing + St St Approac R 624 341 St Approac R 38 30 Stage 2 St Approac R 154 169 St Approac R 0 0 0 0	h Elizabeth WB Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB S59 608 Heavy Ver h Elizabeth WB 99 108 Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB WB WB WB WB WB WB Developm H Elizabeth WB O O Heavy Ver h Elizabeth WB	n Dr L O O O nicles D O O O O O O O O O O O O O O O O O O	U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	South App R 0 0 0 South App R 0 0 South App R 17 22 South App R 7 2 South App R 0 0 South App R 0 0 South App R 0 0 0	NB oroach M7 NB 13 13 oroach M7 NB 0 0 oroach M7 NB 68 46 oroach M7 NB 10 8 oroach M7 NB 10 8 oroach M7 NB 10 NB 10 NB NB NB NB NB NB NB NB NB N	0 0 0 0 L 63 93 L 56 73	Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 Wes U 0 0 Wes U 0 0 U 0 U 0 U 0 U 0 U 0 U 0 U 0 U 0	st Approac R 0 0	h Elizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB 817 665 h Elizabeti EB 91 86 h Elizabeti EB 0 0 h Elizabeti EB	h Dr L 13 6 h Dr L 0 0 158 h Dr L 340 158 h Dr L 79 44 h Dr L 31 15
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	No	rth Approa R 6 11 rth Approa R 0 0 rth Approa R 81 227 rth Approa R 21 33 rth Approa R 14 27 rth Approa 0 0 rth Approa 0 0	SB O O Ch Wallgro SB O O	L	East U 0 0 0 10 Y 10 Y 10 Y 10 Y 10 Y 10 Y 1	Stage 2 St Approac R 63 69 St Approac R 0 0 Existing + St 4Approac R 624 341 St Approac R 38 30 Stage 2 St Approac R 154 169 St Approac R 0 0 0 car Growth	h Elizabeth WB Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB O O age 1 Deve h Elizabeth WB 559 608 Heavy Ver h Elizabeth WB 99 108 Developm h Elizabeth WB O O O Heavy Ver h Elizabeth WB O O O O O O O O O O O O O O O O O O	ent Volume Dr L 0 0 in Dr Dr L 0 0 in Dr	U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	South App R 0 0 0 South App R 0 0 South App R 17 22 South App R 7 2 South App R 0 0 South App R 0 0 South App R 0 0 0	NB oroach M7 NB 13 13 oroach M7 NB 0 0 oroach M7 NB 68 46 oroach M7 NB 10 8 oroach M7 NB 10 8 oroach M7 NB 10 8 oroach M7 NB 0 0 oroach M7 NB 10 0 oroach M7 NB 10 0 oroach M7 NB 0 oroach M7 NB 31 oroach M7 NB 0 0	L 63 93 L 56 73 L 0 0	Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0	st Approac R 0 0	HEIIZABET BB O O HEIIZABET EB O O HEIIZABET EB 817 665 HEIIZABET EB 91 86 HEIIZABET EB O O h Elizabet EB 91 86 HEIIZABET EB O O	h Dr L 13 6 h Dr L 340 158 h Dr L 340 158 h Dr L 79 44 h Dr L 31 15
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	No	rth Approa R 6 11 rth Approa R 0 0 rth Approa R 81 227 rth Approa R 21 33 rth Approa R 14 27 rth Approa 0 0 rth Approa 0 0	SB O O O O O O O O O O O O O O O O O O O	L	East U 0 0 0 10 Y 10 Y 10 Y 10 Y 10 Y 10 Y 1	Stage 2 St Approac R 63 69 St Approac R 0 0 Existing + St 4Approac R 624 341 St Approac R 38 30 Stage 2 St Approac R 154 169 St Approac R 0 0 0 car Growth	h Elizabeth WB L Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB 559 608 Heavy Ver h Elizabeth WB 99 108 2 Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB	ent Volume Dr L 0 0 in Dr Dr L 0 0 in Dr	U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	South App R 0 0 South App R 0 0 South App R 17 22 South App R 7 2 South App R 0 0 South App R 0 R	NB oroach M7 NB 13 13 oroach M7 NB 0 0 oroach M7 NB 68 46 oroach M7 NB 10 8 oroach M7 NB 10 8 oroach M7 NB 10 8 oroach M7 NB 0 0 oroach M7 NB 10 0 oroach M7 NB 10 0 oroach M7 NB 0 oroach M7 NB 31 oroach M7 NB 0 0	L 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0	st Approac R 0 0 0 st Approac R 0 0	HEIIZABET BB O O HEIIZABET EB O O HEIIZABET EB 817 665 HEIIZABET EB 91 86 HEIIZABET EB O O h Elizabet EB 91 86 HEIIZABET EB O O	h Dr L 13 6 h Dr L 340 158 h Dr L 340 158 h Dr L 79 44 h Dr L 31 15
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	No	rth Approa R 6 11 rth Approa R 0 0 rth Approa R 81 227 rth Approa R 21 33 rth Approa R 14 27 rth Approa R 14 27 rth Approa R 14 27	SB O O O O O O O O O O O O O O O O O O O	L	East U 0 0 0 10 Y 10 Y 10 Y 10 Y 10 Y 10 Y 1	Stage 2 st Approac R 63 69 st Approac R 0 0 Existing + St st Approac R 38 30 Stage 2 st Approac R 154 169 st Approac R 0 0 ear Growth st Approac R 8 838	h Elizabeth WB Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB 559 608 Heavy Ver h Elizabeth WB 99 108 Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB	ent Volume Dr L 0 0 0 onicles Dr L 0 0 onicles Dr L 0 0 onicles Dr L 0 onicles	es U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	South App R 0 0 South App R 17 22 South App R 7 22 South App R 0 0 South App R 0 0 South App R 0 0 South App R 2	NB oroach M7 NB 13 13 oroach M7 NB 0 0 oroach M7 NB 68 46 oroach M7 NB 10 8 oroach M7 NB 10 8 oroach M7 NB 10 0 oroach M7 NB 10 Oroach M7 NB 10 NB 10 Oroach M7	L 0 0 0 0 L 0 0 0 L 2 2 2 2 2 2 2 2 2 2	Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 Wes U 0 0 Wes U 0 0 Wes U 0 0 Wes	st Approac R 0 0 st Approac R 0 0 st Approac R 0 0 st Approac R 0 0 st Approac R 0 0 st Approac R 0 0 st Approac R 0 0 st Approac R 0 0 st Approac R 0 0 st Approac R 0 0	h Elizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB 817 665 h Elizabeti EB 91 86 h Elizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB 91 86	h Dr L 13 6 h Dr L 0 0 158 h Dr L 340 158 h Dr L 79 44 h Dr L 31 15 h Dr L 423
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	No	rth Approa R 6 11 rth Approa R 0 0 rth Approa R 81 227 rth Approa R 21 33 rth Approa R 14 27 rth Approa R 0 0 rth Approa R 14 R 0 0 rth Approa R R R R R R R R R R R R R R R R R R R	SB O O O O O O O O O O O O O O O O O O O	L	East U 0 0 0 East U 0 0 0 0 East U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Stage 2 st Approac R 63 69 st Approac R 0 0 existing + St st Approac R 38 30 Stage 2 st Approac R 154 169 st Approac R 0 0 ear Growth st Approac R R R R R R R R R R R R R R R R R R R	h Elizabeth WB L Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB S59 608 Heavy Ver h Elizabeth WB 99 108 Developm h Elizabeth WB O O Heavy Ver h Elizabeth	ent Volume Dr L 0 0 obicles Dr L Obicles Dr L Obicles Dr Dr Dr Dr Dr Dr Dr Dr Dr D	es U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	South App R 0 0 South App R 0 0 South App R 17 22 South App R 7 2 South App R 0 0 South App R 0 R	NB oroach M7 NB 13 13 oroach M7 NB 0 0 oroach M7 NB 68 46 oroach M7 NB 10 8 oroach M7 NB 10 8 oroach M7 NB 10 0 oroach M7 NB 10 NB 10 0 oroach M7 NB 31 31 oroach M7 NB Oroach M7 NB NB NB NB NB NB NB NB NB N	L 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 U 0 U 0 U 0 U 0 U 0 U 0 U 0 U 0	st Approac R 0 0 st Approac	h Elizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB 817 665 h Elizabeti EB 91 86 h Elizabeti EB 0 0 h Elizabeti EB 0 h Elizabeti EB 0 h Elizabeti EB	h Dr L 13 6 h Dr L 0 0 h Dr L 340 158 h Dr L 79 44 h Dr L 31 15 h Dr L 0 0 h Dr L 0 0 h Dr L 0 0 h Dr
