



21.221 Traffic Impact Assessment

Project:
**Carlisle Residential
Development, Kimmage
Road West, Kimmage,
Dublin 12**

Job No.
21.221

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1. INTRODUCTION

1.1 SCOPE

Barrett Mahony Consulting Engineers (BMCE) have been commissioned by 1 Terenure Land Ltd. to prepare a Traffic Impact Assessment for a proposed residential development at the Carlisle site, Kimmage Road West, Kimmage, Dublin 12.

The purpose of this Traffic and Transport Assessment is to assess the current operational efficiency of the existing transport environment and provide details of the assessment undertaken to identify the level of transport impact resulting from the proposed residential development. The scope of the assessment covers both transport and related sustainability issues, including means of vehicular access, pedestrian, cyclist, and local public transport connections. These related issues are dealt with in more detail in the mobility management plan. The principal objective of the report is to quantify any level of impact across the local road network and subsequently ascertain both the existing and future operational performance of the local road network.

Permission was granted, under ABP 313043 on the 22/09/2022, for an SHD on the subject site comprising 208 no. apartment units in 5 no. blocks. The current proposed LRD application provides the same layout and quantum of units as this permitted development. The proposed LRD access arrangements are the same as permitted in the SHD application.

1.2 GENERAL DESCRIPTION

The proposed Large Scale Residential Development will consist of the construction of 5 no. blocks of development and will range in height up to 6 storeys. This will provide 208 no. residential units (104 no. 1 beds and 104 no. 2 beds) all of which will have associated private balconies/terraces. Car, cycle, and motorbike parking will be located at undercroft and surface level. Vehicular/pedestrian/cyclist access is provided off Kimmage Road West via the existing Ben Dunne Gym access route. All associated site development works, open spaces, landscaping, boundary treatments, plant areas, waste management areas, and services (including ESB substations) shall be provided. A full description is set out in the statutory notices included with this application.

100 No. car parking spaces are proposed, together with 484 No. bike parking spaces

The analysis within this report is undertaken based on 1.6% annual growth in network traffic over the period 2021 to 2030 period, decreasing to 0.5% in the 2030 to 2039 period. These figures are consistent with the 'medium growth' assumption for the Dublin city area as detailed within the 2019 Transport Infrastructure Ireland document 'Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections', PE-PAG-02017-2, May 2019.

1.3 PURPOSE OF THE TRAFFIC AND TRANSPORT ASSESSMENT

The purpose of this Traffic and Transport Assessment is to assess the current operational efficiency of the existing transport environment and provide details of the assessment undertaken to identify the level of transport impact resulting from the proposed residential development. The scope of the assessment covers both transport and related sustainability issues, including means of vehicular access, pedestrian, cyclist, and local public transport connections. The principal objective of the report is to quantify any level of impact across

the local road network and subsequently ascertain both the existing and future operational performance of the local road network.

1.4 METHODOLOGY USED WITHIN THE TRAFFIC AND TRANSPORT ASSESSMENT

This report was developed with guidance from the documents listed below;

- 'Traffic and Transport Assessment Guidelines' (May 2014) National Road Authority;
- 'Traffic Management Guidelines' Dublin Transportation Office & Department of the Environment and Local Government (May 2003);
- 'Guidelines for Traffic Impact Assessments' The Institution of Highways and Transportation; and
- Dublin City Development Plan 2016-2022, and the new draft development plan 2022-2028.

The methodology utilised can be divided into the following 5 No. phases, in compliance with the Traffic and Transport Assessment Guidelines referenced above:

Audit of existing network

The report establishes the existing level of accessibility at present pertaining to the subject site in terms of the level of access available by walking, cycling and public transport.

Completion of Traffic Counts

The report details Junction traffic counts undertaken at the locations relevant to the proposed development, and analysed in order to assess existing operating efficiencies in the vicinity of the proposed development.

Estimation of Trip Generation Volumes

A trip generation exercise has been carried out to establish an estimate for the level of vehicle trips generated by the proposed residential development.

Distribution of Generated Trips

Based upon both the existing observed flow patterns in the local road network at the identified relevant junctions, the trips predicted to be generated by the proposed development are distributed / assigned onto the local road network.

Network Analysis detailing Impact of Generated Volumes

Junction analysis models are utilised to analyse the impact of the estimated trip generation volumes on the operational efficiency of the junctions selected for detailed analysis.

This analysis of the Kimmage Road West / Whitehall Road signalised T-junction, the Terenure Road West / Fortfield Road / Kimmage Road West / Sundrive Road signalised crossroads and the development access T-junction are undertaken for the proposed year of opening of the proposed development in 2024 and the 'design years' five and fifteen years thereafter (2029 and 2039).

This methodology is consistent with the following sections required within a basic Traffic and Transport Assessment for compliance with the 2014 TTA Guidelines:

- Introduction / Existing conditions
- Extent of proposed development (including existing and future public transport and walking / cycling facilities)
- Vehicular Trip Generation
- Vehicular Trip Distribution / Assignment to network
- Impact on road network of trips generated by proposed development

1.5 SITE ACCESS TO LOCAL ROAD NETWORK

The site entrance accesses directly onto Kimmage Road West and is the access point currently used by the Ben Dunne Gym at Carlisle.

In the westbound direction, traffic accesses directly onto Kimmage Road West past the Kimmage Road West / Whitehall Road signalised T-junction located 35 metres to the west of the access point.

In the eastbound direction, traffic accesses directly onto Kimmage Road West onto the Terenure Road West / Fortfield Road / Kimmage Road Lower signalised crossroads, located 200 metres to the east of the access point.

Figure 1-1 contains a site location map of the proposed development, indicating its location relative to adjacent major junctions.

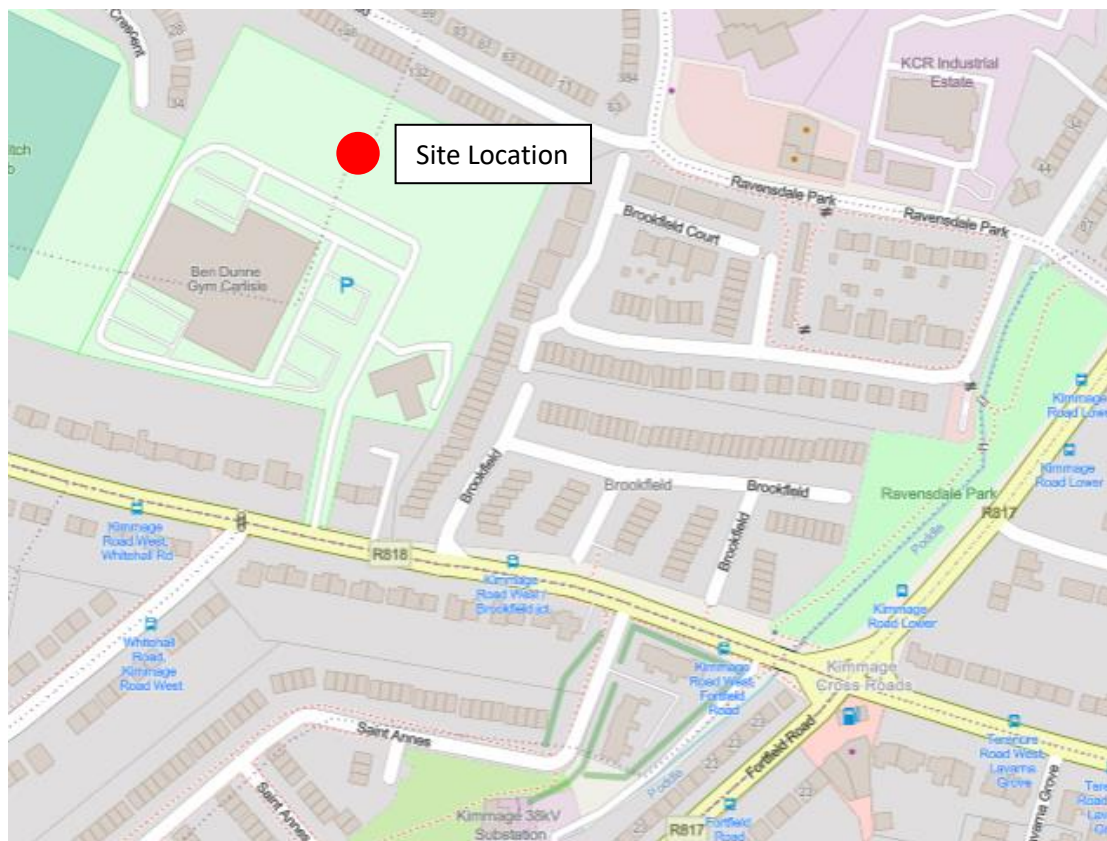


Figure 1-1: Site location map

The location of the 3 No. traffic surveys (numbered 1 to 3) from the 2018 survey is contained within Figure 1-2.

Given that the proposed development is residential, peak flows will typically occur on weekdays, with peak flows typically occurring between 7am and 9am in the morning and between 4pm and 6pm in the evening.

A traffic survey was carried out on Thursday 17th June 2021 over a 12-hour period between 0700 and 1900 at junction Nos. 1 and 2.

In order to ensure the robustness of the surveyed figures, December 2018 / November 2019 were obtained for junction No. 2 and 3. (Junction No. 2 surveyed on Thursday 6th December 2018 and junction No. 3 surveyed Tuesday 26th November 2019).

The surveys indicated that the weekday morning peak occurs between 0800 and 0900 with the evening peak occurring between 1700 and 1800 - these were observed to be the timeframes during which the major links near the subject site will be assumed most heavily loaded. The following analysis is based on these peak periods.

The results of the pre-Covid surveys (2018 and 2019) for Junction Nos. 2 and 3 are detailed within Diagrams 1 and 2 of Appendix 1 for the morning and evening peak hours. It can be seen that there is an extremely high level of consistency between the two datasets.

The results of the June 2021 traffic surveys for Junction No. 1 and 2 are detailed within Diagrams 3 and 4 within Appendix 1 for the morning and evening peak hours respectively.

Directly comparing the 2018 and 2021 surveys for Junction No. 2, one can see that the 2021 AM peak flows are approximately 20% less than the 2018 flows, with the PM peak 10% less on average. Accordingly, the 2021 surveyed flows for Junction No. 1 have been increased accordingly so that they more accurately reflect incident flows in pre-Covid times.

The corrected flows for Junction No. 1 are detailed within Diagrams 5 and 6 of Appendix 1 for the morning and evening peak hours respectively. This ensures consistency with the 2018 / 2019 surveyed flows at Junctions 2 and 3.

The corrected Junction No. 1 survey results within Diagrams 5 and 6, and the 2018 / 2019 survey results for Junction Nos. 2/3 within Diagrams 1 and 2 are combined for the morning and evening peaks in Diagrams 7 and 8 within Appendix 1. These flows are assumed to be the EXISTING 2021 FLOWS within the local road network

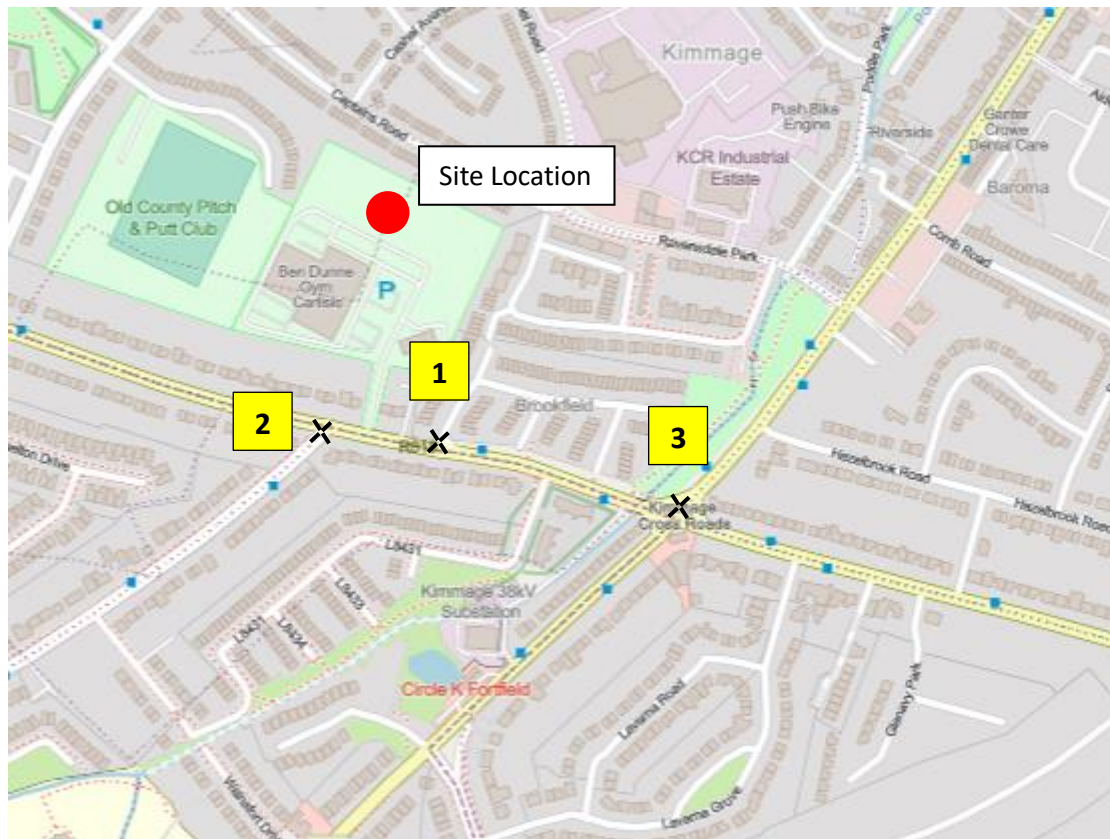


Figure 1-2: Site location map also indicating location of 3 No. traffic surveys

1.6 SCOPE OF THE REPORT

This report is structured in order to address in detail the 5 No. stages of stated methodology as detailed within section 1.3 above.

Section 2 provides details of the receiving environment, detailing existing conditions pertaining at the site of the proposed development, existing and proposed public transport and soft mode provisions, and .

Section 3 refers to the planning control framework associated with the proposed site.

Section 4 contains details of the trip generation, distribution, and assignment processes for proposed flows at Junction Nos. 1, 2 and 3. The scenarios for the junction analysis within section 6 are detailed.

Section 5 details the percentage increases in flows at the 3 No. critical junctions arising from the generated flows from the subject site.

Section 6 details an analysis of the traffic impact of the proposed development on the 3 No. critical junctions for the scenarios outlined within section 4.

Section 7 makes some concluding comments regarding the sustainability of the proposed project in transport impact terms.

2. THE RECEIVING ENVIRONMENT

2.1 LOCATION OF PROPOSED DEVELOPMENT

The general location of the subject site in relation to the surrounding road network is illustrated in Figure 1.1.

2.2 EXISTING AND PROPOSED BUS INFRASTRUCTURE

The Dublin Bus services in the area provide direct linkage to the city, with Routes 9, 15a and 17 running past the site. In addition, the 54a passes through Kimmage crossroads 200 metres to the east of the proposed development, while route 83 and 83a pass through Lorcan O'Toole Park, 350 metres to the northwest.

The frequency of each bus can be seen in Table 2-1:

Table 2-1– Dublin Bus Route Frequencies

Route	Origin	Destination	Frequency AM peak hour
Route 9	Limekiln Avenue	Charlestown	5 No. buses per hour
Route 15a	Limekiln Avenue	Ringsend Road	4 No. buses per hour
Route 17	Rialto	Blackrock	3 No. buses per hour
Route 54a	Killtipper Way	Pearse Street	2 No. buses per hour
Route 83	Harristown	Kimmage	6 No. buses per hour
Route 83a	Harristown	Kimmage	6 No. buses per hour
TOTAL	-	-	26 No. buses per hour



Figure 2-1: Existing bus services

Figure 2-1 details the routes taken by the 9, 15a, 17, 54a, 83 and 83a routes in close proximity to the site of the proposed development.

Figure 2-2 details the Bus Connects proposals, indicating that the F3 route on the high frequency F spine.

The F spine buses (F1, F2, F3) will provide an all-day service, operating every 5 minutes from the Kimmage Crossroads to City Centre (via Harold's Cross) and points beyond. West of Kimmage Crossroads, the route will change to F3 which continues to Templeogue, Firhouse and Tallaght via Fortfield Rd, Fortfield Park, Templeville Road, Cypress Grove Road and Old Bridge Road, running every 15 minutes.

The high frequency S4 orbital route, also running close to the site, will create a direct service from Liffey Valley and Ballyfermot across the southern side of Dublin, including Crumlin, Terenure, Milltown, and finally UCD.

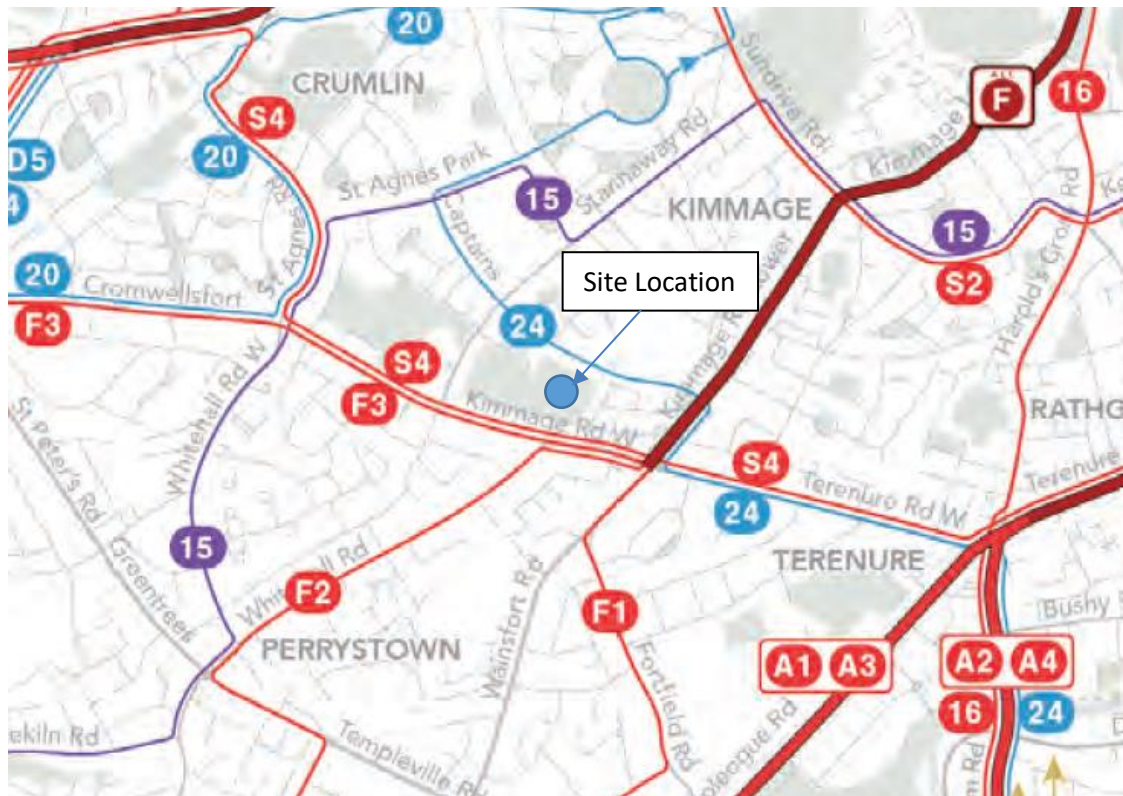
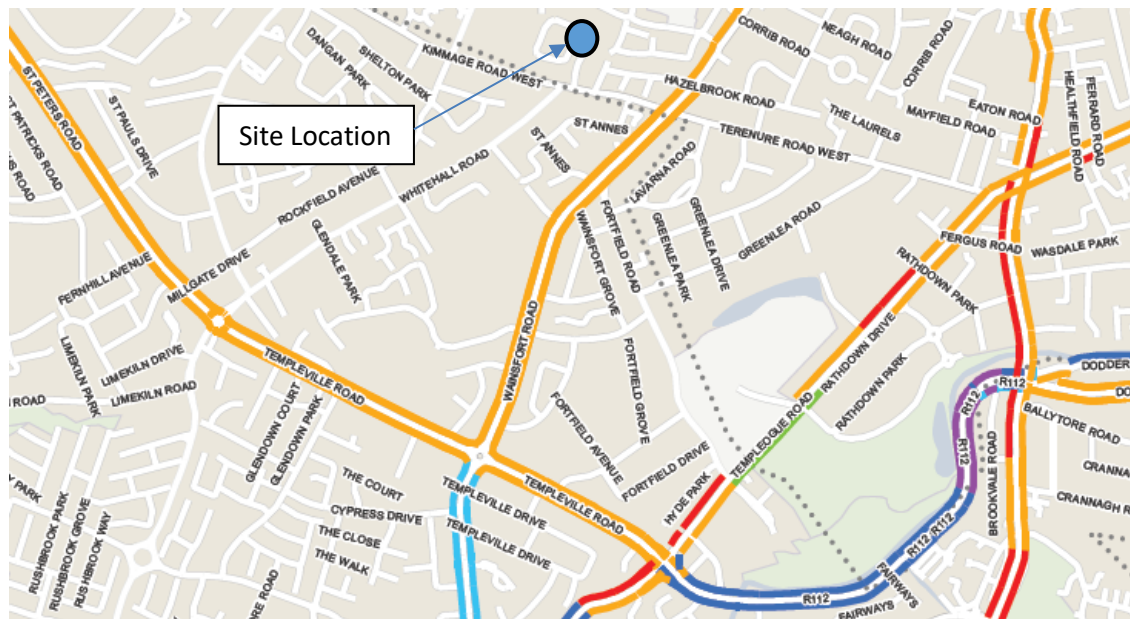


Figure 2-2: Bus Connects proposals

2.3 EXISTING AND PROPOSED CYCLING PROVISION

Figure 2-3 details the existing cycle facilities close to the site:



Legend:

— B1 - Bus Lane (no cycle lane)	— G1 - Cycle Trail or Greenway	Greenline Tram Stops
— C1 - Cycle Track - separated from road	— S2 - Shared Walking & Cycling	Redline Tram Stops
— C2 - Cycle Track - immediately adjacent	— Study Area	Stations
— C3 - Cycle Lane (even within Bus Lane)	— County Council Boundaries	

Figure 2-3: cycling facilities in proximity to Carlisle site

One can see that there are limited cycle lanes in the vicinity of the development, with the main link being the Fortfield Road / Kimmage Road West link (dotted line in Figure 2-3 above).

Figure 2-4 details the facilities planned within the GDA Cycle Network Plan.

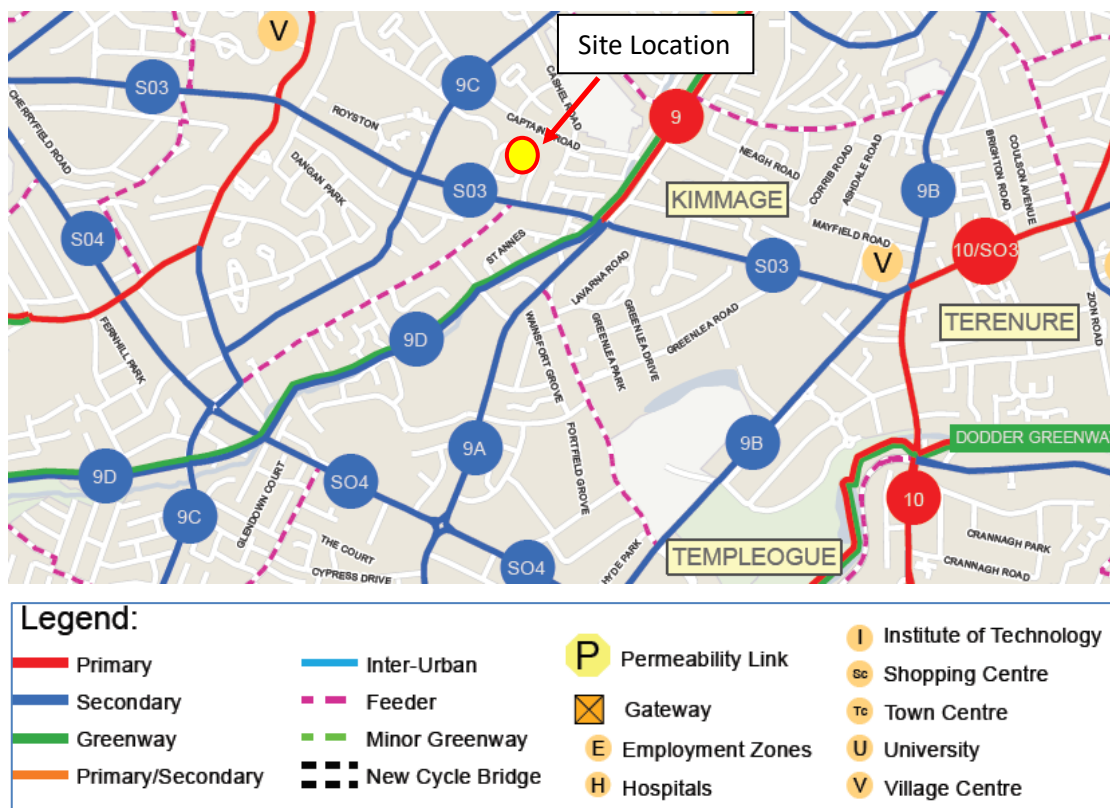


Figure 2-4: Cycle lane improvements detailed within the GDA Cycle Plan

The SO3 secondary route provides direct access into the city will allow residents of the development to use the route and cycle along the canal where they will not have to share their space with other road users such as cars, buses, or trucks.

The SO3 route connects into Primary Route 9 at the Kimmage Crossroads junction, 200 metres east of the development entrance.

Route 9 runs from the city centre along Clanbrassil Street through Harold's Cross, intersecting with the SO3 route at Kimmage crossroads.

The SO3 route runs from Rathgar and Dartry to Milltown, Clonskeagh and Ballsbridge along the Dodder Greenway, connecting westwards to Tallaght.

3. PARKING REQUIREMENTS AND PROVISION

3.1 CAR AND CYCLE PARKING REQUIREMENTS AS PER DUBLIN CITY DEVELOPMENT PLAN 2016 – 2022 (AND NEW DRAFT DEVELOPMENT PLAN 2022-2028)

Table 3-1 and 3-2 below detail the maximum car and bicycle parking standards for Dublin City Council based on the rates contained within their 2016 - 2022 Development Plan Written Statement for the residential developments (and the new draft development Plan 2022-2028)

Development type	Area / units	Maximum car parking standards	Maximum car parking required
Apartments (2016-2022 Dev Plan)	208 No.	1.0 per unit	208
Apartments (2016-2022 Dev Plan)	208 No.	1.0 per unit	208
		Bike parking standards	Bike parking required
Apartments (2022-2028 Dev Plan)	208 No.	1 per unit	208
Apartments (2022-2028 Dev Plan)	208 No.	Long term (1 per bedroom)	312
		Short term (1 per 2 apartments)	104
			416

Table 3-1: Parking required under Dublin City Council Development Plan Standards (2016-2022) & (new draft 2022-2028)

3.2 CAR AND CYCLE PARKING PROVISION

It is proposed to provide 100 No. car parking spaces for the residential component, equating to 0.48 No. spaces per residential unit.

This level of provision is 48% of the quantum required under the Dublin City Development Plan maximum standards. However, this provision must also be viewed in relation to the New Apartment Guidelines, the level of compliance with which is detailed within the mobility management plan in a separate submitted report.

In terms of cycle parking provision, it is intended to provide 484No. cycle parking spaces, 233% of the 2016-2022 Dublin City Development Plan standard, but 116% compliant with the requirements of the National Cycle Manual and 2022-2028 Development Plan (which both require 1 No. space per bed for residents and 0.5 No. spaces per residential unit for visitors).

Therefore, we are providing an over provision of 68no. cycle parking spaces following guidance from the National Cycle Manual and the new draft Development Plan 2022-2028.

4. TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT ESTIMATES FOR PROPOSED DEVELOPMENT FLOWS

4.1 TRIPS GENERATED BY PROPOSED DEVELOPMENT

The traffic impact of the proposed development is derived by assessing the trips generated by the proposal and, taking the day of opening flows on the network. It will gauge the extent to which the superimposed flows from the proposed development will affect the efficiency of future network flows, particularly their impact on both link flows generally and on the operational efficiency of both the development entrance and the 2 No. signalised junctions in its immediate vicinity.

The proposed development will consist of 208 no. dwelling units. It is proposed to provide 100 No. car parking spaces, equating 0.48 No. car parking spaces per apartment, and 484 No. cycle parking spaces.

The TRICS Database has been utilised to derive trip rates for the proposed development. TRICS is the system of trip generation analysis for the UK and Ireland. The database includes over 8,000 transport surveys. In addition to inbound and outbound traffic and multi-modal counts (covering a wide range of separate count and mode types), the TRICS site records include comprehensive descriptive detail on a site's local environment and surroundings, information on the size, composition and functions of a site, and details of on-site and off-site parking facilities. Large annual regional data collection programmes across all parts of the UK and Ireland ensure that new transport surveys are continuously added to the database.

The derived peak hour trip rates are as detailed within Tables 4-1 and 4-2:

		Weekday AM		Weekday PM	
		IN	OUT	IN	OUT
Apartments	Trips/Unit	0.059	0.196	0.165	0.084

Table 4-1: Peak hour trip rates for apartments within development site

On the basis of 208 No. units, the above typical TRICS trip rates give rise to the following weekday morning peak, evening peak and all-day trip rates for the proposed apartment development:

		Weekday AM		Weekday PM	
		IN	OUT	IN	OUT
Apartments	Units (No.)	12	40	34	17
		0.87 No. Vehicles/minute 2-way flow		0.83 No. Vehicles/minute 2-way flow	

Table 4-2: Peak hour flows generated by proposed development site

Appendix 2 contains details of the TRICS Database output utilised to derive the above trip rates

4.2 DISTRIBUTION OF GENERATED FLOWS FROM PROPOSED DEVELOPMENT

In relation to the distribution of the flows into and out of the proposed development entrance, flow patterns within the general network as detailed within Diagrams 7 and 8 (assumed 2021 existing flows) within Appendix 1:

Morning peak hour

Arrivals

50% of generated flows will arrive from the Kimmage Crossroads signalised intersection, with 50% arriving from the Kimmage Road West / Whitehall Road West Road signalised junction.

For the traffic arriving from the Kimmage Cross Roads, 50% will do so via Sundrive Road and 50% via Terenure Road West.

For the traffic arriving from the Kimmage Road West / Whitehall Road West Road junction Kimmage Cross Roads, 50% will do so via Kimmage Road West and 50% via Whitehall Road.

Departures

50% of generated flows will depart to the Kimmage Crossroads signalised intersection, with 50% departing to the Kimmage Road West / Whitehall Road West Road signalised junction.

For the traffic departing towards the Kimmage Cross Roads, 40% will do so to Sundrive Road, 40% to Terenure Road West and 20% to Fortfield Road.

For the traffic departing towards the Kimmage Road West / Whitehall Road West Road junction Kimmage Cross Roads, 67% will do so to Kimmage Road West and 33% to Whitehall Road.

Evening Peak Hour

Arrivals

50% of generated flows will arrive from the Kimmage Crossroads signalised intersection, with 50% arriving from the Kimmage Road West / Whitehall Road West Road signalised junction.

For the traffic arriving from the Kimmage Cross Roads, 45% will do so via Sundrive Road, 45% via Terenure Road West and 10% via Fortfield Road.

For the traffic arriving from the Kimmage Road West / Whitehall Road West Road junction Kimmage Cross Roads, 50% will do so via Kimmage Road West and 50% via Whitehall Road.

Departures

50% of generated flows will depart to the Kimmage Crossroads signalised intersection, with 50% departing to the Kimmage Road West / Whitehall Road West Road signalised junction.

For the traffic departing towards the Kimmage Cross Roads, 50% will do so to Sundrive Road, 25% to Terenure Road West and 25% to Fortfield Road.

For the traffic departing towards the Kimmage Road West / Whitehall Road West Road junction Kimmage Cross Roads, 70% will do so to Kimmage Road West and 30% to Whitehall Road.

These generated flows and their distribution are detailed for the morning and evening peak hours in Diagrams 9 and 10 within Appendix 1.

4.3 TRIP ASSIGNMENT

As stated above, Diagrams 7 and 8 within Appendix 1 represent the existing 2021 AM and PM network flows for the purposes of this analysis.

The flows at sites 2 and 3 are based on pre-Covid 2018 / 2019 surveys, while the flows at site 1 (the development access) is based on a 2021 survey factored up based on the Kimmage Road West flows detailed within the pre-Covid surveys of Sites 1 and 2.

Diagrams 9 and 10 contain the estimated AM and PM flows generated by the proposed development.

The following scenarios are analysed within this report:

- Analysis of existing flows (2021) – all junctions
- Year of opening (2024) with no development in place - (Sites 2 and 3 only)
- Year of opening (2024) with proposed development in place – all junctions
- Year of opening plus 5 (2029) with no development in place - (Sites 2 and 3 only)
- Year of opening plus 5 (2029) with proposed development in place – all junctions
- Year of opening plus 15 (2039) with no development in place - (Sites 2 and 3 only)
- Year of opening plus 15 (2039) with proposed development in place – all junctions

The 2014 Traffic and Transport Assessment Guidelines published by TII requires that the relevant junctions be analysed for the existing situation, the year of opening (2024) with the proposed development in place, the design year 1 (year of opening plus 5) with the proposed development in place, and the design year 2 (year of opening plus 15) with the proposed development in place.

An annual growth rate of 1.6% has been assumed for the period 2019 to 2030, decreasing to 0.5% for 2031 to 2037, based on the medium growth estimate for Dublin City Council published by TII in 2019 (PE-PAG-02017-2).

The 2024 Do-Nothing ('without development') scenario is derived by factoring the survey results in Diagrams 7 and 8 in Appendix 1 up by 4.9% ($(1.016)^3 - 1 = 0.049$).

The 2024 Do-Something ('with proposed development') scenario is derived by factoring the survey results in Diagrams 7 and 8 in Appendix 1 up by 4.9% ($(1.016)^3 - 1 = 0.049$) plus the development flows for the subject site as detailed within Diagrams 9 and 10.

The 2029 Do-Nothing ('without development') scenario is derived by factoring the survey results in Diagrams 7 and 8 in Appendix 1 up by 13.5% ($(1.016)^8 - 1 = 0.135$).

The 2029 Do-Something ('with proposed development') scenario is derived by factoring the survey results in Diagrams 7 and 8 in Appendix 1 up by 13.5% ($(1.016)^8 - 1 = 0.135$) plus the development flows for the subject site as detailed within Diagrams 9 and 10.

The 2039 Do-Nothing ('without development') scenario is derived by factoring the survey results in Diagrams 7 and 8 in Appendix 1 up by 20.7% ($((1.016)^9 - 1) / ((1.005)^9 - 1) = 0.207$).

The 2039 Do-Something ('with proposed development') scenario is derived by factoring the survey results in Diagrams 7 and 8 in Appendix 1 up by 20.7% $((1.016)^9 - 1)((1.005)^9 - 1) = 0.207$) plus the development flows for the subject site as detailed within Diagrams 9 and 10.

In reality, it could reasonably be assumed going forward that traffic volume increases during the morning and evening peaks will be marginal over the coming years given the targeted modal split reductions planned for private car use within the Dublin City Transport Plan.

5. PERCENTAGE INCREASES AT 3 NO. CRITICAL JUNCTIONS ARISING FROM GENERATED FLOWS

This analysis of the Kimmage Road West / Whitehall Road signalised T-junction, the Terenure Road West / Fortfield Road / Kimmage Road West / Sundrive Road signalised crossroads Table 5-1 indicates the total flows incident on all 3 No. junctions during the morning and evening peaks resulting from surveyed network flows, generated flows from the proposed permitted development:

		NETWORK TRAFFIC (2024)		GENERATED TRAFFIC FROM SUBJECT SITE (2024)	
		AM	PM	AM	PM
SITE No. 1	Development Access T-Junction	1371	1302	52 (3.7%)	52 (3.8%)
SITE No. 2	Kimmage Rd West / Whitehall Rd T-junction	1411	1319	26 (1.81%)	26 (1.93%)
SITE No. 3	Terenure Rd West / Fortfield Rd / Kimmage Rd West / Sundrive Rd crossroads	2507	2515	26 (1.03%)	25 (1.02%)

Table 5-1: Impact of generated flows on critical nearby junctions

The 2014 Traffic and Transport Assessment Guidelines requires the impact of the additional traffic volumes on the critical nearby junctions to be assessed in detail if:

- Development flows exceed 10% of existing turning movements at the two relevant junctions;
- Development flows exceed 5% of turning movements if the location has the potential to become congested.

None of the three junctions are above the 5% or 10% thresholds.

Nonetheless, in the interests of robustness, all three critical junctions will be comprehensively analysed within the traffic assessment presented within this report, despite the very low incident flows from the proposed development on all three.

6. TRAFFIC ANALYSIS OF 3 NO. CRITICAL JUNCTIONS

6.1 INTRODUCTION

Section 6.2 below will analyse the performance of the Terenure Road West / Fortfield Road / Kimmage Road West / Sundrive Road signalised crossroads for the 7 No. scenarios outlined above within section 5 for this intersection.

Section 6.3 below will analyse the performance of the Kimmage Road West / Whitehall Road West signalised T-junction for the 7 No. scenarios outlined above within section 5 for this intersection.

Section 6.4 below will analyse the performance of the Development access priority T-junction for the 3 No. scenarios outlined above within section 5 for this intersection.

