



Figure 6.A: Location of all traffic surveys



Figure 6.B: Focus on Locations 1-3

From these traffic counts the network peak hours on the local road network were established as follows:

- AM peak – 09:00 to 10:00
- PM peak – 17:00 to 18:00

The AM network peak, detailed above, is later than the recorded peak in and around the N7, possibly due to the high prevalence of school traffic in Sallins. In order to ensure that the peak impacts are assessed on the entire modelled network, a 3 hour peak period (07:00 – 10:00) has been assessed, with localised flow profiles across the three hour period determined through analysis of the traffic survey data.

Demand matrices were developed to represent the various zone to zone traffic movements in the study area based on the observed traffic patterns across the defined AM (07:00 – 10:00) and PM (16:00 – 19:00) peak periods. The demand matrices allow for differing vehicle classes to be assigned to the network and are profiled at fifteen minute time intervals.

6.3 Traffic Growth

Traffic growth for the surrounding road network is based on the medium growth rates for East Ireland obtained from NRA Project Appraisal Guidelines, Unit 5.5 Link-Based Traffic Growth Forecasting.

The commencement of the Remediation Phase is subject to the determination of the planning process, the period for which is not defined. As a result a start date of remediation works for the purposes of this traffic and transport assessment has been assumed as 2018. This ensures a robust assessment of the Remediation Phase impacts.

By assuming that the peak traffic volumes relating to the remediation works occur in the first year of the Remediation Phase, i.e. 2018, baseline traffic is projected to an earlier year and thus utilises a lower projected baseline. The addition of the associated percentage increase to this baseline, taking cognisance of the estimated total daily construction traffic volumes, would be higher than use of a later start date (this would see a higher projected baseline but lower percentage increase). It is therefore considered that this assumed start date of 2018 represents a more robust approach.

Furthermore, with the proposed Remediation Phase estimated to last between three and four years, the Operational Phase of the proposed Project is anticipated to commence (at the earliest) in 2022. As a result, and in a similar approach to that above, baseline traffic has been projected to this year for the purposes of a robust Operational Phase assessment.

The following medium growth rates, from NRA Project Appraisal Guidelines, Unit 5.5 Link-Based Traffic Growth Forecasting, have been applied to the base flows for the following scenarios:

- Medium growth rate of 1.022 (All Traffic) and 1.016 (HGVs) for peak remediation year of 2018;
- Medium growth rate of 1.055 (All Traffic) and 1.048 (HGVs) for operational year of 2022;
- Medium growth rate of 1.097 (All Traffic) and 1.048 (HGVs) for operational year of 2027; and
- Medium growth rate of 1.187 (All Traffic) and 1.048 (HGVs) for operational year of 2037; and

The demand associated with the development (during remediation and operation) are then added to the background traffic growth levels as detailed in Chapter 5 (Section 5.2.1).

6.4 Assessment Scenarios

The scenarios considered within the traffic impact assessment for the AM and PM peak periods are:

- 2017 Base;
- 2018 Projected Do Minimum (assumed remediation start);
- 2022 Projected Do Minimum (assumed operational start);

- 2027 Projected Do Minimum (assumed operational start);
- 2037 Projected Do Minimum (assumed operational start);
- 2018 Projected + Remediation Traffic;
- 2018 Projected + Remediation Traffic (Sensitivity Test);
- 2022 Projected + Operational Traffic;
- 2027 Projected + Operational Traffic; and
- 2037 Projected + Operational Traffic.

The traffic flows for each of the above scenarios are illustrated in Figures 6.1 to 6.20 in Appendix A.

6.5 Model Reporting and Key Points

Impacts on forecast maximum queue lengths were considered in both the remediation and operational assessments. The maximum queue lengths are summarised in the report for comparison between the model scenarios and the forecasts represent the predicted maximum levels of queuing across the busiest 15 minute periods on each junction approach, which provide a more robust view of the likely queuing levels at peak times. It should also be noted that the forecast maximum queues, represent the maximum expected during the three hour period and do not reflect queuing levels for the full three hours.

Model queue lengths are reported in vehicles based on a standard length of around 5.5m to 6m per vehicle.

Vehicle Delay (seconds) was also considered in the assessment of the model scenarios and these present forecast average delay estimates during the peak periods.

Traffic on the N7, constituting use of Junction 8, was considered as part of the model assessment, in addition to traffic using the local roads that interact at the interchange. Increases in traffic associated with the proposed Project experienced on the mainline N7 are considered to have a negligible impact due to the high carrying capacity of the strategic road network.

6.6 Model Results and Analysis

6.6.1 2017 Base Network

As discussed in Section 6.1, a 2017 microsimulation model was developed, which was calibrated and validated against 2017 base traffic surveys and queue length surveys, in order to robustly assess the remediation and operational impacts of the proposed development. Full details of the calibration and validation of the model are contained within Appendix B.

Table 6.1 below presents maximum queue lengths (vehicles) and Vehicle Delay (seconds) for all junctions within the base AM and PM peak models with commentary on the results below.

Table 6.1: AM and PM Peak Period 2017 Base

2017 (Base Network)						
Junction / Location		Approach	AM Peak Period (07:00-10:00)		PM Peak Period (16:00-19:00)	
			Maximum Queue Length (vehicles)	Delay (seconds)	Maximum Queue Length (vehicles)	Delay (seconds)
1	R407 / Church Ave, Sallins	R407 North	7	2	5	2
		R407 South	11	5	6	3

2017 (Base Network)						
Junction / Location		Approach	AM Peak Period (07:00-10:00)		PM Peak Period (16:00-19:00)	
			Maximum Queue Length (vehicles)	Delay (seconds)	Maximum Queue Length (vehicles)	Delay (seconds)
2	Church Ave (W) / Church Ave (S), Sallins	Church Avenue East	2	9	6	13
		Church Avenue East	0	0	0	1
		Church Avenue North	2	1	1	1
		Church Avenue West	1	1	1	1
3	R407 / Church Ave (E)	Church Avenue East	8	17	18	37
		R407 North	11	2	13	2
		R407 South	31	9	30	8
4	Church Ave / Sallins National School	Church Avenue East	0	2	0	6
		Church Avenue West	0	2	0	2
		School	5	1	5	3
5	Church Ave Railway Bridge	Church Avenue East	0	1	0	5
		Church Avenue West	0	1	0	1
6	Kerdiffstown Road / Naas Golf Club	Kerdiffstown Road East	0	2	0	6
		Kerdiffstown Road West	0	2	0	1
		Golf Club	1	1	0	0
7	Kerdiffstown Road / Landfill Site	Kerdiffstown Road East	0	1	1	5
		Kerdiffstown Road west	0	3	0	2
		Landfill	0	1	1	1
8	N7 Access Road / Johnstown Garden Centre	N7 Access Road East	1	1	1	4
		Johnstown Garden	0	0	1	1
		N7 Access Road West	0	3	0	1
9	N7 North Roundabout	The Paddocks	1	5	2	4
		N7 off-slip EB	3	6	3	6
		Greenhill Overbridge	0	2	1	1
		N7 Access Road	3	7	2	3
10	N7 South Roundabout	Palmerstown	3	4	4	3
		Kill West	2	1	4	3
		Greenhill Overbridge	2	2	2	3
		N7 off-slip WB	4	3	5	4

During the AM peak period, the greatest level of queuing is reported on the R407 (N) arm of the R407 / Church Avenue junction in Sallins, with a maximum queue length of 30 vehicles. At this junction a queue of 13 vehicles is also noted on the R407 (S) arm. Other locations experiencing queuing of note are also in Sallins, at the R407/ Church Avenue junction, where a maximum queue of 7 vehicles is noted on the R407 (N) arm and 11 vehicles on the R407 (S) arm. Queueing elsewhere on the network is relatively minor during the AM peak.

During the PM peak, the R407/Church Avenue East junction again experiences the longest queues in the network, with 26 vehicles southbound, 17 vehicles for Church Avenue eastbound and 12 vehicles for R407 northbound. The other R407/Church Avenue junction in Sallins experiences some degree of queuing in the PM, ranging from 4 to 6 vehicles, with minor levels of queuing at other locations.

There are no predicted queuing issues at any other assessed location on the network.

6.6.2 2018 / 2022 / 2027 / 2037 Projected Network

The 2018 (assumed Remediation Phase start) and 2022 (earliest assumed Operational Phase start) projected scenarios were developed to provide a robust comparative traffic scenario with the existing road network. Furthermore, future year scenarios (5 years and 15 years after estimated park opening/ commencement of Operational Phase) have been modelled to comply with requirements of a TTA.

Tables 6.2 to 6.5 below presents maximum queue lengths (vehicles) and Vehicle Delay (seconds) for all relevant locations within the projected AM and PM peak models with commentary on the results below. In relation to the Remediation Phase specific scenarios (2018), given that no HGV traffic associated with the remediation works will be permitted to route via Sallins, these junctions have been omitted from the Remediation Phase analysis.

Table 6.2: AM and PM Peak Period 2018 Projected

2018 (Projected Network)						
Junction / Location		Approach	AM Peak Period (07:00-10:00)		PM Peak Period (16:00-19:00)	
			Maximum Queue Length (vehicles)	Delay (seconds)	Maximum Queue Length (vehicles)	Delay (seconds)
7	Kerdiffstown Road / Landfill Site	Kerdiffstown Road East	2	2	4	1
		Kerdiffstown Road west	2	3	2	0
		Landfill	0	1	0	0
8	N7 Access Road / Johnstown Garden Centre	N7 Access Road East	2	1	0	1
		Johnstown Garden	0	0	1	0
		N7 Access Road West	1	3	0	0
9	N7 North Roundabout	The Paddocks	1	4	1	1
		N7 off-slip EB	3	6	4	1
		Greenhill Overbridge	0	1	1	0
		N7 Access Road	4	6	2	1
10	N7 South Roundabout	Palmerstown	3	2	3	1
		Kill West	2	1	5	1
		Greenhill Overbridge	2	2	3	0
		N7 off-slip WB	3	3	7	1

Table 6.3: AM and PM Peak Period 2022 Projected

2022 (Projected Network)						
Junction / Locations		Approach	AM Peak Period (07:00-10:00)		PM Peak Period (16:00-19:00)	
			Maximum Queue Length (vehicles)	Delay (seconds)	Maximum Queue Length (vehicles)	Delay (seconds)
1	R407 / Church Ave, Sallins	R407 North	7	2	3	2
		R407 South	13	6	7	3
		Church Avenue East	2	12	6	17
2	Church Ave (W) / Church Ave (S), Sallins	Church Avenue East	0	1	0	1
		Church Avenue North	2	1	1	1
		Church Avenue West	2.3	1	1	2
3	R407 / Church Ave (E)	Church Avenue East	7	17	17	38
		R407 North	13	2	12	2
		R407 South	30	9	26	8
4	Church Ave / Sallins National School	Church Avenue East	0	3	0	6
		Church Avenue West	1	2	0	1
		School	4	1	4	3
5	Church Ave Railway Bridge	Church Avenue East	0	1	0	5
		Church Avenue West	0	1	0	0
6	Kerdiffstown Road / Naas Golf Club	Kerdiffstown Road East	0	2	0	7
		Kerdiffstown Road West	0	2	0	1
		Golf Club	1	1	0	0
7	Kerdiffstown Road / Landfill Site	Kerdiffstown Road East	2	2	2	4
		Kerdiffstown Road West	1	3	3	2
		Landfill	0	1	1	0
8	N7 Access Road / Johnstown Garden Centre	N7 Access Road East	2	1	1	4
		Johnstown Garden	0	0	1	1
		N7 Access Road West	2	4	0	1
9	N7 North Roundabout	The Paddocks	1	4	1	4
		N7 off-slip EB	3	6	3	6
		Greenhill Overbridge	0	1	1	1
		N7 Access Road	3	6	2	4
10	N7 South Roundabout	Palmerstown	2	2	3	4
		Kill West	1	1	3	3
		Greenhill Overbridge	3	2	1	2
		N7 off-slip WB	3	3	7	5

Table 6.4: AM and PM Peak Period 2027 Projected

2027 (Projected Network)						
Junction / Locations		Approach	AM Peak Period (07:00-10:00)		PM Peak Period (16:00-19:00)	
			Maximum Queue Length (vehicles)	Delay (seconds)	Maximum Queue Length (vehicles)	Delay (seconds)
1	R407 / Church Ave, Sallins	R407 North	11	2	4	2
		R407 South	11	6	6	3
		Church Avenue East	3	10	6	16
2	Church Ave (W) / Church Ave (S), Sallins	Church Avenue East	0	0	0	1
		Church Avenue North	2	1	1	1
		Church Avenue West	0	1	1	1
3	R407 / Church Ave (E)	Church Avenue East	7	17	16	39
		R407 North	13	2	13	2
		R407 South	30	10	26	7
4	Church Ave / Sallins National School	Church Avenue East	0	3	2	7
		Church Avenue West	0	2	0	2
		School	4	1	4	2
5	Church Ave Railway Bridge	Church Avenue East	0	1	0	5
		Church Avenue West	0	1	0	1
6	Kerdiffstown Road / Naas Golf Club	Kerdiffstown Road East	0	2	0	1
		Kerdiffstown Road West	1	1	0	1
		Golf Club	0	2	0	7
7	Kerdiffstown Road / Landfill Site	Kerdiffstown Road East	2	1	3	4
		Kerdiffstown Road West	1	3	2	2
		Landfill	0	0	0	0
8	N7 Access Road / Johnstown Garden Centre	N7 Access Road East	1	1	2	4
		Johnstown Garden	0	0	1	1
		N7 Access Road West	3	4	0	1
9	N7 North Roundabout	The Paddocks	1	5	1	4
		N7 off-slip EB	3	6	4	6
		Greenhill Overbridge	1	1	1	1
		N7 Access Road	4	6	2	3
10	N7 South Roundabout	Palmerstown	3	2	3	3
		Kill West	2	1	4	3
		Greenhill Overbridge	2	2	2	2
		N7 off-slip WB	3	3	8	5

Table 6.5: AM and PM Peak Period 2037 Projected

2037 (Projected Network)						
Junction / Locations		Approach	AM Peak Period (07:00-10:00)		PM Peak Period (16:00-19:00)	
			Maximum Queue Length (vehicles)	Delay (seconds)	Maximum Queue Length (vehicles)	Delay (seconds)
1	R407 / Church Ave, Sallins	R407 North	12	2	11	2
		R407 South	12	7	11	6
		Church Avenue East	2	16	8	21
2	Church Ave (W) / Church Ave (S), Sallins	Church Avenue East	0	1	6	3
		Church Avenue North	1	2	1	1
		Church Avenue West	1	1	2	1
3	R407 / Church Ave (E)	Church Avenue East	10	26	22	69
		R407 North	14	2	13	2
		R407 South	35	14	31	8
4	Church Ave / Sallins National School	Church Avenue East	0	4	2	7
		Church Avenue West	1	2	0	1
		School	4	1	4	3
5	Church Ave Railway Bridge	Church Avenue East	0	2	0	5
		Church Avenue West	0	1	0	0
6	Kerdiffstown Road / Naas Golf Club	Kerdiffstown Road East	0	2	0	1
		Kerdiffstown Road West	1	1	0	1
		Golf Club	0	2	1	7
7	Kerdiffstown Road / Landfill Site	Kerdiffstown Road East	2	1	3	4
		Kerdiffstown Road West	2	4	2	2
		Landfill	0	0	0	0
8	N7 Access Road / Johnstown Garden Centre	N7 Access Road East	2	1	3	9
		Johnstown Garden	0	0	1	1
		N7 Access Road West	4	4	0	1
9	N7 North Roundabout	The Paddocks	1	5	2	4
		N7 off-slip EB	3	6	4	7
		Greenhill Overbridge	0	2	1	1
		N7 Access Road	5	6	3	3
10	N7 South Roundabout	Palmerstown	3	4	4	3
		Kill West	2	1	6	3
		Greenhill Overbridge	4	2	2	2
		N7 off-slip WB	3	3	10	5

For future year projections, minor increases are anticipated in relation to maximum queuing and delay at a number of locations on the network, but overall delay and maximum queuing remain negligible. A similar pattern is reflected for Junction 8.

No HGVs will be permitted to route via Sallins during the Remediation Phase hence no impacts to future traffic flows from Remediation Phase traffic is anticipated for Sallins junctions (1-6).

6.6.3 2018 Projected + Remediation Phase Traffic Network

The 2018 projected plus Remediation Phase traffic scenario (assuming 30% of Remediation Phase traffic arrives / departs in the peak periods) were developed to provide a comparative traffic scenario with base / projected road network performance.

Table 6.6 below presents maximum queue lengths (vehicles) and Vehicle Delay (seconds) for all relevant junctions within the projected 2018 + Remediation Phase AM and PM peak models with commentary on the results below. In relation to the Remediation Phase specific scenarios (2018), given that no HGV traffic will be permitted to route via Sallins during the Remediation Phase, and with only a small number of site personnel trips anticipated, these junctions have been omitted from the Remediation Phase analysis.

Table 6.6: AM and PM Peak Period 2018 Projected + Remediation Phase

2018 Projected + Remediation						
Junction / Location		Approach	AM Peak Period (07:00-10:00)		PM Peak Period (16:00-19:00)	
			Maximum Queue Length (vehicles)	Delay (seconds)	Maximum Queue Length (vehicles)	Delay (seconds)
7	Kerdiffstown Road / Landfill Site	Kerdiffstown Road East	2	2	3	5
		Kerdiffstown Road West	3	3	4	2
		Landfill	2	1	1	1
8	N7 Access Road / Johnstown Garden Centre	N7 Access Road East	1	1	1	6
		Johnstown Garden	0	0	1	2
		N7 Access Road West	1	3	1	1
9	N7 North Roundabout	The Paddocks	1	1	2	4
		N7 off-slip EB	3	6	4	6
		Greenhill Overbridge	0	1	1	1
		N7 Access Road	3	8	2	3
10	N7 South Roundabout	Palmerstown	3	3	3	5
		Kill West	2	1	6	3
		Greenhill Overbridge	2	2	2	2
		N7 off-slip WB	3	3	7	5

Locations where projected 2018 + Remediation Phase traffic is anticipated to increase by 1 vehicle length or more include the following:

AM Peak (level of increase in queuing)

- J7 (Kerdiffstown Road west at landfill site) –1 vehicle

PM Peak (level of increase in queuing)

- J7 (Kerdiffstown Road westbound at landfill site) –1 vehicle

The overall impact of these additional vehicles in relation to maximum queuing and delay is negligible.

It is recorded that HGV traffic (which comprises the majority of Remediation Phase traffic) will not be permitted to route via Sallins, hence no impacts to future traffic flows from Remediation Phase traffic is anticipated for Sallins junctions (1-6).

6.6.4 2018 Projected + Remediation Phase (Sensitivity Test) Traffic Network

The 2018 projected plus Remediation Phase traffic sensitivity test scenario (assuming 100% of Remediation Phase traffic arrives / departs in both peak periods) was developed to provide a comparative traffic scenario with base / projected road network performance.

Table 6.7 below presents maximum queue lengths (vehicles) and Vehicle Delay (seconds) for all relevant junctions within the projected 2018 + Remediation Phase sensitivity test AM and PM peak models with commentary on the results below. In relation to the Remediation Phase specific scenarios (2018), given that no HGV traffic will be permitted to route via Sallins during the Remediation Phase, and with only a small number of site personnel trips anticipated, these junctions have been omitted from the Remediation Phase analysis.

Table 6.7: AM and PM Peak Period 2018 Projected + Remediation Phase (Sensitivity Test)

2018 Projected + Remediation (sensitivity test)						
Junction / Location		Approach	AM Peak Period (07:00-10:00)		PM Peak Period (16:00-19:00)	
			Maximum Queue Length (vehicles)	Delay (seconds)	Maximum Queue Length (vehicles)	Delay (seconds)
7	Kerdiffstown Road / Landfill Site	Kerdiffstown Road East	5	2	4	5
		Kerdiffstown Road West	3	3	4	2
		Landfill	3	1	2	1
8	N7 Access Road / Johnstown Garden Centre	N7 Access Road East	2	3	3	4
		Johnstown Garden	0	0	1	2
		N7 Access Road West	2	3	1	1
9	N7 North Roundabout	The Paddocks	1	4	2	4
		N7 off-slip EB	4	6	4	6
		Greenhill Overbridge	0	2	1	1
		N7 Access Road	7	6	3	3
10	N7 South Roundabout	Palmerstown	3	2	3	3
		Kill West	2	1	5	3
		Greenhill Overbridge	3	2	2	2
		N7 off-slip WB	4	3	7	5

The sensitivity test scenario shows more acute growth in queue lengths, though delay time remains relatively minor. For the landfill site entrance (junction 7), a maximum potential AM peak queue increase of 4 vehicles for eastbound Kerdiffstown Road is predicted. At the same junction in the PM peak, an increased queue length of 4 vehicles would be anticipated for westbound Kerdiffstown Road.

Some minor growth in queue lengths and time delay would be predicted for junctions 8, 9 and 10. The largest single location for potential growth aside from the site entrance is shown to be at the N7 north roundabout

junction with N7 Access Road, where queuing would increase by 3 vehicles in the AM peak. During the PM peak, the largest potential area for queuing growth is at the N7 south roundabout junction with the N7 westbound off slip, a growth of 2 vehicles.

It is recorded that HGV traffic (which comprises the majority of Remediation Phase traffic) will not be permitted to route via Sallins, hence no impacts to future traffic flows from Remediation Phase traffic is anticipated for Sallins junctions (1-6).

6.6.5 2022 Projected + Operational Phase Traffic Network

The 2022 (assumed Operational Phase start) projected plus Operational Phase traffic scenarios were developed to provide a comparative traffic scenario with the base / projected road network performance.

Table 6.8 below presents maximum queue lengths (vehicles) and Vehicle Delay (seconds) for all locations within the projected 2022 + Operational Phase Traffic AM and PM peak models with commentary on the results below.

Table 6.8: AM and PM Peak Period 2022 Projected + Operational Phase Traffic

2022 Projected + Operational						
Junction / Location		Approach	AM Peak Period (07:00-10:00)		PM Peak Period (16:00-19:00)	
			Maximum Queue Length (vehicles)	Delay (seconds)	Maximum Queue Length (vehicles)	Delay (seconds)
1	R407 / Church Ave, Sallins	R407 North	7	2	4	2
		R407 South	11	6	8	3
		Church Avenue East	2	10	7	17
2	Church Ave (W) / Church Ave (S), Sallins	Church Avenue East	0	0	1	2
		Church Avenue North	2	1	1	1
		Church Avenue West	0	1	1	2
3	R407 / Church Ave (E)	Church Avenue East	8	18	19	40
		R407 North	13	2	13	2
		R407 South	34	10	32	10
4	Church Ave / Sallins National School	Church Avenue East	0	3	0	6
		Church Avenue West	1	2	0	1
		School	5	1	5	3
5	Church Ave Railway Bridge	Church Avenue East	0	1	0	5
		Church Avenue West	0	1	0	0
6	Kerdiffstown Road / Naas Golf Club	Kerdiffstown Road East	0	2	0	6
		Kerdiffstown Road West	0	2	0	1
		Golf Club	1	1	0	0
7	Kerdiffstown Road / Landfill Site	Kerdiffstown Road East	3	2	3	5
		Kerdiffstown Road West	1	3	3	2
		Landfill	1	1	1	1
8	N7 Access Road /	N7 Access Road East	1	1	1	4

2022 Projected + Operational						
Junction / Location		Approach	AM Peak Period (07:00-10:00)		PM Peak Period (16:00-19:00)	
			Maximum Queue Length (vehicles)	Delay (seconds)	Maximum Queue Length (vehicles)	Delay (seconds)
	Johnstown Garden Centre	Johnstown Garden	0	0	1	1
		N7 Access Road West	2	3	1	1
9	N7 North Roundabout	The Paddocks	1	5	2	4
		N7 off-slip EB	3	6	4	6
		Greenhill Overbridge	0	1	1	1
		N7 Access Road	4	6	2	3
10	N7 South Roundabout	Palmerstown	2	3	3	4
		Kill West	2	1	4	3
		Greenhill Overbridge	2	2	2	2
		N7 off-slip WB	3	3	7	5

All 10 junctions will potentially be impacted by Operational Phase traffic. Locations where projected 2022 + Operational Phase traffic is anticipated to increase by more than 1 vehicle length include the following:

AM Peak (level of increase in queuing)

- J3 (R407 southbound at Church Avenue East) – 3 vehicles
- J7 (Kerdiffstown Road eastbound at landfill site) – 2 vehicles

PM Peak (level of increase in queuing)

- J1 (R407 southbound at Church Avenue) – 2 vehicles
- J7 (Kerdiffstown Road westbound at landfill site) – 2 vehicles

The overall impact of these additional vehicles in relation to maximum queuing and delay is negligible with only minor increases in queueing predicted at a small number of locations on the network.

6.6.6 2027 Projected + Operational Phase Traffic Network

The 2027 (5 years post Operational Phase start) projected plus Operational Phase traffic scenarios were developed to provide a comparative traffic scenario with the base / projected road network performance.

Table 6.9 below presents maximum queue lengths (vehicles) and Vehicle Delay (seconds) for all locations within the projected 2027 + Operational Phase Traffic AM and PM peak models with commentary on the results below.

Table 6.9: AM and PM Peak Period 2027 Projected + Operational Phase Traffic

2027 Projected + Operational						
Junction / Location		Approach	AM Peak Period (07:00-10:00)		PM Peak Period (16:00-19:00)	
			Maximum Queue Length (vehicles)	Delay (seconds)	Maximum Queue Length (vehicles)	Delay (seconds)
1	R407 / Church Ave, Sallins	R407 North	7	2	4	2
		R407 South	12	6	8	3
		Church Avenue East	8	15	6	14
2	Church Ave (W) / Church Ave (S), Sallins	Church Avenue East	0	0	0	1
		Church Avenue North	2	2	1	1
		Church Avenue West	3	1	1	1
3	R407 / Church Ave (E)	Church Avenue East	6	19	18	39
		R407 North	13	2	13	2
		R407 South	30	11	25	7
4	Church Ave / Sallins National School	Church Avenue East	0	3	1	7
		Church Avenue West	0	2	1	2
		School	4	1	4	2
5	Church Ave Railway Bridge	Church Avenue East	0	1	0	5
		Church Avenue West	0	1	0	1
6	Kerdiffstown Road / Naas Golf Club	Kerdiffstown Road East	0	2	0	1
		Kerdiffstown Road West	1	1	0	0
		Golf Club	0	2	1	7
7	Kerdiffstown Road / Landfill Site	Kerdiffstown Road East	2	1	3	4
		Kerdiffstown Road West	2	3	3	2
		Landfill	0	1	0	0
8	N7 Access Road / Johnstown Garden Centre	N7 Access Road East	0	1	1	6
		Johnstown Garden	0	0	0	1
		N7 Access Road West	0	3	1	1
9	N7 North Roundabout	The Paddocks	1	5	1	4
		N7 off-slip EB	2	6	4	6
		Greenhill Overbridge	0	1	1	1
		N7 Access Road	5	6	2	3
10	N7 South Roundabout	Palmerstown	3	2	4	3
		Kill West	1	1	6	3
		Greenhill Overbridge	2	2	2	2
		N7 off-slip WB	3	3	7	5

All 10 junctions will potentially be impacted by Operational Phase traffic. Locations where projected 2027 + Operational Phase traffic is anticipated to increase by more than 1 vehicle length against the 2027 projected scenario include the following:

AM Peak (level of increase in queuing)

- J1 (R407 / Church Ave, Sallins at Church Avenue East) – 5 vehicles
- J2 (Church Ave (W) / Church Ave (S), Sallins at Church Avenue West) – 2 vehicles
- J9 (N7 North Roundabout at N7 Access Road) – 2 vehicles

PM Peak (level of increase in queuing)

- J1 (R407 southbound at Church Avenue) – 2 vehicles

The overall impact of these additional vehicles in relation to maximum queuing and delay is negligible.

6.6.7 2037 Projected + Operational Phase Traffic Network

The 2037 (15 years post Operational Phase start) projected plus Operational Phase traffic scenarios were developed to provide a comparative traffic scenario with the base / projected road network performance.

Table 6.10 below presents maximum queue lengths (vehicles) and Vehicle Delay (seconds) for all locations within the projected 2037 + Operational Phase Traffic AM and PM peak models with commentary on the results below.

Table 6.10: AM and PM Peak Period 2037 Projected + Operational Phase Traffic

2037 Projected + Operational						
Junction / Location		Approach	AM Peak Period (07:00-10:00)		PM Peak Period (16:00-19:00)	
			Maximum Queue Length (vehicles)	Delay (seconds)	Maximum Queue Length (vehicles)	Delay (seconds)
1	R407 / Church Ave, Sallins	R407 North	14	2	8	2
		R407 South	12	7	12	4
		Church Avenue East	2	18	7	25
2	Church Ave (W) / Church Ave (S), Sallins	Church Avenue East	0	0	4	2
		Church Avenue North	2	2	1	1
		Church Avenue West	1	1	1	2
3	R407 / Church Ave (E)	Church Avenue East	9	25	23	64
		R407 North	13	2	13	2
		R407 South	35	13	29	8
4	Church Ave / Sallins National School	Church Avenue East	0	3	2	7
		Church Avenue West	1	2	1	3
		School	4	1	4	3
5	Church Ave Railway Bridge	Church Avenue East	0	1	0	6
		Church Avenue West	0	1	0	1
6	Kerdiffstown Road / Naas Golf Club	Kerdiffstown Road East	0	2	0	1
		Kerdiffstown Road West	1	1	0	0
		Golf Club	0	2	0	7

2037 Projected + Operational						
Junction / Location		Approach	AM Peak Period (07:00-10:00)		PM Peak Period (16:00-19:00)	
			Maximum Queue Length (vehicles)	Delay (seconds)	Maximum Queue Length (vehicles)	Delay (seconds)
7	Kerdiffstown Road / Landfill Site	Kerdiffstown Road East	2	2	4	5
		Kerdiffstown Road West	2	4	3	2
		Landfill	1	1	1	1
8	N7 Access Road / Johnstown Garden Centre	N7 Access Road East	1	1	1	4
		Johnstown Garden	0	0	1	2
		N7 Access Road West	1	4	0	1
9	N7 North Roundabout	The Paddocks	1	5	1	4
		N7 off-slip EB	4	6	4	7
		Greenhill Overbridge	0	2	2	1
		N7 Access Road	4	8	2	6
10	N7 South Roundabout	Palmerstown	3	2	5	3
		Kill West	2	1	5	3
		Greenhill Overbridge	2	2	2	2
		N7 off-slip WB	3	3	8	5

All 10 junctions will potentially be impacted by Operational Phase traffic. Locations where projected 2037 + Operational Phase traffic is anticipated to increase by more than 1 vehicle length include the following:

AM Peak (level of increase in queuing)

- J1 (R407 / Church Ave, Sallins at R407 North Arm) – 2 vehicles

The overall impact of these additional vehicles in relation to maximum queuing and delay is negligible.

7. Summary and Conclusion

7.1 Summary

The scope of the assessment and related assumptions used in this Traffic and Transport Assessment have been discussed and agreed with Kildare County Council (KCC) Roads Department.

Reference has been made to national, regional and local planning policy. The policies at all levels aim to promote sustainable travel, provide a choice of transport mode and reduce the impact of private car use. The proposed development has been designed in accordance with these policies.

Vehicular access to the site will be via a new roundabout, located in close proximity to the existing site access off L2005 Kerdiffstown Road, to be constructed in order to provide an access arrangement that can safely accommodate all traffic associated with all phases of the proposed Project. The location and form of the proposed access, selected following an appraisal of options through a desk study and site visit, represents the safest and most appropriate location for the access. The roundabout and associated realignment of the L2005 Kerdiffstown Road, which has been designed in accordance with DMURS standards, maximises visibility despite the constrained environment and improves the condition of the existing road as well as providing a safe access arrangement for the proposed Project.

Pedestrians and cyclists are given due consideration within the internal site layout with appropriate walking and cycling facilities provided. Furthermore, a shared footway / cycleway is proposed along the realigned extents of the L2005 Kerdiffstown Road, which will link the site with the existing pedestrian / cycle infrastructure to the south of the L2005 Kerdiffstown Road.

The operation of the road network and key junction capacity in the vicinity of the proposed Project has been modelled using a VISSIM microsimulation model. The model evaluates the potential impacts on the local road network during Remediation and Operational Phases for the proposed Project. Through undertaking a robust assessment of construction and operational traffic impacts, it is predicted that the existing road network can accommodate all additional traffic associated with the proposed Project.

7.2 Conclusions

The assessment of construction and operational traffic generated by the proposed Project indicates that the existing road network can accommodate the additional traffic during the peak hours. Traffic associated with the Remediation Phase and Operational Phase is not predicted to significantly increase traffic levels at the junctions studied and therefore it can be concluded that the proposed Project will not have a detrimental impact on the road network.

The provision of a Construction Traffic Management Plan will mitigate and reduce the environmental impacts of the Remediation Phase. In conjunction with appropriate parking provision this will encourage staff to travel by sustainable modes to the work site as well as ensure that traffic, equipment and materials associated with the Remediation Phase can reasonably be accommodated within the site or at a designated off-site space.

For the Operational Phase adequate provision for both car and cycle parking is included within the proposed Project, aligning with the requirements of the County Development Plan. The promotion of cycle and pedestrian access also aligns with the objectives of current policy documents.