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	No	rth Approa R 6 11 rth Approa R 0 0 rth Approa R 81 227 rth Approa R 21 33 rth Approa R 14 27 rth Approa R 14 27 rth Approa R 14 27	sB 0 0 ach Wallgro SB 0 0 0	L	East U 0 0 0 10 Y East U 0 0 0 10 Y East U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Stage 2 st Approac R 63 69 st Approac R 0 0 existing + St st Approac R 624 341 st Approac R 38 30 Stage 2 st Approac R 154 169 st Approac R 0 0 0 ear Growth st Approac R 8 38 452	h Elizabeth WB Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB S59 608 Heavy Ver h Elizabeth WB 99 108 Developm h Elizabeth WB O O heavy Ver h Elizabeth WB 99 108 Developm h Elizabeth WB O O Heavy Ver h Elizabeth	n Dr L lent Volume n Dr L 0 0 0 lopment Vol n Dr L 0 0 lopment Vol n Dr L 0 0 lopment Volume n Dr L 0 lopment Vo	es U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	R O O	NB oroach M7 NB 13 13 13 oroach M7 NB 0 0 oroach M7 NB 68 46 oroach M7 NB 10 8 oroach M7 NB 10 NB 10 0 oroach M7 NB 10 NB 31 31 oroach M7 NB 0 0 oroach M7 NB 31 31 oroach M7 NB 0 0 oroach M7	L 0 0 0 0 L 0 0 0 L 2 2 2 2 2 2 2 2 2 2	Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0 0 Wes	st Approac R 0 0 st Approac	h Elizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB 817 665 h Elizabeti EB 91 86 h Elizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB 91 86	h Dr L 13 6 h Dr L 0 0 158 h Dr L 340 158 h Dr L 79 44 h Dr L 31 15 h Dr L 423 225
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes 10 Year Growth + Stage 2	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	No	rth Approa R 6 11 rth Approa R 0 0 rth Approa R 81 227 rth Approa R 21 33 rth Approa R 14 27	sB 0 0 0 ach Wallgro SB 0 0 0 ach Wallgro SB 0 0 0 ach Wallgro SB 0 ach Wallgro	L	Eas U 0 0 0 0 Eas U 0 0 0 0 Eas U 0 0 0 10 Eas U 0 0 0 10 Eas U 0 0 0 10 Feas	Stage 2 st Approac R 63 69 st Approac R 0 0 existing + St st Approac R 624 341 st Approac R 38 30 Stage 2 st Approac R 154 169 st Approac R 0 0 0 ear Growth st Approac R 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	h Elizabeth WB Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB S59 608 Heavy Ver h Elizabeth WB 99 108 Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB Heavy Ver h Elizabeth WB Heavy Ver h Elizabeth WB O Heavy Ver h Elizabeth	n Dr L O O O O O O O O O O O O O O O O O O	es U O O O O O O O O O O O O O O O O O O	R O O	NB oroach M7 NB 13 13 oroach M7 NB 0 0 oroach M7 NB 68 46 oroach M7 NB 10 8 oroach M7 NB 10 8 oroach M7 NB 10 NB 31 31 oroach M7 NB 0 0 oroach M7	0	Wes U 0 0 0 Wes U 0 0 Wes U 0 0 Wes U 0 0 Wes	st Approac R 0 0 st Approac	h Elizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB 817 665 h Elizabeti EB 91 86 h Elizabeti EB 0 0 h Elizabeti EB 91 86 h Elizabeti EB 91 86 h Elizabeti EB 91 86 h Elizabeti EB 0 0 h Elizabeti	h Dr L 13 6 h Dr L 340 158 h Dr L 340 158 h Dr L 79 44 h Dr L 31 15 h Dr L 31 15 h Dr L 31 15
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes 10 Year Growth + Stage 2 Developm	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45	No	R R R R R R R R R R	SB O O O O O O O O O O O O O O O O O O O	L	Eas U 0 0 0 0 Eas U 0 0 0 Eas	Stage 2 st Approac R 63 69 st Approac R 0 0 existing + St st Approac R 624 341 st Approac R 38 30 Stage 2 st Approac R 154 169 st Approac R 0 0 ear Growth st Approac R 838 452	h Elizabeth WB Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB S59 608 Heavy Ver h Elizabeth WB 99 108 Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB	n Dr L O O O O O O O O O O O O O O O O O O	U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	R	NB oroach M7 NB 13 13 oroach M7 NB 0 0 oroach M7 NB 68 46 oroach M7 NB 10 8 oroach M7 NB 10 8 oroach M7 NB 10 8 oroach M7 NB 31 oroach M7 NB 31 oroach M7 NB 0 0 oroach M7 NB 0 0 oroach M7 NB 0 NB 0 oroach M7 NB 0 NB 0 oroach M7 NB NB 0 oroach M7 NB NB NB NB NB NB NB NB NB N	0	Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 0 Wes U 0 0 U 0 U 0 U 0 U 0 U 0 U 0 U 0 U 0	st Approac R 0 0 st Approac	h Elizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB 817 665 h Elizabeti EB 91 86 h Elizabeti EB 0 0 h Elizabeti EB 91 86 h Elizabeti EB 91 86 h Elizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB EB 0 0 h Elizabeti EB EB 0 0 h Elizabeti EB EB 0 EB 0 EB 0 D	h Dr L 340 158 h Dr L 340 158 h Dr L 340 158 h Dr L 423 225 h Dr L
Stage 1 Developm ent Volumes Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes 10 Year Growth + Stage 2 Developm ent ent Stage 2	Period Start 8:00 14:45 Peak Period Start 8:00 14:45	Period End 9:00 15:45 Time Period End 9:00 15:45	No	rth Approa R 6 11 rth Approa R 0 0 rth Approa R 81 227 rth Approa R 21 33 rth Approa R 14 27	sB 0 0 0 ach Wallgro SB 0 0 0 ach Wallgro SB 0 0 0 ach Wallgro SB 0 ach Wallgro	L	Eas U 0 0 0 0 Eas U 0 0 0 0 Eas U 0 0 0 10 Eas U 0 0 0 10 Eas U 0 0 0 10 Feas	Stage 2 st Approac R 63 69 st Approac R 0 0 existing + St st Approac R 624 341 st Approac R 38 30 Stage 2 st Approac R 154 169 st Approac R 0 0 0 ear Growth st Approac R 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	h Elizabeth WB Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB S59 608 Heavy Ver h Elizabeth WB 99 108 Developm h Elizabeth WB O O Heavy Ver h Elizabeth WB Heavy Ver h Elizabeth WB Heavy Ver h Elizabeth WB O Heavy Ver h Elizabeth	n Dr L O O O O O O O O O O O O O O O O O O	es U O O O O O O O O O O O O O O O O O O	R O O	NB oroach M7 NB 13 13 oroach M7 NB 0 0 oroach M7 NB 68 46 oroach M7 NB 10 8 oroach M7 NB 10 8 oroach M7 NB 10 NB 31 31 oroach M7 NB 0 0 oroach M7	0	Wes U 0 0 0 Wes U 0 0 Wes U 0 0 Wes U 0 0 Wes	st Approac R 0 0 st Approac	h Elizabeti EB 0 0 h Elizabeti EB 0 0 h Elizabeti EB 817 665 h Elizabeti EB 91 86 h Elizabeti EB 0 0 h Elizabeti EB 91 86 h Elizabeti EB 91 86 h Elizabeti EB 91 86 h Elizabeti EB 0 0 h Elizabeti	h Dr L 13 6 h Dr L 340 158 h Dr L 340 158 h Dr L 79 44 h Dr L 31 15 h Dr L 31 15 h Dr L 31 15