The OSCADY programme from the Junctions 10 suite will be used to analyse the Terenure Road West / Fortfield Road / Kimmage Road West / Sundrive Road and the Kimmage Road West / Whitehall Road West Naas Road signalised intersection for the 7 No. scenarios under consideration.

The PICADY programme from the Junctions 10 suite will be used to analyse the Development Access priority intersection for the 3 No. scenarios under consideration.

6.2 IMPACT OF DEVELOPMENT FLOWS ON TERENURE ROAD WEST / FORTFIELD ROAD / KIMMAGE ROAD WEST / SUNDRIVE ROAD SIGNALISED JUNCTION

Table 6-1 immediately below summarises the critical flows, capacities, RFC's and queue lengths for the morning and evening peaks for each of the 7 No. scenarios for the Terenure Road West / Fortfield Road / Kimmage Road West / Sundrive Road signalised junction:

Table 6-1: Critical flows, capacities, ratios of flow to capacity and queue lengths for each 15-minute interval during the morning and evening peak hours for each scenario

Scenario No.1	EXISTING AM PEAK FLOWS (2021)				EXISTING PM PEAK FLOWS (2021)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Terenure Road West	88	204.66	0.43	8	77	145.64	0.53	9
Fortfield Road	158	158.61	1.00	19	130	216.36	0.60	8
Kimmage Road West	162	175.51	0.92	18	142	130.57	1.09	31
Sundrive Road	128	144.03	0.89	17	201	210.22	0.96	22
Scenario No.2	2024 AM PEAK FLOWS (Do-Nothing)				2024 PM PEAK FLOWS (Do-Nothing)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Terenure Road West	92	211.23	0.44	10	80	145.78	0.55	10
Fortfield Road	166	164.19	1.01	23	136	216.36	0.63	9
Kimmage Road West	170	181.02	0.94	22	148	130.56	1.13	36
Sundrive Road	135	158.05	0.85	18	211	210.22	1.00	29
Scenario No.3	2024 AM PEAK FLOWS (with development)				2024 PM PEAK FLOWS (with development)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Terenure Road West	93	215.17	0.43	10	82	145.87	0.56	10
Fortfield Road	166	161.12	1.03	24	136	213.29	0.64	9
Kimmage Road West	174	184.25	0.94	22	150	130.55	1.15	38
Sundrive Road	135	154.98	0.87	18	211	210.22	1.00	29
Scenario No.4	2029 AM PEAK FLOWS (Do-Nothing)				2029 PM PEAK FLOWS (Do-Nothing)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Terenure Road West	100	211.10	0.47	11	87	145.59	0.60	10
Fortfield Road	180	164.19	1.10	34	147	216.36	0.68	9
Kimmage Road West	185	181.03	1.02	32	161	130.62	1.23	50
Sundrive Road	145	158.05	0.92	21	229	210.22	1.09	51
Scenario No.5	2029 AM PEAK FLOWS (with development)				2029 PM PEAK FLOWS (with development)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Terenure Road West	100	214.97	0.47	11	89	145.68	0.61	11
Fortfield Road	180	161.12	1.12	39	147	213.29	0.69	10
Kimmage Road West	188	184.35	1.02	32	163	130.62	1.25	53
Sundrive Road	145	154.98	0.94	22	229	210.22	1.09	52
Scenario No.6	2039 AM PEAK FLOWS (Do-Nothing)				2039 AM PEAK FLOWS (Do-Nothing)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)

Terenure Road West	106	210.87	0.50	12	92	145.81	0.63	11
Fortfield Road	191	161.12	1.19	57	157	216.36	0.73	10
Kimmage Road West	196	180.89	1.08	47	171	130.59	1.31	67
Sundrive Road	154	158.05	0.97	25	243	210.22	1.16	89
Scenario No.7	2039 AM PEAK FLOWS (with development)				2039 PM PEAK FLOWS (with development)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Terenure Road West	107	214.80	0.50	12	94	145.88	0.64	11
Fortfield Road	191	161.12	1.19	57	157	213.29	0.74	10
Kimmage Road West	200	184.36	1.08	49	173	130.59	1.32	72
Sundrive Road	154	154.98	0.99	26	243	210.22	1.16	89

Table 6-2: Critical flows, capacities, ratios of flow to capacity and queue lengths for each 15-minute interval during the morning and evening peak hours for each scenario

The above analysis indicates that the Kimmage Crossroads signalised intersection is predicted to operate in 2021 within or at capacity on all approaches except the Kimmage Road West approach during the evening peak which is over capacity by 9%. Queuing is an average of up to 19 No. vehicles in the morning peak hour, increasing to 31 No. vehicles during the evening peak.

In 2024, with network flow increases only allowed for, the intersection will continue to operate over capacity on some approaches, with maximum degree of saturation still at 113%. Average queuing is at a maximum of 36 No. vehicles. With the proposed development in place, the maximum degree of saturation increases marginally to 115%, with average queuing increasing very marginally to a maximum of 38 No. vehicles.

In 2029, with network flow increases only allowed for, the intersection will continue to operate over capacity on some approaches, with maximum degree of saturation still at 123%. Average queuing is at a maximum of 50 No. vehicles. With the proposed development in place, the maximum degree of saturation increases marginally to 125%, with average queuing increasing very marginally to a maximum of 53 No. vehicles.

In 2039, with network flow increases only allowed for, the intersection will continue to operate over capacity on some approaches, with maximum degree of saturation still at 131%. Average queuing is at a maximum of 67 No. vehicles. With the proposed development in place, the maximum degree of saturation increases marginally to 132%, with average queuing increasing very marginally to a maximum of 72 No. vehicles.

With the conservative assumptions on traffic growth in place, the junction is, predicted, to be over capacity on its day of opening during both peaks, five and fifteen years thereafter without the proposed development in place. However, the proposed development is predicted to have an extremely marginal impact on the efficiency of the junction.

6.3 IMPACT OF DEVELOPMENT FLOWS ON KIMMAGE ROAD WEST / WHITEHALL ROAD SIGNALISED JUNCTION

Table 6-2 immediately below summarises the critical flows, capacities, RFC's and queue lengths for the morning and evening peaks for each of the 7 No. scenarios for the Kimmage Road West / Whitehall Road signalised junction:

Table 6-3: Critical flows, capacities, ratios of flow to capacity and queue lengths for each 15-minute interval during the morning and evening peak hours for each scenario

Scenario No.1	EXISTING AM PEAK FLOWS (2021)				EXISTING PM PEAK FLOWS (2021)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Kimmage Rd W westbound	167	234.54	0.71	9	153	254.36	0.60	7
Whitehall Road	87	110.50	0.79	8	72	86.95	0.83	7
Kimmage Rd W eastbound	110	241.99	0.45	6	126	267.12	0.47	6
Scenario No.2	2024 AM PEAK FLOWS (Do-Nothing)				2024 PM PEAK FLOWS (Do-Nothing)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Kimmage Rd W westbound	174	234.30	0.74	10	161	254.50	0.63	7
Whitehall Road	91	110.20	0.83	9	75	86.95	0.86	8
Kimmage Rd W eastbound	115	241.85	0.48	6	133	266.97	0.50	6
Scenario No.3	2024 AM PEAK FLOWS (with development)				2024 PM PEAK FLOWS (with development)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Kimmage Rd W westbound	180	236.69	0.76	10	162	251.41	0.64	8
Whitehall Road	91	111.17	0.82	9	76	85.86	0.89	9
Kimmage Rd W eastbound	116	244.38	0.47	6	136	263.69	0.52	6
Scenario No.4	2029 AM PEAK FLOWS (Do-Nothing)				2029 PM PEAK FLOWS (Do-Nothing)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Kimmage Rd W westbound	189	236.47	0.80	11	174	253.16	0.69	8
Whitehall Road	99	117.95	0.84	10	81	87.78	0.92	10
Kimmage Rd W eastbound	124	244.11	0.51	7	143	265.71	0.54	7
Scenario No.5	2029 AM PEAK FLOWS (with development)				2029 PM PEAK FLOWS (with development)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Kimmage Rd W westbound	194	236.56	0.82	12	176	253.11	0.70	9
Whitehall Road	99	117.95	0.84	10	82	92.79	0.88	9
Kimmage Rd W eastbound	125	244.13	0.51	7	146	265.76	0.55	7

Scenario No.6					2039 AM PEAK FLOWS (Do-Nothing)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Kimmage Rd W westbound	201	236.58	0.85	13	184	254.83	0.72	9
Whitehall Road	104	117.95	0.88	11	87	94.39	0.92	11
Kimmage Rd W eastbound	133	244.05	0.54	7	152	267.35	0.57	7
Scenario No.7					2039 PM PEAK FLOWS (with development)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Kimmage Rd W westbound	206	236.50	0.87	14	187	257.13	0.73	14
Whitehall Road	105	117.95	0.89	11	88	93.31	0.94	11
Kimmage Rd W eastbound	133	244.05	0.54	7	155	269.78	0.57	7

The above analysis indicates that the Kimmage Road West / Whitehill Road signalised intersection operates within capacity in 2021, with an overall maximum degree of saturation of 79% and 83% in the morning and evening peak hours respectively. Queuing is an average of up to 9 No. vehicles in the morning peak hour, decreasing to 7 No. vehicles during the evening peak.

In 2024, with network flow increases only allowed for, the Kimmage Road West / Whitehill Road signalised intersection will continue to operate within capacity on all approaches, with an overall maximum degree of saturation of 83% and 86% in the morning and evening peak hours respectively. Queuing is an average of up to 10 No. vehicles in the morning peak hour, decreasing to 8 No. vehicles during the evening peak. With the proposed development in place, the maximum degree of saturation will increase slightly to 89%, with average queuing remaining unchanged.

In 2029, with network flow increases only allowed for, the Kimmage Road West / Whitehill Road signalised intersection will continue to operate within capacity on all approaches, with an overall maximum degree of saturation of 84% and 92% in the morning and evening peak hours respectively. Queuing is an average of up to 11 No. vehicles in the morning peak hour, decreasing to 10 No. vehicles during the evening peak. With the proposed development in place, the maximum degree of saturation does not increase above its 'without development' levels, with average queuing increasing to a maximum of 12 No. vehicles.

In 2039, with network flow increases only allowed for, the Kimmage Road West / Whitehill Road signalised intersection will continue to operate within capacity on all approaches, with an overall maximum degree of saturation of 88% and 92% in the morning and evening peak hours respectively. Queuing is an average of up to 13 No. vehicles in the morning peak hour, decreasing to 11 No. vehicles during the evening peak. With the proposed development in place, the maximum degree of saturation will increase slightly to 94%, with average queuing increasing marginally to a maximum of 14 No. vehicles during both peaks.

In conclusion, the junction is presently within capacity, with moderate queuing at peak times. The proposed development will add imperceptibly to the incident saturation levels at all approaches levels.

If significant network traffic growth takes place in the coming years, congestion levels will increase significantly as detailed within the above analysis. However, if the continuing decreases in the modal splits for private car usage during the morning and evening peaks, as detailed within the output from Dublin City Council's Annual Canal Cordon Counts, transpire, the level of growth in network traffic within the Metropolitan Area assumed within this analysis may well not materialise.

6.4 IMPACT OF DEVELOPMENT FLOWS ON DEVELOPMENT ACCESS PRIORITY JUNCTION

Table 6-3 immediately below summarises the critical flows, capacities, RFC's and queue lengths for the morning and evening peaks for each of the 3 No. scenarios for the Development Access / Kimmage Road West priority junction:

Table 6-4: Critical flows, capacities, ratios of flow to capacity and queue lengths for each 15-minute interval during the morning and evening peak hours for each scenario

Scenario No.1	2024 AM PEAK FLOWS (with development)				2024 PM PEAK FLOWS (with development)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Development access exit left/right (B-AC)	21	81.34	0.26	1	19	88.85	0.21	1
Kimmage Rd W westbound enter right-turn (C-B)	6	107.28	0.06	1	14	111.95	0.13	1
Scenario No.2	2029 AM PEAK FLOWS (with development)				2029 PM PEAK FLOWS (with development)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Development access exit left/right (B-AC)	21	75.46	0.28	1	21	83.89	0.25	1
Kimmage Rd W westbound enter right-turn (C-B)	6	104.01	0.06	1	15	108.91	0.14	1
Scenario No.3	2039 AM PEAK FLOWS (with development)				2039 PM PEAK FLOWS (with development)			
	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)	Flow (PCU/TS)	Cap. (PCU/TS)	RFC (-)	Avg. queue (PCU)
Development access exit left/right (B-AC)	22	71.40	0.31	1	21	80.15	0.26	1
Kimmage Rd W westbound enter right-turn (C-B)	6	100.97	0.06	1	15	106.11	0.14	1

The above analysis indicates that the Development Access / Kimmage Road West priority junction is predicted to operate within capacity at all times during both peaks on the projected day of opening of the proposed development in 2024. A minimum of 74% spare capacity exists on all opposed movement over all peak times. Queuing will be at very low levels for turning movements at the T-junction during the morning and evening peaks, never exceeding 1 No. vehicle.

This situation does not change in 2029 and 2039, with 90% spare capacity remaining at all times with queuing less than 1 No. vehicle

The proposed development entrance will thus continue to result in no interruption to the vehicular flow along Kimmage Road West during peak times in 2039, 15 years after the day of opening, though brief interruptions in flow along Kimmage Road West during peak times may temporarily impact on the efficiency of cars exiting the development access.

7. SUMMARY COMMENTS ON TRAFFIC IMPACT OF PROPOSED DEVELOPMENT

7.1 SUMMARY OF THE TRAFFIC ANALYSIS

This document contains a Traffic and Transport Assessment for a residential development at Carlisle Lands, consisting of 208 No. units.

The proposed development will provide for 100 no. car parking spaces and 484 bicycle spaces.

The function of this TTA is to quantify the existing transport environment in terms of the vehicular flows incident on it and to identify and assess the level of transport impact generated by the vehicular trips generated by the proposed residential development.

This TTA has carried out a range of assessments for the existing situation, within the year of opening in 2024, and within the 2029 (year of opening plus 5) and 2039 (year of opening plus 15) design years.

7.2 CONCLUSIONS FROM THE TRAFFIC ANALYSIS

Based on the data and evaluations within this TTA, the following conclusions can be made:

1. While there is limited cycle accessibility at present close to the site, future proposals as stated within the GDA Cycle Network Plan will improve accessibility levels.
2. The site is well served by public transport, with regular bus services and located very close to the location of the proposed development.
3. Future proposals as stated within the Bus Connects Report will further improve public transport connectivity to the city centre and north / south suburbs.
4. The network analysis within the TTA indicates that, for the 2 No. existing critical junctions in the vicinity of the proposed development, 1 No. presently works within capacity, and 1 No. operating at / over-capacity, with the proposed development having a very limited impact on existing congestion levels.
5. The report demonstrates that the development access junction at present works within capacity and the detailed analysis within this report demonstrates that it will continue to do so with the proposed development in place, with moderate levels of queuing and delays.

7.3 MITIGATION

In the context of the overall volume of flows generated by all proposed development in the area, the importance of implementing a coherent parking and mobility policy for the area becomes of significant importance. Such policies will minimise the impact of private car

traffic and will be in keeping with the sustainable transport policy presently advocated for the Greater Dublin Area. Please also refer to the Residential Travel Plan that accompanies this LRD application.

A significant instrument in mitigating the traffic impacts of the proposed development consists of the Residential Travel Plan / Mobility Management (MMP) that is contained within this submission and compiled with the aim of guiding the delivery and management of coordinated initiatives by the applicant. The MMP ultimately seeks to encourage sustainable travel practices for all journeys to and from the proposed development.



Appendix 1

Flow Diagrams

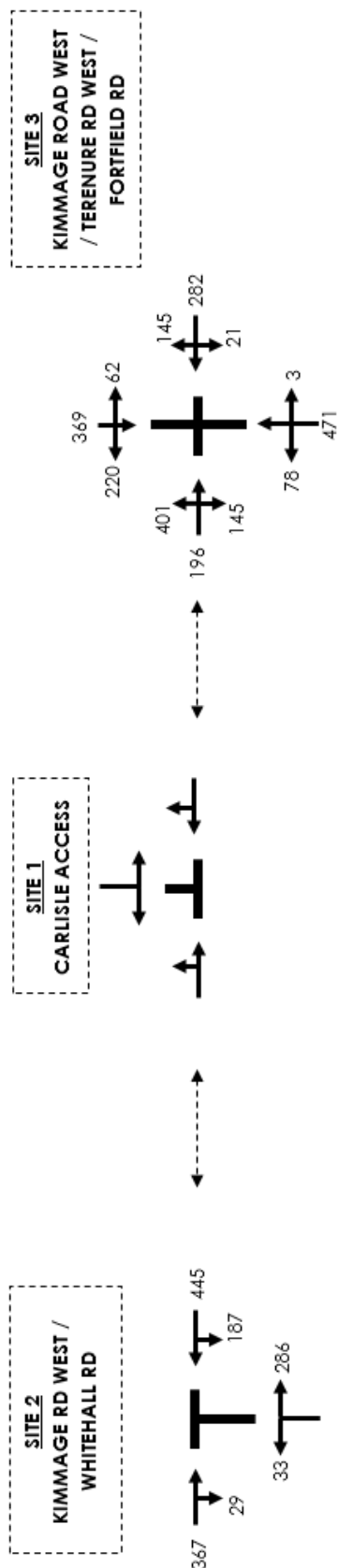


DIAGRAM 1 – AM EXISTING (SITES 2 AND 3, 2018/2019)

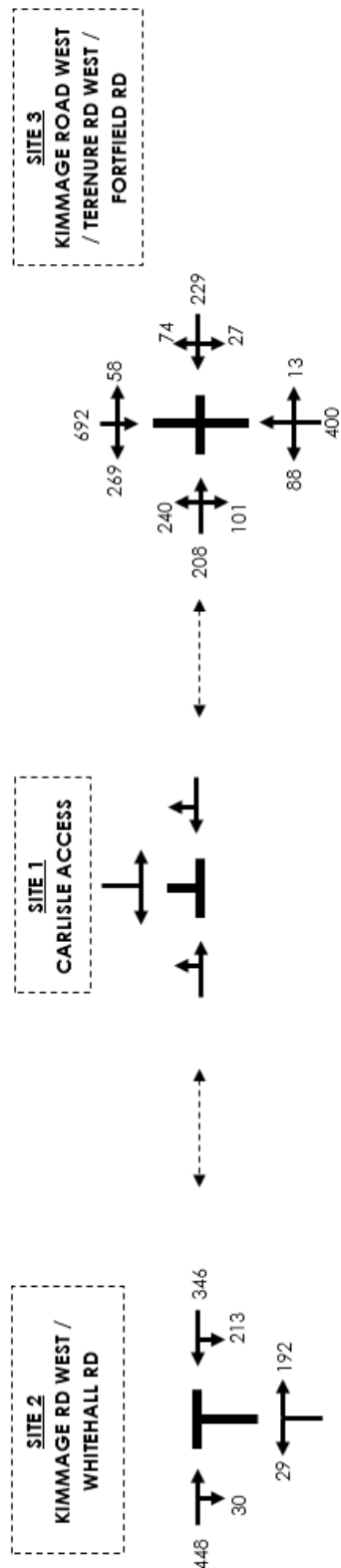


DIAGRAM 2 – PM EXISTING (SITES 2 AND 3, 2018/2019)

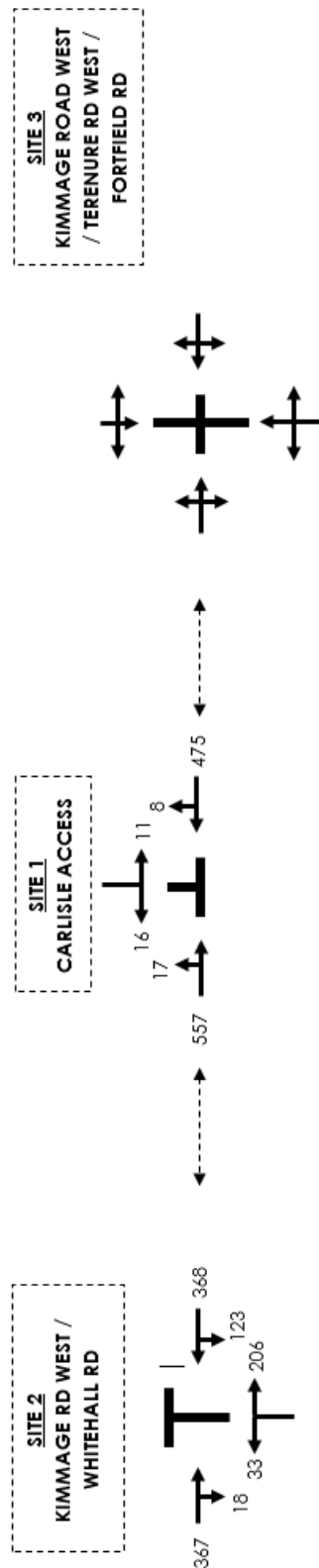


DIAGRAM 3 – AM EXISTING (SITES 1 AND 2, 2021)

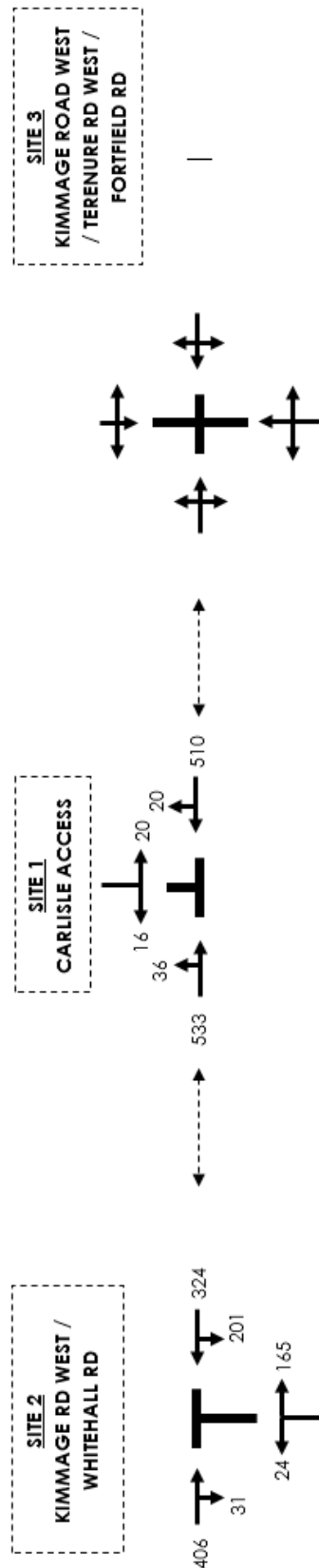


DIAGRAM 4 – PM EXISTING (SITES 1 AND 2, 2021)

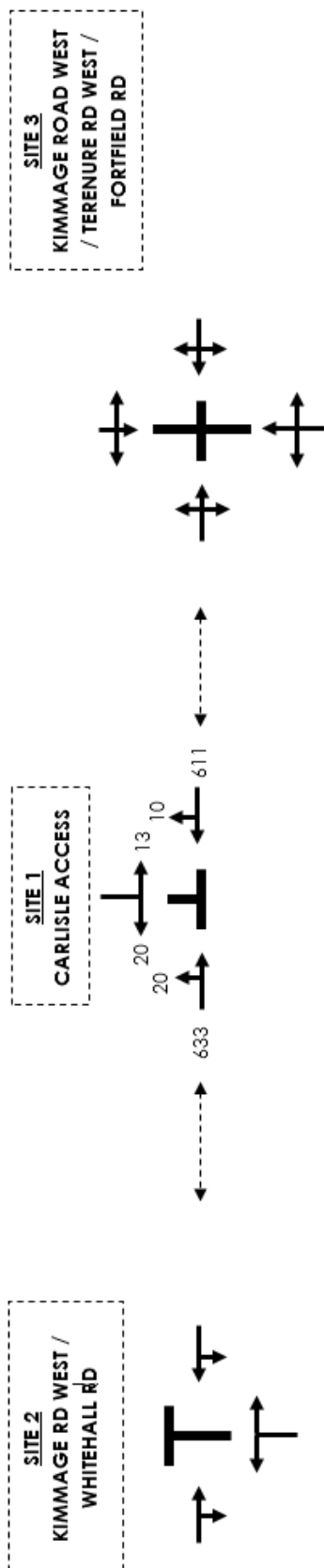


DIAGRAM 5 – AM EXISTING (SITE1, CORRECTED)

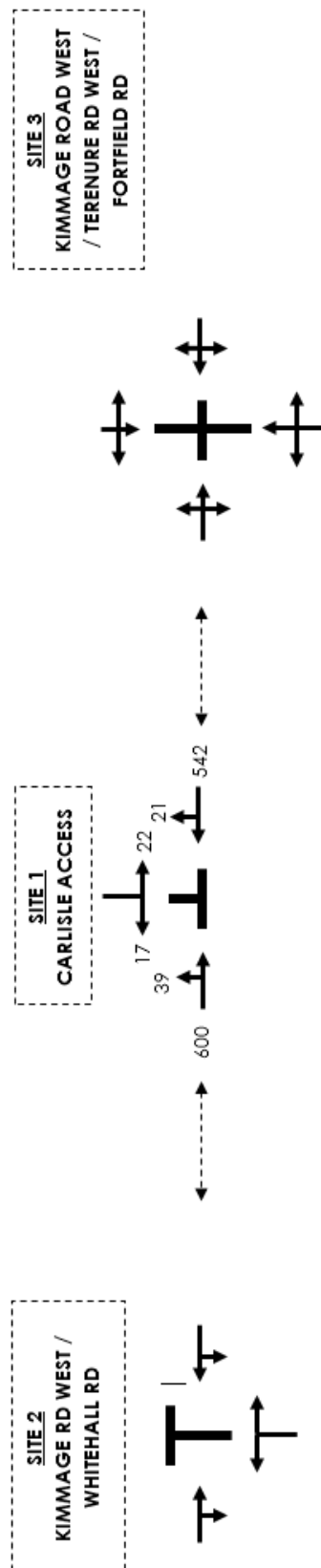


DIAGRAM 6 – PM EXISTING (SITE 1 CORRECTED)

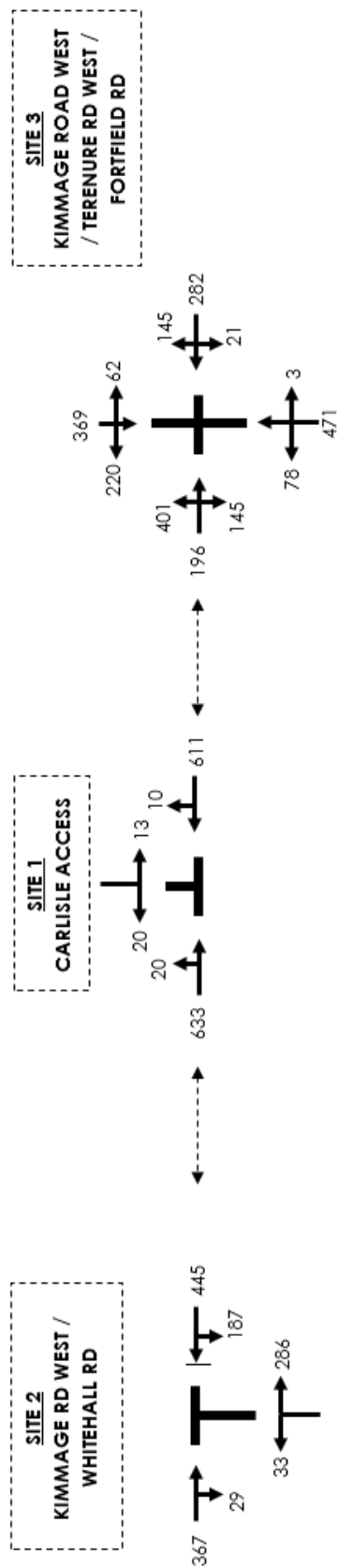


DIAGRAM 7 – AM PEAK - ASSUMED 2021 EXISTING FLOWS FOR 3 No. SURVEYED SITES

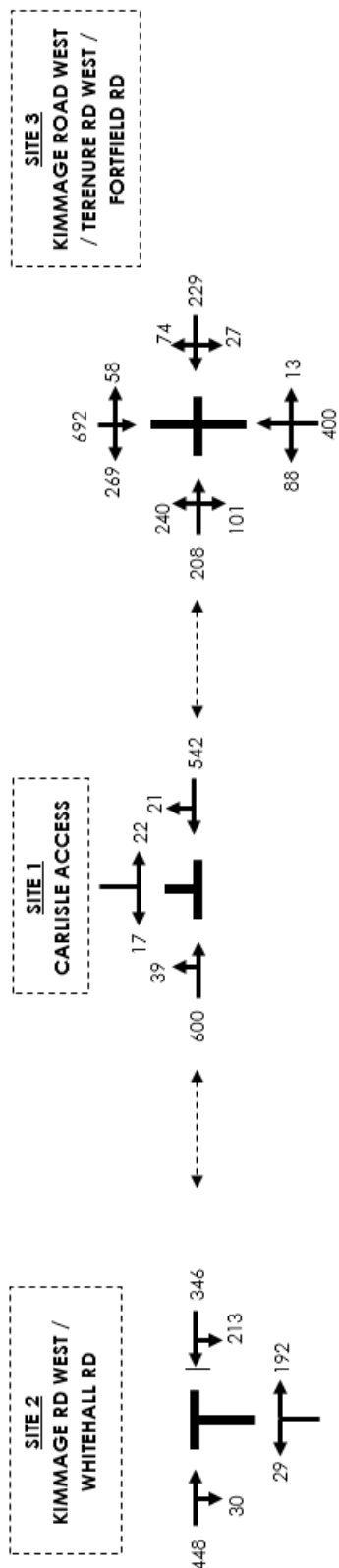


DIAGRAM 8 – PM PEAK - ASSUMED 2021 EXISTING FLOWS FOR 3 No. SURVEYED SITES

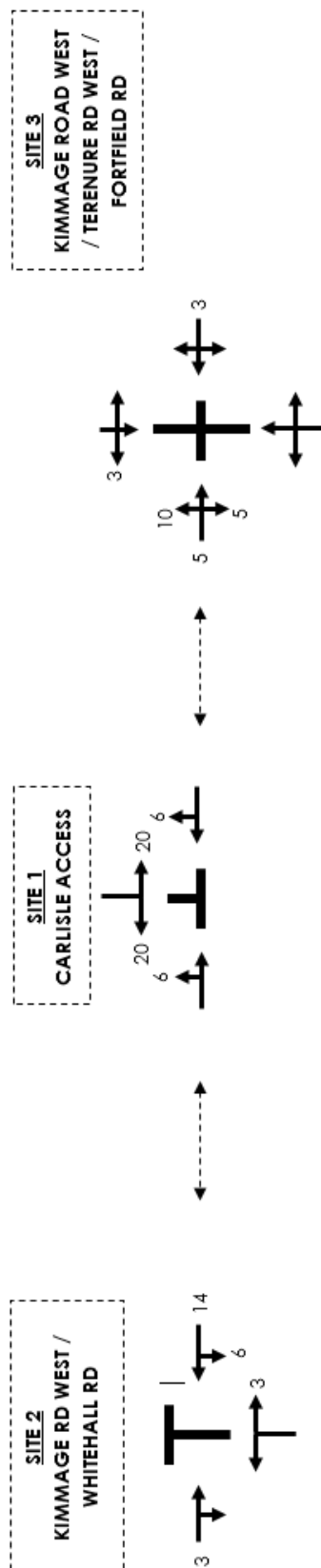


DIAGRAM 9 – AM PEAK – GENERATED FLOWS

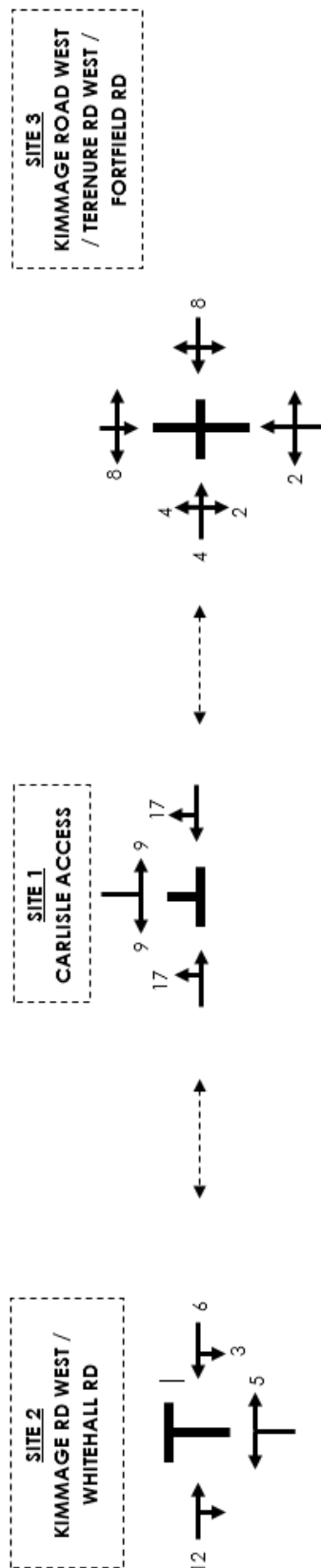


DIAGRAM 10 – PM PEAK – GENERATED FLOWS



Appendix 2

TRICS Output

TRICS 7.8.2 210621 B20.20 Database right of TRICS Consortium Limited, 2021. All rights reserved	Sunday 29/08/21
OFF-LINE VERSION Martin Rogers Consulting Limited 7 Butterfield Avenue Rathfarnham, Dublin 14	Page 1 Licence No: 306901

Calculation Reference: AUDIT-306901-210829-0820

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : C - FLATS PRIVATELY OWNED
TOTAL VEHICLES

Selected regions and areas:

02 SOUTH EAST	
BD BEDFORDSHIRE	3 days
ES EAST SUSSEX	1 days
EX ESSEX	1 days
HC HAMPSHIRE	1 days
HF HERTFORDSHIRE	1 days
04 EAST ANGLIA	
CA CAMBRIDGESHIRE	1 days
NF NORFOLK	2 days
SF SUFFOLK	2 days
05 EAST MIDLANDS	
NT NOTTINGHAMSHIRE	2 days
06 WEST MIDLANDS	
WM WEST MIDLANDS	1 days
07 YORKSHIRE & NORTH LINCOLNSHIRE	
SY SOUTH YORKSHIRE	1 days
08 NORTH WEST	
MS MERSEYSIDE	1 days
11 SCOTLAND	
SA SOUTH Ayrshire	1 days
SR STIRLING	1 days
13 MUNSTER	
WA WATERFORD	1 days
14 LEINSTER	
LU LOUTH	1 days
15 GREATER DUBLIN	
DL DUBLIN	2 days

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

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Primary Filtering 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: No of Dwellings
 Actual Range: 51 to 332 (units:)
 Range Selected by User: 50 to 372 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 23/10/20

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:

Monday	2 days
Tuesday	12 days
Wednesday	3 days
Thursday	4 days
Friday	2 days

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

Selected survey types:

Manual count	23 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:

Edge of Town Centre	13
Suburban Area (PPS6 Out of Centre)	10

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:

Development Zone	1
Residential Zone	12
Built-Up Zone	5
No Sub Category	5

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.

Secondary Filtering selection:**Use Class:**

C3	23 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 500m Range:

All Surveys Included

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Secondary Filtering selection (Cont.):Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	1 days
10,001 to 15,000	3 days
15,001 to 20,000	2 days
20,001 to 25,000	2 days
25,001 to 50,000	11 days
50,001 to 100,000	2 days

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

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	6 days
75,001 to 100,000	1 days
125,001 to 250,000	6 days
250,001 to 500,000	6 days
500,001 or More	3 days

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

Car ownership within 5 miles:

0.6 to 1.0	11 days
1.1 to 1.5	12 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:

Yes	2 days
No	21 days

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.

PTAL Rating:

No PTAL Present	23 days
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This data displays the number of selected surveys with PTAL Ratings.

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions
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LIST OF SITES relevant to selection parameters

1	BD-03-C-01	BLOCKS OF FLATS	BEDFORDSHIRE
	WING ROAD		
	LEIGHTON BUZZARD		
	LINSLADE		
	Edge of Town Centre		
	Residential Zone		
	Total No of Dwellings:	175	
	Survey date: TUESDAY	15/05/18	Survey Type: MANUAL
2	BD-03-C-02	BLOCKS OF FLATS	BEDFORDSHIRE
	STANBRIDGE ROAD		
	LEIGHTON BUZZARD		
	Edge of Town Centre		
	Residential Zone		
	Total No of Dwellings:	62	
	Survey date: TUESDAY	15/05/18	Survey Type: MANUAL
3	BD-03-C-03	BLOCKS OF FLATS	BEDFORDSHIRE
	COURT DRIVE		
	DUNSTABLE		
	Edge of Town Centre		
	No Sub Category		
	Total No of Dwellings:	146	
	Survey date: TUESDAY	15/05/18	Survey Type: MANUAL
4	CA-03-C-03	BLOCKS OF FLATS	CAMBRIDGESHIRE
	CROMWELL ROAD		
	CAMBRIDGE		
	Suburban Area (PPS6 Out of Centre)		
	No Sub Category		
	Total No of Dwellings:	82	
	Survey date: MONDAY	18/09/17	Survey Type: MANUAL
5	DL-03-C-14	BLOCKS OF FLATS	DUBLIN
	BALLINTEER ROAD		
	DUBLIN		
	DUNDRUM		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	140	
	Survey date: TUESDAY	10/09/13	Survey Type: MANUAL
6	DL-03-C-17	BLOCKS OF FLATS	DUBLIN
	FINGLAS ROAD		
	DUBLIN		
	FINGLAS		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	332	
	Survey date: FRIDAY	23/10/20	Survey Type: MANUAL
7	ES-03-C-01	BLOCK OF FLATS	EAST SUSSEX
	OLD SHOREHAM RD		
	BRIGHTON		
	HOVE		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	71	
	Survey date: TUESDAY	26/09/17	Survey Type: MANUAL
8	EX-03-C-02	BLOCK OF FLATS	ESSEX
	WESTCLIFF PARADE		
	SOUTHEND-ON-SEA		
	WESTCLIFF		
	Edge of Town Centre		
	Residential Zone		
	Total No of Dwellings:	94	
	Survey date: TUESDAY	22/10/13	Survey Type: MANUAL

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LIST OF SITES relevant to selection parameters (Cont.)