Appendix A. Traffic Flow Diagrams

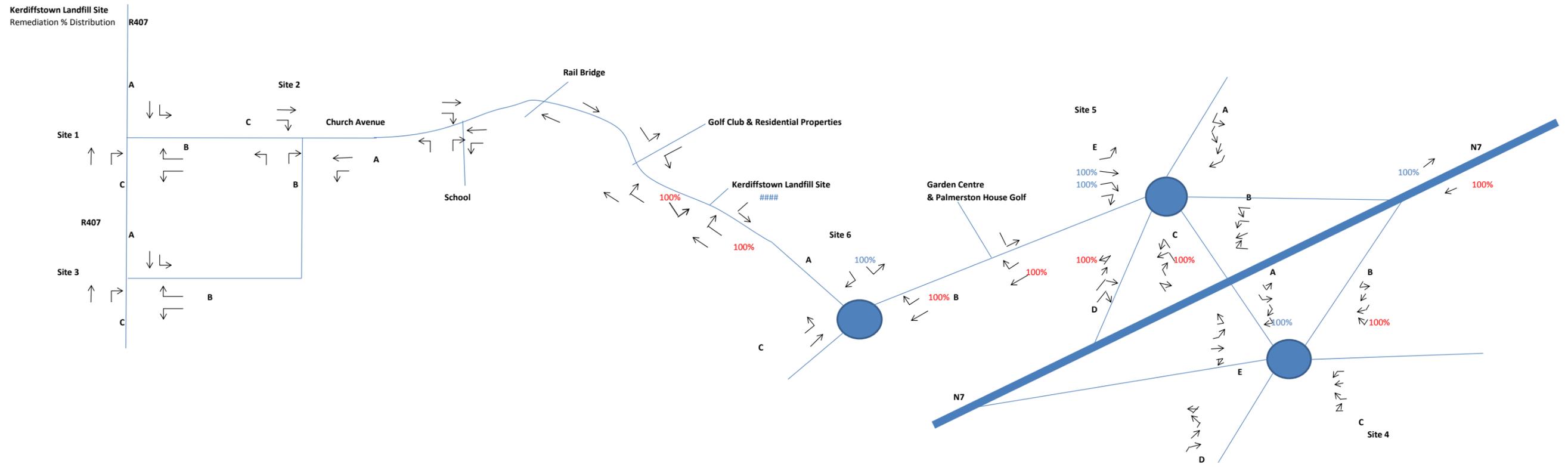


Figure 5.1

Kerdiffstown Landfill Site
AM Remediation Trips

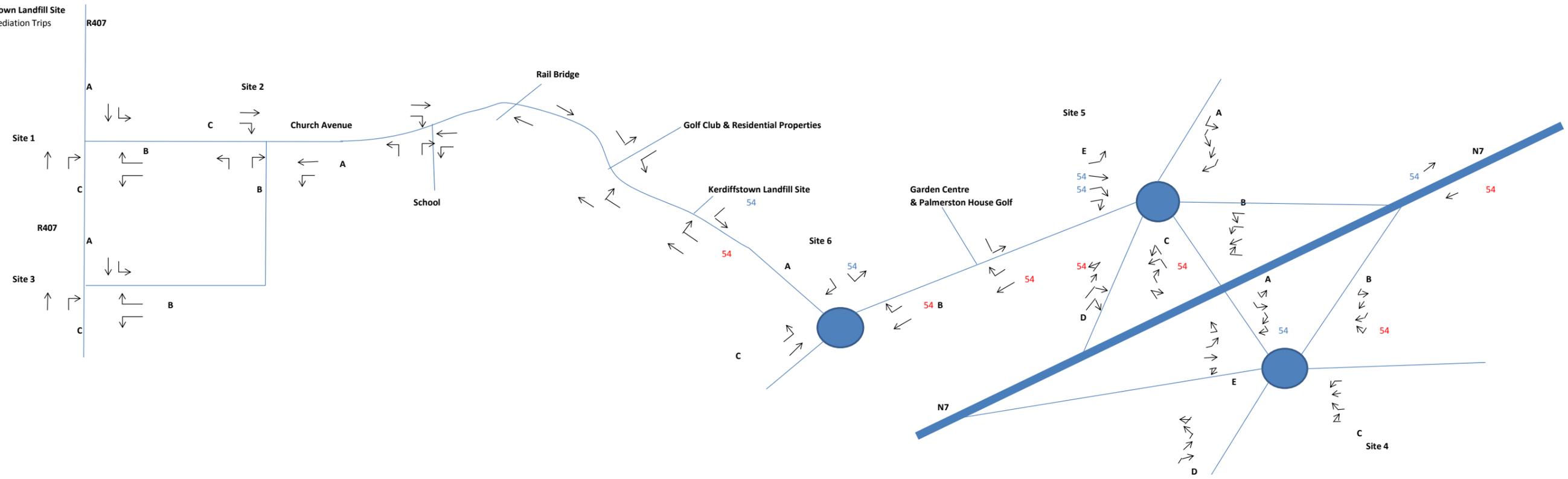


Figure 5.2

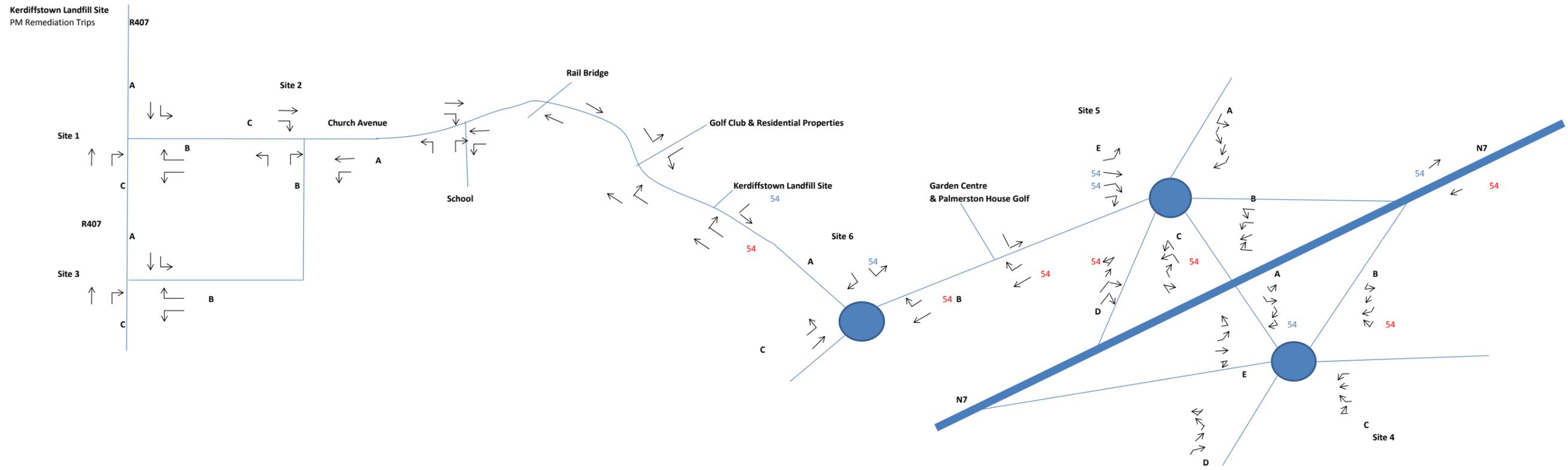


Figure 5.3

Kerdiffstown Landfill Site
AM Remediation Trips
Sensitivity Test

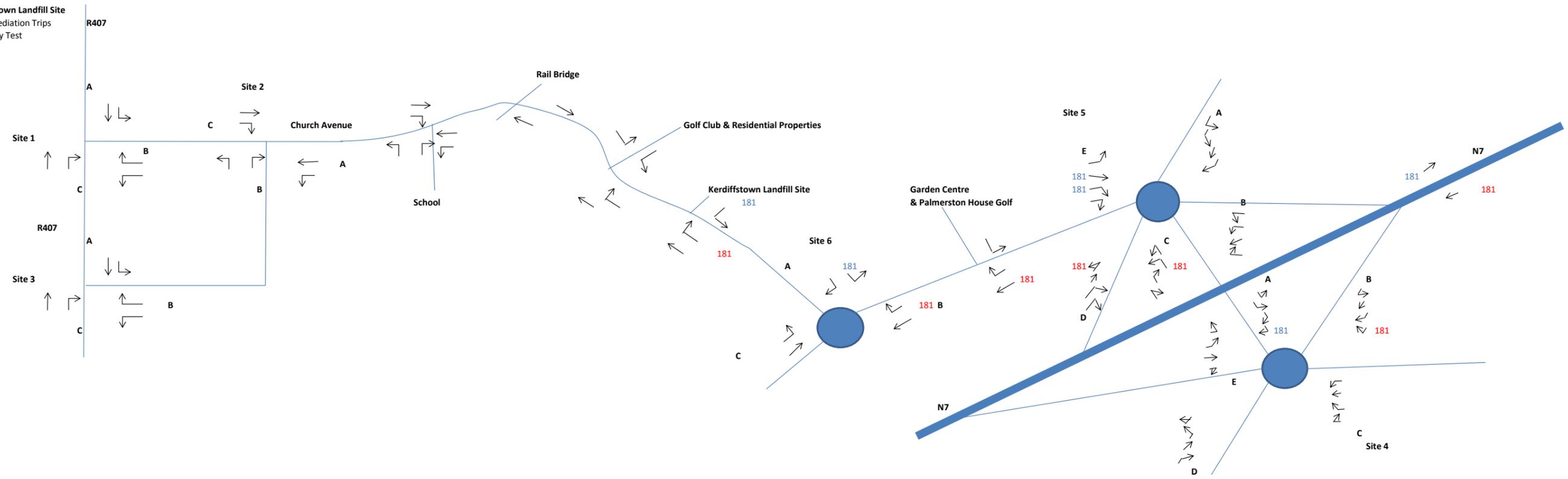


Figure 5.4

Kerdiffstown Landfill Site
PM Remediation Trips
Sensitivity Test

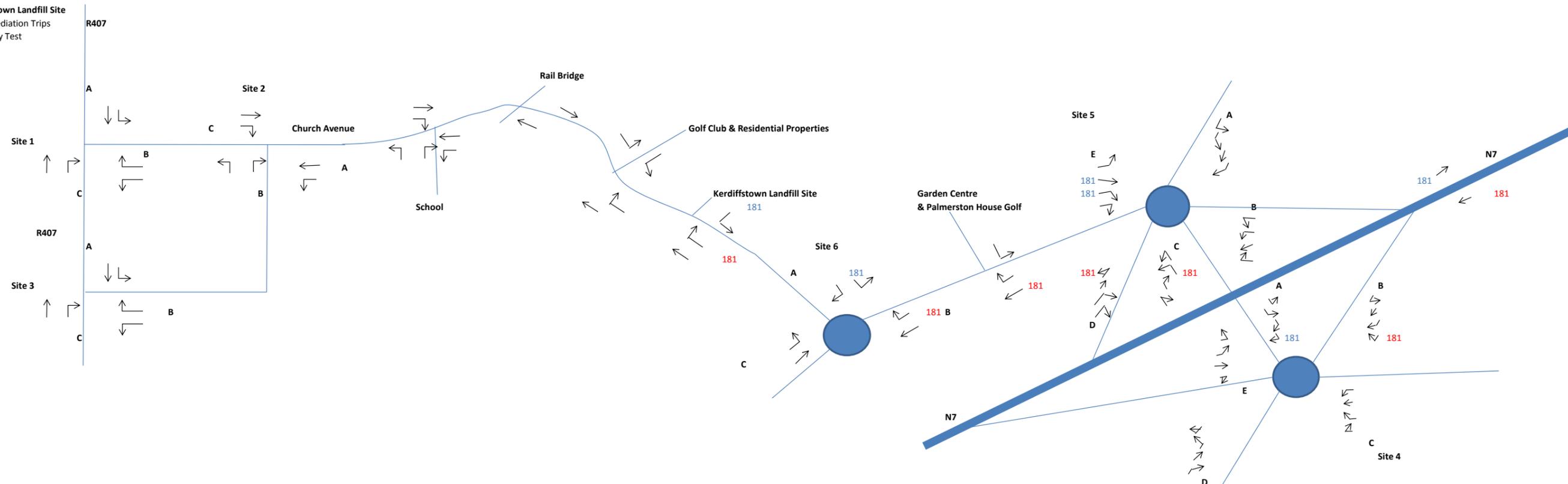


Figure 5.5

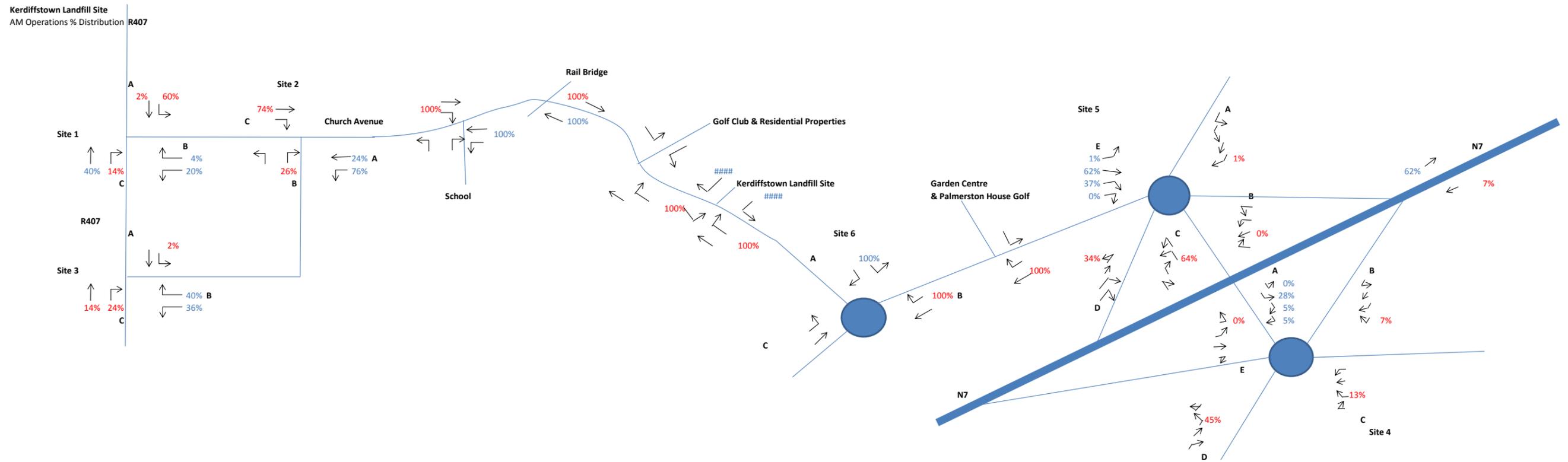


Figure 5.6

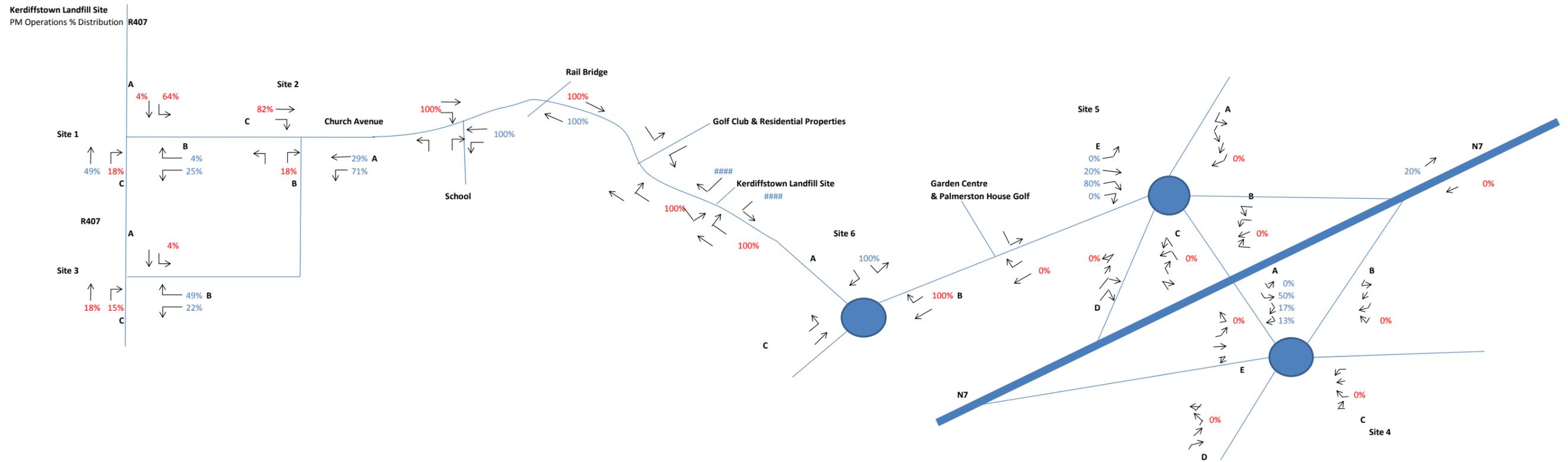


Figure 5.7

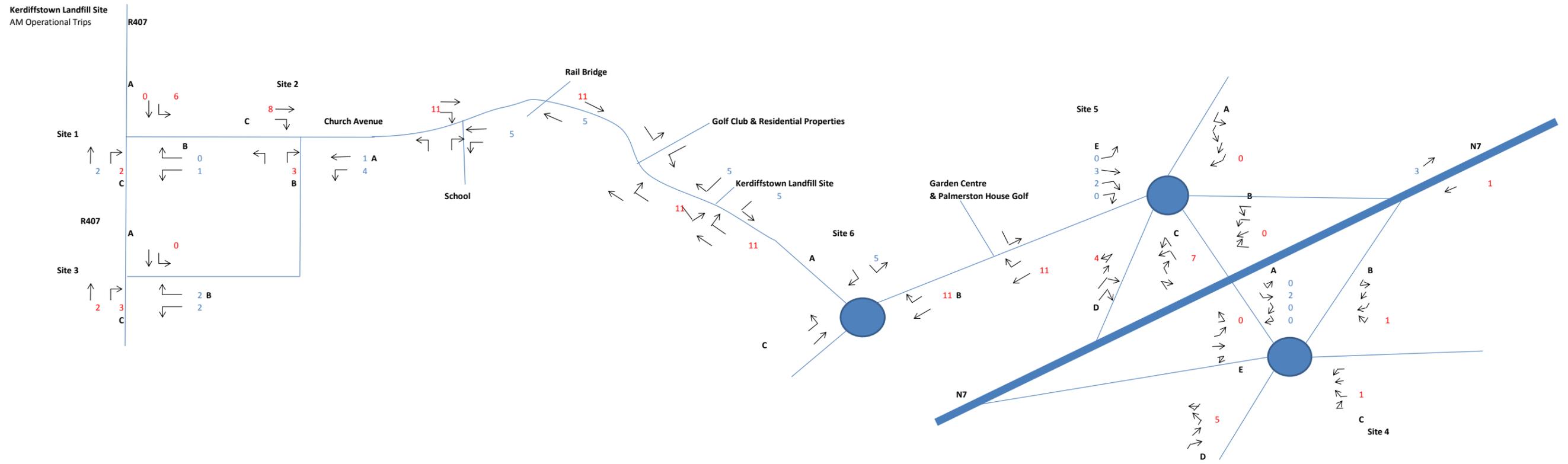


Figure 5.8

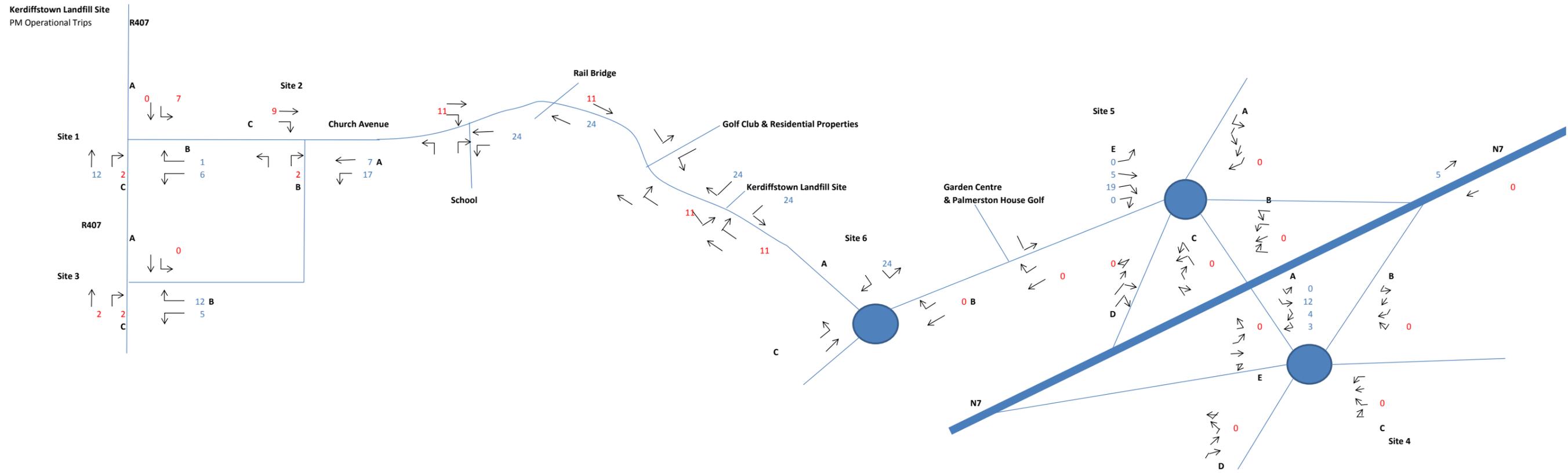


Figure 5.9

Kerdiffstown Landfill Site
 AM Base 2017
 07:00-10:00

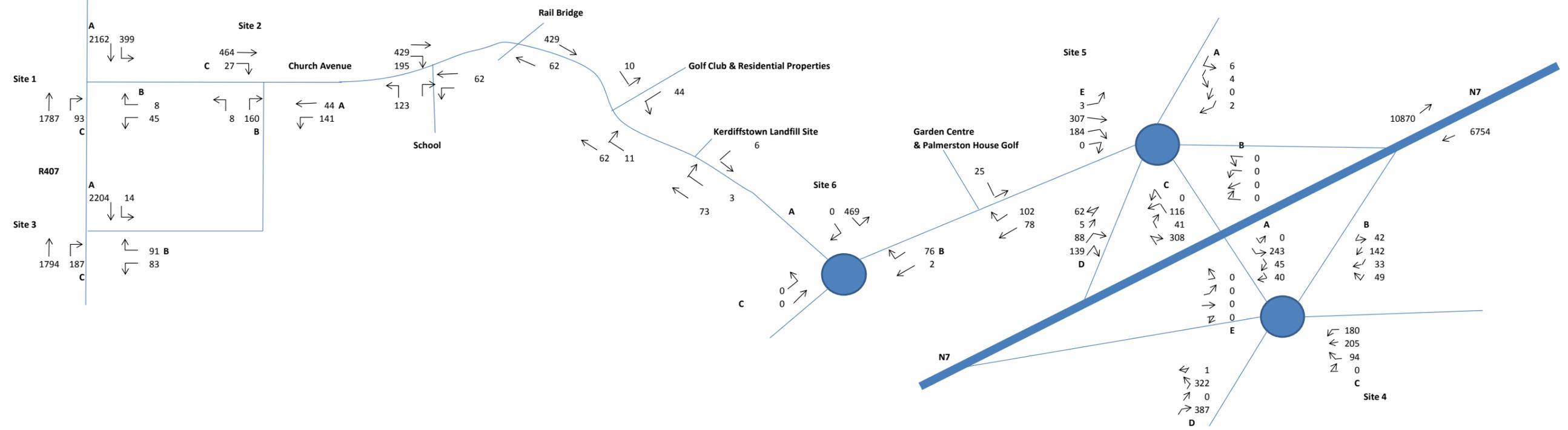


Figure 6.1

Kerdiffstown Landfill Site
 PM Base 2017
 16:00-19:00

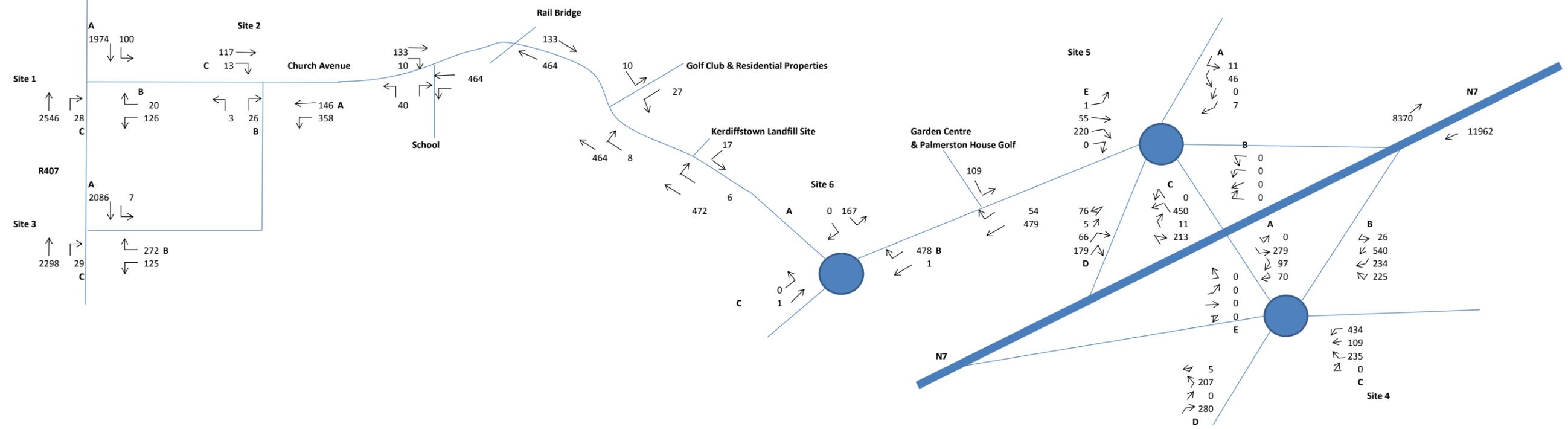
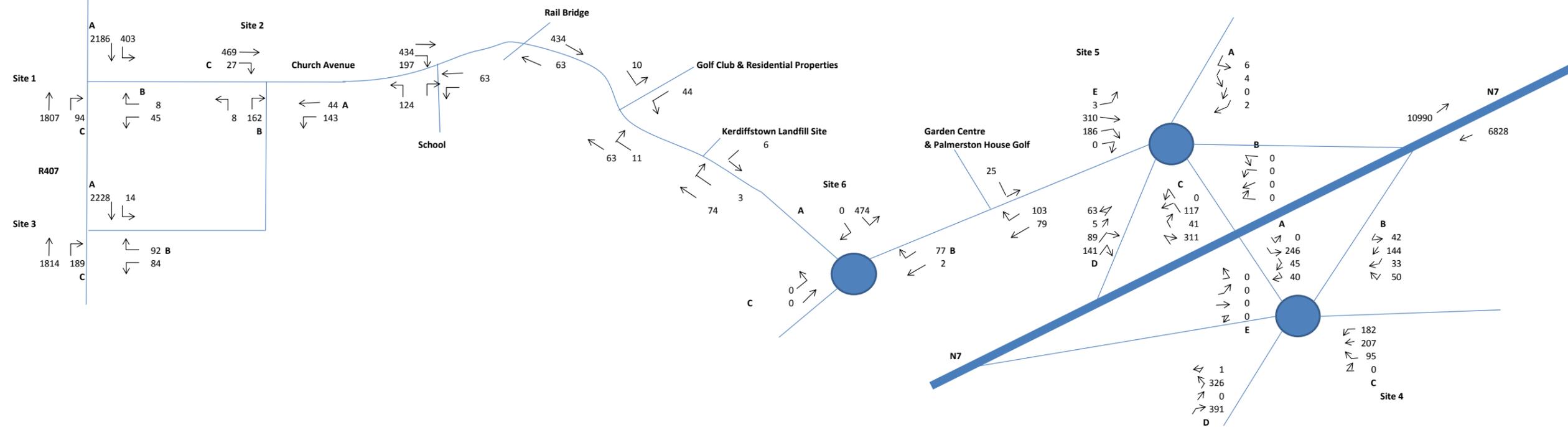


Figure 6.2

Kerdiffstown Landfill Site
 AM Projected 2018 R407
 07:00-10:00



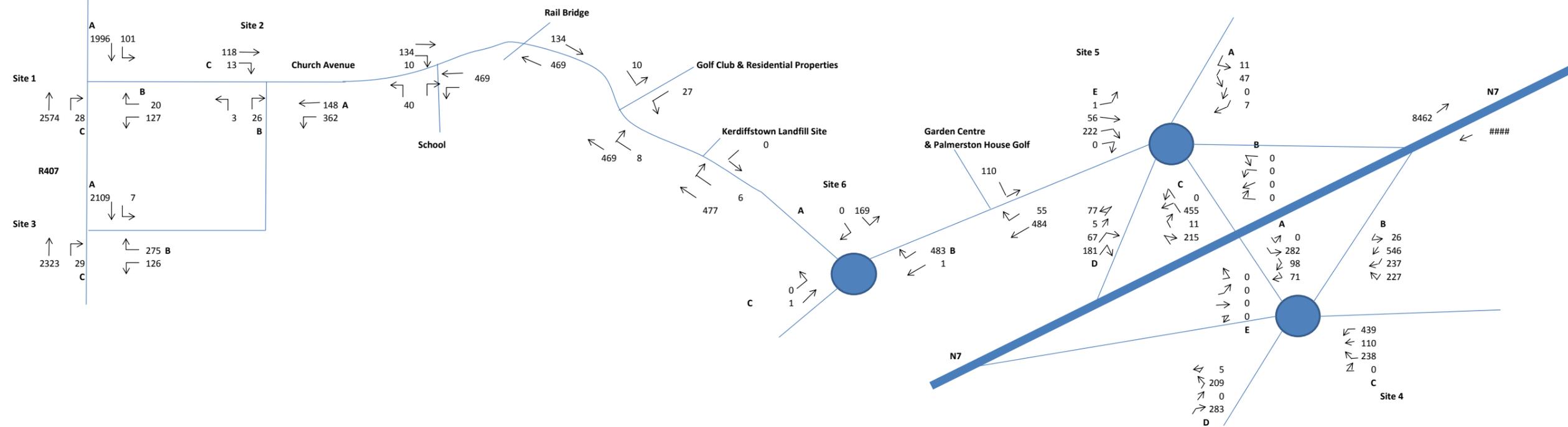


Figure 6.4

Kerdiffstown Landfill Site
 AM Projected 2022 R407
 07:00-10:00

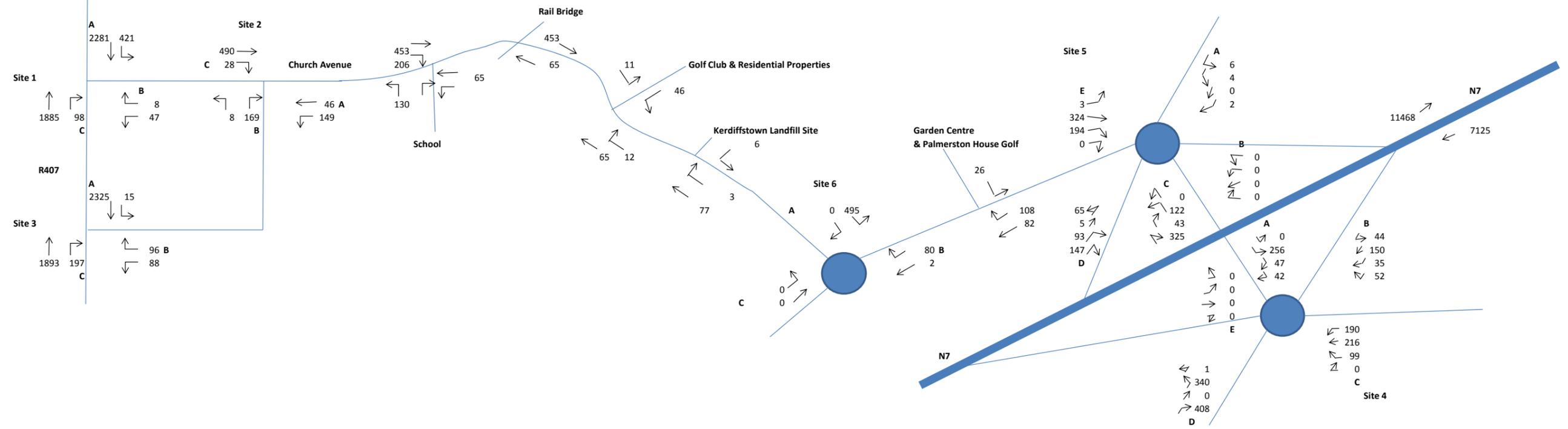


Figure 6.5

Kerdiffstown Landfill Site
 AM Projected 2027
 R407
 07:00-10:00

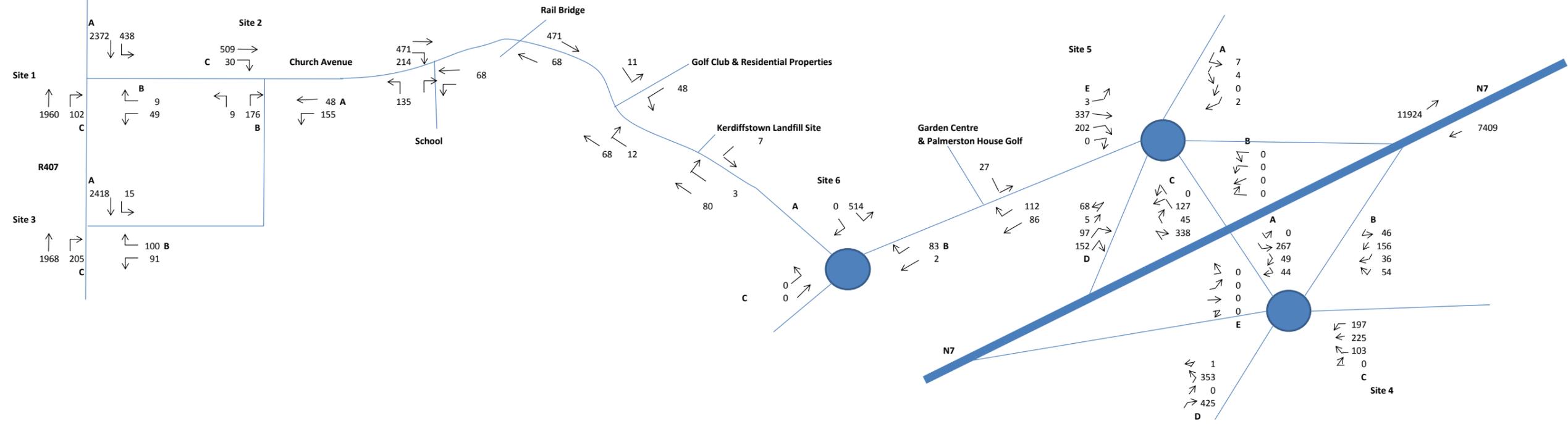


Figure 6.7

Kerdiffstown Landfill Site
 PM Projected 2027 R407
 07:00-10:00

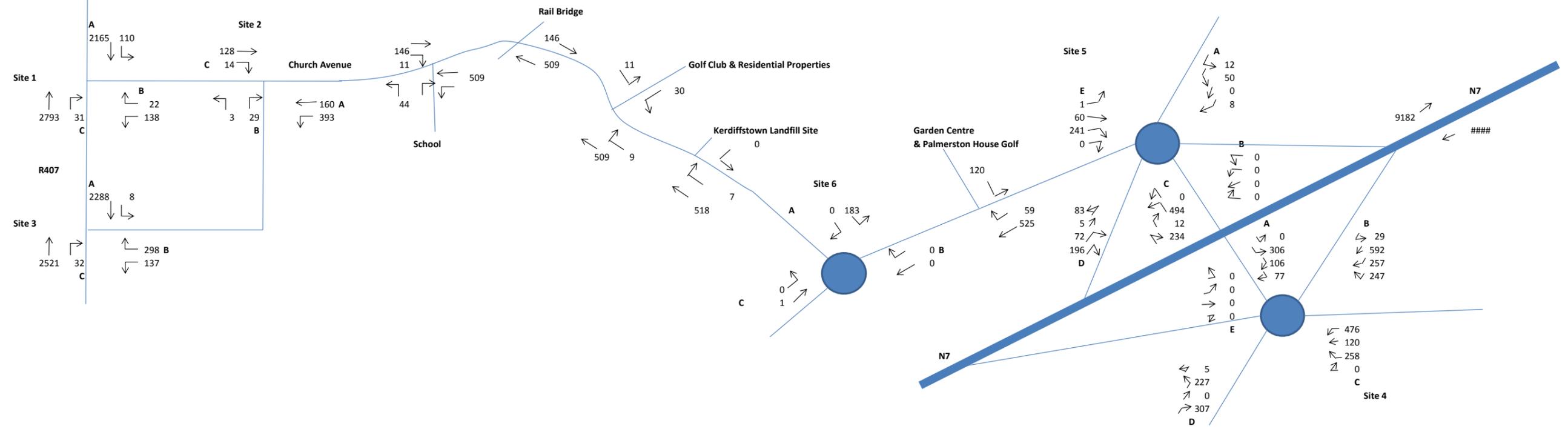


Figure 6.8

Kerdiffstown Landfill Site
 AM Projected 2037 R407
 07:00-10:00

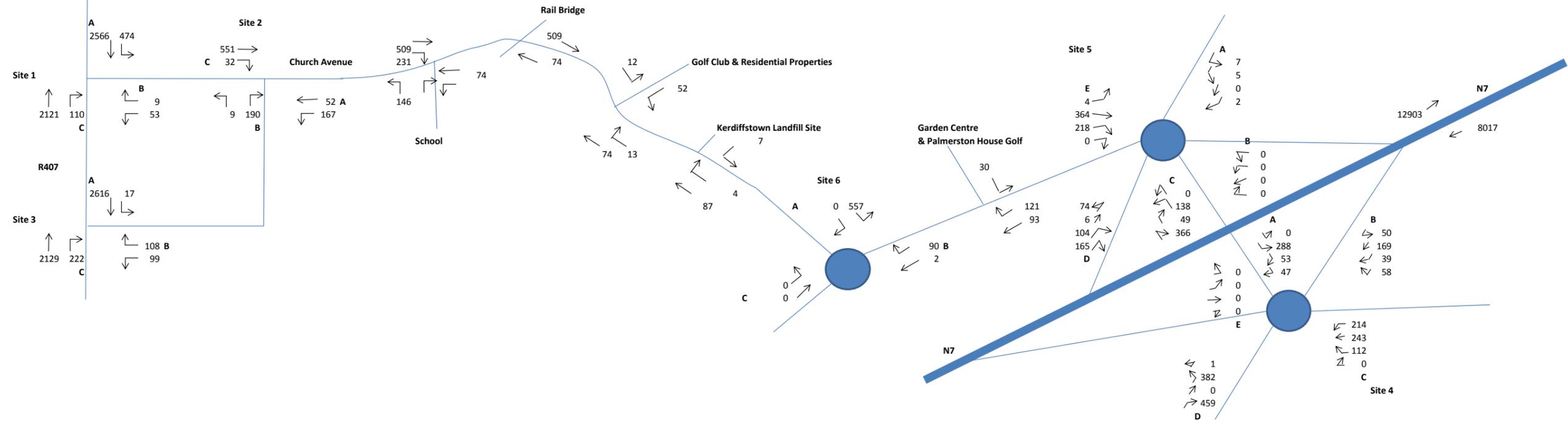


Figure 6.9

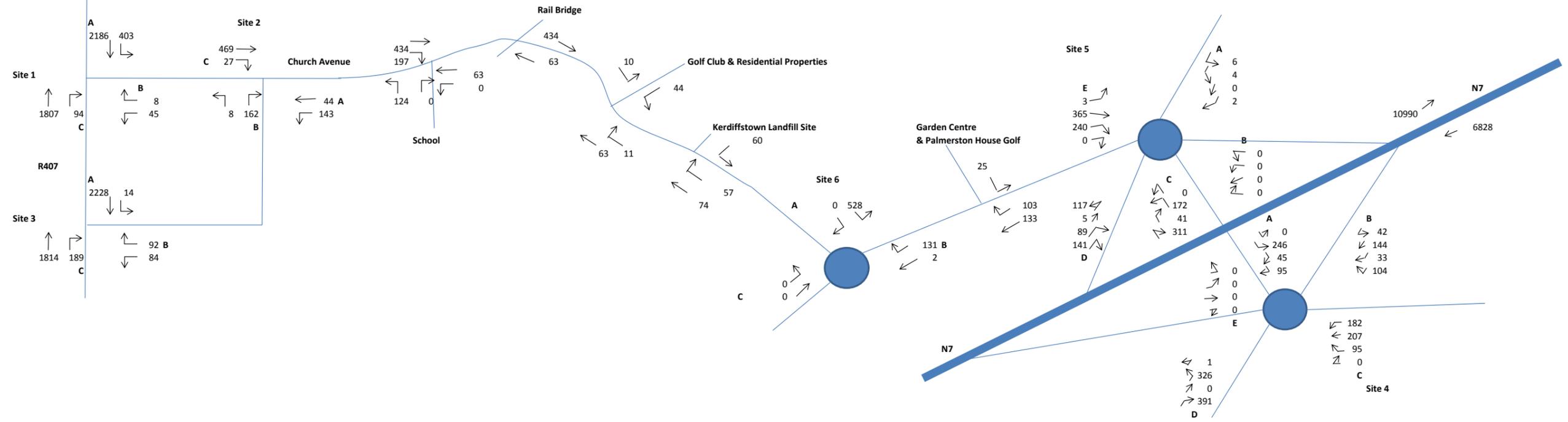


Figure 6.11

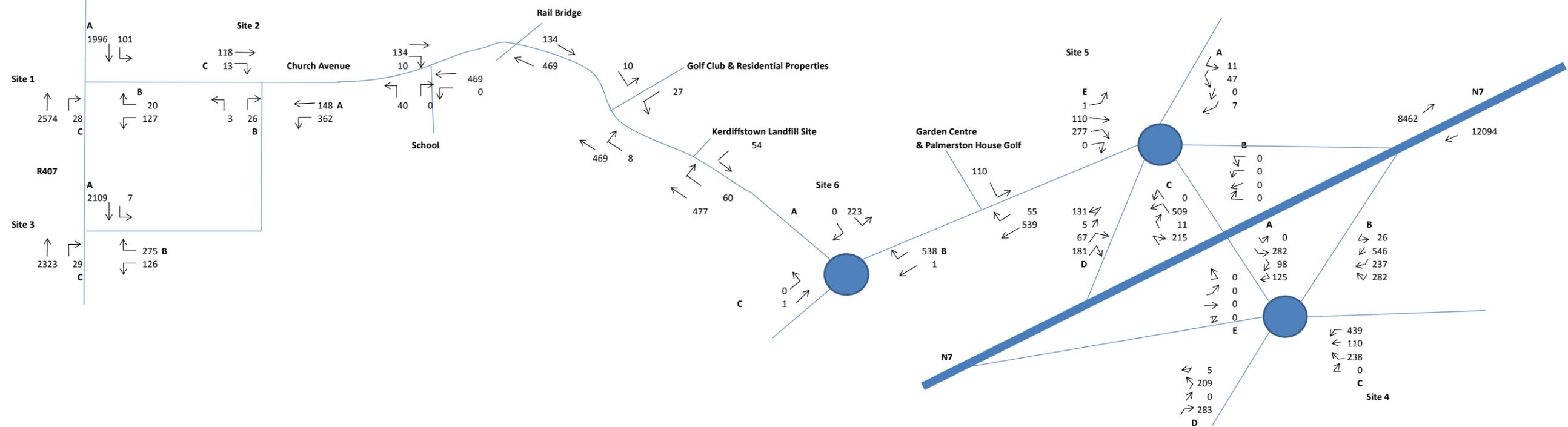


Figure 6.12

Kerdiffstown Landfill Site
 AM Proj 2018 + Remediation
 SENSITIVITY TEST
 07:00-10:00

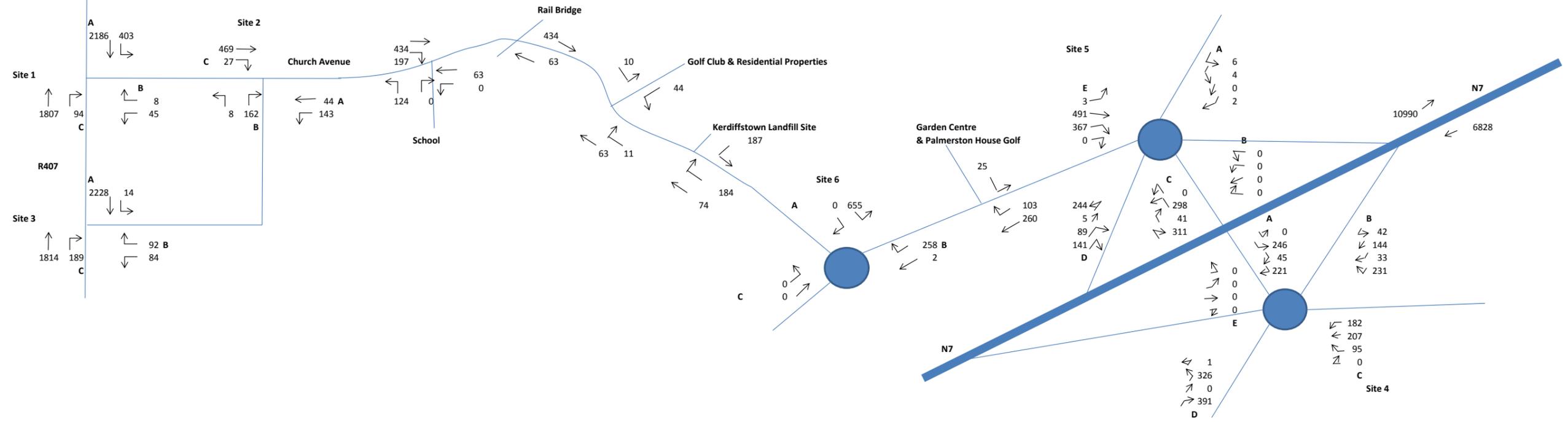


Figure 6.13

Kerdiffstown Landfill Site
 PM Proj 2018 + Remediation
 SENSITIVITY TEST
 16:00-19:00