Wallgrove Road/Kosovich Place

									Light Veh	icles								
	Peak	Time	No	orth Approa	ach Wallgro	ove			·	icies	So	uth Approa	ach Wallgr	ove	West	Approach	Kosovich	Place
	Period Start		U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00	0	1	316								714	2		2		2
Existing	14:45	15:45		1	759				Heavy Vel	niclos			315	1		2		1
EXISTING	Peak	Time	No	orth Approa	ach Wallgro	ove			neavy vei	licies	So	uth Approa	ach Wallgr	ove	West	Approach	Kosovich	Place
	Period Start		U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00			54								55					
	14:45	15:45			65				0 11 5				41					<u> </u>
İ	Peak	Time	No	orth Annros	ach Wallgro	ove			Growth R	ates	So	uth Approa	ach Waller	ove	West	Annroach	Kosovich	Place
	Period Start	_	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00	0.007	0.007	0.007	0.007					0.003	0.003	0.003	0.003	0	0	0	0
Growth	14:45	15:45	0.008	0.008	0.008	0.008					0.01	0.01	0.01	0.01	0	0	0	0
Rates	Peak	Timo	Ne	orth Approx	ach Wallgro	21/0			Heavy Veh	nicles	50	uth Approa	ob Wallar	01/0	West	Approach	Kosovich	Diago
	Period Start		U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00	0.007	0.007	0.007	0.007	_				0.003	0.003	0.003	0.003	0	0	0	0
	14:45	15:45	0.008	0.008	0.008	0.008					0.01	0.01	0.01	0.01	0	0	0	0
i	Peak	Times	N-	auth Amara	a a la Mallava			10 Y	ear Growth	n Volumes	C-	udb Annya	ah Wallan		West	Annyasah	Vasavish	Diseas
	Period Start		U	R R	ach Wallgro	ove	U	R	WB	1	U	uth Approa	NB	L	U	Approacn R	Kosovich EB	Place
	8:00	9:00	0	1	338	0	U		***		0	0	735	2	0	2	0	2
10 Year	14:45	15:45	0	1	820	0					0	0	347	1	0	2	0	1
Growth	D I.	T:	NI -		1- \\\ - 11				Heavy Vel	nicles	0-		l- \\\/ -		VA/ 4	A	1/	Disease
Volumes	Peak Period Start		U	R R	sB	ove	U	R	WB	1	U	uth Approa	NB	ove	U	Approacn R	Kosovich EB	Place
	8:00	9:00	0	0	58	0		11	***		0	0	57	0	0	0	0	0
	14:45	15:45	0	0	70	0					0	0	45	0	0	0	0	0
		Time -							evelopme	nt % IN			ak Mr. W		107	A	V	Dis -
	Peak Period Start		U	orth Approa	sB	ove L	U	R	WB	L	U So	uth Approa	NB	ove L	West U	Approach R	Kosovich EB	riace
	8:00	9:00		0.3	OB		U		***		U	11	IVD	0.7			LD	
Developm	14:45	15:45		0.4										0.6				
ent % IN		_							Heavy Vel	nicles								
	Peak Period Start		U	R R	sB	ove	U	R	WB	1	U	uth Approa	NB	ove	U	Approacn R	Kosovich EB	Place
	8:00	9:00		11	OB OB				****			11	ND			11	LD	
	14:45	15:45																
i	Peak	Time	Ne	orth Approx	ach Wallgro	240		D	evelopmen	t % OUT	S ₀	uth Approa	oh Wallar	01/0	Woot	Annroach	Kosovich	Place
	Period Start		U	R R	SB	L	U	R	WB	L	U	R R	NB	L	U	R	EB	L
	8:00	9:00			0.6	_								_				1
Developm	14:45	15:45			0.7													1
ent % OUT	Peak	Time	Ne	orth Approx	ach Wallgro	240			Heavy Veh	nicles	S ₀	uth Approa	oh Wallar	01/0	Woot	Annroach	Kosovich	Place
001			INC		acii waligit)V e						ulli Abbio	acii wallul	uve			KOSOVICII	riace
	Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	Period End 9:00	U	R	SB	L	U	R	WB	L								L
			U	R	SB	L	U			_	U							L
	8:00 14:45	9:00 15:45				L	U			L ent Volumo	U	R	NB	L	U	R	EB	L
	8:00	9:00 15:45 Time			SB ach Wallgro	L ove	U			_	U		NB	L	U	R		L
Stage 1	8:00 14:45 Peak Period Start 8:00	9:00 15:45 Time Period End 9:00	No U 0	orth Approa	ach Wallgro	L 0		Stage 2	. Developm	_	U es So U 0	R uth Approa	NB	ove L 88	West U 0	R Approach	EB Kosovich	Place L 113
Stage 1 Developm	8:00 14:45 Peak Period Start 8:00	9:00 15:45 Time Period End	No U	orth Approa	ach Wallgro	L		Stage 2	. Developm · WB	ent Volumo	es So	R uth Approa	NB ach Wallgr	ove	West	Approach	Kosovich EB	Place
Developm ent	8:00 14:45 Peak Period Start 8:00 14:45	9:00 15:45 Time Period End 9:00 15:45	No U 0 0	Prth Approa R 38 50	ach Wallgro SB 68 79	0 0		Stage 2	. Developm	ent Volumo	U es So U 0 0	R uth Approa	NB ach Wallgr NB 0	L 88 75	West U 0	Approach R 0	Kosovich EB 0	Place L 113 113
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Developm ent	8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start 8:00	9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00	No U 0 0 No U 0 0	orth Approx R 38 50 orth Approx R 0	SB 68 79 ach Wallground SB 0	0 0 0 ove L	U	Stage 2	. Developm . WB . Heavy Veh	ent Volume	U	R uth Approx R 0 0 uth Approx R 0	NB ach Wallgr NB 0 0 ach Wallgr NB 0	L 88 75 0ve L 0	West U 0 0 West U 0	Approach R 0 0 Approach R 0	Kosovich EB 0 0 Kosovich EB 0	Place
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Developm ent Volumes Existing + Stage 1	8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak Period Start 8:00 14:45	9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45	No U 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	orth Approa R 38 50 orth Approa R	ach Wallgro SB 68 79 ach Wallgro SB 0 0	L 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	U	Stage 2	. Developm . WB . Heavy Veh . WB . age 1 Deve	L L L L L L L L L L L L L L L L L L L	U	R uth Approx R 0 0 uth Approx R 0 0 uth Approx R R R	NB ach Wallgr NB 0 ach Wallgr NB 0 0 ach Wallgr NB NB	L	U	Approach R 0 0 Approach R 0 Approach R R R	Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB EB	Place L 113 113 Place L 0 0 Place L
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Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes 10 Year Growth + Stage 2 Developm	8:00 14:45 Peak Period Start 8:00 14:45	9:00 15:45 Time Period End 9:00 15:45	No U O O O O O O O O O	orth Approx R 38 50 orth Approx R 0 0 orth Approx R 39 51 orth Approx R 0 0 orth Approx R 92 123	ach Wallgro SB 68 79 ach Wallgro SB 0 0 0 ach Wallgro SB 384 838 ach Wallgro SB 54 65 ach Wallgro SB 163 190 ach Wallgro SB 163 190 ach Wallgro SB 58 50 0 0	L	U U U U U U U U U U U U U U U U U U U	Stage 2 R R Existing + Stage 2 R R R Stage 2	Developm WB Heavy Veh WB age 1 Deve WB Heavy Veh WB Heavy Veh WB P Developm WB Heavy Veh WB Heavy Veh WB WB	lent Volume L lopment Volume	U	uth Approx R 0 0	NB ach Wallgr NB 0 0 ach Wallgr NB 0 0 ach Wallgr NB 714 315 ach Wallgr NB 55 41 ach Wallgr NB 0 0 ach Wallgr NB 55 41 Ach Wallgr NB 0 0 ach Wallgr NB 315	L	West U 0 0 West U 0 0 West U 0 0 West U 0 0 West U 0 0	Approach R 0 0 Approach R 0 0 Approach R 2 2 Approach R 0 0 Approach R 0 0 Approach R 0 0 Approach R 2 2 2	Kosovich EB 0 0 0 Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB 0 0 0	Place
Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes 10 Year Growth + Stage 2	8:00 14:45 Peak Period Start 8:00 14:45	9:00 15:45 Time Period End 9:00 15:45	No U O O O O O O O O O	orth Approx R 38 50 orth Approx R 0 0 orth Approx R 39 51 orth Approx R 0 0 orth Approx R 92 123 orth Approx R 92 123 orth Approx R 0 0 orth Approx R R 0 R R R R R R R R R R R R R R R R	ach Wallgro SB 68 79 ach Wallgro SB 0 0 0 ach Wallgro SB 384 838 ach Wallgro SB 54 65 ach Wallgro SB 163 190 ach Wallgro SB 163 190 ach Wallgro SB 163 190 ach Wallgro SB 501 0 0	L	U U U U U U U U U U U U U U U U U U U	Stage 2 R R Existing + Stage 2 R R R Stage 2	Developm WB Heavy Veh WB age 1 Deve WB Heavy Veh WB Heavy Veh WB P Developm WB Heavy Veh WB Heavy Veh WB WB	lent Volume L lopment Volume	U	uth Approx R 0 0 uth Approx R 0 R 0 uth Approx R R 0 R R R R R R R R R R R R R R R R	NB ach Wallgr NB 0 0 ach Wallgr NB 714 315 ach Wallgr NB 55 41 ach Wallgr NB 0 0 ach Wallgr NB 55 41 ach Wallgr NB 0 0 ach Wallgr NB 0 0 ach Wallgr NB NB NB NB NB NB NB NB NB N	L	U	Approach R 0 0 Approach R 0 0 Approach R 2 2 Approach R 0 0 Approach R 0 0 Approach R 0 0 Approach R 2 2 Approach R 0 R 0 R 0 Approach R 0 R 0 R R R R R R R R R R R R R R R	Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB 0 0 Kosovich EB EB 0 0 Cosovich EB	Place
Existing + Stage 1 Developm ent Volumes Stage 2 Developm ent Volumes 10 Year Growth + Stage 2 Developm ent	8:00 14:45 Peak Period Start 8:00 14:45	9:00 15:45 Time Period End 9:00 15:45	No U O O O O O O O O O	orth Approx R 38 50 orth Approx R 0 0 orth Approx R 39 51 orth Approx R 0 0 orth Approx R 92 123 orth Approx R 92 123	ach Wallgro SB 68 79 ach Wallgro SB 0 0 0 ach Wallgro SB 384 838 ach Wallgro SB 54 65 ach Wallgro SB 163 190 ach Wallgro SB 163 190 ach Wallgro SB 1010 ach Wallgro SB 0 0 0	L	U U U U U U U U U U U U U U U U U U U	Stage 2 R R R Stage 2 R R R R R R R R R R R	Developm WB Heavy Veh WB WB Heavy Veh	lopment Volume L lopmen	U	uth Approx R 0 0 uth Approx R	NB ach Wallgr NB 0 0 ach Wallgr NB 0 0 ach Wallgr NB 714 315 ach Wallgr NB 55 41 ach Wallgr NB 0 0 ach Wallgr NB 55 41 ach Wallgr NB 0 0 ach Wallgr NB 347	L	West U	Approach R 0 0 Approach R 0 0 Approach R 2 2 Approach R 0 0 Approach R 0 0 Approach R 0 Approach R 2 2 Approach R 0 0	Kosovich EB 0 0 Kosovich	Place