9	HC-03-C-01 CROSS STREET PORTSMOUTH	BLOCKS OF FLATS		HAMPSHIRE
	Edge of Town Centre Built-Up Zone Total No of Dwellings:		90	
	Survey date: TUESDAY		05/06/18	Survey Type: MANUAL
10	HF-03-C-03 SHENLEY ROAD BOREHAMWOOD	BLOCK OF FLATS		HERTFORDSHIRE
	Edge of Town Centre Built-Up Zone Total No of Dwellings:		91	
	Survey date: THURSDAY		14/11/19	Survey Type: MANUAL
11	LU-03-C-01 DONORE ROAD DROGHEDA	BLOCKS OF FLATS		LOUTH
	Edge of Town Centre Residential Zone Total No of Dwellings:		52	
	Survey date: THURSDAY		12/09/13	Survey Type: MANUAL
12	MS-03-C-02 SOUTH FERRY QUAY LIVERPOOL BRUNSWICK DOCK Suburban Area (PPS6 Out of Centre) Development Zone Total No of Dwellings:	BLOCKS OF FLATS		MERSEYSIDE
	Survey date: TUESDAY		184 13/11/18	Survey Type: MANUAL
13	NF-03-C-01 PAGE STAIR LANE KING'S LYNN	BLOCKS OF FLATS		NORFOLK
	Edge of Town Centre Built-Up Zone Total No of Dwellings:		51	
	Survey date: THURSDAY		11/12/14	Survey Type: MANUAL
14	NF-03-C-02 HALL ROAD NORWICH LAKENHAM Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:	MIXED FLATS & HOUSES		NORFOLK
	Survey date: MONDAY		82 18/11/19	Survey Type: MANUAL
15	NT-03-C-01 LAWRENCE WAY NOTTINGHAM	HOUSES (SPLIT INTO FLATS)		NOTTINGHAMSHIRE
	Suburban Area (PPS6 Out of Centre) No Sub Category Total No of Dwellings:		56	
	Survey date: TUESDAY		08/11/16	Survey Type: MANUAL
16	NT-03-C-02 CASTLE MARINA ROAD NOTTINGHAM	HOUSES (SPLIT INTO FLATS)		NOTTINGHAMSHIRE
	Suburban Area (PPS6 Out of Centre) No Sub Category Total No of Dwellings:		135	
	Survey date: WEDNESDAY		09/11/16	Survey Type: MANUAL

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LIST OF SITES relevant to selection parameters (Cont.)

17	SA-03-C-01 RACECOURSE ROAD AVR	BLOCK OF FLATS		SOUTH AYRSHIRE
	Edge of Town Centre Residential Zone Total No of Dwellings:	51		
	Survey date: TUESDAY	16/09/14		Survey Type: MANUAL
18	SF-03-C-01 STATION HILL BURY ST EDMUNDS	BLOCKS OF FLATS		SUFFOLK
	Edge of Town Centre Built-Up Zone Total No of Dwellings:	85		
	Survey date: THURSDAY	18/12/14		Survey Type: MANUAL
19	SF-03-C-04 SAINT MARY'S ROAD IPSWICH	BLOCKS OF FLATS		SUFFOLK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:	56		
	Survey date: WEDNESDAY	16/09/20		Survey Type: MANUAL
20	SR-03-C-01 FORTHESIDE WAY STIRLING	FLATS		STIRLING
	Edge of Town Centre No Sub Category Total No of Dwellings:	80		
	Survey date: WEDNESDAY	18/06/14		Survey Type: MANUAL
21	SY-03-C-01 HEELIS STREET BARNESLEY	BLOCKS OF FLATS		SOUTH YORKSHIRE
	Edge of Town Centre Built-Up Zone Total No of Dwellings:	112		
	Survey date: TUESDAY	08/09/20		Survey Type: MANUAL
22	WA-03-C-01 UPPER YELLOW ROAD WATERFORD	BLOCKS OF FLATS		WATERFORD
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:	51		
	Survey date: TUESDAY	12/05/15		Survey Type: MANUAL
23	WM-03-C-04 GILLQUART WAY COVENTRY PARKSIDE	BLOCKS OF FLATS		WEST MIDLANDS
	Edge of Town Centre Residential Zone Total No of Dwellings:	55		
	Survey date: FRIDAY	11/11/16		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.

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TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

TOTAL VEHICLES

Calculation factor: 1 DWELL

Estimated TRIP rate value per 208 DWELLS shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated 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	23	101	0.039	8.045	23	101	0.142	29.030	23	101	0.181	37.075
08:00 - 09:00	23	101	0.059	12.067	23	101	0.196	40.048	23	101	0.255	52.115
09:00 - 10:00	23	101	0.069	13.991	23	101	0.081	16.614	23	101	0.150	30.605
10:00 - 11:00	23	101	0.059	12.067	23	101	0.072	14.690	23	101	0.131	26.757
11:00 - 12:00	23	101	0.062	12.679	23	101	0.082	16.701	23	101	0.144	29.380
12:00 - 13:00	23	101	0.087	17.751	23	101	0.084	17.226	23	101	0.171	34.977
13:00 - 14:00	23	101	0.074	15.127	23	101	0.086	17.488	23	101	0.160	32.615
14:00 - 15:00	23	101	0.085	17.401	23	101	0.077	15.739	23	101	0.162	33.140
15:00 - 16:00	23	101	0.096	19.587	23	101	0.067	13.728	23	101	0.163	33.315
16:00 - 17:00	23	101	0.119	24.221	23	101	0.072	14.603	23	101	0.191	38.824
17:00 - 18:00	23	101	0.165	33.665	23	101	0.084	17.138	23	101	0.249	50.803
18:00 - 19:00	23	101	0.161	32.790	23	101	0.097	19.849	23	101	0.258	52.639
19:00 - 20:00												
20:00 - 21:00												
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			1.075	219.391			1.140	232.854			2.215	452.245

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.

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Parameter summary

Trip rate parameter range selected: 51 - 332 (units:)
 Survey date range: 01/01/13 - 23/10/20
 Number of weekdays (Monday-Friday): 23
 Number of Saturdays: 0
 Number of Sundays: 0
 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.



Appendix 3

OSCADY Output

KIMMAGE CROSSROADS

Junctions 10												
OSCADY 10 - Signalised Intersection Module												
Version: 10.0.1.1519 © Copyright TRL Software Limited, 2021												
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The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution												

Filename: Kimmage Crossroads exist.j10
Path: C:\Users\martin.rogers\Dropbox\Carlisle 2021\oscadY
Report generation date: 31/08/2021 18:06:42

[2021 exist, AM](#)

[2021 exist, PM](#)

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Network Residual Capacity
2021 exist												
A - Terenure Road West	D1	7.9	19.11	0.43	B	-21 % [B - Fortfield Road - Traffic Stream 1]	D2	8.7	36.01	0.53	D	-60 % [C - Kimmage Road West - Traffic Stream 2]
B - Fortfield Road		19.0	68.23	1.00	E			7.7	19.51	0.60	B	
C - Kimmage Road West		17.4	44.38	0.92	D			30.7	94.13	1.09	F	
D - Sundrive Road		16.1	41.00	0.89	D			22.7	41.95	0.96	D	

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Kimmage Crossroads exist
Location	Kimmage
Site number	
Date	27/03/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	DOS Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2021 exist	AM	DIRECT	08:00	09:00	60	15
D2	2021 exist	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2021 exist, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Kimmage Crossroads	Signalised		44.21	D

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-21	B - Fortfield Road - Traffic Stream 1	44.21	D

Arms

Arms

Arm	Name	Description
A	Terenure Road West	
B	Fortfield Road	
C	Kimmage Road West	
D	Sundrive Road	

OSCADY Traffic Streams

Arm	Traffic Stream	Phase	Signals EEG (s)	Destination arms	Straight move
A - Terenure Road West	2	A	0.00	B, C	C
	3	B	0.00	D	C
B - Fortfield Road	1	D	5.00	A, C, D	
C - Kimmage Road West	2	A	0.00	A, D	A

	3	B	0.00	B	A
D - Sundrive Road	1	E	0.00	A, B	
	2	E	0.00	C	

OSCADY Lanes

Arm	Traffic Stream	Destination arms	Gradient (%)	Width (m)	Turning radius (m)	Nearside lane	Has bay
A - Terenure Road West	2	C, B	0	3.00	5.00	✓	
	3	D	0	3.00	10.00		
B - Fortfield Road	1	C, D, A	0	3.00	5.00	✓	
C - Kimmage Road West	2	A, D	0	3.00	5.00	✓	
	3	B	0	3.00	5.00		
D - Sundrive Road	1	A, B	0	3.00	5.00	✓	
	2	C	0	3.00	10.00		

Signal Timings

Junction 1

Junction	Sequence to use	Cycle time (s)	Maximum cycle time (s)	Start displacement (s)	End displacement (s)
1	1	101	120	1.40	2.90

Optimisation options

Junction	Optimise stage lengths	Optimise cycle time	Optimiser demand source	Optimiser message
1	✓	✓	Average	Timings provide delay minimisation.

Phases

Junction	Phase	Name	Minimum green (s)
1	A		5
	B		5
	C		5
	D		5
	E		5
	F		7

Library Stages

Junction	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, C, B	1		
	2	B	1		
	3	D, F, E	1		
	4	E	1		
	5		5		

Stage Sequences

Junction	Sequence	Name	Stage IDs	Stage ends
1	1		5, 1, 2, 3, 4	7, 50, 57, 99, 100

Intergreen Matrix for Junction 1

	To						
		A	B	C	D	E	F
From	A				5	5	5
	B					5	5
	C					5	5
	D	0					
	E	0	0	0			
	F	0	0	0			

Interstage Matrix for Junction 1

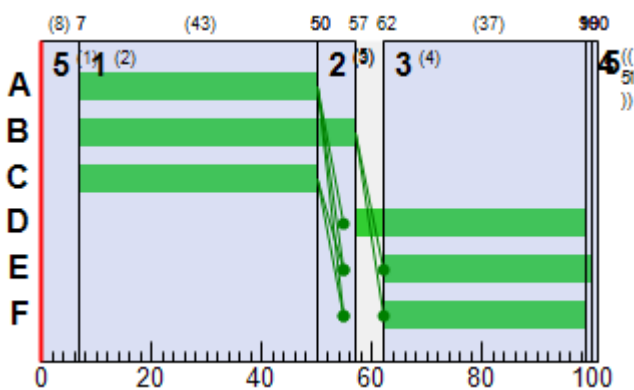
		To				
From		1	2	3	4	5
	1	0	0	5	5	0
	2	0	0	5	5	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

Resultant Stages

Junction	Resultant Stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	5		100	7	8	5	5
	2	1	A,C,B	7	50	43	1	5
	3	2	B	50	57	7	1	5
	4	3	D,F,E	62	99	37	1	7
	5	4	E	99	100	1	1	1

Resultant Phase Green Periods

Junction	Phase	Green period	Start time (s)	End time (s)	Duration (s)
1	A	1	7	50	43
	B	1	7	57	50
	C	1	7	50	43
	D	1	57	99	42
	E	1	62	100	38
	F	1	62	99	37

Phase Timings Diagram for Junction 1**Stage Sequence Diagram for Junction 1****Traffic Demand****Demand Set Details**

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2021 exist	AM	DIRECT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Terenure Road West		✓	100.000
B - Fortfield Road		✓	100.000
C - Kimmage Road West		✓	100.000
D - Sundrive Road		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	7.00	64.00	35.00
		B - Fortfield Road	0.00	0.00	10.00	148.00
		C - Kimmage Road West	41.00	33.00	0.00	90.00
		D - Sundrive Road	11.00	69.00	45.00	0.00

Demand (PCU/TS)

08:15 - 08:30		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	1.00	65.00	27.00
		B - Fortfield Road	0.00	0.00	20.00	123.00
		C - Kimmage Road West	45.00	35.00	0.00	107.00
		D - Sundrive Road	11.00	117.00	57.00	0.00

Demand (PCU/TS)

08:30 - 08:45		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	9.00	79.00	39.00
		B - Fortfield Road	1.00	0.00	22.00	94.00
		C - Kimmage Road West	53.00	42.00	0.00	109.00
		D - Sundrive Road	17.00	89.00	60.00	0.00

Demand (PCU/TS)

08:45 - 09:00		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	4.00	73.00	44.00
		B - Fortfield Road	1.00	0.00	25.00	105.00
		C - Kimmage Road West	57.00	35.00	0.00	95.00
		D - Sundrive Road	23.00	94.00	58.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
	A - Terenure Road West	0	0	0	0
	B - Fortfield Road	0	0	0	0
	C - Kimmage Road West	0	0	0	0
	D - Sundrive Road	0	0	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
08:00-08:15	A - Terenure Road West	106.00	106.00
	B - Fortfield Road	158.00	158.00
	C - Kimmage Road West	164.00	164.00
	D - Sundrive Road	125.00	125.00
08:15-08:30	A - Terenure Road West	93.00	93.00
	B - Fortfield Road	143.00	143.00
	C - Kimmage Road West	187.00	187.00
	D - Sundrive Road	185.00	185.00
08:30-08:45	A - Terenure Road West	127.00	127.00
	B - Fortfield Road	117.00	117.00
	C - Kimmage Road West	204.00	204.00
	D - Sundrive Road	166.00	166.00
08:45-09:00	A - Terenure Road West	121.00	121.00
	B - Fortfield Road	131.00	131.00
	C - Kimmage Road West	187.00	187.00
	D - Sundrive Road	175.00	175.00

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Terenure Road West	0.43	19.11	7.9	B
B - Fortfield Road	1.00	68.23	19.0	E
C - Kimmage Road West	0.92	44.38	17.4	D
D - Sundrive Road	0.89	41.00	16.1	D

Main Results for each time segment

08:00 - 08:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEE G (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	71.00	465.00	44.50	0.00	204.87	0.347	66.43	4.6	20.038	C
	3	35.00	446.74	51.50	0.00	227.79	0.154	33.06	1.9	13.591	B

B - Fortfield Road	1	158.00	368.27	43.50	0.00	158.61	0.996	139.03	19.0	63.885	E
C - Kimmage Road West	2	131.00	396.94	44.50	0.00	174.89	0.749	121.50	9.5	31.994	C
	3	33.00	395.19	51.50	0.00	201.51	0.164	31.17	1.8	13.759	B
D - Sundrive Road	1	80.00	368.27	39.50	0.00	144.03	0.555	74.12	5.9	28.454	C
	2	45.00	446.74	39.50	0.00	174.71	0.258	41.87	3.1	21.888	C

08:15 - 08:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	66.00	476.58	44.50	0.00	209.98	0.314	66.34	4.2	19.526	B
	3	27.00	446.74	51.50	0.00	227.79	0.119	27.45	1.5	13.229	B
B - Fortfield Road	1	143.00	368.27	43.50	0.00	158.61	0.902	146.73	15.2	68.228	E
C - Kimmage Road West	2	152.00	395.27	44.50	0.00	174.16	0.873	148.90	12.6	42.388	D
	3	35.00	395.19	51.50	0.00	201.51	0.174	34.89	1.9	13.872	B
D - Sundrive Road	1	128.00	368.27	39.50	0.00	144.03	0.889	121.78	12.1	49.032	D
	2	57.00	446.74	39.50	0.00	174.71	0.326	56.14	4.0	22.951	C

08:30 - 08:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	88.00	464.50	44.50	0.00	204.66	0.430	86.51	5.7	21.469	C
	3	39.00	446.74	51.50	0.00	227.79	0.171	38.33	2.2	13.779	B
B - Fortfield Road	1	117.00	368.27	43.50	0.00	158.61	0.738	123.45	8.8	36.435	D
C - Kimmage Road West	2	162.00	398.34	44.50	0.00	175.51	0.923	159.52	15.1	52.180	D
	3	42.00	395.19	51.50	0.00	201.51	0.208	41.60	2.3	14.277	B
D - Sundrive Road	1	106.00	368.27	39.50	0.00	144.03	0.736	109.55	8.5	38.060	D
	2	60.00	446.74	39.50	0.00	174.71	0.343	59.78	4.2	23.242	C

08:45 - 09:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	77.00	471.40	44.50	0.00	207.70	0.371	77.75	5.0	20.430	C
	3	44.00	446.74	51.50	0.00	227.79	0.193	43.72	2.4	14.022	B
B - Fortfield Road	1	131.00	368.27	43.50	0.00	158.61	0.826	129.28	10.5	39.623	D
C - Kimmage Road West	2	152.00	403.16	44.50	0.00	177.63	0.856	154.13	13.0	46.566	D
	3	35.00	395.19	51.50	0.00	201.51	0.174	35.40	1.9	13.873	B

D - Sundrive Road	1	117.00	368.27	39.50	0.00	144.03	0.81 2	115.62	9.9	41.98 4	D
	2	58.00	446.74	39.50	0.00	174.71	0.33 2	58.14	4.1	23.05 6	C

2021 exist, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Kimmage Crossroads	Signalised		48.39	D

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-60	C - Kimmage Road West - Traffic Stream 2	48.39	D

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2021 exist	PM	DIRECT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Terenure Road West		✓	100.000
B - Fortfield Road		✓	100.000
C - Kimmage Road West		✓	100.000
D - Sundrive Road		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 -
17:15

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0.00	7.00	65.00	19.00
	B - Fortfield Road	9.00	0.00	16.00	93.00
	C - Kimmage Road West	50.00	15.00	0.00	52.00
	D - Sundrive Road	12.00	167.00	74.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
17:15 - 17:30	From				
	A - Terenure Road West	0.00	7.00	49.00	25.00
	B - Fortfield Road	2.00	0.00	23.00	102.00
	C - Kimmage Road West	39.00	24.00	0.00	55.00
	D - Sundrive Road	19.00	182.00	72.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
17:30 - 17:45	From				
	A - Terenure Road West	0.00	7.00	70.00	15.00
	B - Fortfield Road	1.00	0.00	24.00	100.00
	C - Kimmage Road West	73.00	27.00	0.00	69.00
	D - Sundrive Road	13.00	157.00	61.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
17:45 - 18:00	From				
	A - Terenure Road West	0.00	6.00	45.00	15.00
	B - Fortfield Road	1.00	0.00	24.00	105.00
	C - Kimmage Road West	46.00	35.00	0.00	64.00
	D - Sundrive Road	15.00	187.00	63.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0	0	0	0
	B - Fortfield Road	0	0	0	0
	C - Kimmage Road West	0	0	0	0
	D - Sundrive Road	0	0	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
17:00-17:15	A - Terenure Road West	91.00	91.00
	B - Fortfield Road	118.00	118.00
	C - Kimmage Road West	117.00	117.00
	D - Sundrive Road	253.00	253.00
17:15-17:30	A - Terenure Road West	81.00	81.00
	B - Fortfield Road	127.00	127.00
	C - Kimmage Road West	118.00	118.00
	D - Sundrive Road	273.00	273.00
17:30-17:45	A - Terenure Road West	92.00	92.00
	B - Fortfield Road	125.00	125.00
	C - Kimmage Road West	169.00	169.00

	D - Sundrive Road	231.00	231.00
17:45-18:00	A - Terenure Road West	66.00	66.00
	B - Fortfield Road	130.00	130.00
	C - Kimmage Road West	145.00	145.00
	D - Sundrive Road	265.00	265.00

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Terenure Road West	0.53	36.01	8.7	D
B - Fortfield Road	0.60	19.51	7.7	B
C - Kimmage Road West	1.09	94.13	30.7	F
D - Sundrive Road	0.96	41.95	22.7	D

Main Results for each time segment

17:00 - 17:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	72.00	465.18	37.50	0.00	145.37	0.495	65.11	6.9	37.113	D
	3	19.00	446.74	43.50	0.00	161.94	0.117	17.38	1.6	25.910	C
B - Fortfield Road	1	118.00	368.27	70.50	0.00	216.36	0.545	111.12	6.9	17.955	B
C - Kimmage Road West	2	102.00	415.24	37.50	0.00	129.76	0.786	91.06	10.9	50.624	D
	3	15.00	395.19	43.50	0.00	143.26	0.105	13.72	1.3	25.786	C
D - Sundrive Road	1	179.00	368.27	68.50	0.00	210.22	0.851	166.13	12.9	33.589	C
	2	74.00	446.74	68.50	0.00	255.01	0.290	69.69	4.3	14.107	B

17:15 - 17:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	56.00	461.45	37.50	0.00	144.20	0.388	57.61	5.3	34.686	C
	3	25.00	446.74	43.50	0.00	161.94	0.154	24.48	2.1	26.437	C
B - Fortfield Road	1	127.00	368.27	70.50	0.00	216.36	0.587	126.40	7.5	19.090	B
C - Kimmage Road West	2	94.00	407.26	37.50	0.00	127.27	0.739	95.01	9.9	49.476	D
	3	24.00	395.19	43.50	0.00	143.26	0.168	23.22	2.1	26.717	C
D - Sundrive Road	1	201.00	368.27	68.50	0.00	210.22	0.956	195.39	18.5	50.519	D
	2	72.00	446.74	68.50	0.00	255.01	0.282	72.12	4.2	14.008	B

17:30 - 17:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue	Delay (s)	Signalised level of service
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			n flow (PCU/TS)						(PCU)		
A - Terenure Road West	2	77.00	466.04	37.50	0.00	145.64	0.52 9	74.87	7.4	38.038	D
	3	15.00	446.74	43.50	0.00	161.94	0.09 3	15.86	1.3	25.573	C
B - Fortfield Road	1	125.00	368.27	70.50	0.00	216.36	0.57 8	125.13	7.4	18.878	B
C - Kimmage Road West	2	142.00	417.84	37.50	0.00	130.57	1.08 7	123.60	28.3	100.55 4	F
	3	27.00	395.19	43.50	0.00	143.26	0.18 8	26.74	2.3	27.046	C
D - Sundrive Road	1	170.00	368.27	68.50	0.00	210.22	0.80 9	176.54	11.9	33.993	C
	2	61.00	446.74	68.50	0.00	255.01	0.23 9	61.65	3.5	13.466	B

17:45 - 18:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculate d saturation flow (PCU/TS)	Effective green time (s)	NEE G (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	51.00	462.43	37.50	0.00	144.51	0.35 3	53.62	4.8	33.940	C
	3	15.00	446.74	43.50	0.00	161.94	0.09 3	15.00	1.3	25.572	C
B - Fortfield Road	1	130.00	368.27	70.50	0.00	216.36	0.60 1	129.67	7.7	19.510	B
C - Kimmage Road West	2	110.00	407.60	37.50	0.00	127.38	0.86 4	122.43	15.9	115.18 7	F
	3	35.00	395.19	43.50	0.00	143.26	0.24 4	34.30	3.0	27.967	C
D - Sundrive Road	1	202.00	368.27	68.50	0.00	210.22	0.96 1	195.11	18.8	50.806	D
	2	63.00	446.74	68.50	0.00	255.01	0.24 7	62.88	3.7	13.560	B

Junctions 10												
OSCADY 10 - Signalised Intersection Module												
Version: 10.0.1.1519 © Copyright TRL Software Limited, 2021												
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Filename: Kimmage Crossroads 2024 wod.j10
Path: C:\Users\martin.rogers\Dropbox\Carlisle 2021\oscadY
Report generation date: 31/08/2021 15:25:54

[2024 wod, AM](#)

[2024 wod, PM](#)

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Network Residual Capacity
2024 wod												
A - Terenure Road West	D1	9.6	21.94	0.44	C	-27 % [B - Fortfield Road - Traffic Stream 1]	D2	9.1	36.46	0.55	D	-62 % [C - Kimmage Road West - Traffic Stream 2]
B - Fortfield Road		22.5	80.28	1.01	F			8.1	20.38	0.63	C	
C - Kimmage Road West		21.1	50.70	0.94	D			36.0	133.00	1.13	F	
D - Sundrive Road		17.5	39.54	0.85	D			28.2	50.88	1.00	D	

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Kimmage Crossroads exist
Location	Kimmage
Site number	
Date	27/03/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	DOS Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2024 wod	AM	DIRECT	08:00	09:00	60	15
D2	2024 wod	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024 wod, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Kimmage Crossroads	Signalised		49.10	D

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-27	B - Fortfield Road - Traffic Stream 1	49.10	D

Arms

Arms

Arm	Name	Description
A	Terenure Road West	
B	Fortfield Road	
C	Kimmage Road West	
D	Sundrive Road	

OSCADY Traffic Streams

Arm	Traffic Stream	Phase	Signals EEG (s)	Destination arms	Straight move
A - Terenure Road West	2	A	0.00	B, C	C
	3	B	0.00	D	C
B - Fortfield Road	1	D	5.00	A, C, D	
C - Kimmage Road West	2	A	0.00	A, D	A

	3	B	0.00	B	A
D - Sundrive Road	1	E	0.00	A, B	
	2	E	0.00	C	

OSCADY Lanes

Arm	Traffic Stream	Destination arms	Gradient (%)	Width (m)	Turning radius (m)	Nearside lane	Has bay
A - Terenure Road West	2	C, B	0	3.00	5.00	✓	
	3	D	0	3.00	10.00		
B - Fortfield Road	1	C, D, A	0	3.00	5.00	✓	
C - Kimmage Road West	2	A, D	0	3.00	5.00	✓	
	3	B	0	3.00	5.00		
D - Sundrive Road	1	A, B	0	3.00	5.00	✓	
	2	C	0	3.00	10.00		

Signal Timings

Junction 1

Junction	Sequence to use	Cycle time (s)	Maximum cycle time (s)	Start displacement (s)	End displacement (s)
1	1	120	120	1.40	2.90

Optimisation options

Junction	Optimise stage lengths	Optimise cycle time	Optimiser demand source	Optimiser message
1	✓	✓	Average	Timings provide delay minimisation.

Phases

Junction	Phase	Name	Minimum green (s)
1	A		5
	B		5
	C		5
	D		5
	E		5
	F		7

Library Stages

Junction	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, C, B	1		
	2	B	1		
	3	D, F, E	1		
	4	E	1		
	5		5		

Stage Sequences

Junction	Sequence	Name	Stage IDs	Stage ends
1	1		5, 1, 2, 3, 4	6, 59, 65, 117, 0

Intergreen Matrix for Junction 1

Intergreen matrix for Canada							
		To					
From		A	B	C	D	E	F
	A				5	5	5
	B					5	5
	C					5	5
	D	0					
	E	0	0	0			
	F	0	0	0			

Interstage Matrix for Junction 1

	To					
From		1	2	3	4	5
	1	0	0	5	5	0
	2	0	0	5	5	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

Resultant Stages

Junction	Resultant Stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	5		0	6	6	5	5
	2	1	A,C,B	6	59	53	1	5
	3	2	B	59	65	6	1	5
	4	3	D,F,E	70	117	47	1	7
	5	4	E	117	0	3	1	1

Resultant Phase Green Periods

Junction	Phase	Green period	Start time (s)	End time (s)	Duration (s)
1	A	1	6	59	53
	B	1	6	65	59
	C	1	6	59	53
	D	1	65	117	52
	E	1	70	0	50
	F	1	70	117	47

Traffic Demand**Demand Set Details**

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2024 wod	AM	DIRECT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Terenure Road West		✓	100.000
B - Fortfield Road		✓	100.000
C - Kimmage Road West		✓	100.000
D - Sundrive Road		✓	100.000

Origin-Destination Data**Demand (PCU/TS)**08:00 -
08:15

	To				
From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
	A - Terenure Road West	0.00	7.00	67.00	36.00
	B - Fortfield Road	0.00	0.00	11.00	155.00
	C - Kimmage Road West	43.00	35.00	0.00	94.00
	D - Sundrive Road	11.00	73.00	47.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
08:15 - 08:30	From				
	A - Terenure Road West	0.00	1.00	69.00	28.00
	B - Fortfield Road	0.00	0.00	21.00	129.00
	C - Kimmage Road West	47.00	37.00	0.00	112.00
	D - Sundrive Road	12.00	123.00	60.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
08:30 - 08:45	From				
	A - Terenure Road West	0.00	9.00	83.00	41.00
	B - Fortfield Road	1.00	0.00	23.00	99.00
	C - Kimmage Road West	56.00	44.00	0.00	114.00
	D - Sundrive Road	18.00	93.00	63.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
08:45 - 09:00	From				
	A - Terenure Road West	0.00	4.00	77.00	46.00
	B - Fortfield Road	1.00	0.00	27.00	111.00
	C - Kimmage Road West	59.00	36.00	0.00	99.00
	D - Sundrive Road	25.00	99.00	61.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0	0	0	0
	B - Fortfield Road	0	0	0	0
	C - Kimmage Road West	0	0	0	0
	D - Sundrive Road	0	0	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
08:00-08:15	A - Terenure Road West	110.00	110.00
	B - Fortfield Road	166.00	166.00
	C - Kimmage Road West	172.00	172.00
	D - Sundrive Road	131.00	131.00
08:15-08:30	A - Terenure Road West	98.00	98.00
	B - Fortfield Road	150.00	150.00
	C - Kimmage Road West	196.00	196.00
	D - Sundrive Road	195.00	195.00
08:30-08:45	A - Terenure Road West	133.00	133.00
	B - Fortfield Road	123.00	123.00
	C - Kimmage Road West	214.00	214.00

	D - Sundrive Road	174.00	174.00
08:45-09:00	A - Terenure Road West	127.00	127.00
	B - Fortfield Road	139.00	139.00
	C - Kimmage Road West	194.00	194.00
	D - Sundrive Road	185.00	185.00

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Terenure Road West	0.44	21.94	9.6	C
B - Fortfield Road	1.01	80.28	22.5	F
C - Kimmage Road West	0.94	50.70	21.1	D
D - Sundrive Road	0.85	39.54	17.5	D

Main Results for each time segment

08:00 - 08:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	74.00	465.54	54.50	0.00	211.43	0.350	68.50	5.5	22.619	C
	3	36.00	446.74	60.50	0.00	225.23	0.160	33.60	2.4	16.499	B
B - Fortfield Road	1	166.00	368.27	53.50	0.00	164.19	1.011	143.51	22.5	70.671	E
C - Kimmage Road West	2	137.00	397.03	54.50	0.00	180.32	0.760	125.66	11.3	35.889	D
	3	35.00	395.19	60.50	0.00	199.24	0.176	32.66	2.3	16.760	B
D - Sundrive Road	1	84.00	368.27	51.50	0.00	158.05	0.531	77.25	6.8	29.103	C
	2	47.00	446.74	51.50	0.00	191.73	0.245	43.38	3.6	22.760	C

08:15 - 08:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	70.00	476.71	54.50	0.00	216.50	0.323	70.31	5.2	22.148	C
	3	28.00	446.74	60.50	0.00	225.23	0.124	28.54	1.9	16.078	B
B - Fortfield Road	1	150.00	368.27	53.50	0.00	164.19	0.914	153.74	18.8	80.276	F
C - Kimmage Road West	2	159.00	395.23	54.50	0.00	179.50	0.886	155.35	15.0	47.556	D
	3	37.00	395.19	60.50	0.00	199.24	0.186	36.86	2.5	16.892	B
D - Sundrive Road	1	135.00	368.27	51.50	0.00	158.05	0.854	128.88	12.9	46.504	D
	2	60.00	446.74	51.50	0.00	191.73	0.313	58.97	4.7	23.861	C

08:30 - 08:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
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			n flow (PCU/TS)						(PCU)		
A - Terenure Road West	2	92.00	465.10	54.50	0.00	211.23	0.43 6	90.29	6.9	24.23 8	C
	3	41.00	446.74	60.50	0.00	225.23	0.18 2	40.13	2.7	16.77 4	B
B - Fortfield Road	1	123.00	368.27	53.50	0.00	164.19	0.74 9	131.24	10.5	41.41 3	D
C - Kimmage Road West	2	170.00	398.57	54.50	0.00	181.02	0.93 9	166.81	18.2	59.32 8	E
	3	44.00	395.19	60.50	0.00	199.24	0.22 1	43.53	2.9	17.36 6	B
D - Sundrive Road	1	111.00	368.27	51.50	0.00	158.05	0.70 2	114.39	9.5	36.74 4	D
	2	63.00	446.74	51.50	0.00	191.73	0.32 9	62.76	4.9	24.13 7	C

08:45 - 09:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculate d saturation flow (PCU/TS)	Effectiv e green time (s)	NEE G (s)	Capacit y (PCU/TS)	DOS	Throughp ut (PCU/TS)	End queu e (PCU)	Delay (s)	Signalise d level of service
A - Terenure Road West	2	81.00	471.76	54.50	0.00	214.26	0.37 8	81.86	6.0	23.12 3	C
	3	46.00	446.74	60.50	0.00	225.23	0.20 4	45.66	3.1	17.05 9	B
B - Fortfield Road	1	139.00	368.27	53.50	0.00	164.19	0.84 7	136.75	12.8	45.03 4	D
C - Kimmage Road West	2	158.00	403.00	54.50	0.00	183.03	0.86 3	160.98	15.2	51.88 6	D
	3	36.00	395.19	60.50	0.00	199.24	0.18 1	36.54	2.4	16.82 9	B
D - Sundrive Road	1	124.00	368.27	51.50	0.00	158.05	0.78 5	122.44	11.0	40.90 9	D
	2	61.00	446.74	51.50	0.00	191.73	0.31 8	61.16	4.7	23.95 9	C

2024 wod, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Kimmage Crossroads	Signalised		61.30	E

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-62	C - Kimmage Road West - Traffic Stream 2	61.30	E

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2024 wod	PM	DIRECT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Terenure Road West		✓	100.000
B - Fortfield Road		✓	100.000
C - Kimmage Road West		✓	100.000
D - Sundrive Road		✓	100.000

Origin-Destination Data**Demand (PCU/TS)**17:00 -
17:15

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0.00	8.00	68.00	19.00
	B - Fortfield Road	9.00	0.00	17.00	97.00
	C - Kimmage Road West	52.00	16.00	0.00	54.00
	D - Sundrive Road	12.00	175.00	77.00	0.00

Demand (PCU/TS)17:15 -
17:30

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0.00	7.00	51.00	27.00
	B - Fortfield Road	2.00	0.00	24.00	107.00
	C - Kimmage Road West	41.00	25.00	0.00	58.00
	D - Sundrive Road	20.00	191.00	75.00	0.00

Demand (PCU/TS)17:30 -
17:45

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0.00	7.00	73.00	16.00
	B - Fortfield Road	1.00	0.00	26.00	105.00
	C - Kimmage Road West	76.00	28.00	0.00	72.00
	D - Sundrive Road	14.00	164.00	64.00	0.00

Demand (PCU/TS)17:45 -
18:00

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0.00	6.00	47.00	16.00
	B - Fortfield Road	1.00	0.00	25.00	110.00
	C - Kimmage Road West	48.00	37.00	0.00	67.00
	D - Sundrive Road	15.00	196.00	66.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
	A - Terenure Road West	0	0	0	0
	B - Fortfield Road	0	0	0	0
	C - Kimmage Road West	0	0	0	0
	D - Sundrive Road	0	0	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
17:00-17:15	A - Terenure Road West	95.00	95.00
	B - Fortfield Road	123.00	123.00
	C - Kimmage Road West	122.00	122.00
	D - Sundrive Road	264.00	264.00
17:15-17:30	A - Terenure Road West	85.00	85.00
	B - Fortfield Road	133.00	133.00
	C - Kimmage Road West	124.00	124.00
	D - Sundrive Road	286.00	286.00
17:30-17:45	A - Terenure Road West	96.00	96.00
	B - Fortfield Road	132.00	132.00
	C - Kimmage Road West	176.00	176.00
	D - Sundrive Road	242.00	242.00
17:45-18:00	A - Terenure Road West	69.00	69.00
	B - Fortfield Road	136.00	136.00
	C - Kimmage Road West	152.00	152.00
	D - Sundrive Road	277.00	277.00

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Terenure Road West	0.55	36.46	9.1	D
B - Fortfield Road	0.63	20.38	8.1	C
C - Kimmage Road West	1.13	133.00	36.0	F
D - Sundrive Road	1.00	50.88	28.2	D

Main Results for each time segment

17:00 - 17:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	76.00	464.09	37.50	0.00	145.03	0.524	68.69	7.3	37.901	D
	3	19.00	446.74	43.50	0.00	161.94	0.117	17.38	1.6	25.910	C
B - Fortfield Road	1	123.00	368.27	70.50	0.00	216.36	0.569	115.79	7.2	18.541	B
C - Kimmage Road West	2	106.00	415.28	37.50	0.00	129.78	0.817	94.34	11.7	53.156	D

	3	16.00	395.19	43.50	0.00	143.26	0.112	14.63	1.4	25.886	C
D - Sundrive Road	1	187.00	368.27	68.50	0.00	210.22	0.890	172.72	14.3	37.638	D
	2	77.00	446.74	68.50	0.00	255.01	0.302	72.52	4.5	14.264	B

17:15 - 17:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	58.00	462.02	37.50	0.00	144.38	0.402	59.83	5.5	34.979	C
	3	27.00	446.74	43.50	0.00	161.94	0.167	26.31	2.3	26.618	C
B - Fortfield Road	1	133.00	368.27	70.50	0.00	216.36	0.615	132.31	7.9	19.905	B
C - Kimmage Road West	2	99.00	407.18	37.50	0.00	127.25	0.778	99.85	10.8	53.056	D
	3	25.00	395.19	43.50	0.00	143.26	0.175	24.22	2.1	26.825	C
D - Sundrive Road	1	211.00	368.27	68.50	0.00	210.22	1.004	201.42	23.9	63.456	E
	2	75.00	446.74	68.50	0.00	255.01	0.294	75.12	4.4	14.163	B

17:30 - 17:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	80.00	466.50	37.50	0.00	145.78	0.549	77.75	7.7	38.620	D
	3	16.00	446.74	43.50	0.00	161.94	0.099	16.95	1.4	25.656	C
B - Fortfield Road	1	132.00	368.27	70.50	0.00	216.36	0.610	132.06	7.8	19.820	B
C - Kimmage Road West	2	148.00	417.78	37.50	0.00	130.56	1.134	125.17	33.6	112.645	F
	3	28.00	395.19	43.50	0.00	143.26	0.195	27.74	2.4	27.158	C
D - Sundrive Road	1	178.00	368.27	68.50	0.00	210.22	0.847	187.99	13.9	46.176	D
	2	64.00	446.74	68.50	0.00	255.01	0.251	64.65	3.7	13.610	B

17:45 - 18:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	53.00	463.02	37.50	0.00	144.70	0.366	55.74	5.0	34.214	C
	3	16.00	446.74	43.50	0.00	161.94	0.099	16.00	1.4	25.656	C
B - Fortfield Road	1	136.00	368.27	70.50	0.00	216.36	0.629	135.73	8.1	20.382	C
C - Kimmage Road West	2	115.00	407.52	37.50	0.00	127.35	0.903	124.30	24.3	166.712	F
	3	37.00	395.19	43.50	0.00	143.26	0.258	36.21	3.2	28.209	C
D - Sundrive Road	1	211.00	368.27	68.50	0.00	210.22	1.004	201.15	23.7	62.508	E
	2	66.00	446.74	68.50	0.00	255.01	0.259	65.88	3.8	13.706	B

Junctions 10											
OSCADY 10 - Signalised Intersection Module											
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Filename: Kimmage Crossroads 2024 wdev.j10
 Path: C:\Users\martin.rogers\Dropbox\Carlisle 2021\oscady
 Report generation date: 31/08/2021 15:41:34

[2024 wdev, AM](#)

[2024 wdev, PM](#)

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Network Residual Capacity
2024 wdev												
A - Terenure Road West	D1	9.5	21.31	0.43	C	-30 % [B - Fortfield Road - Traffic Stream 1]	D2	9.3	36.84	0.56	D	-62 % [C - Kimmage Road West - Traffic Stream 2]
B - Fortfield Road		24.2	95.94	1.03	F			8.3	21.27	0.64	C	
C - Kimmage Road West		21.6	51.03	0.94	D			38.0	148.36	1.15	F	
D - Sundrive Road		18.1	41.63	0.87	D			28.4	50.64	1.00	D	

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Kimmage Crossroads exist
Location	Kimmage
Site number	
Date	27/03/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	DOS Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2024 wdev	AM	DIRECT	08:00	09:00	60	15
D2	2024 wdev	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024 wdev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Kimmage Crossroads	Signalised		53.20	D

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-30	B - Fortfield Road - Traffic Stream 1	53.20	D

Arms

Arms

Arm	Name	Description
A	Terenure Road West	
B	Fortfield Road	
C	Kimmage Road West	
D	Sundrive Road	

OSCADY Traffic Streams

Arm	Traffic Stream	Phase	Signals EEG (s)	Destination arms	Straight move
A - Terenure Road West	2	A	0.00	B, C	C
	3	B	0.00	D	C
B - Fortfield Road	1	D	5.00	A, C, D	
C - Kimmage Road West	2	A	0.00	A, D	A

	3	B	0.00	B	A
D - Sundrive Road	1	E	0.00	A, B	
	2	E	0.00	C	

OSCADY Lanes

Arm	Traffic Stream	Destination arms	Gradient (%)	Width (m)	Turning radius (m)	Nearside lane	Has bay
A - Terenure Road West	2	C, B	0	3.00	5.00	✓	
	3	D	0	3.00	10.00		
B - Fortfield Road	1	C, D, A	0	3.00	5.00	✓	
C - Kimmage Road West	2	A, D	0	3.00	5.00	✓	
	3	B	0	3.00	5.00		
D - Sundrive Road	1	A, B	0	3.00	5.00	✓	
	2	C	0	3.00	10.00		

Signal Timings

Junction 1

Junction	Sequence to use	Cycle time (s)	Maximum cycle time (s)	Start displacement (s)	End displacement (s)
1	1	120	120	1.40	2.90

Optimisation options

Junction	Optimise stage lengths	Optimise cycle time	Optimiser demand source	Optimiser message
1	✓	✓	Average	Timings provide delay minimisation.

