



**Clyde  
Shanks**

**Chapter 12**

Transport

## 12. Transport

### Introduction

12.1 The traffic and transport related impacts associated with the development proposals were originally assessed within Chapter 12 of the original EIA submission (March 2014). This was followed by subsequent ES addendums in August 2016, March 2019 and September 2023. This update should be read and reviewed in conjunction with the previous submissions. It should be noted that all of the previous submissions were reviewed and agreed by the Department for Infrastructure (The Department).

12.2 The key findings of the assessments are summarised as follows:

- The future traffic movements for the new facility and potential locations on the highway network that may experience some impact were identified. Operational assessments of the relevant junctions demonstrated that there would be no tangible reduction in highway performance as a result of development traffic. The environmental impact of the proposed development on transport issues was therefore assessed as neutral.
- An Outline Construction and Environmental Management Plan (OCEMP) was developed to ensure that the construction phase of the development would have minimal impact on the site or its general vicinity. The environmental impact during the construction phase of the proposed development with respect to transport was assessed as moderate due to the relatively significant traffic volumes and diversionary routing in place during the construction period. However, it should be noted that this impact was confirmed as temporary/ short-term.
- The development proposals involve upgrading and widening of Boghill Road including the provision of a footpath with improvements to the visibility splays at the Boghill Road/ Hydepark Road junction and forward visibility on Hydepark Road. These improvements will improve road safety and the general convenience of road users.
- In terms of indirect impacts, it is considered that transport could have potential indirect impacts on ecology, landscape, the water environment, noise and air quality. These indirect impacts relate to both the construction and operational phases and are considered in detail in the various relevant assessments.
- Cumulative Impacts are impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project under consideration. In summary, it is considered that there will be a slight cumulative effect due to the anticipated increases in traffic on the localised road network.

12.3 The updated Transport Chapter submitted as part of the March 2019 ES addendum further concluded:

***“From the review set out within this chapter and the 2019 TA Review, it is concluded that the findings and recommendations/ mitigations set out within the original approved assessment and the 2016 Transport FEI accepted by the PAC at Public Inquiry remain valid and current.”***

12.4 Department for Infrastructure Roads (DfI Roads) were consulted in relation to the updated transport/ traffic information within the March 2019 ES addendum and provided a response dated 19th April 2019 which stated that they were “...**satisfied with the methodology used and agrees with the conclusion that the finding/recommendations / mitigation set out in the original assessment and the 2016 transport FEI remain valid.**”

12.5 The lead author of this addendum is a technically skilled Transport Planner with 35 years' experience covering a wide range of projects. He is a Chartered Transport Planning Professional and a Fellow of the Institute of Highways and Transportation.

### **September 2023 TA Review**

12.6 The principal aim of this chapter was to ensure that in 2023, the findings remained valid and consistent with the previous assessments undertaken. In particular, this review included updated traffic surveys to ensure the traffic data which informed the assessments was within the acceptable thresholds (typically up to 3 years old) and the list of committed developments which are approved in the vicinity of the development site remain accurate as well as any other material change in circumstances which may have affected the findings. DfI Roads undertook a review of the information and concluded in their consultation response dated December 11<sup>th</sup> 2023 that:

***“the findings and recommendations/ mitigation set out within the original EIA and subsequent FEI submissions remain valid and current.”***

### **Current TA Review**

12.7 To inform the preparation of this further ES addendum, a TA Review has been prepared and the following actions were taken:

- Site visit to review current conditions on the 9<sup>th</sup> October 2024;
- A review of approved planning applications within 2km of the site to identify any new committed developments that should be considered in the update; and
- The PSNI were also contacted to obtain new road traffic accident data for the period January 2023 - July 2024 (Latest data available).

12.8 The TA Review technical note is included as Appendix 12.1 and has demonstrated that although there have been some changes in background traffic, accident data and public transport services since the September 2023 ES addendum submission was prepared, these changes do not affect the previously reported traffic impact of the proposed development nor the operational capacity assessment originally undertaken.

### **Methodology**

12.9 As noted, the development impacts have been assessed on multiple occasions (original submission in March 2014, FEI as part of the statement of case evidence to the Planning Appeals Commission in August 2016, March 2019 and September 2023) and on each occasion the findings have been accepted by DfI Roads with no objections raised. Therefore, this assessment provides an update to the 2023

TA Review to confirm whether or not the previous findings and proposed mitigation measures remain valid/robust.

12.10 This updated Transport Chapter will therefore focus on key information presented in the TA Review in the September 2023 ES addendum. The key areas to be considered within this assessment are:

- Base Conditions, including Committed Developments and Road Safety;
- Proposed Operational Movements;
- Predicted Environmental Effects and their significance (Construction and Operation);
- Proposed Mitigation Measures (Construction and Operation); and
- Residual Effects and their Significance taking Mitigation into Account (Construction and Operational).

12.11 Table 12.1 therefore sets out an initial overview of the key information that is time limited or sensitive to changes in traffic volume which require further consideration as part of this chapter..

**Table 12.1 Summary of Transportation Elements to be Considered**

Key Area	Sub area	Change Since 2019
Baseline Conditions	Traffic Volumes	Traffic Volumes have not changed since 2023 review
	Committed Developments	New committed developments identified
	Existing Quarry Use	No Change from the 2023 review
	Council Waste Contracts	No Change from the 2023 review (assumes no traffic using Cottonmount)
	Road Safety Statistics	Road Safety statistics have been updated with the most recent data
	PT/Walk/Cycle Environment	No Change from the 2023 review
Proposed Operational Movements	Vehicle Movements	No Change
	Routing	No Change

	Hours of Operation	No Change
Predicted Environmental Effects and their Significance (Construction)	Type of Movements, Risks, Mitigation	No Change
Predicted Environmental Effects and their Significance (Operational)	Council Waste	No Change
	Future Assessment Years	Opening year updated to 2030 with assessment years of 2040 and 2045 considered
	PT/Walk/Cycle Environment	No Change
Description of Proposed Mitigation-Measures (Construction)		No Change
Description of Proposed Mitigation-Measures (Operation)		No Change
Description of Residual Effects and their Significance taking Mitigation into Account (Construction and Operational)		No Change

12.12 In accordance with EIA guidelines, the following potential net impacts generated by development proposals have been considered to help understand the requirement for mitigation measures:

- Change in traffic conditions e.g. increased queuing and delays;
- Change in public transport conditions e.g. increased waiting for public transport;
- Change in highway infrastructure e.g. for local residents;
- Effects on car users e.g. impacts local road users and development traffic;
- Effect on pedestrians; and
- Effects on local residents.

12.13 In keeping with the Significance Criteria set out within previous submission/ assessment and based on the type of potential consequences occurring and the magnitude of consequence, the proposed site's construction and operational assessment (after mitigation) has been undertaken as presented In Table 12.2.

**Table 12.2 Magnitude of Impact Criteria**

<b>2014 Terminology</b>
<b>Neutral:</b> where there will be no overall impact.
<b>Slight:</b> where impacts will be observable but where the scale of the impact is unlikely to be of material significance in the locality.
<b>Moderate:</b> where impacts could occur which will have effects on factors recognised as being of local importance or implication.
<b>Substantial:</b> where impacts could occur which have implications for factors which are of recognised regional importance.
<b>Severe:</b> where the potential impact is likely to affect a matter of recognised national or international importance or affect a recognised national or international guideline or standard, or to be of major implication to the character or context of the area in which the feature or factor is located.

12.14 Indirect impacts, cumulative impacts and impact interactions will also be considered. This approach is still considered valid.

## Assessment

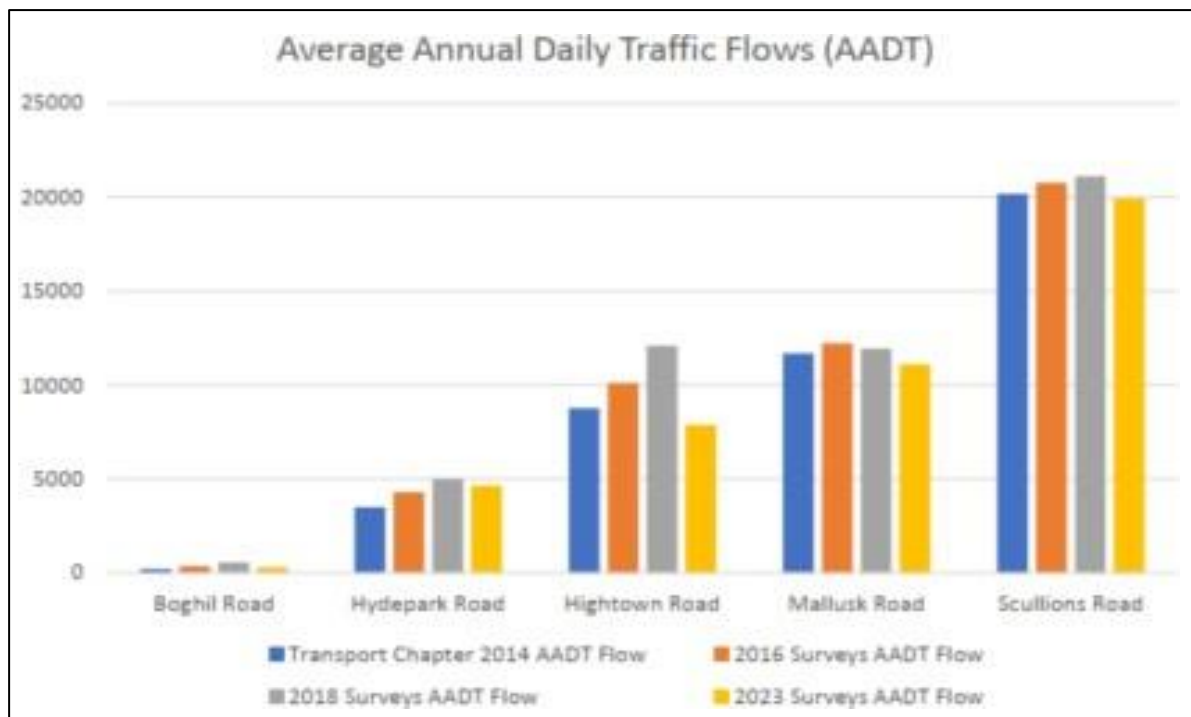
### Explanation of Base Conditions

12.15 The most recent assessment submitted to and accepted by DfI Roads was that contained within the September 2023 ES addendum which included Annual Average Daily Traffic (AADT) flows for the following links within the study area:

- Boghill Road;
- Hydepark Road;
- Hightown Road;
- Mallusk Road; and
- Scullions Road.

12.16 As part of the 2023 TA Review, traffic data was collected at all junctions previously surveyed and the AADT Figures had been updated. Figure 12.1 provides the comparison between the 2023 AADT figures in the most recent iteration and those set out in the previous assessments. These traffic surveys and analysis are still valid as they are within the threshold (typically up to 3 years old) set out in the TA guidelines, so no additional traffic data has been collected.

**Figure 12.1 - Daily Traffic Flows**



12.17 Figure 12.1 demonstrates that the observed daily traffic flow levels were high in 2018 when compared to all other survey years.

12.18 As previously noted in the 2023 review, in the passage of time since the 2018 traffic surveys Junction 2 – Hydepark Road/ Hightown Road has been upgraded from a priority-controlled junction to a signalised junction that includes controlled pedestrian crossing facilities on the Hightown Road at the junction.

#### Committed Developments

12.19 A review has been undertaken of recently approved planning applications since the September 2023 ES addendum was submitted and this has identified a number of committed developments to be included within the assessment.

12.20 For robustness however, the original assumptions/volumes for committed developments have been retained as well as the additional committed developments (to reflect the difficulty in confirming accurately the degree of build out of originally committed developments).

12.21 Review of the recent approved planning applications found that there were 3 additional planning applications to be considered as part of the assessment. Further analysis found that only 2 of these committed developments were required to be included in the assessment (Planning References: LA03/2023/0258/F and LA03/2021/0548/F) with 1 of the developments having no impact on the local highway network (Planning Reference: LA03/2023/0240/F).

#### Road Safety

12.22 PSNI statistics were again obtained to provide a summary of collisions which have occurred from the previous time period up to present day (31<sup>st</sup> July 2021 - 31<sup>st</sup> July 2024 - latest data available). This enabled a comparison of recent accident levels with those reported previously in the original ES and subsequent ES Addendums

12.23 The latest information received from PSNI Statistics team shows that there were a total of 12 collisions (10 slight, 1 serious and 1 fatal) and a total of 20 injuries recorded within the study area outlined above. The fatal incident occurred on the 14<sup>th</sup> March 2023 at the Mallusk Road/Hydepark Link/Scullions Road junction where a pedestrian suffered fatal injuries. The causation factor for the collision is unknown and a desktop review of the junction shows that there have not been any major changes to the junction layout from previous submissions.

12.24 When this latest data is compared with the accident data presented within the September 2023 ES addendum, it is noted that the total number of collisions in the vicinity of the site between 31<sup>st</sup> July 2021 - 31<sup>st</sup> July 2024 is similar to the number recorded between 1<sup>st</sup> January 2020 and December 2022.

12.25 The type, number and location of accidents within the study area is generally consistent between the latest data and the September 2023 ES addendum findings and it is therefore considered reasonable to conclude that the previous findings in relation to the Road Safety remain valid.

12.26 Previous commitments to enhance road safety in the vicinity of the site will be retained and road improvements will be provided in the form of enhanced visibility at the Boghill Road/ Hydepark Road junction and widening of the Boghill Road to deliver betterment to the existing alignment and forward

visibility at this location.

#### Explanation of Proposed Operational Movements

Key information presented within previous ES submissions is summarised below and is considered to be unchanged and remains current:

- Proposed site will have the capacity to accept up to a maximum of 300,000 tonnes of waste annually.
- The proposed operational waste vehicles that will be transferred to the site is 143 vehicles arriving and 143 departing the site in a typical daily weekday (equates to 286 two-way vehicles).
- During peak periods there will be 32 two-way operational vehicles during the AM peak (07:45- 08:45) and 2 two-way operational vehicles during the PM peak (16:45-17:45).
- The waste operation hours for the site will be between 07:00 and 18:00 during the weekdays and therefore waste operational vehicles will only enter and depart the site during this time. Waste deliveries will also occur on Saturday morning although there will be no Sunday deliveries.
- There are four primary routes which operational vehicles associated with the Waste Treatment Facility can utilise from the M2 Motorway when arriving/ departing to/ from the site (B95 Mallusk Road, Hightown Road, Upper Hightown Road, Hydepark Road).

#### Predicted Environmental Effects and their significance (Construction)

12.27 Key information presented with previous ES submissions is summarised below and is considered to be unchanged and remains current:

- Traffic movements associated with the construction phase will include cars and light goods vehicles (LGVs) for construction workers as well as heavy goods vehicles (HGVs) delivering construction materials and plant to the site.
- Potential risks include:
- The spillage of materials and carrying of soil from the site onto carriageways; and
- The disturbance of adjacent landowners and people using the road network in the area.
- A separate Outline Construction and Environmental Management Plan (OCEMP) has been prepared to address the detailed procedures, sequencing and construction methodology anticipated by the project team engaged in the planning, liaison, and construction of the project (Appendix 3.1). The OCEMP outlines detailed proposals for temporary traffic and environmental measures to be adopted during construction. The Outline CEMP also includes supplementary information on detailed construction practice that will be adhered to during the development of the site.

#### Predicted Environmental Effects and their significance (Operation)

12.28 The trips have been distributed and assigned to the study network based upon previous assumptions set out within the September 2023 ES addendum – this has not changed.

12.29 Given that previous traffic surveys were collected as part of the 2023 TA Review, they are still within an acceptable time frame to be used for this updated assessment. The assessment years have been changed and are as follows:

- Opening Year = 2030.
- Design Years = 2040 and 2045.