Wallgrove Road/Equestrian Centre Light Vehicles

	Peak	Time	No	orth Approa	ach Wallgro	ve			-	icies	So	uth Approa	ach Wallgr	ove			-	
	Period Start		U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00			317								716					
Existing	14:45	15:45		<u> </u>	760				Heavy Vel	l nicles			316					<u> </u>
	Peak	Time	No	orth Approa	ach Wallgro	ve			-		So	uth Approa	ach Wallgr	ove			•	
	Period Start		U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00 14:45	9:00 15:45			54 65								55 41					
	14.43	13.43			03				Growth F	lates			71					ļļ
	Peak			1	ach Wallgro	ve		ı	-	1			ach Wallgr	ove		1	-	
	Period Start 8:00		0.007	0.007	SB 0.007	0.007	U	R	WB	L	U 0.003	0.003	0.003	0.003	U	R	EB	L
	14:45	9:00 15:45	0.007	0.007	0.007	0.007					0.003	0.003	0.003	0.003				
Growth Rates				L					Heavy Vel	nicles	l	l	1	I			I	1
nates	Peak				ach Wallgro		11		- WD	1 .			ach Wallgr	ove		l	- 	1 .
	Period Start 8:00	9:00	0.007	0.007	SB 0.007	0.007	U	R	WB	L	U 0.003	0.003	NB 0.003	0.003	U	R	EB	L
	14:45	15:45	0.008	0.008	0.008	0.008					0.01	0.01	0.01	0.01				
		 -						10 \	ear Growt	n Volumes								
	Peak Period Start		U	R R	sB	L	U	R	- WB		U	R R	ach Wallgr NB	ove	U	R	- EB	ı
	8:00	9:00	0	0	339	0	_		7.1	_	0	0	737	0				_
10 Year	14:45	15:45	0	0	821	0					0	0	348	0				
Growth Volumes	Peak	Time	No	orth Approx	ach Wallgro	ve			Heavy Vel	nicles	So	uth Approx	ach Wallgr	ove			-	
Volumes	Period Start		U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00	0	0	58	0					0	0	57	0				
	14:45	15:45	0	0	70	0			 Developme	nt % IN	0	0	45	0				<u> </u>
	Peak	Time	No	orth Approa	ach Wallgro	ve		·	- -	111 /0 11 N	So	uth Approa	ach Wallgr	ove			-	
	Period Start		U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00 14:45	9:00 15:45			0.3													
Developm	14.43	13.43		<u> </u>	0.4				Heavy Vel	nicles			<u> </u>					<u> </u>
ent % IN	Peak				ach Wallgro			ı	-				ach Wallgr			1	-	
	Period Start 8:00	Period End 9:00	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	14:45	15:45																
				ı				D	evelopmen	t % OUT								
	Peak Period Start		U No	orth Approa	sB	ve	U	R	- WB	L	So U	uth Approa	ach Wallgr NB	ove	U	R	- EB	
	8:00	9:00	U	n	36	L	U	n	WD	L	0.6	n	0.4	L	U	n	ED	L
Developm	14:45	15:45									0.7		0.3					
ent % OUT	Peak	Time	No	orth Annros	ach Wallgro	IVA			Heavy Vel	nicles	So	uth Annro	ach Wallgr	ove			-	
001	Period Start		U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00	9:00																
	14:45	15:45						Stage :	l 1 Developm	l nent Volume	es							
	Peak		No	orth Approa	ach Wallgro	ve			-			uth Approa	ach Wallgr	ove			-	
	Period Start 8:00	Period End 9:00	0	R	SB	L 0	U	R	WB	L	U 68	R	NB 45	L	U	R	EB	L
Stage 1	14.45	15:45	0	0	38 50	0					79	0	45 34	0				
Developm ent				ļ.				ļ	Heavy Vel	nicles		!		!			!	
Volumes	Peak Period Start		U No	orth Approa	sB	ve	U	R	- WB		So U	uth Approa	ach Wallgr NB	ove	U	R	- EB	L
	8:00	9:00	0	0	0	0	U	п	WD	L	0	0	0	0	U	n	LD	_
	14:45	15:45	0	0	0	0					0	0	0	0				
	Peak	Timo	Ne	orth Approx	ach Wallgro	WO.	l I	Existing + St	tage 1 Deve	lopment Vo		uth Approx	ach Wallgr	010			_	
	Period Start		U	R R	SB	L	U	R	- WB	L	U	R R	NB	L	U	R	- EB	L
Existing +	8:00	9:00	0	0	355	0					68	0	761	0				
Stage 1 Developm	14:45	15:45	0	0	810	0			Heavy Vel	l nicles	79	0	350	0			<u> </u>	
ent	Peak		No	orth Approa	ach Wallgro	ve					So	uth Approa	ach Wallgr	ove				
Volumes	Period Start		U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
	8:00 14:45	9:00 15:45	0	0	54 65	0					0	0	55 41	0				
	14.43	13.43	0	0	05	0		Stage 2	I 2 Developm	l ent Volume		0	41	0				
	Peak				ach Wallgro				-		So		ach Wallgr	ove		I -	• I =-	
	Period Start 8:00	Period End 9:00	0	0 R	SB 92	L 0	U	R	WB	L	U 163	R 0	NB 109	L 0	U	R	EB	L
Stage 2			()	0	92	U								U				
	14:45	15:45	0	0	123	0					190	0	82	0				
Developm ent		15:45	0		123	0			Heavy Vel	nicles			1					
	Peak	15:45 Time	0 N c	orth Approa	123 ach Wallgro	0	11	R	•	nicles	So	uth Approa	ach Wallgr		11	l p	- - - FR	
ent		15:45 Time	0		123	0	U	R	Heavy Vel	nicles			1		U	R	- EB	L
ent	Peak Period Start	15:45 Time Period End	0 N c	orth Approa	123 ach Wallgro	0 ove			WB	L	So U 0 0	uth Approx	ach Wallgr	ove L	U	R	- EB	L
ent	Peak Period Start 8:00 14:45	15:45 Time Period End 9:00 15:45	0 No U 0 0	R 0 0	123 ach Wallgro	0 Dive L 0 0			WB	L Developmen	So U 0 0 nt Volumes	uth Approx	ach Wallgr NB 0	0 0	U	R	EB	L
ent Volumes	Peak Period Start 8:00	15:45 Time Period End 9:00 15:45 Time	0 No U 0 0	R 0 0	123 ach Wallgro	0 Dive L 0 0			WB	L	So U 0 0 nt Volumes	uth Approx	ach Wallgr	0 0	U	R	EB EB	L
ent Volumes 10 Year	Peak Period Start 8:00 14:45 Peak Period Start 8:00	15:45 Time Period End 9:00 15:45 Time Period End 9:00	0 No U 0 0 No U 0 0	Prth Approa	123 ach Wallgro SB 0 0 ach Wallgro SB 431	0	10 Ye	ear Growth	WB + Stage 2 [L	U 0 0 t Volumes So U 163	uth Approx R 0 0 0	ach Wallgr NB 0 0 0 ach Wallgr NB 846	0 0 0 0 COVE L 0 0 0 COVE L 0 0 0 COVE C C C C C C C C C C C C C C C C C C C			-	L
ent Volumes	Peak Period Start 8:00 14:45 Peak Period Start	15:45 Time Period End 9:00 15:45 Time Period End	0 No U 0 0 No U U	Prth Approa	123 ach Wallgro SB 0 0 ach Wallgro	0 vve	10 Ye	ear Growth	+ Stage 2 [L Developmen L	So U 0 0 t Volumes So U	uth Approx R 0 0	ach Wallgr NB 0 0 0 NB	ove L 0 0 0			-	L
ent Volumes 10 Year Growth + Stage 2 Developm	Peak Period Start 8:00 14:45 Peak Period Start 8:00 14:45	15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45	0 No O O O O O O O O O O O O O O O O O O	orth Approa	123 ach Wallgro SB 0 0 ach Wallgro SB 431	0	10 Ye	ear Growth	WB + Stage 2 [L Developmen L	So U 0 0 t Volumes So U 163 190	uth Approx R 0 0 0 uth Approx R 0 0	ach Wallgr NB 0 0 0 ach Wallgr NB 846	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			-	L
ent Volumes 10 Year Growth + Stage 2 Developm ent	Peak	15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45 Time Period End	0 No U 0 0 0 No U U U U U U U U U U U U U U U U U U	orth Approa R 0 0 orth Approa R 0 0 orth Approa R R R	SB 0 0 ach Wallgro SB 431 944 ach Wallgro	0 ve L 0 0 vve L 0 ove L 0 ove L	10 Ye	ear Growth	+ Stage 2 [L Developmen L	So U 0 0 163 190 So U	uth Approx R 0 0 uth Approx R 0 0 uth Approx R R R R	ach Wallgr NB 0 0 ach Wallgr NB 846 430 ach Wallgr	ove			-	L
ent Volumes 10 Year Growth + Stage 2 Developm	Peak Period Start 8:00 14:45 Peak Period Start 8:00 14:45 Peak	15:45 Time Period End 9:00 15:45 Time Period End 9:00 15:45	0 No U O O O No O No O No O No O No O No	orth Approa	SB 0 0 ach Wallgro SB 431 944 ach Wallgro	0 ve L 0 0 vve L 0 0 vve 0 0 vve	10 Ye	ear Growth	+ Stage 2 IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	L Developmen	So U 0 0 nt Volumes So U 163 190	uth Approx R 0 0 uth Approx R 0 0 uth Approx	ach Wallgr NB 0 0 ach Wallgr NB NB 846 430 ach Wallgr	ove	U	R	EB	L