Phases

Junction	Phase	Name	Minimum green (s)
1	A		5
	B		5
	C		5
	D		5
	E		5
	F		7

Library Stages

Junction	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, C, B	1		
	2	B	1		
	3	D, F, E	1		
	4	E	1		
	5		5		

Stage Sequences

Junction	Sequence	Name	Stage IDs	Stage ends
1	1		5, 1, 2, 3, 4	6, 60, 66, 117, 0

Intergreen Matrix for Junction 1

	To						
		A	B	C	D	E	F
From	A				5	5	5
	B					5	5
	C					5	5
	D	0					
	E	0	0	0			
	F	0	0	0			

Interstage Matrix for Junction 1

		To				
From		1	2	3	4	5
	1	0	0	5	5	0
	2	0	0	5	5	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

Resultant Stages

Junction	Resultant Stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	5		0	6	6	5	5
	2	1	A,C,B	6	60	54	1	5
	3	2	B	60	66	6	1	5
	4	3	D,F,E	71	117	46	1	7
	5	4	E	117	0	3	1	1

Resultant Phase Green Periods

Junction	Phase	Green period	Start time (s)	End time (s)	Duration (s)
1	A	1	6	60	54
	B	1	6	66	60
	C	1	6	60	54
	D	1	66	117	51
	E	1	71	0	49
	F	1	71	117	46

Traffic Demand**Demand Set Details**

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2024 wdev	AM	DIRECT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Terenure Road West		✓	100.000
B - Fortfield Road		✓	100.000
C - Kimmage Road West		✓	100.000
D - Sundrive Road		✓	100.000

Origin-Destination Data**Demand (PCU/TS)**08:00 -
08:15

	To				
From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
	A - Terenure Road West	0.00	7.00	68.00	36.00
	B - Fortfield Road	0.00	0.00	11.00	155.00
	C - Kimmage Road West	44.00	36.00	0.00	97.00
	D - Sundrive Road	11.00	73.00	48.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
08:15 - 08:30	From				
	A - Terenure Road West	0.00	1.00	69.00	28.00
	B - Fortfield Road	0.00	0.00	21.00	129.00
	C - Kimmage Road West	48.00	38.00	0.00	115.00
	D - Sundrive Road	12.00	123.00	60.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
08:30 - 08:45	From				
	A - Terenure Road West	0.00	9.00	84.00	41.00
	B - Fortfield Road	1.00	0.00	23.00	99.00
	C - Kimmage Road West	57.00	45.00	0.00	117.00
	D - Sundrive Road	18.00	93.00	64.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
08:45 - 09:00	From				
	A - Terenure Road West	0.00	4.00	78.00	46.00
	B - Fortfield Road	1.00	0.00	27.00	111.00
	C - Kimmage Road West	61.00	38.00	0.00	102.00
	D - Sundrive Road	25.00	99.00	62.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0	0	0	0
	B - Fortfield Road	0	0	0	0
	C - Kimmage Road West	0	0	0	0
	D - Sundrive Road	0	0	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
08:00-08:15	A - Terenure Road West	111.00	111.00
	B - Fortfield Road	166.00	166.00
	C - Kimmage Road West	177.00	177.00
	D - Sundrive Road	132.00	132.00
08:15-08:30	A - Terenure Road West	98.00	98.00
	B - Fortfield Road	150.00	150.00
	C - Kimmage Road West	201.00	201.00
	D - Sundrive Road	195.00	195.00
08:30-08:45	A - Terenure Road West	134.00	134.00
	B - Fortfield Road	123.00	123.00
	C - Kimmage Road West	219.00	219.00

	D - Sundrive Road	175.00	175.00
08:45-09:00	A - Terenure Road West	128.00	128.00
	B - Fortfield Road	139.00	139.00
	C - Kimmage Road West	201.00	201.00
	D - Sundrive Road	186.00	186.00

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Terenure Road West	0.43	21.31	9.5	C
B - Fortfield Road	1.03	95.94	24.2	F
C - Kimmage Road West	0.94	51.03	21.6	D
D - Sundrive Road	0.87	41.63	18.1	D

Main Results for each time segment

08:00 - 08:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	75.00	465.71	55.50	0.00	215.39	0.348	69.51	5.5	21.991	C
	3	36.00	446.74	61.50	0.00	228.95	0.157	33.64	2.4	15.948	B
B - Fortfield Road	1	166.00	368.27	52.50	0.00	161.12	1.030	141.77	24.2	75.168	E
C - Kimmage Road West	2	141.00	396.85	55.50	0.00	183.54	0.768	129.45	11.6	35.690	D
	3	36.00	395.19	61.50	0.00	202.54	0.178	33.64	2.4	16.263	B
D - Sundrive Road	1	84.00	368.27	50.50	0.00	154.98	0.542	77.13	6.9	30.081	C
	2	48.00	446.74	50.50	0.00	188.00	0.255	44.24	3.8	23.529	C

08:15 - 08:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	70.00	476.71	55.50	0.00	220.48	0.317	70.38	5.1	21.461	C
	3	28.00	446.74	61.50	0.00	228.95	0.122	28.53	1.8	15.542	B
B - Fortfield Road	1	150.00	368.27	52.50	0.00	161.12	0.931	152.72	21.5	95.941	F
C - Kimmage Road West	2	163.00	395.12	55.50	0.00	182.74	0.892	159.26	15.3	47.621	D
	3	38.00	395.19	61.50	0.00	202.54	0.188	37.87	2.5	16.392	B
D - Sundrive Road	1	135.00	368.27	50.50	0.00	154.98	0.871	128.49	13.4	49.202	D
	2	60.00	446.74	50.50	0.00	188.00	0.319	59.04	4.7	24.588	C

08:30 - 08:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
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			n flow (PCU/TS)						(PCU)		
A - Terenure Road West	2	93.00	465.24	55.50	0.00	215.17	0.43 2	91.24	6.9	23.55 8	C
	3	41.00	446.74	61.50	0.00	228.95	0.17 9	40.14	2.7	16.21 4	B
B - Fortfield Road	1	123.00	368.27	52.50	0.00	161.12	0.76 3	133.69	10.8	47.02 2	D
C - Kimmage Road West	2	174.00	398.39	55.50	0.00	184.25	0.94 4	170.65	18.6	59.86 4	E
	3	45.00	395.19	61.50	0.00	202.54	0.22 2	44.53	3.0	16.85 2	B
D - Sundrive Road	1	111.00	368.27	50.50	0.00	154.98	0.71 6	114.67	9.7	38.49 7	D
	2	64.00	446.74	50.50	0.00	188.00	0.34 0	63.68	5.0	24.97 0	C

08:45 - 09:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculate d saturation flow (PCU/TS)	Effectiv e green time (s)	NEE G (s)	Capacit y (PCU/TS)	DOS	Throughp ut (PCU/TS)	End queu e (PCU)	Delay (s)	Signalise d level of service
A - Terenure Road West	2	82.00	471.84	55.50	0.00	218.23	0.37 6	82.85	6.0	22.47 9	C
	3	46.00	446.74	61.50	0.00	228.95	0.20 1	45.67	3.0	16.48 8	B
B - Fortfield Road	1	139.00	368.27	52.50	0.00	161.12	0.86 3	136.57	13.2	47.80 0	D
C - Kimmage Road West	2	163.00	403.08	55.50	0.00	186.42	0.87 4	165.78	15.9	53.62 7	D
	3	38.00	395.19	61.50	0.00	202.54	0.18 8	38.47	2.5	16.39 3	B
D - Sundrive Road	1	124.00	368.27	50.50	0.00	154.98	0.80 0	122.35	11.4	42.97 0	D
	2	62.00	446.74	50.50	0.00	188.00	0.33 0	62.16	4.9	24.78 5	C

2024 wdev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Kimmage Crossroads	Signalised		65.14	E

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-62	C - Kimmage Road West - Traffic Stream 2	65.14	E

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2024 wdev	PM	DIRECT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Terenure Road West		✓	100.000
B - Fortfield Road		✓	100.000
C - Kimmage Road West		✓	100.000
D - Sundrive Road		✓	100.000

Origin-Destination Data**Demand (PCU/TS)**17:00 -
17:15

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0.00	8.00	70.00	19.00
	B - Fortfield Road	9.00	0.00	17.00	97.00
	C - Kimmage Road West	53.00	16.00	0.00	55.00
	D - Sundrive Road	12.00	175.00	79.00	0.00

Demand (PCU/TS)17:15 -
17:30

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0.00	7.00	53.00	27.00
	B - Fortfield Road	2.00	0.00	24.00	107.00
	C - Kimmage Road West	42.00	26.00	0.00	59.00
	D - Sundrive Road	20.00	191.00	77.00	0.00

Demand (PCU/TS)17:30 -
17:45

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0.00	7.00	75.00	16.00
	B - Fortfield Road	1.00	0.00	26.00	105.00
	C - Kimmage Road West	77.00	29.00	0.00	73.00
	D - Sundrive Road	14.00	164.00	66.00	0.00

Demand (PCU/TS)17:45 -
18:00

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0.00	6.00	49.00	16.00
	B - Fortfield Road	1.00	0.00	25.00	110.00
	C - Kimmage Road West	49.00	37.00	0.00	68.00
	D - Sundrive Road	15.00	196.00	68.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
	A - Terenure Road West	0	0	0	0
	B - Fortfield Road	0	0	0	0
	C - Kimmage Road West	0	0	0	0
	D - Sundrive Road	0	0	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
17:00-17:15	A - Terenure Road West	97.00	97.00
	B - Fortfield Road	123.00	123.00
	C - Kimmage Road West	124.00	124.00
	D - Sundrive Road	266.00	266.00
17:15-17:30	A - Terenure Road West	87.00	87.00
	B - Fortfield Road	133.00	133.00
	C - Kimmage Road West	127.00	127.00
	D - Sundrive Road	288.00	288.00
17:30-17:45	A - Terenure Road West	98.00	98.00
	B - Fortfield Road	132.00	132.00
	C - Kimmage Road West	179.00	179.00
	D - Sundrive Road	244.00	244.00
17:45-18:00	A - Terenure Road West	71.00	71.00
	B - Fortfield Road	136.00	136.00
	C - Kimmage Road West	154.00	154.00
	D - Sundrive Road	279.00	279.00

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Terenure Road West	0.56	36.84	9.3	D
B - Fortfield Road	0.64	21.27	8.3	C
C - Kimmage Road West	1.15	148.36	38.0	F
D - Sundrive Road	1.00	50.64	28.4	D

Main Results for each time segment

17:00 - 17:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	78.00	464.46	37.50	0.00	145.14	0.537	70.48	7.5	38.280	D
	3	19.00	446.74	43.50	0.00	161.94	0.117	17.38	1.6	25.910	C
B - Fortfield Road	1	123.00	368.27	69.50	0.00	213.29	0.577	115.63	7.4	19.318	B
C - Kimmage Road West	2	108.00	415.30	37.50	0.00	129.78	0.832	95.94	12.1	54.582	D

	3	16.00	395.19	43.50	0.00	143.26	0.112	14.63	1.4	25.886	C
D - Sundrive Road	1	187.00	368.27	68.50	0.00	210.22	0.890	172.72	14.3	37.638	D
	2	79.00	446.74	68.50	0.00	255.01	0.310	74.40	4.6	14.371	B

17:15 - 17:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	60.00	462.56	37.50	0.00	144.55	0.415	61.84	5.7	35.279	D
	3	27.00	446.74	43.50	0.00	161.94	0.167	26.31	2.3	26.618	C
B - Fortfield Road	1	133.00	368.27	69.50	0.00	213.29	0.624	132.29	8.1	20.761	C
C - Kimmage Road West	2	101.00	407.36	37.50	0.00	127.30	0.793	101.85	11.2	54.825	D
	3	26.00	395.19	43.50	0.00	143.26	0.181	25.13	2.2	26.935	C
D - Sundrive Road	1	211.00	368.27	68.50	0.00	210.22	1.004	201.42	23.9	63.456	E
	2	77.00	446.74	68.50	0.00	255.01	0.302	77.12	4.5	14.269	B

17:30 - 17:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	82.00	466.80	37.50	0.00	145.87	0.562	79.74	7.9	39.027	D
	3	16.00	446.74	43.50	0.00	161.94	0.099	16.95	1.4	25.656	C
B - Fortfield Road	1	132.00	368.27	69.50	0.00	213.29	0.619	132.06	8.0	20.676	C
C - Kimmage Road West	2	150.00	417.76	37.50	0.00	130.55	1.149	125.65	35.6	117.090	F
	3	29.00	395.19	43.50	0.00	143.26	0.202	28.74	2.5	27.270	C
D - Sundrive Road	1	178.00	368.27	68.50	0.00	210.22	0.847	187.99	13.9	46.176	D
	2	66.00	446.74	68.50	0.00	255.01	0.259	66.65	3.8	13.708	B

17:45 - 18:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	55.00	463.58	37.50	0.00	144.87	0.380	57.76	5.2	34.494	C
	3	16.00	446.74	43.50	0.00	161.94	0.099	16.00	1.4	25.656	C
B - Fortfield Road	1	136.00	368.27	69.50	0.00	213.29	0.638	135.72	8.3	21.269	C
C - Kimmage Road West	2	117.00	407.67	37.50	0.00	127.40	0.918	124.60	28.0	186.362	F
	3	37.00	395.19	43.50	0.00	143.26	0.258	36.30	3.2	28.210	C
D - Sundrive Road	1	211.00	368.27	68.50	0.00	210.22	1.004	201.15	23.7	62.508	E
	2	68.00	446.74	68.50	0.00	255.01	0.267	67.88	3.9	13.805	B

Junctions 10											
OSCADY 10 - Signalised Intersection Module											
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Filename: Kimmage Crossroads 2029 wod.j10
 Path: C:\Users\martin.rogers\Dropbox\Carlisle 2021\oscady
 Report generation date: 31/08/2021 16:30:04

[2029 wod, AM](#)

[2029 wod, PM](#)

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Network Residual Capacity
2029 wod												
A - Terenure Road West	D1	10.5	22.55	0.47	C	-33 % [B - Fortfield Road - Traffic Stream 1]	D2	9.9	37.83	0.60	D	-65 % [C - Kimmage Road West - Traffic Stream 2]
B - Fortfield Road		33.9	158.24	1.10	F			8.9	22.22	0.68	C	
C - Kimmage Road West		31.5	79.70	1.02	E			49.5	218.35	1.23	F	
D - Sundrive Road		20.3	45.34	0.92	D			50.1	94.96	1.09	F	

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Kimmage Crossroads exist
Location	Kimmage
Site number	
Date	27/03/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	DOS Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2029 wod	AM	DIRECT	08:00	09:00	60	15
D2	2029 wod	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2029 wod, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Kimmage Crossroads	Signalised		77.77	E

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-33	B - Fortfield Road - Traffic Stream 1	77.77	E

Arms

Arms

Arm	Name	Description
A	Terenure Road West	
B	Fortfield Road	
C	Kimmage Road West	
D	Sundrive Road	

OSCADY Traffic Streams

Arm	Traffic Stream	Phase	Signals EEG (s)	Destination arms	Straight move
A - Terenure Road West	2	A	0.00	B, C	C
	3	B	0.00	D	C
B - Fortfield Road	1	D	5.00	A, C, D	
C - Kimmage Road West	2	A	0.00	A, D	A

	3	B	0.00	B	A
D - Sundrive Road	1	E	0.00	A, B	
	2	E	0.00	C	

OSCADY Lanes

Arm	Traffic Stream	Destination arms	Gradient (%)	Width (m)	Turning radius (m)	Nearside lane	Has bay
A - Terenure Road West	2	C, B	0	3.00	5.00	✓	
	3	D	0	3.00	10.00		
B - Fortfield Road	1	C, D, A	0	3.00	5.00	✓	
C - Kimmage Road West	2	A, D	0	3.00	5.00	✓	
	3	B	0	3.00	5.00		
D - Sundrive Road	1	A, B	0	3.00	5.00	✓	
	2	C	0	3.00	10.00		

Signal Timings

Junction 1

Junction	Sequence to use	Cycle time (s)	Maximum cycle time (s)	Start displacement (s)	End displacement (s)
1	1	120	120	1.40	2.90

Optimisation options

Junction	Optimise stage lengths	Optimise cycle time	Optimiser demand source	Optimiser message
1	✓	✓	Average	Timings provide capacity maximisation.

Phases

Junction	Phase	Name	Minimum green (s)
1	A		5
	B		5
	C		5
	D		5
	E		5
	F		7

Library Stages

Junction	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, C, B	1		
	2	B	1		
	3	D, F, E	1		
	4	E	1		
	5		5		

Stage Sequences

Junction	Sequence	Name	Stage IDs	Stage ends
1	1		5, 1, 2, 3, 4	6, 59, 65, 117, 0

Intergreen Matrix for Junction 1

Intergreen matrix for Canada							
		To					
From		A	B	C	D	E	F
	A				5	5	5
	B					5	5
	C					5	5
	D	0					
	E	0	0	0			
	F	0	0	0			

Interstage Matrix for Junction 1

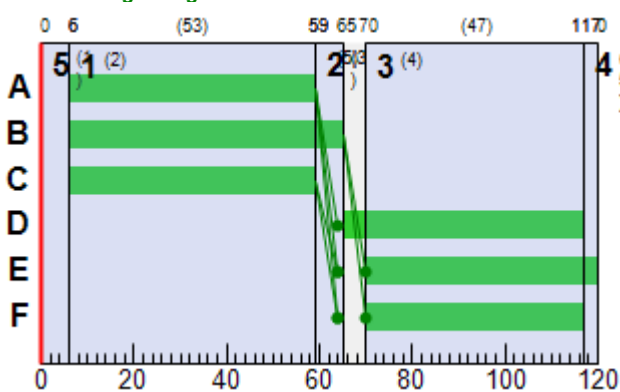
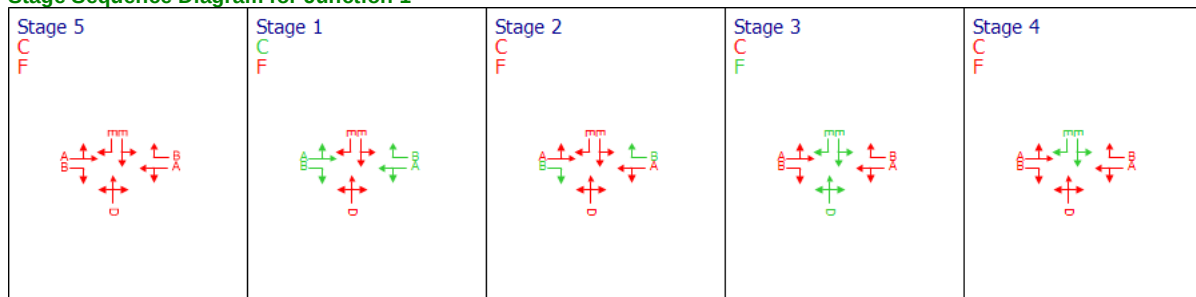
	To					
From		1	2	3	4	5
	1	0	0	5	5	0
	2	0	0	5	5	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

Resultant Stages

Junction	Resultant Stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	5		0	6	6	5	5
	2	1	A,C,B	6	59	53	1	5
	3	2	B	59	65	6	1	5
	4	3	D,F,E	70	117	47	1	7
	5	4	E	117	0	3	1	1

Resultant Phase Green Periods

Junction	Phase	Green period	Start time (s)	End time (s)	Duration (s)
1	A	1	6	59	53
	B	1	6	65	59
	C	1	6	59	53
	D	1	65	117	52
	E	1	70	0	50
	F	1	70	117	47

Phase Timings Diagram for Junction 1**Stage Sequence Diagram for Junction 1****Traffic Demand****Demand Set Details**

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2029 wod	AM	DIRECT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Terenure Road West		✓	100.000
B - Fortfield Road		✓	100.000
C - Kimmage Road West		✓	100.000
D - Sundrive Road		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	8.00	73.00	39.00
		B - Fortfield Road	0.00	0.00	12.00	168.00
		C - Kimmage Road West	47.00	37.00	0.00	102.00
		D - Sundrive Road	12.00	79.00	51.00	0.00

Demand (PCU/TS)

08:15 - 08:30		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	1.00	74.00	31.00
		B - Fortfield Road	0.00	0.00	23.00	140.00
		C - Kimmage Road West	51.00	40.00	0.00	122.00
		D - Sundrive Road	12.00	133.00	64.00	0.00

Demand (PCU/TS)

08:30 - 08:45		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	10.00	90.00	45.00
		B - Fortfield Road	2.00	0.00	25.00	107.00
		C - Kimmage Road West	61.00	48.00	0.00	124.00
		D - Sundrive Road	19.00	101.00	68.00	0.00

Demand (PCU/TS)

08:45 - 09:00		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	5.00	83.00	50.00
		B - Fortfield Road	1.00	0.00	29.00	120.00
		C - Kimmage Road West	64.00	40.00	0.00	107.00
		D - Sundrive Road	27.00	107.00	66.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
	A - Terenure Road West	0	0	0	0
	B - Fortfield Road	0	0	0	0
	C - Kimmage Road West	0	0	0	0
	D - Sundrive Road	0	0	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
08:00-08:15	A - Terenure Road West	120.00	120.00
	B - Fortfield Road	180.00	180.00
	C - Kimmage Road West	186.00	186.00
	D - Sundrive Road	142.00	142.00
08:15-08:30	A - Terenure Road West	106.00	106.00
	B - Fortfield Road	163.00	163.00
	C - Kimmage Road West	213.00	213.00
	D - Sundrive Road	209.00	209.00
08:30-08:45	A - Terenure Road West	145.00	145.00
	B - Fortfield Road	134.00	134.00
	C - Kimmage Road West	233.00	233.00
	D - Sundrive Road	188.00	188.00
08:45-09:00	A - Terenure Road West	138.00	138.00
	B - Fortfield Road	150.00	150.00
	C - Kimmage Road West	211.00	211.00
	D - Sundrive Road	200.00	200.00

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Terenure Road West	0.47	22.55	10.5	C
B - Fortfield Road	1.10	158.24	33.9	F
C - Kimmage Road West	1.02	79.70	31.5	E
D - Sundrive Road	0.92	45.34	20.3	D

Main Results for each time segment

08:00 - 08:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	81.00	464.97	54.50	0.00	211.18	0.384	74.96	6.0	23.224	C
	3	39.00	446.74	60.50	0.00	225.23	0.173	36.40	2.6	16.663	B
B - Fortfield Road	1	180.00	368.27	53.50	0.00	164.19	1.096	147.49	32.5	88.957	F
C - Kimmage Road West	2	149.00	397.18	54.50	0.00	180.39	0.826	136.02	13.0	40.566	D

	3	37.00	395.19	60.50	0.00	199.24	0.186	34.53	2.5	16.891	B
D - Sundrive Road	1	91.00	368.27	51.50	0.00	158.05	0.576	83.61	7.4	30.452	C
	2	51.00	446.74	51.50	0.00	191.73	0.266	47.06	3.9	23.086	C

08:15 - 08:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	75.00	476.84	54.50	0.00	216.57	0.346	75.47	5.6	22.539	C
	3	31.00	446.74	60.50	0.00	225.23	0.138	31.54	2.1	16.234	B
B - Fortfield Road	1	163.00	368.27	53.50	0.00	164.19	0.993	161.59	33.9	158.239	F
C - Kimmage Road West	2	173.00	395.15	54.50	0.00	179.46	0.964	166.29	19.7	61.503	E
	3	40.00	395.19	60.50	0.00	199.24	0.201	39.80	2.7	17.092	B
D - Sundrive Road	1	145.00	368.27	51.50	0.00	158.05	0.917	137.02	15.4	54.655	D
	2	64.00	446.74	51.50	0.00	191.73	0.334	62.97	5.0	24.224	C

08:30 - 08:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	100.00	464.81	54.50	0.00	211.10	0.474	98.04	7.5	25.052	C
	3	45.00	446.74	60.50	0.00	225.23	0.200	44.06	3.0	17.001	B
B - Fortfield Road	1	134.00	368.27	53.50	0.00	164.19	0.816	155.38	12.5	87.597	F
C - Kimmage Road West	2	185.00	398.60	54.50	0.00	181.03	1.022	176.44	28.2	90.088	F
	3	48.00	395.19	60.50	0.00	199.24	0.241	47.46	3.2	17.648	B
D - Sundrive Road	1	120.00	368.27	51.50	0.00	158.05	0.759	124.71	10.7	41.505	D
	2	68.00	446.74	51.50	0.00	191.73	0.355	67.68	5.3	24.605	C

08:45 - 09:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	88.00	470.73	54.50	0.00	213.79	0.412	88.95	6.6	23.767	C
	3	50.00	446.74	60.50	0.00	225.23	0.222	49.66	3.3	17.293	B
B - Fortfield Road	1	150.00	368.27	53.50	0.00	164.19	0.914	147.06	15.5	55.730	E
C - Kimmage Road West	2	171.00	403.08	54.50	0.00	183.07	0.934	175.63	23.6	94.342	F
	3	40.00	395.19	60.50	0.00	199.24	0.201	40.54	2.7	17.095	B
D - Sundrive Road	1	134.00	368.27	51.50	0.00	158.05	0.848	131.95	12.7	46.951	D
	2	66.00	446.74	51.50	0.00	191.73	0.344	66.16	5.1	24.421	C

2029 wod, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Kimmage Crossroads	Signalised		100.20	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-65	C - Kimmage Road West - Traffic Stream 2	100.20	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2029 wod	PM	DIRECT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Terenure Road West		✓	100.000
B - Fortfield Road		✓	100.000
C - Kimmage Road West		✓	100.000
D - Sundrive Road		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 -
17:15

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0.00	8.00	74.00	21.00
	B - Fortfield Road	10.00	0.00	19.00	105.00
	C - Kimmage Road West	57.00	17.00	0.00	59.00
	D - Sundrive Road	13.00	189.00	84.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
17:15 - 17:30	From				
	A - Terenure Road West	0.00	8.00	55.00	29.00
	B - Fortfield Road	2.00	0.00	26.00	115.00
	C - Kimmage Road West	44.00	27.00	0.00	62.00
	D - Sundrive Road	22.00	207.00	81.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
17:30 - 17:45	From				
	A - Terenure Road West	0.00	8.00	79.00	17.00
	B - Fortfield Road	1.00	0.00	28.00	114.00
	C - Kimmage Road West	83.00	31.00	0.00	78.00
	D - Sundrive Road	14.00	178.00	69.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
17:45 - 18:00	From				
	A - Terenure Road West	0.00	7.00	51.00	17.00
	B - Fortfield Road	1.00	0.00	27.00	119.00
	C - Kimmage Road West	52.00	40.00	0.00	73.00
	D - Sundrive Road	17.00	212.00	71.00	0.00

Vehicle Mix**Heavy Vehicle Percentages**

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0	0	0	0
	B - Fortfield Road	0	0	0	0
	C - Kimmage Road West	0	0	0	0
	D - Sundrive Road	0	0	0	0

Detailed Demand Data**Demand for each time segment**

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
17:00-17:15	A - Terenure Road West	103.00	103.00
	B - Fortfield Road	134.00	134.00
	C - Kimmage Road West	133.00	133.00
	D - Sundrive Road	286.00	286.00
17:15-17:30	A - Terenure Road West	92.00	92.00
	B - Fortfield Road	143.00	143.00
	C - Kimmage Road West	133.00	133.00
	D - Sundrive Road	310.00	310.00
17:30-17:45	A - Terenure Road West	104.00	104.00
	B - Fortfield Road	143.00	143.00
	C - Kimmage Road West	192.00	192.00

	D - Sundrive Road	261.00	261.00
17:45-18:00	A - Terenure Road West	75.00	75.00
	B - Fortfield Road	147.00	147.00
	C - Kimmage Road West	165.00	165.00
	D - Sundrive Road	300.00	300.00

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Terenure Road West	0.60	37.83	9.9	D
B - Fortfield Road	0.68	22.22	8.9	C
C - Kimmage Road West	1.23	218.35	49.5	F
D - Sundrive Road	1.09	94.96	50.1	F

Main Results for each time segment

17:00 - 17:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	82.00	465.14	37.50	0.00	145.36	0.564	74.05	7.9	39.076	D
	3	21.00	446.74	43.50	0.00	161.94	0.130	19.20	1.8	26.083	C
B - Fortfield Road	1	134.00	368.27	70.50	0.00	216.36	0.619	126.04	8.0	19.983	B
C - Kimmage Road West	2	116.00	415.37	37.50	0.00	129.80	0.894	101.96	14.0	61.646	E
	3	17.00	395.19	43.50	0.00	143.26	0.119	15.55	1.5	25.987	C
D - Sundrive Road	1	202.00	368.27	68.50	0.00	210.22	0.961	183.36	18.6	48.763	D
	2	84.00	446.74	68.50	0.00	255.01	0.329	79.10	4.9	14.644	B

17:15 - 17:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	63.00	461.18	37.50	0.00	144.12	0.437	64.97	6.0	35.808	D
	3	29.00	446.74	43.50	0.00	161.94	0.179	28.31	2.5	26.803	C
B - Fortfield Road	1	143.00	368.27	70.50	0.00	216.36	0.661	142.34	8.6	21.467	C
C - Kimmage Road West	2	106.00	407.28	37.50	0.00	127.28	0.833	107.56	12.5	62.138	E
	3	27.00	395.19	43.50	0.00	143.26	0.188	26.13	2.3	27.045	C
D - Sundrive Road	1	229.00	368.27	68.50	0.00	210.22	1.089	207.70	39.9	95.198	F
	2	81.00	446.74	68.50	0.00	255.01	0.318	81.18	4.7	14.485	B

17:30 - 17:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue	Delay (s)	Signalised level of service
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			n flow (PCU/TS)						(PCU)		
A - Terenure Road West	2	87.00	465.90	37.50	0.00	145.59	0.59 8	84.48	8.5	40.193	D
	3	17.00	446.74	43.50	0.00	161.94	0.10 5	18.04	1.5	25.741	C
B - Fortfield Road	1	143.00	368.27	70.50	0.00	216.36	0.66 1	142.99	8.6	21.550	C
C - Kimmage Road West	2	161.00	418.00	37.50	0.00	130.62	1.23 3	127.15	46.3	140.00 7	F
	3	31.00	395.19	43.50	0.00	143.26	0.21 6	30.65	2.7	27.498	C
D - Sundrive Road	1	192.00	368.27	68.50	0.00	210.22	0.91 3	205.89	26.1	116.06 1	F
	2	69.00	446.74	68.50	0.00	255.01	0.27 1	69.72	4.0	13.857	B

17:45 - 18:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculate d saturation flow (PCU/TS)	Effective green time (s)	NEE G (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	58.00	462.02	37.50	0.00	144.38	0.40 2	61.02	5.5	34.988	C
	3	17.00	446.74	43.50	0.00	161.94	0.10 5	17.00	1.5	25.740	C
B - Fortfield Road	1	147.00	368.27	70.50	0.00	216.36	0.67 9	146.70	8.9	22.223	C
C - Kimmage Road West	2	125.00	407.38	37.50	0.00	127.31	0.98 2	125.32	46.0	279.07 9	F
	3	40.00	395.19	43.50	0.00	143.26	0.27 9	39.21	3.5	28.583	C
D - Sundrive Road	1	229.00	368.27	68.50	0.00	210.22	1.08 9	209.07	46.0	120.07 5	F
	2	71.00	446.74	68.50	0.00	255.01	0.27 8	70.88	4.1	13.956	B

Junctions 10											
OSCADY 10 - Signalised Intersection Module											
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Filename: Kimmage Crossroads 2029 wdev.j10
 Path: C:\Users\martin.rogers\Dropbox\Carlisle 2021\oscady
 Report generation date: 31/08/2021 17:01:40

[2029 wdev, AM](#)
[2029 wdev, PM](#)

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Network Residual Capacity
2029 wdev												
A - Terenure Road West	D1	10.4	21.82	0.47	C	-35 % [B - Fortfield Road - Traffic Stream 1]	D2	10.2	38.27	0.61	D	-65 % [C - Kimmage Road West - Traffic Stream 2]
B - Fortfield Road		38.4	176.06	1.12	F			9.1	23.23	0.69	C	
C - Kimmage Road West		31.3	84.02	1.02	F			52.5	251.18	1.25	F	
D - Sundrive Road		21.4	48.14	0.94	D			51.2	97.28	1.09	F	

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Kimmage Crossroads exist
Location	Kimmage
Site number	
Date	27/03/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	DOS Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2029 wdev	AM	DIRECT	08:00	09:00	60	15
D2	2029 wdev	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2029 wdev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Kimmage Crossroads	Signalised		83.76	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-35	B - Fortfield Road - Traffic Stream 1	83.76	F

Arms

Arms

Arm	Name	Description
A	Terenure Road West	
B	Fortfield Road	
C	Kimmage Road West	
D	Sundrive Road	

OSCADY Traffic Streams

Arm	Traffic Stream	Phase	Signals EEG (s)	Destination arms	Straight move
A - Terenure Road West	2	A	0.00	B, C	C
	3	B	0.00	D	C
B - Fortfield Road	1	D	5.00	A, C, D	
C - Kimmage Road West	2	A	0.00	A, D	A

	3	B	0.00	B	A
D - Sundrive Road	1	E	0.00	A, B	
	2	E	0.00	C	

OSCADY Lanes

Arm	Traffic Stream	Destination arms	Gradient (%)	Width (m)	Turning radius (m)	Nearside lane	Has bay
A - Terenure Road West	2	C, B	0	3.00	5.00	✓	
	3	D	0	3.00	10.00		
B - Fortfield Road	1	C, D, A	0	3.00	5.00	✓	
C - Kimmage Road West	2	A, D	0	3.00	5.00	✓	
	3	B	0	3.00	5.00		
D - Sundrive Road	1	A, B	0	3.00	5.00	✓	
	2	C	0	3.00	10.00		

Signal Timings

Junction 1

Junction	Sequence to use	Cycle time (s)	Maximum cycle time (s)	Start displacement (s)	End displacement (s)
1	1	120	120	1.40	2.90

Optimisation options

Junction	Optimise stage lengths	Optimise cycle time	Optimiser demand source	Optimiser message
1	✓	✓	Average	Timings provide capacity maximisation.