12.30 The TA review within the September 2023 ES addendum re-endorses the conclusion of the original TA and subsequent ES addendum updates in that only two junctions (Hydepark Road/ Boghill Road and Hydepark Road/ Hightown Road) exceed the 5% threshold required to undertake detailed analysis to determine their operational performance without and with development traffic.

12.31 Based on the current review, it is considered that the conclusions within the September 2023 ES addendum that potential operational impacts associated with the development were not significant and are localised in their area of influence is unchanged and remains valid.

#### Description of Proposed Mitigation Measures (Construction)

12.32 The proposed mitigation measures during the development's construction remain unchanged and valid from those set out within the September 2023 ES addendum submission; these are:

- Suitable traffic management arrangements will be put in place to control traffic in all of the working areas during the construction phase. All proposed measures will be agreed in advance between the appointed contractor and DfI Roads. The appointed contractor will also liaise closely with DfI Roads during the construction phase to ensure any unexpected issues arising can be addressed quickly and appropriately.
- An Outline CEMP has been prepared to address the detailed procedures, sequencing and construction methodology anticipated and outlines proposals for traffic and environmental management measures to be adopted during construction. This also includes proposals for diversionary routes required for the upgrade of Boghill Road.

#### Description of Proposed Mitigation Measures (Operation)

12.33 The proposed mitigation measures when the proposals are in operation remain unchanged and valid from those set out within the September 2023 ES submission; these are:

- Upgrade and widening of the Boghill Road to enhance forward visibility and improvements to provide adequate visibility splays at the Boghill Road/ Hydepark Road junction and forward visibility and forward visibility on Hydepark Road.
- Provision of a new footway along Boghill Road and cycle parking facilities will be provided within the site to encourage travel to the site via walking and cycling. Within the site, footways will be provided to facilitate ease of access for all, and routes will be clearly identified and supported by appropriate signage. Pedestrian, wheelchair and cycle access will be segregated from the vehicle access and will be designed to include minimal crossing points.

- Two coach spaces will be provided on-site within close vicinity of the visitor car park and sufficient car parking spaces for staff and visitors will be provided.

Description of Residual Effects and their Significance taking Mitigation into Account (Construction and Operational)

12.34 Based on the latest information collected and the analysis undertaken to date as discussed within this chapter and set out within the 2024 TA Review, the conclusions of the September 2023 ES Addendum review remain valid and these are summarised below:

- Operational assessment of the relevant junctions has demonstrated that there will be no tangible reduction in highway performance as a result of development traffic. The impact of the proposed development on transport issues is therefore assessed as neutral.
- The impact during the construction phase of the proposed development on transport is assessed as moderate due to relatively significant traffic volumes and diversionary routing during the construction period. However, it should be noted that this will be a short-term impact.
- The proposed mitigation to Boghill Road and the Boghill Road/ HydePark Road junction will improve road safety and the general convenience of road users.
- Transport issues (both construction and operational) could have a potential indirect impact on ecology, landscape, the water environment noise and air quality, and these are considered in detail within the various relevant Chapters of the EIA.
- In terms of cumulative impacts, it is considered that there will be a slight cumulative effect due to the anticipated increases in traffic on the localised road network.

## **Conclusion**

12.35 From the review set out within this chapter and supporting appendix, it is concluded that the findings and recommendations/ mitigation set out within the original EIA and subsequent EIA addendums remain valid. This further review of the transport assessment provides an updated evaluation of the proposed development and concludes that there will be no significant or adverse impacts arising from the construction and operation of the anticipated development.

A black and white photograph of an industrial facility. In the foreground, a metal walkway with a grid pattern leads into the distance. To the right, there are several large, white pipes and a metal railing. The background shows more pipes and structures, creating a sense of depth. The right side of the image is partially obscured by a dark, semi-transparent vertical bar.

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**Appendix 12.1**

Transport Assessment

# Transport Assessment – Review

Project:	Residual Waste Treatment Project, Hightown Quarry
Subject:	TA Review Report
Author:	AtkinsRéalis
Date:	03/03/25
Project No.:	5095039
Distribution:	Planning

## 1. Introduction

### Background

AtkinsRéalis has been providing a range of consultancy services to Arc21 to support their planning application for a residual waste treatment facility in Mallusk, north of Belfast.

This Transport Assessment Review has been prepared to provide an update to the previous transport assessment submissions given the passage of time, to ensure that all the information provided is relevant and up to date.

Chapter 12 of the original EIA submission (March 2014) assessed the transport impacts associated with the development proposals. As part of that original assessment, desktop and site studies were undertaken as well as consultations with the then DoE Strategic Projects Team, Transport NI (now DfI Roads), Translink and the Police Service of Northern Ireland.

It was noted that some of the potential activities associated with the proposed development will not be wholly new, as the existing quarry benefits from extant planning permission and therefore generates its own impacts. In preparing a Transport Assessment (TA) for the development proposals, it is standard practice to assume that existing trips levels would be subsumed within the baseline activities. The TA therefore focused on the increase in trips that would result from the development proposals (i.e. net trips).

The original TA assessed the operational impact of the development proposals in terms of accessibility to the site by non-car modes as well as accessibility to the site by vehicles and the impact of net additional traffic on the site access and surrounding road network.

The original 2014 TA concluded that:

- The impact assessment identified that the following junctions required further detailed modelling:
  - Junction 1 Hydepark Road/ Boghill Road; and
  - Junction 2 Hydepark Road/ Hightown Road.
- The proposed development would provide a new upgraded junction at Junction 1 - Hydepark Road/ Boghill Road.

- Operational capacity assessments were undertaken for both Junction 1 and Junction 2 and the previous assessments concluded that with development traffic added to the network:
  - The proposed upgrades at Junction 1 ensured that the junction would continue to operate well within acceptable capacity thresholds with negligible queuing and delay.
  - The existing junction configuration of Junction 2 would allow it to continue to operate well within acceptable capacity thresholds with negligible queuing and delay.

The TA was subject to review by the then Transport NI and they confirmed no objection to the application in their formal consultation response.

Following receipt of a Notice of Opinion to Refuse, the applicant requested to be heard before the Planning Appeals Commission (PAC). This hearing was undertaken in October 2016. During the two-day hearing the Commission heard submissions and considered evidence from a number of parties. In support of the 2016 hearing, AtkinsRéalis reviewed the 'approved' TA to ensure that the assessment remained valid and the conclusions appropriate. The review highlighted that due to the time that had lapsed between the preparation of the approved TA in 2014 and the hearing in October 2016, the traffic count data exceeded the acceptable three-year data threshold as outlined in paragraph 6.1 of Appendix D of the TA Guidelines.

New traffic surveys were therefore undertaken in March 2016 at all junctions surveyed as part of the original assessment and the committed development assumptions were also reviewed. A comparative exercise was then carried out to determine if any changes in local traffic volumes/movements have occurred in the intervening period and if such changes were identified whether they have any impact upon the findings of the approved TA.

In particular, the review focused on three chapters of the approved TA which may be sensitive to changes in local traffic volumes, these included Chapter 5 – Existing Traffic Conditions, Chapter 11 – Impact Assessment and Chapter 12 – Operational Assessment.

AtkinsRéalis prepared a Technical Note in August 2016, Transport “Further Environmental Information (Transport FEI) review” which concluded that:

- There had been some traffic growth noted between 2013 and 2016.
- This traffic growth had not affected the traffic impact analysis, and the same junctions were identified.
- No additional committed developments warranted inclusion in the analysis.
- The junctions affected by the traffic growth were re-modelled with the analysis confirming that the junctions would continue to operate satisfactorily and within accepted performance parameters.
- The findings of the previously approved TA therefore remained valid.

In March 2017 the PAC report was issued with the recommendation for approval and in the absence of a working assembly and minister, the Department granted planning approval in September 2017.

However, following a Judicial Review, the High Court ruled in May 2018 that the Senior Civil Servant that approved the application did not have the power to do so.

In 2018 (reported in March 2019 ES addendum), AtkinsRéalis undertook additional analysis to ascertain if the previous conclusions from 2013 and 2016 in relation to the traffic impact assessment remained valid. This included updating:

- Traffic data, forecast traffic conditions and proposed development traffic impact based on 2018 traffic data
- Sustainable transport facilities in the local area.
- Junction operational capacity assessment at junctions that are above the previously agreed impact threshold.

The 2018 review was consistent with the 2013 and 2016 conclusion, and stated:

- There has been some traffic growth noted between 2013 and 2018.
- Latest accident data for a period between 2015 and 2018 demonstrate that recorded accidents are in keeping with the number and type of accidents discussed within the approved TA.
- Bus timetable information has been updated and is considered to be in keeping with the level of bus service discussed as part of the approved TA.
- This traffic growth has not affected the traffic impact analysis, and the same junctions have been identified.
- There are no new committed developments to be included within the assessment.
- These junctions were re-modelled, and this analysis has confirmed that the junctions would continue to operate satisfactorily and within accepted performance parameters.
- The findings of the previously approved TA remain valid.

The Department for Infrastructure Roads (DfI Roads) were consulted in relation to the updated in 2018 traffic information within the March 2019 FEI and provided a response dated 19th April 2019 which stated that they were:

***“...satisfied with the methodology used and agrees with the conclusion that the finding and recommendations / mitigation set out in the original assessment and the 2016 transport FEI remain valid.”***

In 2023, an additional review was conducted and reported in the September 2023 ES addendum. It had a similar conclusion to the March 2014, August 2016 and March 2019 findings stating that:

- Latest accident data for a period between 2020 and 2022 demonstrated that recorded accidents were in keeping with the number and type of accidents discussed within the March 2019 ES addendum and previous assessments.
- Bus timetable information had been updated and considered to be in keeping with the level of bus service outlined previously.
- New Traffic surveys were undertaken and analysis of the traffic data showed that it had generally decreased within the study area since the most recent March 2019 ES addendum. This decrease in traffic levels reflected post-Covid travel behaviours and therefore, to ensure robustness, previous assumptions around forecast traffic had been retained.
- Changes in traffic levels had not affected the traffic impact analysis and the same junctions had been identified.
- New committed developments were included within the assessment to ensure a robust operational assessment.
- The junctions were re-modelled, and the analysis has confirmed that the junctions would continue to operate satisfactorily and within accepted performance parameters.
- The findings of all previous assessment therefore remained valid.

Once again, the Department for Infrastructure Roads (DfI Roads) were consulted in relation to the updated 2023 traffic information within the September 2023 ES addendum and provided a response dated 11th December 2023 which stated that:

***“the findings and recommendations/ mitigation set out within the original EIA and subsequent FEI submissions remain valid and current.”***

## Inputs to Current Assessment

### Guidelines and Policies

The March 2014 TA was prepared by AtkinsRéalis in accordance with published guidance – “*Transport Assessment – Guidelines for Development Proposals in Northern Ireland*” (Planning Service, November 2006). It also took due cognisance of the Chartered Institute of Highway and Transportation (CIHT) document “*Traffic Impact Assessment*” (1994) as well as current Northern Ireland transportation and planning policy documents, such as “Planning Policy Statement (PPS) 11 – Planning and Waste Management (December 2002); PP 13 – Transportation and Land Use (February 2005); PPS 3 – Access, Movement and Parking (February 2005); The draft Belfast Metropolitan Area Plan 2015 and Plan Amendments and Antrim Area Plan 1984-2001.”

The currently applicable policies and guidelines have been reviewed, and it can be confirmed that there are no changes which warrant a change in the approach to assessment.

### Road Network

AtkinsRéalis has reviewed the study area previously considered as part of the TA and can confirm that there is no change in the road network from the 2023 TA review.

### Assessment of existing traffic associated within Arc21 Council Contracts

There is no change to the ‘Core’ Assessment from the 2023 TA review.

### Traffic Data

New traffic surveys were undertaken as part of the 2023 TA review and concluded that base traffic conditions have not significantly changed and that the conclusions of previous assessments remain valid.

As this traffic data was collected within the last 3 years, it is deemed that this data remains valid and is appropriate to use in the current assessments, as per the TA Guidelines.

## 2. Approach to Assessment

### Approved Transport Assessment Conclusions

The following conclusions were reached for the March 2014 TA and reinforced by the August 2016, March 2019 and September 2023 ES addendum reviews:

- The impact assessment identified that the following junctions required further detailed modelling:
  - Junction 1 Hydepark Road/ Boghill Road; and
  - Junction 2 Hydepark Road/ Hightown Road
- The proposed development would provide a new upgraded junction at Junction 1 Hydepark Road/ Boghill Road.
- Operational capacity assessments were undertaken for both Junction 1 and Junction 2 and the approved TA concluded that with development traffic added to the network:
- The proposed upgrades at Junction 1 ensured that the junction would continue to operate well within acceptable capacity thresholds with negligible queuing and delay.
- The existing junction configuration of Junction 2 would allow it to continue to operate well within acceptable capacity thresholds with negligible queuing and delay. Junction 2 was upgraded to a signalised junction, and this was assessed as part of the September 2023 ES addendum review and showed that the junction would continue to operate well within acceptable capacity thresholds with negligible queuing and delay.

### Approach to Current Transport Assessment Update

Taking the above into consideration the following tasks have been undertaken to ascertain if the previous conclusions from the traffic impact assessment remain valid:

- Review of Existing Traffic Conditions;
- Update to Road Safety Review;
- Review of Access by Public Transport, Pedestrians, Cyclists and Mobility Impaired;
- Update to Impact Assessment; and
- Update to Operational Assessment.

# 3. Existing Traffic Conditions

## Introduction

This section provides an update to “Existing Traffic Conditions” (previously Chapter 5 of the original TA). In particular this section provides:

- Existing conditions Review, site visit October 2024
- Road Safety Review

## Site Visit

A site visit was undertaken on the 9th of October 2024. The purpose of the site visit was to review the existing conditions of the four main junctions identified and the current status of the Mayfield Link to ensure there were no changes from the previous assessment. Inspections of current highway conditions and pedestrian/cyclist provision were carried out. The junctions which were inspected were:

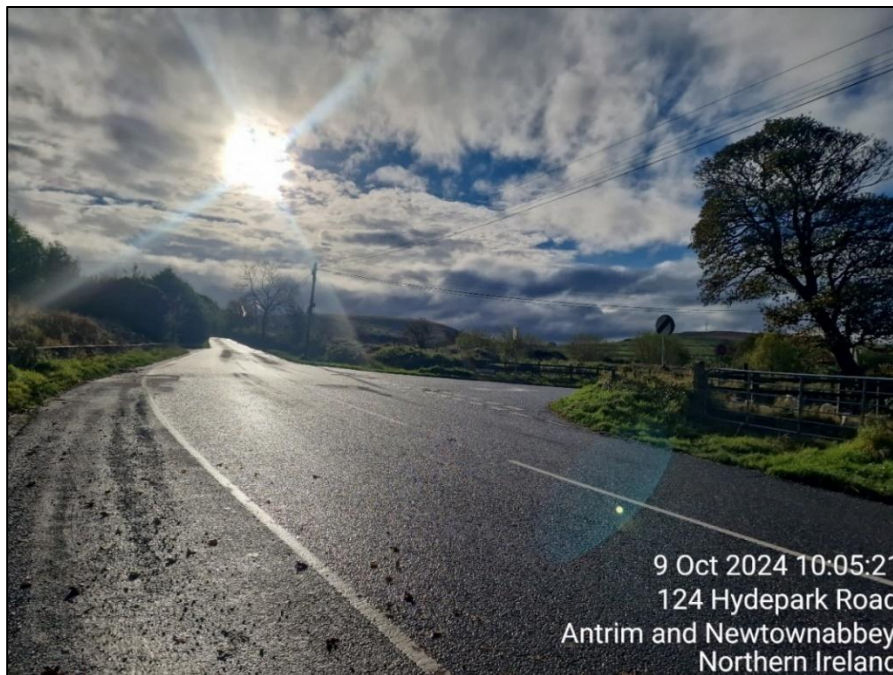
1. Hydepark Road/ Boghill Road
2. Upper Hightown Road/ Hydepark Road/ Hightown Road
3. Hightown Road/ Mallusk Road
4. Mallusk Road/ Mayfield Link/ Scullions Road

The proposed Mayfield link was also inspected, and current status of the proposed new link road was assessed.