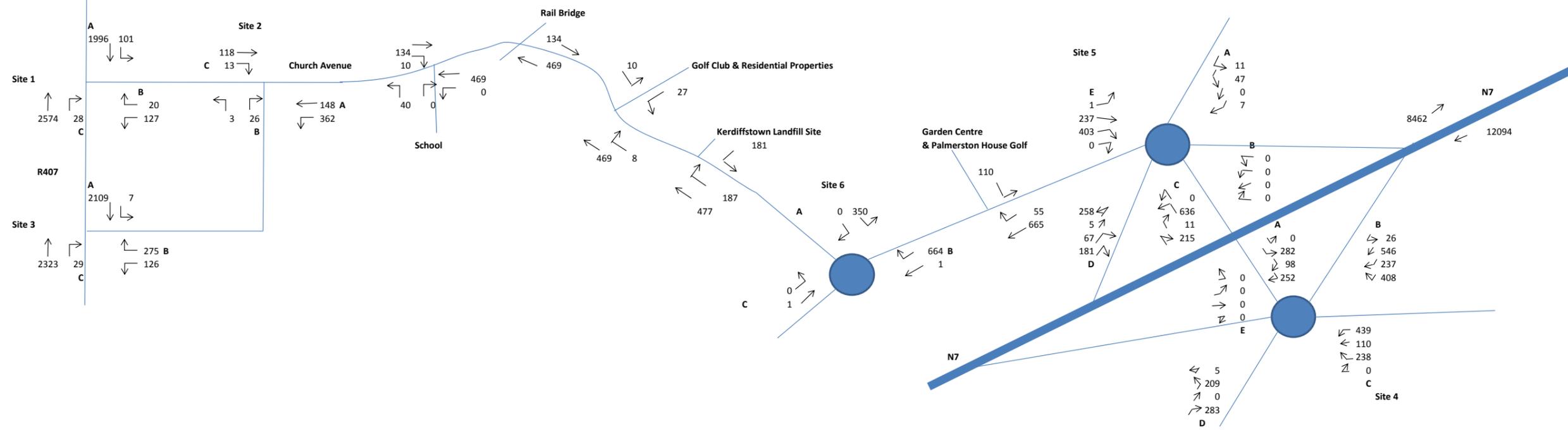


Figure 6.14

Kerdiffstown Landfill Site
 PM Projected 2022+Operation
 1600-1900

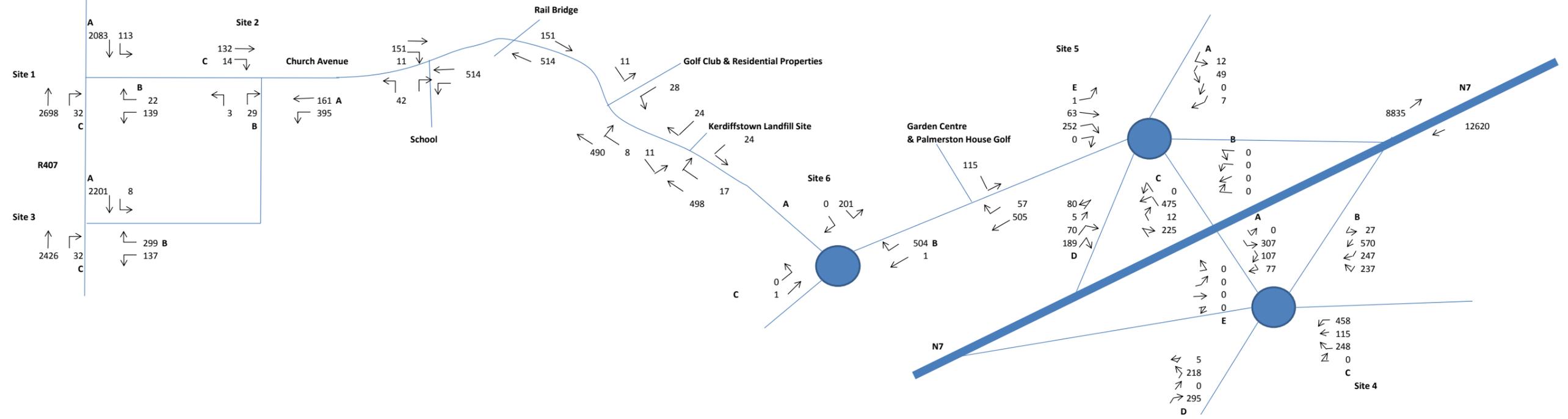


Figure 6.16

Kerdiffstown Landfill Site
 PM Projected 2027+Operation R407
 07:00-10:00

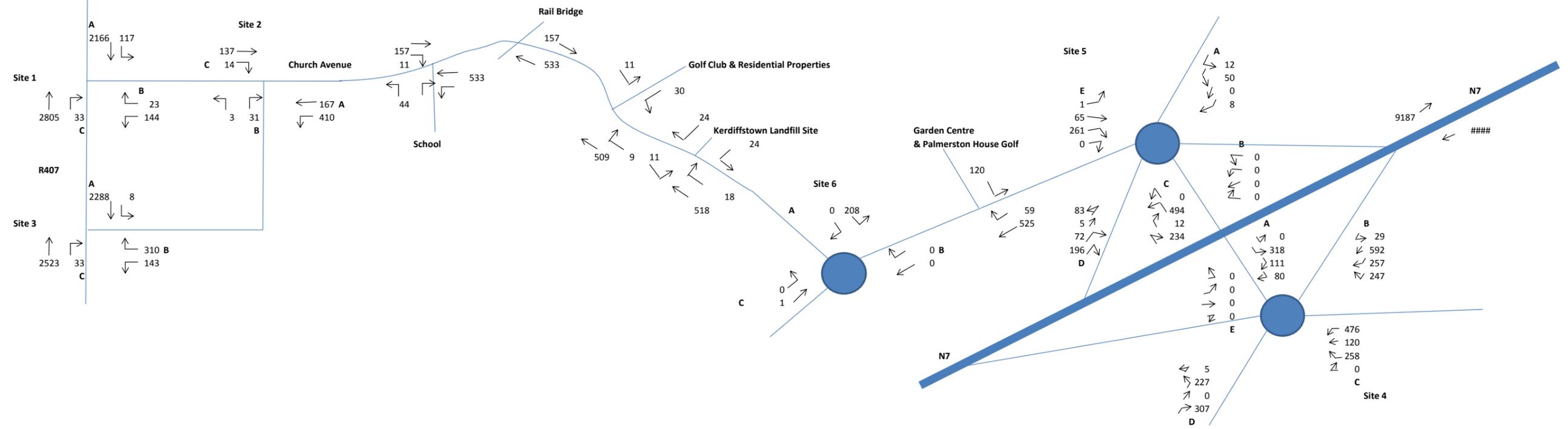


Figure 6.18

Kerdiffstown Landfill Site
 AM Projected 2037+Operation R407
 07:00-10:00

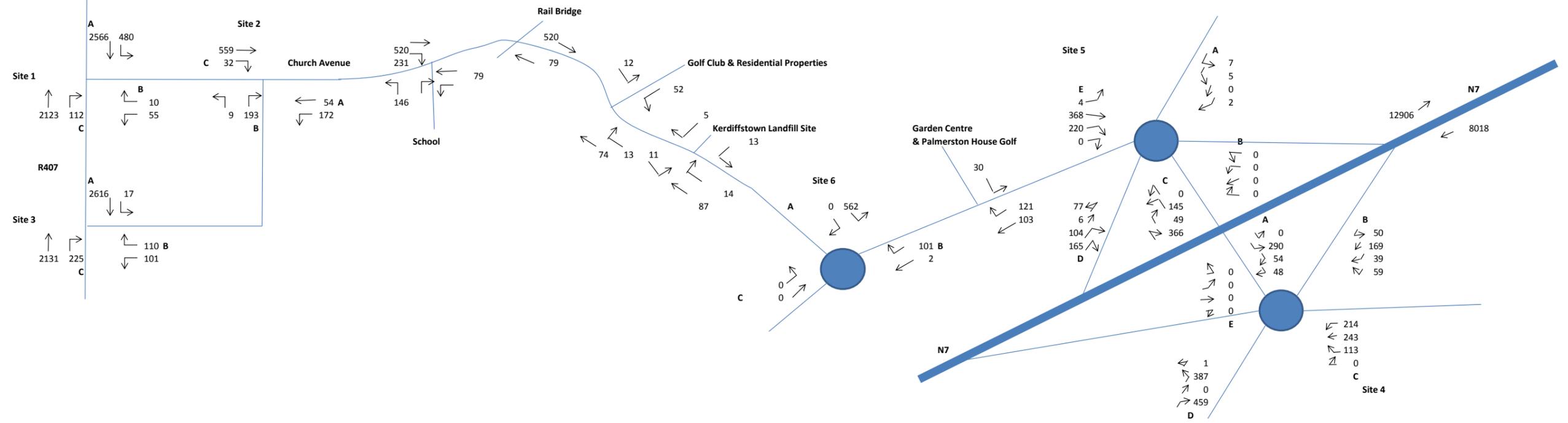


Figure 6.19

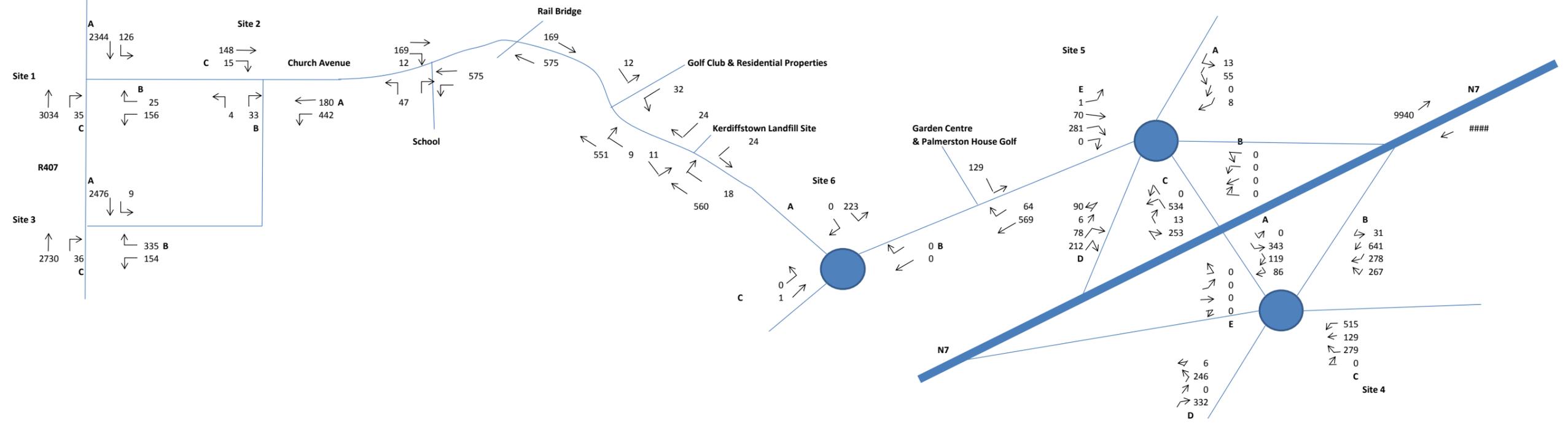


Figure 6.20

Appendix B. Modelling Results

AM Peak

Site/ Junction Name	Link	2018 Do Minimum		2018 Remediation Scenario		Difference	
		Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)
Site 7 Kerdiffstown Road / Landfill Site	Church Avenue East	13.3	1.5	13.3	1.7	0.1	0.3
	Church Avenue west	8.2	3.0	13.9	3.1	5.7	0.1
	Landfill	2.6	0.9	9.7	1.1	7.1	0.3
Site 8 N7 Access Road / Johnstown Garden Centre	Church Avenue East	9.1	1.1	7.7	1.2	-1.3	0.1
	Johnstown Garden	0.0	0.0	0.0	0.0	0.0	0.0
	Church Avenue West	4.2	3.1	4.0	2.9	-0.2	-0.1
	The Paddocks	3.4	4.2	6.0	4.3	2.6	0.2
Site 9 N7 North Roundabout	N7 off-slip EB	17.5	5.7	16.4	6.1	-1.1	0.4
	Greenhill Overbridge	0.0	1.4	2.1	1.4	2.1	0.0
	N7 Access Road	19.3	5.7	18.0	8.1	-1.3	2.4
Site 10 N7 South Roundabout	Palmerstown	14.6	2.3	17.9	3.0	3.3	0.7
	Kill West	9.1	1.1	10.1	1.1	1.1	0.0
	Greenhill Overbridge	11.6	1.5	11.6	1.7	0.0	0.2
	N7 off-slip WB	14.8	3.1	14.1	3.2	-0.7	0.1
Site 4 Church Ave / Sallins National School	Church Avenue East	0.0	2.7	0.0	2.8	0.0	0.0
	Church Avenue West	7.1	1.7	2.2	1.7	-5.0	0.0
	School	24.7	0.7	24.7	0.8	0.0	0.1
Site 1 R407 / Church Ave, Sallins	R407 North	41.2	2.0	41.2	2.0	0.0	0.0
	R407 South	65.9	5.5	66.3	6.0	0.3	0.5
	Church Avenue East	11.3	11.3	11.0	8.1	-0.3	-3.2
Site 2 Church Ave (W) / Church Ave (S), Sallins	Church Avenue East	0.0	0.5	0.0	0.5	0.0	0.0
	Church Avenue North	9.5	1.3	9.5	1.3	0.1	0.0
	Church Avenue West	2.3	0.5	3.7	0.5	1.3	0.0
Site 3 R407 / Church Ave (E)	Church Avenue East	39.7	16.6	41.9	19.2	2.2	2.6
	R407 North	70.5	1.9	70.2	1.9	-0.3	0.0
	R407 South	167.6	9.5	170.9	9.6	3.3	0.0
Site 5 Church Ave Railway Bridge	Church Avenue East	0.0	1.5	0.0	1.4	0.0	0.0
	Church Avenue West	0.0	1.0	0.0	0.9	0.0	0.0
Site 6 Kerdiffstown Road / Naas Golf Club	Church Avenue East	1.1	2.0	3.8	1.8	2.7	-0.2
	Church Avenue west	0.0	2.2	0.0	2.1	0.0	0.0
	Golf Club	3.8	0.6	5.1	0.7	1.3	0.2
Garden Centre	Church Avenue East	10.5	1.5	18.2	1.8	7.7	0.3
	Church Avenue west	0.0	2.4	0.0	2.3	0.0	-0.1
	Garden Centre	6.3	1.0	6.3	0.8	0.1	-0.2

Site/ Junction Name	Link	2018 Do Minimum		2018 Remediation + Sensitivity Scenario		Difference	
		Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)
Site 7 Kerdiffstown Road / Landfill Site	Church Avenue East	13.3	1.5	24.7	2.3	11.4	0.8
	Church Avenue west	8.2	3.0	16.8	3.3	8.6	0.2
	Landfill	2.6	0.9	18.4	1.4	15.8	0.6
Site 8 N7 Access Road / Johnstown Garden Centre	Church Avenue East	9.1	1.1	12.2	2.8	3.2	1.7
	Johnstown Garden	0.0	0.0	0.0	0.0	0.0	0.0
	Church Avenue West	4.2	3.1	13.4	2.8	9.3	-0.3
	The Paddocks	3.4	4.2	3.6	4.0	0.2	-0.2
Site 9 N7 North Roundabout	N7 off-slip EB	17.5	5.7	20.7	6.3	3.2	0.6
	Greenhill Overbridge	0.0	1.4	1.6	1.5	1.6	0.1
	N7 Access Road	19.3	5.7	36.2	6.4	17.0	0.7
Site 10 N7 South Roundabout	Palmerstown	14.6	2.3	15.6	2.4	0.9	0.1
	Kill West	9.1	1.1	13.5	1.2	4.5	0.1
	Greenhill Overbridge	11.6	1.5	16.2	2.1	4.6	0.6
	N7 off-slip WB	14.8	3.1	22.2	3.3	7.5	0.2
Site 4 Church Ave / Sallins National School	Church Avenue East	0.0	2.7	0.0	2.7	0.0	-0.1
	Church Avenue West	7.1	1.7	2.0	1.6	-5.1	0.0
	School	24.7	0.7	24.7	0.8	0.0	0.1
Site 1 R407 / Church Ave, Sallins	R407 North	41.2	2.0	41.3	2.0	0.2	0.0
	R407 South	65.9	5.5	68.7	6.0	2.8	0.5
	Church Avenue East	11.3	11.3	11.2	7.8	-0.1	-3.6
Site 2 Church Ave (W) / Church Ave (S), Sallins	Church Avenue East	0.0	0.5	0.0	0.5	0.0	0.0
	Church Avenue North	9.5	1.3	9.6	1.3	0.1	0.0
	Church Avenue West	2.3	0.5	1.1	0.5	-1.2	0.0
Site 3 R407 / Church Ave (E)	Church Avenue East	39.7	16.6	56.6	20.4	16.9	3.7
	R407 North	70.5	1.9	70.2	1.9	-0.2	0.0
	R407 South	167.6	9.5	174.5	9.6	7.0	0.1
Site 5 Church Ave Railway Bridge	Church Avenue East	0.0	1.5	0.0	1.3	0.0	-0.2
	Church Avenue West	0.0	1.0	0.0	0.9	0.0	0.0
Site 6 Kerdiffstown Road / Naas Golf Club	Church Avenue East	1.1	2.0	5.1	1.7	4.0	-0.3
	Church Avenue west	0.0	2.2	0.0	2.1	0.0	0.0
	Golf Club	3.8	0.6	4.0	0.7	0.2	0.1
Garden Centre	Church Avenue East	10.5	1.5	18.2	2.0	7.8	0.5
	Church Avenue west	0.0	2.4	0.0	2.2	0.0	-0.2
	Garden Centre	6.3	1.0	6.5	1.2	0.2	0.2

Site/ Junction Name	Link	2022 Do Minimum		2022 Operational Scenario		Difference	
		Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)
Site 7 Kerdiffstown Road / Landfill Site	Church Avenue East	8.4	2.1	15.3	1.7	6.8	-0.4
	Church Avenue west	6.6	3.0	7.2	3.0	0.7	0.0
	Landfill	2.5	0.5	4.8	0.8	2.4	0.3
Site 8 N7 Access Road / Johnstown Garden Centre	Church Avenue East	9.9	1.3	5.7	1.4	-4.2	0.1
	Johnstown Garden	0.0	0.0	0.0	0.0	0.0	0.0
	Church Avenue West	11.1	3.5	9.2	3.3	-1.9	-0.2
Site 9 N7 North Roundabout	The Paddocks	4.2	4.3	4.1	4.6	-0.1	0.3
	N7 off-slip EB	17.3	5.9	16.7	5.7	-0.6	-0.2
	Greenhill Overbridge	1.4	1.4	2.5	1.4	1.1	0.0
Site 10 N7 South Roundabout	N7 Access Road	18.1	5.8	19.8	5.7	1.7	-0.1
	Palmerstown	13.7	2.1	12.8	3.0	-0.9	0.9
	Kill West	9.1	1.1	9.1	1.1	0.0	-0.1
	Greenhill Overbridge	15.1	1.7	13.0	1.7	-2.1	0.0
Site 4 Church Ave / Sallins National School	N7 off-slip WB	16.4	3.0	14.9	3.1	-1.4	0.1
	Church Avenue East	0.0	2.7	0.0	2.7	0.0	0.0
	Church Avenue West	6.1	1.6	4.3	1.6	-1.7	0.0
Site 1 R407 / Church Ave, Sallins	School	24.7	0.7	24.7	0.7	0.0	0.0
	R407 North	41.1	2.1	37.0	2.0	-4.1	0.0
	R407 South	69.2	5.8	62.5	5.6	-6.7	-0.2
Site 2 Church Ave (W) / Church Ave (S), Sallins	Church Avenue East	12.0	12.3	12.2	9.7	0.2	-2.6
	Church Avenue North	8.2	1.2	10.4	1.4	2.2	0.1
	Church Avenue West	2.3	0.5	1.3	0.5	-1.0	0.0
Site 3 R407 / Church Ave (E)	Church Avenue East	39.9	16.6	45.8	17.9	5.9	1.3
	R407 North	70.3	1.9	71.0	1.9	0.8	0.0
	R407 South	166.1	9.4	187.3	10.0	21.2	0.5
Site 5 Church Ave Railway Bridge	Church Avenue East	0.0	1.3	0.0	1.2	0.0	-0.1
	Church Avenue West	0.0	1.0	0.0	0.9	0.0	-0.1
Site 6 Kerdiffstown Road / Naas Golf Club	Church Avenue East	0.0	1.6	0.0	1.8	0.0	0.2
	Church Avenue west	0.0	2.2	0.0	2.1	0.0	-0.1
	Golf Club	6.1	0.7	6.1	0.8	0.0	0.1
Garden Centre	Church Avenue East	10.8	1.4	14.2	1.6	3.4	0.2
	Church Avenue west	0.0	2.3	0.0	2.3	0.0	0.0
	Garden Centre	6.4	1.2	6.4	1.1	0.0	-0.1

PM Peak

Site/ Junction Name	Link	2018 Do Minimum		2018 Remediation Scenario		Difference	
		Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)
Site 7 Kerdiffstown Road / Landfill Site	Church Avenue East	20.7	4.2	16.2	4.9	-4.5	0.6
	Church Avenue west	11.0	1.5	20.5	1.8	9.5	0.3
	Landfill	0.0	0.4	4.8	0.5	4.8	0.1
Site 8 N7 Access Road / Johnstown Garden Centre	Church Avenue East	1.1	3.7	6.0	6.3	4.8	2.5
	Johnstown Garden	5.0	1.2	6.4	2.1	1.4	0.9
	Church Avenue West	1.1	1.3	5.5	1.2	4.4	-0.1
Site 9 N7 North Roundabout	The Paddocks	6.7	4.2	9.2	4.1	2.5	-0.1
	N7 off-slip EB	19.6	5.9	19.7	6.0	0.2	0.1
	Greenhill Overbridge	2.8	1.0	3.5	1.0	0.6	0.0
	N7 Access Road	11.5	4.7	13.0	2.5	1.5	-2.2
Site 10 N7 South Roundabout	Palmerstown	16.1	2.8	16.2	4.6	0.1	1.8
	Kill West	27.1	3.0	31.0	2.9	3.8	-0.1
	Greenhill Overbridge	16.7	1.9	11.4	1.8	-5.4	0.0
	N7 off-slip WB	38.3	4.6	40.9	4.8	2.6	0.2
Site 4 Church Ave / Sallins National School	Church Avenue East	2.3	6.2	3.8	6.1	1.5	-0.1
	Church Avenue West	1.9	2.1	0.0	2.2	-1.9	0.1
	School	24.7	3.7	24.7	3.2	0.0	-0.4
Site 1 R407 / Church Ave, Sallins	R407 North	14.5	1.7	25.2	1.8	10.7	0.0
	R407 South	42.9	2.8	41.9	2.7	-1.0	-0.1
	Church Avenue East	32.6	16.2	31.7	16.4	-0.9	0.2
Site 2 Church Ave (W) / Church Ave (S), Sallins	Church Avenue East	0.0	1.5	0.0	1.5	0.0	0.0
	Church Avenue North	5.1	1.1	3.7	0.9	-1.4	-0.2
	Church Avenue West	2.7	0.9	5.3	2.3	2.6	1.4
Site 3 R407 / Church Ave (E)	Church Avenue East	105.5	38.5	98.2	39.3	-7.3	0.7
	R407 North	67.6	1.9	68.4	1.9	0.8	0.0
	R407 South	130.9	7.4	129.9	7.4	-1.0	0.1
Site 5 Church Ave Railway Bridge	Church Avenue East	0.0	5.2	0.0	5.2	0.0	0.1
	Church Avenue West	0.0	0.4	0.0	0.4	0.0	0.0
Site 6 Kerdiffstown Road / Naas Golf Club	Church Avenue East	1.0	6.9	0.0	6.6	-1.0	-0.3
	Church Avenue west	0.0	1.1	0.0	1.1	0.0	0.0
	Golf Club	0.0	0.5	0.0	0.4	0.0	0.0
Garden Centre	Church Avenue East	6.3	3.5	5.2	3.7	-1.1	0.2
	Church Avenue west	0.0	1.3	0.0	1.2	0.0	-0.1
	Garden Centre	4.8	0.5	6.2	0.6	1.5	0.1

Site/ Junction Name	Link	2018 Do Minimum		2018 Remediation + Sensitivity Scenario		Difference	
		Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)
Site 7 Kerdiffstown Road / Landfill Site	Church Avenue East	20.7	4.2	23.6	5.2	2.9	1.0
	Church Avenue west	11.0	1.5	23.4	2.1	12.4	0.6
	Landfill	0.0	0.4	10.8	0.7	10.8	0.3
Site 8 N7 Access Road / Johnstown Garden Centre	Church Avenue East	1.1	3.7	14.2	4.1	13.1	0.4
	Johnstown Garden	5.0	1.2	6.1	2.1	1.0	0.8
	Church Avenue West	1.1	1.3	6.7	1.1	5.6	-0.1
Site 9 N7 North Roundabout	The Paddocks	6.7	4.2	8.7	4.3	2.0	0.1
	N7 off-slip EB	19.6	5.9	23.1	6.1	3.5	0.2
	Greenhill Overbridge	2.8	1.0	4.6	1.1	1.7	0.1
	N7 Access Road	11.5	4.7	14.4	3.0	2.9	-1.7
Site 10 N7 South Roundabout	Palmerstown	16.1	2.8	15.0	3.0	-1.1	0.3
	Kill West	27.1	3.0	26.7	3.2	-0.4	0.3
	Greenhill Overbridge	16.7	1.9	12.6	1.9	-4.2	0.1
	N7 off-slip WB	38.3	4.6	39.5	4.9	1.2	0.3
Site 4 Church Ave / Sallins National School	Church Avenue East	2.3	6.2	4.8	6.2	2.5	0.0
	Church Avenue West	1.9	2.1	0.0	1.7	-1.9	-0.5
	School	24.7	3.7	24.7	2.3	0.0	-1.3
Site 1 R407 / Church Ave, Sallins	R407 North	14.5	1.7	19.7	1.8	5.2	0.0
	R407 South	42.9	2.8	35.0	2.4	-7.9	-0.4
	Church Avenue East	32.6	16.2	32.1	14.1	-0.5	-2.1
Site 2 Church Ave (W) / Church Ave (S), Sallins	Church Avenue East	0.0	1.5	0.0	1.5	0.0	0.0
	Church Avenue North	5.1	1.1	5.1	1.1	0.0	0.0
	Church Avenue West	2.7	0.9	5.1	0.6	2.4	-0.3
Site 3 R407 / Church Ave (E)	Church Avenue East	105.5	38.5	99.7	37.6	-5.8	-0.9
	R407 North	67.6	1.9	68.3	1.9	0.7	0.0
	R407 South	130.9	7.4	146.8	7.8	15.9	0.5
Site 5 Church Ave Railway Bridge	Church Avenue East	0.0	5.2	0.0	5.2	0.0	0.1
	Church Avenue West	0.0	0.4	0.0	0.4	0.0	0.0
Site 6 Kerdiffstown Road / Naas Golf Club	Church Avenue East	1.0	6.9	1.0	6.5	0.0	-0.4
	Church Avenue west	0.0	1.1	0.0	1.0	0.0	-0.1
	Golf Club	0.0	0.5	0.0	0.5	0.0	0.0
Garden Centre	Church Avenue East	6.3	3.5	8.4	3.8	2.1	0.4
	Church Avenue west	0.0	1.3	0.0	1.2	0.0	-0.1
	Garden Centre	4.8	0.5	6.3	0.6	1.6	0.1

Site/ Junction Name	Link	2022 Do Minimum		2022 Operational Scenario		Difference	
		Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)
Site 7 Kerdiffstown Road / Landfill Site	Church Avenue East	12.3	4.2	16.1	4.7	3.8	0.5
	Church Avenue west	15.7	1.6	14.6	1.7	-1.1	0.1
	Landfill	1.3	0.4	3.9	0.6	2.6	0.1
Site 8 N7 Access Road / Johnstown Garden Centre	Church Avenue East	7.1	3.8	7.9	3.8	0.8	0.1
	Johnstown Garden	3.7	1.0	3.8	1.2	0.1	0.3
	Church Avenue West	2.6	1.3	3.1	1.1	0.5	-0.2
Site 9 N7 North Roundabout	The Paddocks	6.7	4.0	8.2	4.3	1.5	0.3
	N7 off-slip EB	18.9	6.0	21.1	6.1	2.3	0.2
	Greenhill Overbridge	3.5	1.0	3.0	1.1	-0.6	0.1
	N7 Access Road	9.0	4.4	11.2	2.7	2.3	-1.7
Site 10 N7 South Roundabout	Palmerstown	18.6	4.3	14.5	4.1	-4.1	-0.2
	Kill West	17.5	2.8	21.5	2.9	4.0	0.1
	Greenhill Overbridge	8.1	1.8	9.2	1.6	1.0	-0.2
	N7 off-slip WB	37.7	4.8	35.8	4.7	-1.9	0.0
Site 4 Church Ave / Sallins National School	Church Avenue East	1.3	6.1	2.6	6.1	1.3	0.0
	Church Avenue West	0.0	0.8	2.4	1.2	2.4	0.4
	School	24.7	2.8	24.7	2.8	0.0	0.0
Site 1 R407 / Church Ave, Sallins	R407 North	18.8	1.8	21.5	1.8	2.7	0.1
	R407 South	39.8	2.5	46.4	3.1	6.6	0.7
	Church Avenue East	32.4	17.0	37.7	17.3	5.3	0.4
Site 2 Church Ave (W) / Church Ave (S), Sallins	Church Avenue East	0.0	1.4	7.3	1.5	7.3	0.1
	Church Avenue North	3.8	1.1	6.5	1.1	2.7	0.0
	Church Avenue West	6.5	1.5	6.5	2.0	0.0	0.6
Site 3 R407 / Church Ave (E)	Church Avenue East	94.9	38.4	103.0	39.7	8.1	1.3
	R407 North	67.8	2.1	69.9	2.0	2.2	-0.1
	R407 South	145.3	7.5	174.7	9.7	29.4	2.3
Site 5 Church Ave Railway Bridge	Church Avenue East	0.0	5.0	0.0	5.1	0.0	0.1
	Church Avenue West	0.0	0.4	0.0	0.4	0.0	0.0
Site 6 Kerdiffstown Road / Naas Golf Club	Church Avenue East	0.0	7.0	0.0	6.4	0.0	-0.6
	Church Avenue west	0.0	1.1	0.0	1.1	0.0	-0.1
	Golf Club	0.0	0.4	0.0	0.4	0.0	0.0
Garden Centre	Church Avenue East	8.3	3.5	2.5	3.6	-5.7	0.1
	Church Avenue west	0.0	1.3	0.0	1.2	0.0	-0.1
	Garden Centre	6.2	0.5	6.2	0.5	0.1	0.0

DM 2018 AM Peak

Location		Observed DM 2018				Model DM 2018				Difference				Difference				
From	To	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV	Difference	GEH	Flow	GEH	
Site 1 R407 / Church Ave, Sallins																		
R407 North	R407 South	2064	1779	113	172	2061	1769	109	183	-3	-10	-4	11	3	0.1	Pass	Pass	
R407 North	Church Avenue East	400	383	2	15	407	394	1	11	7	11	-1	-4	-7	0.3	Pass	Pass	
R407 South	R407 North	1687	1375	112	200	1715	1397	108	210	28	22	-4	10	-28	0.7	Pass	Pass	
R407 South	Church Avenue East	94	89	0	5	95	90	0	5	1	1	0	0	-1	0.1	Pass	Pass	
Church Avenue East	R407 South	45	44	0	1	46	46	0	1	1	2	0	0	-1	0.1	Pass	Pass	
Church Avenue East	R407 North	8	8	0	0	7	7	0	0	-1	-1	0	0	1	0.4	Pass	Pass	
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Site 2 Church Ave (W) / Church Ave (S), Sallins																		
Church Avenue East	Church Avenue West	44	44	0	0	43	43	0	0	-1	-1	0	0	1	0.2	Pass	Pass	
Church Avenue East	Church Avenue South	140	133	2	5	145	122	0	23	5	-11	-2	18	-5	0.4	Pass	Pass	
Church Avenue North	Church Avenue West	8	7	0	1	10	9	0	1	2	2	0	0	-2	0.6	Pass	Pass	
Church Avenue North	Church Avenue East	161	149	1	10	193	178	2	13	32	29	1	3	-32	2.4	Pass	Pass	
Church Avenue West	Church Avenue South	27	26	0	1	27	26	0	1	0	0	0	0	0	0.1	Pass	Pass	
Church Avenue West	Church Avenue East	465	444	2	18	484	467	2	15	19	23	0	-3	-19	0.9	Pass	Pass	
Site 3 R407 / Church Ave (E)																		
Church Avenue East	R407 South	83	80	1	2	80	73	0	7	-3	-7	-1	5	3	0.3	Pass	Pass	
Church Avenue East	R407 North	91	84	1	6	92	76	0	16	1	-8	-1	10	-1	0.1	Pass	Pass	
R407 North	Church Avenue East	14	13	0	1	17	15	0	2	3	2	0	1	-3	0.7	Pass	Pass	
R407 North	R407 South	2101	1814	113	174	2128	1831	112	185	27	17	-1	11	-27	0.6	Pass	Pass	
R407 South	Church Avenue East	188	174	1	13	186	172	2	12	-2	-2	1	-1	2	0.1	Pass	Pass	
R407 South	R407 North	1698	1396	108	194	1718	1411	108	199	20	15	0	5	-20	0.5	Pass	Pass	
Site 10 N7 South Roundabout																		
Palmerstown	Greenhill Overbridge	324	302	1	21	327	306	1	20	3	4	0	-1	-3	0.2	Pass	Pass	
Palmerstown	N7 on-slip WB	1	1	0	0	1	1	0	0	0	0	0	0	0	0.0	Pass	Pass	
Palmerstown	Kill West	377	341	14	21	378	344	13	21	1	3	-1	0	-1	0.1	Pass	Pass	
Palmerstown	Palmerstown	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Kill West	Greenhill Overbridge	94	82	1	11	97	84	1	12	3	2	0	1	-3	0.3	Pass	Pass	
Kill West	N7 on-slip WB	206	190	1	15	214	198	1	15	8	8	0	0	-8	0.5	Pass	Pass	
Kill West	Kill West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Kill West	Palmerstown	169	146	13	9	164	142	12	9	-5	-4	-1	0	5	0.4	Pass	Pass	
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Greenhill Overbridge	N7 on-slip WB	36	28	4	4	30	25	2	3	-6	-3	-2	-1	6	1.1	Pass	Pass	
Greenhill Overbridge	Kill West	238	200	7	31	225	200	0	24	-13	0	-7	-7	13	0.9	Pass	Pass	
Greenhill Overbridge	Palmerstown	45	40	0	5	47	44	0	3	2	4	0	-2	-2	0.2	Pass	Pass	
N7 off-slip WB	Greenhill Overbridge	42	27	6	9	41	25	6	10	-1	-2	0	1	1	0.2	Pass	Pass	
N7 off-slip WB	N7 on-slip WB	33	29	0	4	36	31	0	6	3	2	0	2	-3	0.5	Pass	Pass	
N7 off-slip WB	Kill West	42	35	0	7	41	33	0	8	-1	-2	0	1	1	0.2	Pass	Pass	
N7 off-slip WB	Palmerstown	140	117	3	20	141	120	0	21	1	3	-3	1	-1	0.1	Pass	Pass	
Site 9 N7 North Roundabout																		
The Paddocks	N7 Access Road	2	1	0	1	1	1	0	0	-1	0	0	-1	1	0.8	Pass	Pass	
The Paddocks	N7 on-slip EB	6	3	0	3	5	3	0	2	-1	0	0	-1	1	0.5	Pass	Pass	
The Paddocks	Greenhill Overbridge	4	2	0	2	4	2	0	2	0	0	0	0	0	0.0	Pass	Pass	
The Paddocks	The Paddocks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
N7 off-slip EB	N7 Access Road	63	53	0	10	61	48	3	11	-2	-5	3	1	2	0.2	Pass	Pass	
N7 off-slip EB	N7 on-slip EB	89	78	0	11	82	72	0	9	-7	-6	0	-2	7	0.7	Pass	Pass	
N7 off-slip EB	Greenhill Overbridge	133	114	7	12	117	105	0	11	-16	-9	-7	-1	16	1.5	Pass	Pass	
N7 off-slip EB	The Paddocks	5	4	0	1	4	4	0	0	-1	0	0	-1	1	0.5	Pass	Pass	
Greenhill Overbridge	N7 Access Road	112	97	4	11	120	99	8	13	8	2	4	2	-8	0.7	Pass	Pass	
Greenhill Overbridge	N7 on-slip EB	309	281	2	26	308	284	0	25	-1	3	-2	-1	1	0.1	Pass	Pass	
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Greenhill Overbridge	The Paddocks	39	31	2	6	37	32	0	5	-2	1	-2	-1	2	0.4	Pass	Pass	
N7 Access Road	N7 Access Road	1	1	0	0	0	0	0	0	-1	-1	0	0	1	1.4	Pass	Pass	
N7 Access Road	N7 on-slip EB	308	290	1	17	331	320	1	10	23	30	0	-7	-23	1.3	Pass	Pass	
N7 Access Road	Greenhill Overbridge	182	153	4	25	181	163	2	16	-1	10	-2	-9	1	0.1	Pass	Pass	
N7 Access Road	The Paddocks	3	2	0	1	3	2	0	1	0	0	0	0	0	0.0	Pass	Pass	
Site 8 N7 Access Road / Johnstown Garden Centre																		
Church Avenue East	Church Avenue West	77	69	0	8	81	47	11	23	4	-22	11	15	-4	0.5	Pass	Pass	
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Church Avenue East	Johnstown Garden	2	2	0	0	2	2	0	0	0	0	0	0	0	0.0	Pass	Pass	
Johnstown Garden	Church Avenue West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Johnstown Garden	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Johnstown Garden	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Church Avenue West	Church Avenue West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Church Avenue West	Church Avenue East	471	431	2	37	496	464	3	28	25	33	1	-9	-25	1.2	Pass	Pass	
Church Avenue West	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Site 5 Church Ave Railway Bridge																		
Church Avenue West	Church Avenue East	424	393	3	28	463	431	3	28	39	38	0	0	-39	1.9	Pass	Pass	
Church Avenue East	Church Avenue West	62	54	0	8	61	38	0	23	-1	-16	0	15	1	0.1	Pass	Pass	
Site 6 Kerdiffstown Road / Naas Golf Club																		
Church Avenue west	Church Avenue East	463	431	3	28	448	417	3	28	-15	-14	0	0	15	0.7	Pass	Pass	
Church Avenue west	Golf Club	10	10	0	0	11	11	0	0	1	1	0	0	-1	0.3	Pass	Pass	
Golf Club	Church Avenue East	44	44	0	0	46	46	0	0	2	2	0	0	-2	0.2	Pass	Pass	
Golf Club	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Church Avenue East	Golf Club	11	11	0	0	7	7	0	0	-4	-4	0	0	4	1.4	Pass	Pass	
Church Avenue East	Church Avenue west	63	55	0	8	62	39	0	23	-1	-16	0	15	1	0.1	Pass	Pass	
Site 7 Kerdiffstown Road / Landfill Site																		
Church Avenue East	Landfill	3	3	0	0	12	1	10	0	9	-2	10	0	-9	3.3	Pass	Pass	
Church Avenue East	Church Avenue west	74	66	0	8	69	46	0	23	-5	-20	0	15	5	0.6	Pass	Pass	
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Church Avenue west	Landfill	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Church Avenue west	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Church Avenue west	Church Avenue East	469	437	3	28	492	460	3	28	23	23	0	0	-23	1.1	Pass	Pass	
Landfill	Landfill	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Landfill	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Landfill	Church Avenue East	6	6	0	0	6	6	0	0	0	0	0	0	0	0.0	Pass	Pass	
Garden Centre																		
Church Avenue East	Church Avenue west	75	48	4	22	82	49	11	23	7	1	7	1	-7	0.8	Pass	Pass	
Church Avenue East	Garden Centre	103	103	0	0	100	100	0	0	-3	-3	0	0	3	0.3	Pass	Pass	
Church Avenue west	Church Avenue East	471	431	2	37	495	464	3	28	24	33	1	-9	-24	1.1	Pass	Pass	
Church Avenue west	Garden Centre	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass	
Garden Centre																		