ANNEXURE C: INTERSECTION PHASING HISTORY – WALLGROVE/ELIZABETH (5 SHEETS)

Wednesday, 25 July 2018, 7:45:00 AM to Wednesday, 25 July 2018, 8:00:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	8	38	55	46	370
B phase	8	25	31	27	222
C phase	7	12	16	13	96
D phase	8	17	29	19	159
Nominal cycle length	9	96	112	104	939
Active cycle length	9	96	112	104	939
Actual cycle	8	94	117	105	847
Split plan 4	1	96	96	96	96
Signal group 1	9	32	49	39	355
Signal group 2	8	57	79	68	545
Signal group 3	8	19	25	21	175
Signal group 4	7	6	10	7	53
Signal group 5	8	11	22	13	108
Signal group 6	8	21	38	33	270
Signal group 9	8	58	89	76	608
Pedestrian movement 2	8	58	89	76	608

Wednesday, 25 July 2018, 8:00:00 AM to Wednesday, 25 July 2018, 8:15:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	7	40	57	47	333
B phase	8	26	36	31	255
C phase	8	13	18	15	122
D phase	8	17	22	19	156
Nominal cycle length	7	107	120	114	802
Active cycle length	7	107	120	114	802
Actual cycle	7	103	127	115	806
Signal group 1	7	34	51	41	291
Signal group 2	7	64	85	74	520
Signal group 3	8	20	30	25	207
Signal group 4	8	7	12	9	74
Signal group 5	8	11	16	13	107
Signal group 6	8	35	45	41	329
Signal group 9	7	76	97	85	596
Pedestrian movement 2	7	76	97	85	596

Wednesday, 25 July 2018, 8:15:00 AM to Wednesday, 25 July 2018, 8:30:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	8	29	59	41	333
B phase	9	23	33	28	260
C phase	7	15	22	16	118
D phase	8	17	26	21	168
Nominal cycle length	7	85	120	101	713
Active cycle length	7	85	120	101	713
Actual cycle	7	87	127	107	749
Split plan 4	1	120	120	120	120
Signal group 1	8	23	53	35	285
Signal group 2	8	52	84	64	512
Signal group 3	9	17	27	22	206
Signal group 4	7	9	16	10	75

Signal group 5	8	11	20	14	119
Signal group 6	9	23	43	35	323
Signal group 9	8	43	96	70	565
Pedestrian movement 2	8	43	96	70	565

Wednesday, 25 July 2018, 8:30:00 AM to Wednesday, 25 July 2018, 8:45:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	11	22	53	31	341
B phase	11	12	29	21	233
C phase	9	12	14	12	116
D phase	10	17	23	18	182
Nominal cycle length	11	70	99	81	891
Active cycle length	11	70	99	81	891
Actual cycle	10	67	111	81	813
Split plan 3	1	98	98	98	98
Split plan 4	2	97	170	133	267
Signal group 1	11	16	47	24	274
Signal group 2	11	32	72	46	507
Signal group 3	11	6	23	15	167
Signal group 4	9	6	8	6	59
Signal group 5	11	11	16	12	134
Signal group 6	11	18	32	25	280
Signal group 9	11	33	81	50	559
Pedestrian movement 2	11	33	81	50	560

Wednesday, 25 July 2018, 8:45:00 AM to Wednesday, 25 July 2018, 9:00:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	10	16	64	33	334
B phase	10	17	30	23	239
C phase	8	12	16	13	109
D phase	10	17	26	20	201
Nominal cycle length	11	64	108	89	989
Active cycle length	11	64	108	89	989
Actual cycle	10	62	128	88	883
Split plan 4	1	87	87	87	87
Signal group 1	10	10	58	27	275
Signal group 2	10	27	86	51	513
Signal group 3	10	11	24	17	178
Signal group 4	8	6	10	7	60
Signal group 5	10	11	20	13	139
Signal group 6	10	19	38	28	286
Signal group 9	10	25	98	56	569
Pedestrian movement 2	10	25	98	56	569

Wednesday, 25 July 2018, 9:00:00 AM to Wednesday, 25 July 2018, 9:15:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	10	13	48	30	304
B phase	11	12	31	22	243
C phase	8	12	18	12	103
D phase	10	17	31	21	215
Nominal cycle length	10	60	113	87	873
Active cycle length	10	60	113	87	873

Actual cycle	10	57	116	83	836
Split plan 2	2	95	449	272	544
Split plan 4	1	83	83	83	83
Signal group 1	10	7	48	25	258
Signal group 2	10	19	70	41	411
Signal group 3	9	6	16	11	99
Signal group 4	11	8	19	11	131
Signal group 5	11	10	18	13	146
Signal group 6	10	8	38	26	268
Signal group 9	10	30	82	52	527
Pedestrian movement 2	10	30	82	52	527