### Hydepark Road/ Boghill Road

There have been no changes to the Hydepark Road and Boghill junction from the September 2023 ES addendum TA Review.

**Figure 3-1 - Hydepark Road/ Boghill Road Junction**



[Upper Hightown Road/ Hydepark Road/ Hightown Road](#)

Road layout remains unchanged from 2023 TA Review update.

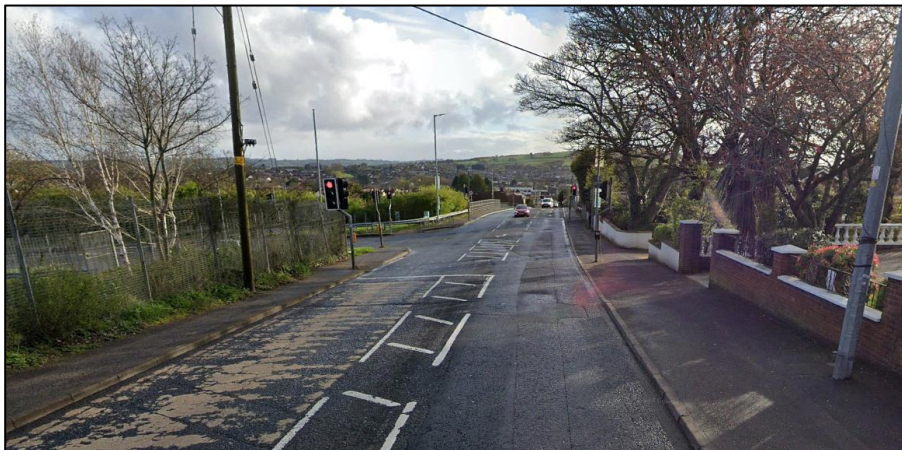
**Figure 3-2 - Upper Hightown Road/ Hydepark Road/Hightown Road Junction**



[Hightown Road/ Mallusk Road](#)

The road layout remains unchanged from the September 2023 ES addendum.

**Figure 3-3 - Hightown Road/ Mallusk Road Junction**



### Mallusk Road/ Mayfield Link/ Scullions Road

The road layout remains unchanged from the September 2023 TA Review update

**Figure 3-4 - Mallusk Road/Mayfield Link/Scullions Road Junction**



### Mayfield Link

During the site visit, Mayfield Link was inspected to check the status on the construction of through route to Hydepark Road. From the site visit, it is clear that the Mayfield Link has not been subject to further construction to the point of being completed. The link road has therefore not been considered as part of the assessments.

**Figure 3-5 - Mayfield Link (View from Aylesbury Place)**



Figure 3-6 - Mayfield Link (Proposed Connection Location to Hydepark Road)



## Traffic Volume Review

### Existing Traffic Baseline Flows

As noted, the September 2023 ES addendum transport update is the most recent assessment submitted to and accepted by DfI Roads, and as the data was collected within 3 years it is still deemed valid and robust. The baseline flows have therefore been used for this 2025 assessment.

### Future Forecast Traffic Flow Baseline (without development)

The original TA recognised that there was the potential for traffic growth in this area and a number of assumptions were therefore made to derive future traffic flows. As part of that process, 2014 traffic data was factored using National Road Traffic Forecasts (NRTF) Central Growth (to reflect general trends in traffic levels) and then committed development traffic was added to obtain forecast traffic flows.

As per the 2023 TA review the assessment is cognisant of previous traffic levels between 2013 and 2018 (i.e. to ensure consistency in approach, existing surveyed 2023 traffic flows will be factored to future years using NRTF Central Growth rates (2030 opening year, design years 2040, 2045) and then committed developments will be added to obtain future forecast traffic flows).

### Existing Traffic Conditions

The 2023 traffic data is deemed valid and robust and has been previously agreed with DFI Roads as acceptable for use in the assessment.

The previous assessments made allowances for traffic growth which included both an increase to background traffic and specific allowances for committed developments. The changes in traffic flows are within previously identified growth expectations.

The effects of this increase in traffic levels will however be considered elsewhere in this review.

# 4. Road Safety

## Introduction

This section provides an update and review of 'Road Safety' (previously Chapter 6 of the TA). In particular this section provides an update to recorded accident data in the Mallusk area.

## Accident History

As part of the preparation of the original March 2014 ES and the August 2016, March 2019 and September 2023 ES addendums, AtkinsRéalis consulted with the PSNI Statistics team to gather road safety data (over a three-year period) for the road network in the vicinity of the proposed development to ascertain if there were any road safety issues that should be considered within the TA.

AtkinsRéalis has undertaken a further consultation with PSNI Statistics team to obtain updated road safety data for collisions which had occurred (and which have been recorded by PSNI) on the road network over a 3-year period between 31st July 2021 and 31st July 2024.

A comparison between the 3 years accident data from the September 2023 review and the 2024 review is provided in **Table 1**.

A copy of the summary statistics provided by Police Service of Northern Ireland (PSNI) is attached at **Appendix A**.

**Table 1 - Collisions occurring in the vicinity of the Development Site (2024 vs 2023 submission)**

Location	Number of Collisions				No. of Injuries
	Fatal	Serious	Slight	Total	
Hydepark Road/Boghill Road	0 (0)	0 (0)	1 (1)	1 (1)	1 (1)
Hydepark Road/Upper Hightown Road	0 (0)	0 (0)	2 (0)	2 (0)	3 (0)
Mallusk Road/Hightown Road	0 (0)	1 (0)	5 (6)	6 (6)	13 (9)
Mallusk Road/Hydepark Link/Scullions Road	1 (0)	0 (0)	2 (3)	3 (3)	3 (9)
<b>Total</b>	<b>1 (0)</b>	<b>1(0)</b>	<b>10 (10)</b>	<b>12 (10)</b>	<b>20 (19)</b>

*Values shown in brackets are from 2023 Update - (#)*

When this latest data is compared with the accident data presented within the September 2023 ES addendum (in brackets), it is noted that:

- The number of accidents at each junction had generally stayed the same or had decreased except at Mallusk Road / Hightown Road which had increased in the previous update.
- There was also a similar level of injuries with 20 compared to 19. Notably, there was a fatal incident on the 14/03/2023 at the Mallusk Road/Hydepark Link/Scullions Road junction where a pedestrian suffered fatal injuries which was the first fatal incident since the beginning of the review of PSNI statistics (January 2018) There was also a serious collision resulting in 1 serious injury at the Mallusk Road/Hightown Road on the 11/05/2023.

The PSNI data does not provide causation information for the road accidents. AtkinsRéalis has therefore undertaken further analysis of the accidents at this location. A desktop review of the junction shows that there have not been any major changes to the junction. Figure 4.1 shows the locations of the accidents at Hydepark Road/Upper Hightown Road.

**Figure 4-1 - Hydepark Road/Upper Hightown Road Collision Locations**

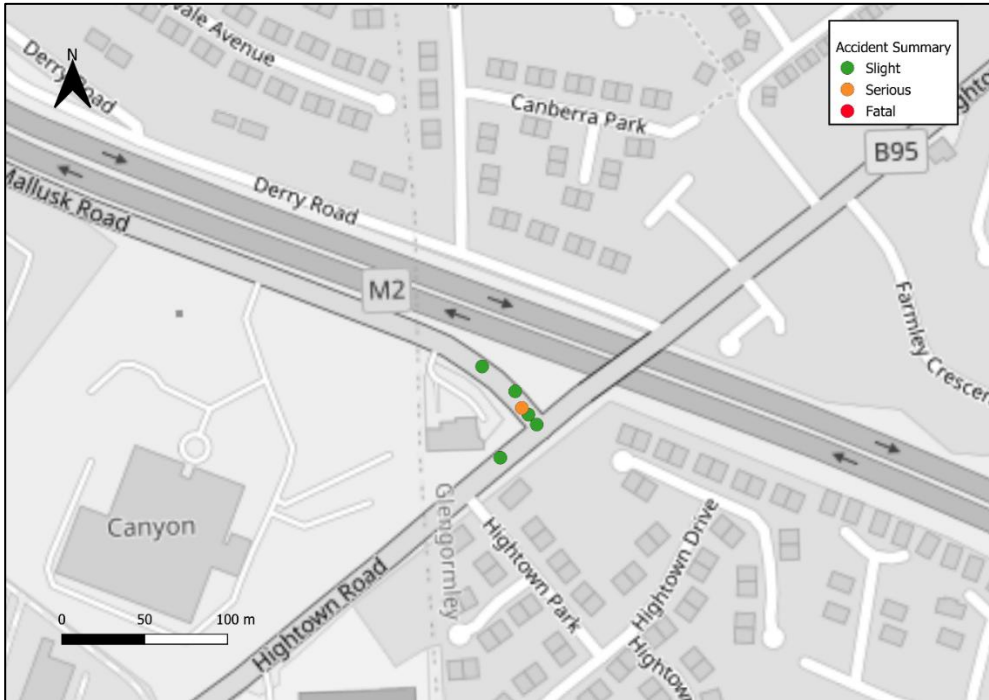


Figure 4-1 show the majority of accidents occur on the minor arm or from the eastbound approach. It was noted that a review of the junction shows that the High Friction Surfacing at this location is very worn and may be in need of maintenance.

**Figure 4-2 - Hydepark Road/ Boghill Road Collision Locations**

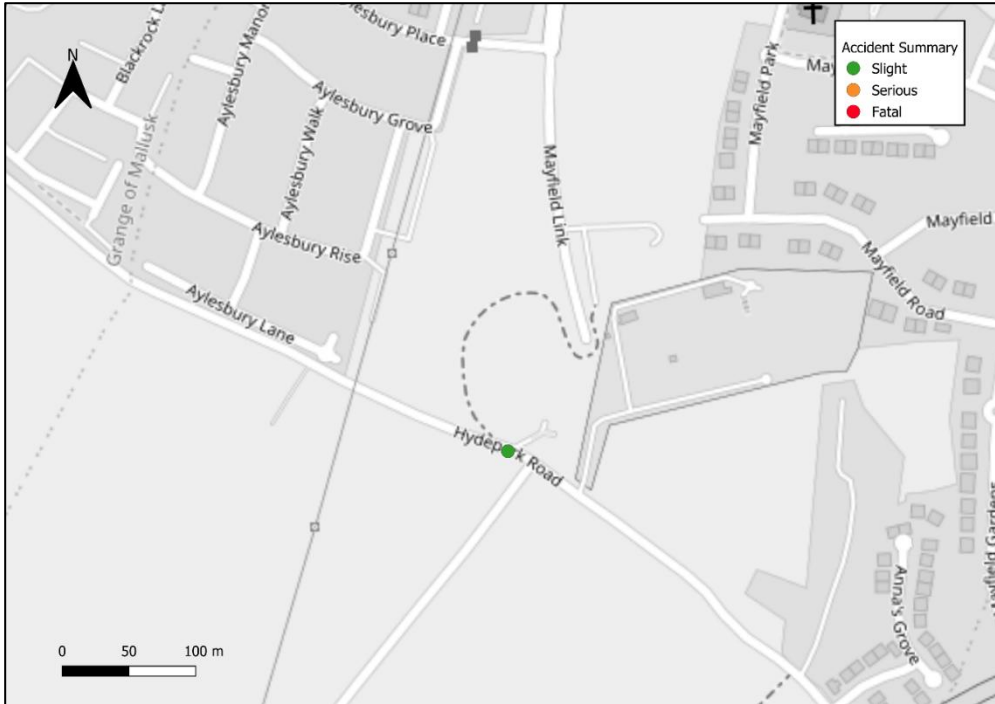


Figure 4.2 demonstrates that there has been 1 collision/accident at the above junction from between 2021 - 2024.

Figure 4-3 - Hydepark Road/Upper Hightown Road Collision Locations

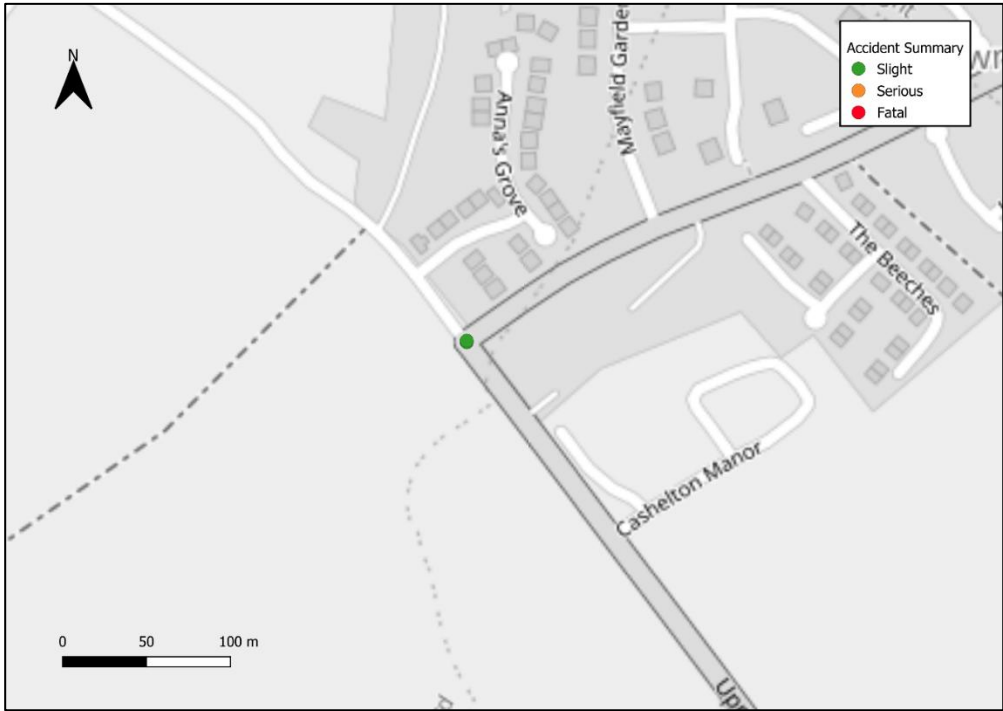


Figure 4.3 demonstrates the location of the two collision/accidents at the above junction from between 2021 - 2024

Figure 4-4 - Mallusk Road/Mayfield Link/Scullions Road Collisions Locations

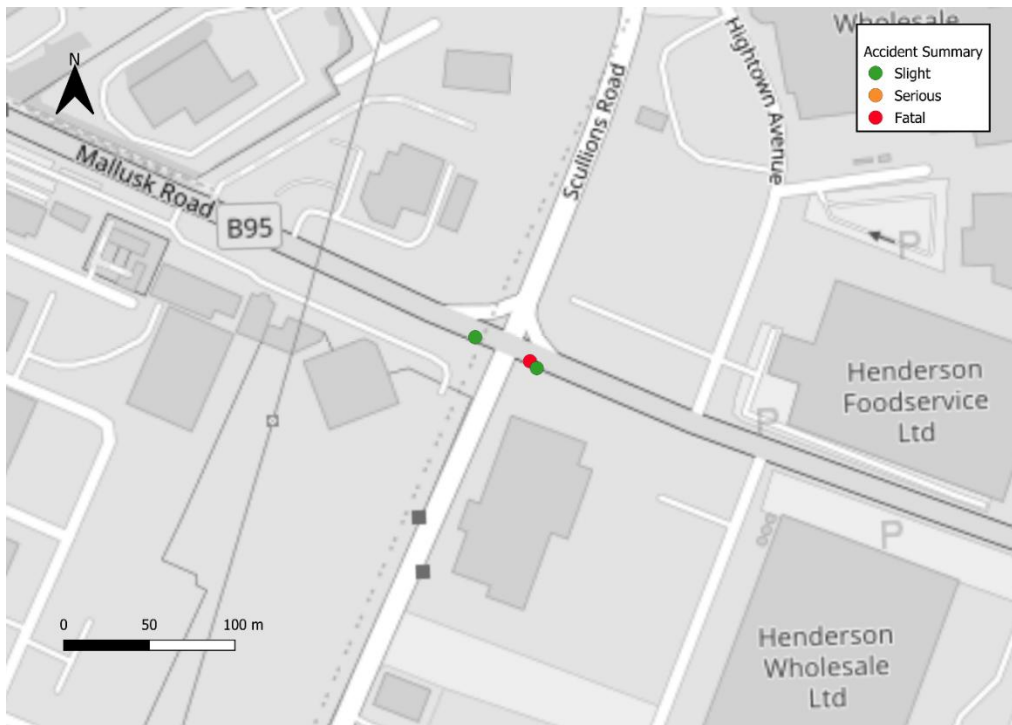


Figure 4.4 displays the locations of the previous collisions, and the locations of collisions established in the latest review of the PSNI statistics and data. As shown above, the location of the fatal accident is situated off the main carriageway and along the pedestrian footway around the signalised junction. The causation factor for the vehicle leaving the carriageway is unknown.