DS 2018 PM Peak

Location		Observed				Model				Difference				Difference			
From	To	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV	Difference	GEH	Flow	GEH
Site 1 R407 / Church Ave, Sallins																	
R407 North	R407 South	1926	1676	61	190	1924	1664	59	200	-2	-12	-2	10	2	0.1	Pass	Pass
R407 North	Church Avenue East	101	94	0	7	104	99	0	5	3	5	0	-2	-3	0.3	Pass	Pass
R407 South	R407 North	2479	2202	84	193	2469	2170	94	205	-10	-32	10	12	10	0.2	Pass	Pass
R407 South	Church Avenue East	28	28	0	0	27	27	0	0	-1	-1	0	0	1	0.2	Pass	Pass
Church Avenue East	R407 South	127	111	0	16	123	105	0	18	-4	-6	0	2	4	0.4	Pass	Pass
Church Avenue East	R407 North	20	18	0	2	21	19	0	2	1	1	0	0	-1	0.2	Pass	Pass
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Site 2 Church Ave (W) / Church Ave (S), Sallins																	
Church Avenue East	Church Avenue West	147	129	0	18	141	120	0	21	-6	-9	0	3	6	0.5	Pass	Pass
Church Avenue East	Church Avenue South	359	329	1	28	352	310	9	33	-7	-19	8	5	7	0.3	Pass	Pass
Church Avenue North	Church Avenue West	2	2	0	0	4	4	0	0	2	2	0	0	-2	1.1	Pass	Pass
Church Avenue North	Church Avenue East	26	25	0	1	28	26	0	2	2	1	0	1	-2	0.3	Pass	Pass
Church Avenue West	Church Avenue South	12	12	0	0	12	12	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue West	Church Avenue East	118	111	0	7	121	116	0	5	3	5	0	-2	-3	0.3	Pass	Pass
Site 3 R407 / Church Ave (E)																	
Church Avenue East	R407 South	124	116	0	8	110	103	0	7	-14	-13	0	-1	14	1.3	Pass	Pass
Church Avenue East	R407 North	273	242	1	29	251	216	9	27	-22	-26	8	-2	22	1.3	Pass	Pass
R407 North	Church Avenue East	7	5	0	2	6	4	0	2	-1	-1	0	0	1	0.4	Pass	Pass
R407 North	R407 South	2038	1781	61	197	2075	1796	60	219	37	15	-1	22	-37	0.8	Pass	Pass
R407 South	Church Avenue East	29	29	0	0	25	25	0	0	-4	-4	0	0	4	0.8	Pass	Pass
R407 South	R407 North	2228	1970	85	174	2246	1983	85	178	18	13	0	4	-18	0.4	Pass	Pass
Site 10 N7 South Roundabout																	
Palmerstown	Greenhill Overbridge	206	188	3	15	206	187	4	15	0	-1	1	0	0	0.0	Pass	Pass
Palmerstown	N7 on-slip WB	5	5	0	0	4	4	0	0	-1	-1	0	0	1	0.5	Pass	Pass
Palmerstown	Kill West	275	245	8	21	278	250	7	21	3	5	-1	0	-3	0.2	Pass	Pass
Palmerstown	Palmerstown	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Kill West	Greenhill Overbridge	236	214	1	21	227	206	1	20	-9	-8	0	-1	9	0.6	Pass	Pass
Kill West	N7 on-slip WB	105	90	4	11	110	93	4	13	5	3	0	2	-5	0.5	Pass	Pass
Kill West	Kill West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Kill West	Palmerstown	424	377	13	34	435	389	13	34	11	12	0	0	-11	0.5	Pass	Pass
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Greenhill Overbridge	N7 on-slip WB	68	62	2	4	65	61	1	3	-3	-1	-1	-1	3	0.3	Pass	Pass
Greenhill Overbridge	Kill West	279	253	3	23	270	247	3	20	-9	-6	0	-3	9	0.5	Pass	Pass
Greenhill Overbridge	Palmerstown	98	95	0	3	102	100	0	2	4	5	0	-1	-4	0.4	Pass	Pass
N7 off-slip WB	Greenhill Overbridge	224	189	1	34	228	194	2	33	4	5	1	-1	-4	0.2	Pass	Pass
N7 off-slip WB	N7 on-slip WB	234	202	2	30	237	204	2	31	3	2	0	1	-3	0.2	Pass	Pass
N7 off-slip WB	Kill West	26	21	0	5	28	22	0	6	2	1	0	1	-2	0.3	Pass	Pass
N7 off-slip WB	Palmerstown	542	505	3	34	530	496	3	31	-12	-9	0	-3	12	0.5	Pass	Pass
Site 9 N7 North Roundabout																	
The Paddocks	N7 Access Road	7	7	0	0	7	7	0	0	0	0	0	0	0	0.0	Pass	Pass
The Paddocks	N7 on-slip EB	11	8	0	3	11	9	0	2	0	1	0	-1	0	0.0	Pass	Pass
The Paddocks	Greenhill Overbridge	44	41	1	2	45	43	1	2	1	2	0	0	-1	0.1	Pass	Pass
The Paddocks	The Paddocks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
N7 off-slip EB	N7 Access Road	76	72	1	3	72	68	1	3	-4	-4	0	0	4	0.4	Pass	Pass
N7 off-slip EB	N7 on-slip EB	65	59	2	4	61	55	3	3	-4	-4	1	-1	4	0.5	Pass	Pass
N7 off-slip EB	Greenhill Overbridge	178	157	3	18	163	141	3	18	-15	-16	0	0	15	1.1	Pass	Pass
N7 off-slip EB	The Paddocks	4	3	0	1	3	3	0	0	-1	0	0	-1	1	0.6	Pass	Pass
Greenhill Overbridge	N7 Access Road	448	393	4	52	443	389	3	51	-5	-4	-1	-1	5	0.3	Pass	Pass
Greenhill Overbridge	N7 on-slip EB	213	194	2	17	210	191	2	17	-3	-3	0	0	3	0.2	Pass	Pass
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Greenhill Overbridge	The Paddocks	10	8	1	1	8	6	1	0	-2	-2	0	-1	2	0.7	Pass	Pass
N7 Access Road	N7 Access Road	3	2	0	1	2	1	0	0	-1	-1	0	-1	1	0.6	Pass	Pass
N7 Access Road	N7 on-slip EB	55	49	0	5	49	47	0	2	-6	-2	0	-3	6	0.8	Pass	Pass
N7 Access Road	Greenhill Overbridge	222	211	0	11	230	226	0	5	8	15	0	-6	-8	0.5	Pass	Pass
N7 Access Road	The Paddocks	1	1	0	0	1	1	0	0	0	0	0	0	0	0.0	Pass	Pass
Site 8 N7 Access Road / Johnstown Garden Centre																	
Church Avenue East	Church Avenue West	478	427	3	47	468	410	4	54	-10	-17	1	7	10	0.4	Pass	Pass
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue East	Johnstown Garden	1	1	0	0	1	1	0	0	0	0	0	0	0	0.0	Pass	Pass
Johnstown Garden	Church Avenue West	0	0	0	0	5	0	5	0	5	0	5	0	-5	3.2	Pass	Pass
Johnstown Garden	Church Avenue East	1	1	0	0	3	3	0	0	2	2	0	0	-2	1.4	Pass	Pass
Johnstown Garden	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue West	Church Avenue West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue West	Church Avenue East	169	160	0	9	172	165	0	8	3	5	0	-1	-3	0.3	Pass	Pass
Church Avenue West	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Site 5 Church Ave Railway Bridge																	
Church Avenue West	Church Avenue East	134	126	8	0	138	131	0	8	4	5	-8	8	-4	0.3	Pass	Pass
Church Avenue East	Church Avenue West	464	413	47	3	453	390	9	54	-11	-23	-38	51	11	0.5	Pass	Pass
Site 6 Kerdiffstown Road / Naas Golf Club																	
Church Avenue west	Church Avenue East	152	143	0	8	128	120	0	8	-24	-23	0	0	24	2.0	Pass	Pass
Church Avenue west	Golf Club	10	10	0	0	10	10	0	0	0	0	0	0	0	0.0	Pass	Pass
Golf Club	Church Avenue East	27	27	0	0	29	29	0	0	2	2	0	0	-2	0.3	Pass	Pass
Golf Club	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue East	Golf Club	8	8	0	0	6	6	0	0	-2	-2	0	0	2	0.8	Pass	Pass
Church Avenue East	Church Avenue west	464	413	3	47	454	392	9	54	-10	-21	6	7	10	0.5	Pass	Pass
Site 7 Kerdiffstown Road / Landfill Site																	
Church Avenue East	Landfill	6	6	0	0	4	4	0	0	-2	-2	0	0	2	0.9	Pass	Pass
Church Avenue East	Church Avenue west	472	421	3	47	468	405	9	54	-4	-16	6	7	4	0.2	Pass	Pass
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue west	Landfill	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue west	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue west	Church Avenue East	169	161	0	8	155	147	0	8	-14	-14	0	0	14	1.1	Pass	Pass
Landfill	Landfill	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Landfill	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Landfill	Church Avenue East	17	17	0	0	18	18	0	0	1	1	0	0	-1	0.2	Pass	Pass
Garden Centre																	
Church Avenue East	Church Avenue west	480	419	5	56	469	411	4	54	-11	-8	-1	-2	11	0.5	Pass	Pass
Church Avenue East	Garden Centre	55	55	0	0	51	51	0	0	-4	-4	0	0	4	0.5	Pass	Pass
Church Avenue west	Church Avenue East	170	161	0	9	175	167	0	8	5	6	0	-1	-5	0.4	Pass	Pass
Church Avenue west	Garden Centre	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Garden Centre	Church Avenue																

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Location		Observed				Model				Difference				Difference			
From	To	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV	Difference	GEH	Flow	GEH
Site 1 R407 / Church Ave, Sallins																	
R407 North	R407 South	2065	1780	113	172	2060	1768	109	183	-5	-12	-4	11	5	0.1	Pass	Pass
R407 North	Church Avenue East	400	383	2	15	410	398	1	11	10	15	-1	-4	-10	0.5	Pass	Pass
R407 South	R407 North	1688	1375	112	200	1716	1398	108	210	28	23	-4	10	-28	0.7	Pass	Pass
R407 South	Church Avenue East	94	89	0	5	95	90	0	5	1	1	0	0	-1	0.1	Pass	Pass
Church Avenue East	R407 South	45	44	0	1	46	46	0	1	1	2	0	0	-1	0.1	Pass	Pass
Church Avenue East	R407 North	8	8	0	0	7	7	0	0	-1	-1	0	0	1	0.4	Pass	Pass
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Site 2 Church Ave (W) / Church Ave (S), Sallins																	
Church Avenue East	Church Avenue West	44	44	0	0	44	44	0	0	0	0	0	0	0	0.1	Pass	Pass
Church Avenue East	Church Avenue South	140	133	2	5	145	123	0	23	5	-10	-2	18	-5	0.4	Pass	Pass
Church Avenue North	Church Avenue West	8	7	0	1	10	9	0	1	2	2	0	0	-2	0.6	Pass	Pass
Church Avenue North	Church Avenue East	161	150	1	10	193	178	2	13	32	28	1	3	-32	2.4	Pass	Pass
Church Avenue West	Church Avenue South	27	26	0	1	27	26	0	1	0	0	0	0	0	0.1	Pass	Pass
Church Avenue West	Church Avenue East	465	445	2	18	485	468	2	15	20	23	0	-3	-20	0.9	Pass	Pass
Site 3 R407 / Church Ave (E)																	
Church Avenue East	R407 South	83	80	1	2	81	74	0	7	-2	-6	-1	5	2	0.2	Pass	Pass
Church Avenue East	R407 North	91	84	1	6	93	76	0	16	2	-8	-1	10	-2	0.2	Pass	Pass
R407 North	Church Avenue East	14	13	0	1	17	15	0	2	3	2	0	1	-3	0.7	Pass	Pass
R407 North	R407 South	2102	1815	113	174	2130	1833	112	185	28	18	-1	11	-28	0.6	Pass	Pass
R407 South	Church Avenue East	188	174	1	13	186	172	2	12	-2	-2	1	-1	2	0.1	Pass	Pass
R407 South	R407 North	1699	1397	108	194	1719	1412	108	199	20	15	0	5	-20	0.5	Pass	Pass
Site 10 N7 South Roundabout																	
Palmerstown	Greenhill Overbridge	324	302	1	21	326	305	1	20	2	3	0	-1	-2	0.1	Pass	Pass
Palmerstown	N7 on-slip WB	1	1	0	0	1	1	0	0	0	0	0	0	0	0.0	Pass	Pass
Palmerstown	Kill West	377	342	14	21	379	345	13	21	2	3	-1	0	-2	0.1	Pass	Pass
Palmerstown	Palmerstown	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Kill West	Greenhill Overbridge	94	82	1	11	96	83	1	12	2	1	0	1	-2	0.2	Pass	Pass
Kill West	N7 on-slip WB	206	190	1	15	213	197	1	15	7	7	0	0	-7	0.5	Pass	Pass
Kill West	Kill West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Kill West	Palmerstown	169	147	13	9	165	144	12	9	-4	-3	-1	0	4	0.3	Pass	Pass
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Greenhill Overbridge	N7 on-slip WB	36	28	4	4	30	25	3	3	-6	-3	-1	-1	6	1.1	Pass	Pass
Greenhill Overbridge	Kill West	238	200	7	31	231	200	6	24	-7	0	-1	-7	7	0.5	Pass	Pass
Greenhill Overbridge	Palmerstown	45	40	0	5	47	44	0	3	2	4	0	-2	-2	0.2	Pass	Pass
N7 off-slip WB	Greenhill Overbridge	42	27	6	9	42	25	7	10	0	-2	1	1	0	0.1	Pass	Pass
N7 off-slip WB	N7 on-slip WB	33	29	0	4	36	31	0	6	3	2	0	2	-3	0.5	Pass	Pass
N7 off-slip WB	Kill West	42	35	0	7	41	33	0	8	-1	-2	0	1	1	0.2	Pass	Pass
N7 off-slip WB	Palmerstown	140	117	3	20	143	119	3	21	3	2	0	1	-3	0.2	Pass	Pass
Site 9 N7 North Roundabout																	
The Paddocks	N7 Access Road	2	1	0	1	1	1	0	0	-1	0	0	-1	1	0.8	Pass	Pass
The Paddocks	N7 on-slip EB	6	3	0	3	5	3	0	2	-1	0	0	-1	1	0.5	Pass	Pass
The Paddocks	Greenhill Overbridge	4	2	0	2	4	2	0	2	0	0	0	0	0	0.0	Pass	Pass
The Paddocks	The Paddocks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
N7 off-slip EB	N7 Access Road	63	53	0	10	59	48	0	11	-4	-5	0	1	4	0.5	Pass	Pass
N7 off-slip EB	N7 on-slip EB	89	78	0	11	82	73	0	9	-7	-5	0	-2	7	0.7	Pass	Pass
N7 off-slip EB	Greenhill Overbridge	133	114	7	12	123	106	6	11	-10	-8	-1	-1	10	0.9	Pass	Pass
N7 off-slip EB	The Paddocks	5	4	0	1	4	4	0	0	-1	0	0	-1	1	0.5	Pass	Pass
Greenhill Overbridge	N7 Access Road	112	97	4	11	116	99	4	13	4	2	0	2	-4	0.4	Pass	Pass
Greenhill Overbridge	N7 on-slip EB	309	281	2	26	310	283	2	25	1	2	0	-1	-1	0.0	Pass	Pass
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Greenhill Overbridge	The Paddocks	39	31	2	6	39	32	2	5	0	1	0	-1	0	0.1	Pass	Pass
N7 Access Road	N7 Access Road	1	1	0	0	0	0	0	0	-1	-1	0	0	1	1.4	Pass	Pass
N7 Access Road	N7 on-slip EB	308	290	1	17	330	320	1	9	22	30	0	-8	-22	1.2	Pass	Pass
N7 Access Road	Greenhill Overbridge	182	153	4	25	181	162	3	16	-1	9	-1	-9	1	0.1	Pass	Pass
N7 Access Road	The Paddocks	3	2	0	1	3	2	0	1	0	0	0	0	0	0.0	Pass	Pass
Site 8 N7 Access Road / Johnstown Garden Centre																	
Church Avenue East	Church Avenue West	77	69	0	8	71	47	0	23	-6	-22	0	15	6	0.7	Pass	Pass
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue East	Johnstown Garden	2	2	0	0	6	2	4	0	4	0	4	0	-4	2.0	Pass	Pass
Johnstown Garden	Church Avenue West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Johnstown Garden	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Johnstown Garden	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue West	Church Avenue West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue West	Church Avenue East	471	432	2	37	497	466	3	28	26	34	1	-9	-26	1.2	Pass	Pass
Church Avenue West	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Site 5 Church Ave Railway Bridge																	
Church Avenue West	Church Avenue East	424	393	3	28	463	431	3	28	39	38	0	0	-39	1.9	Pass	Pass
Church Avenue East	Church Avenue West	62	54	0	8	61	38	0	23	-1	-16	0	15	1	0.1	Pass	Pass
Site 6 Kerdiffstown Road / Naas Golf Club																	
Church Avenue west	Church Avenue East	463	432	3	28	448	416	3	28	-15	-16	0	0	15	0.7	Pass	Pass
Church Avenue west	Golf Club	10	10	0	0	11	11	0	0	1	1	0	0	-1	0.3	Pass	Pass
Golf Club	Church Avenue East	44	44	0	0	46	46	0	0	2	2	0	0	-2	0.2	Pass	Pass
Golf Club	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue East	Golf Club	11	11	0	0	7	7	0	0	-4	-4	0	0	4	1.4	Pass	Pass
Church Avenue East	Church Avenue west	63	55	0	8	62	39	0	23	-1	-16	0	15	1	0.1	Pass	Pass
Site 7 Kerdiffstown Road / Landfill Site																	
Church Avenue East	Landfill	3	3	0	0	1	1	0	0	-2	-2	0	0	2	1.4	Pass	Pass
Church Avenue East	Church Avenue west	74	66	0	8	69	46	0	23	-5	-20	0	15	5	0.6	Pass	Pass
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue west	Landfill	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue west	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue west	Church Avenue East	469	438	3	28	492	461	3	28	23	23	0	0	-23	1.1	Pass	Pass
Landfill	Landfill	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Landfill	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Landfill	Church Avenue East	6	6	0	0	6	6	0	0	0	0	0	0	0	0.0	Pass	Pass
Garden Centre																	
Church Avenue East	Church Avenue west	75	49	4	22	77	49	4	23	2	0	0	1	-2	0.3	Pass	Pass
Church Avenue East	Garden Centre	103	103	0	0	99	99	0	0	-4	-4	0	0	4	0.4	Pass	Pass
Church Avenue west	Church Avenue East	471	432	2	37	496	465	3	28	25	33	1	-9	-25	1.1	Pass	Pass
Church Avenue west	Garden Centre	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Garden Centre	Church Avenue west	0	0														

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Location		Observed				Model				Difference				Difference			
From	To	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV	Difference	GEH	Flow	GEH
Site 1 R407 / Church Ave, Sallins																	
R407 North	R407 South	1927	1677	61	190	1925	1666	59	200	-2	-11	-2	10	2	0.0	Pass	Pass
R407 North	Church Avenue East	101	94	0	7	104	99	0	5	3	5	0	-2	-3	0.3	Pass	Pass
R407 South	R407 North	2480	2203	84	193	2471	2172	94	205	-9	-31	10	12	9	0.2	Pass	Pass
R407 South	Church Avenue East	28	28	0	0	27	27	0	0	-1	-1	0	0	1	0.2	Pass	Pass
Church Avenue East	R407 South	127	111	0	16	123	105	0	18	-4	-6	0	2	4	0.4	Pass	Pass
Church Avenue East	R407 North	20	18	0	2	21	19	0	2	1	1	0	0	-1	0.2	Pass	Pass
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Site 2 Church Ave (W) / Church Ave (S), Sallins																	
Church Avenue East	Church Avenue West	148	129	0	18	141	120	0	20	-7	-9	0	2	7	0.5	Pass	Pass
Church Avenue East	Church Avenue South	359	329	1	28	349	307	9	33	-10	-22	8	5	10	0.5	Pass	Pass
Church Avenue North	Church Avenue West	2	2	0	0	4	4	0	0	2	2	0	0	-2	1.1	Pass	Pass
Church Avenue North	Church Avenue East	26	25	0	1	28	26	0	2	2	1	0	1	-2	0.3	Pass	Pass
Church Avenue West	Church Avenue South	12	12	0	0	12	12	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue West	Church Avenue East	118	111	0	7	121	116	0	5	3	5	0	-2	-3	0.3	Pass	Pass
Site 3 R407 / Church Ave (E)																	
Church Avenue East	R407 South	124	116	0	8	109	102	0	7	-15	-14	0	-1	15	1.4	Pass	Pass
Church Avenue East	R407 North	273	243	1	29	251	216	9	27	-22	-27	8	-2	22	1.4	Pass	Pass
R407 North	Church Avenue East	7	5	0	2	6	4	0	2	-1	-1	0	0	1	0.4	Pass	Pass
R407 North	R407 South	2039	1782	61	197	2075	1796	60	219	36	14	-1	22	-36	0.8	Pass	Pass
R407 South	Church Avenue East	29	29	0	0	25	25	0	0	-4	-4	0	0	4	0.8	Pass	Pass
R407 South	R407 North	2229	1971	85	174	2249	1985	85	179	20	14	0	5	-20	0.4	Pass	Pass
Site 10 N7 South Roundabout																	
Palmerstown	Greenhill Overbridge	206	188	3	15	205	186	4	15	-1	-2	1	0	1	0.1	Pass	Pass
Palmerstown	N7 on-slip WB	5	5	0	0	4	4	0	0	-1	-1	0	0	1	0.5	Pass	Pass
Palmerstown	Kill West	275	246	8	21	279	251	7	21	4	5	-1	0	-4	0.2	Pass	Pass
Palmerstown	Palmerstown	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Kill West	Greenhill Overbridge	236	214	1	21	228	207	1	20	-8	-7	0	-1	8	0.6	Pass	Pass
Kill West	N7 on-slip WB	105	90	4	11	110	93	4	13	5	3	0	2	-5	0.5	Pass	Pass
Kill West	Kill West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Kill West	Palmerstown	424	377	13	34	436	389	13	34	12	12	0	0	-12	0.6	Pass	Pass
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Greenhill Overbridge	N7 on-slip WB	68	62	2	4	65	61	1	3	-3	-1	-1	-1	3	0.3	Pass	Pass
Greenhill Overbridge	Kill West	279	253	3	23	270	247	3	20	-9	-6	0	-3	9	0.5	Pass	Pass
Greenhill Overbridge	Palmerstown	98	95	0	3	102	100	0	2	4	5	0	-1	-4	0.4	Pass	Pass
N7 off-slip WB	Greenhill Overbridge	224	189	1	34	228	193	2	33	4	4	1	-1	-4	0.2	Pass	Pass
N7 off-slip WB	N7 on-slip WB	234	202	2	30	237	204	2	31	3	2	0	1	-3	0.2	Pass	Pass
N7 off-slip WB	Kill West	26	21	0	5	28	22	0	6	2	1	0	1	-2	0.3	Pass	Pass
N7 off-slip WB	Palmerstown	543	505	3	34	530	496	3	31	-13	-9	0	-3	13	0.5	Pass	Pass
Site 9 N7 North Roundabout																	
The Paddocks	N7 Access Road	7	7	0	0	7	7	0	0	0	0	0	0	0	0.0	Pass	Pass
The Paddocks	N7 on-slip EB	11	8	0	3	11	9	0	2	0	1	0	-1	0	0.0	Pass	Pass
The Paddocks	Greenhill Overbridge	44	41	1	2	45	43	1	2	1	2	0	0	-1	0.1	Pass	Pass
The Paddocks	The Paddocks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
N7 off-slip EB	N7 Access Road	76	72	1	3	72	68	1	3	-4	-4	0	0	4	0.4	Pass	Pass
N7 off-slip EB	N7 on-slip EB	65	59	2	4	61	55	3	3	-4	-4	1	-1	4	0.5	Pass	Pass
N7 off-slip EB	Greenhill Overbridge	178	157	3	18	163	141	3	18	-15	-16	0	0	15	1.1	Pass	Pass
N7 off-slip EB	The Paddocks	4	3	0	1	3	3	0	0	-1	0	0	-1	1	0.6	Pass	Pass
Greenhill Overbridge	N7 Access Road	449	393	4	52	442	388	3	51	-7	-5	-1	-1	7	0.3	Pass	Pass
Greenhill Overbridge	N7 on-slip EB	213	194	2	17	210	191	2	17	-3	-3	0	0	3	0.2	Pass	Pass
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Greenhill Overbridge	The Paddocks	10	8	1	1	8	6	1	0	-2	-2	0	-1	2	0.7	Pass	Pass
N7 Access Road	N7 Access Road	3	2	0	1	2	1	0	0	-1	-1	0	-1	1	0.7	Pass	Pass
N7 Access Road	N7 on-slip EB	55	50	0	5	50	47	0	2	-5	-3	0	-3	5	0.6	Pass	Pass
N7 Access Road	Greenhill Overbridge	222	211	0	11	230	225	0	5	8	14	0	-6	-8	0.5	Pass	Pass
N7 Access Road	The Paddocks	1	1	0	0	1	1	0	0	0	0	0	0	0	0.0	Pass	Pass
Site 8 N7 Access Road / Johnstown Garden Centre																	
Church Avenue East	Church Avenue West	478	427	3	47	467	409	4	54	-11	-18	1	7	11	0.5	Pass	Pass
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue East	Johnstown Garden	1	1	0	0	1	1	0	0	0	0	0	0	0	0.0	Pass	Pass
Johnstown Garden	Church Avenue West	0	0	0	0	5	0	5	0	5	0	5	0	-5	3.2	Pass	Pass
Johnstown Garden	Church Avenue East	1	1	0	0	3	3	0	0	2	2	0	0	-2	1.4	Pass	Pass
Johnstown Garden	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue West	Church Avenue West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue West	Church Avenue East	169	160	0	9	172	164	0	8	3	4	0	-1	-3	0.2	Pass	Pass
Church Avenue West	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Site 5 Church Ave Railway Bridge																	
Church Avenue West	Church Avenue East	134	126	0	8	138	131	0	8	4	5	0	0	-4	0.3	Pass	Pass
Church Avenue East	Church Avenue West	464	413	3	47	453	390	9	54	-11	-23	6	7	11	0.5	Pass	Pass
Site 6 Kerdiffstown Road / Naas Golf Club																	
Church Avenue west	Church Avenue East	152	143	0	8	128	120	0	8	-24	-23	0	0	24	2.0	Pass	Pass
Church Avenue west	Golf Club	10	10	0	0	10	10	0	0	0	0	0	0	0	0.0	Pass	Pass
Golf Club	Church Avenue East	27	27	0	0	29	29	0	0	2	2	0	0	-2	0.3	Pass	Pass
Golf Club	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue East	Golf Club	8	8	0	0	6	6	0	0	-2	-2	0	0	2	0.8	Pass	Pass
Church Avenue East	Church Avenue west	464	413	3	47	456	393	9	54	-8	-20	6	7	8	0.4	Pass	Pass
Site 7 Kerdiffstown Road / Landfill Site																	
Church Avenue East	Landfill	6	6	0	0	4	4	0	0	-2	-2	0	0	2	0.9	Pass	Pass
Church Avenue East	Church Avenue west	472	421	3	47	467	404	9	54	-5	-17	6	7	5	0.2	Pass	Pass
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue west	Landfill	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue west	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue west	Church Avenue East	169	161	0	8	155	147	0	8	-14	-14	0	0	14	1.1	Pass	Pass
Landfill	Landfill	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Landfill	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Landfill	Church Avenue East	17	17	0	0	18	18	0	0	1	1	0	0	-1	0.2	Pass	Pass
Garden Centre																	
Church Avenue East	Church Avenue west	480	419	5	56	468	410	4	54	-12	-9	-1	-2	12	0.6	Pass	Pass
Church Avenue East	Garden Centre	55	55	0	0	51	51	0	0	-4	-4	0	0	4	0.5	Pass	Pass
Church Avenue west	Church Avenue East	170	161	0	9	175	167	0	8	5	6	0	-1	-5	0.4	Pass	Pass
Church Avenue west	Garden Centre	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Garden Centre	Church Avenue west																

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Location		Observed				Modeled				Difference				Difference			
From	To	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV	Difference	GEH	Flow	GEH
Site 1 R407 / Church Ave, Sallins																	
R407 North	R407 South	2065	1780	113	172	2061	1769	109	183	-4	-11	-4	11	4	0.1	Pass	Pass
R407 North	Church Avenue East	407	389	2	15	417	403	2	11	10	14	0	-4	-10	0.5	Pass	Pass
R407 South	R407 North	1689	1377	112	200	1721	1403	108	210	32	26	-4	10	-32	0.8	Pass	Pass
R407 South	Church Avenue East	95	90	0	5	96	91	0	5	1	1	0	0	-1	0.1	Pass	Pass
Church Avenue East	R407 South	47	46	0	1	47	47	0	1	0	1	0	0	0	0.1	Pass	Pass
Church Avenue East	R407 North	8	8	0	0	7	7	0	0	-1	-1	0	0	1	0.5	Pass	Pass
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Site 2 Church Ave (W) / Church Ave (S), Sallins																	
Church Avenue East	Church Avenue West	46	46	0	0	45	45	0	0	-1	-1	0	0	1	0.1	Pass	Pass
Church Avenue East	Church Avenue South	145	138	2	5	151	129	0	22	6	-9	-2	17	-6	0.5	Pass	Pass
Church Avenue North	Church Avenue West	8	7	0	1	10	9	0	1	2	2	0	0	-2	0.6	Pass	Pass
Church Avenue North	Church Avenue East	163	152	1	10	194	180	2	13	31	28	1	3	-31	2.3	Pass	Pass
Church Avenue West	Church Avenue South	27	26	0	1	27	26	0	1	0	0	0	0	0	0.1	Pass	Pass
Church Avenue West	Church Avenue East	473	453	2	18	494	477	2	15	21	24	0	-3	-21	1.0	Pass	Pass
Site 3 R407 / Church Ave (E)																	
Church Avenue East	R407 South	85	82	1	2	84	77	0	7	-1	-5	-1	5	1	0.1	Pass	Pass
Church Avenue East	R407 North	93	86	1	6	96	80	0	16	3	-6	-1	10	-3	0.3	Pass	Pass
R407 North	Church Avenue East	14	13	0	1	17	15	0	2	3	2	0	1	-3	0.7	Pass	Pass
R407 North	R407 South	2102	1815	113	174	2133	1835	112	185	31	20	-1	11	-31	0.7	Pass	Pass
R407 South	Church Avenue East	191	176	1	13	187	174	2	12	-4	-2	1	-1	4	0.3	Pass	Pass
R407 South	R407 North	1700	1398	108	194	1722	1415	108	199	22	17	0	5	-22	0.5	Pass	Pass
Site 10 N7 South Roundabout																	
Palmerstown	Greenhill Overbridge	329	307	1	21	333	312	1	20	4	5	0	-1	-4	0.2	Pass	Pass
Palmerstown	N7 on-slip WB	1	1	0	0	1	1	0	0	0	0	0	0	0	0.0	Pass	Pass
Palmerstown	Kill West	377	342	14	21	378	344	13	21	1	2	-1	0	-1	0.1	Pass	Pass
Palmerstown	Palmerstown	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Kill West	Greenhill Overbridge	95	83	1	11	97	84	1	12	2	1	0	1	-2	0.2	Pass	Pass
Kill West	N7 on-slip WB	206	190	1	15	214	197	1	15	8	7	0	0	-8	0.5	Pass	Pass
Kill West	Kill West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Kill West	Palmerstown	169	147	13	9	165	144	12	9	-4	-3	-1	0	4	0.3	Pass	Pass
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Greenhill Overbridge	N7 on-slip WB	37	29	4	4	30	25	3	3	-7	-4	-1	-1	7	1.1	Pass	Pass
Greenhill Overbridge	Kill West	240	202	7	31	229	198	6	24	-11	-4	-1	-7	11	0.7	Pass	Pass
Greenhill Overbridge	Palmerstown	46	41	0	5	48	45	0	3	2	4	0	-2	-2	0.3	Pass	Pass
N7 off-slip WB	Greenhill Overbridge	43	28	6	9	42	25	7	10	-1	-3	1	1	1	0.2	Pass	Pass
N7 off-slip WB	N7 on-slip WB	33	29	0	4	36	31	0	6	3	2	0	2	-3	0.5	Pass	Pass
N7 off-slip WB	Kill West	42	35	0	7	41	33	0	8	-1	-2	0	1	1	0.2	Pass	Pass
N7 off-slip WB	Palmerstown	140	117	3	20	143	119	3	21	3	2	0	1	-3	0.2	Pass	Pass
Site 9 N7 North Roundabout																	
The Paddocks	N7 Access Road	2	1	0	1	1	1	0	0	-1	0	0	-1	1	0.9	Pass	Pass
The Paddocks	N7 on-slip EB	6	3	0	3	5	3	0	2	-1	0	0	-1	1	0.5	Pass	Pass
The Paddocks	Greenhill Overbridge	4	2	0	2	4	2	0	2	0	0	0	0	0	0.0	Pass	Pass
The Paddocks	The Paddocks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
N7 off-slip EB	N7 Access Road	66	56	0	10	61	50	0	11	-5	-6	0	1	5	0.7	Pass	Pass
N7 off-slip EB	N7 on-slip EB	89	78	0	11	82	73	0	9	-7	-5	0	-2	7	0.7	Pass	Pass
N7 off-slip EB	Greenhill Overbridge	133	114	7	12	123	105	6	11	-10	-9	-1	-1	10	0.9	Pass	Pass
N7 off-slip EB	The Paddocks	5	4	0	1	4	4	0	0	-1	0	0	-1	1	0.5	Pass	Pass
Greenhill Overbridge	N7 Access Road	119	104	4	11	123	106	4	13	4	2	0	2	-4	0.4	Pass	Pass
Greenhill Overbridge	N7 on-slip EB	309	281	2	26	311	284	2	25	2	3	0	-1	-2	0.1	Pass	Pass
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Greenhill Overbridge	The Paddocks	39	31	2	6	39	32	2	5	0	1	0	-1	0	0.1	Pass	Pass
N7 Access Road	N7 Access Road	1	1	0	0	0	0	0	0	-1	-1	0	0	1	1.4	Pass	Pass
N7 Access Road	N7 on-slip EB	312	293	1	17	327	316	1	10	15	23	0	-7	-15	0.9	Pass	Pass
N7 Access Road	Greenhill Overbridge	184	155	4	25	180	161	3	16	-4	6	-1	-9	4	0.3	Pass	Pass
N7 Access Road	The Paddocks	3	2	0	1	3	2	0	1	0	0	0	0	0	0.0	Pass	Pass
Site 8 N7 Access Road / Johnstown Garden Centre																	
Church Avenue East	Church Avenue West	87	79	0	8	81	58	0	23	-6	-21	0	15	6	0.7	Pass	Pass
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue East	Johnstown Garden	2	2	0	0	5	1	4	0	3	-1	4	0	-3	1.6	Pass	Pass
Johnstown Garden	Church Avenue West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Johnstown Garden	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Johnstown Garden	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue West	Church Avenue West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue West	Church Avenue East	476	437	2	37	491	459	3	28	15	22	1	-9	-15	0.7	Pass	Pass
Church Avenue West	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Site 5 Church Ave Railway Bridge																	
Church Avenue West	Church Avenue East	405	397	0	8	460	428	3	28	55	31	3	20	-55	2.6	Pass	Pass
Church Avenue East	Church Avenue West	56	55	0	1	68	46	0	23	12	-9	0	22	-12	1.6	Pass	Pass
Site 6 Kerdiffstown Road / Naas Golf Club																	
Church Avenue west	Church Avenue East	463	432	3	28	447	416	3	28	-16	-16	0	0	16	0.7	Pass	Pass
Church Avenue west	Golf Club	10	10	0	0	11	11	0	0	1	1	0	0	-1	0.3	Pass	Pass
Golf Club	Church Avenue East	44	44	0	0	46	46	0	0	2	2	0	0	-2	0.2	Pass	Pass
Golf Club	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue East	Golf Club	11	11	0	0	9	9	0	0	-2	-2	0	0	2	0.7	Pass	Pass
Church Avenue East	Church Avenue west	63	55	0	8	69	46	0	23	6	-9	0	15	-6	0.8	Pass	Pass
Site 7 Kerdiffstown Road / Landfill Site																	
Church Avenue East	Landfill	14	14	0	0	9	9	0	0	-5	-5	0	0	5	1.4	Pass	Pass
Church Avenue East	Church Avenue west	74	66	0	8	72	49	0	23	-2	-17	0	15	2	0.2	Pass	Pass
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue west	Landfill	11	11	0	0	11	11	0	0	0	0	0	0	0	0.1	Pass	Pass
Church Avenue west	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue west	Church Avenue East	469	438	3	28	480	448	3	28	11	10	0	0	-11	0.5	Pass	Pass
Landfill	Landfill	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Landfill	Church Avenue west	5	5	0	0	6	6	0	0	1	1	0	0	-1	0.2	Pass	Pass
Landfill	Church Avenue East	12	12	0	0	12	12	0	0	0	0	0	0	0	0.1	Pass	Pass
Garden Centre																	
Church Avenue East	Church Avenue west	85	59	4	22	86	59	4	23	1	0	0	1	-1	0.1	Pass	Pass
Church Avenue East	Garden Centre	103	103	0	0	98	98	0	0	-5	-5	0	0	5	0.5	Pass	Pass
Church Avenue west	Church Avenue East	471	432	2	37	490	459	3	28	19	27	1	-9	-19	0.9	Pass	Pass
Church Avenue west	Garden Centre	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Garden Centre	Church Avenue west																

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Site/ Junction Name	Link	2027 Do Minimum		2027 Operational Scenario		Difference	
		Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)
Site 7 Kerdiffstown Road / Landfill Site	Church Avenue East	10.8	1.2	13.1	1.3	2.3	0.1
	Church Avenue west	7.9	3.3	13.0	3.3	5.1	-0.1
	Landfill	0.0	0.0	2.4	0.8	2.4	0.8
Site 8 N7 Access Road / Johnstown Garden Centre	Church Avenue East	3.16	1.08	1.39	0.96	-1.8	-0.1
	Johnstown Garden	0.0	0.0	0.0	0.0	0.0	0.0
	Church Avenue West	13.9	3.8	0.0	3.2	-13.9	-0.5
Site 9 N7 North Roundabout	The Paddocks	5.7	5.4	7.2	5.5	1.5	0.0
	N7 off-slip EB	14.4	5.8	13.7	6.0	-0.7	0.2
	Greenhill Overbridge	4.0	1.4	1.0	1.5	-3.0	0.1
	Church Avenue	19.3	5.7	28.1	5.6	8.7	-0.1
Site 10 N7 South Roundabout	Palmerstown	14.4	2.1	15.3	2.2	0.9	0.0
	Kill West	8.4	1.1	7.9	1.4	-0.5	0.3
	Greenhill Overbridge	12.1	1.8	12.8	1.8	0.7	0.0
	N7 off-slip WB	18.1	3.2	16.2	3.0	-2.0	-0.2
Site 4 Church Ave / Sallins National School	Church Avenue East	0.0	3.0	1.2	3.1	1.2	0.1
	Church Avenue West	0.0	2.0	0.0	2.0	0.0	0.0
	School	24.7	0.7	24.7	0.8	0.0	0.0
Site 1 R407 / Church Ave, Sallins	R407 North	62.0	2.1	37.0	2.0	-24.9	-0.1
	R407 South	60.1	5.8	66.1	6.0	5.9	0.2
	Church Avenue East	14.6	9.6	42.7	15.2	28.1	5.6
Site 2 Church Ave (W) / Church Ave (S), Sallins	Church Avenue East	0.0	0.5	0.0	0.5	0.0	0.0
	Church Avenue North	9.8	1.4	13.3	1.7	3.5	0.3
	Church Avenue West	2.5	0.6	14.1	0.8	11.6	0.2
Site 3 R407 / Church Ave (E)	Church Avenue East	38.5	17.1	32.5	18.8	-6.0	1.7
	R407 North	72.6	2.0	69.4	2.0	-3.2	0.0
	R407 South	167.3	10.4	166.9	11.1	-0.4	0.7
Site 5 Church Ave Railway Bridge	Church Avenue East	0.00	1.09	0.00	1.11	0.0	0.0
	Church Avenue West	0.00	1.07	0.00	1.07	0.0	0.0
Site 6 Kerdiffstown Road / Naas Golf Club	Church Avenue East	0.00	2.19	0.00	2.12	0.0	-0.1
	Church Avenue west	6.2	0.9	6.2	0.8	0.0	0.0
	Golf Club	2.6	1.6	1.1	1.6	-1.5	0.0
Garden Centre	Church Avenue East	16.6	1.5	18.6	1.5	2.0	0.0
	Church Avenue west	0.0	2.3	0.0	2.3	0.0	0.0
	Garden Centre	5.1	1.0	6.3	0.9	1.3	-0.1