Wednesday, 25 July 2018, 2:30:00 PM to Wednesday, 25 July 2018, 2:45:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	11	15	44	29	321
B phase	11	13	22	18	204
C phase	10	12	20	16	163
D phase	10	17	25	20	208
Nominal cycle length	10	60	103	84	847
Active cycle length	10	60	103	84	847
Actual cycle	10	54	103	85	850
Split plan 2	1	80	80	80	80
Split plan 3	1	88	88	88	88
Split plan 4	1	203	203	203	203
Signal group 1	10	9	38	22	223
Signal group 2	10	28	57	40	406
Signal group 3	11	7	16	12	138
Signal group 4	10	6	14	10	103
Signal group 5	10	11	19	14	145
Signal group 6	11	15	36	27	301
Signal group 9	10	21	69	49	496
Pedestrian movement 2	10	21	69	49	496

Wednesday, 25 July 2018, 2:45:00 PM to Wednesday, 25 July 2018, 3:00:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	12	13	43	29	353
B phase	10	12	20	14	143
C phase	10	13	17	15	150
D phase	11	17	31	20	221
Nominal cycle length	11	60	90	79	869
Active cycle length	11	60	90	79	869
Actual cycle	11	57	96	75	833
Split plan 2	1	121	121	121	121
Split plan 3	2	67	71	69	138
Split plan 4	2	85	404	244	489
Signal group 1	12	7	37	23	281
Signal group 2	12	19	51	37	445
Signal group 3	11	6	15	8	98
Signal group 4	10	7	11	9	90
Signal group 5	11	11	25	13	153
Signal group 6	11	8	28	20	227
Signal group 9	11	30	63	45	495
Pedestrian movement 2	11	30	63	45	495

Wednesday, 25 July 2018, 3:00:00 PM to Wednesday, 25 July 2018, 3:15:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	11	16	42	28	308
B phase	10	13	25	19	195
C phase	11	14	24	17	192
D phase	11	17	21	18	198
Nominal cycle length	11	65	97	82	910
Active cycle length	11	65	97	82	910
Actual cycle	10	62	105	83	835
Split plan 2	1	96	96	96	96
Split plan 3	1	262	262	262	262
Signal group 1	11	10	36	22	242
Signal group 2	11	23	61	40	448
Signal group 3	11	6	19	12	140
Signal group 4	11	8	18	11	125
Signal group 5	11	11	15	11	130
Signal group 6	10	22	39	30	309
Signal group 9	10	35	73	53	538
Pedestrian movement 2	10	35	73	53	539

Wednesday, 25 July 2018, 3:15:00 PM to Wednesday, 25 July 2018, 3:30:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	8	26	54	36	291
B phase	8	15	21	17	142
C phase	9	19	33	27	246
D phase	9	19	25	21	197
Nominal cycle length	9	90	117	105	950
Active cycle length	9	90	117	105	950
Actual cycle	8	88	130	104	838
Split plan 2	1	115	115	115	115
Split plan 4	2	108	116	112	224
Signal group 1	8	20	48	30	243
Signal group 2	8	38	69	48	385
Signal group 3	8	9	15	11	94
Signal group 4	9	13	27	21	192
Signal group 5	9	13	19	15	142
Signal group 6	8	34	47	40	321
Signal group 9	8	50	81	60	481
Pedestrian movement 2	8	50	81	60	481

Wednesday, 25 July 2018, 3:30:00 PM to Wednesday, 25 July 2018, 3:45:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	7	25	47	37	263
B phase	8	20	28	23	190
C phase	8	22	28	25	207
D phase	8	20	31	25	205
Nominal cycle length	3	104	120	111	333
Active cycle length	3	104	120	111	333
Actual cycle	7	98	124	113	793
Split plan 3	1	240	240	240	240
Signal group 1	7	19	41	31	221

Signal group 2	7	44	66	55	391
Signal group 3	8	14	22	17	142
Signal group 4	8	16	22	19	158
Signal group 5	8	14	25	19	156
Signal group 6	8	40	50	43	348
Signal group 9	7	56	78	67	475
Pedestrian movement 2	7	56	78	67	475

Wednesday, 25 July 2018, 3:45:00 PM to Wednesday, 25 July 2018, 4:00:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	9	22	60	35	321
B phase	10	17	22	19	194
C phase	9	13	24	17	157
D phase	9	17	27	20	184
Nominal cycle length	9	78	118	92	830
Active cycle length	9	78	118	92	830
Actual cycle	8	73	130	92	742
Split plan 2	1	78	78	78	78
Split plan 3	2	168	256	212	424
Signal group 1	9	16	54	29	267
Signal group 2	9	34	75	49	442
Signal group 3	10	11	16	13	134
Signal group 4	9	7	18	11	103
Signal group 5	9	11	20	14	127
Signal group 6	9	27	39	31	279
Signal group 9	9	45	87	60	546
Pedestrian movement 2	9	45	87	60	546

Wednesday, 25 July 2018, 4:00:00 PM to Wednesday, 25 July 2018, 4:15:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	7	37	52	42	294
B phase	7	17	24	20	146
C phase	7	26	35	30	214
D phase	8	22	29	25	203
Nominal cycle length	6	116	120	117	707
Active cycle length	6	116	120	117	707
Actual cycle	7	110	129	119	835
Split plan 4	1	356	356	356	356
Signal group 1	8	26	46	34	278
Signal group 2	7	50	63	56	398
Signal group 3	7	11	18	14	104
Signal group 4	7	20	29	24	172
Signal group 5	8	16	23	19	153
Signal group 6	7	42	52	45	318
Signal group 9	7	62	75	68	482
Pedestrian movement 2	7	62	75	68	482

Wednesday, 25 July 2018, 4:15:00 PM to Wednesday, 25 July 2018, 4:30:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	7	35	52	42	298
B phase	8	20	24	22	177
C phase	8	27	35	31	248



ANNEXURE D: INTERSECTION PHASING HISTORY – WALLGROVE/THE HORSLEY
(5 SHEETS)

Wednesday, 25 July 2018, 7:30:00 AM to Wednesday, 25 July 2018, 7:45:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	7	28	65	44	313
D phase	7	14	37	33	231
E phase	7	24	32	29	207
G phase	6	18	29	22	133
Nominal cycle length	7	107	120	115	807
Active cycle length	7	107	120	115	807
Actual cycle	6	101	157	128	771
Signal group 1	7	21	58	36	257
Signal group 2	6	26	58	46	279
Signal group 3	5	6	14	10	51
Signal group 4	6	11	22	14	88
Signal group 5	7	22	62	46	327
Signal group 6	7	16	37	24	169
Signal group 7	6	27	30	29	175
Signal group 8	4	6	13	8	32
Signal group 9	7	21	95	68	478
Signal group 10	6	26	70	54	328
Signal group 11	6	11	21	14	87
Signal group 12	5	5	14	10	50

Wednesday, 25 July 2018, 7:45:00 AM to Wednesday, 25 July 2018, 8:00:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	8	15	50	30	243
D phase	8	17	38	26	213
E phase	8	21	38	29	238
G phase	8	15	31	22	181
Nominal cycle length	8	94	120	104	837
Active cycle length	8	94	120	104	837
Actual cycle	8	88	136	109	875
Signal group 1	9	7	42	21	189
Signal group 2	8	7	73	29	237
Signal group 3	6	5	12	7	45
Signal group 4	8	7	24	15	122
Signal group 5	8	31	57	44	352
Signal group 6	8	14	31	22	178
Signal group 7	8	10	31	19	157
Signal group 8	3	6	7	6	20
Signal group 9	8	25	79	49	397
Signal group 10	8	7	88	35	280
Signal group 11	8	7	24	15	121
Signal group 12	6	5	12	7	45

Wednesday, 25 July 2018, 8:00:00 AM to Wednesday, 25 July 2018, 8:15:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	8	14	39	23	189
D phase	9	25	38	30	274
E phase	9	23	36	28	260
G phase	8	15	25	19	155
Nominal cycle length	6	78	120	96	576
Active cycle length	6	78	120	96	576