Phases

Junction	Phase	Name	Minimum green (s)
1	A		5
	B		5
	C		5
	D		5
	E		5
	F		7

Library Stages

Junction	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, C, B	1		
	2	B	1		
	3	D, F, E	1		
	4	E	1		
	5		5		

Stage Sequences

Junction	Sequence	Name	Stage IDs	Stage ends
1	1		5, 1, 2, 3, 4	6, 60, 66, 117, 0

Intergreen Matrix for Junction 1

Intergreen matrix for Canada							
		To					
From		A	B	C	D	E	F
	A				5	5	5
	B					5	5
	C					5	5
	D	0					
	E	0	0	0			
	F	0	0	0			

Interstage Matrix for Junction 1

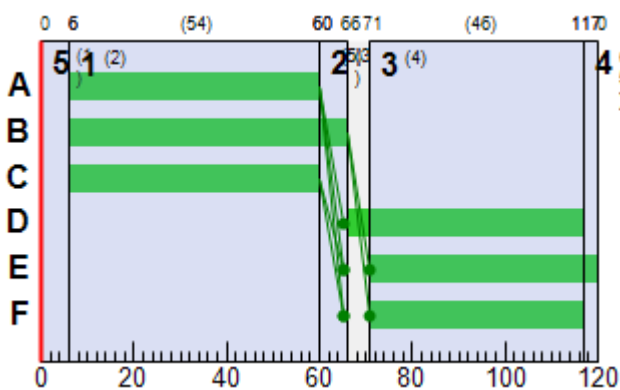
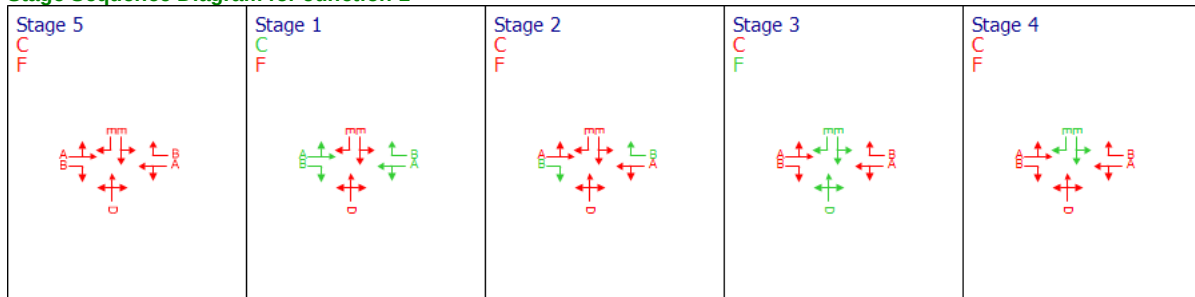
		To				
From		1	2	3	4	5
	1	0	0	5	5	0
	2	0	0	5	5	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

Resultant Stages

Junction	Resultant Stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	5		0	6	6	5	5
	2	1	A,C,B	6	60	54	1	5
	3	2	B	60	66	6	1	5
	4	3	D,F,E	71	117	46	1	7
	5	4	E	117	0	3	1	1

Resultant Phase Green Periods

Junction	Phase	Green period	Start time (s)	End time (s)	Duration (s)
1	A	1	6	60	54
	B	1	6	66	60
	C	1	6	60	54
	D	1	66	117	51
	E	1	71	0	49
	F	1	71	117	46

Phase Timings Diagram for Junction 1**Stage Sequence Diagram for Junction 1****Traffic Demand****Demand Set Details**

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2029 wdev	AM	DIRECT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Terenure Road West		✓	100.000
B - Fortfield Road		✓	100.000
C - Kimmage Road West		✓	100.000
D - Sundrive Road		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	8.00	73.00	39.00
		B - Fortfield Road	0.00	0.00	12.00	168.00
		C - Kimmage Road West	48.00	39.00	0.00	105.00
		D - Sundrive Road	12.00	79.00	51.00	0.00

Demand (PCU/TS)

08:15 - 08:30		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	1.00	75.00	31.00
		B - Fortfield Road	0.00	0.00	23.00	140.00
		C - Kimmage Road West	52.00	41.00	0.00	124.00
		D - Sundrive Road	12.00	133.00	65.00	0.00

Demand (PCU/TS)

08:30 - 08:45		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	10.00	90.00	45.00
		B - Fortfield Road	2.00	0.00	25.00	107.00
		C - Kimmage Road West	62.00	49.00	0.00	126.00
		D - Sundrive Road	19.00	101.00	69.00	0.00

Demand (PCU/TS)

08:45 - 09:00		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	5.00	84.00	50.00
		B - Fortfield Road	1.00	0.00	29.00	120.00
		C - Kimmage Road West	66.00	41.00	0.00	110.00
		D - Sundrive Road	27.00	107.00	67.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0	0	0	0
	B - Fortfield Road	0	0	0	0
	C - Kimmage Road West	0	0	0	0
	D - Sundrive Road	0	0	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
08:00-08:15	A - Terenure Road West	120.00	120.00
	B - Fortfield Road	180.00	180.00
	C - Kimmage Road West	192.00	192.00
	D - Sundrive Road	142.00	142.00
08:15-08:30	A - Terenure Road West	107.00	107.00
	B - Fortfield Road	163.00	163.00
	C - Kimmage Road West	217.00	217.00
	D - Sundrive Road	210.00	210.00
08:30-08:45	A - Terenure Road West	145.00	145.00
	B - Fortfield Road	134.00	134.00
	C - Kimmage Road West	237.00	237.00
	D - Sundrive Road	189.00	189.00
08:45-09:00	A - Terenure Road West	139.00	139.00
	B - Fortfield Road	150.00	150.00
	C - Kimmage Road West	217.00	217.00
	D - Sundrive Road	201.00	201.00

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Terenure Road West	0.47	21.82	10.4	C
B - Fortfield Road	1.12	176.06	38.4	F
C - Kimmage Road West	1.02	84.02	31.3	F
D - Sundrive Road	0.94	48.14	21.4	D

Main Results for each time segment

08:00 - 08:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	81.00	464.97	55.50	0.00	215.05	0.377	75.06	5.9	22.495	C
	3	39.00	446.74	61.50	0.00	228.95	0.170	36.44	2.6	16.106	B
B - Fortfield Road	1	180.00	368.27	52.50	0.00	161.12	1.117	145.02	35.0	94.611	F
C - Kimmage Road West	2	153.00	397.01	55.50	0.00	183.62	0.833	139.78	13.2	40.446	D

	3	39.00	395.19	61.50	0.00	202.54	0.19 3	36.44	2.6	16.45 4	B
D - Sundrive Road	1	91.00	368.27	50.50	0.00	154.98	0.58 7	83.48	7.5	31.51 0	C
	2	51.00	446.74	50.50	0.00	188.00	0.27 1	47.00	4.0	23.78 3	C

08:15 - 08:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	76.00	476.87	55.50	0.00	220.55	0.34 5	76.39	5.6	21.912	C
	3	31.00	446.74	61.50	0.00	228.95	0.13 5	31.53	2.0	15.693	B
B - Fortfield Road	1	163.00	368.27	52.50	0.00	161.12	1.01 2	159.56	38.4	176.05 5	F
C - Kimmage Road West	2	176.00	395.22	55.50	0.00	182.79	0.96 3	169.52	19.7	60.627	E
	3	41.00	395.19	61.50	0.00	202.54	0.20 2	40.87	2.7	16.586	B
D - Sundrive Road	1	145.00	368.27	50.50	0.00	154.98	0.93 6	136.26	16.3	58.479	E
	2	65.00	446.74	50.50	0.00	188.00	0.34 6	63.87	5.1	25.062	C

08:30 - 08:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	100.00	464.81	55.50	0.00	214.97	0.46 5	98.15	7.4	24.247	C
	3	45.00	446.74	61.50	0.00	228.95	0.19 7	44.07	3.0	16.432	B
B - Fortfield Road	1	134.00	368.27	52.50	0.00	161.12	0.83 2	156.96	15.5	127.24 8	F
C - Kimmage Road West	2	188.00	398.60	55.50	0.00	184.35	1.02 0	179.59	28.1	88.347	F
	3	49.00	395.19	61.50	0.00	202.54	0.24 2	48.46	3.2	17.126	B
D - Sundrive Road	1	120.00	368.27	50.50	0.00	154.98	0.77 4	125.28	11.0	44.211	D
	2	69.00	446.74	50.50	0.00	188.00	0.36 7	68.67	5.5	25.463	C

08:45 - 09:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	89.00	470.81	55.50	0.00	217.75	0.40 9	89.86	6.5	23.10 1	C
	3	50.00	446.74	61.50	0.00	228.95	0.21 8	49.67	3.3	16.71 5	B
B - Fortfield Road	1	150.00	368.27	52.50	0.00	161.12	0.93 1	148.89	16.6	62.38 8	E
C - Kimmage Road West	2	176.00	403.16	55.50	0.00	186.46	0.94 4	178.36	25.7	99.73 0	F
	3	41.00	395.19	61.50	0.00	202.54	0.20 2	41.54	2.7	16.58 8	B
D - Sundrive Road	1	134.00	368.27	50.50	0.00	154.98	0.86 5	131.78	13.2	49.92 0	D
	2	67.00	446.74	50.50	0.00	188.00	0.35 6	67.16	5.3	25.27 0	C

2029 wdev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Kimmage Crossroads	Signalised		109.25	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-65	C - Kimmage Road West - Traffic Stream 2	109.25	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2029 wdev	PM	DIRECT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Terenure Road West		✓	100.000
B - Fortfield Road		✓	100.000
C - Kimmage Road West		✓	100.000
D - Sundrive Road		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 -
17:15

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0.00	8.00	76.00	21.00
	B - Fortfield Road	10.00	0.00	19.00	105.00
	C - Kimmage Road West	58.00	18.00	0.00	60.00
	D - Sundrive Road	13.00	189.00	86.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
17:15 - 17:30	From				
	A - Terenure Road West	0.00	8.00	57.00	29.00
	B - Fortfield Road	2.00	0.00	26.00	115.00
	C - Kimmage Road West	45.00	28.00	0.00	63.00
	D - Sundrive Road	22.00	207.00	83.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
17:30 - 17:45	From				
	A - Terenure Road West	0.00	8.00	81.00	17.00
	B - Fortfield Road	1.00	0.00	28.00	114.00
	C - Kimmage Road West	84.00	31.00	0.00	79.00
	D - Sundrive Road	15.00	178.00	71.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
17:45 - 18:00	From				
	A - Terenure Road West	0.00	7.00	53.00	17.00
	B - Fortfield Road	1.00	0.00	27.00	119.00
	C - Kimmage Road West	53.00	40.00	0.00	74.00
	D - Sundrive Road	17.00	212.00	73.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0	0	0	0
	B - Fortfield Road	0	0	0	0
	C - Kimmage Road West	0	0	0	0
	D - Sundrive Road	0	0	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
17:00-17:15	A - Terenure Road West	105.00	105.00
	B - Fortfield Road	134.00	134.00
	C - Kimmage Road West	136.00	136.00
	D - Sundrive Road	288.00	288.00
17:15-17:30	A - Terenure Road West	94.00	94.00
	B - Fortfield Road	143.00	143.00
	C - Kimmage Road West	136.00	136.00
	D - Sundrive Road	312.00	312.00
17:30-17:45	A - Terenure Road West	106.00	106.00
	B - Fortfield Road	143.00	143.00
	C - Kimmage Road West	194.00	194.00

	D - Sundrive Road	264.00	264.00
17:45-18:00	A - Terenure Road West	77.00	77.00
	B - Fortfield Road	147.00	147.00
	C - Kimmage Road West	167.00	167.00
	D - Sundrive Road	302.00	302.00

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Terenure Road West	0.61	38.27	10.2	D
B - Fortfield Road	0.69	23.23	9.1	C
C - Kimmage Road West	1.25	251.18	52.5	F
D - Sundrive Road	1.09	97.28	51.2	F

Main Results for each time segment

17:00 - 17:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	84.00	465.45	37.50	0.00	145.45	0.578	75.84	8.2	39.497	D
	3	21.00	446.74	43.50	0.00	161.94	0.130	19.20	1.8	26.083	C
B - Fortfield Road	1	134.00	368.27	69.50	0.00	213.29	0.628	125.85	8.1	20.840	C
C - Kimmage Road West	2	118.00	415.39	37.50	0.00	129.81	0.909	103.34	14.7	63.819	E
	3	18.00	395.19	43.50	0.00	143.26	0.126	16.46	1.5	26.088	C
D - Sundrive Road	1	202.00	368.27	68.50	0.00	210.22	0.961	183.36	18.6	48.763	D
	2	86.00	446.74	68.50	0.00	255.01	0.337	80.98	5.0	14.757	B

17:15 - 17:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	65.00	461.70	37.50	0.00	144.28	0.451	66.98	6.2	36.133	D
	3	29.00	446.74	43.50	0.00	161.94	0.179	28.31	2.5	26.803	C
B - Fortfield Road	1	143.00	368.27	69.50	0.00	213.29	0.670	142.32	8.8	22.420	C
C - Kimmage Road West	2	108.00	407.45	37.50	0.00	127.33	0.848	109.56	13.1	65.507	E
	3	28.00	395.19	43.50	0.00	143.26	0.195	27.13	2.4	27.156	C
D - Sundrive Road	1	229.00	368.27	68.50	0.00	210.22	1.089	207.70	39.9	95.198	F
	2	83.00	446.74	68.50	0.00	255.01	0.325	83.18	4.8	14.596	B

17:30 - 17:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue	Delay (s)	Signalised level of service
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			n flow (PCU/TS)						(PCU)		
A - Terenure Road West	2	89.00	466.18	37.50	0.00	145.68	0.61 1	86.46	8.7	40.661	D
	3	17.00	446.74	43.50	0.00	161.94	0.10 5	18.04	1.5	25.741	C
B - Fortfield Road	1	143.00	368.27	69.50	0.00	213.29	0.67 0	142.99	8.8	22.515	C
C - Kimmage Road West	2	163.00	417.98	37.50	0.00	130.62	1.24 8	127.49	48.6	145.44 6	F
	3	31.00	395.19	43.50	0.00	143.26	0.21 6	30.74	2.7	27.499	C
D - Sundrive Road	1	193.00	368.27	68.50	0.00	210.22	0.91 8	205.89	27.1	117.77 2	F
	2	71.00	446.74	68.50	0.00	255.01	0.27 8	71.72	4.1	13.959	B

17:45 - 18:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculate d saturation flow (PCU/TS)	Effectiv e green time (s)	NEE G (s)	Capacit y (PCU/TS)	DOS	Throughp ut (PCU/TS)	End queu e (PCU)	Delay (s)	Signalise d level of service
A - Terenure Road West	2	60.00	462.56	37.50	0.00	144.55	0.41 5	63.04	5.7	35.289	D
	3	17.00	446.74	43.50	0.00	161.94	0.10 5	17.00	1.5	25.740	C
B - Fortfield Road	1	147.00	368.27	69.50	0.00	213.29	0.68 9	146.69	9.1	23.232	C
C - Kimmage Road West	2	127.00	407.52	37.50	0.00	127.35	0.99 7	126.54	49.1	321.28 3	F
	3	40.00	395.19	43.50	0.00	143.26	0.27 9	39.21	3.5	28.583	C
D - Sundrive Road	1	229.00	368.27	68.50	0.00	210.22	1.08 9	209.15	46.9	123.80 8	F
	2	73.00	446.74	68.50	0.00	255.01	0.28 6	72.88	4.2	14.058	B

Junctions 10											
OSCADY 10 - Signalised Intersection Module											
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Filename: Kimmage Crossroads 2039 wod.j10
 Path: C:\Users\martin.rogers\Dropbox\Carlisle 2021\oscady
 Report generation date: 31/08/2021 17:30:23

[2039 wod, AM](#)

[2039 wod, PM](#)

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Network Residual Capacity
2039 wod												
A - Terenure Road West	D1	11.2	23.05	0.50	C	-39 % [B - Fortfield Road - Traffic Stream 1]	D2	10.6	38.85	0.63	D	-67 % [C - Kimmage Road West - Traffic Stream 2]
B - Fortfield Road		56.1	256.91	1.19	F			9.8	24.27	0.73	C	
C - Kimmage Road West		46.2	157.16	1.08	F			66.9	291.63	1.31	F	
D - Sundrive Road		24.4	52.58	0.97	D			88.5	177.84	1.16	F	

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Kimmage Crossroads exist
Location	Kimmage
Site number	
Date	27/03/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	DOS Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2039 wod	AM	DIRECT	08:00	09:00	60	15
D2	2039 wod	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2039 wod, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Kimmage Crossroads	Signalised		126.55	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-39	B - Fortfield Road - Traffic Stream 1	126.55	F

Arms

Arms

Arm	Name	Description
A	Terenure Road West	
B	Fortfield Road	
C	Kimmage Road West	
D	Sundrive Road	

OSCADY Traffic Streams

Arm	Traffic Stream	Phase	Signals EEG (s)	Destination arms	Straight move
A - Terenure Road West	2	A	0.00	B, C	C
	3	B	0.00	D	C
B - Fortfield Road	1	D	5.00	A, C, D	
C - Kimmage Road West	2	A	0.00	A, D	A

	3	B	0.00	B	A
D - Sundrive Road	1	E	0.00	A, B	
	2	E	0.00	C	

OSCADY Lanes

Arm	Traffic Stream	Destination arms	Gradient (%)	Width (m)	Turning radius (m)	Nearside lane	Has bay
A - Terenure Road West	2	C, B	0	3.00	5.00	✓	
	3	D	0	3.00	10.00		
B - Fortfield Road	1	C, D, A	0	3.00	5.00	✓	
C - Kimmage Road West	2	A, D	0	3.00	5.00	✓	
	3	B	0	3.00	5.00		
D - Sundrive Road	1	A, B	0	3.00	5.00	✓	
	2	C	0	3.00	10.00		

Signal Timings

Junction 1

Junction	Sequence to use	Cycle time (s)	Maximum cycle time (s)	Start displacement (s)	End displacement (s)
1	1	120	120	1.40	2.90

Optimisation options

Junction	Optimise stage lengths	Optimise cycle time	Optimiser demand source	Optimiser message
1	✓	✓	Average	Timings provide capacity maximisation.

Phases

Junction	Phase	Name	Minimum green (s)
1	A		5
	B		5
	C		5
	D		5
	E		5
	F		7

Library Stages

Junction	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, C, B	1		
	2	B	1		
	3	D, F, E	1		
	4	E	1		
	5		5		

Stage Sequences

Junction	Sequence	Name	Stage IDs	Stage ends
1	1		5, 1, 2, 3, 4	6, 59, 65, 116, 0

Intergreen Matrix for Junction 1

Intergreen matrix for Canada							
		To					
From		A	B	C	D	E	F
	A				5	5	5
	B					5	5
	C					5	5
	D	0					
	E	0	0	0			
	F	0	0	0			

Interstage Matrix for Junction 1

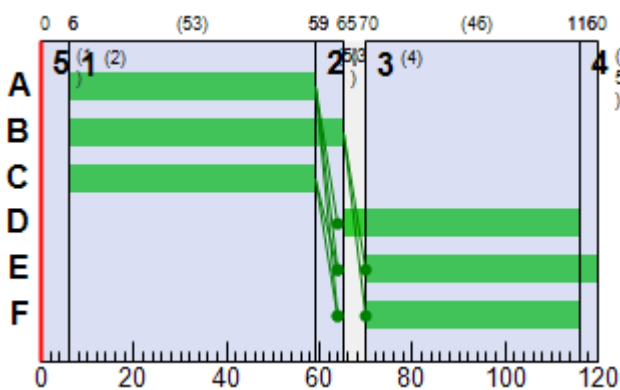
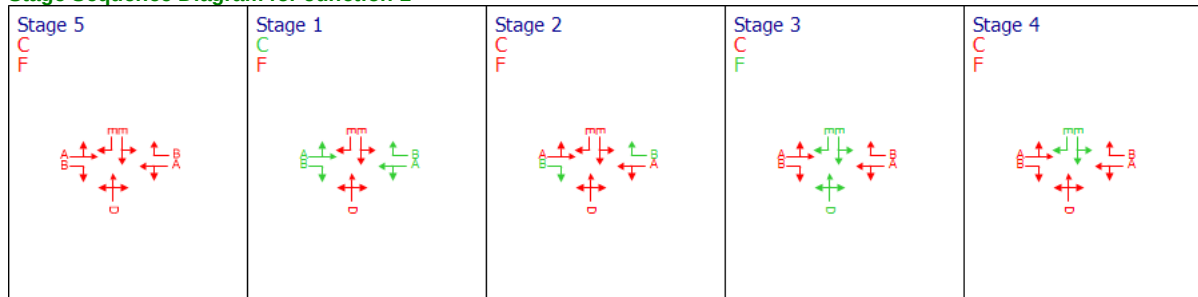
	To					
	1	2	3	4	5	
From	1	0	0	5	5	0
	2	0	0	5	5	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

Resultant Stages

Junction	Resultant Stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	5		0	6	6	5	5
	2	1	A,C,B	6	59	53	1	5
	3	2	B	59	65	6	1	5
	4	3	D,F,E	70	116	46	1	7
	5	4	E	116	0	4	1	1

Resultant Phase Green Periods

Junction	Phase	Green period	Start time (s)	End time (s)	Duration (s)
1	A	1	6	59	53
	B	1	6	65	59
	C	1	6	59	53
	D	1	65	116	51
	E	1	70	0	50
	F	1	70	116	46

Phase Timings Diagram for Junction 1**Stage Sequence Diagram for Junction 1****Traffic Demand****Demand Set Details**

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2039 wod	AM	DIRECT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Terenure Road West		✓	100.000
B - Fortfield Road		✓	100.000
C - Kimmage Road West		✓	100.000
D - Sundrive Road		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	8.00	77.00	42.00
		B - Fortfield Road	0.00	0.00	12.00	179.00
		C - Kimmage Road West	50.00	40.00	0.00	109.00
		D - Sundrive Road	13.00	83.00	54.00	0.00

Demand (PCU/TS)

08:15 - 08:30		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	1.00	79.00	33.00
		B - Fortfield Road	0.00	0.00	24.00	148.00
		C - Kimmage Road West	54.00	42.00	0.00	129.00
		D - Sundrive Road	13.00	141.00	69.00	0.00

Demand (PCU/TS)

08:30 - 08:45		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	11.00	95.00	48.00
		B - Fortfield Road	2.00	0.00	27.00	113.00
		C - Kimmage Road West	64.00	51.00	0.00	132.00
		D - Sundrive Road	21.00	107.00	72.00	0.00

Demand (PCU/TS)

08:45 - 09:00		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	5.00	88.00	53.00
		B - Fortfield Road	1.00	0.00	31.00	127.00
		C - Kimmage Road West	68.00	42.00	0.00	114.00
		D - Sundrive Road	28.00	114.00	70.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
	A - Terenure Road West	0	0	0	0
	B - Fortfield Road	0	0	0	0
	C - Kimmage Road West	0	0	0	0
	D - Sundrive Road	0	0	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
08:00-08:15	A - Terenure Road West	127.00	127.00
	B - Fortfield Road	191.00	191.00
	C - Kimmage Road West	199.00	199.00
	D - Sundrive Road	150.00	150.00
08:15-08:30	A - Terenure Road West	113.00	113.00
	B - Fortfield Road	172.00	172.00
	C - Kimmage Road West	225.00	225.00
	D - Sundrive Road	223.00	223.00
08:30-08:45	A - Terenure Road West	154.00	154.00
	B - Fortfield Road	142.00	142.00
	C - Kimmage Road West	247.00	247.00
	D - Sundrive Road	200.00	200.00
08:45-09:00	A - Terenure Road West	146.00	146.00
	B - Fortfield Road	159.00	159.00
	C - Kimmage Road West	224.00	224.00
	D - Sundrive Road	212.00	212.00

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Terenure Road West	0.50	23.05	11.2	C
B - Fortfield Road	1.19	256.91	56.1	F
C - Kimmage Road West	1.08	157.16	46.2	F
D - Sundrive Road	0.97	52.58	24.4	D

Main Results for each time segment

08:00 - 08:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	85.00	465.60	54.50	0.00	211.46	0.402	78.65	6.3	23.567	C
	3	42.00	446.74	60.50	0.00	225.23	0.186	39.20	2.8	16.830	B
B - Fortfield Road	1	191.00	368.27	52.50	0.00	161.12	1.185	146.18	44.8	111.049	F
C - Kimmage Road West	2	159.00	397.09	54.50	0.00	180.34	0.882	144.15	14.8	46.127	D

	3	40.00	395.19	60.50	0.00	199.24	0.20 1	37.33	2.7	17.091	B
D - Sundrive Road	1	96.00	368.27	51.50	0.00	158.05	0.60 7	88.14	7.9	31.523	C
	2	54.00	446.74	51.50	0.00	191.73	0.28 2	49.82	4.2	23.337	C

08:15 - 08:30

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculate d saturation flow (PCU/TS)	Effectiv e green time (s)	NEE G (s)	Capacit y (PCU/T S)	DOS	Throughp ut (PCU/TS)	End queu e (PCU)	Delay (s)	Signalise d level of service
A - Terenure Road West	2	80.00	476.96	54.50	0.00	216.62	0.36 9	80.39	6.0	22.944	C
	3	33.00	446.74	60.50	0.00	225.23	0.14 7	33.61	2.2	16.340	B
B - Fortfield Road	1	172.00	368.27	52.50	0.00	161.12	1.06 8	160.68	56.1	235.47 9	F
C - Kimmage Road West	2	183.00	395.18	54.50	0.00	179.48	1.02 0	172.15	25.7	76.552	E
	3	42.00	395.19	60.50	0.00	199.24	0.21 1	41.86	2.8	17.228	B
D - Sundrive Road	1	154.00	368.27	51.50	0.00	158.05	0.97 4	142.87	19.0	65.079	E
	2	69.00	446.74	51.50	0.00	191.73	0.36 0	67.80	5.4	24.696	C

08:30 - 08:45

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculate d saturation flow (PCU/TS)	Effectiv e green time (s)	NEE G (s)	Capacit y (PCU/T S)	DOS	Throughp ut (PCU/TS)	End queu e (PCU)	Delay (s)	Signalise d level of service
A - Terenure Road West	2	106.00	464.30	54.50	0.00	210.87	0.50 3	103.94	8.0	25.718	C
	3	48.00	446.74	60.50	0.00	225.23	0.21 3	46.99	3.2	17.174	B
B - Fortfield Road	1	142.00	368.27	52.50	0.00	161.12	0.88 1	158.98	39.2	256.90 6	F
C - Kimmage Road West	2	196.00	398.28	54.50	0.00	180.89	1.08 4	179.53	42.2	128.39 4	F
	3	51.00	395.19	60.50	0.00	199.24	0.25 6	50.39	3.4	17.866	B
D - Sundrive Road	1	128.00	368.27	51.50	0.00	158.05	0.81 0	134.97	12.0	49.351	D
	2	72.00	446.74	51.50	0.00	191.73	0.37 6	71.76	5.6	24.997	C

08:45 - 09:00

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculate d saturation flow (PCU/TS)	Effectiv e green time (s)	NEE G (s)	Capacit y (PCU/T S)	DOS	Throughp ut (PCU/TS)	End queu e (PCU)	Delay (s)	Signalise d level of service
A - Terenure Road West	2	93.00	471.15	54.50	0.00	213.98	0.43 5	94.05	7.0	24.229	C
	3	53.00	446.74	60.50	0.00	225.23	0.23 5	52.66	3.5	17.473	B
B - Fortfield Road	1	159.00	368.27	52.50	0.00	161.12	0.98 7	158.80	39.4	200.05 5	F
C - Kimmage Road West	2	182.00	403.02	54.50	0.00	183.04	0.99 4	180.77	43.4	189.45 4	F
	3	42.00	395.19	60.50	0.00	199.24	0.21 1	42.61	2.8	17.231	B
D - Sundrive Road	1	142.00	368.27	51.50	0.00	158.05	0.89 8	139.41	14.6	54.486	D
	2	70.00	446.74	51.50	0.00	191.73	0.36 5	70.16	5.5	24.806	C

2039 wod, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Kimmage Crossroads	Signalised		152.71	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-67	C - Kimmage Road West - Traffic Stream 2	152.71	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2039 wod	PM	DIRECT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Terenure Road West		✓	100.000
B - Fortfield Road		✓	100.000
C - Kimmage Road West		✓	100.000
D - Sundrive Road		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 -
17:15

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0.00	9.00	79.00	22.00
	B - Fortfield Road	11.00	0.00	20.00	112.00
	C - Kimmage Road West	60.00	18.00	0.00	62.00
	D - Sundrive Road	14.00	201.00	89.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
17:15 - 17:30	From				
	A - Terenure Road West	0.00	8.00	59.00	31.00
	B - Fortfield Road	2.00	0.00	28.00	123.00
	C - Kimmage Road West	47.00	29.00	0.00	66.00
	D - Sundrive Road	23.00	220.00	87.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
17:30 - 17:45	From				
	A - Terenure Road West	0.00	8.00	84.00	18.00
	B - Fortfield Road	1.00	0.00	29.00	121.00
	C - Kimmage Road West	88.00	33.00	0.00	83.00
	D - Sundrive Road	16.00	189.00	74.00	0.00

Demand (PCU/TS)

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
17:45 - 18:00	From				
	A - Terenure Road West	0.00	7.00	54.00	18.00
	B - Fortfield Road	1.00	0.00	29.00	127.00
	C - Kimmage Road West	56.00	42.00	0.00	77.00
	D - Sundrive Road	18.00	225.00	76.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0	0	0	0
	B - Fortfield Road	0	0	0	0
	C - Kimmage Road West	0	0	0	0
	D - Sundrive Road	0	0	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
17:00-17:15	A - Terenure Road West	110.00	110.00
	B - Fortfield Road	143.00	143.00
	C - Kimmage Road West	140.00	140.00
	D - Sundrive Road	304.00	304.00
17:15-17:30	A - Terenure Road West	98.00	98.00
	B - Fortfield Road	153.00	153.00
	C - Kimmage Road West	142.00	142.00
	D - Sundrive Road	330.00	330.00
17:30-17:45	A - Terenure Road West	110.00	110.00
	B - Fortfield Road	151.00	151.00
	C - Kimmage Road West	204.00	204.00

	D - Sundrive Road	279.00	279.00
17:45-18:00	A - Terenure Road West	79.00	79.00
	B - Fortfield Road	157.00	157.00
	C - Kimmage Road West	175.00	175.00
	D - Sundrive Road	319.00	319.00

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Terenure Road West	0.63	38.85	10.6	D
B - Fortfield Road	0.73	24.27	9.8	C
C - Kimmage Road West	1.31	291.63	66.9	F
D - Sundrive Road	1.16	177.84	88.5	F

Main Results for each time segment

17:00 - 17:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	88.00	464.50	37.50	0.00	145.16	0.606	79.39	8.6	40.474	D
	3	22.00	446.74	43.50	0.00	161.94	0.136	20.12	1.9	26.170	C
B - Fortfield Road	1	143.00	368.27	70.50	0.00	216.36	0.661	134.38	8.6	21.361	C
C - Kimmage Road West	2	122.00	415.42	37.50	0.00	129.82	0.940	105.86	16.1	68.739	E
	3	18.00	395.19	43.50	0.00	143.26	0.126	16.46	1.5	26.088	C
D - Sundrive Road	1	215.00	368.27	68.50	0.00	210.22	1.023	189.55	25.5	61.809	E
	2	89.00	446.74	68.50	0.00	255.01	0.349	83.80	5.2	14.928	B

17:15 - 17:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	67.00	462.19	37.50	0.00	144.44	0.464	69.23	6.4	36.470	D
	3	31.00	446.74	43.50	0.00	161.94	0.191	30.22	2.7	26.990	C
B - Fortfield Road	1	153.00	368.27	70.50	0.00	216.36	0.707	152.21	9.4	23.330	C
C - Kimmage Road West	2	113.00	407.37	37.50	0.00	127.30	0.888	114.07	15.1	75.574	E
	3	29.00	395.19	43.50	0.00	143.26	0.202	28.05	2.5	27.268	C
D - Sundrive Road	1	243.00	368.27	68.50	0.00	210.22	1.156	209.55	58.9	135.224	F
	2	87.00	446.74	68.50	0.00	255.01	0.341	87.12	5.1	14.821	B

17:30 - 17:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue	Delay (s)	Signalised level of service
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			n flow (PCU/TS)						(PCU)		
A - Terenure Road West	2	92.00	466.58	37.50	0.00	145.81	0.63 1	89.32	9.1	41.398	D
	3	18.00	446.74	43.50	0.00	161.94	0.11 1	19.12	1.5	25.826	C
B - Fortfield Road	1	151.00	368.27	70.50	0.00	216.36	0.69 8	151.13	9.3	23.086	C
C - Kimmage Road West	2	171.00	417.90	37.50	0.00	130.59	1.30 9	128.34	57.7	165.84 1	F
	3	33.00	395.19	43.50	0.00	143.26	0.23 0	32.65	2.8	27.731	C
D - Sundrive Road	1	205.00	368.27	68.50	0.00	210.22	0.97 5	212.75	51.2	208.35 3	F
	2	74.00	446.74	68.50	0.00	255.01	0.29 0	74.78	4.3	14.114	B

17:45 - 18:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculate d saturation flow (PCU/TS)	Effective green time (s)	NEE G (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	61.00	462.82	37.50	0.00	144.63	0.42 2	64.29	5.8	35.447	D
	3	18.00	446.74	43.50	0.00	161.94	0.11 1	18.00	1.5	25.825	C
B - Fortfield Road	1	157.00	368.27	70.50	0.00	216.36	0.72 6	156.53	9.8	24.274	C
C - Kimmage Road West	2	133.00	407.90	37.50	0.00	127.47	1.04 3	127.46	63.3	374.61 5	F
	3	42.00	395.19	43.50	0.00	143.26	0.29 3	41.20	3.6	28.839	C
D - Sundrive Road	1	243.00	368.27	68.50	0.00	210.22	1.15 6	210.03	84.1	229.01 2	F
	2	76.00	446.74	68.50	0.00	255.01	0.29 8	75.88	4.4	14.215	B

Junctions 10											
OSCADY 10 - Signalised Intersection Module											
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Filename: Kimmage Crossroads 2039 wdev.j10
 Path: C:\Users\martin.rogers\Dropbox\Carlisle 2021\oscad
 Report generation date: 31/08/2021 17:43:59

[2039 wdev, AM](#)
[2039 wdev, PM](#)

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Network Residual Capacity
2039 wdev												
A - Terenure Road West	D1	11.1	22.39	0.50	C	-39 % [B - Fortfield Road - Traffic Stream 1]	D2	10.8	39.33	0.64	D	-68 % [C - Kimmage Road West - Traffic Stream 2]
B - Fortfield Road		56.1	256.91	1.19	F			10.0	25.44	0.74	C	
C - Kimmage Road West		48.5	158.18	1.08	F			71.6	304.36	1.32	F	
D - Sundrive Road		26.0	56.37	0.99	E			88.7	176.84	1.16	F	

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Kimmage Crossroads exist
Location	Kimmage
Site number	
Date	27/03/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	DOS Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2039 wdev	AM	DIRECT	08:00	09:00	60	15
D2	2039 wdev	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2039 wdev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Kimmage Crossroads	Signalised		127.76	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-39	B - Fortfield Road - Traffic Stream 1	127.76	F

Arms

Arms

Arm	Name	Description
A	Terenure Road West	
B	Fortfield Road	
C	Kimmage Road West	
D	Sundrive Road	

OSCADY Traffic Streams

Arm	Traffic Stream	Phase	Signals EEG (s)	Destination arms	Straight move
A - Terenure Road West	2	A	0.00	B, C	C
	3	B	0.00	D	C
B - Fortfield Road	1	D	5.00	A, C, D	
C - Kimmage Road West	2	A	0.00	A, D	A

	3	B	0.00	B	A
D - Sundrive Road	1	E	0.00	A, B	
	2	E	0.00	C	

OSCADY Lanes

Arm	Traffic Stream	Destination arms	Gradient (%)	Width (m)	Turning radius (m)	Nearside lane	Has bay
A - Terenure Road West	2	C, B	0	3.00	5.00	✓	
	3	D	0	3.00	10.00		
B - Fortfield Road	1	C, D, A	0	3.00	5.00	✓	
C - Kimmage Road West	2	A, D	0	3.00	5.00	✓	
	3	B	0	3.00	5.00		
D - Sundrive Road	1	A, B	0	3.00	5.00	✓	
	2	C	0	3.00	10.00		

Signal Timings

Junction 1

Junction	Sequence to use	Cycle time (s)	Maximum cycle time (s)	Start displacement (s)	End displacement (s)
1	1	120	120	1.40	2.90

Optimisation options

Junction	Optimise stage lengths	Optimise cycle time	Optimiser demand source	Optimiser message
1	✓	✓	Average	Timings provide capacity maximisation.