Site/ Junction Name	Link	2037 Do Minimum		2037 Operational Scenario		Difference	
		Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)
Site 7 Kerdiffstown Road / Landfill Site	Church Avenue East	12.15	1.48	11.10	2.03	-1.0	0.6
	Church Avenue west	10.0	3.6	8.3	3.6	-1.7	0.1
	Landfill	0.0	0.0	5.0	0.9	5.0	0.9
Site 8 N7 Access Road / Johnstown Garden Centre	Church Avenue East	8.47	1.47	4.28	1.00	-4.2	-0.5
	Johnstown Garden	0.0	0.0	0.0	0.0	0.0	0.0
	Church Avenue West	19.3	4.4	4.7	3.6	-14.7	-0.7
Site 9 N7 North Roundabout	The Paddocks	6.8	5.0	3.3	5.0	-3.5	-0.1
	N7 off-slip EB	17.5	6.3	20.2	6.3	2.7	0.0
	Greenhill Overbridge	1.3	1.5	0.9	1.5	-0.4	0.0
	Church Avenue	28.1	6.3	22.2	7.6	-5.9	1.3
Site 10 N7 South Roundabout	Palmerstown	17.6	4.1	18.1	2.2	0.6	-1.9
	Kill West	9.6	1.3	10.4	1.2	0.8	0.0
	Greenhill Overbridge	20.3	2.0	11.9	1.9	-8.4	-0.1
	N7 off-slip WB	17.1	2.7	16.3	2.7	-0.8	0.0
Site 4 Church Ave / Sallins National School	Church Avenue East	0.0	3.7	0.0	3.4	0.0	-0.3
	Church Avenue West	6.5	2.1	5.2	2.1	-1.3	0.0
	School	24.7	1.0	24.7	0.9	0.0	-0.1
Site 1 R407 / Church Ave, Sallins	R407 North	67.8	2.4	78.0	2.4	10.2	0.0
	R407 South	64.5	7.1	67.8	7.0	3.3	-0.1
	Church Avenue East	13.1	16.2	9.5	18.2	-3.6	2.0
Site 2 Church Ave (W) / Church Ave (S), Sallins	Church Avenue East	0.0	0.6	0.0	0.5	0.0	-0.1
	Church Avenue North	8.2	1.6	11.6	1.5	3.4	0.0
	Church Avenue West	5.0	0.6	3.8	0.6	-1.3	0.0
Site 3 R407 / Church Ave (E)	Church Avenue East	56.1	26.0	52.2	25.0	-3.9	-0.9
	R407 North	74.4	1.9	71.8	1.9	-2.6	0.0
	R407 South	195.0	13.8	194.6	12.9	-0.4	-0.9
Site 5 Church Ave Railway Bridge	Church Avenue East	0.00	1.84	0.00	1.39	0.0	-0.4
	Church Avenue West	0.00	1.17	0.00	1.20	0.0	0.0
Site 6 Kerdiffstown Road / Naas Golf Club	Church Avenue East	0.0	2.3	0.0	2.4	0.0	0.1
	Church Avenue west	5.7	0.8	5.2	0.9	-0.5	0.2
	Golf Club	0.0	2.0	0.0	1.5	0.0	-0.5
Garden Centre	Church Avenue East	11.2	1.8	14.8	1.6	3.5	-0.2
	Church Avenue west	0.0	2.4	0.0	2.5	0.0	0.0
	Garden Centre	6.4	1.3	4.0	0.9	-2.5	-0.4

PM Peak

Site/ Junction Name	Link	2027 Do Minimum		2027 Operational Scenario		Difference	
		Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)
Site 7 Kerdiffstown Road / Landfill Site	Church Avenue East	15.9	4.2	17.2	4.4	1.3	0.2
	Church Avenue west	9.1	1.8	13.9	1.7	4.8	0.0
	Landfill	2.3	0.5	1.3	0.4	-1.0	-0.1
Site 8 N7 Access Road / Johnstown Garden Centre	Church Avenue East	9.06	3.91	8.24	6.34	-0.8	2.4
	Johnstown Garden	7.5	1.4	0.0	0.6	-7.5	-0.8
	Church Avenue West	0.0	1.4	3.3	1.3	3.3	-0.1
Site 9 N7 North Roundabout	The Paddocks	6.7	3.8	6.5	4.0	-0.2	0.2
	N7 off-slip EB	23.3	6.3	21.7	6.1	-1.6	-0.2
	Greenhill Overbridge	7.7	1.1	6.2	1.0	-1.5	-0.1
	Church Avenue	9.7	2.6	12.3	3.2	2.7	0.7
Site 10 N7 South Roundabout	Palmerstown	18.6	3.0	20.7	2.9	2.1	-0.1
	Kill West	23.9	2.8	30.8	2.9	6.9	0.1
	Greenhill Overbridge	10.6	1.7	9.0	1.8	-1.6	0.1
	N7 off-slip WB	42.3	4.7	35.8	4.5	-6.5	-0.1
Site 4 Church Ave / Sallins National School	Church Avenue East	10.2	6.9	7.7	7.0	-2.4	0.1
	Church Avenue West	2.2	1.5	3.5	2.0	1.3	0.4
	School	24.4	1.6	24.5	1.9	0.0	0.3
Site 1 R407 / Church Ave, Sallins	R407 North	23.4	1.7	23.2	1.7	-0.2	0.0
	R407 South	30.4	2.7	43.0	2.9	12.6	0.1
	Church Avenue East	31.6	15.9	32.0	14.4	0.4	-1.5
Site 2 Church Ave (W) / Church Ave (S), Sallins	Church Avenue East	0.0	1.4	0.0	1.5	0.0	0.0
	Church Avenue North	4.6	1.0	5.2	1.3	0.6	0.2
	Church Avenue West	4.9	1.2	4.0	0.9	-0.9	-0.3
Site 3 R407 / Church Ave (E)	Church Avenue East	89.4	38.6	97.2	38.8	7.8	0.2
	R407 North	69.5	1.9	69.0	2.1	-0.5	0.1
	R407 South	144.1	6.8	139.6	6.9	-4.5	0.1
Site 5 Church Ave Railway Bridge	Church Avenue East	0.00	5.16	0.00	5.19	0.0	0.0
	Church Avenue West	0.00	0.51	0.00	0.53	0.0	0.0
Site 6 Kerdiffstown Road / Naas Golf Club	Church Avenue East	0.00	1.05	0.00	1.05	0.0	0.0
	Church Avenue west	1.2	0.5	0.0	0.4	-1.2	-0.1
	Golf Club	0.0	6.8	2.8	6.9	2.8	0.1
Garden Centre	Church Avenue East	4.0	3.7	8.0	3.6	4.0	0.0
	Church Avenue west	0.0	1.3	0.0	1.2	0.0	-0.1
	Garden Centre	4.9	0.5	6.1	0.6	1.2	0.1

Site/ Junction Name	Link	2027 Do Minimum		2027 Operational Scenario		Difference	
		Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)	Queue Length (m)	Delay (s)
Site 7 Kerdiffstown Road / Landfill Site	Church Avenue East	17.38	4.33	20.63	4.66	3.3	0.3
	Church Avenue west	11.5	1.8	18.1	2.0	6.6	0.2
	Landfill	0.0	0.3	5.0	0.5	5.0	0.2
Site 8 N7 Access Road / Johnstown Garden Centre	Church Avenue East	14.79	9.42	7.82	4.16	-7.0	-5.3
	Johnstown Garden	6.1	1.2	4.9	1.8	-1.2	0.6
	Church Avenue West	2.3	1.4	2.3	1.5	0.0	0.0
Site 9 N7 North Roundabout	The Paddocks	8.9	4.4	6.8	4.1	-2.1	-0.3
	N7 off-slip EB	24.2	6.9	22.5	6.7	-1.7	-0.2
	Greenhill Overbridge	2.8	1.2	9.2	1.1	6.4	0.0
	Church Avenue	17.0	3.2	11.3	6.1	-5.7	2.9
Site 10 N7 South Roundabout	Palmerstown	19.7	3.0	27.9	3.2	8.1	0.2
	Kill West	32.2	3.4	29.7	3.3	-2.5	-0.1
	Greenhill Overbridge	9.4	1.9	10.8	1.9	1.4	0.0
	N7 off-slip WB	54.7	5.3	44.0	4.9	-10.7	-0.3
Site 4 Church Ave / Sallins National School	Church Avenue East	8.9	7.4	8.4	7.3	-0.5	-0.1
	Church Avenue West	0.0	1.1	4.3	3.1	4.3	2.0
	School	24.7	2.7	24.7	2.7	0.0	0.0
Site 1 R407 / Church Ave, Sallins	R407 North	58.9	2.1	45.0	2.0	-13.9	-0.1
	R407 South	58.4	5.5	64.7	3.7	6.3	-1.8
	Church Avenue East	42.2	20.5	37.9	25.3	-4.3	4.8
Site 2 Church Ave (W) / Church Ave (S), Sallins	Church Avenue East	31.8	3.0	20.3	1.9	-11.4	-1.0
	Church Avenue North	6.3	1.3	6.5	1.4	0.2	0.1
	Church Avenue West	9.5	1.2	6.2	1.5	-3.4	0.3
Site 3 R407 / Church Ave (E)	Church Avenue East	121.3	68.8	125.0	64.3	3.6	-4.4
	R407 North	72.1	2.0	70.2	1.9	-1.9	0.0
	R407 South	171.0	7.6	159.7	8.0	-11.3	0.5
Site 5 Church Ave Railway Bridge	Church Avenue East	0.00	5.42	0.00	5.51	0.0	0.1
	Church Avenue West	0.00	0.49	0.00	0.56	0.0	0.1
Site 6 Kerdiffstown Road / Naas Golf Club	Church Avenue East	0.00	1.09	0.00	1.20	0.0	0.1
	Church Avenue west	2.4	0.5	1.3	0.5	-1.1	0.0
	Golf Club	6.5	6.9	1.2	7.2	-5.3	0.2
Garden Centre	Church Avenue East	3.8	3.5	3.6	3.8	-0.2	0.3
	Church Avenue west	0.0	1.3	0.0	1.3	0.0	0.0
	Garden Centre	5.1	0.5	6.4	0.6	1.3	0.0

OS 2027 AM Peak

Location		Observed				Modeled				Difference			
From	To	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV
Site 1 R407 / Church Ave, Sallins													
R407 North	R407 South	2305	1987	126	192	1999	1823	0	176	-306	-164	-126	-16
R407 North	Church Avenue East	432	414	2	16	541	415	115	11	109	1	113	-5
R407 South	R407 North	1907	1555	127	226	1669	1454	0	215	-238	-101	-127	-11
R407 South	Church Avenue East	101	95	0	5	112	94	13	5	11	-1	13	0
Church Avenue East	R407 South	49	48	0	1	47	46	0	1	-2	-2	0	0
Church Avenue East	R407 North	9	9	0	0	102	7	96	0	93	-2	96	0
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0
Site 2 Church Ave (W) / Church Ave (S), Sallins													
Church Avenue East	Church Avenue West	48	48	0	0	44	44	0	0	-4	-4	0	0
Church Avenue East	Church Avenue South	154	147	2	5	149	125	0	24	-5	-22	-2	19
Church Avenue North	Church Avenue West	9	7	0	1	105	9	96	1	96	2	96	0
Church Avenue North	Church Avenue East	173	161	1	11	201	188	0	13	28	27	-1	2
Church Avenue West	Church Avenue South	29	28	0	1	159	27	131	1	130	-1	131	0
Church Avenue West	Church Avenue East	503	481	2	19	505	490	0	15	2	9	-2	-4
Site 3 R407 / Church Ave (E)													
Church Avenue East	R407 South	90	87	1	2	83	75	0	8	-7	-12	-1	6
Church Avenue East	R407 North	99	92	1	6	93	77	0	17	-6	-15	-1	11
R407 North	Church Avenue East	15	14	0	1	17	15	0	2	2	1	0	1
R407 North	R407 South	2349	2029	127	194	2066	1888	0	179	-283	-141	-127	-15
R407 South	Church Avenue East	202	187	1	14	289	181	96	12	87	-6	95	-2
R407 South	R407 North	1914	1574	122	218	1689	1472	13	203	-225	-102	-109	-15
Site 10 N7 South Roundabout													
Palmerstown	Greenhill Overbridge	348	324	1	22	355	319	15	21	7	-5	14	-1
Palmerstown	N7 on-slip WB	1	1	0	0	1	1	0	0	0	0	0	0
Palmerstown	Kill West	413	374	15	23	376	355	0	21	-37	-19	-15	-2
Palmerstown	Palmerstown	0	0	0	0	0	0	0	0	0	0	0	0
Kill West	Greenhill Overbridge	102	89	1	12	99	87	0	11	-3	-2	-1	-1
Kill West	N7 on-slip WB	219	201	1	16	217	202	1	14	-2	1	0	-2
Kill West	Kill West	0	0	0	0	13	0	13	0	13	0	13	0
Kill West	Palmerstown	192	167	15	10	159	149	1	9	-33	-18	-14	-1
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0
Greenhill Overbridge	N7 on-slip WB	43	33	5	5	35	27	6	3	-8	-6	1	-2
Greenhill Overbridge	Kill West	261	219	8	34	235	210	0	25	-26	-9	-8	-9
Greenhill Overbridge	Palmerstown	48	43	0	5	53	46	4	3	5	3	4	-2
N7 off-slip WB	Greenhill Overbridge	53	34	7	11	37	27	0	10	-16	-7	-7	-1
N7 off-slip WB	N7 on-slip WB	35	31	0	4	37	33	0	4	2	2	0	0
N7 off-slip WB	Kill West	45	37	0	7	40	34	0	6	-5	-3	0	-1
N7 off-slip WB	Palmerstown	151	126	3	22	143	123	0	20	-8	-3	-3	-2
Site 9 N7 North Roundabout													
The Paddocks	N7 Access Road	2	1	0	1	2	1	0	1	0	0	0	0
The Paddocks	N7 on-slip EB	6	3	0	3	6	3	0	3	0	0	0	0
The Paddocks	Greenhill Overbridge	4	2	0	2	5	2	0	2	1	0	0	0
The Paddocks	The Paddocks	0	0	0	0	0	0	0	0	0	0	0	0
N7 off-slip EB	N7 Access Road	70	59	0	11	65	54	0	11	-5	-5	0	0
N7 off-slip EB	N7 on-slip EB	94	82	0	12	87	77	0	10	-7	-5	0	-2
N7 off-slip EB	Greenhill Overbridge	148	127	8	13	123	111	0	12	-25	-16	-8	-1
N7 off-slip EB	The Paddocks	5	4	0	1	4	4	0	0	-1	0	0	-1
Greenhill Overbridge	N7 Access Road	131	114	4	12	122	109	0	13	-9	-5	-4	1
Greenhill Overbridge	N7 on-slip EB	328	298	2	28	318	293	0	25	-10	-5	-2	-3
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	10	0	10	0	10	0	10	0
Greenhill Overbridge	The Paddocks	44	35	2	7	42	33	5	4	-2	-2	3	-3
N7 Access Road	N7 Access Road	0	0	0	0	0	0	0	0	0	0	0	0
N7 Access Road	N7 on-slip EB	331	311	1	18	345	336	0	10	14	25	-1	-8
N7 Access Road	Greenhill Overbridge	198	167	4	27	185	169	0	16	-13	2	-4	-11
N7 Access Road	The Paddocks	3	2	0	1	3	2	0	1	0	0	0	0
Site 8 N7 Access Road / Johnstown Garden Centre													
Church Avenue East	Church Avenue West	92	83	0	9	83	59	0	24	-9	-24	0	15
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue East	Johnstown Garden	2	2	0	0	1	1	0	0	-1	-1	0	0
Johnstown Garden	Church Avenue West	0	0	0	0	0	0	0	0	0	0	0	0
Johnstown Garden	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0
Johnstown Garden	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue West	Church Avenue West	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue West	Church Avenue East	505	464	2	40	513	486	0	27	8	22	-2	-13
Church Avenue West	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0
Site 5 Church Ave Railway Bridge													
Church Avenue West	Church Avenue East	443	435	0	9	484	455	0	28	41	20	0	19
Church Avenue East	Church Avenue West	59	58	0	1	66	42	0	24	7	-16	0	23
Site 6 Kerdiffstown Road / Naas Golf Club													
Church Avenue west	Church Avenue East	457	427	3	27	468	440	0	28	11	13	-3	1
Church Avenue west	Golf Club	11	11	0	0	12	12	0	0	1	1	0	0
Golf Club	Church Avenue East	47	47	0	0	48	48	0	0	1	1	0	0
Golf Club	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue East	Golf Club	12	12	0	0	8	8	0	0	-4	-4	0	0
Church Avenue East	Church Avenue west	66	58	0	9	66	43	0	24	0	-15	0	15
Site 7 Kerdiffstown Road / Landfill Site													
Church Avenue East	Landfill	14	14	0	0	8	8	0	0	-6	-6	0	0
Church Avenue East	Church Avenue west	78	69	0	9	74	50	0	24	-4	-19	0	15
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue west	Landfill	11	11	0	0	10	10	0	0	-1	-1	0	0
Church Avenue west	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue west	Church Avenue East	504	471	3	30	503	476	0	28	-1	5	-3	-2
Landfill	Landfill	0	0	0	0	0	0	0	0	0	0	0	0
Landfill	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0
Landfill	Church Avenue East	12	12	0	0	12	12	0	0	0	0	0	0
Garden Centre													
Church Avenue East	Church Avenue west	94	65	4	25	84	60	0	24	-10	-5	-4	-1
Church Avenue East	Garden Centre	109	109	0	0	103	103	0	0	-6	-6	0	0
Church Avenue west	Church Avenue East	505	464	2	40	513	485	0	27	8	21	-2	-13
Church Avenue west	Garden Centre	0	0	0	0	0	0	0	0	0	0	0	0
Garden Centre	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0
Garden Centre	Church Avenue East	27	27	0	0	24	24	0	0	-3	-3	0	0
Site 4 Church Ave / Sallins National School													
Church Avenue East	Church Avenue West	72	63	0	9	66	42	0	24	-6	-21	0	15
Church Avenue East	School	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue West	Church Avenue East	468	435	3	30	485	457	0	28	17	22	-3	-2
Church Avenue West	School	208	208	0	0	219	219	0	0	11	11	0	0
School	Church Avenue West	131	131	0	0	127	127	0	0	-4	-4	0	0
School	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0

Difference			
Difference	GEH	Flow	GEH
306	6.6	Fail	Fail
-109	5.0	Fail	Pass
238	5.6	Fail	Fail
-11	1.1	Pass	Pass
2	0.3	Pass	Pass
-93	12.5	Pass	Fail
0	0.0	Pass	Pass
4	0.6	Pass	Pass
5	0.4	Pass	Pass
-96	12.8	Pass	Fail
-28	2.0	Pass	Pass
-130	13.4	Fail	Fail
-2	0.1	Pass	Pass
7	0.8	Pass	Pass
6	0.6	Pass	Pass
-2	0.5	Pass	Pass
283	6.0	Fail	Fail
-87	5.6	Pass	Fail
225	5.3	Fail	Fail
-7	0.4	Pass	Pass
0	0.1	Pass	Pass
37	1.8	Pass	Pass
0	0.0	Pass	Pass
3	0.3	Pass	Pass
2	0.1	Pass	Pass
-13	5.1	Pass	Fail
33	2.5	Pass	Pass
0	0.0	Pass	Pass
8	1.3	Pass	Pass
26	1.6	Pass	Pass
-5	0.7	Pass	Pass
16	2.4	Pass	Pass
-2	0.3	Pass	Pass
5	0.7	Pass	Pass
8	0.7	Pass	Pass
0	0.2	Pass	Pass
0	0.2	Pass	Pass

DM 2037 AM Peak

Location		Observed				Modeled				Difference			
From	To	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV
Site 1 R407 / Church Ave, Sallins													
R407 North	R407 South	2566	2212	141	214	2350	2025	126	199	-216	-187	-15	-15
R407 North	Church Avenue East	474	453	2	18	466	452	2	12	-8	-1	0	-6
R407 South	R407 North	2121	1729	141	251	1979	1620	121	237	-142	-109	-20	-14
R407 South	Church Avenue East	110	104	0	6	109	104	0	5	-1	0	0	-1
Church Avenue East	R407 South	53	52	0	1	50	49	0	1	-3	-3	0	0
Church Avenue East	R407 North	9	9	0	0	8	8	0	0	-1	-1	0	0
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0
Site 2 Church Ave (W) / Church Ave (S), Sallins													
Church Avenue East	Church Avenue West	52	52	0	0	48	48	0	0	-4	-4	0	0
Church Avenue East	Church Avenue South	167	159	2	6	163	138	0	24	-4	-21	-2	18
Church Avenue North	Church Avenue West	9	8	0	1	10	10	0	1	1	2	0	0
Church Avenue North	Church Avenue East	190	177	1	12	218	203	2	14	28	26	1	2
Church Avenue West	Church Avenue South	32	31	0	1	32	30	0	1	0	-1	0	0
Church Avenue West	Church Avenue East	551	527	2	22	553	534	2	17	2	7	0	-5
Site 3 R407 / Church Ave (E)													
Church Avenue East	R407 South	99	95	1	2	88	81	0	6	-11	-14	-1	4
Church Avenue East	R407 North	108	100	1	7	104	85	0	19	-4	-15	-1	12
R407 North	Church Avenue East	17	15	0	1	18	16	0	2	1	1	0	1
R407 North	R407 South	2616	2259	141	216	2435	2104	130	201	-181	-155	-11	-15
R407 South	Church Avenue East	222	205	1	16	211	197	2	13	-11	-8	1	-3
R407 South	R407 North	2129	1751	136	243	1985	1639	121	224	-144	-112	-15	-19
Site 10 N7 South Roundabout													
Palmerstown	Greenhill Overbridge	382	356	1	25	378	355	1	22	-4	-1	0	-3
Palmerstown	N7 on-slip WB	1	1	0	0	0	0	0	0	-1	-1	0	0
Palmerstown	Kill West	459	416	17	26	429	392	14	22	-30	-24	-3	-4
Palmerstown	Palmerstown	0	0	0	0	0	0	0	0	0	0	0	0
Kill West	Greenhill Overbridge	112	97	1	13	107	95	0	12	-5	-2	-1	-1
Kill West	N7 on-slip WB	243	224	1	18	241	224	1	16	-2	0	0	-2
Kill West	Kill West	0	0	0	0	0	0	0	0	0	0	0	0
Kill West	Palmerstown	214	186	17	12	190	166	15	9	-24	-20	-2	-3
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0
Greenhill Overbridge	N7 on-slip WB	47	37	5	5	35	29	3	3	-12	-8	-2	-2
Greenhill Overbridge	Kill West	288	242	9	38	260	226	7	27	-28	-16	-2	-11
Greenhill Overbridge	Palmerstown	53	47	0	6	53	50	0	3	0	3	0	-3
N7 off-slip WB	Greenhill Overbridge	58	37	8	12	47	30	6	10	-11	-7	-2	-2
N7 off-slip WB	N7 on-slip WB	39	34	0	5	42	36	0	6	3	2	0	1
N7 off-slip WB	Kill West	50	42	0	8	47	40	0	7	-3	-2	0	-1
N7 off-slip WB	Palmerstown	169	141	4	24	165	140	3	22	-4	-1	-1	-2
Site 9 N7 North Roundabout													
The Paddocks	N7 Access Road	2	1	0	1	2	1	0	1	0	0	0	0
The Paddocks	N7 on-slip EB	7	4	0	4	7	4	0	3	0	0	0	-1
The Paddocks	Greenhill Overbridge	5	2	0	2	3	1	0	2	-2	-1	0	0
The Paddocks	The Paddocks	0	0	0	0	0	0	0	0	0	0	0	0
N7 off-slip EB	N7 Access Road	74	62	0	12	70	59	0	11	-4	-3	0	-1
N7 off-slip EB	N7 on-slip EB	104	91	0	13	95	84	0	11	-9	-7	0	-2
N7 off-slip EB	Greenhill Overbridge	165	141	9	15	142	122	7	13	-23	-19	-2	-2
N7 off-slip EB	The Paddocks	6	5	0	1	4	4	0	0	-2	-1	0	-1
Greenhill Overbridge	N7 Access Road	138	119	5	14	131	114	4	13	-7	-5	-1	-1
Greenhill Overbridge	N7 on-slip EB	366	332	2	31	357	330	2	26	-9	-2	0	-5
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0
Greenhill Overbridge	The Paddocks	49	39	2	7	44	37	2	5	-5	-2	0	-2
N7 Access Road	N7 Access Road	0	0	0	0	0	0	0	0	0	0	0	0
N7 Access Road	N7 on-slip EB	364	343	1	20	371	359	0	11	7	16	-1	-9
N7 Access Road	Greenhill Overbridge	218	183	5	30	202	181	4	17	-16	-2	-1	-13
N7 Access Road	The Paddocks	4	2	0	1	3	2	0	2	-1	0	0	1
Site 8 N7 Access Road / Johnstown Garden Centre													
Church Avenue East	Church Avenue West	90	81	0	9	81	55	0	25	-9	-26	0	16
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue East	Johnstown Garden	2	2	0	0	4	1	4	0	2	-1	4	0
Johnstown Garden	Church Avenue West	0	0	0	0	0	0	0	0	0	0	0	0
Johnstown Garden	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0
Johnstown Garden	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue West	Church Avenue West	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue West	Church Avenue East	557	510	2	44	558	523	4	30	1	13	2	-14
Church Avenue West	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0
Site 5 Church Ave Railway Bridge													
Church Avenue West	Church Avenue East	472	472	0	0	527	493	4	30	55	21	4	30
Church Avenue East	Church Avenue West	65	64	0	1	70	45	0	25	5	-19	0	24
Site 6 Kerdiffstown Road / Naas Golf Club													
Church Avenue west	Church Avenue East	497	464	3	30	512	478	4	30	15	14	1	0
Church Avenue west	Golf Club	12	12	0	0	13	13	0	0	1	1	0	0
Golf Club	Church Avenue East	52	52	0	0	48	48	0	0	-4	-4	0	0
Golf Club	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue East	Golf Club	13	13	0	0	9	9	0	0	-4	-4	0	0
Church Avenue East	Church Avenue west	74	64	0	9	70	45	0	25	-4	-19	0	16
Site 7 Kerdiffstown Road / Landfill Site													
Church Avenue East	Landfill	4	4	0	0	2	2	0	0	-2	-2	0	0
Church Avenue East	Church Avenue west	87	77	0	9	79	53	0	25	-8	-24	0	16
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue west	Landfill	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue west	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue west	Church Avenue East	550	513	4	33	558	524	4	30	8	11	0	-3
Landfill	Landfill	0	0	0	0	0	0	0	0	0	0	0	0
Landfill	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0
Landfill	Church Avenue East	7	7	0	0	0	0	0	0	-7	-7	0	0
Garden Centre													
Church Avenue East	Church Avenue west	93	60	5	28	85	56	4	25	-8	-4	-1	-3
Church Avenue East	Garden Centre	121	121	0	0	117	117	0	0	-4	-4	0	0
Church Avenue west	Church Avenue East	557	510	2	44	557	523	4	30	0	13	2	-14
Church Avenue west	Garden Centre	0	0	0	0	0	0	0	0	0	0	0	0
Garden Centre	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0
Garden Centre	Church Avenue East	30	30	0	0	24	24	0	0	-6	-6	0	0
Site 4 Church Ave / Sallins National School													
Church Avenue East	Church Avenue West	74	64	0	9	69	44	0	24	-5	-20	0	15
Church Avenue East	School	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue West	Church Avenue East	509	472	4	34	529	495	4	30	20	23	0	-4
Church Avenue West	School	231	231	0	0	241	241	0	0	10	10	0	0
School	Church Avenue West	146	146	0	0	142	142	0	0	-4	-4	0	0
School	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0

Difference			
Difference	GEH	Flow	GEH
216	4.4	Fail	Pass
8	0.4	Pass	Pass
142	3.1	Fail	Pass
1	0.1	Pass	Pass
3	0.5	Pass	Pass
1	0.5	Pass	Pass
0	0.0	Pass	Pass
4	0.6	Pass	Pass
4	0.3	Pass	Pass
-1	0.2	Pass	Pass
-28	2.0	Pass	Pass
0	0.0	Pass	Pass
-2	0.1	Pass	Pass
11	1.1	Pass	Pass
4	0.4	Pass	Pass
-1	0.3	Pass	Pass
181	3.6	Fail	Pass
11	0.7	Pass	Pass
144	3.2	Fail	Pass
4	0.2	Pass	Pass
1	1.5	Pass	Pass
30	1.4	Pass	Pass
0	0.0	Pass	Pass
5	0.4	Pass	Pass
2	0.2	Pass	Pass
0	0.0	Pass	Pass
24	1.7	Pass	Pass
0	0.0	Pass	Pass
12	1.9	Pass	Pass
28	1.7	Pass	Pass
0	0.1	Pass	Pass
11	1.5	Pass	Pass
-3	0.4	Pass	Pass
3	0.4	Pass	Pass
4	0.3	Pass	Pass
0	0.3	Pass	Pass
0	0.0	Pass	Pass
2	0.9	Pass	Pass
0			

OS 2037 AM Peak

Location		Observed				Modeled				Difference			
From	To	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV
Site 1 R407 / Church Ave, Sallins													
R407 North	R407 South	2566	2212	141	214	2352	2028	126	199	-214	-184	-15	-15
R407 North	Church Avenue East	480	460	2	18	474	460	2	12	-6	0	0	-6
R407 South	R407 North	2123	1731	141	251	1979	1620	121	238	-144	-111	-20	-13
R407 South	Church Avenue East	112	106	0	6	111	106	0	5	-1	0	0	-1
Church Avenue East	R407 South	55	53	0	1	50	50	0	1	-5	-3	0	0
Church Avenue East	R407 North	10	10	0	0	8	8	0	0	-2	-2	0	0
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0
Site 2 Church Ave (W) / Church Ave (S), Sallins													
Church Avenue East	Church Avenue West	54	54	0	0	49	49	0	0	-5	-5	0	0
Church Avenue East	Church Avenue South	172	163	2	6	165	141	0	24	-7	-22	-2	18
Church Avenue North	Church Avenue West	9	8	0	1	10	9	0	1	1	1	0	0
Church Avenue North	Church Avenue East	193	180	1	12	222	207	2	14	29	27	1	2
Church Avenue West	Church Avenue South	32	31	0	1	31	30	0	1	-1	-1	0	0
Church Avenue West	Church Avenue East	559	535	2	22	562	543	2	17	3	8	0	-5
Site 3 R407 / Church Ave (E)													
Church Avenue East	R407 South	101	97	1	2	88	82	0	6	-13	-15	-1	4
Church Avenue East	R407 North	110	102	1	7	107	87	0	19	-3	-15	-1	12
R407 North	Church Avenue East	17	16	0	1	19	18	0	2	2	2	0	1
R407 North	R407 South	2616	2259	141	216	2435	2104	130	201	-181	-155	-11	-15
R407 South	Church Avenue East	225	208	1	16	214	199	2	13	-11	-9	1	-3
R407 South	R407 North	2131	1752	136	243	1985	1639	121	224	-146	-113	-15	-19
Site 10 N7 South Roundabout													
Palmerstown	Greenhill Overbridge	387	361	1	25	383	360	1	22	-4	-1	0	-3
Palmerstown	N7 on-slip WB	1	1	0	0	0	0	0	0	-1	-1	0	0
Palmerstown	Kill West	459	416	17	26	429	392	14	22	-30	-24	-3	-4
Palmerstown	Palmerstown	0	0	0	0	0	0	0	0	0	0	0	0
Kill West	Greenhill Overbridge	113	99	1	13	109	96	0	12	-4	-3	-1	-1
Kill West	N7 on-slip WB	243	224	1	18	241	224	1	16	-2	0	0	-2
Kill West	Kill West	0	0	0	0	0	0	0	0	0	0	0	0
Kill West	Palmerstown	214	186	17	12	190	166	15	9	-24	-20	-2	-3
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0
Greenhill Overbridge	N7 on-slip WB	48	37	5	5	36	30	3	3	-12	-7	-2	-2
Greenhill Overbridge	Kill West	290	244	9	38	264	229	7	27	-26	-15	-2	-11
Greenhill Overbridge	Palmerstown	54	48	0	6	54	51	0	3	0	3	0	-3
N7 off-slip WB	Greenhill Overbridge	59	38	8	12	47	31	6	10	-12	-7	-2	-2
N7 off-slip WB	N7 on-slip WB	39	34	0	5	42	36	0	6	3	2	0	1
N7 off-slip WB	Kill West	50	42	0	8	48	40	0	7	-2	-2	0	-1
N7 off-slip WB	Palmerstown	169	141	4	24	164	139	3	22	-5	-2	-1	-2
Site 9 N7 North Roundabout													
The Paddocks	N7 Access Road	2	1	0	1	2	1	0	1	0	0	0	0
The Paddocks	N7 on-slip EB	7	4	0	4	7	4	0	3	0	0	0	-1
The Paddocks	Greenhill Overbridge	5	2	0	2	3	1	0	2	-2	-1	0	0
The Paddocks	The Paddocks	0	0	0	0	0	0	0	0	0	0	0	0
N7 off-slip EB	N7 Access Road	77	65	0	12	72	60	0	11	-5	-5	0	-1
N7 off-slip EB	N7 on-slip EB	104	91	0	13	95	84	0	11	-9	-7	0	-2
N7 off-slip EB	Greenhill Overbridge	165	141	9	15	144	124	7	13	-21	-17	-2	-2
N7 off-slip EB	The Paddocks	6	5	0	1	4	4	0	0	-2	-1	0	-1
Greenhill Overbridge	N7 Access Road	145	126	5	14	139	121	4	13	-6	-5	-1	-1
Greenhill Overbridge	N7 on-slip EB	366	332	2	31	357	330	2	26	-9	-2	0	-5
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0
Greenhill Overbridge	The Paddocks	49	39	2	7	44	37	2	5	-5	-2	0	-2
N7 Access Road	N7 Access Road	0	0	0	0	0	0	0	0	0	0	0	0
N7 Access Road	N7 on-slip EB	368	346	1	20	378	367	0	11	10	21	-1	-9
N7 Access Road	Greenhill Overbridge	220	185	5	30	206	185	4	17	-14	0	-1	-13
N7 Access Road	The Paddocks	4	2	0	1	3	2	0	2	-1	0	0	1
Site 8 N7 Access Road / Johnstown Garden Centre													
Church Avenue East	Church Avenue West	101	91	0	9	92	66	0	25	-9	-25	0	16
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue East	Johnstown Garden	2	2	0	0	4	1	4	0	2	-1	4	0
Johnstown Garden	Church Avenue West	0	0	0	0	0	0	0	0	0	0	0	0
Johnstown Garden	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0
Johnstown Garden	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue West	Church Avenue West	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue West	Church Avenue East	562	516	2	44	568	534	4	30	6	18	2	-14
Church Avenue West	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0
Site 5 Church Ave Railway Bridge													
Church Avenue West	Church Avenue East	492	483	0	9	539	504	4	30	47	21	4	21
Church Avenue East	Church Avenue West	65	64	0	1	73	48	0	25	8	-16	0	24
Site 6 Kerdiffstown Road / Naas Golf Club													
Church Avenue west	Church Avenue East	508	474	3	30	523	489	4	30	15	15	1	0
Church Avenue west	Golf Club	12	12	0	0	13	13	0	0	1	1	0	0
Golf Club	Church Avenue East	52	52	0	0	48	48	0	0	-4	-4	0	0
Golf Club	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue East	Golf Club	13	13	0	0	9	9	0	0	-4	-4	0	0
Church Avenue East	Church Avenue west	74	64	0	9	74	49	0	25	0	-15	0	16
Site 7 Kerdiffstown Road / Landfill Site													
Church Avenue East	Landfill	14	14	0	0	8	8	0	0	-6	-6	0	0
Church Avenue East	Church Avenue west	87	77	0	9	83	58	0	25	-4	-19	0	16
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue west	Landfill	11	11	0	0	12	12	0	0	1	1	0	0
Church Avenue west	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue west	Church Avenue East	560	524	4	33	557	523	4	30	-3	-1	0	-3
Landfill	Landfill	0	0	0	0	0	0	0	0	0	0	0	0
Landfill	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0
Landfill	Church Avenue East	13	13	0	0	12	12	0	0	-1	-1	0	0
Garden Centre													
Church Avenue East	Church Avenue west	103	71	5	28	96	67	4	25	-7	-4	-1	-3
Church Avenue East	Garden Centre	121	121	0	0	115	115	0	0	-6	-6	0	0
Church Avenue west	Church Avenue East	562	516	2	44	567	533	4	30	5	17	2	-14
Church Avenue west	Garden Centre	0	0	0	0	0	0	0	0	0	0	0	0
Garden Centre	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0
Garden Centre	Church Avenue East	30	30	0	0	24	24	0	0	-6	-6	0	0
Site 4 Church Ave / Sallins National School													
Church Avenue East	Church Avenue West	79	70	0	9	73	48	0	24	-6	-22	0	15
Church Avenue East	School	0	0	0	0	0	0	0	0	0	0	0	0
Church Avenue West	Church Avenue East	520	483	4	34	540	506	4	30	20	23	0	-4
Church Avenue West	School	231	231	0	0	243	243	0	0	12	12	0	0
School	Church Avenue West	146	146	0	0	141	141	0	0	-5	-5	0	0
School	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0

Difference			
Difference	GEH	Flow	GEH
214	4.3	Fail	Pass
6	0.3	Pass	Pass
144	3.2	Fail	Pass
1	0.1	Pass	Pass
5	0.6	Pass	Pass
2	0.6	Pass	Pass
0	0.0	Pass	Pass
5	0.6	Pass	Pass
7	0.5	Pass	Pass
-1	0.2	Pass	Pass
-29	2.0	Pass	Pass
1	0.2	Pass	Pass
-3	0.1	Pass	Pass
13	1.3	Pass	Pass
3	0.3	Pass	Pass
-2	0.5	Pass	Pass
181	3.6	Fail	Pass
11	0.7	Pass	Pass
146	3.2	Fail	Pass
4	0.2	Pass	Pass
1	1.5	Pass	Pass
30	1.4	Pass	Pass
0	0.0	Pass	Pass
4	0.4	Pass	Pass
2	0.2	Pass	Pass
0	0.0	Pass	Pass
24	1.7	Pass	Pass
0	0.0	Pass	Pass
12	1.8	Pass	Pass
26	1.6	Pass	Pass
0	0.0	Pass	Pass
12	1.6	Pass	Pass
-3	0.4	Pass	Pass
2	0.3	Pass	Pass
5	0.4	Pass	Pass
0	0.3	Pass	Pass
0	0.0	Pass	Pass
2	0.9	Pass	Pass