Actual cycle	7	78	128	101	711
Signal group 1	8	7	46	19	155
Signal group 2	8	7	42	22	182
Signal group 3	7	6	12	8	62
Signal group 4	7	9	18	14	101
Signal group 5	9	40	62	48	438
Signal group 6	9	16	29	21	193
Signal group 7	9	17	31	23	208
Signal group 8	2	7	8	7	15
Signal group 9	8	32	82	51	410
Signal group 10	8	7	48	26	214
Signal group 11	7	9	18	14	100
Signal group 12	7	6	12	8	60

Wednesday, 25 July 2018, 8:15:00 AM to Wednesday, 25 July 2018, 8:30:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	9	15	39	22	201
D phase	9	14	35	25	233
E phase	9	25	38	30	277
G phase	8	18	26	22	179
Nominal cycle length	9	89	118	100	907
Active cycle length	9	89	118	100	907
Actual cycle	8	93	119	101	812
Signal group 1	9	7	31	14	130
Signal group 2	8	12	54	27	222
Signal group 3	4	6	15	9	37
Signal group 4	8	11	19	15	123
Signal group 5	9	28	56	43	395
Signal group 6	9	17	43	24	223
Signal group 7	8	11	28	20	162
Signal group 8	3	7	13	9	27
Signal group 9	9	27	66	39	353
Signal group 10	8	14	74	34	272
Signal group 11	8	11	18	15	121
Signal group 12	4	6	14	9	36

Wednesday, 25 July 2018, 8:30:00 AM to Wednesday, 25 July 2018, 8:45:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	8	15	83	33	265
D phase	8	16	37	30	242
E phase	7	21	38	31	217
G phase	7	14	28	19	139
Nominal cycle length	8	89	120	105	847
Active cycle length	8	89	120	105	847
Actual cycle	7	83	168	113	794
Signal group 1	8	6	93	27	219
Signal group 2	8	10	75	32	259
Signal group 3	5	6	11	9	45
Signal group 4	6	5	21	12	72
Signal group 5	8	30	62	48	389
Signal group 6	8	13	30	23	187
Signal group 7	8	9	30	23	186
Signal group 8	3	7	9	7	23

Signal group 9	8	34	131	58	469
Signal group 10	8	15	90	38	306
Signal group 11	6	5	20	11	71
Signal group 12	5	6	11	8	43

Wednesday, 25 July 2018, 8:45:00 AM to Wednesday, 25 July 2018, 9:00:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	7	16	80	38	266
D phase	7	24	37	33	236
E phase	7	26	33	30	213
G phase	8	15	25	18	149
Nominal cycle length	7	108	119	114	802
Active cycle length	7	108	119	114	802
Actual cycle	7	96	173	120	846
Signal group 1	8	8	76	30	244
Signal group 2	8	15	72	34	276
Signal group 3	7	6	12	8	58
Signal group 4	8	5	19	10	86
Signal group 5	7	25	57	43	307
Signal group 6	7	19	26	22	159
Signal group 7	7	17	31	26	188
Signal group 8	5	7	16	10	54
Signal group 9	7	43	111	65	459
Signal group 10	7	22	95	46	327
Signal group 11	8	5	19	10	84
Signal group 12	7	6	12	8	56

Wednesday, 25 July 2018, 9:00:00 AM to Wednesday, 25 July 2018, 9:15:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	9	15	57	29	264
D phase	9	18	37	25	228
E phase	9	20	32	27	246
G phase	8	14	26	18	148
Nominal cycle length	9	70	110	92	830
Active cycle length	9	70	110	92	830
Actual cycle	8	64	122	93	750
Signal group 1	9	7	49	25	232
Signal group 2	9	7	49	24	218
Signal group 3	7	6	20	10	72
Signal group 4	6	7	14	10	65
Signal group 5	9	21	47	35	321
Signal group 6	9	12	42	22	201
Signal group 7	8	10	31	18	151
Signal group 8	4	6	14	8	34
Signal group 9	9	7	76	45	408
Signal group 10	9	7	63	29	268
Signal group 11	6	7	14	10	64
Signal group 12	7	6	19	10	71

Wednesday, 25 July 2018, 9:15:00 AM to Wednesday, 25 July 2018, 9:30:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	8	16	49	35	283

Signal group 6	9	14	31	19	179
Signal group 7	8	7	30	17	138
Signal group 8	6	6	14	8	51
Signal group 9	9	22	93	48	435
Signal group 10	9	21	83	37	339
Signal group 11	8	4	14	8	71
Signal group 12	8	5	12	8	69

Wednesday, 25 July 2018, 2:45:00 PM to Wednesday, 25 July 2018, 3:00:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	9	15	59	36	326
D phase	9	18	39	26	234
E phase	7	22	31	26	182
G phase	8	15	24	18	145
Nominal cycle length	9	71	120	92	831
Active cycle length	9	71	120	92	831
Actual cycle	8	76	145	106	854
Signal group 1	9	7	51	28	259
Signal group 2	9	7	59	33	305
Signal group 3	5	6	16	11	57
Signal group 4	8	8	13	10	80
Signal group 5	8	24	55	37	297
Signal group 6	7	14	24	18	129
Signal group 7	9	11	32	19	173
Signal group 8	3	6	8	7	22
Signal group 9	9	26	86	55	503
Signal group 10	9	7	63	39	351
Signal group 11	8	8	13	9	79
Signal group 12	5	6	16	11	56

Wednesday, 25 July 2018, 3:00:00 PM to Wednesday, 25 July 2018, 3:15:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	8	15	36	25	206
D phase	8	24	35	32	262
E phase	7	25	36	32	225
G phase	8	16	26	19	155
Nominal cycle length	5	87	120	109	549
Active cycle length	5	87	120	109	549
Actual cycle	7	81	131	110	770
Signal group 1	8	7	41	23	188
Signal group 2	8	7	35	20	161
Signal group 3	7	7	17	11	81
Signal group 4	6	5	18	10	62
Signal group 5	8	32	62	44	353
Signal group 6	8	18	29	24	196
Signal group 7	8	17	28	25	205
Signal group 8	5	7	23	14	71
Signal group 9	8	36	76	57	457
Signal group 10	8	7	56	34	272
Signal group 11	6	5	18	10	62
Signal group 12	7	7	17	11	81

Wednesday, 25 July 2018, 3:15:00 PM to Wednesday, 25 July 2018, 3:30:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	8	25	52	35	282
D phase	7	20	38	32	227
E phase	7	23	33	30	210
G phase	8	16	26	20	164
Nominal cycle length	4	115	120	117	470
Active cycle length	4	115	120	117	470
Actual cycle	7	106	130	117	823
Signal group 1	8	23	44	28	231
Signal group 2	8	16	44	29	234
Signal group 3	8	6	19	10	87
Signal group 4	8	8	18	11	91
Signal group 5	7	35	60	42	296
Signal group 6	7	16	25	22	156
Signal group 7	7	13	31	25	178
Signal group 8	6	6	18	10	60
Signal group 9	8	34	65	58	464
Signal group 10	8	29	55	42	341
Signal group 11	8	8	18	11	91
Signal group 12	8	6	19	10	87

Wednesday, 25 July 2018, 3:30:00 PM to Wednesday, 25 July 2018, 3:45:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	8	17	66	37	297
D phase	8	14	37	26	210
E phase	8	26	38	30	241
G phase	8	14	24	17	141
Nominal cycle length	7	87	120	102	720
Active cycle length	7	87	120	102	720
Actual cycle	7	59	149	105	738
Signal group 1	8	9	82	33	271
Signal group 2	8	11	58	31	248
Signal group 3	7	7	17	11	78
Signal group 4	7	7	13	9	66
Signal group 5	9	8	58	34	313
Signal group 6	7	19	42	25	178
Signal group 7	7	7	30	20	140
Signal group 8	4	7	15	11	45
Signal group 9	7	9	153	67	472
Signal group 10	8	11	75	40	325
Signal group 11	7	7	13	9	63
Signal group 12	7	7	17	11	77
Signal group 16	1	9	9	9	9
Pedestrian movement 4	1	9	9	9	9

Wednesday, 25 July 2018, 3:45:00 PM to Wednesday, 25 July 2018, 4:00:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	8	30	46	35	287
D phase	7	18	37	31	222
E phase	7	18	49	32	228
G phase	7	15	21	18	129



ANNEXURE E: INTERSECTION PHASING HISTORY – THE HORSLEY/M7
(4 SHEETS)