Phases

Junction	Phase	Name	Minimum green (s)
1	A		5
	B		5
	C		5
	D		5
	E		5
	F		7

Library Stages

Junction	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, C, B	1		
	2	B	1		
	3	D, F, E	1		
	4	E	1		
	5		5		

Stage Sequences

Junction	Sequence	Name	Stage IDs	Stage ends
1	1		5, 1, 2, 3, 4	6, 60, 66, 117, 0

Intergreen Matrix for Junction 1

Intergreen matrix for Canada							
		To					
From		A	B	C	D	E	F
	A				5	5	5
	B					5	5
	C					5	5
	D	0					
	E	0	0	0			
	F	0	0	0			

Interstage Matrix for Junction 1

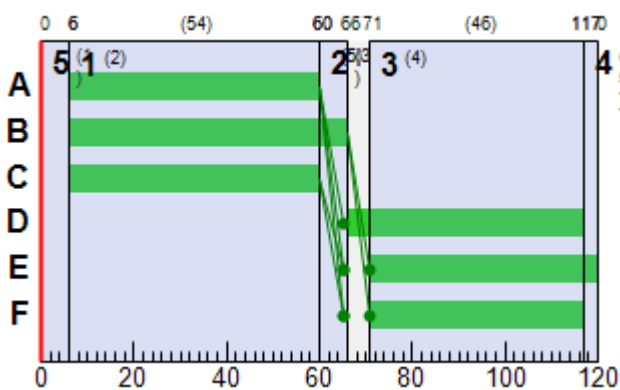
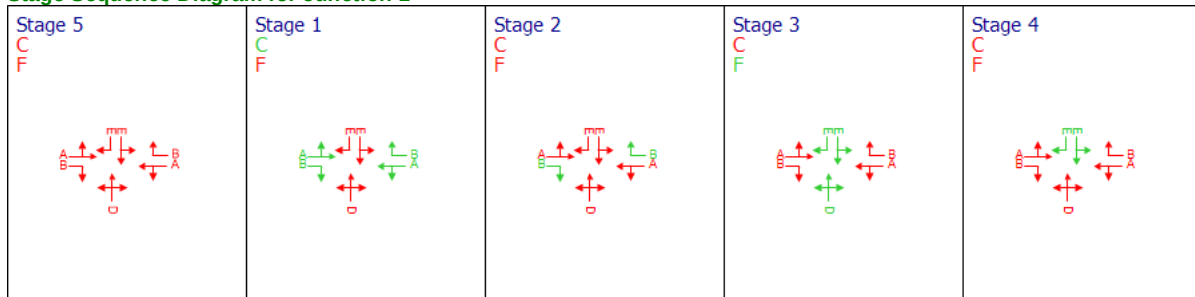
	To					
	1	2	3	4	5	
From	1	0	0	5	5	0
	2	0	0	5	5	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

Resultant Stages

Junction	Resultant Stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	5		0	6	6	5	5
	2	1	A,C,B	6	60	54	1	5
	3	2	B	60	66	6	1	5
	4	3	D,F,E	71	117	46	1	7
	5	4	E	117	0	3	1	1

Resultant Phase Green Periods

Junction	Phase	Green period	Start time (s)	End time (s)	Duration (s)
1	A	1	6	60	54
	B	1	6	66	60
	C	1	6	60	54
	D	1	66	117	51
	E	1	71	0	49
	F	1	71	117	46

Phase Timings Diagram for Junction 1**Stage Sequence Diagram for Junction 1****Traffic Demand****Demand Set Details**

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2039 wdev	AM	DIRECT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Terenure Road West		✓	100.000
B - Fortfield Road		✓	100.000
C - Kimmage Road West		✓	100.000
D - Sundrive Road		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 - 08:15		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	8.00	78.00	42.00
		B - Fortfield Road	0.00	0.00	12.00	179.00
		C - Kimmage Road West	51.00	41.00	0.00	111.00
		D - Sundrive Road	13.00	83.00	55.00	0.00

Demand (PCU/TS)

08:15 - 08:30		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	1.00	80.00	33.00
		B - Fortfield Road	0.00	0.00	24.00	148.00
		C - Kimmage Road West	55.00	43.00	0.00	132.00
		D - Sundrive Road	13.00	141.00	69.00	0.00

Demand (PCU/TS)

08:30 - 08:45		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	11.00	96.00	48.00
		B - Fortfield Road	2.00	0.00	27.00	113.00
		C - Kimmage Road West	66.00	52.00	0.00	134.00
		D - Sundrive Road	21.00	107.00	73.00	0.00

Demand (PCU/TS)

08:45 - 09:00		To				
	From		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
		A - Terenure Road West	0.00	5.00	89.00	53.00
		B - Fortfield Road	1.00	0.00	31.00	127.00
		C - Kimmage Road West	70.00	43.00	0.00	117.00
		D - Sundrive Road	28.00	114.00	71.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0	0	0	0
	B - Fortfield Road	0	0	0	0
	C - Kimmage Road West	0	0	0	0
	D - Sundrive Road	0	0	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
08:00-08:15	A - Terenure Road West	128.00	128.00
	B - Fortfield Road	191.00	191.00
	C - Kimmage Road West	203.00	203.00
	D - Sundrive Road	151.00	151.00
08:15-08:30	A - Terenure Road West	114.00	114.00
	B - Fortfield Road	172.00	172.00
	C - Kimmage Road West	230.00	230.00
	D - Sundrive Road	223.00	223.00
08:30-08:45	A - Terenure Road West	155.00	155.00
	B - Fortfield Road	142.00	142.00
	C - Kimmage Road West	252.00	252.00
	D - Sundrive Road	201.00	201.00
08:45-09:00	A - Terenure Road West	147.00	147.00
	B - Fortfield Road	159.00	159.00
	C - Kimmage Road West	230.00	230.00
	D - Sundrive Road	213.00	213.00

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Terenure Road West	0.50	22.39	11.1	C
B - Fortfield Road	1.19	256.91	56.1	F
C - Kimmage Road West	1.08	158.18	48.5	F
D - Sundrive Road	0.99	56.37	26.0	E

Main Results for each time segment

08:00 - 08:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	86.00	465.75	55.50	0.00	215.41	0.399	79.68	6.3	22.910	C
	3	42.00	446.74	61.50	0.00	228.95	0.183	39.25	2.8	16.268	B
B - Fortfield Road	1	191.00	368.27	52.50	0.00	161.12	1.185	146.18	44.8	111.049	F
C - Kimmage Road West	2	162.00	397.12	55.50	0.00	183.67	0.882	147.09	14.9	45.396	D

	3	41.00	395.19	61.50	0.00	202.54	0.20 2	38.30	2.7	16.584	B
D - Sundrive Road	1	96.00	368.27	50.50	0.00	154.98	0.61 9	88.00	8.0	32.651	C
	2	55.00	446.74	50.50	0.00	188.00	0.29 3	50.68	4.3	24.132	C

08:15 - 08:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	81.00	476.98	55.50	0.00	220.60	0.36 7	81.39	5.9	22.306	C
	3	33.00	446.74	61.50	0.00	228.95	0.14 4	33.60	2.2	15.795	B
B - Fortfield Road	1	172.00	368.27	52.50	0.00	161.12	1.06 8	160.68	56.1	235.47 9	F
C - Kimmage Road West	2	187.00	395.08	55.50	0.00	182.73	1.02 3	175.58	26.3	76.510	E
	3	43.00	395.19	61.50	0.00	202.54	0.21 2	42.87	2.8	16.718	B
D - Sundrive Road	1	154.00	368.27	50.50	0.00	154.98	0.99 4	141.50	20.5	70.215	E
	2	69.00	446.74	50.50	0.00	188.00	0.36 7	67.86	5.5	25.457	C

08:30 - 08:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	107.00	464.43	55.50	0.00	214.80	0.49 8	104.97	8.0	24.987	C
	3	48.00	446.74	61.50	0.00	228.95	0.21 0	47.01	3.2	16.600	B
B - Fortfield Road	1	142.00	368.27	52.50	0.00	161.12	0.88 1	158.98	39.2	256.90 6	F
C - Kimmage Road West	2	200.00	398.63	55.50	0.00	184.36	1.08 5	183.06	43.3	129.59 1	F
	3	52.00	395.19	61.50	0.00	202.54	0.25 7	51.40	3.4	17.338	B
D - Sundrive Road	1	128.00	368.27	50.50	0.00	154.98	0.82 6	135.97	12.5	54.579	D
	2	73.00	446.74	50.50	0.00	188.00	0.38 8	72.67	5.8	25.875	C

08:45 - 09:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	94.00	471.23	55.50	0.00	217.94	0.43 1	95.03	6.9	23.549	C
	3	53.00	446.74	61.50	0.00	228.95	0.23 1	52.67	3.5	16.888	B
B - Fortfield Road	1	159.00	368.27	52.50	0.00	161.12	0.98 7	158.80	39.4	200.05 5	F
C - Kimmage Road West	2	187.00	403.09	55.50	0.00	186.43	1.00 3	184.65	45.6	190.70 7	F
	3	43.00	395.19	61.50	0.00	202.54	0.21 2	43.60	2.8	16.721	B
D - Sundrive Road	1	142.00	368.27	50.50	0.00	154.98	0.91 6	139.11	15.4	59.013	E
	2	71.00	446.74	50.50	0.00	188.00	0.37 8	71.16	5.6	25.675	C

2039 wdev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Kimmage Crossroads	Signalised		155.76	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-68	C - Kimmage Road West - Traffic Stream 2	155.76	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2039 wdev	PM	DIRECT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Terenure Road West		✓	100.000
B - Fortfield Road		✓	100.000
C - Kimmage Road West		✓	100.000
D - Sundrive Road		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0.00	9.00	81.00	22.00
	B - Fortfield Road	11.00	0.00	20.00	112.00
	C - Kimmage Road West	61.00	19.00	0.00	63.00
	D - Sundrive Road	14.00	201.00	91.00	0.00

17:00 -
17:15

Demand (PCU/TS)**17:15 -
17:30**

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0.00	8.00	61.00	31.00
	B - Fortfield Road	2.00	0.00	28.00	123.00
	C - Kimmage Road West	48.00	29.00	0.00	67.00
	D - Sundrive Road	23.00	220.00	89.00	0.00

Demand (PCU/TS)**17:30 -
17:45**

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0.00	8.00	86.00	18.00
	B - Fortfield Road	1.00	0.00	29.00	121.00
	C - Kimmage Road West	89.00	33.00	0.00	84.00
	D - Sundrive Road	16.00	189.00	76.00	0.00

Demand (PCU/TS)**17:45 -
18:00**

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0.00	7.00	56.00	18.00
	B - Fortfield Road	1.00	0.00	29.00	127.00
	C - Kimmage Road West	57.00	43.00	0.00	78.00
	D - Sundrive Road	18.00	225.00	78.00	0.00

Vehicle Mix**Heavy Vehicle Percentages**

	To				
		A - Terenure Road West	B - Fortfield Road	C - Kimmage Road West	D - Sundrive Road
From	A - Terenure Road West	0	0	0	0
	B - Fortfield Road	0	0	0	0
	C - Kimmage Road West	0	0	0	0
	D - Sundrive Road	0	0	0	0

Detailed Demand Data**Demand for each time segment**

Time Segment	Arm	Demand (PCU/TS)	Demand in PCU (PCU/TS)
17:00-17:15	A - Terenure Road West	112.00	112.00
	B - Fortfield Road	143.00	143.00
	C - Kimmage Road West	143.00	143.00
	D - Sundrive Road	306.00	306.00
17:15-17:30	A - Terenure Road West	100.00	100.00
	B - Fortfield Road	153.00	153.00
	C - Kimmage Road West	144.00	144.00
	D - Sundrive Road	332.00	332.00
17:30-17:45	A - Terenure Road West	112.00	112.00
	B - Fortfield Road	151.00	151.00
	C - Kimmage Road West	206.00	206.00

	D - Sundrive Road	281.00	281.00
17:45-18:00	A - Terenure Road West	81.00	81.00
	B - Fortfield Road	157.00	157.00
	C - Kimmage Road West	178.00	178.00
	D - Sundrive Road	321.00	321.00

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Terenure Road West	0.64	39.33	10.8	D
B - Fortfield Road	0.74	25.44	10.0	C
C - Kimmage Road West	1.32	304.36	71.6	F
D - Sundrive Road	1.16	176.84	88.7	F

Main Results for each time segment

17:00 - 17:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	90.00	464.81	37.50	0.00	145.25	0.620	81.16	8.8	40.949	D
	3	22.00	446.74	43.50	0.00	161.94	0.136	20.12	1.9	26.170	C
B - Fortfield Road	1	143.00	368.27	69.50	0.00	213.29	0.670	134.18	8.8	22.300	C
C - Kimmage Road West	2	124.00	415.43	37.50	0.00	129.82	0.955	106.99	17.0	71.501	E
	3	19.00	395.19	43.50	0.00	143.26	0.133	17.37	1.6	26.191	C
D - Sundrive Road	1	215.00	368.27	68.50	0.00	210.22	1.023	189.55	25.5	61.809	E
	2	91.00	446.74	68.50	0.00	255.01	0.357	85.67	5.3	15.045	B

17:15 - 17:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Terenure Road West	2	69.00	462.66	37.50	0.00	144.58	0.477	71.25	6.6	36.816	D
	3	31.00	446.74	43.50	0.00	161.94	0.191	30.22	2.7	26.990	C
B - Fortfield Road	1	153.00	368.27	69.50	0.00	213.29	0.717	152.18	9.6	24.412	C
C - Kimmage Road West	2	115.00	407.52	37.50	0.00	127.35	0.903	115.94	16.1	81.048	F
	3	29.00	395.19	43.50	0.00	143.26	0.202	28.13	2.5	27.268	C
D - Sundrive Road	1	243.00	368.27	68.50	0.00	210.22	1.156	209.55	58.9	135.224	F
	2	89.00	446.74	68.50	0.00	255.01	0.349	89.12	5.2	14.937	B

17:30 - 17:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue	Delay (s)	Signalised level of service
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			n flow (PCU/TS)						(PCU)		
A - Terenure Road West	2	94.00	466.83	37.50	0.00	145.88	0.64 4	91.29	9.3	41.919	D
	3	18.00	446.74	43.50	0.00	161.94	0.11 1	19.12	1.5	25.826	C
B - Fortfield Road	1	151.00	368.27	69.50	0.00	213.29	0.70 8	151.13	9.5	24.165	C
C - Kimmage Road West	2	173.00	417.88	37.50	0.00	130.59	1.32 5	128.62	60.5	172.92 9	F
	3	33.00	395.19	43.50	0.00	143.26	0.23 0	32.65	2.8	27.731	C
D - Sundrive Road	1	205.00	368.27	68.50	0.00	210.22	0.97 5	212.75	51.2	208.35 3	F
	2	76.00	446.74	68.50	0.00	255.01	0.29 8	76.78	4.4	14.219	B

17:45 - 18:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculate d saturation flow (PCU/TS)	Effectiv e green time (s)	NEE G (s)	Capacit y (PCU/TS)	DOS	Throughp ut (PCU/TS)	End queu e (PCU)	Delay (s)	Signalise d level of service
A - Terenure Road West	2	63.00	463.31	37.50	0.00	144.78	0.43 5	66.32	6.0	35.762	D
	3	18.00	446.74	43.50	0.00	161.94	0.11 1	18.00	1.5	25.825	C
B - Fortfield Road	1	157.00	368.27	69.50	0.00	213.29	0.73 6	156.51	10.0	25.437	C
C - Kimmage Road West	2	135.00	408.03	37.50	0.00	127.51	1.05 9	127.57	67.9	392.08 0	F
	3	43.00	395.19	43.50	0.00	143.26	0.30 0	42.11	3.7	28.968	C
D - Sundrive Road	1	243.00	368.27	68.50	0.00	210.22	1.15 6	210.03	84.1	229.01 2	F
	2	78.00	446.74	68.50	0.00	255.01	0.30 6	77.88	4.5	14.321	B

KIMMAGE ROAD WEST / WHITEHALL ROAD T-JUNCTION

Junctions 10									
OSCADY 10 - Signalised Intersection Module									
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Filename: whitehall rd exist.j10

Path: C:\Users\martin.rogers\Dropbox\Carlisle 2021\oscady

Report generation date: 31/08/2021 18:15:08

[2021 exist, AM](#)

[2021 exist, PM](#)

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Set ID	Queue (PCU)	Delay (s)	DOS	LOS
2021 exist										
A - Kimmage Rd W westbound	D1	8.4	20.56	0.71	C	D2	6.4	14.51	0.60	B
B - Whitehall Road		7.3	43.80	0.79	D		7.0	53.12	0.83	D
C - Kimmage Rd W eastbound		5.1	14.41	0.45	B		5.1	12.06	0.47	B

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Kimmage Rd West / Whitehall Rd
Location	Kimmage, Dublin
Site number	
Date	30/07/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	DOS Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2021 exist	AM	DIRECT	08:00	09:00	60	15
D2	2021 exist	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2021 exist, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Signalised		24.25	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	24.25	C

Arms

Arms

Arm	Name	Description
A	Kimmage Rd W westbound	
B	Whitehall Road	
C	Kimage Rd W eastbound	

OSCADY Traffic Streams

Arm	Traffic Stream	Phase	Destination arms	Straight move
A - Kimmage Rd W westbound	1	A	B, C	C
B - Whitehall Road	1	B	A, C	
C - Kimage Rd W eastbound	1	A	A, B	A

OSCADY Lanes

Arm	Traffic Stream	Destination arms	Gradient (%)	Width (m)	Turning radius (m)	Nearside lane	Has bay
A - Kimmage Rd W westbound	1	B, C	0	3.00	10.00	✓	
B - Whitehall Road	1	A, C	0	3.00	10.00	✓	
C - Kimage Rd W eastbound	1	A, B	0	3.00	10.00	✓	

Signal Timings

Junction 1

Junction	Sequence to use	Cycle time (s)	Maximum cycle time (s)	Start displacement (s)	End displacement (s)
1	1	81	90	1.40	2.90

Optimisation options

Junction	Optimise stage lengths	Optimise cycle time	Optimiser demand source	Optimiser message
1	✓	✓	Average	Timings provide delay minimisation.

Phases

Junction	Phase	Name	Minimum green (s)
1	A		15
	B		15

Library Stages

Junction	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A	15		
	2	B	15		
	3		15		

Stage Sequences

Junction	Sequence	Name	Stage IDs	Stage ends
1	1		3, 1, 2	16, 56, 0

Intergreen Matrix for Junction 1

From	To	
	A	B
	5	5

Interstage Matrix for Junction 1

From	To		
	1	2	3
	0	5	0
	5	0	0

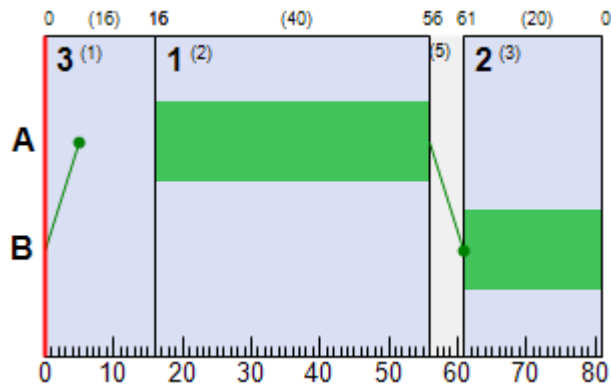
Resultant Stages

Junction	Resultant Stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	3		0	16	16	15	15
	2	1	A	16	56	40	15	15
	3	2	B	61	0	20	15	15

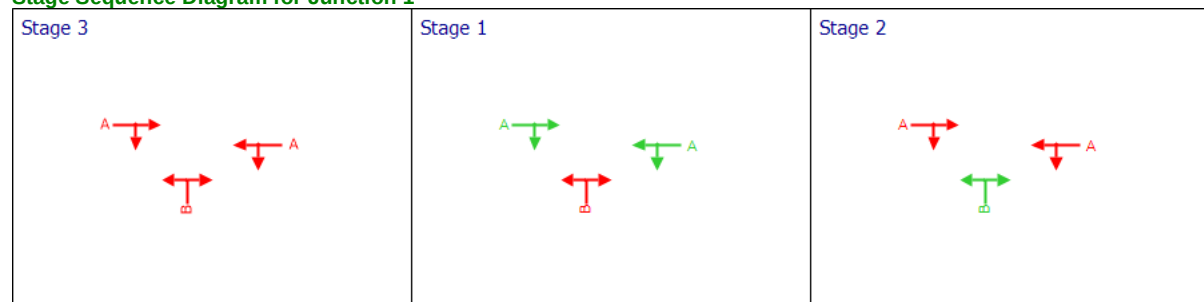
Resultant Phase Green Periods

Junction	Phase	Green period	Start time (s)	End time (s)	Duration (s)
1	A	1	16	56	40
	B	1	61	0	20

Phase Timings Diagram for Junction 1



Stage Sequence Diagram for Junction 1



Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2021 exist	AM	DIRECT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Rd W westbound		✓	100.000
B - Whitehall Road		✓	100.000
C - Kimmage Rd W eastbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 -
08:15

		To		
From		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimmage Rd W eastbound
	A - Kimmage Rd W westbound	0.00	51.00	116.00
	B - Whitehall Road	81.00	0.00	6.00
	C - Kimmage Rd W eastbound	90.00	10.00	0.00

Demand (PCU/TS)

08:15 -
08:30

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	53.00	91.00
	B - Whitehall Road	76.00	0.00	9.00
	C - Kimage Rd W eastbound	100.00	10.00	0.00

Demand (PCU/TS)

08:30 -
08:45

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	46.00	112.00
	B - Whitehall Road	73.00	0.00	10.00
	C - Kimage Rd W eastbound	101.00	6.00	0.00

Demand (PCU/TS)

08:45 -
09:00

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	37.00	126.00
	B - Whitehall Road	56.00	0.00	8.00
	C - Kimage Rd W eastbound	77.00	3.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0	0	0
	B - Whitehall Road	0	0	0
	C - Kimage Rd W eastbound	0	0	0

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Kimmage Rd W westbound	0.71	20.56	8.4	C
B - Whitehall Road	0.79	43.80	7.3	D
C - Kimage Rd W eastbound	0.45	14.41	5.1	B

Main Results for each time segment

08:00 - 08:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	167.00	457.78	41.50	0.00	234.54	0.712	158.64	8.4	20.559	C
B - Whitehall Road	1	87.00	416.30	21.50	0.00	110.50	0.787	79.67	7.3	42.668	D

C - Kimage Rd W eastbound	1	100.00	471.67	41.50	0.00	241.66	0.414	95.44	4.6	13.785	B
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08:15 - 08:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	144.00	453.70	41.50	0.00	232.45	0.619	145.42	6.9	17.990	B
B - Whitehall Road	1	85.00	416.30	21.50	0.00	110.50	0.769	85.14	7.2	43.804	D
C - Kimage Rd W eastbound	1	110.00	472.31	41.50	0.00	241.99	0.455	109.51	5.1	14.405	B

08:30 - 08:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	158.00	458.72	41.50	0.00	235.02	0.672	157.19	7.7	19.311	B
B - Whitehall Road	1	83.00	416.30	21.50	0.00	110.50	0.751	83.27	6.9	42.579	D
C - Kimage Rd W eastbound	1	107.00	474.76	41.50	0.00	243.24	0.440	107.15	4.9	14.181	B

08:45 - 09:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	163.00	462.99	41.50	0.00	237.21	0.687	162.70	8.0	19.816	B
B - Whitehall Road	1	64.00	416.30	21.50	0.00	110.50	0.579	66.20	4.7	32.968	C
C - Kimage Rd W eastbound	1	80.00	476.07	41.50	0.00	243.91	0.328	81.30	3.6	12.664	B

2021 exist, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Signalised		20.35	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	20.35	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2021 exist	PM	DIRECT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Rd W westbound		✓	100.000
B - Whitehall Road		✓	100.000
C - Kimage Rd W eastbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 -
17:15

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From				
	A - Kimmage Rd W westbound	0.00	61.00	92.00
	B - Whitehall Road	42.00	0.00	11.00
	C - Kimage Rd W eastbound	109.00	4.00	0.00

Demand (PCU/TS)

17:15 -
17:30

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From				
	A - Kimmage Rd W westbound	0.00	48.00	90.00
	B - Whitehall Road	33.00	0.00	3.00
	C - Kimage Rd W eastbound	115.00	9.00	0.00

Demand (PCU/TS)

17:30 -
17:45

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From				
	A - Kimmage Rd W westbound	0.00	61.00	72.00
	B - Whitehall Road	54.00	0.00	6.00
	C - Kimage Rd W eastbound	107.00	9.00	0.00

Demand (PCU/TS)

17:45 -
18:00

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From				
	A - Kimmage Rd W westbound	0.00	44.00	92.00
	B - Whitehall Road	63.00	0.00	9.00
	C - Kimage Rd W eastbound	118.00	8.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimmage Rd W eastbound
A - Kimmage Rd W westbound		0	0	0
B - Whitehall Road		0	0	0
C - Kimmage Rd W eastbound		0	0	0

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Kimmage Rd W westbound	0.60	14.51	6.4	B
B - Whitehall Road	0.83	53.12	7.0	D
C - Kimmage Rd W eastbound	0.47	12.06	5.1	B

Main Results for each time segment

17:00 - 17:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	153.00	451.73	44.50	0.00	254.46	0.601	146.60	6.4	14.515	B
B - Whitehall Road	1	53.00	416.30	16.50	0.00	86.95	0.610	48.77	4.2	37.357	D
C - Kimmage Rd W eastbound	1	113.00	476.22	44.50	0.00	268.25	0.421	108.49	4.5	11.329	B

17:15 - 17:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	138.00	455.01	44.50	0.00	256.30	0.538	138.73	5.7	13.299	B
B - Whitehall Road	1	36.00	416.30	16.50	0.00	86.95	0.414	37.55	2.7	31.590	C
C - Kimmage Rd W eastbound	1	124.00	473.59	44.50	0.00	266.77	0.465	123.52	5.0	11.954	B

17:30 - 17:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	133.00	447.93	44.50	0.00	252.32	0.527	133.22	5.5	13.107	B
B - Whitehall Road	1	60.00	416.30	16.50	0.00	86.95	0.690	57.64	5.0	41.303	D
C - Kimmage Rd W eastbound	1	116.00	473.24	44.50	0.00	266.57	0.435	116.35	4.6	11.546	B

17:45 - 18:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	136.00	456.59	44.50	0.00	257.19	0.529	135.88	5.6	13.085	B
B - Whitehall Road	1	72.00	416.30	16.50	0.00	86.95	0.828	70.02	7.0	53.124	D
C - Kimmage Rd W eastbound	1	126.00	474.23	44.50	0.00	267.13	0.472	125.57	5.1	12.055	B

Junctions 10									
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Report generation date: 31/08/2021 19:31:17

» [2024 wdev, AM](#)

» [2024 wdev, PM](#)

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Set ID	Queue (PCU)	Delay (s)	DOS	LOS
2024 wdev										
A - Kimmage Rd W westbound	D1	9.9	23.63	0.76	C	D2	7.1	16.05	0.64	B
B - Whitehall Road		8.5	50.51	0.82	D		8.3	61.94	0.89	E
C - Kimage Rd W eastbound		5.7	15.59	0.47	B		5.7	13.21	0.52	B

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Kimmage Rd West / Whitehall Rd
Location	Kimmage, Dublin
Site number	
Date	30/07/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	DOS Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2024 wdev	AM	DIRECT	08:00	09:00	60	15
D2	2024 wdev	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024 wdev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Signalised		27.56	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	27.56	C

Arms

Arms

Arm	Name	Description
A	Kimmage Rd W westbound	
B	Whitehall Road	
C	Kimage Rd W eastbound	

OSCADY Traffic Streams

Arm	Traffic Stream	Phase	Destination arms	Straight move
A - Kimmage Rd W westbound	1	A	B, C	C
B - Whitehall Road	1	B	A, C	
C - Kimage Rd W eastbound	1	A	A, B	A

OSCADY Lanes

Arm	Traffic Stream	Destination arms	Gradient (%)	Width (m)	Turning radius (m)	Nearside lane	Has bay
A - Kimmage Rd W westbound	1	B, C	0	3.00	10.00	✓	
B - Whitehall Road	1	A, C	0	3.00	10.00	✓	
C - Kimage Rd W eastbound	1	A, B	0	3.00	10.00	✓	

Signal Timings

Junction 1

Junction	Sequence to use	Cycle time (s)	Maximum cycle time (s)	Start displacement (s)	End displacement (s)
1	1	88	90	1.40	2.90

Optimisation options

Junction	Optimise stage lengths	Optimise cycle time	Optimiser demand source	Optimiser message
1	✓	✓	Average	Timings provide delay minimisation.

Phases

Junction	Phase	Name	Minimum green (s)
1	A		15
	B		15

Library Stages

Junction	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A	15		
	2	B	15		
	3		15		

Stage Sequences

Junction	Sequence	Name	Stage IDs	Stage ends
1	1		3, 1, 2	17, 61, 0

Intergreen Matrix for Junction 1

From	To	
	A	B
	5	
From	A	5
	B	5

Interstage Matrix for Junction 1

From	To		
	1	2	3
	0	5	0
From	1	0	5
	2	5	0
From	3	0	0
	3	0	0

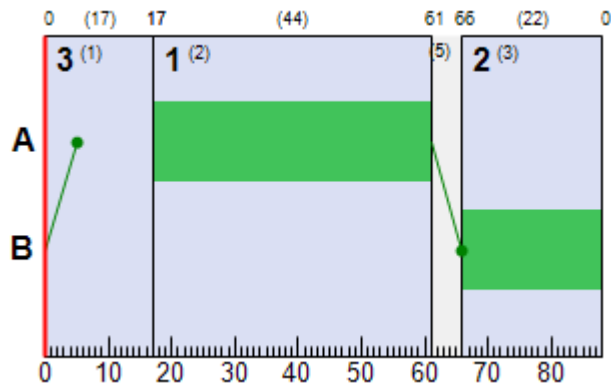
Resultant Stages

Junction	Resultant Stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	3		0	17	17	15	15
	2	1	A	17	61	44	15	15
	3	2	B	66	0	22	15	15

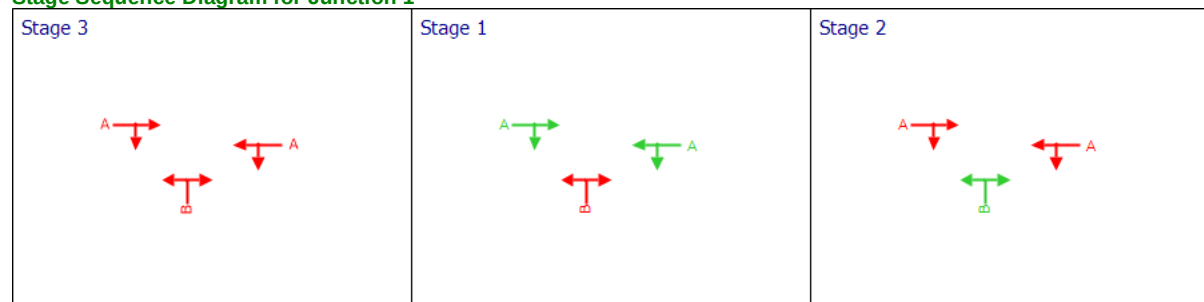
Resultant Phase Green Periods

Junction	Phase	Green period	Start time (s)	End time (s)	Duration (s)
1	A	1	17	61	44
	B	1	66	0	22

Phase Timings Diagram for Junction 1



Stage Sequence Diagram for Junction 1



Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2024 wdev	AM	DIRECT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Rd W westbound		✓	100.000
B - Whitehall Road		✓	100.000
C - Kimmage Rd W eastbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 -
08:15

		To		
From		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimmage Rd W eastbound
	A - Kimmage Rd W westbound	0.00	55.00	125.00
	B - Whitehall Road	85.00	0.00	6.00
	C - Kimmage Rd W eastbound	95.00	10.00	0.00

Demand (PCU/TS)**08:15 -
08:30**

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	57.00	99.00
	B - Whitehall Road	81.00	0.00	9.00
	C - Kimage Rd W eastbound	106.00	10.00	0.00

Demand (PCU/TS)**08:30 -
08:45**

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	50.00	121.00
	B - Whitehall Road	77.00	0.00	10.00
	C - Kimage Rd W eastbound	106.00	6.00	0.00

Demand (PCU/TS)**08:45 -
09:00**

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	40.00	136.00
	B - Whitehall Road	59.00	0.00	8.00
	C - Kimage Rd W eastbound	81.00	3.00	0.00

Vehicle Mix**Heavy Vehicle Percentages**

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0	0	0
	B - Whitehall Road	0	0	0
	C - Kimage Rd W eastbound	0	0	0

Results**Results Summary for whole modelled period**

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Kimmage Rd W westbound	0.76	23.63	9.9	C
B - Whitehall Road	0.82	50.51	8.5	D
C - Kimage Rd W eastbound	0.47	15.59	5.7	B

Main Results for each time segment**08:00 - 08:15**

Arm	Traffic Stream	Total Demand	Calculated saturation	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue	Delay (s)	Signalised level of service
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		(PCU/T S)	n flow (PCU/TS)						(PCU)		
A - Kimmage Rd W westbound	1	180.00	457.77	45.50	0.00	236.69	0.76 0	170.11	9.9	23.62 5	C
B - Whitehall Road	1	91.00	416.30	23.50	0.00	111.17	0.81 9	82.54	8.5	47.52 2	D
C - Kimage Rd W eastbound	1	105.00	472.01	45.50	0.00	244.05	0.43 0	99.85	5.2	14.85 3	B

08:15 - 08:30

Arm	Traffi c Strea m	Total Deman d (PCU/T S)	Calculat ed saturatio n flow (PCU/TS)	Effectiv e green time (s)	NEE G (s)	Capacit y (PCU/T S)	DOS	Throughp ut (PCU/TS)	End queu e (PCU)	Delay (s)	Signalis ed level of service
A - Kimmage Rd W westbound	1	156.00	453.87	45.50	0.00	234.67	0.66 5	157.72	8.2	20.36 1	C
B - Whitehall Road	1	90.00	416.30	23.50	0.00	111.17	0.81 0	90.03	8.4	50.50 6	D
C - Kimage Rd W eastbound	1	116.00	472.64	45.50	0.00	244.38	0.47 5	115.42	5.7	15.58 6	B

08:30 - 08:45

Arm	Traffi c Strea m	Total Deman d (PCU/T S)	Calculat ed saturatio n flow (PCU/TS)	Effectiv e green time (s)	NEE G (s)	Capacit y (PCU/T S)	DOS	Throughp ut (PCU/TS)	End queu e (PCU)	Delay (s)	Signalis ed level of service
A - Kimmage Rd W westbound	1	171.00	458.63	45.50	0.00	237.13	0.72 1	170.01	9.2	22.08 2	C
B - Whitehall Road	1	87.00	416.30	23.50	0.00	111.17	0.78 3	87.39	8.0	48.18 8	D
C - Kimage Rd W eastbound	1	112.00	474.93	45.50	0.00	245.56	0.45 6	112.21	5.5	15.27 9	B

08:45 - 09:00

Arm	Traffi c Strea m	Total Deman d (PCU/T S)	Calculat ed saturatio n flow (PCU/TS)	Effectiv e green time (s)	NEE G (s)	Capacit y (PCU/T S)	DOS	Throughp ut (PCU/TS)	End queu e (PCU)	Delay (s)	Signalis ed level of service
A - Kimmage Rd W westbound	1	176.00	462.97	45.50	0.00	239.38	0.73 5	175.66	9.5	22.73 4	C
B - Whitehall Road	1	67.00	416.30	23.50	0.00	111.17	0.60 3	69.67	5.4	36.12 2	D
C - Kimage Rd W eastbound	1	84.00	476.20	45.50	0.00	246.22	0.34 1	85.45	4.1	13.60 4	B

2024 wdev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Signalised		23.02	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	23.02	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2024 wdev	PM	DIRECT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Rd W westbound		✓	100.000
B - Whitehall Road		✓	100.000
C - Kimage Rd W eastbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 -
17:15

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From				
	A - Kimmage Rd W westbound	0.00	64.00	98.00
	B - Whitehall Road	46.00	0.00	11.00
	C - Kimage Rd W eastbound	117.00	4.00	0.00

Demand (PCU/TS)

17:15 -
17:30

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From				
	A - Kimmage Rd W westbound	0.00	51.00	95.00
	B - Whitehall Road	36.00	0.00	3.00
	C - Kimage Rd W eastbound	123.00	10.00	0.00

Demand (PCU/TS)

17:30 -
17:45

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From				
	A - Kimmage Rd W westbound	0.00	65.00	77.00
	B - Whitehall Road	58.00	0.00	6.00
	C - Kimage Rd W eastbound	115.00	9.00	0.00

Demand (PCU/TS)

17:45 -
18:00

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From				
	A - Kimmage Rd W westbound	0.00	47.00	98.00
	B - Whitehall Road	67.00	0.00	9.00
	C - Kimage Rd W eastbound	127.00	9.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
A - Kimmage Rd W westbound		0	0	0
B - Whitehall Road		0	0	0
C - Kimage Rd W eastbound		0	0	0

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Kimmage Rd W westbound	0.64	16.05	7.1	B
B - Whitehall Road	0.89	61.94	8.3	E
C - Kimage Rd W eastbound	0.52	13.21	5.7	B

Main Results for each time segment

17:00 - 17:15

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	162.00	451.97	44.50	0.00	251.41	0.644	154.92	7.1	16.047	B
B - Whitehall Road	1	57.00	416.30	16.50	0.00	85.86	0.664	52.23	4.8	40.451	D
C - Kimage Rd W eastbound	1	121.00	476.39	44.50	0.00	264.99	0.457	116.00	5.0	12.253	B

17:15 - 17:30

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	146.00	454.91	44.50	0.00	253.05	0.577	146.84	6.2	14.554	B
B - Whitehall Road	1	39.00	416.30	16.50	0.00	85.86	0.454	40.79	3.0	33.259	C
C - Kimage Rd W eastbound	1	133.00	473.41	44.50	0.00	263.33	0.505	132.45	5.6	13.032	B

17:30 - 17:45

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	142.00	447.99	44.50	0.00	249.19	0.570	142.18	6.1	14.410	B
B - Whitehall Road	1	64.00	416.30	16.50	0.00	85.86	0.745	61.27	5.7	45.505	D
C - Kimage Rd W eastbound	1	124.00	473.59	44.50	0.00	263.44	0.471	124.41	5.1	12.503	B

17:45 - 18:00

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	145.00	456.55	44.50	0.00	253.96	0.571	144.88	6.2	14.372	B
B - Whitehall Road	1	76.00	416.30	16.50	0.00	85.86	0.885	73.37	8.3	61.935	E
C - Kimage Rd W eastbound	1	136.00	474.04	44.50	0.00	263.69	0.516	135.45	5.7	13.212	B

Junctions 10									
OSCADY 10 - Signalised Intersection Module									
Version: 10.0.1.1519 © Copyright TRL Software Limited, 2021									
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Filename: whitehall rd 2029 wod.j10
 Path: C:\Users\martin.rogers\Dropbox\Carlisle 2021\oscady
 Report generation date: 31/08/2021 19:55:26

» [2029 wod, AM](#)

» [2029 wod, PM](#)

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Set ID	Queue (PCU)	Delay (s)	DOS	LOS
2029 wod										
A - Kimmage Rd W westbound	D1	10.9	26.08	0.80	C	D2	7.9	17.55	0.69	B
B - Whitehall Road		9.3	51.29	0.84	D		9.9	69.51	0.92	E
C - Kimage Rd W eastbound		6.3	16.52	0.51	B		6.2	13.84	0.54	B

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Kimmage Rd West / Whitehall Rd
Location	Kimmage, Dublin
Site number	
Date	30/07/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	DOS Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2029 wod	AM	DIRECT	08:00	09:00	60	15
D2	2029 wod	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2029 wod, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Signalised		29.25	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	29.25	C

Arms

Arms

Arm	Name	Description
A	Kimmage Rd W westbound	
B	Whitehall Road	
C	Kimage Rd W eastbound	

OSCADY Traffic Streams

Arm	Traffic Stream	Phase	Destination arms	Straight move
A - Kimmage Rd W westbound	1	A	B, C	C
B - Whitehall Road	1	B	A, C	
C - Kimage Rd W eastbound	1	A	A, B	A

OSCADY Lanes

Arm	Traffic Stream	Destination arms	Gradient (%)	Width (m)	Turning radius (m)	Nearside lane	Has bay
A - Kimmage Rd W westbound	1	B, C	0	3.00	10.00	✓	
B - Whitehall Road	1	A, C	0	3.00	10.00	✓	
C - Kimage Rd W eastbound	1	A, B	0	3.00	10.00	✓	

Signal Timings

Junction 1

Junction	Sequence to use	Cycle time (s)	Maximum cycle time (s)	Start displacement (s)	End displacement (s)
1	1	90	90	1.40	2.90

Optimisation options

Junction	Optimise stage lengths	Optimise cycle time	Optimiser demand source	Optimiser message
1	✓	✓	Average	Timings provide delay minimisation.