Location		Observed				Model				Difference				Difference (%)			
From	To	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV	Difference	GEH	Flow	GEH
Site 1 R407 / Church Ave, Sallins																	
R407 North	R407 South	2043	1761	112	170	2038	1748	109	182	-5	-13	-3	12	5	0.1	Pass	Pass
R407 North	Church Avenue East	396	379	2	15	404	391	2	11	8	12	0	-4	-8	0.4	Pass	Pass
R407 South	R407 North	1670	1361	111	198	1701	1384	110	207	31	23	-1	9	-31	0.8	Pass	Pass
R407 South	Church Avenue East	93	88	0	5	93	89	0	5	0	1	0	0	0	0.0	Pass	Pass
Church Avenue East	R407 South	45	44	0	1	46	45	0	1	1	1	0	0	-1	0.1	Pass	Pass
Church Avenue East	R407 North	8	8	0	0	7	7	0	0	-1	-1	0	0	1	0.4	Pass	Pass
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Site 2 Church Ave (W) / Church Ave (S), Sallins																	
Church Avenue East	Church Avenue West	44	44	0	0	43	43	0	0	-1	-1	0	0	1	0.2	Pass	Pass
Church Avenue East	Church Avenue South	139	132	2	5	147	120	4	23	8	-12	2	18	-8	0.7	Pass	Pass
Church Avenue North	Church Avenue West	8	7	0	1	10	9	0	1	2	2	0	0	-2	0.7	Pass	Pass
Church Avenue North	Church Avenue East	159	148	1	10	191	177	2	13	32	29	1	3	-32	2.4	Pass	Pass
Church Avenue West	Church Avenue South	27	26	0	1	27	26	0	1	0	0	0	0	0	0.0	Pass	Pass
Church Avenue West	Church Avenue East	460	440	2	18	479	462	2	15	19	22	0	-3	-19	0.9	Pass	Pass
Site 3 R407 / Church Ave (E)																	
Church Avenue East	R407 South	82	79	1	2	81	72	2	7	-1	-7	1	5	1	0.1	Pass	Pass
Church Avenue East	R407 North	90	83	1	6	94	75	2	16	4	-8	1	10	-4	0.4	Pass	Pass
R407 North	Church Avenue East	14	13	0	1	17	15	0	2	3	2	0	1	-3	0.8	Pass	Pass
R407 North	R407 South	2080	1796	112	172	2104	1810	111	183	24	14	-1	11	-24	0.5	Pass	Pass
R407 South	Church Avenue East	186	172	1	13	184	171	2	12	-2	-1	1	-1	2	0.1	Pass	Pass
R407 South	R407 North	1681	1382	107	192	1701	1397	108	196	20	15	1	4	-20	0.5	Pass	Pass
Site 10 N7 South Roundabout																	
Palmerstown	Greenhill Overbridge	321	299	1	21	325	303	1	20	4	4	0	-1	-4	0.2	Pass	Pass
Palmerstown	N7 on-slip WB	1	1	0	0	1	1	0	0	0	0	0	0	0	0.0	Pass	Pass
Palmerstown	Kill West	373	338	14	21	376	343	13	21	3	5	-1	0	-3	0.2	Pass	Pass
Palmerstown	Palmerstown	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Kill West	Greenhill Overbridge	93	81	1	11	95	83	1	12	2	2	0	1	-2	0.2	Pass	Pass
Kill West	N7 on-slip WB	204	188	1	15	211	195	1	15	7	7	0	0	-7	0.5	Pass	Pass
Kill West	Kill West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Kill West	Palmerstown	167	145	13	9	163	141	12	9	-4	-4	-1	0	4	0.3	Pass	Pass
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Greenhill Overbridge	N7 on-slip WB	36	28	4	4	31	25	3	3	-5	-3	-1	-1	5	0.9	Pass	Pass
Greenhill Overbridge	Kill West	236	198	7	31	228	197	6	24	-8	-1	-1	-7	8	0.5	Pass	Pass
Greenhill Overbridge	Palmerstown	45	40	0	5	47	44	0	3	2	4	0	-2	-2	0.3	Pass	Pass
N7 off-slip WB	Greenhill Overbridge	42	27	6	9	42	25	7	10	0	-2	1	1	0	0.0	Pass	Pass
N7 off-slip WB	N7 on-slip WB	33	29	0	4	36	31	0	6	3	2	0	2	-3	0.5	Pass	Pass
N7 off-slip WB	Kill West	42	35	0	7	41	33	0	8	-1	-2	0	1	1	0.2	Pass	Pass
N7 off-slip WB	Palmerstown	139	116	3	20	142	118	3	21	3	2	0	1	-3	0.3	Pass	Pass
Site 9 N7 North Roundabout																	
The Paddocks	N7 Access Road	2	1	0	1	1	1	0	0	-1	0	0	-1	1	0.8	Pass	Pass
The Paddocks	N7 on-slip EB	6	3	0	3	5	3	0	2	-1	0	0	-1	1	0.4	Pass	Pass
The Paddocks	Greenhill Overbridge	4	2	0	2	4	2	0	2	0	0	0	0	0	0.0	Pass	Pass
The Paddocks	The Paddocks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
N7 off-slip EB	N7 Access Road	62	52	0	10	58	47	0	11	-4	-5	0	1	4	0.5	Pass	Pass
N7 off-slip EB	N7 on-slip EB	88	77	0	11	81	71	0	9	-7	-6	0	-2	7	0.8	Pass	Pass
N7 off-slip EB	Greenhill Overbridge	132	113	7	12	122	105	6	11	-10	-8	-1	-1	10	0.9	Pass	Pass
N7 off-slip EB	The Paddocks	5	4	0	1	4	4	0	0	-1	0	0	-1	1	0.5	Pass	Pass
Greenhill Overbridge	N7 Access Road	111	96	4	11	116	99	4	13	5	3	0	2	-5	0.5	Pass	Pass
Greenhill Overbridge	N7 on-slip EB	306	278	2	26	307	280	2	25	1	2	0	-1	-1	0.1	Pass	Pass
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Greenhill Overbridge	The Paddocks	39	31	2	6	39	32	2	5	0	1	0	-1	0	0.0	Pass	Pass
N7 Access Road	N7 Access Road	1	1	0	0	0	0	0	0	-1	-1	0	0	1	1.4	Pass	Pass
N7 Access Road	N7 on-slip EB	305	287	1	17	327	317	1	10	22	30	0	-7	-22	1.2	Pass	Pass
N7 Access Road	Greenhill Overbridge	180	151	4	25	179	160	3	16	-1	9	-1	-9	1	0.1	Pass	Pass
N7 Access Road	The Paddocks	3	2	0	1	3	2	0	1	0	0	0	0	0	0.0	Pass	Pass
Site 8 N7 Access Road / Johnstown Garden Centre																	
Church Avenue East	Church Avenue West	76	68	0	8	73	46	4	23	-3	-22	4	15	3	0.3	Pass	Pass
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue East	Johnstown Garden	2	2	0	0	2	2	0	0	0	0	0	0	0	0.0	Pass	Pass
Johnstown Garden	Church Avenue West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Johnstown Garden	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Johnstown Garden	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue West	Church Avenue West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue West	Church Avenue East	466	427	2	37	492	461	3	27	26	34	1	-10	-26	1.2	Pass	Pass
Church Avenue West	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Site 5 Church Ave Railway Bridge																	
Church Avenue East	Church Avenue West	62	54	0	8	63	36	4	23	1	-18	4	15	-1	0.1	Pass	Pass
Church Avenue West	Church Avenue East	424	393	3	28	457	426	3	28	33	33	0	0	-33	1.6	Pass	Pass
Site 6 Kerdiffstown Road / Naas Golf Club																	
Church Avenue East	Church Avenue west	62	54	0	8	63	37	4	23	1	-17	4	15	-1	0.1	Pass	Pass
Church Avenue East	Golf Club	11	11	0	0	7	7	0	0	-4	-4	0	0	4	1.3	Pass	Pass
Church Avenue west	Church Avenue East	458	427	3	28	444	413	3	28	-14	-14	0	0	14	0.7	Pass	Pass
Church Avenue west	Golf Club	10	10	0	0	11	11	0	0	1	1	0	0	-1	0.3	Pass	Pass
Golf Club	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Golf Club	Church Avenue East	44	44	0	0	46	46	0	0	2	2	0	0	-2	0.3	Pass	Pass
Site 7 Kerdiffstown Road / Landfill Site																	
Church Avenue East	Church Avenue west	73	65	0	8	72	44	4	23	-1	-21	4	15	1	0.1	Pass	Pass
Church Avenue East	Landfill	3	3	0	0	1	1	0	0	-2	-2	0	0	2	1.4	Pass	Pass
Church Avenue west	Church Avenue East	464	433	3	28	487	456	3	27	23	23	0	-1	-23	1.1	Pass	Pass
Church Avenue west	Landfill	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Landfill	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Landfill	Church Avenue East	6	6	0	0	6	6	0	0	0	0	0	0	0	0.0	Pass	Pass
Garden Centre																	
Church Avenue East	Church Avenue west	74	48	4	22	75	48	4	23	1	0	0	1	-1	0.1	Pass	Pass
Church Avenue East	Garden Centre	102	102	0	0	99	99	0	0	-3	-3	0	0	3	0.3	Pass	Pass
Church Avenue west	Church Avenue East	466	427	2	37	489	459	3	27	23	32	1	-10	-23	1.1	Pass	Pass
Church Avenue west	Garden Centre	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Garden Centre	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Garden Centre	Church Avenue East	25	25	0	0	23	23	0	0	-2	-2	0	0	2	0.4	Pass	Pass
Site 4 Church Ave / Sallins National School																	
Church Avenue East	Church Avenue West	62	54	0	8	62	35	4	23	0	-19	4	15	0	0.0	Pass	Pass
Church Avenue East	School	0	0														

Base Model 2017 PM Peak

Location		Observed				Model				Difference				Difference (%)			
From	To	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV	Total	Cars	HGV	LGV	Difference	GEH	Flow	GEH
Site 1 R407 / Church Ave, Sallins																	
R407 North	R407 South	1907	1659	60	188	1906	1649	59	198	-1	-10	-1	10	1	0.0	Pass	Pass
R407 North	Church Avenue East	100	93	0	7	104	99	0	5	4	6	0	-2	-4	0.4	Pass	Pass
R407 South	R407 North	2454	2180	83	191	2442	2145	93	203	-12	-35	10	12	12	0.2	Pass	Pass
R407 South	Church Avenue East	28	28	0	0	28	28	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue East	R407 South	126	110	0	16	122	104	0	18	-4	-6	0	2	4	0.4	Pass	Pass
Church Avenue East	R407 North	20	18	0	2	21	19	0	2	1	1	0	0	-1	0.2	Pass	Pass
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Site 2 Church Ave (W) / Church Ave (S), Sallins																	
Church Avenue East	Church Avenue West	146	128	0	18	139	119	0	20	-7	-9	0	2	7	0.6	Pass	Pass
Church Avenue East	Church Avenue South	355	326	1	28	348	306	9	33	-7	-20	8	5	7	0.4	Pass	Pass
Church Avenue North	Church Avenue West	2	2	0	0	4	4	0	0	2	2	0	0	-2	1.2	Pass	Pass
Church Avenue North	Church Avenue East	26	25	0	1	29	26	0	2	3	1	0	1	-3	0.6	Pass	Pass
Church Avenue West	Church Avenue South	12	12	0	0	12	12	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue West	Church Avenue East	117	110	0	7	120	115	0	5	3	5	0	-2	-3	0.3	Pass	Pass
Site 3 R407 / Church Ave (E)																	
Church Avenue East	R407 South	123	115	0	8	109	102	0	7	-14	-13	0	-1	14	1.3	Pass	Pass
Church Avenue East	R407 North	270	240	1	29	250	215	9	27	-20	-25	8	-2	20	1.2	Pass	Pass
R407 North	Church Avenue East	7	5	0	2	6	4	0	2	-1	-1	0	0	1	0.4	Pass	Pass
R407 North	R407 South	2018	1763	60	195	2055	1779	60	216	37	16	0	21	-37	0.8	Pass	Pass
R407 South	Church Avenue East	29	29	0	0	26	26	0	0	-3	-3	0	0	3	0.6	Pass	Pass
R407 South	R407 North	2206	1950	84	172	2221	1959	85	177	15	9	1	5	-15	0.3	Pass	Pass
Site 10 N7 South Roundabout																	
Palmerstown	Greenhill Overbridge	204	186	3	15	203	185	4	15	-1	-1	1	0	1	0.1	Pass	Pass
Palmerstown	N7 on-slip WB	5	5	0	0	4	4	0	0	-1	-1	0	0	1	0.5	Pass	Pass
Palmerstown	Kill West	272	243	8	21	276	248	7	21	4	5	-1	0	-4	0.2	Pass	Pass
Palmerstown	Palmerstown	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Kill West	Greenhill Overbridge	234	212	1	21	226	205	1	20	-8	-7	0	-1	8	0.5	Pass	Pass
Kill West	N7 on-slip WB	104	89	4	11	109	92	4	13	5	3	0	2	-5	0.5	Pass	Pass
Kill West	Kill West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Kill West	Palmerstown	420	373	13	34	433	386	13	34	13	13	0	0	-13	0.6	Pass	Pass
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Greenhill Overbridge	N7 on-slip WB	67	61	2	4	64	60	1	3	-3	-1	-1	-1	3	0.4	Pass	Pass
Greenhill Overbridge	Kill West	276	250	3	23	266	243	3	20	-10	-7	0	-3	10	0.6	Pass	Pass
Greenhill Overbridge	Palmerstown	97	94	0	3	101	100	0	2	4	6	0	-1	-4	0.4	Pass	Pass
N7 off-slip WB	Greenhill Overbridge	222	187	1	34	226	192	2	33	4	5	1	-1	-4	0.3	Pass	Pass
N7 off-slip WB	N7 on-slip WB	232	200	2	30	235	203	2	30	3	3	0	0	-3	0.2	Pass	Pass
N7 off-slip WB	Kill West	26	21	0	5	28	22	0	6	2	1	0	1	-2	0.4	Pass	Pass
N7 off-slip WB	Palmerstown	537	500	3	34	525	492	3	30	-12	-8	0	-4	12	0.5	Pass	Pass
Site 9 N7 North Roundabout																	
The Paddocks	N7 Access Road	7	7	0	0	7	7	0	0	0	0	0	0	0	0.0	Pass	Pass
The Paddocks	N7 on-slip EB	11	8	0	3	11	9	0	2	0	1	0	-1	0	0.0	Pass	Pass
The Paddocks	Greenhill Overbridge	44	41	1	2	45	42	1	2	1	1	0	0	-1	0.1	Pass	Pass
The Paddocks	The Paddocks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
N7 off-slip EB	N7 Access Road	75	71	1	3	71	67	1	3	-4	-4	0	0	4	0.5	Pass	Pass
N7 off-slip EB	N7 on-slip EB	64	58	2	4	60	54	3	3	-4	-4	1	-1	4	0.5	Pass	Pass
N7 off-slip EB	Greenhill Overbridge	176	155	3	18	161	139	3	18	-15	-16	0	0	15	1.2	Pass	Pass
N7 off-slip EB	The Paddocks	4	3	0	1	3	3	0	0	-1	0	0	-1	1	0.5	Pass	Pass
Greenhill Overbridge	N7 Access Road	444	389	4	51	439	385	3	51	-5	-4	-1	0	5	0.2	Pass	Pass
Greenhill Overbridge	N7 on-slip EB	211	192	2	17	209	189	2	17	-2	-3	0	0	2	0.1	Pass	Pass
Greenhill Overbridge	Greenhill Overbridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Greenhill Overbridge	The Paddocks	10	8	1	1	8	7	1	0	-2	-1	0	-1	2	0.7	Pass	Pass
N7 Access Road	N7 Access Road	3	2	0	1	2	1	0	0	-1	-1	0	-1	1	0.6	Pass	Pass
N7 Access Road	N7 on-slip EB	54	49	0	5	49	47	0	2	-5	-2	0	-3	5	0.7	Pass	Pass
N7 Access Road	Greenhill Overbridge	220	209	0	11	227	222	0	5	7	13	0	-6	-7	0.5	Pass	Pass
N7 Access Road	The Paddocks	1	1	0	0	1	1	0	0	0	0	0	0	0	0.0	Pass	Pass
Site 8 N7 Access Road / Johnstown Garden Centre																	
Church Avenue East	Church Avenue West	473	423	3	47	465	407	4	54	-8	-16	1	7	8	0.4	Pass	Pass
Church Avenue East	Church Avenue East	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue East	Johnstown Garden	1	1	0	0	1	1	0	0	0	0	0	0	0	0.0	Pass	Pass
Johnstown Garden	Church Avenue West	0	0	0	0	5	0	5	0	5	0	5	0	-5	3.2	Pass	Pass
Johnstown Garden	Church Avenue East	1	1	0	0	3	3	0	0	2	2	0	0	-2	1.4	Pass	Pass
Johnstown Garden	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue West	Church Avenue West	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Church Avenue West	Church Avenue East	167	158	0	9	171	164	0	7	4	6	0	-2	-4	0.3	Pass	Pass
Church Avenue West	Johnstown Garden	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Site 5 Church Ave Railway Bridge																	
Church Avenue East	Church Avenue West	459	409	3	47	450	387	9	53	-9	-22	6	6	9	0.4	Pass	Pass
Church Avenue West	Church Avenue East	133	125	0	8	137	130	0	8	4	5	0	0	-4	0.3	Pass	Pass
Site 6 Kerdiffstown Road / Naas Golf Club																	
Church Avenue East	Church Avenue west	459	409	3	47	453	390	9	54	-6	-19	6	7	6	0.3	Pass	Pass
Church Avenue East	Golf Club	8	8	0	0	6	6	0	0	-2	-2	0	0	2	0.8	Pass	Pass
Church Avenue west	Church Avenue East	150	142	0	8	126	119	0	8	-24	-23	0	0	24	2.0	Pass	Pass
Church Avenue west	Golf Club	10	10	0	0	10	10	0	0	0	0	0	0	0	0.0	Pass	Pass
Golf Club	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Golf Club	Church Avenue East	27	27	0	0	29	29	0	0	2	2	0	0	-2	0.4	Pass	Pass
Site 7 Kerdiffstown Road / Landfill Site																	
Church Avenue East	Church Avenue west	467	417	3	47	464	402	9	54	-3	-15	6	7	3	0.1	Pass	Pass
Church Avenue East	Landfill	6	6	0	0	4	4	0	0	-2	-2	0	0	2	0.9	Pass	Pass
Church Avenue west	Church Avenue East	167	159	0	8	153	146	0	7	-14	-13	0	-1	14	1.1	Pass	Pass
Church Avenue west	Landfill	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Landfill	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Landfill	Church Avenue East	17	17	0	0	18	18	0	0	1	1	0	0	-1	0.2	Pass	Pass
Garden Centre																	
Church Avenue East	Church Avenue west	475	415	5	55	466	409	4	54	-9	-6	-1	-1	9	0.4	Pass	Pass
Church Avenue East	Garden Centre	54	54	0	0	50	50	0	0	-4	-4	0	0	4	0.6	Pass	Pass
Church Avenue west	Church Avenue East	168	159	0	9	174	167	0	7	6	8	0	-2	-6	0.5	Pass	Pass
Church Avenue west	Garden Centre	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Garden Centre	Church Avenue west	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	Pass	Pass
Garden Centre	Church Avenue East	109	109	0	0	107	107	0	0	-2	-2	0	0	2	0.2	Pass	Pass
Site 4 Church Ave / Sallins National School																	
Church Avenue East	Church Avenue West	459	409	3	47	447	385	9	53	-12	-24	6	6				

Appendix A14.2 TRICS Output Files

Calculation Reference: AUDIT-202601-161121-1103

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE
 Category : M - COUNTRY PARKS
 VEHICLES

Selected regions and areas:

03	SOUTH WEST	
	GS GLOUCESTERSHIRE	1 days
08	NORTH WEST	
	LC LANCASHIRE	1 days
12	CONNAUGHT	
	GA GALWAY	1 days
	RO ROSCOMMON	1 days
13	MUNSTER	
	LI LIMERICK	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Filtering Stage 2 selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Site area
 Actual Range: 16.00 to 323.00 (units: hect)
 Range Selected by User: 15.20 to 560.00 (units: hect)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/08 to 12/05/12

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Saturday	4 days
Sunday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Free Standing (PPS6 Out of Town)	5
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This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Out of Town	5
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This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Filtering Stage 3 selection:

Use Class:

Not Known	2 days
D2	2 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,000 or Less	4 days
1,001 to 5,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,000 or Less	3 days
5,001 to 25,000	1 days
125,001 to 250,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

1.1 to 1.5	4 days
1.6 to 2.0	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	5 days
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This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

LIST OF SITES relevant to selection parameters

1	GA-07-M-01	COUNTRY PARK		GALWAY
	GORT			
	NEAR GALWAY			
	Free Standing (PPS6 Out of Town)			
	Out of Town			
	Total Site area:		62.00 hect	
	Survey date: SATURDAY		06/08/11	Survey Type: MANUAL
2	GS-07-M-01	COUNTRY PARK		GLOUCESTERSHIRE
	B4070			
	NEAR GLOUCESTER			
	Free Standing (PPS6 Out of Town)			
	Out of Town			
	Total Site area:		60.80 hect	
	Survey date: SUNDAY		25/04/10	Survey Type: MANUAL
3	LC-07-M-03	COUNTRY PARK		LANCASHIRE
	SKITHAM LANE			
	PILING			
	PRESTON			
	Free Standing (PPS6 Out of Town)			
	Out of Town			
	Total Site area:		16.00 hect	
	Survey date: SATURDAY		12/05/12	Survey Type: MANUAL
4	LI-07-M-01	FOREST PARK		LIMERICK
	KILCORNAN			
	NEAR LIMERICK			
	Free Standing (PPS6 Out of Town)			
	Out of Town			
	Total Site area:		100.00 hect	
	Survey date: SATURDAY		25/06/11	Survey Type: MANUAL
5	RO-07-M-01	COUNTRY PARK		ROSCOMMON
	BOYLE			
	Free Standing (PPS6 Out of Town)			
	Out of Town			
	Total Site area:		323.00 hect	
	Survey date: SATURDAY		16/07/11	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 07 - LEISURE/M - COUNTRY PARKS
VEHICLES

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	112.36	0.050	5	112.36	0.020	5	112.36	0.070
08:00 - 09:00	5	112.36	0.135	5	112.36	0.057	5	112.36	0.192
09:00 - 10:00	5	112.36	0.171	5	112.36	0.105	5	112.36	0.276
10:00 - 11:00	5	112.36	0.283	5	112.36	0.151	5	112.36	0.434
11:00 - 12:00	5	112.36	0.279	5	112.36	0.265	5	112.36	0.544
12:00 - 13:00	5	112.36	0.310	5	112.36	0.251	5	112.36	0.561
13:00 - 14:00	5	112.36	0.340	5	112.36	0.233	5	112.36	0.573
14:00 - 15:00	5	112.36	0.278	5	112.36	0.237	5	112.36	0.515
15:00 - 16:00	5	112.36	0.249	5	112.36	0.285	5	112.36	0.534
16:00 - 17:00	5	112.36	0.169	5	112.36	0.335	5	112.36	0.504
17:00 - 18:00	5	112.36	0.114	5	112.36	0.322	5	112.36	0.436
18:00 - 19:00	5	112.36	0.085	5	112.36	0.158	5	112.36	0.243
19:00 - 20:00	3	133.67	0.035	3	133.67	0.067	3	133.67	0.102
20:00 - 21:00	1	323.00	0.006	1	323.00	0.037	1	323.00	0.043
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.504			2.523			5.027

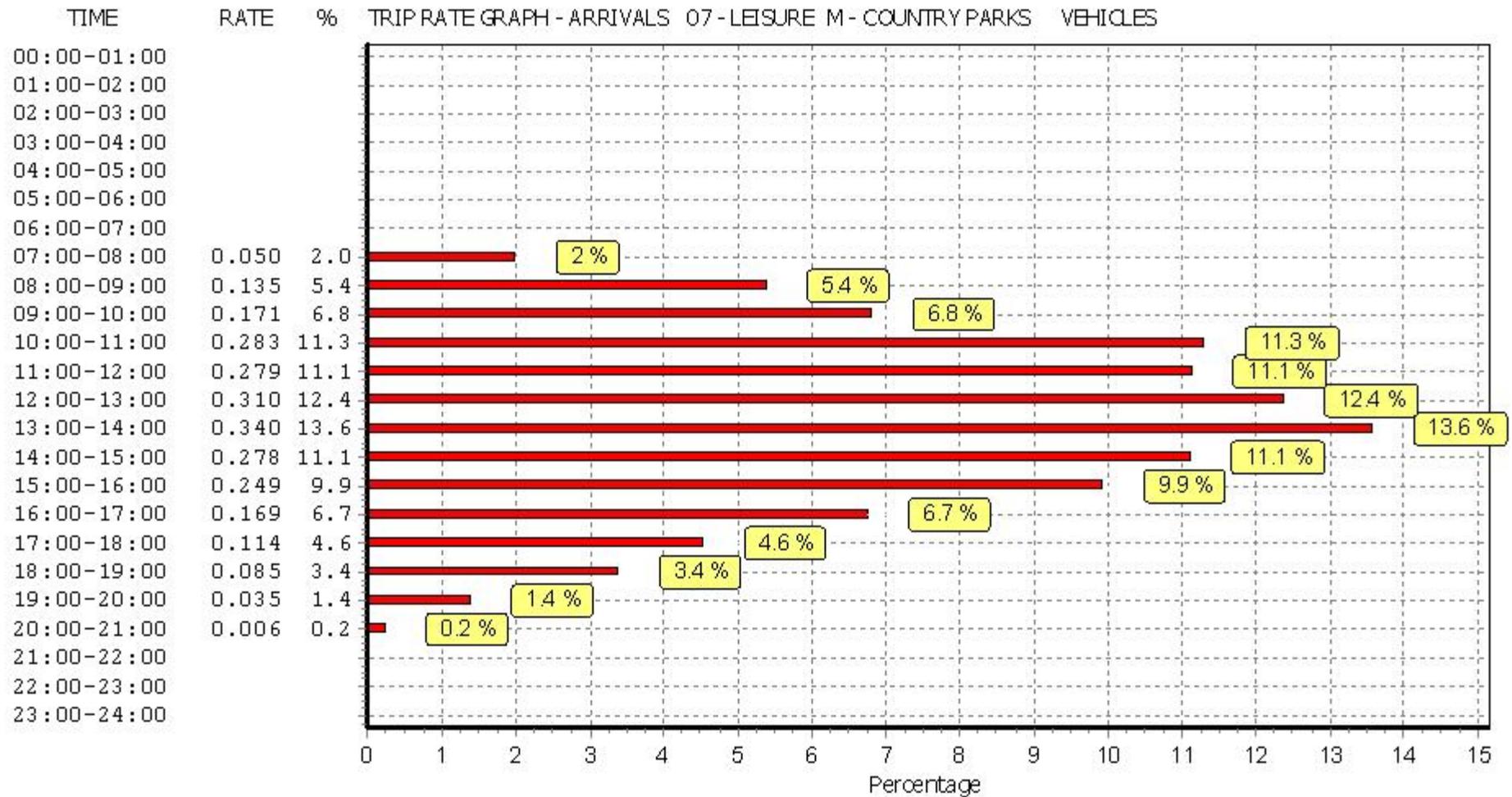
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

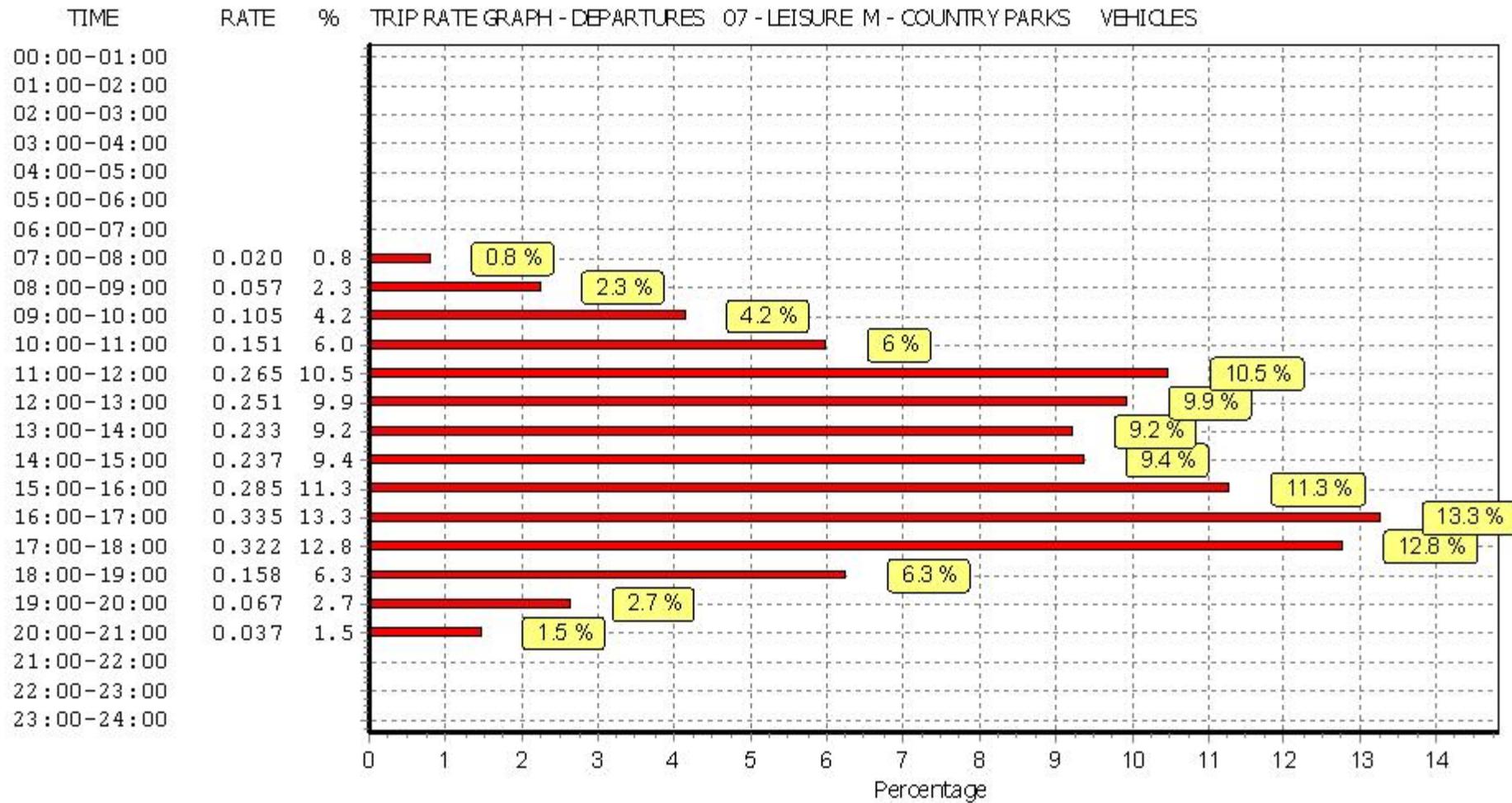
Parameter summary

Trip rate parameter range selected: 16.00 to 323.00 (units: hect)
 Survey date date range: 01/01/08 - 12/05/12
 Number of weekdays (Monday-Friday): 0
 Number of Saturdays: 4
 Number of Sundays: 1
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

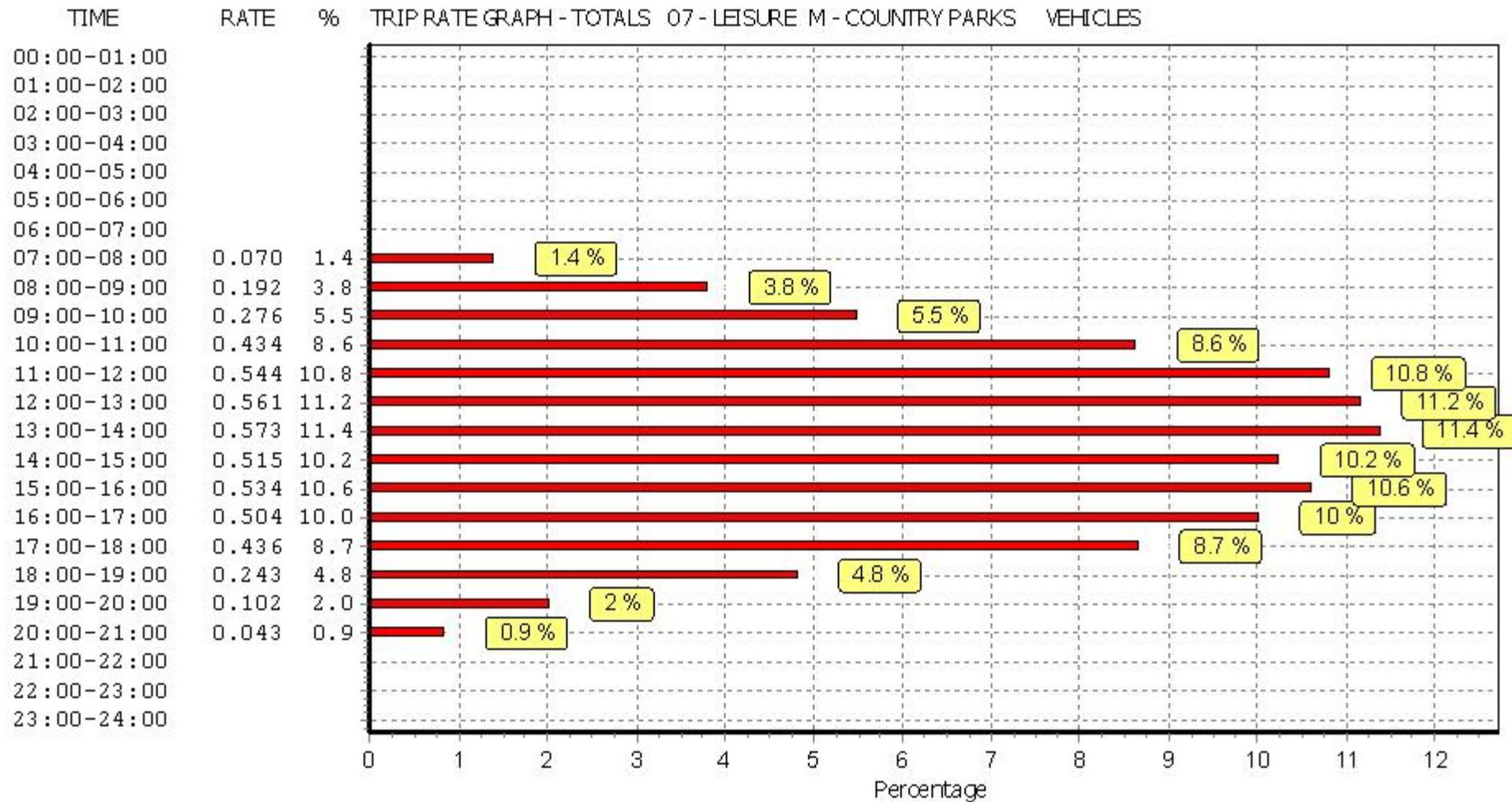
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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TRIP RATE for Land Use 07 - LEISURE/M - COUNTRY PARKS
TAXIS

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
08:00 - 09:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
09:00 - 10:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
10:00 - 11:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
11:00 - 12:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
12:00 - 13:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
13:00 - 14:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
14:00 - 15:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
15:00 - 16:00	5	112.36	0.002	5	112.36	0.000	5	112.36	0.002
16:00 - 17:00	5	112.36	0.000	5	112.36	0.002	5	112.36	0.002
17:00 - 18:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
18:00 - 19:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
19:00 - 20:00	3	133.67	0.000	3	133.67	0.000	3	133.67	0.000
20:00 - 21:00	1	323.00	0.000	1	323.00	0.000	1	323.00	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.002			0.002			0.004

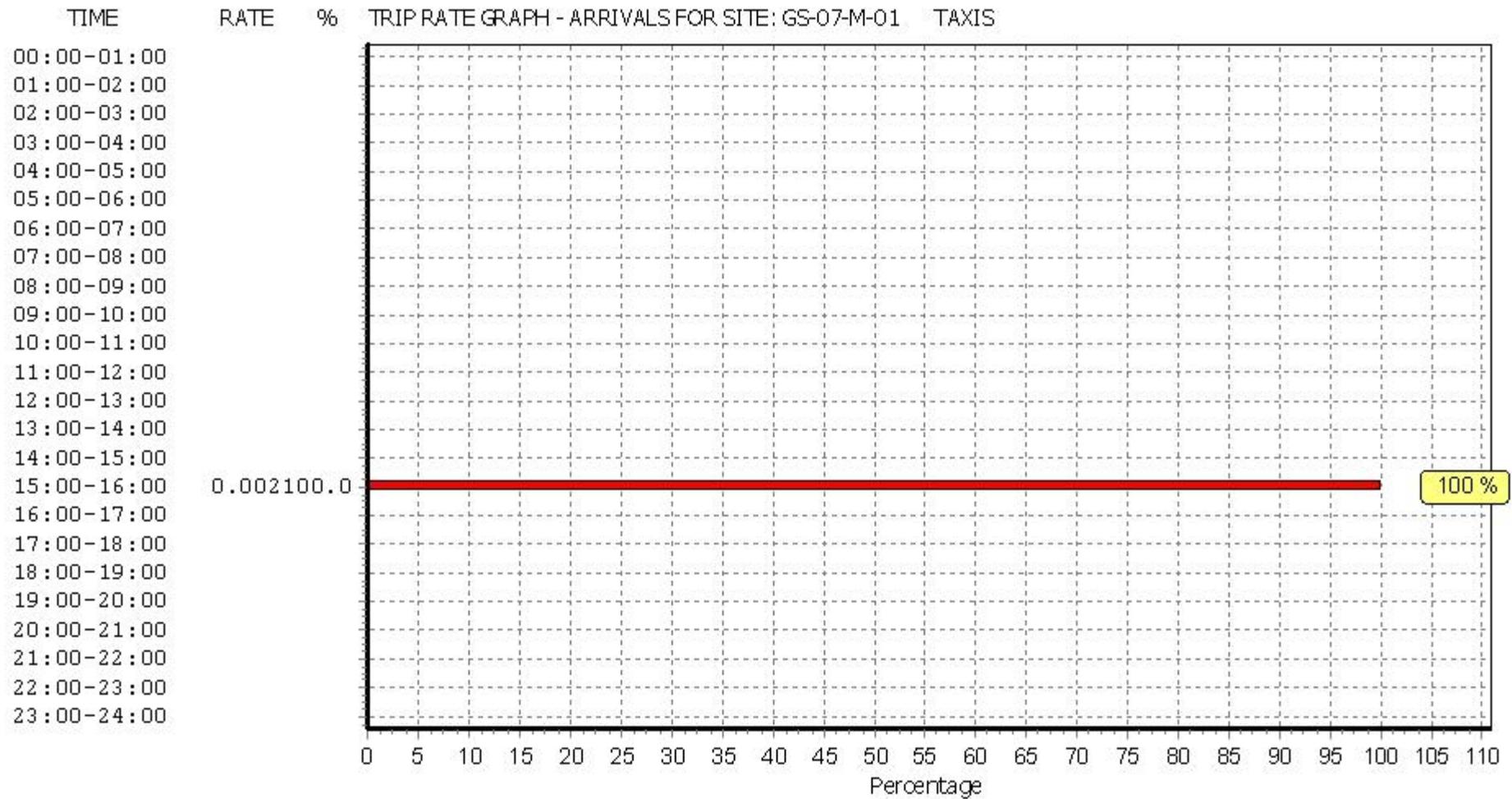
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