### Road Safety

The latest accident data is in keeping with the accident data presented within previous assessments and it is therefore considered reasonable to conclude that the findings of the approved TA and reinforced by the August 2016, March 2019 and September 2023 ES addendum updates in relation to Road Safety remain valid.

# 5. Access by Public Transport, Pedestrians, Cyclists and Mobility Impaired

## Introduction

This section provides an update to ‘Access by Public Transport, Pedestrians, Cyclists and Mobility Impaired’ (previously Chapter 7 of the TA). In particular this section provides an update to the Public Transport services in the Mallusk area.

## Access by Public Transport – Bus Services

Previous assessment noted that there are no bus stops or services operating within the recommended 400m of the site. **Table 2** summarises the existing bus services operating within the Mallusk area and updated bus timetable information is included as **Appendix B**.

**Table 2 - Mallusk Bus Services**

2023 Transport Update			2025 Update	
Route No	Route Description	Frequency	Frequency	Comments
1F	Blackrock – Mayfield – City Centre	Mon-Fri: approx. every 30mins Sat: approx. every 30mins Sun: No Service	Mon-Fri: approx. every 30mins Sat: approx. every 30mins Sun: No Service	Route number unchanged. Description unchanged Frequencies unchanged. Consistent with previous assessment
1E	Mallusk Road – City Centre	Mon-Fri: approx. every 30mins Sat: approx. every 30mins Sun: approx. every hour	Mon-Fri: approx. every 30mins Sat: approx. every 30mins Sun: approx. every hour	Route number unchanged. Description changed to Roughfort - City Centre. Frequencies unchanged. Consistent with previous assessment
1E,1J	City Centre – Roughfort	Mon-Fri: approx. every 30mins Sat: approx. every 30mins Sun: approx. every hour	Mon-Fri: approx. every 30mins Sat: approx. every 30mins Sun: approx. every hour	Route number unchanged. Description changed to City Centre – Royal Mail Mallusk Frequencies unchanged. Consistent with previous assessment
1E,13C, 14C	City Centre – Roughfort	Mon-Fri: approx. every hour Sat: approx. every hour Sun: approx. every hour	N/A	13C/14C route does not enter Mallusk Area. Description is ‘City Centre - Cloughfern – HydePark’ Closest stop is Sandyknowes Park on the northeast side of M12

2023 Transport Update			2025 Update	
Route No	Route Description	Frequency	Frequency	Comments
1E	Roughfort – City Centre	Mon-Fri: approx. every 30mins Sat: approx. every 30mins Sun: every hour	Mon-Fri: approx. every 30mins Sat: approx. every 30mins Sun: every hour	Route number and description unchanged. Slight variances in frequency Overall broadly consistent with previous TA
1E,13C, 14C	Roughfort – City Centre	Mon-Fri: approx. every hour Sat: approx. every hour Sun: approx. every hour	N/A	13C/14C route does not enter Mallusk Area. Description is 'City Centre - Cloughfern – Hydepark' Closest stop is Sandyknowes Park on the northeast side of M12

Table 2 - Mallusk Bus Services demonstrates that there has been a number of minor changes to some of the existing services. From the site visit, it has been established that:

- The accessibility to public transport has remained at a similar level
- 13C/14C from the previous public transport review does not enter the Mallusk area, with the service stopping in nearby on the northeast side of the M12.

## Access by Public Transport, Pedestrians, Cyclists and Mobility Impaired

A review of the latest public transport information has highlighted that the number of bus services available, the location of bus stops, and frequency of services are similar to those discussed within the most recently submitted traffic/ transport information (September 2023 ES addendum) which was reviewed and accepted by DfI Roads.

# 6. Impact Assessment

## Introduction

This chapter presents an update to the 'percentage impacts' (previously Chapter 11 of the approved TA) of the proposed development on the road network in the vicinity of the site based on updated traffic data collected in May 2023.

## Methodology

The approved TA impact assessment was undertaken in accordance with the "Transportation Assessment - Guidelines for Development Proposals in Northern Ireland" of which (paragraph 4.73) provides guidance on the assessment of traffic impacts of new developments. In particular, the document refers to the CIHT document "Traffic Impact Assessment" which recommends that a detailed traffic impact assessment is required (paragraph 3.1.5) where one or other of the following thresholds are exceeded:

- Traffic to and from the development exceeds 10% of the existing two-way traffic flow on the adjoining highway; and
- The development traffic exceeds 5% of the existing two-way traffic flow on the adjoining highway where traffic congestion exists or will exist within the assessment period or in other sensitive locations.

In line with the guidance, the above threshold limits were therefore used to inform the approved TA when assessing the relevant junctions in the vicinity of the development site. Despite the relatively uncongested nature of the road network within the vicinity of the proposed development Roads Service (now DfI Roads) recommended at the time that the 5% threshold was to be applied to all junctions.

In order to determine whether or not the 5% threshold limit had been exceeded, the original March 2014 assessment, August 2016, March 2019 and the September 2023 ES addendums applied the same principles/ methodology: The principles applied as part of this 2025 assessment are also in line with those previously applied and these are summarised below:

- 2023 existing traffic flow data was factored to an opening year of 2030 using NRTF Central Growth Rate Factors.
- In line with previous assessments, committed development traffic previously identified along with any new committed developments since the 2023 review have been added to forecast traffic flows to assess the development traffic impacts against.
- Development traffic has been added to the 2030 baseline scenario to derive a 2030 'development scenario'. As previous noted in Section 1 traffic associated with the ARC21 Council Contracts are considered as new trips.
- The development scenario was then compared to the baseline scenario to determine the difference in traffic flows and hence whether or not the agreed percentage impact thresholds were exceeded. This identified if the traffic impacts at the year of opening 2030.

## 2023 Traffic Data Impact Assessment

The identified percentage impacts as part of 2023 Update (2023 review) for each of the main junctions are shown in Table 3.

**Table 3 – 2023 Traffic - Maximum Percentage Impact of Development Traffic (Two-Way Traffic Flows)**

Ref	Junction	Threshold Value	AM Peak Hour % Impact	PM Peak Hour % Impact
J1	Hydepark Road/Boghill Road	5%	104.67%	21.98%
J2	Hydepark Road/Hightown Road	5%	8.05%	1.70%
J3	Mallusk Road/Hightown Road	5%	3.78%	0.36%
J4	Mallusk Road/Hydepark Link Road /Scullions Road	5%	2.70%	0.31%

The September 2023 ES addendum concluded that based upon the revised traffic data information, the findings set out within Chapter 11 of the approved TA remained valid and that the 5% threshold would be exceeded at the same two junctions (J1 and J2) identified as part of the original TA. The committed developments and new opening year and design years have been assessed as part of the 2025 update.

## Committed Developments

To ensure that the findings of the previous assessments remain valid, an online review of planning applications submitted within a 2km radius of the proposed site was undertaken. AtkinsRéalis undertook a review of this list to identify potential applications to be reviewed further to determine if they warrant the need to be included as committed developments in this latest assessment.

As per the 2023 review, all applications with a 'Pending' or 'Refusal' decision has been discarded for further consideration. Secondly, all single dwelling builds or extensions were excluded and finally, any applications that were considered small redevelopment/ replacement uses were excluded. All other assumptions set out in the September 2023 ES addendum have been included.

Table 4 sets out the applications that were considered for further review to establish if they warrant a need for inclusion in this latest assessment as 'committed development'.

**Table 4 - 2025 Committed Development Review**

Ref	Application Ref	Description	AtkinsRéalis Commentary	To be included as Committed Development?
CD1	LA03/2021/0722/F	Proposed car rental facility with 2 no. access points, office with wash bay structure and staff/visitor parking areas - reduced scale scheme as previously approved under LA03/2019/1007/F	No TA required. TAF shows less than 40 vehicles per day	Update of LA03/2019/1007/F (which is included)
CD2	LA03/2021/0502/F	Erection of Car Showroom and all other associated works	No TA required. P1 form show less than 30 vehicles	No
CD3	LA03/2021/0503/F	Construction of 2 storey building to accommodate ancillary offices, storage and canteen facilities in	No TA required. P1 form shows	No

Ref	Application Ref	Description	AtkinsRéalis Commentary	To be included as Committed Development?
		support of existing commercial vehicle maintenance business	increase of 25 daily vehicles	
CD4	LA03/2019/1048/F	Erection of 22 no. dwellings (part of Mayfield Village development) - Variation of Condition 2 of U/2013/0311/F (vehicular access and visibility splays)	No TA required. P1 form shows increase of 31 daily vehicles	No
CD5	LA03/2022/0042/O	Mixed use development comprising petrol filling station and local neighbourhood supermarket with apartments on first floor care home and consequential modifications to the housing layout approved under planning reference U/2008/0155/RM and realignment to access road serving St Enda's Gaelic Athletic Club and the Gaelscoil Eanna	Yes, Transport Assessment Addendum shows increase in 100 vehicles in AM Peak and 110 in the PM peak	Yes
CD6	LA03/2022/0852/F	Proposed 3 storey office development comprising of flexible office accommodation break-out space and meeting rooms along with associated site works car parking and boundary treatments.	No TA required. TAF form. Site located on Glen Road; local junctions unlikely to be affected	No
CD7	LA03/2018/0028/F	Storage and distribution warehouse and associated works comprising access servicing area car parking and landscaping	No TA required. TAF form shows over 100 vehicles per day	Yes
CD8	LA03/2018/0203/F	Storage and distribution warehousing ancillary office and staff welfare accommodation associated access and parking arrangements sprinkler tanks and associated plant. The development will be part refurbishment of warehousing (retention of floor plates and steel structures with re-cladding) part demolition and rebuild and part new build extension. The development will include the construction of a new roof with a new raised roofline over the main warehouse.	No TA required. TAF form shows increase of 1 vehicle per day	No
CD9	LA03/2019/0127/F	Proposed construction of 15no dwellings with associated car parking and landscaping (change of house type from that approved under application LA03/2017/0595/F)	No TA required. TAF form shows increase of 9 vehicle in AM and 8 vehicles in PM	No
CD10	LA03/2019/0667/F	Proposed residential development comprising construction of 162 no. dwellings associated garages and car	Yes, TA required. Shows 105	Yes

Ref	Application Ref	Description	AtkinsRéalis Commentary	To be included as Committed Development?
		parking open space and landscaping and all other associated site works (including 2 no. temporary waste water treatment works new bridge crossing Ballymartin River and new curtilage to retained dwelling at 9 Park Road) and new access/road improvement works to include:-2 no accesses onto Park Road with right hand turn provision at main site access (serving 129 no. dwellings); new right turn lane into The Poplars housing development; new footway provision with 2 no. associated pedestrian crossings along Park Road; and new signalised pedestrian crossing on Mallusk Road.	vehicle in AM peak and 76 in PM peak	
CD11	LA03/2019/0897/F	Proposed industrial warehouse development to include workshop offices and ancillary/welfare accommodation	No TA required. TAF form shows increase of 7 vehicle in AM peak and 10 in PM peak	No
CD12	LA03/2019/1007/F	Proposed car van truck and lorry rental facility with 2no access points combined office block wash bay structure vehicle maintenance depot building and staff/visitor parking areas	No TA required. TAF form shows increase of 40 vehicles per day	Yes
CD13	LA03/2020/0738/F	Proposed conversion of existing car showroom workshop and convenience shop to a new convenience shop with food concession areas drive through restaurant two additional units (one hot food one retail) with the retention of workshop and a new site parking layout	No TA required. TAF form shows increase of 262 vehicles per day	Yes
CD14	LA03/2023/0258/F	Proposed extension to Diageo Baileys Global Supply facility to support production demand. The extension will include additional warehouse capacity, staff facilities, solar PV and associated external plant equipment.	No TA required. TAF shows increase of 20 staff vehicles per day and 16 HGV Arrivals (50 totals estimated additional arrivals per day)	Yes
CD15	LA03/2021/0548/F	Residential development comprising 55 no. dwellings, garages, open space and landscaping, car parking, site access, pumping station and all other associated site works	Yes - TA required. Shows 43 vehicle in AM peak and 44 in PM peak.	Yes

Ref	Application Ref	Description	AtkinsRéalis Commentary	To be included as Committed Development?
CD16	LA03/2023/0240/F	Proposed petrol filling station with 8 no. pumps and forecourt; 3 no. retail units; 2 no. bay manual car wash; service facilities (air/water); HGV pump; tanker stand; and new crossing point along with all other site and access works.	TAF advises all trips will be pass by trips, so no new trips generated	No

Table 4 demonstrates that there are 2 no. new committed developments (CD14 and CD15) to be considered since the September 2023 ES addendum and these have been applied to junction assessments set out in chapter 6. CD 16 is not included as the TAF advised that all trips will be pass by trips and therefore no new trip generation.

## 2025 Traffic Data Impact Assessment

The traffic impact assessment has been updated to reference the new opening year. As the opening year is likely to be end of 2029 / early 2030 the impact assessment for 2029 and 2030 has been considered, with the 2030 traffic opening year taking forward for the junction assessments to ensure robustness of the assessment.

The detailed traffic flow diagrams as required by the TA guidelines are attached as Appendix C along with Percentage Impact diagrams for individual movements in accordance with the guidelines are provided for information purposes.

A summary of the results for the main junction impacts is also outlined in Table 5.

**Table 5 - Current Traffic - Maximum Percentage Impact of Development Traffic (Two-Way)**

Ref	Junction	Threshold Value	AM Peak Hour % Impact 2029	AM Peak Hour % Impact 2030	PM Peak Hour % Impact 2029	PM Peak Hour % Impact 2030
1	Hydepark Road/Boghill Road	5%	101.33%	100.73%	21.33%	21.18%
J2	Hydepark Road/Hightown Road	5%	7.63%	7.57%	1.63%	1.61%
J3	Mallusk Road/Hightown Road	5%	3.49%	3.46%	0.34%	0.34%
J4	Mallusk Road/Hydepark Link Road/Scullions Road	5%	2.51%	2.49%	0.29%	0.29%

Table 5 demonstrates that the percentage impacts at each junction for 2029 and 2030 opening years are similar and that the same two junctions (J1 and J2) identified in the previous assessments require further detailed analysis.

The traffic flows have been applied using traffic assumptions from each assessment where possible or flows applied as per the existing traffic distribution.