Phases

Junction	Phase	Name	Minimum green (s)
1	A		15
	B		15

Library Stages

Junction	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A	15		
	2	B	15		
	3		15		

Stage Sequences

Junction	Sequence	Name	Stage IDs	Stage ends
1	1		3, 1, 2	16, 61, 0

Intergreen Matrix for Junction 1

From	To	
	A	B
	5	
From	A	5
	B	5

Interstage Matrix for Junction 1

From	To		
	1	2	3
	0	5	0
From	1	0	5
	2	5	0
From	3	0	0
	3	0	0

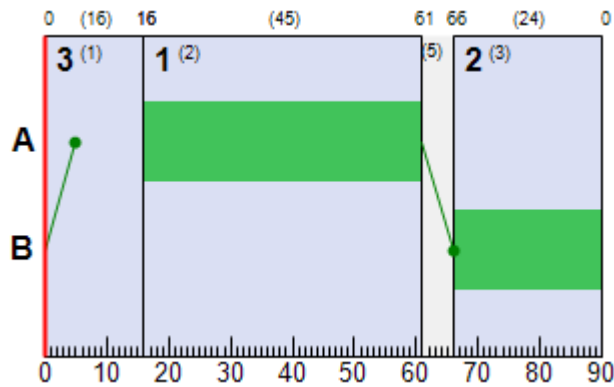
Resultant Stages

Junction	Resultant Stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	3		0	16	16	15	15
	2	1	A	16	61	45	15	15
	3	2	B	66	0	24	15	15

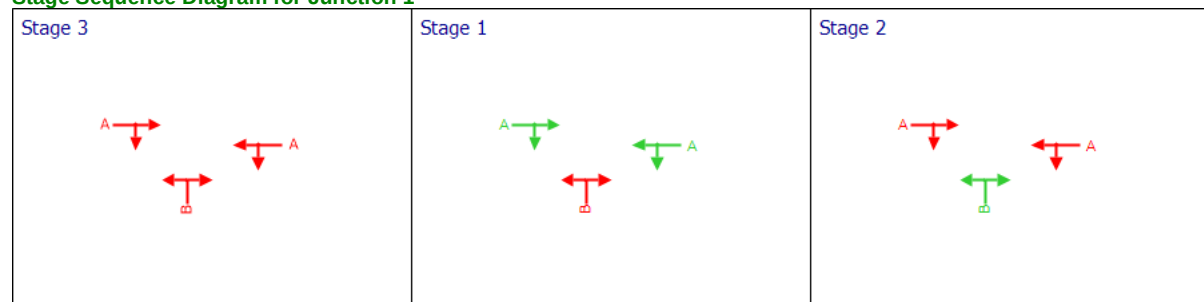
Resultant Phase Green Periods

Junction	Phase	Green period	Start time (s)	End time (s)	Duration (s)
1	A	1	16	61	45
	B	1	66	0	24

Phase Timings Diagram for Junction 1



Stage Sequence Diagram for Junction 1



Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2029 wod	AM	DIRECT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Rd W westbound		✓	100.000
B - Whitehall Road		✓	100.000
C - Kimmage Rd W eastbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 -
08:15

		To		
From		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimmage Rd W eastbound
	A - Kimmage Rd W westbound	0.00	58.00	131.00
	B - Whitehall Road	92.00	0.00	7.00
	C - Kimmage Rd W eastbound	102.00	11.00	0.00

Demand (PCU/TS)**08:15 -
08:30**

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	60.00	103.00
	B - Whitehall Road	87.00	0.00	10.00
	C - Kimage Rd W eastbound	113.00	11.00	0.00

Demand (PCU/TS)**08:30 -
08:45**

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	52.00	128.00
	B - Whitehall Road	83.00	0.00	11.00
	C - Kimage Rd W eastbound	114.00	7.00	0.00

Demand (PCU/TS)**08:45 -
09:00**

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	42.00	143.00
	B - Whitehall Road	63.00	0.00	9.00
	C - Kimage Rd W eastbound	87.00	3.00	0.00

Vehicle Mix**Heavy Vehicle Percentages**

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0	0	0
	B - Whitehall Road	0	0	0
	C - Kimage Rd W eastbound	0	0	0

Results**Results Summary for whole modelled period**

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Kimmage Rd W westbound	0.80	26.08	10.9	C
B - Whitehall Road	0.84	51.29	9.3	D
C - Kimage Rd W eastbound	0.51	16.52	6.3	B

Main Results for each time segment**08:00 - 08:15**

Arm	Traffic Stream	Total Demand	Calculated saturation	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue	Delay (s)	Signalised level of service
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		(PCU/T S)	n flow (PCU/TS)						(PCU)		
A - Kimmage Rd W westbound	1	189.00	457.68	46.50	0.00	236.47	0.79 9	178.06	10.9	26.08 1	C
B - Whitehall Road	1	99.00	416.30	25.50	0.00	117.95	0.83 9	89.66	9.3	48.50 6	D
C - Kimage Rd W eastbound	1	113.00	471.86	46.50	0.00	243.79	0.46 4	107.30	5.7	15.71 3	B

08:15 - 08:30

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	163.00	453.70	46.50	0.00	234.41	0.69 5	165.09	8.9	21.90 3	C
B - Whitehall Road	1	97.00	416.30	25.50	0.00	117.95	0.82 2	97.14	9.2	51.29 4	D
C - Kimage Rd W eastbound	1	124.00	472.46	46.50	0.00	244.11	0.50 8	123.39	6.3	16.52 1	B

08:30 - 08:45

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	180.00	458.87	46.50	0.00	237.08	0.75 9	178.77	10.1	24.17 9	C
B - Whitehall Road	1	94.00	416.30	25.50	0.00	117.95	0.79 7	94.45	8.8	48.87 7	D
C - Kimage Rd W eastbound	1	121.00	474.63	46.50	0.00	245.23	0.49 3	121.17	6.1	16.26 0	B

08:45 - 09:00

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	185.00	462.98	46.50	0.00	239.21	0.77 3	184.61	10.5	25.05 6	C
B - Whitehall Road	1	72.00	416.30	25.50	0.00	117.95	0.61 0	75.00	5.8	35.73 2	D
C - Kimage Rd W eastbound	1	90.00	476.37	46.50	0.00	246.12	0.36 6	91.66	4.5	14.23 5	B

2029 wod, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Signalised		25.22	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	25.22	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2029 wod	PM	DIRECT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Rd W westbound		✓	100.000
B - Whitehall Road		✓	100.000
C - Kimage Rd W eastbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 -
17:15

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From				
	A - Kimmage Rd W westbound	0.00	69.00	105.00
	B - Whitehall Road	48.00	0.00	12.00
	C - Kimage Rd W eastbound	124.00	5.00	0.00

Demand (PCU/TS)

17:15 -
17:30

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From				
	A - Kimmage Rd W westbound	0.00	55.00	102.00
	B - Whitehall Road	37.00	0.00	3.00
	C - Kimage Rd W eastbound	130.00	10.00	0.00

Demand (PCU/TS)

17:30 -
17:45

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From				
	A - Kimmage Rd W westbound	0.00	69.00	82.00
	B - Whitehall Road	62.00	0.00	7.00
	C - Kimage Rd W eastbound	121.00	10.00	0.00

Demand (PCU/TS)

17:45 -
18:00

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From				
	A - Kimmage Rd W westbound	0.00	50.00	105.00
	B - Whitehall Road	71.00	0.00	10.00
	C - Kimage Rd W eastbound	134.00	9.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
A - Kimmage Rd W westbound		0	0	0
B - Whitehall Road		0	0	0
C - Kimage Rd W eastbound		0	0	0

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Kimmage Rd W westbound	0.69	17.55	7.9	B
B - Whitehall Road	0.92	69.51	9.9	E
C - Kimage Rd W eastbound	0.54	13.84	6.2	B

Main Results for each time segment

17:00 - 17:15

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	174.00	451.87	46.50	0.00	253.16	0.687	166.06	7.9	17.548	B
B - Whitehall Road	1	60.00	416.30	17.50	0.00	87.78	0.684	54.80	5.2	42.111	D
C - Kimage Rd W eastbound	1	129.00	475.98	46.50	0.00	266.66	0.484	123.50	5.5	12.884	B

17:15 - 17:30

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	157.00	454.85	46.50	0.00	254.82	0.616	157.98	7.0	15.724	B
B - Whitehall Road	1	40.00	416.30	17.50	0.00	87.78	0.456	42.06	3.1	33.977	C
C - Kimage Rd W eastbound	1	140.00	473.67	46.50	0.00	265.37	0.528	139.47	6.0	13.649	B

17:30 - 17:45

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	151.00	448.04	46.50	0.00	251.01	0.602	151.29	6.7	15.372	B
B - Whitehall Road	1	69.00	416.30	17.50	0.00	87.78	0.786	65.59	6.6	49.274	D
C - Kimage Rd W eastbound	1	131.00	473.33	46.50	0.00	265.18	0.494	131.42	5.6	13.096	B

17:45 - 18:00

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	155.00	456.65	46.50	0.00	255.84	0.606	154.83	6.8	15.392	B
B - Whitehall Road	1	81.00	416.30	17.50	0.00	87.78	0.923	77.69	9.9	69.506	E
C - Kimage Rd W eastbound	1	143.00	474.27	46.50	0.00	265.71	0.538	142.43	6.2	13.841	B

Junctions 10									
OSCADY 10 - Signalised Intersection Module									
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 Path: C:\Users\martin.rogers\Dropbox\Carlisle 2021\oscady
 Report generation date: 31/08/2021 20:01:46

[2029 wdev, AM](#)
[2029 wdev, PM](#)

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Set ID	Queue (PCU)	Delay (s)	DOS	LOS
2029 wdev										
A - Kimmage Rd W westbound	D1	11.5	27.38	0.82	C	D2	8.1	17.81	0.70	B
B - Whitehall Road		9.3	51.29	0.84	D		8.9	60.56	0.88	E
C - Kimmage Rd W eastbound		6.4	16.60	0.51	B		6.3	14.05	0.55	B

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Kimmage Rd West / Whitehall Rd
Location	Kimmage, Dublin
Site number	
Date	30/07/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	DOS Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2029 wdev	AM	DIRECT	08:00	09:00	60	15
D2	2029 wdev	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2029 wdev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Signalised		29.83	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	29.83	C

Arms

Arms

Arm	Name	Description
A	Kimmage Rd W westbound	
B	Whitehall Road	
C	Kimage Rd W eastbound	

OSCADY Traffic Streams

Arm	Traffic Stream	Phase	Destination arms	Straight move
A - Kimmage Rd W westbound	1	A	B, C	C
B - Whitehall Road	1	B	A, C	
C - Kimage Rd W eastbound	1	A	A, B	A

OSCADY Lanes

Arm	Traffic Stream	Destination arms	Gradient (%)	Width (m)	Turning radius (m)	Nearside lane	Has bay
A - Kimmage Rd W westbound	1	B, C	0	3.00	10.00	✓	
B - Whitehall Road	1	A, C	0	3.00	10.00	✓	
C - Kimage Rd W eastbound	1	A, B	0	3.00	10.00	✓	

Signal Timings

Junction 1

Junction	Sequence to use	Cycle time (s)	Maximum cycle time (s)	Start displacement (s)	End displacement (s)
1	1	90	90	1.40	2.90

Optimisation options

Junction	Optimise stage lengths	Optimise cycle time	Optimiser demand source	Optimiser message
1	✓	✓	Average	Timings provide delay minimisation.

Phases

Junction	Phase	Name	Minimum green (s)
1	A		15
	B		15

Library Stages

Junction	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A	15		
	2	B	15		
	3		15		

Stage Sequences

Junction	Sequence	Name	Stage IDs	Stage ends
1	1		3, 1, 2	16, 61, 0

Intergreen Matrix for Junction 1

From	To	
	A	B
	5	5

Interstage Matrix for Junction 1

From	To		
	1	2	3
	0	5	0
	5	0	0

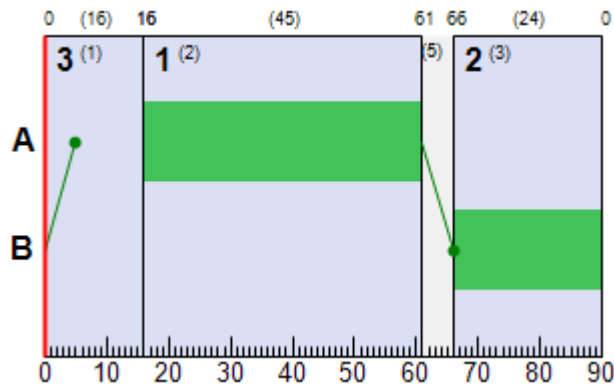
Resultant Stages

Junction	Resultant Stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	3		0	16	16	15	15
	2	1	A	16	61	45	15	15
	3	2	B	66	0	24	15	15

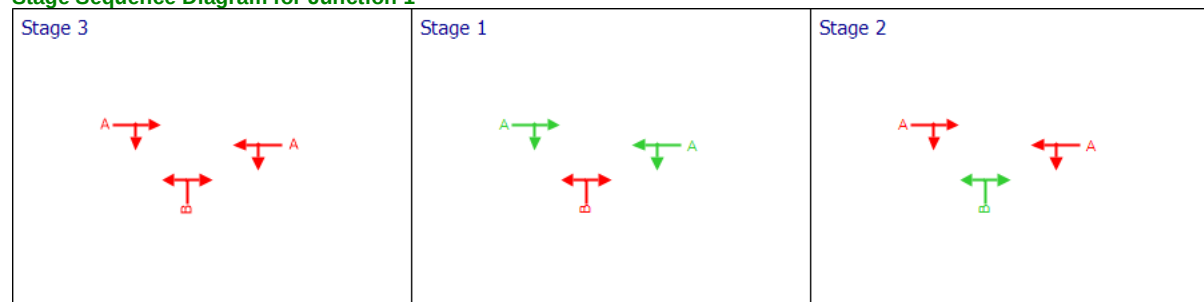
Resultant Phase Green Periods

Junction	Phase	Green period	Start time (s)	End time (s)	Duration (s)
1	A	1	16	61	45
	B	1	66	0	24

Phase Timings Diagram for Junction 1



Stage Sequence Diagram for Junction 1



Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2029 wdev	AM	DIRECT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Rd W westbound		✓	100.000
B - Whitehall Road		✓	100.000
C - Kimmage Rd W eastbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 -
08:15

		To		
From		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimmage Rd W eastbound
	A - Kimmage Rd W westbound	0.00	59.00	135.00
	B - Whitehall Road	92.00	0.00	7.00
	C - Kimmage Rd W eastbound	103.00	11.00	0.00

Demand (PCU/TS)

08:15 -
08:30

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	61.00	106.00
	B - Whitehall Road	87.00	0.00	10.00
	C - Kimage Rd W eastbound	114.00	11.00	0.00

Demand (PCU/TS)

08:30 -
08:45

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	54.00	131.00
	B - Whitehall Road	83.00	0.00	11.00
	C - Kimage Rd W eastbound	115.00	7.00	0.00

Demand (PCU/TS)

08:45 -
09:00

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	44.00	147.00
	B - Whitehall Road	64.00	0.00	9.00
	C - Kimage Rd W eastbound	88.00	3.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0	0	0
	B - Whitehall Road	0	0	0
	C - Kimage Rd W eastbound	0	0	0

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Kimmage Rd W westbound	0.82	27.38	11.5	C
B - Whitehall Road	0.84	51.29	9.3	D
C - Kimage Rd W eastbound	0.51	16.60	6.4	B

Main Results for each time segment

08:00 - 08:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	194.00	457.86	46.50	0.00	236.56	0.820	182.53	11.5	27.382	C
B - Whitehall Road	1	99.00	416.30	25.50	0.00	117.95	0.839	89.66	9.3	48.506	D

C - Kimage Rd W eastbound	1	114.00	471.92	46.50	0.00	243.83	0.468	108.25	5.8	15.782	B
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08:15 - 08:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	167.00	453.88	46.50	0.00	234.51	0.712	169.31	9.2	22.624	C
B - Whitehall Road	1	97.00	416.30	25.50	0.00	117.95	0.822	97.14	9.2	51.294	D
C - Kimage Rd W eastbound	1	125.00	472.51	46.50	0.00	244.13	0.512	124.39	6.4	16.598	B

08:30 - 08:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	185.00	458.67	46.50	0.00	236.98	0.781	183.62	10.5	25.303	C
B - Whitehall Road	1	94.00	416.30	25.50	0.00	117.95	0.797	94.45	8.8	48.877	D
C - Kimage Rd W eastbound	1	122.00	474.66	46.50	0.00	245.24	0.497	122.17	6.2	16.335	B

08:45 - 09:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	191.00	462.76	46.50	0.00	239.09	0.799	190.48	11.1	26.587	C
B - Whitehall Road	1	73.00	416.30	25.50	0.00	117.95	0.619	75.90	5.9	36.093	D
C - Kimage Rd W eastbound	1	91.00	476.39	46.50	0.00	246.14	0.370	92.67	4.5	14.291	B

2029 wdev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Signalised		23.85	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	23.85	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2029 wdev	PM	DIRECT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Rd W westbound		✓	100.000
B - Whitehall Road		✓	100.000
C - Kimage Rd W eastbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 -
17:15

		To		
From		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
	A - Kimmage Rd W westbound	0.00	70.00	106.00
	B - Whitehall Road	49.00	0.00	12.00
	C - Kimage Rd W eastbound	127.00	5.00	0.00

Demand (PCU/TS)

17:15 -
17:30

		To		
From		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
	A - Kimmage Rd W westbound	0.00	55.00	103.00
	B - Whitehall Road	38.00	0.00	3.00
	C - Kimage Rd W eastbound	133.00	10.00	0.00

Demand (PCU/TS)

17:30 -
17:45

		To		
From		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
	A - Kimmage Rd W westbound	0.00	70.00	83.00
	B - Whitehall Road	63.00	0.00	7.00
	C - Kimage Rd W eastbound	124.00	10.00	0.00

Demand (PCU/TS)

17:45 -
18:00

		To		
From		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
	A - Kimmage Rd W westbound	0.00	50.00	106.00
	B - Whitehall Road	72.00	0.00	10.00
	C - Kimage Rd W eastbound	137.00	9.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimmage Rd W eastbound
A - Kimmage Rd W westbound		0	0	0
B - Whitehall Road		0	0	0
C - Kimmage Rd W eastbound		0	0	0

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Kimmage Rd W westbound	0.70	17.81	8.1	B
B - Whitehall Road	0.88	60.56	8.9	E
C - Kimmage Rd W eastbound	0.55	14.05	6.3	B

Main Results for each time segment

17:00 - 17:15

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	176.00	451.80	46.50	0.00	253.11	0.695	167.93	8.1	17.806	B
B - Whitehall Road	1	61.00	416.30	18.50	0.00	92.79	0.657	55.91	5.1	39.584	D
C - Kimmage Rd W eastbound	1	132.00	476.05	46.50	0.00	266.70	0.495	126.36	5.6	13.063	B

17:15 - 17:30

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	158.00	454.99	46.50	0.00	254.91	0.620	159.05	7.0	15.822	B
B - Whitehall Road	1	41.00	416.30	18.50	0.00	92.79	0.442	42.94	3.2	32.580	C
C - Kimmage Rd W eastbound	1	143.00	473.78	46.50	0.00	265.43	0.539	142.47	6.2	13.853	B

17:30 - 17:45

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	153.00	448.00	46.50	0.00	250.99	0.610	153.24	6.8	15.562	B
B - Whitehall Road	1	70.00	416.30	18.50	0.00	92.79	0.754	66.86	6.3	45.373	D
C - Kimmage Rd W eastbound	1	134.00	473.45	46.50	0.00	265.25	0.505	134.43	5.7	13.284	B

17:45 - 18:00

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	156.00	456.79	46.50	0.00	255.91	0.610	155.88	6.9	15.484	B
B - Whitehall Road	1	82.00	416.30	18.50	0.00	92.79	0.884	79.41	8.9	60.559	E
C - Kimmage Rd W eastbound	1	146.00	474.36	46.50	0.00	265.76	0.549	145.43	6.3	14.052	B

Junctions 10									
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 Report generation date: 31/08/2021 18:13:17

[2024 wod, AM](#)

[2024 wod, PM](#)

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Set ID	Queue (PCU)	Delay (s)	DOS	LOS
2024 wod										
A - Kimmage Rd W westbound	D1	9.3	22.56	0.74	C	D2	6.8	15.25	0.63	B
B - Whitehall Road		8.3	49.80	0.83	D		7.8	57.67	0.86	E
C - Kimmage Rd W eastbound		5.6	15.40	0.48	B		5.4	12.47	0.50	B

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Kimmage Rd West / Whitehall Rd
Location	Kimmage, Dublin
Site number	
Date	30/07/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	DOS Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2024 wod	AM	DIRECT	08:00	09:00	60	15
D2	2024 wod	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024 wod, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Signalised		26.91	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	26.91	C

Arms

Arms

Arm	Name	Description
A	Kimmage Rd W westbound	
B	Whitehall Road	
C	Kimage Rd W eastbound	

OSCADY Traffic Streams

Arm	Traffic Stream	Phase	Destination arms	Straight move
A - Kimmage Rd W westbound	1	A	B, C	C
B - Whitehall Road	1	B	A, C	
C - Kimage Rd W eastbound	1	A	A, B	A

OSCADY Lanes

Arm	Traffic Stream	Destination arms	Gradient (%)	Width (m)	Turning radius (m)	Nearside lane	Has bay
A - Kimmage Rd W westbound	1	B, C	0	3.00	10.00	✓	
B - Whitehall Road	1	A, C	0	3.00	10.00	✓	
C - Kimage Rd W eastbound	1	A, B	0	3.00	10.00	✓	

Signal Timings

Junction 1

Junction	Sequence to use	Cycle time (s)	Maximum cycle time (s)	Start displacement (s)	End displacement (s)
1	1	85	90	1.40	2.90

Optimisation options

Junction	Optimise stage lengths	Optimise cycle time	Optimiser demand source	Optimiser message
1	✓	✓	Average	Timings provide delay minimisation.

Phases

Junction	Phase	Name	Minimum green (s)
1	A		15
	B		15

Library Stages

Junction	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A	15		
	2	B	15		
	3		15		

Stage Sequences

Junction	Sequence	Name	Stage IDs	Stage ends
1	1		3, 1, 2	17, 59, 0

Intergreen Matrix for Junction 1

From	To	
	A	B
	5	5

Interstage Matrix for Junction 1

From	To		
	1	2	3
	0	5	0
	5	0	0

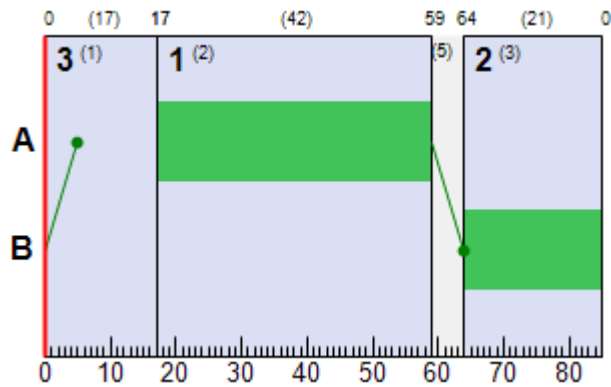
Resultant Stages

Junction	Resultant Stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	3		0	17	17	15	15
	2	1	A	17	59	42	15	15
	3	2	B	64	0	21	15	15

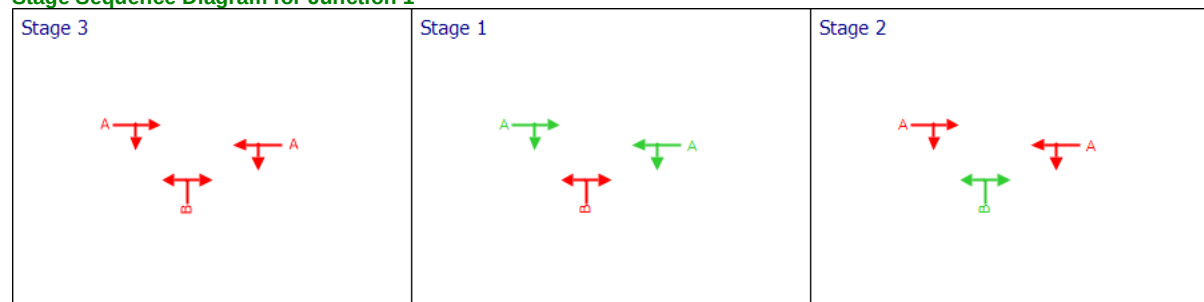
Resultant Phase Green Periods

Junction	Phase	Green period	Start time (s)	End time (s)	Duration (s)
1	A	1	17	59	42
	B	1	64	0	21

Phase Timings Diagram for Junction 1



Stage Sequence Diagram for Junction 1



Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2024 wod	AM	DIRECT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Rd W westbound		✓	100.000
B - Whitehall Road		✓	100.000
C - Kimmage Rd W eastbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 -
08:15

		To		
From		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimmage Rd W eastbound
	A - Kimmage Rd W westbound	0.00	53.00	121.00
	B - Whitehall Road	85.00	0.00	6.00
	C - Kimmage Rd W eastbound	94.00	10.00	0.00

Demand (PCU/TS)**08:15 -
08:30**

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	55.00	95.00
	B - Whitehall Road	80.00	0.00	9.00
	C - Kimage Rd W eastbound	105.00	10.00	0.00

Demand (PCU/TS)**08:30 -
08:45**

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	48.00	118.00
	B - Whitehall Road	76.00	0.00	10.00
	C - Kimage Rd W eastbound	105.00	6.00	0.00

Demand (PCU/TS)**08:45 -
09:00**

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	39.00	132.00
	B - Whitehall Road	59.00	0.00	8.00
	C - Kimage Rd W eastbound	80.00	3.00	0.00

Vehicle Mix**Heavy Vehicle Percentages**

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0	0	0
	B - Whitehall Road	0	0	0
	C - Kimage Rd W eastbound	0	0	0

Results**Results Summary for whole modelled period**

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Kimmage Rd W westbound	0.74	22.56	9.3	C
B - Whitehall Road	0.83	49.80	8.3	D
C - Kimage Rd W eastbound	0.48	15.40	5.6	B

Main Results for each time segment**08:00 - 08:15**

Arm	Traffic Stream	Total Demand	Calculated saturation	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue	Delay (s)	Signalised level of service
-----	----------------	--------------	-----------------------	--------------------------	----------	-------------------	-----	---------------------	-----------	-----------	-----------------------------

		(PCU/T S)	n flow (PCU/TS)						(PCU)		
A - Kimmage Rd W westbound	1	174.00	457.83	43.50	0.00	234.30	0.74 3	164.73	9.3	22.56 1	C
B - Whitehall Road	1	91.00	416.30	22.50	0.00	110.20	0.82 6	82.65	8.3	47.40 1	D
C - Kimmage Rd W eastbound	1	104.00	471.94	43.50	0.00	241.52	0.43 1	99.01	5.0	14.66 8	B

08:15 - 08:30

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	150.00	453.79	43.50	0.00	232.23	0.64 6	151.63	7.6	19.50 8	B
B - Whitehall Road	1	89.00	416.30	22.50	0.00	110.20	0.80 8	89.14	8.2	49.79 9	D
C - Kimmage Rd W eastbound	1	115.00	472.59	43.50	0.00	241.85	0.47 5	114.43	5.6	15.40 1	B

08:30 - 08:45

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	166.00	458.85	43.50	0.00	234.82	0.70 7	164.98	8.7	21.26 7	C
B - Whitehall Road	1	86.00	416.30	22.50	0.00	110.20	0.78 0	86.46	7.8	47.44 5	D
C - Kimmage Rd W eastbound	1	111.00	474.90	43.50	0.00	243.04	0.45 7	111.21	5.4	15.09 5	B

08:45 - 09:00

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	171.00	462.91	43.50	0.00	236.90	0.72 2	170.67	9.0	21.90 3	C
B - Whitehall Road	1	67.00	416.30	22.50	0.00	110.20	0.60 8	69.52	5.2	35.58 4	D
C - Kimmage Rd W eastbound	1	83.00	476.17	43.50	0.00	243.69	0.34 1	84.42	3.9	13.42 2	B

2024 wod, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Signalised		21.58	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	21.58	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2024 wod	PM	DIRECT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Rd W westbound		✓	100.000
B - Whitehall Road		✓	100.000
C - Kimage Rd W eastbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 -
17:15

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
	From			
	A - Kimmage Rd W westbound	0.00	64.00	97.00
	B - Whitehall Road	44.00	0.00	11.00
	C - Kimage Rd W eastbound	114.00	4.00	0.00

Demand (PCU/TS)

17:15 -
17:30

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
	From			
	A - Kimmage Rd W westbound	0.00	51.00	94.00
	B - Whitehall Road	34.00	0.00	3.00
	C - Kimage Rd W eastbound	120.00	10.00	0.00

Demand (PCU/TS)

17:30 -
17:45

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
	From			
	A - Kimmage Rd W westbound	0.00	64.00	76.00
	B - Whitehall Road	57.00	0.00	6.00
	C - Kimage Rd W eastbound	112.00	9.00	0.00

Demand (PCU/TS)

17:45 -
18:00

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
	From			
	A - Kimmage Rd W westbound	0.00	46.00	97.00
	B - Whitehall Road	66.00	0.00	9.00
	C - Kimage Rd W eastbound	124.00	9.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
A - Kimmage Rd W westbound		0	0	0
B - Whitehall Road		0	0	0
C - Kimage Rd W eastbound		0	0	0

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Kimmage Rd W westbound	0.63	15.25	6.8	B
B - Whitehall Road	0.86	57.67	7.8	E
C - Kimage Rd W eastbound	0.50	12.47	5.4	B

Main Results for each time segment

17:00 - 17:15

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	161.00	451.81	44.50	0.00	254.50	0.633	154.18	6.8	15.252	B
B - Whitehall Road	1	55.00	416.30	16.50	0.00	86.95	0.633	50.55	4.4	38.343	D
C - Kimage Rd W eastbound	1	118.00	476.33	44.50	0.00	268.31	0.440	113.27	4.7	11.579	B

17:15 - 17:30

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	145.00	454.76	44.50	0.00	256.16	0.566	145.81	6.0	13.848	B
B - Whitehall Road	1	37.00	416.30	16.50	0.00	86.95	0.426	38.68	2.8	31.897	C
C - Kimage Rd W eastbound	1	130.00	473.29	44.50	0.00	266.60	0.488	129.47	5.3	12.302	B

17:30 - 17:45

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	140.00	448.03	44.50	0.00	252.37	0.555	140.22	5.8	13.632	B
B - Whitehall Road	1	63.00	416.30	16.50	0.00	86.95	0.725	60.33	5.4	43.391	D
C - Kimage Rd W eastbound	1	121.00	473.47	44.50	0.00	266.70	0.454	121.39	4.9	11.809	B

17:45 - 18:00

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	143.00	456.71	44.50	0.00	257.26	0.556	142.89	5.9	13.594	B
B - Whitehall Road	1	75.00	416.30	16.50	0.00	86.95	0.863	72.68	7.8	57.667	E
C - Kimage Rd W eastbound	1	133.00	473.94	44.50	0.00	266.97	0.498	132.47	5.4	12.468	B

Junctions 10									
OSCADY 10 - Signalised Intersection Module									
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Filename: whitehall rd 2039 wod.j10
 Path: C:\Users\martin.rogers\Dropbox\Carlisle 2021\oscady
 Report generation date: 31/08/2021 20:25:33

[2039 wod, AM](#)

[2039 wod, PM](#)

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Set ID	Queue (PCU)	Delay (s)	DOS	LOS
2039 wod										
A - Kimmage Rd W westbound	D1	12.3	29.55	0.85	C	D2	8.8	19.01	0.72	B
B - Whitehall Road		10.6	60.13	0.88	E		10.4	67.44	0.92	E
C - Kimmage Rd W eastbound		6.8	17.26	0.54	B		6.8	14.67	0.57	B

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Kimmage Rd West / Whitehall Rd
Location	Kimmage, Dublin
Site number	
Date	30/07/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	DOS Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2039 wod	AM	DIRECT	08:00	09:00	60	15
D2	2039 wod	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2039 wod, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Signalised		33.16	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	33.16	C

Arms

Arms

Arm	Name	Description
A	Kimmage Rd W westbound	
B	Whitehall Road	
C	Kimage Rd W eastbound	

OSCADY Traffic Streams

Arm	Traffic Stream	Phase	Destination arms	Straight move
A - Kimmage Rd W westbound	1	A	B, C	C
B - Whitehall Road	1	B	A, C	
C - Kimage Rd W eastbound	1	A	A, B	A

OSCADY Lanes

Arm	Traffic Stream	Destination arms	Gradient (%)	Width (m)	Turning radius (m)	Nearside lane	Has bay
A - Kimmage Rd W westbound	1	B, C	0	3.00	10.00	✓	
B - Whitehall Road	1	A, C	0	3.00	10.00	✓	
C - Kimage Rd W eastbound	1	A, B	0	3.00	10.00	✓	

Signal Timings

Junction 1

Junction	Sequence to use	Cycle time (s)	Maximum cycle time (s)	Start displacement (s)	End displacement (s)
1	1	90	90	1.40	2.90

Optimisation options

Junction	Optimise stage lengths	Optimise cycle time	Optimiser demand source	Optimiser message
1	✓	✓	Average	Timings provide delay minimisation.