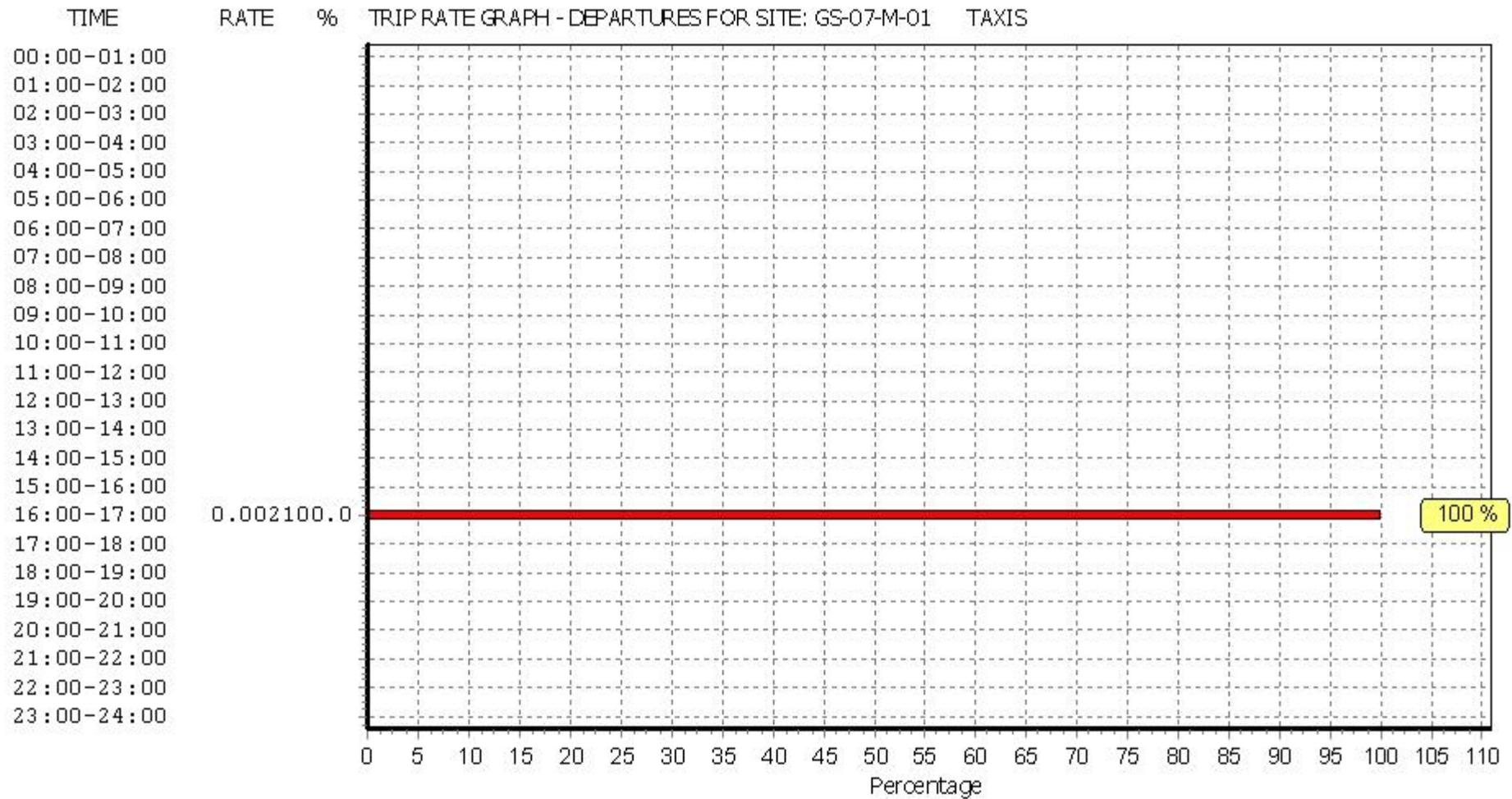
Parameter summary

Trip rate parameter range selected: 16.00 to 323.00 (units: hect)
 Survey date date range: 01/01/08 - 12/05/12
 Number of weekdays (Monday-Friday): 0
 Number of Saturdays: 4
 Number of Sundays: 1
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

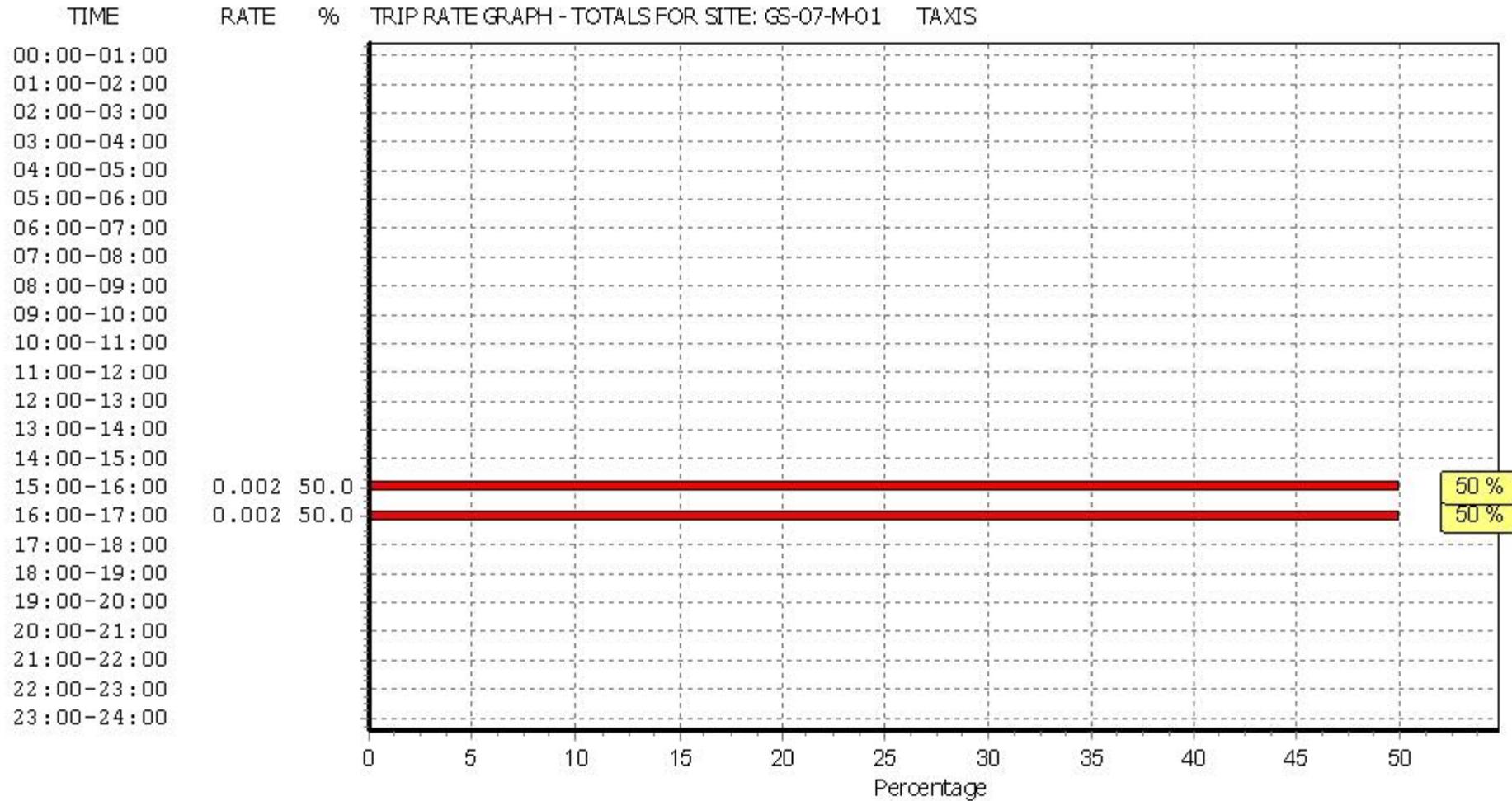
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TRIP RATE for Land Use 07 - LEISURE/M - COUNTRY PARKS
 OGVS
 Calculation factor: 1 hect
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
08:00 - 09:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
09:00 - 10:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
10:00 - 11:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
11:00 - 12:00	5	112.36	0.002	5	112.36	0.002	5	112.36	0.004
12:00 - 13:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
13:00 - 14:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
14:00 - 15:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
15:00 - 16:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
16:00 - 17:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
17:00 - 18:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
18:00 - 19:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
19:00 - 20:00	3	133.67	0.000	3	133.67	0.000	3	133.67	0.000
20:00 - 21:00	1	323.00	0.000	1	323.00	0.000	1	323.00	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.002			0.002			0.004

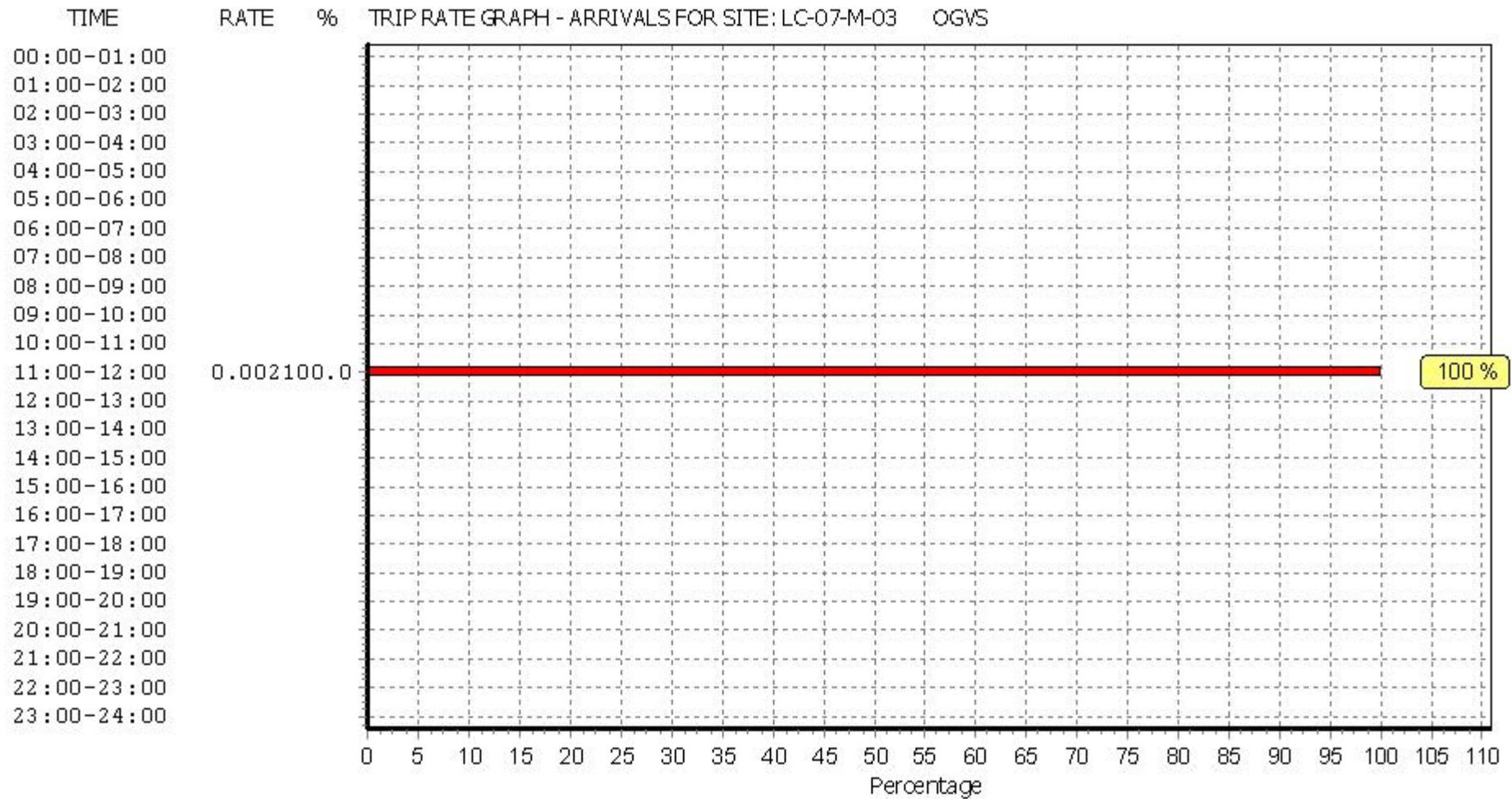
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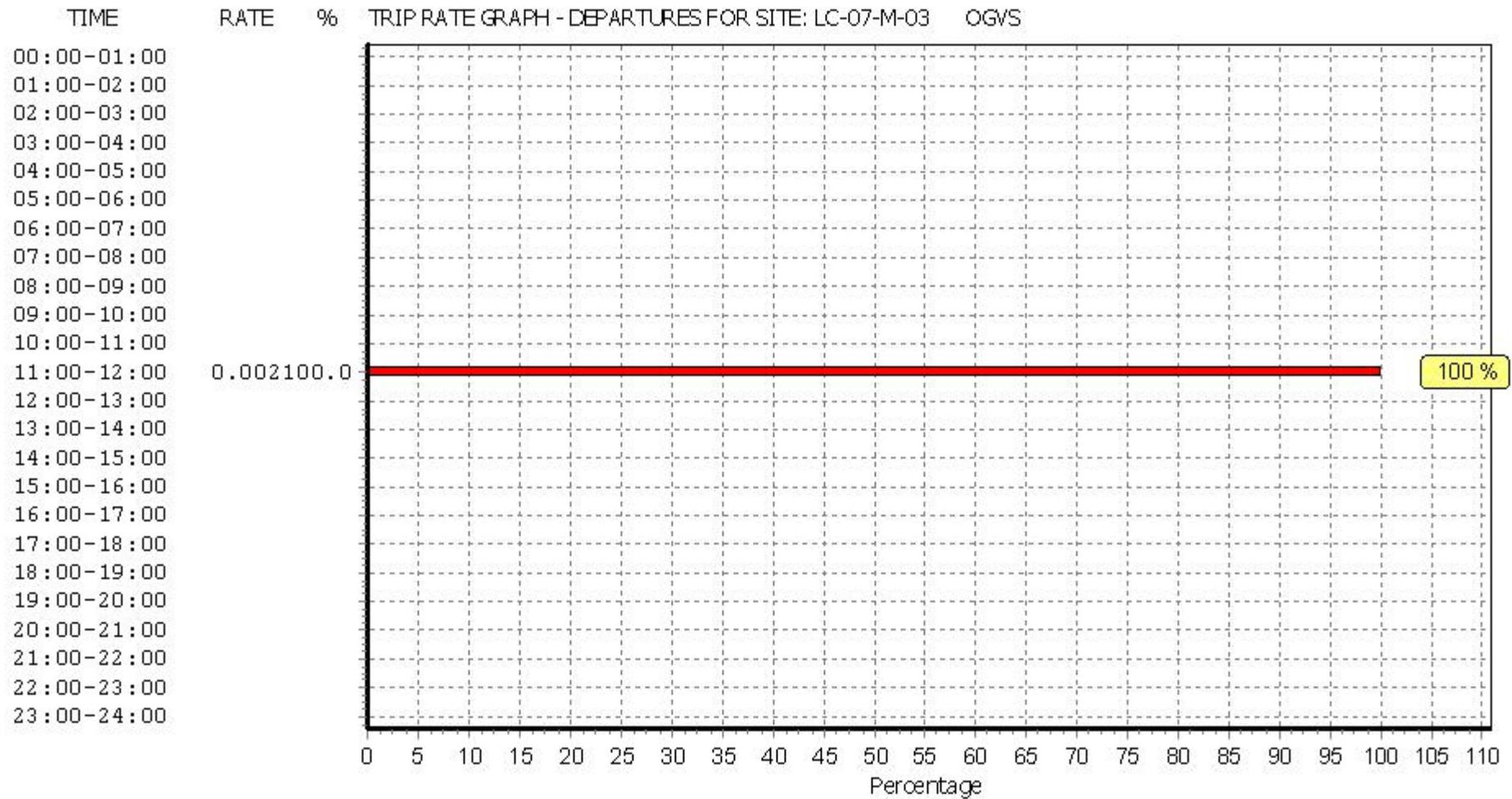
Parameter summary

Trip rate parameter range selected: 16.00 to 323.00 (units: hect)
 Survey date date range: 01/01/08 - 12/05/12
 Number of weekdays (Monday-Friday): 0
 Number of Saturdays: 4
 Number of Sundays: 1
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

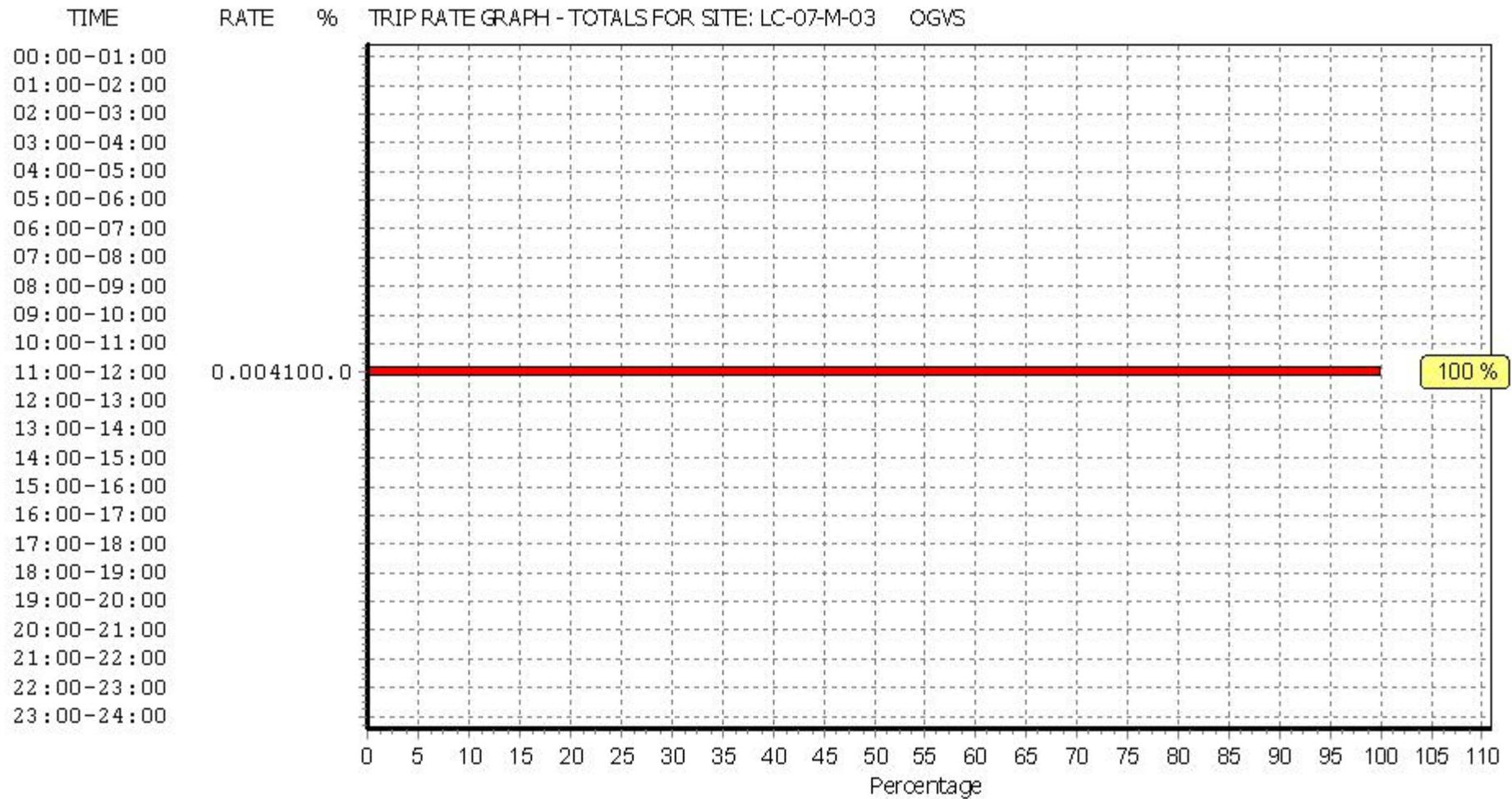
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TRIP RATE for Land Use 07 - LEISURE/M - COUNTRY PARKS
 PSVS
 Calculation factor: 1 hect
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
08:00 - 09:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
09:00 - 10:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
10:00 - 11:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
11:00 - 12:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
12:00 - 13:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
13:00 - 14:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
14:00 - 15:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
15:00 - 16:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
16:00 - 17:00	5	112.36	0.002	5	112.36	0.000	5	112.36	0.002
17:00 - 18:00	5	112.36	0.000	5	112.36	0.002	5	112.36	0.002
18:00 - 19:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
19:00 - 20:00	3	133.67	0.000	3	133.67	0.000	3	133.67	0.000
20:00 - 21:00	1	323.00	0.000	1	323.00	0.000	1	323.00	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.002			0.002			0.004

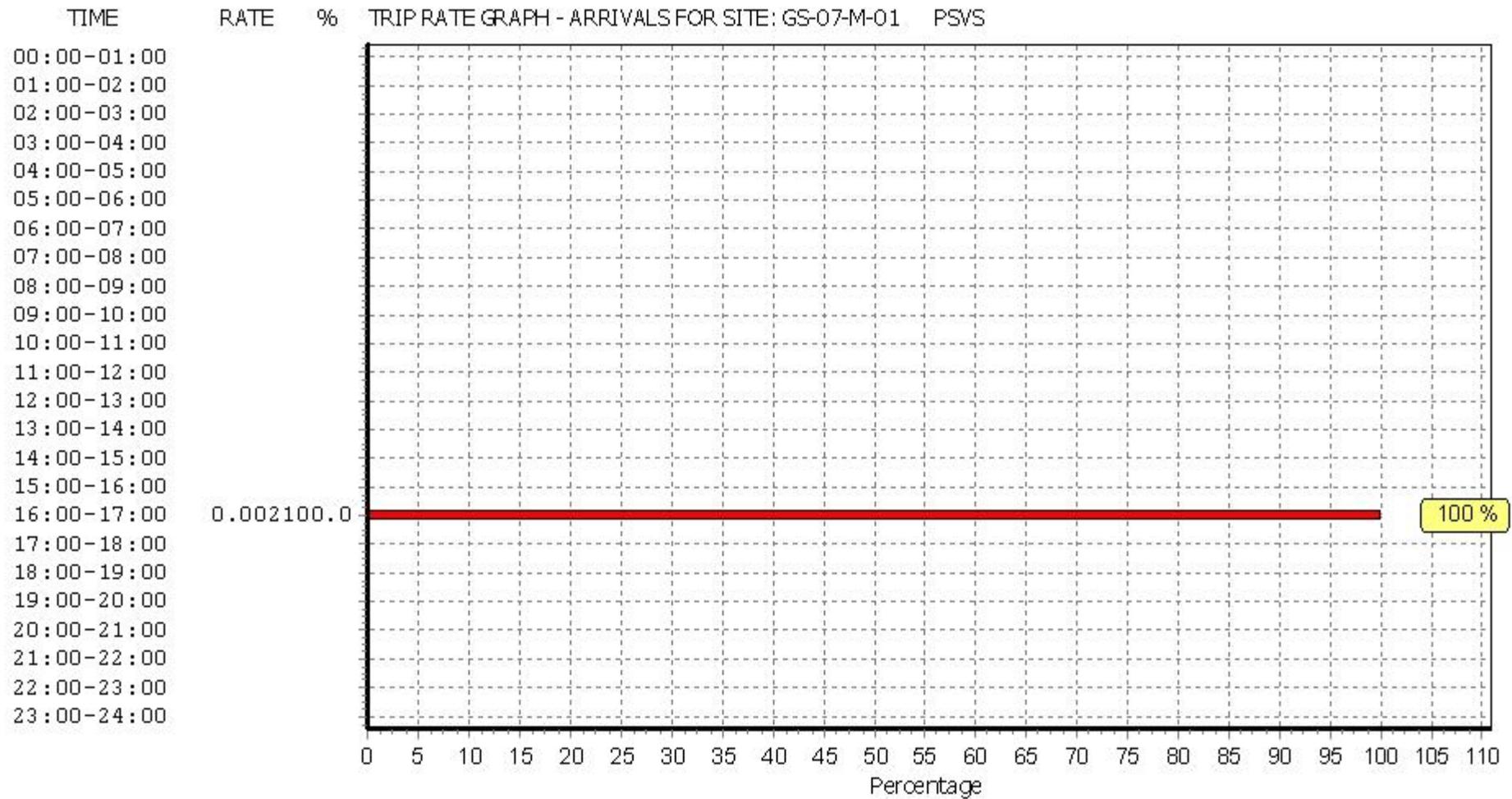
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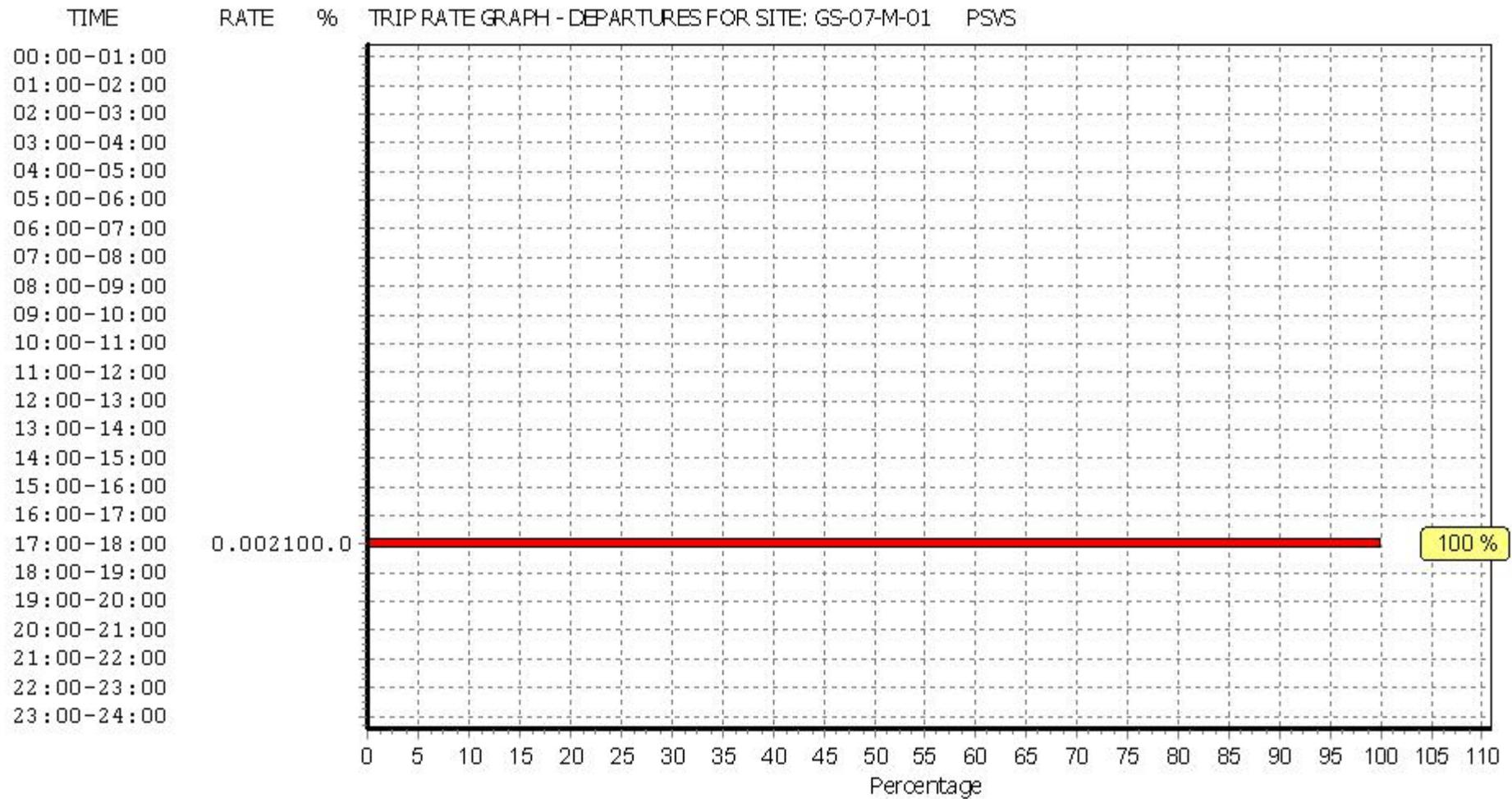
Parameter summary

Trip rate parameter range selected: 16.00 to 323.00 (units: hect)
 Survey date date range: 01/01/08 - 12/05/12
 Number of weekdays (Monday-Friday): 0
 Number of Saturdays: 4
 Number of Sundays: 1
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

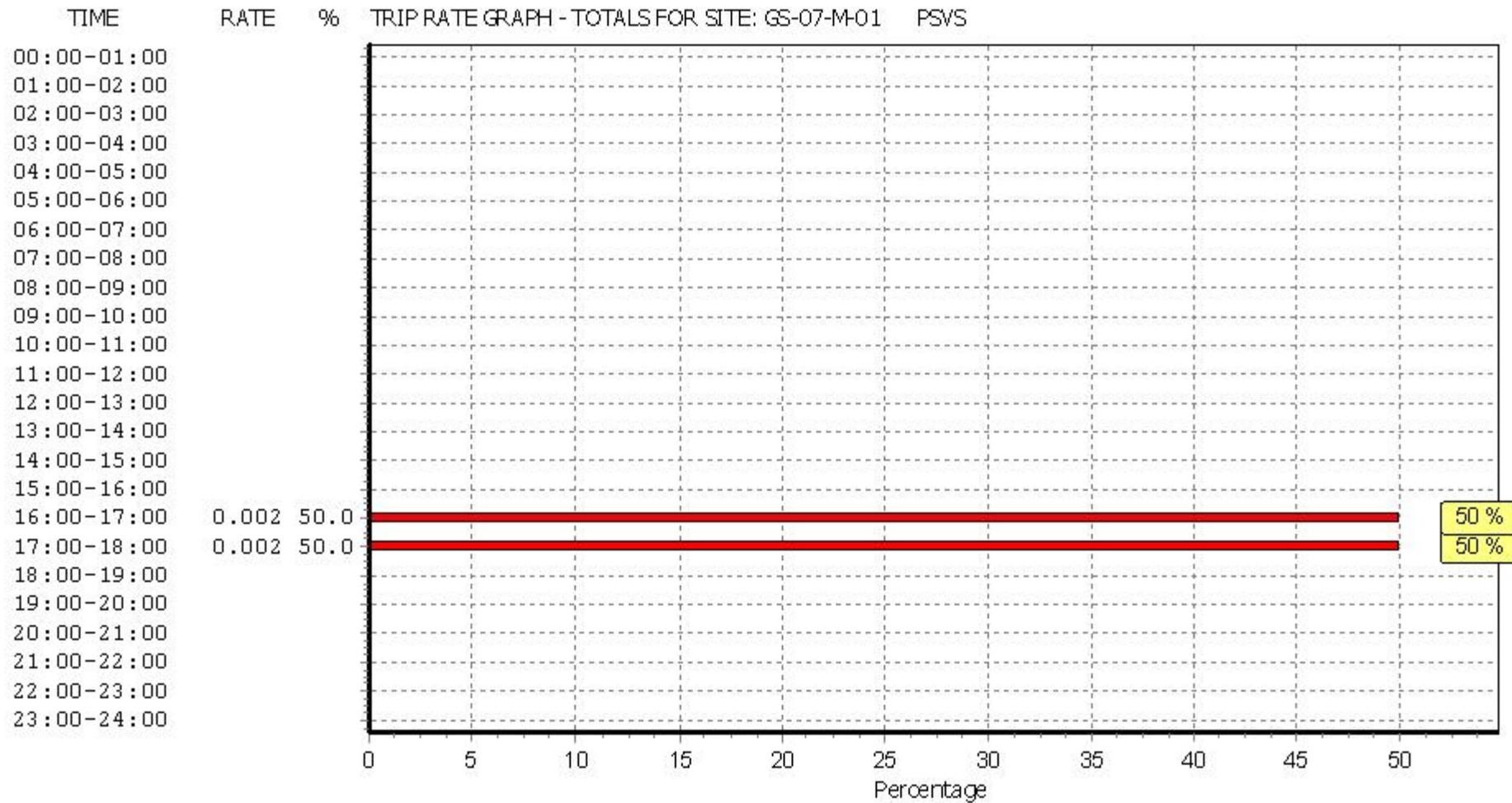
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TRIP RATE for Land Use 07 - LEISURE/M - COUNTRY PARKS
CYCLISTS

Calculation factor: 1 hect

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate	No. Days	Ave. AREA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
08:00 - 09:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
09:00 - 10:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
10:00 - 11:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
11:00 - 12:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
12:00 - 13:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
13:00 - 14:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
14:00 - 15:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
15:00 - 16:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
16:00 - 17:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
17:00 - 18:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
18:00 - 19:00	5	112.36	0.000	5	112.36	0.000	5	112.36	0.000
19:00 - 20:00	3	133.67	0.000	3	133.67	0.000	3	133.67	0.000
20:00 - 21:00	1	323.00	0.000	1	323.00	0.000	1	323.00	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.000			0.000

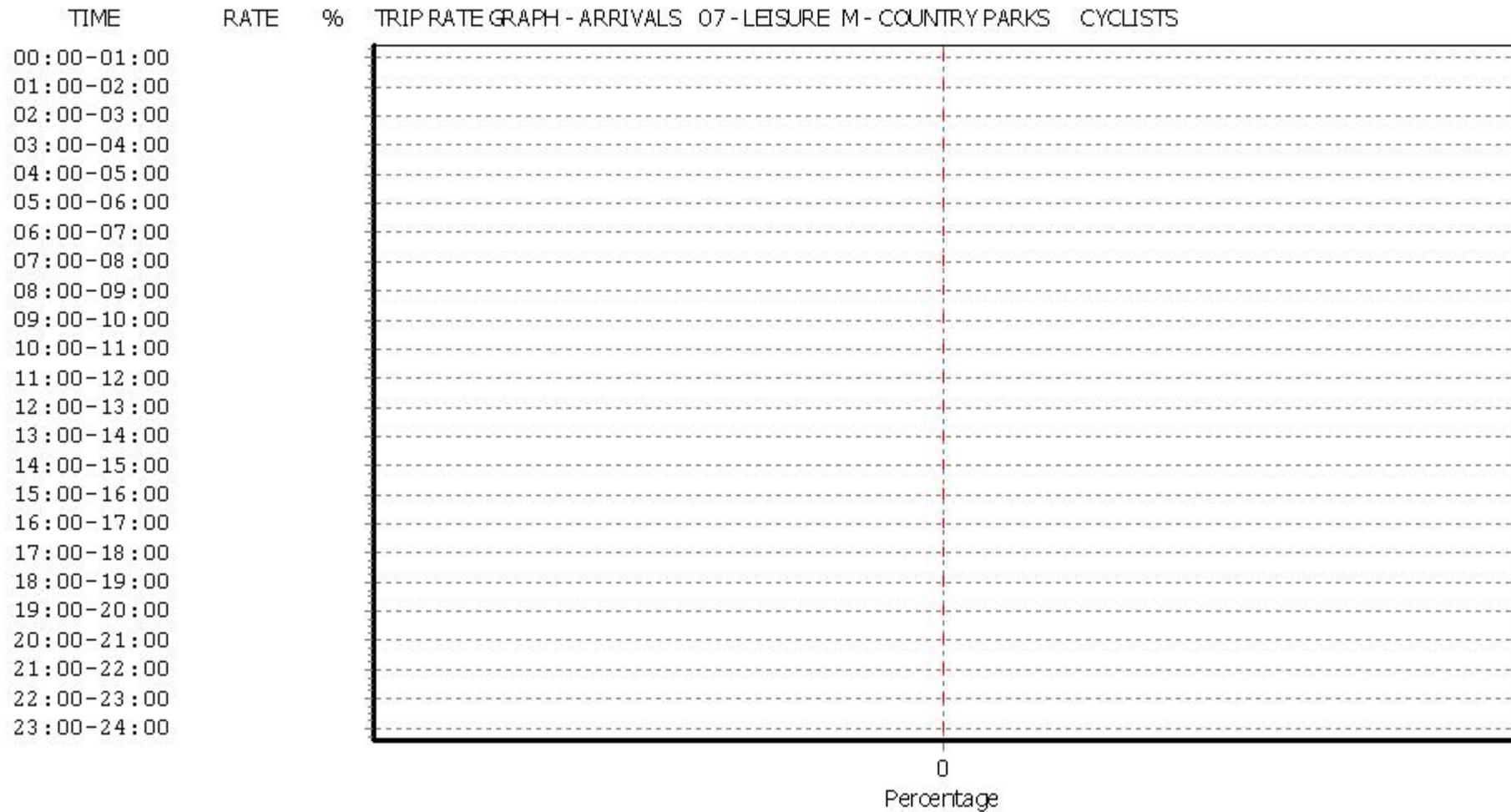
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

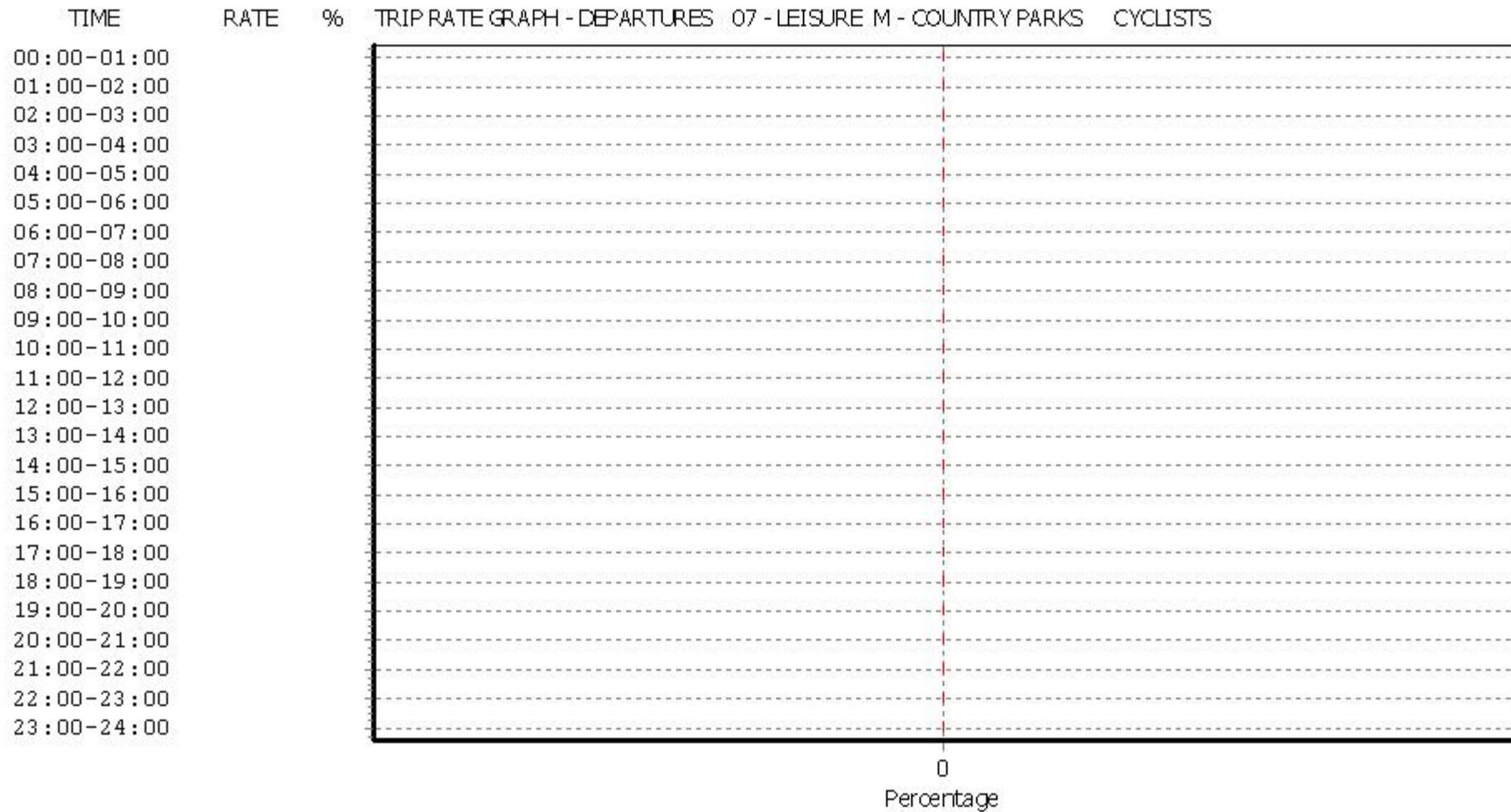
Parameter summary

Trip rate parameter range selected: 16.00 to 323.00 (units: hect)
 Survey date date range: 01/01/08 - 12/05/12
 Number of weekdays (Monday-Friday): 0
 Number of Saturdays: 4
 Number of Sundays: 1
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

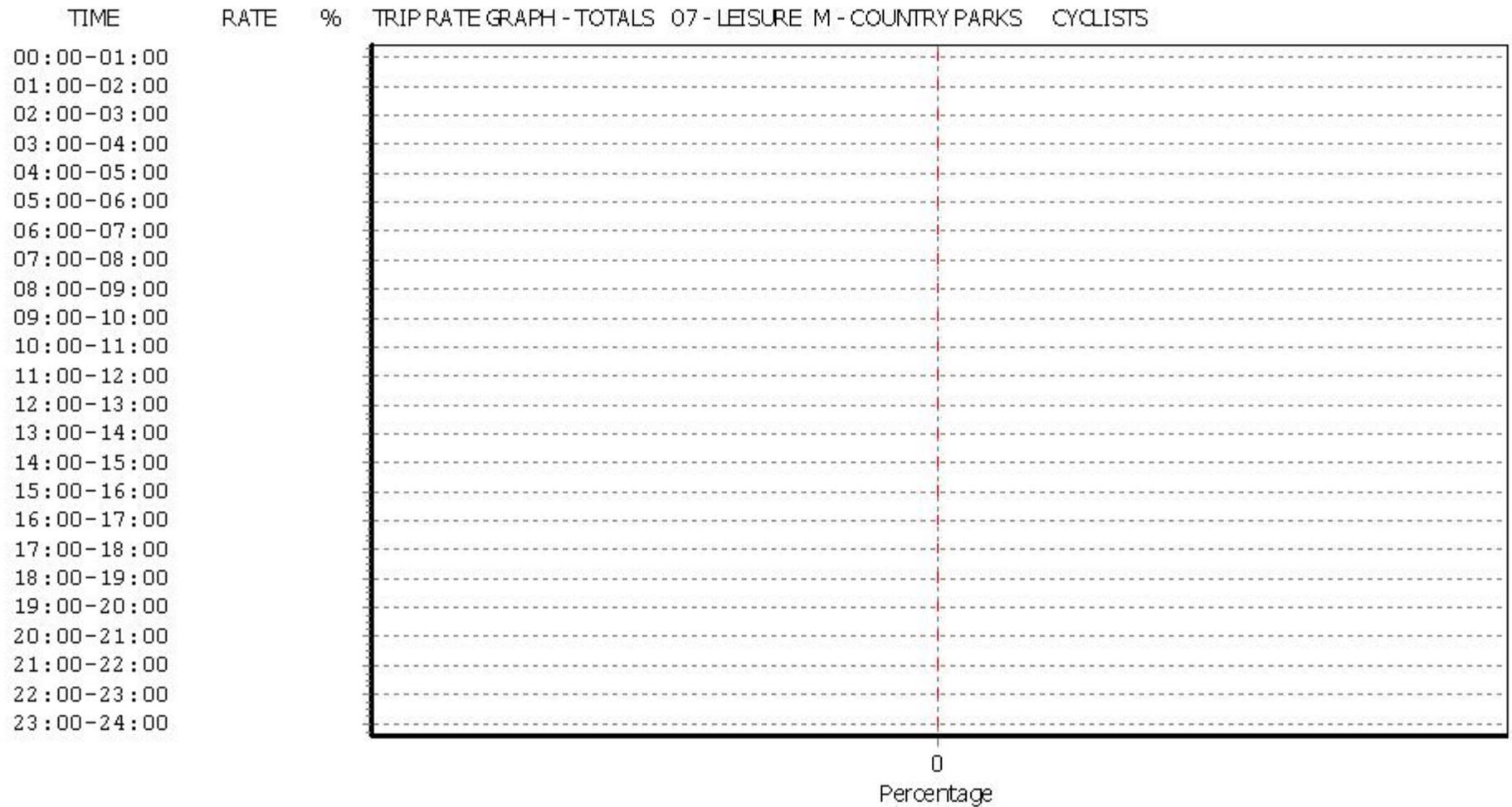
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

Appendix A14.3 Road Safety Audit

Title: **STAGE 1 ROAD SAFETY AUDIT**

**Kerdiffstown Landfill Remediation Project
Co. Kildare**

Client: **Jacobs**

Date: **March 2017**

Report reference: **0308R01**

VERSION: **FINAL**

Prepared By:

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Co. Louth.