## Impact Assessment

Based upon the 2023 baseline traffic data and the updated 2025 committed developments, the conclusions of the previous assessments remain valid. These conclusions are:

- Two junctions exceed the 5% threshold requirement for undertaking detailed analysis in order to determine their operation performance both with and without the development traffic. Those junctions are:
  - J1 Hydepark Road/ Boghill Road junction; and
  - J2 Hydepark Road/ Hightown Road junction.

# 7. Operational Assessment

## Introduction

This section provides an update to the methodology and analysis undertaken to determine the operational performance of the site access and junctions impacted by the development (J1 & J2) (previously set out within Chapter 12 of the 'approved' TA). Further technical information is provided in **Appendix D**.

It should be noted that the September 2023 ES addendum demonstrated that the operational findings set out within Chapter 12 of the approved TA remained valid with both Junction 1 (Hydepark Road/ Boghill Road) and Junction 2 (Hydepark Road/ Hightown Road) predicted to continue to operate well within acceptable capacity thresholds with negligible queuing and delay with the additional of development traffic.

## Methodology

The same methodology which was utilised in the September 2023 ES addendum review has been used to undertake this assessment as indicated by the scenario tests listed in Table 6.

**Table 6 – Assessment Scenarios**

Element	2023 Operational Assessment	2025 Operational Assessment
Opening Year	2028	2030
10 Year Design Horizon	2038	2040
15 Year Design Horizon	2043	2045
NRTF Central Growth Factors	2023-2028: 1.046 2023-2038: 1.143 2023-2043: 1.195	2023-2030: 1.064 2023-2040: 1.163 2023-2045: 1.216

## Junction Assessment

### Model Inputs

To demonstrate the Operational Assessment findings previously set out are still valid, only the worst-case scenario has been considered i.e. either a 10-year or 15-year design horizon, whichever is appropriate for the respective junctions.

As previously identified as part of the Impact Assessment, the following junctions require further detailed analysis to determine junction operational performance with and without development:

- J1 Hydepark Road/ Boghill Road junction; and
- J2 Hydepark Road/ Hightown Road junction.

The layout of junction 1 has been assessed using the latest junction modelling software, JUNCTIONS 10. JUNCTIONS 10 requires the following model inputs:

- Traffic Flow Diagrams for each modelled scenario (same as previous assessments); and
- Geometric Data – same as previous assessments.

Junction 2 was upgraded in 2022 to a signalised junction. The junction has therefore been modelled using LinSig modelling software.

## Model Outputs

For junctions modelled in JUNCTIONS 10 ARCADY Module, approaches experiencing RFC's (Ratio of Flow to Capacity) values of:

- Below 0.85 are considered to be operating below capacity.
- Between 0.85 and 1.0 demonstrate that the junction is operating at capacity.
- Above 1.0 indicates that the junction is operating over capacity.

## Junction 1 – Hydepark Road / Boghill Road

Table 7 and Table 8 provide a summary of the junction operational performance for the worst-case scenario, in this instance a design horizon of 2043 (2023 review) and 2045 (Current review), for Junction 1 Hydepark Road/Boghill Road. JUNCTION 10 PICADY Module modelling outputs are provided as Appendix D.

**Table 7 – Model Output Comparison – AM and PM Design Year (B+C) Junction 1 - Proposed**

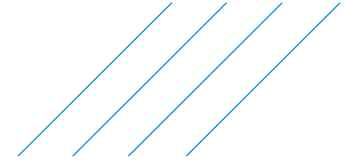
Movement		AM Peak Period				PM Peak Period			
		Max RFC		Queue		Max RFC		Queue	
		2043	2045	2043	2045	2043	2045	2043	2045
Boghill Road to Hydepark Road (E) and (W)	Stream B-AC	0.03	0.04	0.0	0.0	0.04	0.07	0.00	0.00
Hydepark Road Ahead and Right	Stream C-AB	0.02	0.02	0.0	0.0	0.05	0.05	0.10	0.10

**Table 8 – Model Output Comparison – AM and PM Design Year (B+C+D) Junction 1 - Proposed**

Movement		AM Peak Period				PM Peak Period			
		Max RFC		Queue		Max RFC		Queue	
		2043	2045	2043	2045	2043	2045	2043	2045
Boghill Road to Hydepark Road (E) and (W)	Stream B-AC	0.06	0.07	0.1	0.1	0.13	0.14	0.1	0.2
Hydepark Road Ahead and Right	Stream C-AB	0.02	0.02	0.0	0.0	0.05	0.05	0.1	0.1

The results outlined in Table 7 and Table 8 illustrate that:

- The results show that with the inclusion of the additional committed developments there is a negligible change in the operation of the junction from the September 2023 ES addendum assessment. The most recent traffic information submitted to and accepted by DfI Roads predicted that the proposed junction configuration would continue to operate well within acceptable capacity thresholds and experience negligible queuing/delay with the addition of the development traffic.
- The proposed junction configurations are predicted to continue to operate well within acceptable capacity thresholds and negligible queuing/delay with the addition of the development traffic.



## Junction 2 – Hydepark Road / Hightown Road

The September 2023 ES addendum analysis previously noted, this junction has now been upgraded from a priority junction to a signalised junction and must now be assessed using LinSig software.

A base model was developed using geometric parameters and signal timings recorded during the traffic surveys. This information was coded into the model and the model results compared to the observed queues. This is shown in Table 9.

**Table 9 – Queue Comparison – Existing 2023**

Scenario	Hightown Road	Upper Hightown Road	Hydepark Road
<b>AM Peak Observed</b>	5	5	5
<b>AM Peak Modelling</b>	3.1	1.9	3.7
<b>Difference</b>	1.9	3.1	1.3
<b>PM Peak Observed</b>	6	7	6
<b>PM Peak Modelling</b>	4.5	3.9	4.5
<b>Difference</b>	1.5	3.1	1.5

The results show that the model is generally reflective of the existing operation of the junction and therefore has been taken forward for further assessment. It should be noted that the junction uses MOVA, which allows the signal timings to change depending on the volume of traffic. For this assessment AtkinsRéalis has used observed staging and timings and used the optimise function to assess future operation.

Table 10 provides a summary of the junction operational performance for the worst-case scenario, LINSIG modelling outputs are provided as Appendix D.

In terms of the proposed junction performance, the LinSig modelling has been assessed based on the following criteria:

- Degree of Saturation (DoS %).
- Mean Max Queue (MMQ pcu).

Degree of Saturation is defined as the ratio of flow to capacity for a lane. For junctions modelled using LinSig, lanes experiencing a DoS of:

- Below 90% are considered to be operating below capacity.
- Between 90% and 100% are operating at capacity.
- Over 100% are operating over capacity.

**Table 10 – Model Output Comparison – AM and PM Design Year 2045 Junction 2**

Movement		AM Peak Period				PM Peak Period			
		Max Sat Flow		Mean Max Queue		Max Sat Flow		Mean Max Queue	
		2045 B+C	2045 B+C+D	2045 B+C	2045 B+C+D	2045 B+C	2045 B+C+D	2045 B+C	2045 B+C+D
1/1	Hydepark Rd	57.9%	57.3%	4.5	4.7	65.4 %	67.7%	5.8	6.0
2/1	Hightown Road LT	57.1%	59.8%	4.9	5.2	46.2%	46.2%	4.3	4.3
2/2	Hightown Road RT								
3/1	Upper Hightown Road Ahead	49.5%	50.5%	3.2	3.3	69.1%	70.6%	6.74	6.8
3/2	Upper Hightown Road Ahead RT								
PRC		55.5%	50.5%	N/a		30.2%	27.5%	N/a	
Delay		5.95 pcuHr	6.23 pcuHr			7.66 pcuHr	7.97 pcuHr		

The results outlined in Table 10 illustrate that all lanes of the junction have DoS values less than 90% and therefore are considered to operate within capacity and experience negligible queuing/delay with the addition of the development traffic and the committed developments during a future year assessment of 2045; this is in keeping with the original TA finding as well as the August 2016/ March 2019/ September 2023 ES addendum TA reviews.

### Operational Assessment Conclusion

Based on the updated traffic data, the operational assessment findings are in keeping with the previous September 2023 ES addendum assessment submitted to and accepted by DfI Roads. These are:

- Junction 1 Hydepark Road/ Boghill Road is predicted to continue to operate well within acceptable capacity thresholds with negligible queuing and delay with the additional of development traffic; and
- Junction 2 Hydepark Road/ Hightown Road is predicted to operate well within acceptable capacity thresholds with negligible queuing and delay with the additional of development traffic.

## 8. Summary and Conclusion

### Summary

- This report focuses on time limited information or information sensitive to changes to local traffic volumes within the most recent traffic/ transport information submitted to and accepted by DfI Roads (September 2023 ES addendum). These are:
  - Existing Traffic Conditions.
  - Road Safety.
  - Access by Public Transport, Pedestrians, Cyclists and Mobility Impaired.
  - Impact Assessment.
  - Operational Assessment
- The 2023 traffic data remain valid and therefore has been used for the current assessment;
- An updated review of the accident statistics (Road Safety) in the vicinity of the site to cover the years which has passed from the previous review (31st July 2021 – latest data available). This has shown that the number of recorded accidents is in line with those previously reported.
- A review of the public transport information has highlighted that the number of bus services in the local area, the location of bus stops, and the frequency of services are in line with those previously discussed as within the 2023 review.
- Previous assessments identified that impacts, as a result of the proposed Waste Treatment facility would exceed the agreed 5% impact threshold at the following junctions:
  - J1 Hydepark Road/ Boghill Road junction.
  - J2 Hydepark Road/ Hightown Road junction.
- To ensure that the Impact Assessment findings remain valid from the 2023 assessment, AtkinsRéalis repeated the Impact Assessment using the same methodology utilising 2023 traffic data, with updated year of opening to 2030, and design years of 2040 and 2045. This identified the same junctions would be expected to exceed the impact thresholds.
- All previous assessments found that both Junction 1 and Junction 2 would continue to operate well within acceptable capacity thresholds with negligible queuing and delay with the addition of the proposed development traffic. AtkinsRéalis reassessed both junctions using 2023 observed traffic data and additional committed development and this indicated similar results. Both Junction 1 and Junction 2 were therefore confirmed to operate well within acceptable capacity thresholds with negligible queuing and delay with the addition of the proposed development traffic.

## Conclusion

Based upon the analysis presented in this report, it is concluded:

- Latest accident data for a period between 31st July 2021 and 31st July 2024 demonstrates that recorded accidents are in keeping with the number and type of accidents discussed within the previous assessments.
- Bus timetable information has been updated and is considered to be in keeping with the level of bus service outlined previously.
- New committed developments have been included within the assessment to ensure a robust operational assessment.
- The junctions were re-modelled with the 2023 traffic data and updated committed developments and year of assessment and the analysis has confirmed that the junctions would continue to operate satisfactorily and within accepted performance parameters.
- The findings of all previous assessment therefore remain valid.

# Appendix A



# Police Service of Northern Ireland

## Collision history of injury road traffic collisions reported to the police

Collision history of Hydepark Road/Boghill Road junction, Mallusk

1st January 2022 to 31st July 2024

Fatal Collisions	Serious Collisions	Slight Collisions	All Collisions
0	0	1	1

Killed	Seriously Injured	Slightly Injured	All Casualties
0	0	1	1

Injuries/fatalities by Road User Type	
Pedestrian	0
Driver	0
Motorcyclist	0
Pedal Cyclist	0
Passenger	1
Pillion Passenger	0
Other	0
<b>Total</b>	<b>1</b>

*Please be aware that these include collisions at or within 50 metres of the above junction*

Due to ongoing validation, this information may be subject to change

Source: Statistics Branch, Police Service of Northern Ireland, Lisnasharragh

Date	Time	Police District	Location	X	Y	Collision Type	Killed	Serious	Slight	Pedestrian	Driver	Motorcyclist	Pedal Cyclist	Passenger	Pillion passenger	Other	Total
24-Sep-22	21:04	Antrim & Newtownabbey	HYDEPARK ROAD at junction of BOGHILL ROAD	329953	381557	Slight	0	0	1	0	0	0	0	1	0	0	1



# Police Service of Northern Ireland

## Collision history of injury road traffic collisions reported to the police

Collision history of Hydepark Road/Hightown Road junction, Mallusk

1st January 2022 to 31st July 2024

Fatal Collisions	Serious Collisions	Slight Collisions	All Collisions
0	0	2	2

Killed	Seriously Injured	Slightly Injured	All Casualties
0	0	3	3

Injuries/fatalities by Road User Type	
Pedestrian	0
Driver	0
Motorcyclist	0
Pedal Cyclist	0
Passenger	3
Pillion Passenger	0
Other	0
<b>Total</b>	<b>3</b>

*Please be aware that these include collisions at or within 50 metres of the above junction*

Due to ongoing validation, this information may be subject to change

Source: Statistics Branch, Police Service of Northern Ireland, Lisnasharragh

Date	Time	Police District	Location	X	Y	Collision Type	Killed	Serious	Slight	Pedestrian	Driver	Motorcyclist	Pedal Cyclist	Passenger	Pillion passenger	Other	Total
27-May-23	09:29	Antrim & Newtownabbey	UPPER HIGHTOWN ROAD at junction of HIGHTOWN ROAD	330225	381322	Slight	0	0	2	0	0	0	0	2	0	0	2
27-Jun-24	16:43	Antrim & Newtownabbey	UPPER HIGHTOWN ROAD at junction of HIGHTOWN ROAD	330225	381323	Slight	0	0	1	0	0	0	0	1	0	0	1



**Police Service**  
of Northern Ireland

**Collision history of injury road traffic collisions reported to the police**

Collision history of Mallusk Road/Hightown Road junction, Mallusk

1st January 2022 to 31st July 2024

Fatal Collisions	Serious Collisions	Slight Collisions	All Collisions
0	1	4	5

Killed	Seriously Injured	Slightly Injured	All Casualties
0	1	11	12

Injuries/fatalities by Road User Type	
Pedestrian	0
Driver	7
Motorcyclist	0
Pedal Cyclist	0
Passenger	5
Pillion Passenger	0
Other	0
<b>Total</b>	<b>12</b>

*Please be aware that these include collisions at or within 50 metres of the above junction*

Due to ongoing validation, this information may be subject to change

Source: Statistics Branch, Police Service of Northern Ireland, Lisnasharragh

Date	Time	Police District	Location	X	Y	Collision Type	Killed	Serious	Slight	Pedestrian	Driver	Motorcyclist	Pedal Cyclist	Passenger	Pillion passenger	Other	Total
27-Jan-22	17:50	Antrim & Newtownabbey	HIGHTOWN ROAD 30 metres west of MALLUSK ROAD	331356	381975	Slight	0	0	2	0	1	0	0	1	0	0	2
24-Aug-22	06:06	Antrim & Newtownabbey	HIGHTOWN ROAD at junction of MALLUSK ROAD	331378	381995	Slight	0	0	1	0	1	0	0	0	0	0	1
18-Oct-22	08:44	Antrim & Newtownabbey	MALLUSK ROAD 45 metres west of HIGHTOWN ROAD	331345	382030	Slight	0	0	3	0	1	0	0	2	0	0	3
30-Nov-22	16:52	Antrim & Newtownabbey	MALLUSK ROAD at junction of HIGHTOWN ROAD	331365	382015	Slight	0	0	1	0	1	0	0	0	0	0	1
11-Apr-23	22:22	Antrim & Newtownabbey	MALLUSK ROAD at junction of HIGHTOWN ROAD	331369	382005	Serious	0	1	4	0	3	0	0	2	0	0	5



# Police Service of Northern Ireland

## Collision history of injury road traffic collisions reported to the police

Collision history of Mallusk Road/Hydepark Link Road/Scullions Road junction, Mallusk