Phases

Junction	Phase	Name	Minimum green (s)
1	A		15
	B		15

Library Stages

Junction	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A	15		
	2	B	15		
	3		15		

Stage Sequences

Junction	Sequence	Name	Stage IDs	Stage ends
1	1		3, 1, 2	16, 61, 0

Intergreen Matrix for Junction 1

From	To	
	A	B
	5	
	A	B
B	5	

Interstage Matrix for Junction 1

From	To			
	1	2	3	
	0	5	0	
	5	0	0	
	0	0	0	

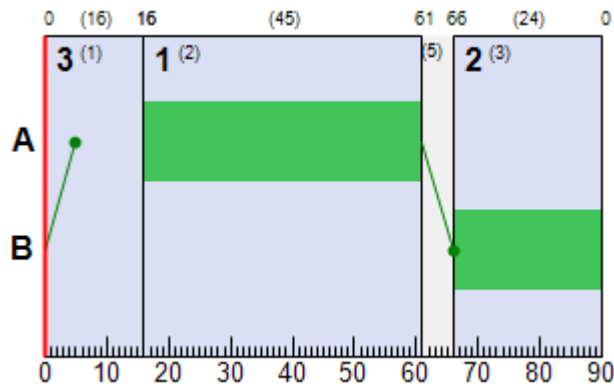
Resultant Stages

Junction	Resultant Stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	3		0	16	16	15	15
	2	1	A	16	61	45	15	15
	3	2	B	66	0	24	15	15

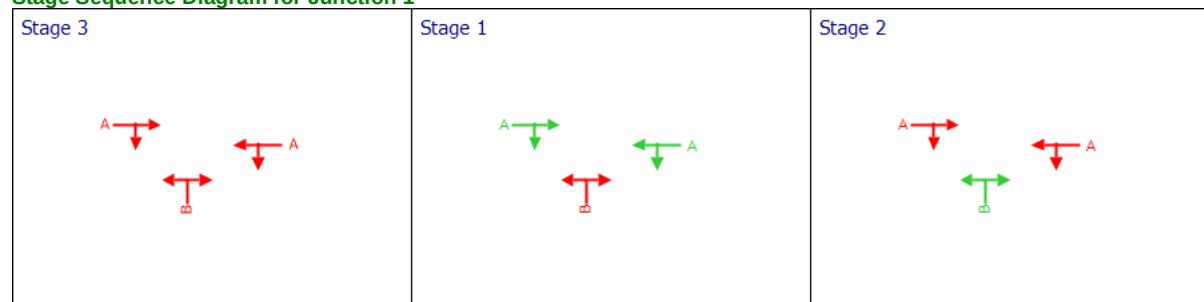
Resultant Phase Green Periods

Junction	Phase	Green period	Start time (s)	End time (s)	Duration (s)
1	A	1	16	61	45
	B	1	66	0	24

Phase Timings Diagram for Junction 1



Stage Sequence Diagram for Junction 1



Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2039 wod	AM	DIRECT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Rd W westbound		✓	100.000
B - Whitehall Road		✓	100.000
C - Kimmage Rd W eastbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 -
08:15

		To		
From		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimmage Rd W eastbound
	A - Kimmage Rd W westbound	0.00	61.00	140.00
	B - Whitehall Road	97.00	0.00	7.00
	C - Kimmage Rd W eastbound	108.00	12.00	0.00

Demand (PCU/TS)

08:15 -
08:30

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	64.00	109.00
	B - Whitehall Road	92.00	0.00	11.00
	C - Kimage Rd W eastbound	121.00	12.00	0.00

Demand (PCU/TS)

08:30 -
08:45

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	56.00	135.00
	B - Whitehall Road	88.00	0.00	12.00
	C - Kimage Rd W eastbound	121.00	7.00	0.00

Demand (PCU/TS)

08:45 -
09:00

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	45.00	152.00
	B - Whitehall Road	67.00	0.00	10.00
	C - Kimage Rd W eastbound	93.00	4.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0	0	0
	B - Whitehall Road	0	0	0
	C - Kimage Rd W eastbound	0	0	0

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Kimmage Rd W westbound	0.85	29.55	12.3	C
B - Whitehall Road	0.88	60.13	10.6	E
C - Kimage Rd W eastbound	0.54	17.26	6.8	B

Main Results for each time segment

08:00 - 08:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	201.00	457.91	46.50	0.00	236.58	0.850	188.67	12.3	29.550	C
B - Whitehall Road	1	104.00	416.30	25.50	0.00	117.95	0.882	93.50	10.5	53.262	D

C - Kimage Rd W eastbound	1	120.00	471.67	46.50	0.00	243.70	0.49 2	113.92	6.1	16.21 9	B
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08:15 - 08:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	173.00	453.58	46.50	0.00	234.35	0.73 8	175.68	9.7	23.91 2	C
B - Whitehall Road	1	103.00	416.30	25.50	0.00	117.95	0.87 3	102.88	10.6	60.13 2	E
C - Kimage Rd W eastbound	1	133.00	472.36	46.50	0.00	244.05	0.54 5	132.27	6.8	17.25 7	B

08:30 - 08:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	191.00	458.58	46.50	0.00	236.93	0.80 6	189.52	11.1	26.86 8	C
B - Whitehall Road	1	100.00	416.30	25.50	0.00	117.95	0.84 8	100.38	10.2	57.27 3	E
C - Kimage Rd W eastbound	1	128.00	474.85	46.50	0.00	245.34	0.52 2	128.29	6.5	16.80 4	B

08:45 - 09:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	197.00	462.89	46.50	0.00	239.16	0.82 4	196.43	11.7	28.41 6	C
B - Whitehall Road	1	77.00	416.30	25.50	0.00	117.95	0.65 3	80.96	6.3	38.24 0	D
C - Kimage Rd W eastbound	1	97.00	475.81	46.50	0.00	245.83	0.39 5	98.69	4.8	14.64 8	B

2039 wod, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Signalised		25.91	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	25.91	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2039 wod	PM	DIRECT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Rd W westbound		✓	100.000
B - Whitehall Road		✓	100.000
C - Kimage Rd W eastbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 -
17:15

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From				
	A - Kimmage Rd W westbound	0.00	73.00	111.00
	B - Whitehall Road	51.00	0.00	13.00
	C - Kimage Rd W eastbound	131.00	5.00	0.00

Demand (PCU/TS)

17:15 -
17:30

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From				
	A - Kimmage Rd W westbound	0.00	58.00	108.00
	B - Whitehall Road	40.00	0.00	4.00
	C - Kimage Rd W eastbound	139.00	11.00	0.00

Demand (PCU/TS)

17:30 -
17:45

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From				
	A - Kimmage Rd W westbound	0.00	73.00	87.00
	B - Whitehall Road	66.00	0.00	7.00
	C - Kimage Rd W eastbound	129.00	10.00	0.00

Demand (PCU/TS)

17:45 -
18:00

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From				
	A - Kimmage Rd W westbound	0.00	53.00	111.00
	B - Whitehall Road	76.00	0.00	11.00
	C - Kimage Rd W eastbound	142.00	10.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimmage Rd W eastbound
A - Kimmage Rd W westbound		0	0	0
B - Whitehall Road		0	0	0
C - Kimmage Rd W eastbound		0	0	0

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Kimmage Rd W westbound	0.72	19.01	8.8	B
B - Whitehall Road	0.92	67.44	10.4	E
C - Kimmage Rd W eastbound	0.57	14.67	6.8	B

Main Results for each time segment

17:00 - 17:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	184.00	451.86	48.50	0.00	254.83	0.72 ₂	175.24	8.8	19.01 ₃	B
B - Whitehall Road	1	64.00	416.30	19.50	0.00	94.39	0.67 ₈	58.46	5.5	41.29 ₃	D
C - Kimmage Rd W eastbound	1	136.00	476.12	48.50	0.00	268.51	0.50 ₆	130.02	6.0	13.48 ₁	B

17:15 - 17:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	166.00	454.91	48.50	0.00	256.55	0.64 ₇	167.12	7.6	16.82 ₈	B
B - Whitehall Road	1	44.00	416.30	19.50	0.00	94.39	0.46 ₆	46.04	3.5	33.95 ₀	C
C - Kimmage Rd W eastbound	1	150.00	473.54	48.50	0.00	267.06	0.56 ₂	149.30	6.7	14.53 ₂	B

17:30 - 17:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	160.00	448.08	48.50	0.00	252.70	0.63 ₃	160.31	7.3	16.43 ₀	B
B - Whitehall Road	1	73.00	416.30	19.50	0.00	94.39	0.77 ₃	69.68	6.8	47.48 ₄	D
C - Kimmage Rd W eastbound	1	139.00	473.64	48.50	0.00	267.11	0.52 ₀	139.55	6.1	13.78 ₂	B

17:45 - 18:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	164.00	456.62	48.50	0.00	257.51	0.63 ₇	163.83	7.5	16.43 ₅	B
B - Whitehall Road	1	87.00	416.30	19.50	0.00	94.39	0.92 ₂	83.40	10.4	67.44 ₀	E
C - Kimmage Rd W eastbound	1	152.00	474.07	48.50	0.00	267.35	0.56 ₉	151.35	6.8	14.67 ₂	B

Junctions 10									
OSCADY 10 - Signalised Intersection Module									
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Filename: whitehall rd 2039 wdev.j10
 Path: C:\Users\martin.rogers\Dropbox\Carlisle 2021\oscady
 Report generation date: 31/08/2021 20:34:09

[2039 wdev, AM](#)
[2039 wdev, PM](#)

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	DOS	LOS	Set ID	Queue (PCU)	Delay (s)	DOS	LOS
2039 wdev										
A - Kimmage Rd W westbound	D1	13.1	31.43	0.87	C	D2	8.9	19.09	0.73	B
B - Whitehall Road		10.9	62.14	0.89	E		11.3	72.72	0.94	E
C - Kimmage Rd W eastbound		6.8	17.26	0.54	B		6.9	14.68	0.57	B

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Kimmage Rd West / Whitehall Rd
Location	Kimmage, Dublin
Site number	
Date	30/07/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	DOS Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2039 wdev	AM	DIRECT	08:00	09:00	60	15
D2	2039 wdev	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2039 wdev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Signalised		34.53	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	34.53	C

Arms

Arms

Arm	Name	Description
A	Kimmage Rd W westbound	
B	Whitehall Road	
C	Kimage Rd W eastbound	

OSCADY Traffic Streams

Arm	Traffic Stream	Phase	Destination arms	Straight move
A - Kimmage Rd W westbound	1	A	B, C	C
B - Whitehall Road	1	B	A, C	
C - Kimage Rd W eastbound	1	A	A, B	A

OSCADY Lanes

Arm	Traffic Stream	Destination arms	Gradient (%)	Width (m)	Turning radius (m)	Nearside lane	Has bay
A - Kimmage Rd W westbound	1	B, C	0	3.00	10.00	✓	
B - Whitehall Road	1	A, C	0	3.00	10.00	✓	
C - Kimage Rd W eastbound	1	A, B	0	3.00	10.00	✓	

Signal Timings

Junction 1

Junction	Sequence to use	Cycle time (s)	Maximum cycle time (s)	Start displacement (s)	End displacement (s)
1	1	90	90	1.40	2.90

Optimisation options

Junction	Optimise stage lengths	Optimise cycle time	Optimiser demand source	Optimiser message
1	✓	✓	Average	Timings provide delay minimisation.

Phases

Junction	Phase	Name	Minimum green (s)
1	A		15
	B		15

Library Stages

Junction	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A	15		
	2	B	15		
	3		15		

Stage Sequences

Junction	Sequence	Name	Stage IDs	Stage ends
1	1		3, 1, 2	16, 61, 0

Intergreen Matrix for Junction 1

From	To	
	A	B
	5	5

Interstage Matrix for Junction 1

From	To		
	1	2	3
	0	5	0
	5	0	0

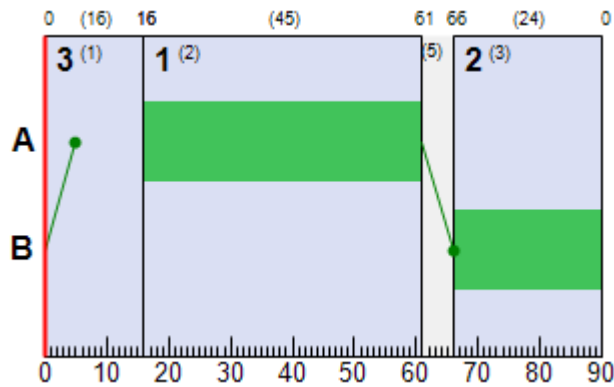
Resultant Stages

Junction	Resultant Stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	3		0	16	16	15	15
	2	1	A	16	61	45	15	15
	3	2	B	66	0	24	15	15

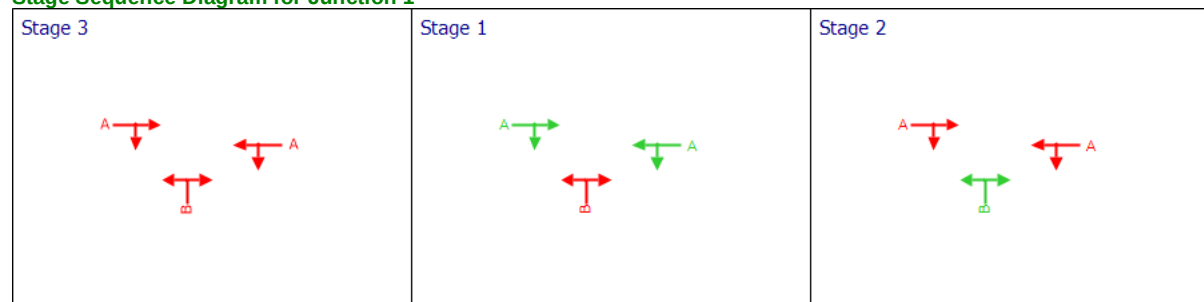
Resultant Phase Green Periods

Junction	Phase	Green period	Start time (s)	End time (s)	Duration (s)
1	A	1	16	61	45
	B	1	66	0	24

Phase Timings Diagram for Junction 1



Stage Sequence Diagram for Junction 1



Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2039 wdev	AM	DIRECT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Rd W westbound		✓	100.000
B - Whitehall Road		✓	100.000
C - Kimmage Rd W eastbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

08:00 -
08:15

		To		
From		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimmage Rd W eastbound
	A - Kimmage Rd W westbound	0.00	63.00	143.00
	B - Whitehall Road	98.00	0.00	7.00
	C - Kimmage Rd W eastbound	109.00	12.00	0.00

Demand (PCU/TS)

08:15 -
08:30

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	65.00	113.00
	B - Whitehall Road	93.00	0.00	11.00
	C - Kimage Rd W eastbound	121.00	12.00	0.00

Demand (PCU/TS)

08:30 -
08:45

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	57.00	139.00
	B - Whitehall Road	89.00	0.00	12.00
	C - Kimage Rd W eastbound	122.00	7.00	0.00

Demand (PCU/TS)

08:45 -
09:00

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0.00	46.00	156.00
	B - Whitehall Road	68.00	0.00	10.00
	C - Kimage Rd W eastbound	93.00	4.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
From	A - Kimmage Rd W westbound	0	0	0
	B - Whitehall Road	0	0	0
	C - Kimage Rd W eastbound	0	0	0

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Kimmage Rd W westbound	0.87	31.43	13.1	C
B - Whitehall Road	0.89	62.14	10.9	E
C - Kimage Rd W eastbound	0.54	17.26	6.8	B

Main Results for each time segment

08:00 - 08:15

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	206.00	457.75	46.50	0.00	236.50	0.871	192.94	13.1	31.426	C
B - Whitehall Road	1	105.00	416.30	25.50	0.00	117.95	0.890	94.22	10.8	54.352	D

C - Kimage Rd W eastbound	1	121.00	471.73	46.50	0.00	243.73	0.496	114.86	6.1	16.293	B
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08:15 - 08:30

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	178.00	453.89	46.50	0.00	234.51	0.759	180.97	10.1	25.113	C
B - Whitehall Road	1	104.00	416.30	25.50	0.00	117.95	0.882	103.84	10.9	62.138	E
C - Kimage Rd W eastbound	1	133.00	472.36	46.50	0.00	244.05	0.545	132.32	6.8	17.259	B

08:30 - 08:45

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	196.00	458.74	46.50	0.00	237.01	0.827	194.41	11.7	28.362	C
B - Whitehall Road	1	101.00	416.30	25.50	0.00	117.95	0.856	101.37	10.6	59.228	E
C - Kimage Rd W eastbound	1	129.00	474.88	46.50	0.00	245.36	0.526	129.23	6.6	16.883	B

08:45 - 09:00

Arm	Traffic Stream	Total Demand (PCU/TS)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/TS)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	202.00	462.94	46.50	0.00	239.18	0.845	201.35	12.3	30.254	C
B - Whitehall Road	1	78.00	416.30	25.50	0.00	117.95	0.661	82.17	6.4	38.857	D
C - Kimage Rd W eastbound	1	97.00	475.81	46.50	0.00	245.83	0.395	98.74	4.8	14.648	B

2039 wdev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Signalised		26.85	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	26.85	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2039 wdev	PM	DIRECT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Rd W westbound		✓	100.000
B - Whitehall Road		✓	100.000
C - Kimage Rd W eastbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 -
17:15

		To		
From		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
	A - Kimmage Rd W westbound	0.00	74.00	113.00
	B - Whitehall Road	52.00	0.00	13.00
	C - Kimage Rd W eastbound	134.00	5.00	0.00

Demand (PCU/TS)

17:15 -
17:30

		To		
From		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
	A - Kimmage Rd W westbound	0.00	59.00	109.00
	B - Whitehall Road	41.00	0.00	4.00
	C - Kimage Rd W eastbound	142.00	11.00	0.00

Demand (PCU/TS)

17:30 -
17:45

		To		
From		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
	A - Kimmage Rd W westbound	0.00	74.00	88.00
	B - Whitehall Road	67.00	0.00	7.00
	C - Kimage Rd W eastbound	132.00	10.00	0.00

Demand (PCU/TS)

17:45 -
18:00

		To		
From		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimage Rd W eastbound
	A - Kimmage Rd W westbound	0.00	54.00	113.00
	B - Whitehall Road	77.00	0.00	11.00
	C - Kimage Rd W eastbound	145.00	10.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Kimmage Rd W westbound	B - Whitehall Road	C - Kimmage Rd W eastbound
A - Kimmage Rd W westbound		0	0	0
B - Whitehall Road		0	0	0
C - Kimmage Rd W eastbound		0	0	0

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max LOS
A - Kimmage Rd W westbound	0.73	19.09	8.9	B
B - Whitehall Road	0.94	72.72	11.3	E
C - Kimmage Rd W eastbound	0.57	14.68	6.9	B

Main Results for each time segment

17:00 - 17:15

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	187.00	451.92	49.50	0.00	257.13	0.727	178.08	8.9	19.089	B
B - Whitehall Road	1	65.00	416.30	19.50	0.00	93.31	0.697	59.22	5.8	42.906	D
C - Kimmage Rd W eastbound	1	139.00	476.18	49.50	0.00	270.93	0.513	132.89	6.1	13.484	B

17:15 - 17:30

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	168.00	454.79	49.50	0.00	258.76	0.649	169.19	7.7	16.778	B
B - Whitehall Road	1	45.00	416.30	19.50	0.00	93.31	0.482	47.13	3.6	34.998	C
C - Kimmage Rd W eastbound	1	153.00	473.64	49.50	0.00	269.49	0.568	152.30	6.8	14.544	B

17:30 - 17:45

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	162.00	448.05	49.50	0.00	254.93	0.635	162.31	7.4	16.377	B
B - Whitehall Road	1	74.00	416.30	19.50	0.00	93.31	0.793	70.49	7.2	49.797	D
C - Kimmage Rd W eastbound	1	142.00	473.75	49.50	0.00	269.54	0.527	142.55	6.3	13.788	B

17:45 - 18:00

Arm	Traffic Stream	Total Demand (PCU/T S)	Calculated saturation flow (PCU/TS)	Effective green time (s)	NEEG (s)	Capacity (PCU/T S)	DOS	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Signalised level of service
A - Kimmage Rd W westbound	1	167.00	456.60	49.50	0.00	259.79	0.643	166.78	7.6	16.477	B
B - Whitehall Road	1	88.00	416.30	19.50	0.00	93.31	0.943	83.85	11.3	72.719	E
C - Kimmage Rd W eastbound	1	155.00	474.16	49.50	0.00	269.78	0.575	154.35	6.9	14.685	B

DEVELOPMENT ACCESS T-JUNCTION

Junctions 10									
PICADY 10 - Priority Intersection Module									
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Filename: Development access 2024 wdev.j10
 Path: C:\Users\martin.rogers\Dropbox\Carlisle 2021\picady
 Report generation date: 31/08/2021 21:21:22

[2024 wdev, AM](#)
[2024 wdev, PM](#)

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
2024 wdev										
Stream B-AC	D1	0.3	16.15	0.26	C	D2	0.3	14.16	0.21	B
Stream C-B		0.1	9.01	0.06	A		0.1	9.19	0.13	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Carlisle LRD
Location	Kimmage Road West
Site number	
Date	23/08/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2024 wdev	AM	DIRECT	08:00	09:00	60	15
D2	2024 wdev	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024 wdev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		0.97	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.97	A

Arms

Arms

Arm	Name	Description	Arm type
A	Kimmage Road W Eastbound		Major
B	Development access		Minor
C	Kimmage Road W Westbound		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Kimmage Road W Westbound	6.00			50.0		-

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Development access	One lane	3.00	0	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	125.490	0.091	0.231	0.145	0.330
B-C	163.853	0.100	0.254	-	-
C-B	150.730	0.234	0.234	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2024 wdev	AM	DIRECT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Road W Eastbound		✓	100.000
B - Development access		✓	100.000
C - Kimmage Road W Westbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
08:00 - 08:15	From			
		A - Kimmage Road W Eastbound	0.00	6.00
		B - Development access	8.00	0.00
		C - Kimmage Road W Westbound	151.00	3.00

Demand (PCU/TS)

	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
08:15 - 08:30	From			
		A - Kimmage Road W Eastbound	0.00	7.00
		B - Development access	11.00	0.00
		C - Kimmage Road W Westbound	146.00	5.00

Demand (PCU/TS)

	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
08:30 - 08:45	From			
		A - Kimmage Road W Eastbound	0.00	7.00
		B - Development access	9.00	0.00
		C - Kimmage Road W Westbound	176.00	6.00

Demand (PCU/TS)

08:45 - 09:00		To			
	From		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
		A - Kimmage Road W Eastbound	0.00	8.00	141.00
		B - Development access	13.00	0.00	8.00
		C - Kimmage Road W Westbound	167.00	3.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
	A - Kimmage Road W Eastbound	0	0	0
	B - Development access	0	0	0
	C - Kimmage Road W Westbound	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.26	16.15	0.3	C
C-A				
C-B	0.06	9.01	0.1	A
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	21.00	81.34	0.258	20.66	0.3	14.763	B
C-A	151.00			151.00			
C-B	3.00	102.84	0.029	2.97	0.0	9.008	A
A-B	6.00			6.00			
A-C	199.00			199.00			

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	19.00	84.73	0.224	19.05	0.3	13.712	B
C-A	146.00			146.00			
C-B	5.00	114.99	0.043	4.98	0.0	8.180	A
A-B	7.00			7.00			
A-C	146.00			146.00			

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	15.00	70.78	0.212	15.02	0.3	16.149	C
C-A	176.00			176.00			

C-B	6.00	107.28	0.056	5.99	0.1	8.884	A
A-B	7.00			7.00			
A-C	179.00			179.00			

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	21.00	81.65	0.257	20.93	0.3	14.806	B
C-A	167.00			167.00			
C-B	3.00	115.92	0.026	3.03	0.0	7.974	A
A-B	8.00			8.00			
A-C	141.00			141.00			

2024 wdev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		0.89	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.89	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2024 wdev	PM	DIRECT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Road W Eastbound		✓	100.000
B - Development access		✓	100.000
C - Kimmage Road W Westbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
	From	A - Kimmage Road W Eastbound	0.00	15.00
		B - Development access	7.00	0.00
		C - Kimmage Road W Westbound	115.00	10.00
				0.00

Demand (PCU/TS)

17:15 - 17:30	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
	From	A - Kimmage Road W Eastbound	0.00	13.00
		B - Development access	5.00	0.00
		C - Kimmage Road W Westbound	151.00	14.00
				0.00

Demand (PCU/TS)

17:30 - 17:45	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
	From	A - Kimmage Road W Eastbound	0.00	9.00
		B - Development access	9.00	0.00
		C - Kimmage Road W Westbound	136.00	8.00
				0.00

Demand (PCU/TS)

17:45 - 18:00	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
	From	A - Kimmage Road W Eastbound	0.00	21.00
		B - Development access	6.00	0.00
		C - Kimmage Road W Westbound	167.00	8.00
				0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
	From	A - Kimmage Road W Eastbound	0	0
		B - Development access	0	0
		C - Kimmage Road W Westbound	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.21	14.16	0.3	B
C-A				
C-B	0.13	9.19	0.1	A

A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	16.00	91.32	0.175	15.79	0.2	11.884	B
C-A	115.00			115.00			
C-B	10.00	111.25	0.090	9.90	0.1	8.872	A
A-B	15.00			15.00			
A-C	154.00			154.00			

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	13.00	89.67	0.145	13.04	0.2	11.751	B
C-A	151.00			151.00			
C-B	14.00	111.95	0.125	13.96	0.1	9.180	A
A-B	13.00			13.00			
A-C	153.00			153.00			

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	19.00	88.85	0.214	18.90	0.3	12.849	B
C-A	136.00			136.00			
C-B	8.00	113.35	0.071	8.06	0.1	8.554	A
A-B	9.00			9.00			
A-C	151.00			151.00			

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	11.00	74.75	0.147	11.09	0.2	14.159	B
C-A	167.00			167.00			
C-B	8.00	105.88	0.076	8.00	0.1	9.194	A
A-B	21.00			21.00			
A-C	171.00			171.00			

Junctions 10									
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Filename: Development access 2029 wdev.j10
 Path: C:\Users\martin.rogers\Dropbox\Carlisle 2021\picady
 Report generation date: 31/08/2021 21:32:22

[2029 wdev, AM](#)
[2029 wdev, PM](#)

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
2029 wdev										
Stream B-AC	D1	0.4	18.04	0.28	C	D2	0.3	15.58	0.25	C
Stream C-B		0.1	9.36	0.06	A		0.2	9.57	0.14	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Carlisle LRD
Location	Kimmage Road West
Site number	
Date	23/08/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2029 wdev	AM	DIRECT	08:00	09:00	60	15
D2	2029 wdev	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2029 wdev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.01	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.01	A

Arms

Arms

Arm	Name	Description	Arm type
A	Kimmage Road W Eastbound		Major
B	Development access		Minor
C	Kimmage Road W Westbound		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Kimmage Road W Westbound	6.00			50.0		-

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Development access	One lane	3.00	0	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	125.490	0.091	0.231	0.145	0.330
B-C	163.853	0.100	0.254	-	-
C-B	150.730	0.234	0.234	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2029 wdev	AM	DIRECT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Road W Eastbound		✓	100.000
B - Development access		✓	100.000
C - Kimmage Road W Westbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
08:00 - 08:15	From			
		A - Kimmage Road W Eastbound	0.00	6.00
		B - Development access	8.00	0.00
		C - Kimmage Road W Westbound	164.00	3.00

Demand (PCU/TS)

	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
08:15 - 08:30	From			
		A - Kimmage Road W Eastbound	0.00	8.00
		B - Development access	12.00	0.00
		C - Kimmage Road W Westbound	158.00	6.00

Demand (PCU/TS)

	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
08:30 - 08:45	From			
		A - Kimmage Road W Eastbound	0.00	7.00
		B - Development access	9.00	0.00
		C - Kimmage Road W Westbound	191.00	6.00

Demand (PCU/TS)

08:45 - 09:00	From	To		
			A - Kimmage Road W Eastbound	B - Development access
			C - Kimmage Road W Westbound	
		A - Kimmage Road W Eastbound	0.00	8.00
		B - Development access	13.00	0.00
		C - Kimmage Road W Westbound	181.00	3.00
				152.00
				8.00
				0.00

Vehicle Mix

Heavy Vehicle Percentages

	From	To		
			A - Kimmage Road W Eastbound	B - Development access
			C - Kimmage Road W Westbound	
		A - Kimmage Road W Eastbound	0	0
		B - Development access	0	0
		C - Kimmage Road W Westbound	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.28	18.04	0.4	C
C-A				
C-B	0.06	9.36	0.1	A
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	21.00	75.46	0.278	20.62	0.4	16.306	C
C-A	164.00			164.00			
C-B	3.00	99.10	0.030	2.97	0.0	9.358	A
A-B	6.00			6.00			
A-C	215.00			215.00			

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	20.00	78.72	0.254	20.03	0.3	15.344	C
C-A	158.00			158.00			
C-B	6.00	111.95	0.054	5.97	0.1	8.490	A
A-B	8.00			8.00			
A-C	158.00			158.00			

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	15.00	64.98	0.231	15.04	0.3	18.041	C
C-A	191.00			191.00			

C-B	6.00	104.01	0.058	6.00	0.1	9.182	A
A-B	7.00			7.00			
A-C	193.00			193.00			

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	21.00	76.96	0.273	20.94	0.4	16.047	C
C-A	181.00			181.00			
C-B	3.00	113.35	0.026	3.03	0.0	8.160	A
A-B	8.00			8.00			
A-C	152.00			152.00			

2029 wdev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		0.93	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.93	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2029 wdev	PM	DIRECT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Road W Eastbound		✓	100.000
B - Development access		✓	100.000
C - Kimmage Road W Westbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
	From	A - Kimmage Road W Eastbound	0.00	15.00
		B - Development access	7.00	0.00
		C - Kimmage Road W Westbound	124.00	10.00
				0.00

Demand (PCU/TS)

17:15 - 17:30	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
	From	A - Kimmage Road W Eastbound	0.00	14.00
		B - Development access	5.00	0.00
		C - Kimmage Road W Westbound	163.00	15.00
				0.00

Demand (PCU/TS)

17:30 - 17:45	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
	From	A - Kimmage Road W Eastbound	0.00	10.00
		B - Development access	10.00	0.00
		C - Kimmage Road W Westbound	147.00	8.00
				0.00

Demand (PCU/TS)

17:45 - 18:00	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
	From	A - Kimmage Road W Eastbound	0.00	22.00
		B - Development access	6.00	0.00
		C - Kimmage Road W Westbound	181.00	8.00
				0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
	From	A - Kimmage Road W Eastbound	0	0
		B - Development access	0	0
		C - Kimmage Road W Westbound	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.25	15.58	0.3	C
C-A				
C-B	0.14	9.57	0.2	A

A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	17.00	88.35	0.192	16.77	0.2	12.534	B
C-A	124.00			124.00			
C-B	10.00	108.21	0.092	9.90	0.1	9.145	A
A-B	15.00			15.00			
A-C	167.00			167.00			

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	13.00	84.67	0.154	13.05	0.2	12.574	B
C-A	163.00			163.00			
C-B	15.00	108.91	0.138	14.94	0.2	9.571	A
A-B	14.00			14.00			
A-C	165.00			165.00			

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	21.00	83.89	0.250	20.86	0.3	14.246	B
C-A	147.00			147.00			
C-B	8.00	110.08	0.073	8.08	0.1	8.831	A
A-B	10.00			10.00			
A-C	164.00			164.00			

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	11.00	69.04	0.159	11.13	0.2	15.578	C
C-A	181.00			181.00			
C-B	8.00	102.37	0.078	8.00	0.1	9.536	A
A-B	22.00			22.00			
A-C	185.00			185.00			

Junctions 10									
PICADY 10 - Priority Intersection Module									
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Filename: Development access 2039 wdev.j10
Path: C:\Users\martin.rogers\Dropbox\Carlisle 2021\picady
Report generation date: 31/08/2021 21:38:34

[2039 wdev, AM](#)
[2039 wdev, PM](#)

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
2039 wdev										
Stream B-AC	D1	0.4	21.08	0.31	C	D2	0.3	17.95	0.26	C
Stream C-B		0.1	9.69	0.06	A		0.2	9.87	0.14	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Carlisle LRD
Location	Kimmage Road West
Site number	
Date	23/08/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ICTDOMAIN\martin.rogers
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2039 wdev	AM	DIRECT	08:00	09:00	60	15
D2	2039 wdev	PM	DIRECT	17:00	18:00	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2039 wdev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.14	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.14	A

Arms

Arms

Arm	Name	Description	Arm type
A	Kimmage Road W Eastbound		Major
B	Development access		Minor
C	Kimmage Road W Westbound		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Kimmage Road W Westbound	6.00			50.0		-

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Development access	One lane	3.00	0	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	125.490	0.091	0.231	0.145	0.330
B-C	163.853	0.100	0.254	-	-
C-B	150.730	0.234	0.234	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2039 wdev	AM	DIRECT	08:00	09:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Road W Eastbound		✓	100.000
B - Development access		✓	100.000
C - Kimmage Road W Westbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
08:00 - 08:15	From			
		A - Kimmage Road W Eastbound	0.00	6.00
		B - Development access	8.00	0.00
		C - Kimmage Road W Westbound	174.00	3.00

Demand (PCU/TS)

	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
08:15 - 08:30	From			
		A - Kimmage Road W Eastbound	0.00	8.00
		B - Development access	12.00	0.00
		C - Kimmage Road W Westbound	168.00	6.00

Demand (PCU/TS)

	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
08:30 - 08:45	From			
		A - Kimmage Road W Eastbound	0.00	7.00
		B - Development access	10.00	0.00
		C - Kimmage Road W Westbound	203.00	6.00

Demand (PCU/TS)

08:45 - 09:00		To			
	From		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
		A - Kimmage Road W Eastbound	0.00	9.00	162.00
		B - Development access	14.00	0.00	8.00
		C - Kimmage Road W Westbound	192.00	3.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
	A - Kimmage Road W Eastbound	0	0	0
	B - Development access	0	0	0
	C - Kimmage Road W Westbound	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.31	21.08	0.4	C
C-A				
C-B	0.06	9.69	0.1	A
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	22.00	71.40	0.308	21.57	0.4	17.914	C
C-A	174.00			174.00			
C-B	3.00	95.83	0.031	2.97	0.0	9.688	A
A-B	6.00			6.00			
A-C	229.00			229.00			

08:15 - 08:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	20.00	74.85	0.267	20.06	0.4	16.449	C
C-A	168.00			168.00			
C-B	6.00	109.62	0.055	5.97	0.1	8.682	A
A-B	8.00			8.00			
A-C	168.00			168.00			

08:30 - 08:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	16.00	58.68	0.273	16.00	0.4	21.085	C
C-A	203.00			203.00			

C-B	6.00	100.97	0.059	5.99	0.1	9.476	A
A-B	7.00			7.00			
A-C	206.00			206.00			

08:45 - 09:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	22.00	71.95	0.306	21.94	0.4	17.969	C
C-A	192.00			192.00			
C-B	3.00	110.78	0.027	3.03	0.0	8.356	A
A-B	9.00			9.00			
A-C	162.00			162.00			

2039 wdev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.02	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.02	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2039 wdev	PM	DIRECT	17:00	18:00	60	15

Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A - Kimmage Road W Eastbound		✓	100.000
B - Development access		✓	100.000
C - Kimmage Road W Westbound		✓	100.000

Origin-Destination Data

Demand (PCU/TS)

17:00 - 17:15	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
	From	A - Kimmage Road W Eastbound	0.00	16.00
		B - Development access	8.00	0.00
		C - Kimmage Road W Westbound	132.00	11.00
				0.00

Demand (PCU/TS)

17:15 - 17:30	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
	From	A - Kimmage Road W Eastbound	0.00	15.00
		B - Development access	5.00	0.00
		C - Kimmage Road W Westbound	173.00	15.00
				0.00

Demand (PCU/TS)

17:30 - 17:45	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
	From	A - Kimmage Road W Eastbound	0.00	10.00
		B - Development access	10.00	0.00
		C - Kimmage Road W Westbound	156.00	8.00
				0.00

Demand (PCU/TS)

17:45 - 18:00	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
	From	A - Kimmage Road W Eastbound	0.00	23.00
		B - Development access	7.00	0.00
		C - Kimmage Road W Westbound	192.00	8.00
				0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Kimmage Road W Eastbound	B - Development access	C - Kimmage Road W Westbound
	From	A - Kimmage Road W Eastbound	0	0
		B - Development access	0	0
		C - Kimmage Road W Westbound	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.26	17.95	0.3	C
C-A				
C-B	0.14	9.87	0.2	A

A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	18.00	82.60	0.218	17.73	0.3	13.816	B
C-A	132.00			132.00			
C-B	11.00	105.64	0.104	10.89	0.1	9.486	A
A-B	16.00			16.00			
A-C	177.00			177.00			

17:15 - 17:30

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	14.00	82.10	0.171	14.06	0.2	13.244	B
C-A	173.00			173.00			
C-B	15.00	106.11	0.141	14.95	0.2	9.867	A
A-B	15.00			15.00			
A-C	176.00			176.00			

17:30 - 17:45

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	21.00	80.15	0.262	20.86	0.3	15.132	C
C-A	156.00			156.00			
C-B	8.00	107.75	0.074	8.08	0.1	9.037	A
A-B	10.00			10.00			
A-C	174.00			174.00			

17:45 - 18:00

Stream	Total Demand (PCU/TS)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	12.00	62.36	0.192	12.10	0.2	17.948	C
C-A	192.00			192.00			
C-B	8.00	99.34	0.081	7.99	0.1	9.853	A
A-B	23.00			23.00			
A-C	197.00			197.00			

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