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1.0 Introduction

This report was prepared in response to a request from Ms. Sharon Sugrue of Jacobs for a Stage 1 Road Safety Audit of the proposed 3 arm roundabout and link roads to the former landfill site at Kerdiffstown, Co. Kildare.

The Road Safety Audit Team comprised of;

Team Leader: **Norman Bruton**, BE CEng FIEI, Cert Comp RSA, MSoRSA

TII approval number: NB 168446

Team Member: **Owen O'Reilly**, B.SC. Eng Dip Struct. Eng NCEA Civil Dip Civil. Eng CEng MIEI

TII Auditor Approval number: OO1291756

The Road Safety Audit comprised an examination of the information provided and a site visit by the Audit Team, together on the 30th March 2017.

The weather at the time of the site visit was dry and the road surface was wet.

This Stage 1 Road Safety Audit has been carried out generally in accordance with the requirements of TII DMRB HD 19/15 Road Safety Audits. (TII Publication Number GE-STY-01024)

The scheme has been examined and this report compiled in respect of the consideration of those matters that have an adverse effect on road safety. It has not been examined or verified for compliance with any other standards or criteria.

The problems identified in this report are considered to require action in order to improve the safety of the scheme for road users.

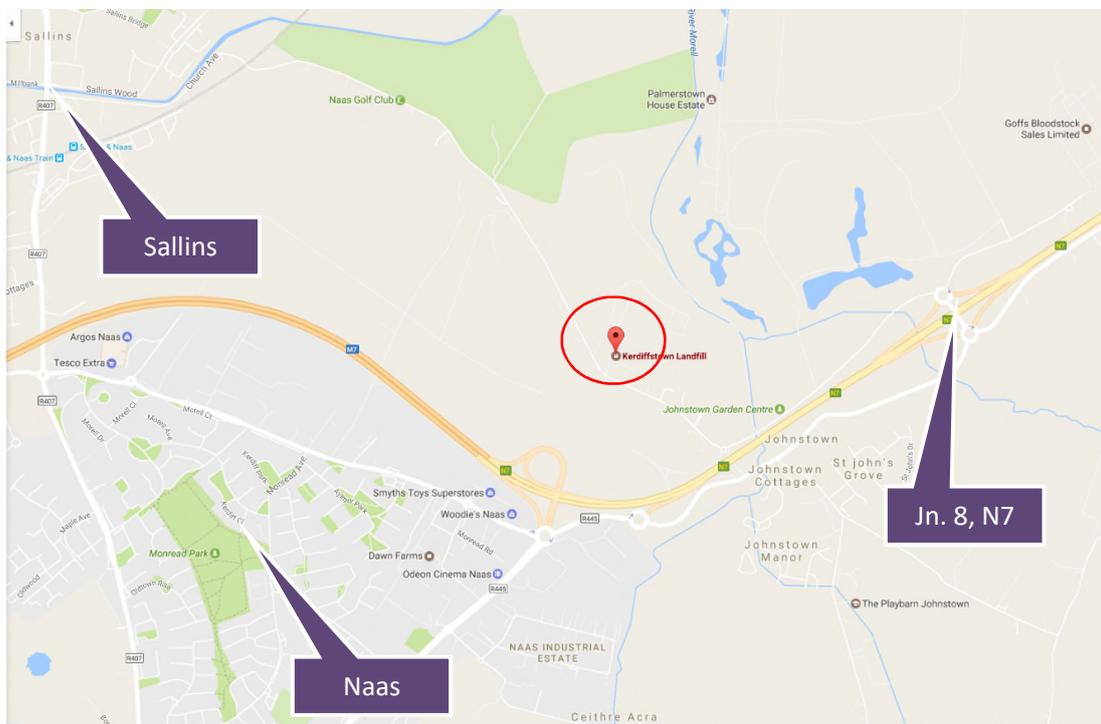
If any of the recommendations within this safety audit report are not accepted, a written response is required, stating reasons for non-acceptance. Comments made within the report under the heading of Observation are intended to be for information only. Written responses to Observations are not required.

The information supplied is listed in Appendix A.

No previous road safety audits were carried out on this scheme.

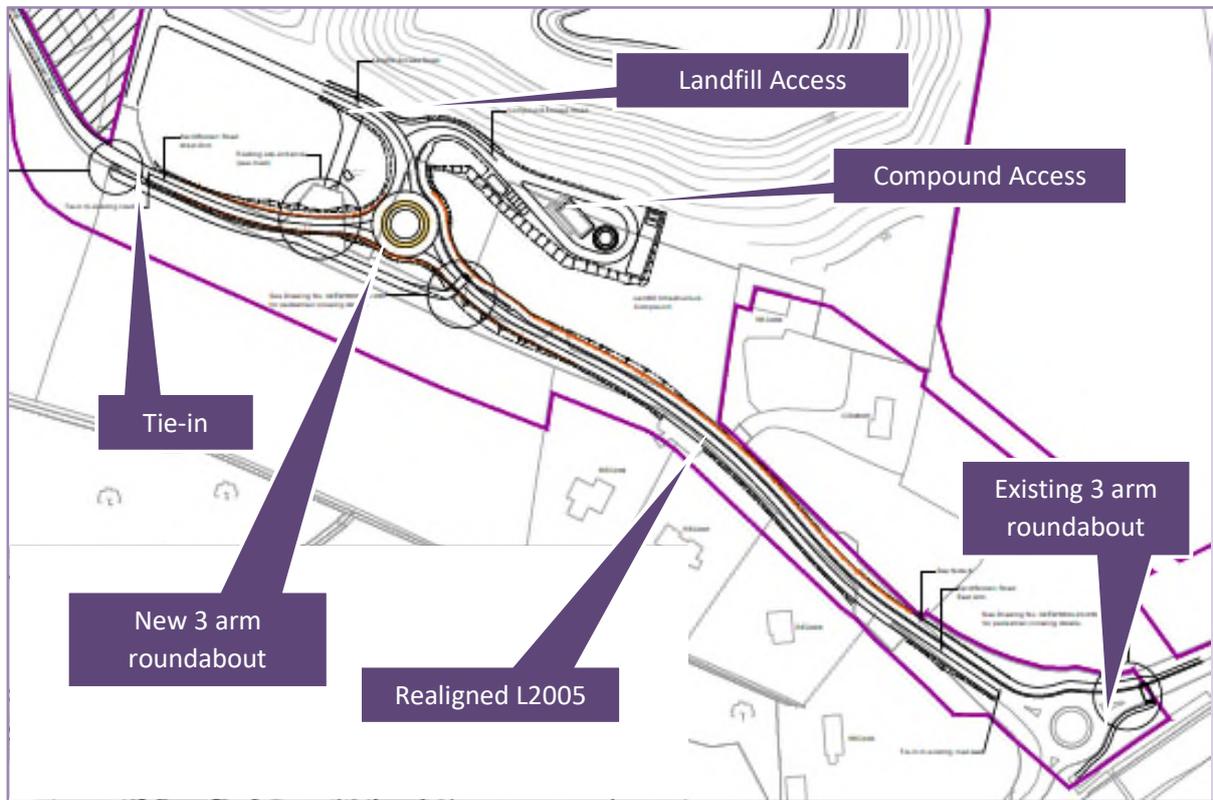
2.0 Background

The site of the previous landfill at Kerdiffstown Co. Kildare is proposed to be remediated. It is proposed thereafter to redevelop the site as an amenity area. This Stage 1 Road Safety Audit is required as part of the design process for a new site access. The remediation process will require the importation of a substantial quantity of material using heavy goods vehicles. The site is located off the L2005 Kerdiffstown Road which links Sallins and Johnstown via the grade separated Junction 8 on the N7 National Primary route. The site location is shown below.



Site Location Map – image courtesy of Google

The extents of the site (site for road safety audit purposes) includes a proposed 3 arm roundabout into the site, realignment of the L2005 between the existing 3 arm roundabout south west of Johnstown Garden Centre, realignment of, and tie-in with the existing L2005 to the northwest of the site, the provision of shared use cycle/pedestrian facilities, provision of a new access road to the landfill and the compound and other ancillary works. The site extents for the purposes of the road safety audit are shown below.



Site Extents Map

The Road Safety Authority’s website (<http://www.rsa.ie/RSA/Road-Safety/Our-Research/Collision-Statistics/Ireland-Road-Collisions/>) indicates that there were no reported collisions along this section of the L2005 between 2005 and 2013.

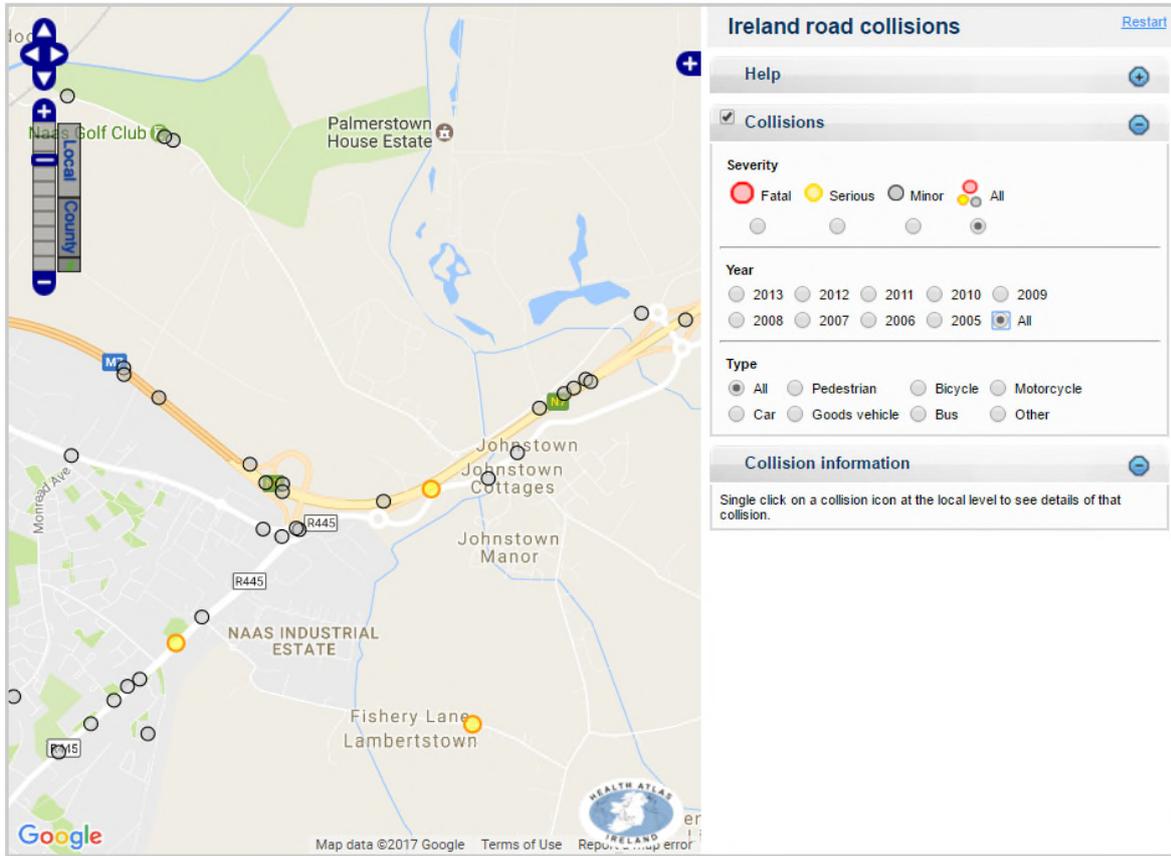
Historic collision data provided by Jacobs was as follows;

‘A review of NRA collision statistics was undertaken for the previous five years, on the roads in the immediate vicinity of the proposed Project, which identified the following accidents:

- Minor accident on Kerdiffstown Road, north of proposed site access, in the vicinity of the railway bridge; and
- Minor accident on N7 Eastbound, at Junction 8 off-slip.

Given that only a small number of minor accidents have occurred in the vicinity of the proposed Project, none of which are linked to operations at the site, it is clear that there are no existing accident or safety issues based on these statistics.’

Ireland Road Collisions



Screenshot from RSA Website.

3.0 Main Report

3.1 Problem

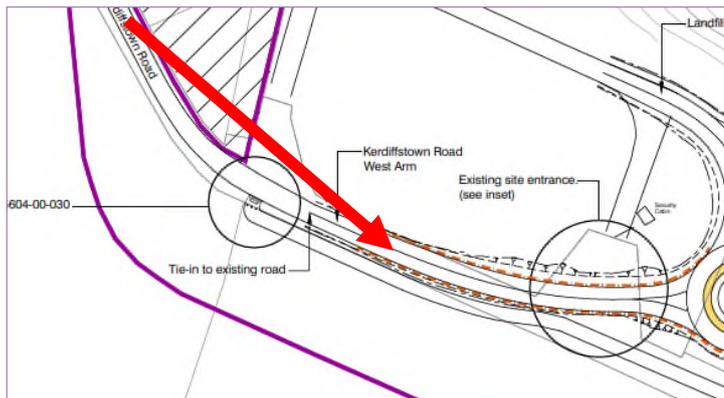
LOCATION

Drawing 32EW5604-00-029 Rev O New Site Access Proposed Road Layout and Site Observation.

PROBLEM

There is a tight horizontal radius bend on the existing L2005 Cardiff's town road to the west of the proposed realignment. There is a risk that drivers approaching from the Sallins direction will not have adequate forward visibility at this bend or to the proposed roundabout and as a result may lose control of their vehicle, collide with stationary traffic or collide with vulnerable road users.

The Audit Team are aware that a 60 km/h speed limit exists on the L2005. During the site visit it was felt that the actual speeds were in excess of the speed limit. The higher the 85th percentile speed on the road the greater the required forward visibility is.



RECOMMENDATION

It is recommended that the actual 85th percentile speed on the L2005 is determined and that realignment of the road or verge widening is provided to ensure adequate forward visibility for that speed.

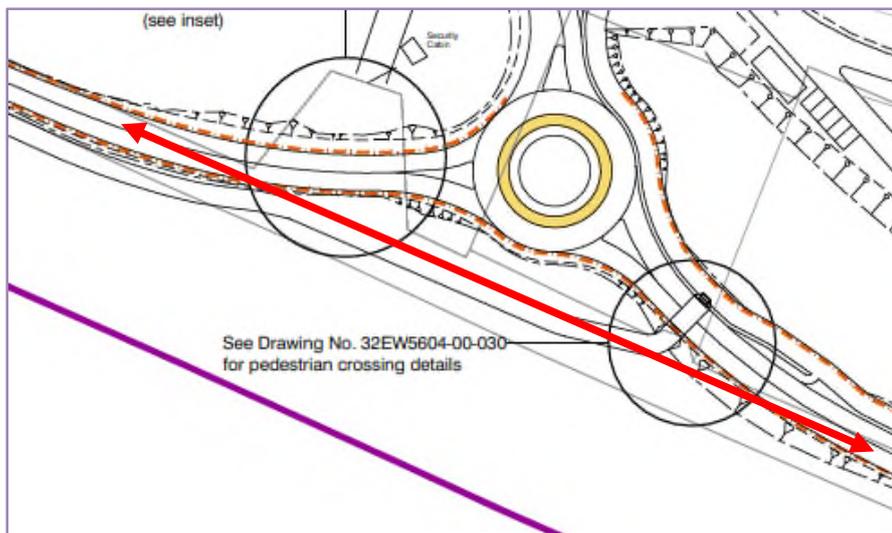
3.2 Problem

LOCATION

Drawing 32EW5604-00-029 Rev O New Site Access Proposed Road Layout

PROBLEM

It is proposed to utilise the old L2005 as a shared use footway/cycleway in the vicinity of the proposed roundabout. There is a risk that drivers approaching from the Sallins direction may sight through onto the old alignment. This may lead to loss of control when they suddenly realise that the new alignment turns to the left.



RECOMMENDATION

It is recommended that suitable screening be provided by the use of earth berms or signage or both suitably positioned so as not to become roadside hazards and to eliminate potential sight-through from both directions.

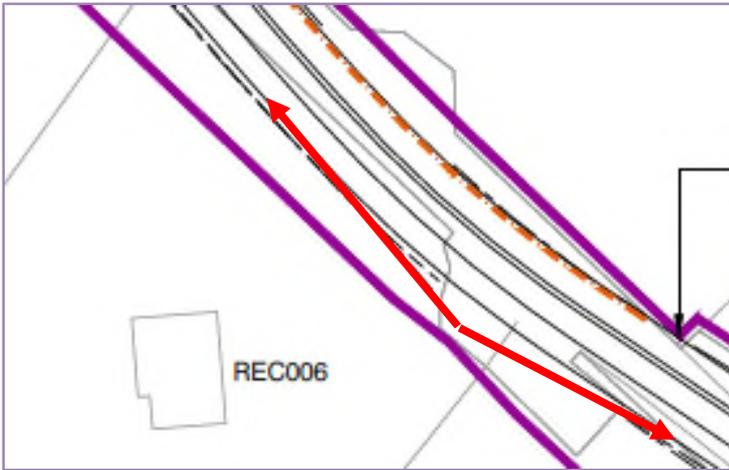
3.3 Problem

LOCATION

Drawing 32EW5604-00-029 Rev O, New Site Access Proposed Road Layout and Site Observation.

PROBLEM

It is unclear from the drawings provided the proposed accommodation works at each private access along the L2005. It was observed during the site visit that there is limited visibility at a number of the existing accesses. Insufficient visibility could lead to side impact collisions with through traffic on the L2005.



RECOMMENDATION

It is recommended that visibility splays be provided with suitable X and Y distances for the design speed of the realigned road.

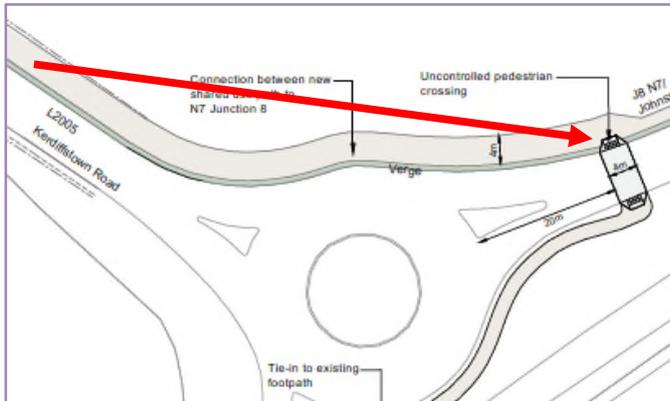
3.4 Problem

LOCATION

Drawing 32EW5604-00-030 Rev O, New Site Access Proposed Pedestrian Access and Cycleway & Site Observation.

PROBLEM

It is proposed to provide an informal crossing point 20 m north-east of the existing three arm roundabout. It was observed during the site visit that vehicles travelling from the Sallins direction towards Junction 8 on the N7, maintained high speed whilst on the circulating carriageway of this roundabout. This is most likely due to the alignment of the roundabout and the fact that the south-west arm leads only to private property and therefore drivers familiar with the area do not yield as they do not expect to encounter circulating traffic. There is a risk that pedestrians or cyclists crossing at the proposed location may not have adequate inter-visibility with drivers of approaching vehicles. It was also observed on site that roadside furniture and vegetation behind the existing footpath reduced visibility.



RECOMMENDATION

It is recommended that the uncontrolled pedestrian crossing is relocated closer to the roundabout, similar to the existing situation with a refuge being provided as part of the splitter island. Visibility to the northern side of the crossing point should be provided without been obscured by roadside furniture or landscaping.

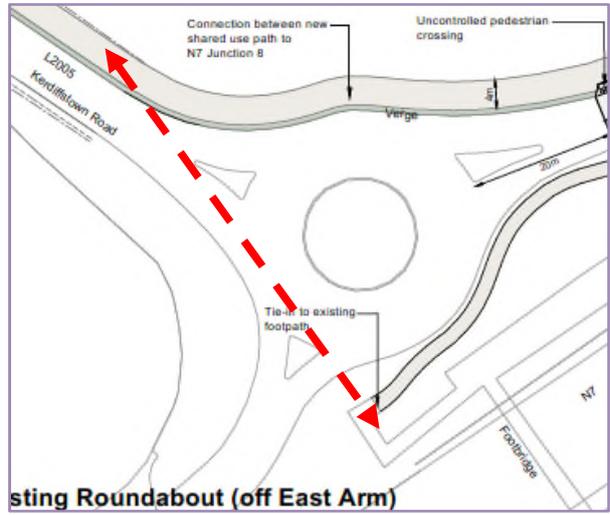
3.5 Problem

LOCATION

Drawing 32EW5604-00-030 Rev O, New Site Access Proposed Pedestrian Access and Cycleway & Site Observation.

PROBLEM

There is a risk that the proposed informal pedestrian crossing at the existing three arm roundabout will not cater for the desire line of pedestrians travelling from the future amenity area to the overbridge on the N7. During the site visit a pedestrian was observed walking on the south-western side of the circulating carriageway to get to the over bridge. There is a risk that pedestrians will continue to enter the carriageway if the proposed informal crossing point is moved further to the north-east than the existing crossing point. Vulnerable road users that enter the carriageway are at a greater risk of being struck by vehicles.



RECOMMENDATION

It is recommended that two additional informal crossing points are provided on the two other arms of the roundabout and that a footpath is provided in the south-western verge connecting the crossing points.

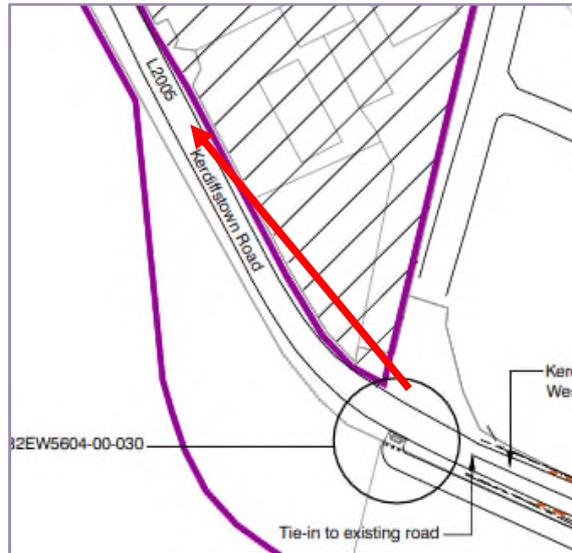
3.6 Problem

LOCATION

Drawing 32EW5604-00-029 Rev O, New Site Access Proposed Road Layout & Site Observation.

PROBLEM

It is proposed to terminate the shared use footway/cycleway at the tie-in point with the existing L2005 where there is a tight horizontal radius curve. There is a risk that pedestrians or cyclists wishing to cross the L2005 at this location will not have sufficient visibility to the right (towards Sallins) which may lead to collisions with oncoming vehicles.



RECOMMENDATION

Ensure adequate inter-visibility between drivers and vulnerable road users at this potential crossing point.

3.7 Problem

LOCATION

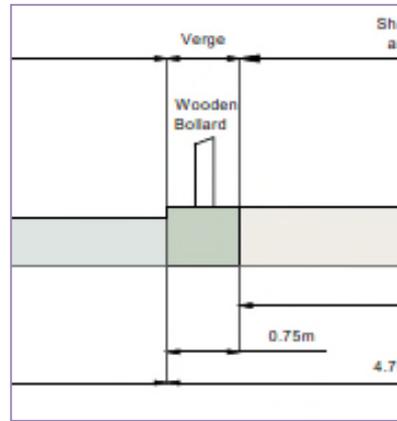
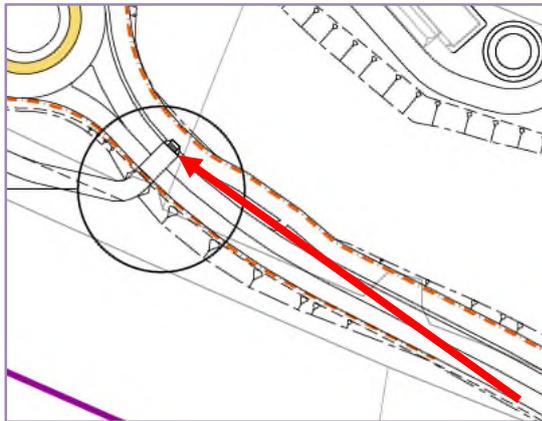
Drawing 32EW5604-00-030 Rev O, New Site Access Proposed Pedestrian Access and Cycleway &

Drawing 32EW5604-00-029 Rev O, New Site Access Proposed Road Layout.

PROBLEM

It is proposed to provide wooden bollards in the verge between the carriageway and the shared use path and cycleway. There is a risk that these bollards may obscure inter-visibility between drivers approaching the proposed roundabout from the south-east and pedestrians or cyclists wishing to cross the L2005 at the informal crossing point on approach to the roundabout due to the relatively steep vertical alignment of the L2005. A lack of inter-visibility could lead to collisions with vulnerable road users.

STAGE 1 RSA – KERDIFFSTOWN
JACOBS



RECOMMENDATION

Ensure that adequate inter-visibility is provided without obstruction by the bollards to a low object height of 0.6 m which could represent a child.

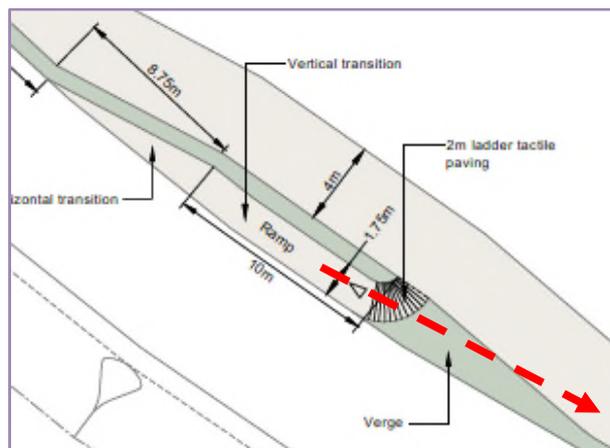
3.8 Problem

LOCATION

Drawing 32EW5604-00-030 Rev O, New Site Access Proposed Pedestrian Access and Cycleway

PROBLEM

It is proposed to provide a transition for cyclists from on-road to off-road to the south-east of the proposed roundabout. There is a risk that cyclists using this facility and wishing to continue their journey towards the existing three-armed roundabout may travel across the grassed verge and lose control of their bicycle leading to injury. In addition, the proposed ladder tactile paving may provide discomfort for cyclists.



RECOMMENDATION

Ensure that the transition caters for the desire line of south-east bound cyclists. It is also recommended that tramline tactile paving be provided for cyclists.

3.9 Problem

LOCATION

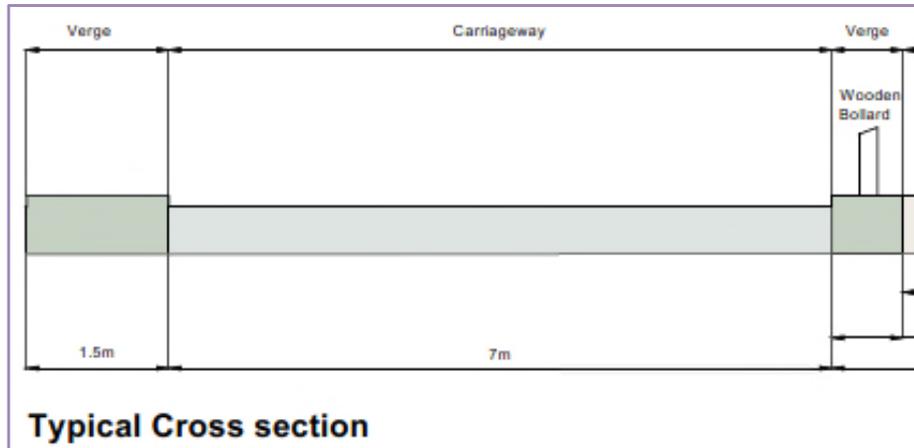
Drawing 32EW5604-00-031 Rev O, Site Access Design Profiles.

PROBLEM

It is unclear at this preliminary design stage what the exact crossfall and drainage details are for the realigned L2005. The proposed long sections for the Kerdiffstown Rd, East Arm shows at SAG in the vertical alignment at approximate chainage 25. This is followed by a relatively long vertical gradient of 0.5%.

There is a risk of surface water ponding on the carriageway surface or, of larger than acceptable water film depths on the surface if inadequate drainage is provided.

The typical cross-section indicates that the verges will be raised relative to the carriageway level. Should this be the intention the risk of surface ponding will be increased. Ponding can lead to loss of traction and loss of control in wet or icy conditions.



RECOMMENDATION

Ensure that all road surfaces are adequately drained.

4.0 Observations

4.1 Observation

It was observed during the site visit that there are a number of telecom and electrical cables crossing the L2005. It is assumed that the clearances to these cables will be checked for the revised vertical alignment.

4.2 Observation

It is assumed that an inappropriately located 'all routes' sign on approach to the existing three arm roundabout will be removed as part of the site clearance.

4.3 Observation

It was observed during the site visit that the ramp on the N7 overbridge had a slippery surface with some surface water ponding on the dwell areas. The Audit Team acknowledge that this is outside the scope of the works, however as the new amenity facility will lead to increased usage of this overbridge this issue should be brought to the attention of the Roads Authority.

4.4 Observation

It is assumed that at the detailed design stage suitable aggregate with suitable PSV will be provided on the north-west approach to the proposed roundabout taking into consideration the actual 85th percentile speed on the L2005.

4.5 Observation

It is assumed that the public lighting columns and the supports for road signs will be placed at the back of the shared use facility such that there will not reduce its effective width.

4.6 Observation

If it is intended to have 4 m wide crossing points then the dropped kerb and tactile paving should be provided over the 4 m width. Transition kerbs should be provided thereafter.

4.7 Observation

It is unclear if the realigned L2005 is to be kerbed throughout. If not it is assumed that kerbing would be provided at the vicinity of the proposed roundabout.

5.0 Audit Statement

We certify that we have examined the information provided and the site on the 30th March 2017. The examination has been carried out with the sole purpose of identifying any features of the design which could be removed or modified in order to improve the safety of the scheme.

The problems identified have been noted in this report together with associated safety improvement suggestions which we would recommend should be studied for implementation. The audit has been carried out by the persons named below who have not been involved in any design work on this scheme as a member of the Design Team.

Norman Bruton Signed: 
(Audit Team Leader) Dated: 25-4-2017

Owen O'Reilly Signed: 
(Audit Team Member) Dated: 25-4-2017

Appendix A

List of material Supplied for this Stage 1 Road Safety Audit;

- Drawing 32EW5604-00-029 Rev O, New Site Access Proposed Road Layout.
- Drawing 32EW5604-00-030 Rev O, New Site Access Proposed Pedestrian Access and Cycleway
- Drawing 32EW5604-00-031 Rev O, Site Access Design Profiles.

Background material

- Jacobs Technical Note – Road and New Site Access Design, 29th March 2017
- Details of collision history from NRA Data for last 5 years – From Jacobs.
- Proposed traffic volumes during remediation phase – From Jacobs.

Appendix B

Feedback Form

SAFETY AUDIT FORM – FEEDBACK ON AUDIT REPORT

Scheme: Kerdiffstown Landfill Remediation Project

Stage: 1 Road Safety Audit.

Date Audit (Site visit) Completed: 30th March 2017

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
3.1	Yes	No	<p><u>Area 1 – existing bend</u></p> <p>The requirement for third party land is likely to be at a disproportionate cost to KCC to effect road realignment, hence alternatives to satisfy the 85th percentile speeds (ave 71kph) are:</p> <ul style="list-style-type: none"> • Mitigation would be provided using appropriate roundabout warning signs, speed limit signs (along the entire length of the road) and SLOW markings in advance of the bend; • Existing hedgeline vegetation to be trimmed back to property boundary; • The urbanisation of the road (refer to Problem 3.6) also offers improvement and identification of change in road layout. <p><u>Area 2 – new roundabout</u></p> <p>The design speed for L2005 Kerdiffstown Road is 60kph, hence the SSD for the new roundabout is sufficient to satisfy the DMURs guidance of min. 65m at this design speed. Assessment of the 85th percentile (ave 71kph) recorded north and south east of the existing junction exceeds the design guidance in DMURs and as such would require TII DMRB guidance to be utilised. The DMRB requires SSD at 120m, or with two steps below, 70m, though use of DMRB guidance would also require more significant horizontal and vertical alignments which are not achievable with the lands available. With mitigation proposed above and in Problem 3.6 with the urbanisation improvements to the road/ pathway/ cycleway DMURs is considered the appropriate standard to follow hence no further actions are proposed.</p>	YES

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
3.2	Yes	Yes	Screening requirements will be addressed during detailed design stage. Appropriate signage would also be erected to warn of new road layout / junction ahead.	
3.3	Yes	Yes	Existing vegetation will be removed as part of the site clearance works to provide requisite visibility splays.	
3.4	Yes	No	The splitter island at the current crossing location is not considered appropriate as a refuge. The proposed crossing location (c.20m from roundabout) provides the requisite forward visibility. This proposed crossing also provides for the desire line of pedestrians and cyclists travelling from the footbridge onwards to the east. For users wishing to travel onwards to Sallins/the park from the footbridge, a new crossing will be provided (see 3.5 below).	YES
3.5	Yes	Yes	A 2.2m pathway will be provided around the south side of the junction to a further crossing point located at the private drive on level grade (the third arm of the roundabout) as recommended. The pathway will extend to a further crossing point over Kerdiffstown Road, north of the existing roundabout, to meet visibility standards. Design drawing to be revised accordingly.	
3.6	Yes	Yes	The trail will be extended to the west, towards the centre of the bend to improve visibility looking north along Kerdiffstown Road, whilst maintaining visibility back towards the new roundabout. Lighting will be provided along the pathway and cycleway improving visibility of this crossing point for road users, and ease of identification in daylight hours.	
3.7	Yes	Yes	Height will not exceed 0.6m. Drawing to be revised accordingly.	

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
3.8	Yes	No	<p>During detailed design the most effective tactile paving will be investigated, in order to clearly indicate the transition from carriageway to shared use pathway and effectively communicate this transition to cyclists and pedestrians, whilst posing no danger to either.</p> <p>Additionally, SLOW markings will be provided to the ramp in advance of the yield marking and low plantings (<0.6m height) or other physical barrier will be provided to the top of the ramp to keep cyclists channelized.</p>	YES
3.9	Yes	Yes (see comment)	<p>It is confirmed that the design will mitigate any potential drainage issues.</p> <p>Reference on Drawing Number 32EW5604-00-031 to be changed from Typical Cross Section to 'Indicative Conceptual Section'. This is intended to show widths only.</p> <p>The MX design has incorporated 2.5% adverse camber on horizontal curves over 178m radius and 2.5% superelevation on horizontal curves at 136m radius.</p>	YES

Signed.....
Design Team Leader

Date 21/04/2017

Signed.....
Audit Team Leader

Date 25/4/2017

Signed.....
Employer

Date 25/4/17