1st January 2022 to 31st July 2024

Fatal Collisions	Serious Collisions	Slight Collisions	All Collisions
1	0	2	3

Killed	Seriously Injured	Slightly Injured	All Casualties
1	0	2	3

Injuries/fatalities by Road User Type	
Pedestrian	1
Driver	2
Motorcyclist	0
Pedal Cyclist	0
Passenger	0
Pillion Passenger	0
Other	0
<b>Total</b>	<b>3</b>

*Please be aware that these include collisions at or within 50 metres of the above junction*

Due to ongoing validation, this information may be subject to change

Source: Statistics Branch, Police Service of Northern Ireland, Lisnasharragh

Date	Time	Police District	Location	X	Y	Collision Type	Killed	Serious	Slight	Pedestrian	Driver	Motorcyclist	Pedal Cyclist	Passenger	Pillion passenger	Other	Total
31-Jan-23	09:00	Antrim & Newtownabbey	MALLUSK ROAD at junction of SCULLIONS ROAD	330201	382508	Slight	0	0	1	0	1	0	0	0	0	0	1
14-Mar-23	07:41	Antrim & Newtownabbey	MALLUSK ROAD at junction of SCULLIONS ROAD	330233	382494	Fatal	1	0	0	1	0	0	0	0	0	0	1
17-Jul-24	08:25	Antrim & Newtownabbey	MALLUSK ROAD at junction of SCULLIONS ROAD	330237	382490	Slight	0	0	1	0	1	0	0	0	0	0	1

# Appendix B

**Mondays to Fridays**

Service	1j	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Service Restrictions				1	2	1	2	1	2	1	2					
Donegall Place (Donegall Place)	0545	0615	0700	0720	0720	0748	0748	0825	0825	0855	0855	0925	0955	1025	1055	1125
North Street (North Street 3)	0549	0619	0705	0725	0725	0755	0754	0832	0831	0902	0901	0932	1002	1032	1102	1132
Carlisle Circus Antrim Road (Antrim Road)	0552	0623	0710	0730	0730	0801	0801	0838	0838	0908	0907	0938	1008	1038	1108	1138
Atlantic Avenue (Antrim Road)	0553	0625	0713	0733	0733	0805	0806	0842	0843	0912	0911	0942	1012	1042	1112	1142
Richmond Lane (Antrim Road)	0553	0626	0714	0734	0734	0806	0807	0843	0844	0913	0912	0943	1013	1043	1113	1143
Salisbury Avenue (Antrim Road)	0555	0628	0717	0737	0737	0809	0811	0846	0848	0916	0916	0946	1016	1046	1116	1146
Serpentine Road (Antrim Road)	0558	0632	0722	0742	0742	0815	0819	0852	0856	0922	0923	0952	1022	1052	1122	1152
Belfast Zoo (Antrim Road)	0600	0635	0725	0745	0745	0818	0822	0855	0859	0925	0926	0955	1025	1055	1125	1155
Glengormley Centre (Antrim Road)	0602	0637	0728	0748	0748	0821	0825	0858	0902	0928	0930	0958	1028	1058	1128	1158
Edmund Rice College (Hightown Road)	0604	0639	0731	0751	0751	0824	0828	0901	0905	0931	0933	1001	1031	1101	1131	1201
Ballyrobert Garage (Mallusk Road)		0640	0734	0753	0756	0826	0833	0903	0908	0933	0935	1003	1033	1103	1133	1203
Parkmount (Mallusk Road)		0645	0739	0758	0801	0831	0838	0908	0913	0938	0940	1008	1038	1108	1138	1208
Roughfort Turning Circle (Coach Road)		0649	0743	0801	0805	0834	0842	0911	0916	0941	0943	1011	1041	1111	1141	1213
Royal Mail (Enterprise Way)	0606	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Mondays to Fridays**

Service	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Donegall Place (Donegall Place)	1155	1225	1255	1325	1355	1425	1455	1525	1559	1629	1658	1713	1729	1759	1825	1922
North Street (North Street 3)	1202	1232	1302	1332	1402	1432	1502	1533	1607	1638	1707	1721	1737	1807	1832	1929
Carlisle Circus Antrim Road (Antrim Road)	1208	1238	1308	1338	1408	1438	1510	1541	1613	1644	1712	1726	1742	1812	1837	1934
Atlantic Avenue (Antrim Road)	1212	1242	1312	1342	1412	1442	1516	1547	1617	1648	1716	1730	1746	1816	1841	1938
Richmond Lane (Antrim Road)	1213	1243	1313	1343	1413	1443	1518	1549	1619	1650	1717	1731	1747	1817	1842	1939
Salisbury Avenue (Antrim Road)	1217	1247	1317	1347	1417	1447	1522	1553	1623	1654	1721	1735	1751	1821	1846	1943
Serpentine Road (Antrim Road)	1224	1254	1324	1354	1424	1454	1530	1601	1630	1701	1727	1741	1757	1827	1852	1949
Belfast Zoo (Antrim Road)	1227	1257	1327	1357	1427	1457	1534	1605	1634	1704	1730	1744	1800	1830	1855	1952
Glengormley Centre (Antrim Road)	1231	1301	1331	1401	1431	1501	1539	1610	1639	1708	1734	1748	1804	1834	1859	1955
Edmund Rice College (Hightown Road)	1235	1305	1335	1405	1435	1505	1543	1614	1643	1712	1738	1752	1808	1837	1902	1958
Ballyrobert Garage (Mallusk Road)	1237	1307	1337	1407	1437	1509	1547	1617	1646	1714	1740	1754	1810	1839	1904	2000
Parkmount (Mallusk Road)	1242	1312	1342	1412	1442	1514	1552	1623	1652	1719	1745	1759	1815	1843	1908	2005
Roughfort Turning Circle (Coach Road)	1247	1317	1347	1417	1447	1518	1556	1627	1656	1723	1749	1803	1819	1847	1912	2009

**Mondays to Fridays**

Service	1e	1j	1j	1e
Vehicle Type	LF	LF	LF	LF
Donegall Place (Donegall Place)	2022	2100	2130	2210
North Street (North Street 3)	2028	2106	2136	2216
Carlisle Circus Antrim Road (Antrim Road)	2033	2111	2141	2221
Atlantic Avenue (Antrim Road)	2036	2114	2144	2224
Richmond Lane (Antrim Road)	2037	2115	2145	2225
Salisbury Avenue (Antrim Road)	2040	2118	2148	2228
Serpentine Road (Antrim Road)	2045	2123	2153	2233
Belfast Zoo (Antrim Road)	2048	2126	2156	2236
Glengormley Centre (Antrim Road)	2051	2129	2159	2239
Edmund Rice College (Hightown Road)	2054	2132	2202	2242
Ballyrobert Garage (Mallusk Road)	2056			2244
Parkmount (Mallusk Road)	2101			2249
Roughfort Turning Circle (Coach Road)	2105			2253
Royal Mail (Enterprise Way)	-	2135	2205	-

**Saturdays**

Service	1j	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Donegall Place (Donegall Place)	0545	0650	0720	0750	0820	0850	0940	1010	1040	1125	1155	1225	1255	1325	1355	1425
North Street (North Street 3)	0549	0654	0724	0754	0824	0854	0945	1015	1047	1132	1202	1233	1303	1333	1403	1433
Carlisle Circus Antrim Road (Antrim Road)	0552	0657	0727	0758	0828	0858	0950	1020	1052	1137	1207	1238	1308	1338	1408	1438
Atlantic Avenue (Antrim Road)	0554	0659	0729	0800	0830	0900	0952	1022	1055	1140	1210	1241	1311	1341	1411	1441
Richmond Lane (Antrim Road)	0554	0700	0730	0801	0831	0901	0953	1023	1056	1141	1211	1242	1312	1342	1412	1442
Salisbury Avenue (Antrim Road)	0556	0702	0732	0803	0833	0904	0956	1026	1059	1144	1215	1246	1316	1346	1416	1446
Serpentine Road (Antrim Road)	0600	0706	0737	0808	0838	0909	1001	1031	1104	1149	1220	1251	1321	1351	1421	1451
Belfast Zoo (Antrim Road)	0603	0709	0740	0811	0841	0912	1004	1034	1107	1152	1223	1254	1324	1354	1424	1454
Glengormley Centre (Antrim Road)	0605	0711	0742	0813	0843	0915	1007	1037	1110	1155	1227	1258	1328	1358	1428	1458
Edmund Rice College (Hightown Road)	0607	0713	0744	0815	0845	0918	1010	1040	1113	1158	1230	1301	1331	1401	1431	1501
Ballyrobert Garage (Mallusk Road)		0715	0746	0817	0847	0920	1012	1042	1115	1200	1232	1303	1333	1403	1433	1503
Parkmount (Mallusk Road)		0719	0750	0821	0851	0923	1015	1046	1119	1204	1236	1307	1337	1407	1437	1507
Roughfort Turning Circle (Coach Road)		0722	0753	0824	0854	0926	1018	1049	1122	1207	1239	1310	1340	1410	1440	1510
Royal Mail (Enterprise Way)	0609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Saturdays**

Service	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	
Donegall Place (Donegall Place)	1455	1525	1555	1625	1655	1725	1755	1820	1922	2022	2212
North Street (North Street 3)	1503	1533	1603	1634	1704	1734	1804	1828	1929	2029	2219
Carlisle Circus Antrim Road (Antrim Road)	1508	1538	1608	1639	1709	1739	1809	1833	1934	2034	2224
Atlantic Avenue (Antrim Road)	1511	1541	1611	1642	1712	1742	1812	1836	1937	2037	2227
Richmond Lane (Antrim Road)	1512	1542	1612	1643	1713	1743	1813	1837	1938	2038	2228
Salisbury Avenue (Antrim Road)	1516	1546	1615	1646	1716	1746	1816	1840	1941	2041	2231
Serpentine Road (Antrim Road)	1521	1551	1621	1652	1722	1752	1822	1846	1947	2047	2237
Belfast Zoo (Antrim Road)	1524	1554	1624	1655	1725	1755	1825	1849	1950	2050	2240
Glengormley Centre (Antrim Road)	1528	1558	1628	1659	1729	1759	1829	1853	1953	2053	2243
Edmund Rice College (Hightown Road)	1531	1601	1631	1702	1732	1802	1832	1856	1956	2056	2246
Ballyrobert Garage (Mallusk Road)	1533	1603	1633	1704	1734	1804	1834	1858	1958	2058	2248
Parkmount (Mallusk Road)	1537	1607	1637	1708	1738	1812	1842	1906	2002	2102	2252
Roughfort Turning Circle (Coach Road)	1540	1610	1640	1711	1741	1816	1846	1910	2006	2106	2256

Service Restrictions: 1 - from 28 Oct 2024 to 1 Nov 2024 2 - does not operate 28 Oct 2024 to 1 Nov

Notes: LF - Operated by Low Floor vehicles

**Sundays**

Service	1e	1e	1e	1e	1e	1e	1e	1j		
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF		
Donegall Place (Donegall Place)	0740	1115	15	1615	1715	1815	1915	2130		
North Street (North Street 3)	0744	1122	22	1622	1722	1822	1922	2135		
Carlisle Circus Antrim Road (Antrim Road)	0748	1127	27	1627	1727	1827	1927	2139		
Atlantic Avenue (Antrim Road)	0750	1130	then	30	1630	1730	1830	1930	2142	
Richmond Lane (Antrim Road)	0751	1131	at	31	1631	1731	1831	1931	2143	
Salisbury Avenue (Antrim Road)	0753	1134	these	34	1634	1734	1834	1934	2146	
Serpentine Road (Antrim Road)	0758	1140	mins	40	until	1640	1740	1840	1940	2151
Belfast Zoo (Antrim Road)	0801	1143	past	43	1643	1745	1845	1945	2154	
Glengormley Centre (Antrim Road)	0804	1147	each	47	1647	1748	1848	1948	2157	
Edmund Rice College (Hightown Road)	0807	1150	hour	50	1650	1751	1851	1951	2159	
Ballyrobert Garage (Mallusk Road)	-	1152		52	1652	1753	1853	1953		
Parkmount (Mallusk Road)	-	1156		56	1656	1758	1858	1958		
Roughfort Turning Circle (Coach Road)	-	1159		59	1659	1802	1902	2002		
Royal Mail (Enterprise Way)	-	-	-	-	-	-	-	-	2202	

Notes: LF - Operated by Low Floor vehicles

**Mondays to Fridays**

Service	1j	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Service Restrictions	2		1	2	1	2	1	2	1	2	1	2	1	2	1	2
Notes	PX															
Roughfort Turning Circle (Coach Road)	-	0653	0710	0711	0733	0740	0748	0759	-	0814	0824	0852	0856	0926	0927	0956
Parkmount (Mallusk Road)	-	0656	0714	0715	0737	0744	0752	0804	-	0818	0829	0856	0901	0931	0931	1001
Ballyrobert Garage (Mallusk Road)	-	0701	0719	0720	0742	0749	0758	0809	-	0824	0834	0902	0906	0936	0936	1006
Royal Mail (Enterprise Way)	0614															
Edmund Rice College (Hightown Road)	0617	0704	0722	0723	0745	0752	0802	0811	0813	0828	0836	0905	0908	0938	0938	1008
Glengormley Centre (Antrim Road)	0620	0708	0726	0727	0751	0756	0808	0815	0819	0834	0840	0910	0912	0942	0942	1012
Belfast Zoo (Antrim Road)	0622	0711	0729	0730	0755	0759	0812	0818	0823	0838	0843	0913	0915	0945	0945	1015
Serpentine Road (Antrim Road)	0625	0715	0733	0734	0801	0802	0818	0821	0829	0844	0846	0917	0918	0948	0948	1018
Salisbury Avenue (Antrim Road)	0630	0721	0739	0740	0810	0809	0827	0828	0838	0853	0853	0924	0925	0955	0955	1025
Hopefield Avenue (Antrim Road)	0631	0722	0740	0741	0811	0810	0828	0829	0839	0854	0854	0925	0926	0956	0956	1026
Atlantic Avenue (Antrim Road)	0634	0725	0743	0744	0815	0814	0832	0833	0843	0858	0858	0929	0930	1000	1000	1030
Carlisle Circus Antrim Road (Antrim Road)	0636	0728	0746	0747	0820	0817	0837	0836	0848	0903	0901	0933	0933	1003	1003	1033
CastleCourt (Royal Avenue)	0641	0733	0752	0752	0826	0823	0843	0842	0854	0909	0907	0939	0939	1009	1009	1039
Donegall Place (Donegall Place)	0642	0734	0753	0753	0827	0825	0844	0844	0855	0911	0909	0941	0941	1011	1011	1041

**Mondays to Fridays**

Service	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Roughfort Turning Circle (Coach Road)	1026	1056	1126	1159	1228	1258	1328	1358	1426	1456	1532	1604	1640	1705	1730	1759
Parkmount (Mallusk Road)	1031	1101	1131	1204	1235	1305	1335	1405	1433	1503	1535	1607	1643	1708	1733	1802
Ballyrobert Garage (Mallusk Road)	1036	1106	1136	1209	1240	1310	1340	1410	1438	1509	1541	1615	1651	1717	1742	1811
Edmund Rice College (Hightown Road)	1038	1108	1138	1212	1243	1313	1343	1413	1441	1512	1544	1618	1654	1720	1745	1814
Glengormley Centre (Antrim Road)	1042	1112	1142	1216	1247	1317	1347	1417	1445	1517	1549	1623	1659	1725	1750	1819
Belfast Zoo (Antrim Road)	1045	1115	1145	1219	1250	1320	1350	1420	1448	1520	1552	1626	1702	1728	1753	1822
Serpentine Road (Antrim Road)	1048	1118	1148	1222	1253	1323	1353	1423	1451	1523	1555	1629	1705	1731	1756	1825
Salisbury Avenue (Antrim Road)	1055	1125	1155	1230	1301	1331	1401	1431	1459	1533	1605	1636	1711	1737	1802	1831
Hopefield Avenue (Antrim Road)	1056	1126	1156	1231	1302	1332	1402	1432	1500	1534	1606	1637	1712	1738	1803	1832
Atlantic Avenue (Antrim Road)	1100	1130	1200	1235	1306	1336	1406	1436	1504	1538	1610	1641	1716	1742	1807	1835
Carlisle Circus Antrim Road (Antrim Road)	1103	1133	1204	1239	1310	1340	1410	1440	1511	1545	1615	1646	1719	1745	1810	1838
CastleCourt (Royal Avenue)	1109	1139	1210	1245	1316	1346	1416	1446	1517	1551	1621	1652	1725	1751	1816	1844
Donegall Place (Donegall Place)	1111	1141	1212	1247	1318	1348	1418	1448	1519	1553	1623	1654	1727	1753	1817	1845