Nominal cycle length	8	94	120	104	837
Active cycle length	8	94	120	104	837
Actual cycle	7	89	133	110	774
Split plan 2	1	230	230	230	230
Signal group 1	8	15	51	30	241
Signal group 2	8	15	84	53	431
Signal group 3	4	8	11	9	37
Signal group 4	8	16	32	23	191
Signal group 5	8	16	27	23	184
Signal group 6	8	16	27	23	184
Signal group 7	8	16	32	23	191
Signal group 8	4	53	438	159	638
Signal group 14	16	5	7	6	98
Pedestrian movement 6	16	4	7	6	104

Wednesday, 25 July 2018, 8:00:00 AM to Wednesday, 25 July 2018, 8:15:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	9	20	46	30	273
D phase	9	26	31	29	263
F phase	8	22	57	40	324
Nominal cycle length	6	78	120	96	576
Active cycle length	6	78	120	96	576
Actual cycle	8	73	122	98	784
Split plan 4	1	87	87	87	87
Signal group 1	9	9	35	19	175
Signal group 2	9	16	83	47	431
Signal group 3	4	8	8	8	32
Signal group 4	8	11	46	30	240
Signal group 5	9	14	21	18	170
Signal group 6	9	14	21	18	170
Signal group 7	8	11	46	30	240
Signal group 8	4	65	188	129	518
Signal group 14	18	5	7	6	112
Pedestrian movement 6	18	6	7	6	119

Wednesday, 25 July 2018, 8:15:00 AM to Wednesday, 25 July 2018, 8:30:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	9	28	40	33	298
D phase	9	23	40	30	278
F phase	8	23	52	35	284
Nominal cycle length	9	89	118	100	907
Active cycle length	9	89	118	100	907
Actual cycle	8	88	121	98	790
Split plan 3	2	183	209	196	392
Split plan 4	3	91	118	102	308
Signal group 1	9	17	30	22	204
Signal group 2	8	22	52	36	294
Signal group 3	8	8	13	9	79
Signal group 4	8	12	41	25	201
Signal group 5	9	13	30	20	186
Signal group 6	9	13	30	20	186
Signal group 7	8	12	41	25	201
Signal group 8	7	47	86	66	467

Signal group 14	18	6	8	6	115
Pedestrian movement 6	18	6	8	6	122

Wednesday, 25 July 2018, 8:30:00 AM to Wednesday, 25 July 2018, 8:45:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	8	21	73	35	280
D phase	8	21	43	30	240
F phase	8	33	53	41	330
Nominal cycle length	8	89	120	105	847
Active cycle length	8	89	120	105	847
Actual cycle	8	85	145	106	850
Split plan 4	1	91	91	91	91
Signal group 1	8	9	63	24	195
Signal group 2	7	24	80	46	327
Signal group 3	5	8	15	9	48
Signal group 4	8	23	42	30	245
Signal group 5	8	11	32	19	156
Signal group 6	8	11	32	19	156
Signal group 7	8	23	42	30	245
Signal group 8	4	46	194	117	470
Signal group 14	17	6	7	6	103
Pedestrian movement 6	17	6	7	6	112

Wednesday, 25 July 2018, 8:45:00 AM to Wednesday, 25 July 2018, 9:00:00 AM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	7	33	41	37	261
D phase	8	25	40	30	245
F phase	7	41	55	48	337
Nominal cycle length	7	108	119	114	802
Active cycle length	7	108	119	114	802
Actual cycle	6	105	121	113	683
Signal group 1	7	22	30	26	187
Signal group 2	7	44	77	55	389
Signal group 3	7	8	21	11	79
Signal group 4	8	24	45	35	285
Signal group 5	8	15	29	20	163
Signal group 6	8	15	29	20	163
Signal group 7	8	24	45	35	285
Signal group 8	6	73	195	102	617
Signal group 14	15	6	7	6	92
Pedestrian movement 6	15	6	7	6	97

Wednesday, 25 July 2018, 9:00:00 AM to Wednesday, 25 July 2018, 9:15:00 AM:

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Data item	Frequency	Minimum	Maximum	Average	Total
A phase	10	19	46	30	304
D phase	10	20	34	26	269
F phase	9	23	45	32	294
Nominal cycle length	9	70	110	92	830
Active cycle length	9	70	110	92	830
Actual cycle	9	62	120	90	815
Signal group 1	10	9	35	19	199
Signal group 2	9	12	58	36	329

Split plan 4	1	105	105	105	105
Signal group 1	8	9	30	19	156
Signal group 2	8	13	70	46	372
Signal group 3	7	8	45	14	103
Signal group 4	10	10	45	29	291
Signal group 5	9	8	26	15	140
Signal group 6	8	11	26	16	132
Signal group 7	10	10	48	30	307
Signal group 8	6	39	180	89	538

Wednesday, 25 July 2018, 2:45:00 PM to Wednesday, 25 July 2018, 3:00:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	8	20	46	31	255
C phase	6	19	22	20	123
D phase	9	19	38	25	229
F phase	9	19	55	28	257
Nominal cycle length	9	71	120	92	831
Active cycle length	9	71	120	92	831
Actual cycle	8	78	124	98	786
Split plan 2	1	234	234	234	234
Signal group 1	8	9	35	20	165
Signal group 2	8	28	58	38	307
Signal group 3	8	8	45	19	155
Signal group 4	15	9	45	15	225
Signal group 5	9	9	28	15	135
Signal group 6	9	9	28	15	135
Signal group 7	15	9	45	15	225
Signal group 8	7	48	131	73	512

Wednesday, 25 July 2018, 3:00:00 PM to Wednesday, 25 July 2018, 3:15:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	7	22	40	29	204
C phase	4	20	23	21	86
D phase	8	20	33	28	228
F phase	7	20	63	48	342
Nominal cycle length	5	87	120	109	549
Active cycle length	5	87	120	109	549
Actual cycle	6	117	143	123	742
Split plan 3	2	236	240	238	476
Split plan 4	1	120	120	120	120
Signal group 1	7	10	29	18	126
Signal group 2	7	34	102	59	413
Signal group 3	6	8	12	9	57
Signal group 4	11	9	53	28	312
Signal group 5	8	10	23	18	148
Signal group 6	8	10	23	18	148
Signal group 7	11	9	53	28	312
Signal group 8	6	67	221	106	636

Wednesday, 25 July 2018, 3:15:00 PM to Wednesday, 25 July 2018, 3:30:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	7	31	45	40	281

C phase	1	23	23	23	23
D phase	7	19	35	26	188
F phase	7	26	61	47	335
Nominal cycle length	4	115	120	117	470
Active cycle length	4	115	120	117	470
Actual cycle	7	116	122	118	827
Split plan 3	1	240	240	240	240
Split plan 4	1	120	120	120	120
Signal group 1	7	20	35	29	209
Signal group 2	7	34	95	66	464
Signal group 3	6	7	16	10	60
Signal group 4	8	12	50	33	271
Signal group 5	7	8	24	15	111
Signal group 6	7	8	24	15	111
Signal group 7	8	12	50	33	271
Signal group 8	6	86	184	110	662

Wednesday, 25 July 2018, 3:30:00 PM to Wednesday, 25 July 2018, 3:45:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	8	19	56	33	264
C phase	2	21	22	21	43
D phase	9	23	34	30	270
F phase	8	19	60	33	268
Nominal cycle length	7	87	120	102	720
Active cycle length	7	87	120	102	720
Actual cycle	7	79	117	102	716
Split plan 4	1	200	200	200	200
Signal group 1	8	9	46	22	177
Signal group 2	8	9	85	46	374
Signal group 3	6	8	16	11	69
Signal group 4	10	9	49	20	203
Signal group 5	9	13	23	19	176
Signal group 6	9	13	23	19	176
Signal group 7	10	9	49	20	203
Signal group 8	5	38	215	129	645

Wednesday, 25 July 2018, 3:45:00 PM to Wednesday, 25 July 2018, 4:00:00 PM:

Data item	Frequency	Minimum	Maximum	Average	Total
A phase	7	37	48	41	288
C phase	4	19	24	22	88
D phase	7	22	29	26	185
F phase	7	27	54	39	278
Nominal cycle length	6	118	120	118	713
Active cycle length	6	118	120	118	713
Actual cycle	7	117	121	119	839
Split plan 2	1	120	120	120	120
Split plan 3	1	238	238	238	238
Split plan 4	2	120	237	178	357
Signal group 1	7	26	37	30	210
Signal group 2	7	37	92	65	455
Signal group 3	7	8	10	8	58
Signal group 4	11	9	43	22	249
Signal group 5	7	12	20	16	112