**Mondays to Fridays**

Service	1e	1e	1e	1j	1j
Vehicle Type	LF	LF	LF	LF	LF
Roughfort Turning Circle (Coach Road)	1822	1852	2014	2113	-
Parkmount (Mallusk Road)	1825	1855	2017	2116	-
Ballyrobert Garage (Mallusk Road)	1830	1900	2022	2121	-
Royal Mail (Enterprise Way)				2140	2210
Edmund Rice College (Hightown Road)	1832	1902	2024	2123	2143
Glengormley Centre (Antrim Road)	1836	1905	2027	2126	2146
Belfast Zoo (Antrim Road)	1839	1908	2029	2128	2148
Serpentine Road (Antrim Road)	1842	1911	2032	2131	2151
Salisbury Avenue (Antrim Road)	1848	1917	2037	2136	2156
Hopefield Avenue (Antrim Road)	1849	1918	2037	2136	2156
Atlantic Avenue (Antrim Road)	1852	1921	2040	2139	2159
Carlisle Circus Antrim Road (Antrim Road)	1855	1924	2042	2141	2201
CastleCourt (Royal Avenue)	1901	1930	2047	2146	2206
Donegall Place (Donegall Place)	1902	1931	2048	2147	2207

**Saturdays**

Service	1j	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Roughfort Turning Circle (Coach Road)	-	0708	0738	0808	0838	0912	0942	1020	1058	1128	1158	1228	1258	1328	1358
Parkmount (Mallusk Road)	-	0711	0741	0811	0841	0916	0946	1024	1102	1132	1202	1231	1301	1331	1401
Ballyrobert Garage (Mallusk Road)	-	0715	0745	0815	0845	0920	0950	1028	1106	1136	1207	1236	1306	1336	1406
Royal Mail (Enterprise Way)	0614														
Edmund Rice College (Hightown Road)	0617	0717	0747	0817	0847	0922	0952	1030	1108	1138	1210	1239	1309	1339	1409
Glengormley Centre (Antrim Road)	0619	0719	0750	0820	0850	0926	0956	1034	1112	1142	1214	1243	1313	1343	1413
Belfast Zoo (Antrim Road)	0621	0721	0752	0822	0852	0929	0959	1037	1115	1145	1217	1246	1316	1346	1416
Serpentine Road (Antrim Road)	0624	0724	0755	0825	0855	0932	1002	1040	1118	1148	1220	1249	1319	1349	1419
Salisbury Avenue (Antrim Road)	0628	0728	0800	0830	0900	0938	1008	1046	1124	1154	1226	1255	1325	1355	1425
Hopefield Avenue (Antrim Road)	0628	0728	0800	0830	0901	0939	1009	1047	1125	1155	1227	1256	1326	1356	1426
Atlantic Avenue (Antrim Road)	0630	0731	0803	0833	0904	0942	1012	1051	1129	1159	1231	1300	1330	1400	1430
Carlisle Circus Antrim Road (Antrim Road)	0632	0733	0805	0835	0907	0945	1015	1054	1132	1202	1234	1303	1333	1403	1433
CastleCourt (Royal Avenue)	0635	0737	0809	0839	0911	0949	1019	1100	1138	1208	1240	1309	1339	1409	1439
Donegall Place (Donegall Place)	0637	0739	0811	0841	0913	0951	1021	1102	1140	1210	1242	1311	1341	1411	1441

**Saturdays**

Service	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Roughfort Turning Circle (Coach Road)	1458	1528	1603	1633	1703	1733	1805	1835	1900	2119
Parkmount (Mallusk Road)	1501	1531	1606	1636	1706	1736	1808	1838	1903	2122
Ballyrobert Garage (Mallusk Road)	1506	1536	1610	1640	1710	1740	1811	1841	1906	2126
Edmund Rice College (Hightown Road)	1509	1539	1612	1642	1712	1742	1813	1843	1908	2128
Glengormley Centre (Antrim Road)	1513	1543	1615	1645	1715	1745	1816	1846	1911	2131
Belfast Zoo (Antrim Road)	1516	1546	1618	1648	1718	1748	1819	1849	1913	2133
Serpentine Road (Antrim Road)	1519	1549	1621	1651	1721	1751	1822	1852	1916	2136
Salisbury Avenue (Antrim Road)	1525	1555	1627	1657	1727	1757	1827	1857	1921	2141
Hopefield Avenue (Antrim Road)	1526	1556	1628	1658	1728	1758	1828	1858	1922	2141
Atlantic Avenue (Antrim Road)	1530	1600	1631	1701	1731	1801	1831	1901	1925	2144
Carlisle Circus Antrim Road (Antrim Road)	1533	1603	1634	1704	1734	1804	1834	1903	1927	2146
CastleCourt (Royal Avenue)	1539	1608	1639	1709	1739	1809	1839	1908	1932	2151
Donegall Place (Donegall Place)	1541	1610	1641	1711	1741	1811	1841	1910	1934	2153

Service Restrictions: 1 - from 28 Oct 2024 to 1 Nov 2024     3 - does not operate 28 Oct 2024 to 1 Nov, 23 Dec 2024 to 3 Jan 2025, 10 Feb to 14 Feb, 17 Mar, 17 Apr to 25 Apr, 26 May  
 2 - does not operate 28 Oct 2024 to 1 Nov  
 Notes: PX - Additional Services on Schooldays    LF - Operated by Low Floor vehicles

**Sundays**

Service	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1j
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
<b>Roughfort Turning Circle (Coach Road)</b>	1007	1207	1307	1407	1507	1607	1707	1811	1911	2011	—
<b>Parkmount (Mallusk Road)</b>	1011	1211	1311	1411	1511	1611	1711	1814	1914	2014	—
<b>Ballyrobert Garage (Mallusk Road)</b>	1015	1216	1316	1416	1516	1616	1716	1818	1918	2018	—
<b>Royal Mail (Enterprise Way)</b>											2205
<b>Edmund Rice College (Hightown Road)</b>	1017	1218	1318	1418	1518	1618	1718	1820	1920	2020	2208
<b>Glengormley Centre (Antrim Road)</b>	1021	1223	1323	1423	1523	1623	1723	1823	1923	2023	2210
<b>Belfast Zoo (Antrim Road)</b>	1023	1226	1326	1426	1526	1626	1726	1826	1926	2026	2212
<b>Serpentine Road (Antrim Road)</b>	1026	1230	1330	1430	1530	1630	1730	1829	1929	2029	2215
<b>Salisbury Avenue (Antrim Road)</b>	1033	1238	1338	1438	1538	1638	1736	1835	1935	2035	2219
<b>Hopefield Avenue (Antrim Road)</b>	1034	1239	1339	1439	1539	1639	1737	1836	1936	2035	2219
<b>Atlantic Avenue (Antrim Road)</b>	1038	1243	1343	1443	1543	1643	1740	1839	1939	2038	2222
<b>Carlisle Circus Antrim Road (Antrim Road)</b>	1041	1246	1346	1446	1546	1646	1743	1842	1942	2040	2224
<b>CastleCourt (Royal Avenue)</b>	1046	1251	1351	1451	1551	1651	1748	1847	1947	2043	2227
<b>Donegall Place (Donegall Place)</b>	1048	1253	1353	1453	1553	1653	1750	1849	1949	2045	2229

Notes: LF - Operated by Low Floor vehicles

**Mondays to Fridays**

Service	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Service Restrictions	1	2	1	2												
Donegall Place (Donegall Place)	0803	0803	0847	0847	0917	0947	1017	1047	1117	1147	1217	1247	1317	1347	1417	1447
North Street (North Street 3)	0810	0809	0854	0853	0924	0954	1024	1054	1124	1154	1224	1254	1324	1354	1424	1454
Carlisle Circus Antrim Road (Antrim Road)	0816	0816	0900	0900	0930	1000	1030	1100	1130	1200	1230	1300	1330	1400	1430	1500
Atlantic Avenue (Antrim Road)	0820	0821	0904	0904	0934	1004	1034	1104	1134	1204	1234	1304	1334	1404	1434	1506
Richmond Lane (Antrim Road)	0821	0822	0905	0905	0935	1005	1035	1105	1135	1205	1235	1305	1335	1405	1435	1508
Salisbury Avenue (Antrim Road)	0824	0826	0908	0909	0938	1008	1038	1108	1138	1209	1239	1309	1339	1409	1439	1512
Serpentine Road (Antrim Road)	0830	0834	0914	0916	0944	1014	1044	1114	1144	1216	1246	1316	1346	1416	1446	1520
Belfast Zoo (Antrim Road)	0833	0837	0917	0919	0947	1017	1047	1117	1147	1219	1249	1319	1349	1419	1449	1524
Glengormley Centre (Antrim Road)	0836	0840	0920	0923	0950	1020	1050	1120	1150	1223	1253	1323	1353	1423	1453	1529
Burney's Lane (Antrim Road)	0838	0842	0922	0925	0952	1022	1052	1122	1152	1225	1255	1325	1355	1425	1455	1532
Sandyknowes (Antrim Road)	0839	0843	0923	0926	0953	1023	1053	1123	1153	1227	1257	1327	1357	1427	1457	1533
Blackrock Square (Hydepark Road)	0847	0852	0931	0935	1001	1031	1101	1131	1201	1236	1306	1336	1406	1436	1506	1543

**Mondays to Fridays**

Service	1f	1f	1f	1g	1f	1f	1g	1f	1f	1f	1f
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Donegall Place (Donegall Place)	1517	1546	1617	1623	1647	1718	1723	1747	1818	1842	1937
North Street (North Street 3)	1525	1554	1626	1632	1656	1726	1731	1755	1825	1849	1944
Carlisle Circus Antrim Road (Antrim Road)	1533	1602	1632	1638	1702	1731	1736	1800	1830	1854	1949
Atlantic Avenue (Antrim Road)	1539	1606	1636	1642	1706	1735	1740	1804	1834	1858	1952
Richmond Lane (Antrim Road)	1541	1608	1638	1644	1707	1736	1741	1805	1835	1859	1953
Salisbury Avenue (Antrim Road)	1545	1612	1642	1648	1711	1740	1745	1809	1839	1903	1956
Serpentine Road (Antrim Road)	1553	1619	1649	1655	1717	1746	1751	1815	1845	1909	2001
Belfast Zoo (Antrim Road)	1557	1623	1653	1659	1720	1749	1754	1818	1848	1912	2004
Glengormley Centre (Antrim Road)	1602	1628	1658	1704	1724	1753	1758	1822	1852	1916	2007
Burney's Lane (Antrim Road)	1605	1631	1701	1707	1727	1756	1801	1825	1855	1919	2009
Sandyknowes (Antrim Road)	1607	1633	1702	1708	1728	1757	1802	1826	1856	1920	2010
Sandyknowes Park (Ballyhenry Road)				1712			1806				
Ballyearl Terrace (Ballyearl Way)				1718			1812				
Manse Way (Manse Terrace)				1721			1815				
Blackrock Square (Hydepark Road)	1621	1647	1713	-	1739	1808	-	1834	1904	1927	2017

**Saturdays**

Service	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Donegall Place (Donegall Place)	0920	1117	1147	1217	1247	1317	1347	1417	1447	1517	1547	1617	1647	1717	1747	1840
North Street (North Street 3)	0925	1124	1154	1225	1255	1325	1355	1425	1455	1525	1555	1626	1656	1726	1756	1848
Carlisle Circus Antrim Road (Antrim Road)	0930	1129	1159	1230	1300	1330	1400	1430	1500	1530	1600	1631	1701	1731	1801	1853
Atlantic Avenue (Antrim Road)	0932	1132	1202	1233	1303	1333	1403	1433	1503	1533	1603	1634	1704	1734	1804	1856
Richmond Lane (Antrim Road)	0933	1133	1203	1234	1304	1334	1404	1434	1504	1534	1604	1635	1705	1735	1805	1857
Salisbury Avenue (Antrim Road)	0936	1136	1207	1238	1308	1338	1408	1438	1508	1538	1607	1638	1708	1738	1808	1900
Serpentine Road (Antrim Road)	0941	1141	1212	1243	1313	1343	1413	1443	1513	1543	1613	1644	1714	1744	1814	1906
Belfast Zoo (Antrim Road)	0944	1144	1215	1246	1316	1346	1416	1446	1516	1546	1616	1647	1717	1747	1817	1909
Glengormley Centre (Antrim Road)	0947	1147	1219	1250	1320	1350	1420	1450	1520	1550	1620	1651	1721	1751	1821	1913
Burney's Lane (Antrim Road)	0949	1149	1221	1252	1322	1352	1422	1452	1522	1552	1623	1654	1724	1754	1824	1915
Sandyknowes (Antrim Road)	0950	1150	1222	1253	1323	1353	1423	1453	1523	1553	1624	1655	1725	1755	1825	1916
Blackrock Square (Hydepark Road)	0956	1157	1229	1300	1330	1400	1430	1500	1530	1600	1631	1702	1732	1802	1832	1923

**Saturdays**

Service	1f
Vehicle Type	LF
Donegall Place (Donegall Place)	1937
North Street (North Street 3)	1944
Carlisle Circus Antrim Road (Antrim Road)	1949
Atlantic Avenue (Antrim Road)	1952
Richmond Lane (Antrim Road)	1953
Salisbury Avenue (Antrim Road)	1956
Serpentine Road (Antrim Road)	2002
Belfast Zoo (Antrim Road)	2005
Glengormley Centre (Antrim Road)	2008
Burney's Lane (Antrim Road)	2010
Sandyknowes (Antrim Road)	2011
Blackrock Square (Hydepark Road)	2017

**Sundays**

no service

Service Restrictions: 1 - from 28 Oct 2024 to 1 Nov 2024 2 - does not operate 28 Oct 2024 to 1 Nov  
 Notes: LF - Operated by Low Floor vehicles

**Mondays to Fridays**

Service	1f	1g	1g	1f	1f	1g	1g	1f	1g	1f	1g	1f	1f	1f	1f	1g	
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	
Service Restrictions	2		1	2	1	3	3	2	2	1	1	2	1	2	1		
Notes							PX	PX									
Manse Way (Manse Terrace)	-	0722	0724	-	-	-	-	-	0759	-	0814	-	-	-	-	0917	
Ballyearl Turning Circle (Ballyearl Way)	-	0724	0726	-	-	-	-	-	0802	-	0816	-	-	-	-	0919	
Sandyknowes Park (Ballyhenry Road)	-	0728	0730	-	-	-	-	-	0808	-	0819	-	-	-	-	0922	
Blackrock Square (Hydepark Road)	0702			0729	0732	-	-	0753		0808		0841	0851	0905	0908		
Sandyknowes (Antrim Road)	0710	0729	0731	0737	0740	0742	0754	0805	0809	0815	0820	0853	0858	0914	0915	0923	
Burney's Lane (Antrim Road)	0712	0731	0733	0739	0742	0744	0756	0807	0811	0816	0821	0855	0859	0915	0916	0924	
Glengormley Centre (Antrim Road)	0715	0734	0736	0742	0745	0747	0800	0811	0815	0819	0824	0859	0902	0918	0919	0927	
Belfast Zoo (Antrim Road)	0718	0737	0739	0745	0748	0751	0804	0815	0819	0822	0827	0903	0905	0921	0922	0930	
Serpentine Road (Antrim Road)	0722	0741	0743	0751	0752	0757	0810	0821	0825	0825	0830	0907	0908	0925	0925	0933	
Salisbury Avenue (Antrim Road)	0728	0747	0749	0800	0758	0806	0819	0830	0834	0832	0837	0914	0915	0932	0932	0940	
Hopefield Avenue (Antrim Road)	0729	0748	0750	0801	0759	0807	0820	0831	0835	0833	0838	0915	0916	0933	0933	0941	
Atlantic Avenue (Antrim Road)	0732	0752	0753	0805	0803	0811	0824	0835	0839	0837	0842	0919	0920	0937	0937	0945	
Carlisle Circus Antrim Road (Antrim Road)	0735	0757	0756	0810	0806	0816	0829	0840	0844	0840	0845	0923	0923	0940	0940	0948	
CastleCourt (Royal Avenue)	0740	0803	0802	0816	0812	0822	0835	0846	0850	0846	0851	0929	0929	0946	0946	0954	
Donegall Place (Donegall Place)	0741	0804	0804	0817	0814	0823	0836	0847	0851	0848	0853	0931	0931	0948	0948	0956	

**Mondays to Fridays**

Service	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Blackrock Square (Hydepark Road)	0954	1024	1054	1124	1158	1226	1256	1326	1356	1426	1455	1529	1601	1628	1633	1702
Sandyknowes (Antrim Road)	1001	1031	1101	1131	1205	1235	1305	1335	1405	1435	1504	1536	1610	1637	1642	1710
Burney's Lane (Antrim Road)	1002	1032	1102	1132	1207	1237	1307	1337	1407	1437	1506	1538	1612	1639	1644	1712
Glengormley Centre (Antrim Road)	1005	1035	1105	1135	1210	1240	1310	1340	1410	1440	1510	1542	1616	1643	1648	1716
Belfast Zoo (Antrim Road)	1008	1038	1108	1138	1213	1243	1313	1343	1413	1443	1513	1545	1619	1646	1651	1719
Serpentine Road (Antrim Road)	1011	1041	1111	1141	1216	1246	1316	1346	1416	1446	1516	1548	1622	1649	1654	1722
Salisbury Avenue (Antrim Road)	1018	1048	1118	1148	1224	1254	1324	1354	1424	1454	1526	1558	1629	1656	1701	1728
Hopefield Avenue (Antrim Road)	1019	1049	1119	1149	1225	1255	1325	1355	1425	1455	1527	1559	1630	1657	1702	1729
Atlantic Avenue (Antrim Road)	1023	1053	1123	1153	1229	1259	1329	1359	1429	1459	1531	1603	1634	1701	1706	1733
Carlisle Circus Antrim Road (Antrim Road)	1026	1056	1126	1156	1233	1303	1333	1403	1433	1503	1538	1608	1639	1704	1709	1736
CastleCourt (Royal Avenue)	1032	1102	1132	1202	1239	1309	1339	1409	1439	1509	1544	1614	1645	1710	1715	1742
Donegall Place (Donegall Place)	1034	1104	1134	1204	1241	1311	1341	1411	1441	1511	1546	1616	1647	1712	1717	1744

**Mondays to Fridays**

Service	1f	1f	1f	1f	1f
Vehicle Type	LF	LF	LF	LF	LF
Blackrock Square (Hydepark Road)	1730	1748	1819	1922	2027
Sandyknowes (Antrim Road)	1738	1756	1826	1928	2032
Burney's Lane (Antrim Road)	1740	1758	1828	1929	2033
Glengormley Centre (Antrim Road)	1744	1802	1831	1932	2035
Belfast Zoo (Antrim Road)	1747	1805	1834	1935	2037
Serpentine Road (Antrim Road)	1750	1808	1837	1938	2040
Salisbury Avenue (Antrim Road)	1756	1814	1843	1944	2045
Hopefield Avenue (Antrim Road)	1757	1815	1844	1945	2045
Atlantic Avenue (Antrim Road)	1801	1818	1847	1948	2048
Carlisle Circus Antrim Road (Antrim Road)	1804	1821	1850	1950	2050
CastleCourt (Royal Avenue)	1810	1827	1856	1955	2055
Donegall Place (Donegall Place)	1812	1828	1857	1956	2056

**Saturdays**

Service	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f	1f
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Blackrock Square (Hydepark Road)	0821	1005	1055	1125	1155	1224	1254	1324	1354	1424	1454	1524	1556	1627	1657	1727
Sandyknowes (Antrim Road)	0827	1011	1101	1131	1201	1231	1301	1331	1401	1431	1501	1531	1603	1633	1703	1733
Burney's Lane (Antrim Road)	0828	1012	1102	1132	1202	1232	1302	1332	1402	1432	1502	1532	1604	1634	1704	1734
Glengormley Centre (Antrim Road)	0830	1015	1105	1135	1205	1235	1305	1335	1405	1435	1505	1535	1607	1637	1707	1737
Belfast Zoo (Antrim Road)	0832	1018	1108	1138	1208	1238	1308	1338	1408	1438	1508	1538	1610	1640	1710	1740
Serpentine Road (Antrim Road)	0835	1021	1111	1141	1211	1241	1311	1341	1411	1441	1511	1541	1613	1643	1713	1743
Salisbury Avenue (Antrim Road)	0840	1027	1117	1147	1217	1247	1317	1347	1417	1447	1517	1547	1619	1649	1719	1749
Hopefield Avenue (Antrim Road)	0840	1028	1118	1148	1218	1248	1318	1348	1418	1448	1518	1548	1620	1650	1720	1750
Atlantic Avenue (Antrim Road)	0843	1031	1122	1152	1222	1252	1322	1352	1422	1452	1522	1552	1623	1653	1723	1753
Carlisle Circus Antrim Road (Antrim Road)	0845	1034	1125	1155	1225	1255	1325	1355	1425	1455	1525	1555	1626	1656	1726	1756
CastleCourt (Royal Avenue)	0849	1040	1131	1201	1231	1301	1331	1401	1431	1501	1531	1601	1631	1701	1731	1801
Donegall Place (Donegall Place)	0851	1042	1133	1203	1233	1303	1333	1403	1433	1503	1533	1603	1633	1703	1733	1803

**Saturdays**

Service	1f	1f	1f	1f
Vehicle Type	LF	LF	LF	LF
Blackrock Square (Hydepark Road)	1757	1827	1935	2037
Sandyknowes (Antrim Road)	1803	1833	1941	2042
Burney's Lane (Antrim Road)	1804	1834	1942	2043
Glengormley Centre (Antrim Road)	1808	1838	1946	2046
Belfast Zoo (Antrim Road)	1811	1841	1948	2048
Serpentine Road (Antrim Road)	1814	1844	1951	2051
Salisbury Avenue (Antrim Road)	1819	1849	1956	2056
Hopefield Avenue (Antrim Road)	1820	1850	1956	2056
Atlantic Avenue (Antrim Road)	1823	1853	1959	2059
Carlisle Circus Antrim Road (Antrim Road)	1826	1856	2001	2101
CastleCourt (Royal Avenue)	1831	1901	2006	2106
Donegall Place (Donegall Place)	1833	1903	2008	2108

**Sundays**

no service

Service Restrictions: 1 - from 28 Oct 2024 to 1 Nov 2024 3 - does not operate 28 Oct 2024 to 1 Nov, 23 Dec 2024 to 3 Jan 2025, 10 Feb to 14 Feb, 17 Mar, 17 Apr to 25 Apr, 26 May

2 - does not operate 28 Oct 2024 to 1 Nov

Notes: PX - Additional Services on Schooldays LF - Operated by Low Floor vehicles

**Mondays to Fridays**

Service	1j	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Service Restrictions	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Donegall Place (Donegall Place)	0545	0615	0700	0720	0720	0748	0748	0825	0825	0855	0855	0925	0955	1025	1055	1125
North Street (North Street 3)	0549	0619	0705	0725	0725	0755	0754	0832	0831	0902	0901	0932	1002	1032	1102	1132
Carlisle Circus Antrim Road (Antrim Road)	0552	0623	0710	0730	0730	0801	0801	0838	0838	0908	0907	0938	1008	1038	1108	1138
Atlantic Avenue (Antrim Road)	0553	0625	0713	0733	0733	0805	0806	0842	0843	0912	0911	0942	1012	1042	1112	1142
Richmond Lane (Antrim Road)	0553	0626	0714	0734	0734	0806	0807	0843	0844	0913	0912	0943	1013	1043	1113	1143
Salisbury Avenue (Antrim Road)	0555	0628	0717	0737	0737	0809	0811	0846	0848	0916	0916	0946	1016	1046	1116	1146
Serpentine Road (Antrim Road)	0558	0632	0722	0742	0742	0815	0819	0852	0856	0922	0923	0952	1022	1052	1122	1152
Belfast Zoo (Antrim Road)	0600	0635	0725	0745	0745	0818	0822	0855	0859	0925	0926	0955	1025	1055	1125	1155
Glengormley Centre (Antrim Road)	0602	0637	0728	0748	0748	0821	0825	0858	0902	0928	0930	0958	1028	1058	1128	1158
Edmund Rice College (Hightown Road)	0604	0639	0731	0751	0751	0824	0828	0901	0905	0931	0933	1001	1031	1101	1131	1201
Ballyrobert Garage (Mallusk Road)		0640	0734	0753	0756	0826	0833	0903	0908	0933	0935	1003	1033	1103	1133	1203
Parkmount (Mallusk Road)		0645	0739	0758	0801	0831	0838	0908	0913	0938	0940	1008	1038	1108	1138	1208
Roughfort Turning Circle (Coach Road)		0649	0743	0801	0805	0834	0842	0911	0916	0941	0943	1011	1041	1111	1141	1213
Royal Mail (Enterprise Way)	0606	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Mondays to Fridays**

Service	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Donegall Place (Donegall Place)	1155	1225	1255	1325	1355	1425	1455	1525	1559	1629	1658	1713	1729	1759	1825	1922
North Street (North Street 3)	1202	1232	1302	1332	1402	1432	1502	1533	1607	1638	1707	1721	1737	1807	1832	1929
Carlisle Circus Antrim Road (Antrim Road)	1208	1238	1308	1338	1408	1438	1510	1541	1613	1644	1712	1726	1742	1812	1837	1934
Atlantic Avenue (Antrim Road)	1212	1242	1312	1342	1412	1442	1516	1547	1617	1648	1716	1730	1746	1816	1841	1938
Richmond Lane (Antrim Road)	1213	1243	1313	1343	1413	1443	1518	1549	1619	1650	1717	1731	1747	1817	1842	1939
Salisbury Avenue (Antrim Road)	1217	1247	1317	1347	1417	1447	1522	1553	1623	1654	1721	1735	1751	1821	1846	1943
Serpentine Road (Antrim Road)	1224	1254	1324	1354	1424	1454	1530	1601	1630	1701	1727	1741	1757	1827	1852	1949
Belfast Zoo (Antrim Road)	1227	1257	1327	1357	1427	1457	1534	1605	1634	1704	1730	1744	1800	1830	1855	1952
Glengormley Centre (Antrim Road)	1231	1301	1331	1401	1431	1501	1539	1610	1639	1708	1734	1748	1804	1834	1859	1955
Edmund Rice College (Hightown Road)	1235	1305	1335	1405	1435	1505	1543	1614	1643	1712	1738	1752	1808	1837	1902	1958
Ballyrobert Garage (Mallusk Road)	1237	1307	1337	1407	1437	1509	1547	1617	1646	1714	1740	1754	1810	1839	1904	2000
Parkmount (Mallusk Road)	1242	1312	1342	1412	1442	1514	1552	1623	1652	1719	1745	1759	1815	1843	1908	2005
Roughfort Turning Circle (Coach Road)	1247	1317	1347	1417	1447	1518	1556	1627	1656	1723	1749	1803	1819	1847	1912	2009

**Mondays to Fridays**

Service	1e	1j	1j	1e
Vehicle Type	LF	LF	LF	LF
Donegall Place (Donegall Place)	2022	2100	2130	2210
North Street (North Street 3)	2028	2106	2136	2216
Carlisle Circus Antrim Road (Antrim Road)	2033	2111	2141	2221
Atlantic Avenue (Antrim Road)	2036	2114	2144	2224
Richmond Lane (Antrim Road)	2037	2115	2145	2225
Salisbury Avenue (Antrim Road)	2040	2118	2148	2228
Serpentine Road (Antrim Road)	2045	2123	2153	2233
Belfast Zoo (Antrim Road)	2048	2126	2156	2236
Glengormley Centre (Antrim Road)	2051	2129	2159	2239
Edmund Rice College (Hightown Road)	2054	2132	2202	2242
Ballyrobert Garage (Mallusk Road)	2056			2244
Parkmount (Mallusk Road)	2101			2249
Roughfort Turning Circle (Coach Road)	2105			2253
Royal Mail (Enterprise Way)	-	2135	2205	-

**Saturdays**

Service	1j	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	
Donegall Place (Donegall Place)	0545	0650	0720	0750	0820	0850	0940	1010	1040	1125	1155	1225	1255	1325	1355	1425
North Street (North Street 3)	0549	0654	0724	0754	0824	0854	0945	1015	1047	1132	1202	1233	1303	1333	1403	1433
Carlisle Circus Antrim Road (Antrim Road)	0552	0657	0727	0758	0828	0858	0950	1020	1052	1137	1207	1238	1308	1338	1408	1438
Atlantic Avenue (Antrim Road)	0554	0659	0729	0800	0830	0900	0952	1022	1055	1140	1210	1241	1311	1341	1411	1441
Richmond Lane (Antrim Road)	0554	0700	0730	0801	0831	0901	0953	1023	1056	1141	1211	1242	1312	1342	1412	1442
Salisbury Avenue (Antrim Road)	0556	0702	0732	0803	0833	0904	0956	1026	1059	1144	1215	1246	1316	1346	1416	1446
Serpentine Road (Antrim Road)	0600	0706	0737	0808	0838	0909	1001	1031	1104	1149	1220	1251	1321	1351	1421	1451
Belfast Zoo (Antrim Road)	0603	0709	0740	0811	0841	0912	1004	1034	1107	1152	1223	1254	1324	1354	1424	1454
Glengormley Centre (Antrim Road)	0605	0711	0742	0813	0843	0915	1007	1037	1110	1155	1227	1258	1328	1358	1428	1458
Edmund Rice College (Hightown Road)	0607	0713	0744	0815	0845	0918	1010	1040	1113	1158	1230	1301	1331	1401	1431	1501
Ballyrobert Garage (Mallusk Road)		0715	0746	0817	0847	0920	1012	1042	1115	1200	1232	1303	1333	1403	1433	1503
Parkmount (Mallusk Road)		0719	0750	0821	0851	0923	1015	1046	1119	1204	1236	1307	1337	1407	1437	1507
Roughfort Turning Circle (Coach Road)		0722	0753	0824	0854	0926	1018	1049	1122	1207	1239	1310	1340	1410	1440	1510
Royal Mail (Enterprise Way)	0609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**Saturdays**

Service	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	
Donegall Place (Donegall Place)	1455	1525	1555	1625	1655	1725	1755	1820	1922	2022	2212
North Street (North Street 3)	1503	1533	1603	1634	1704	1734	1804	1828	1929	2029	2219
Carlisle Circus Antrim Road (Antrim Road)	1508	1538	1608	1639	1709	1739	1809	1833	1934	2034	2224
Atlantic Avenue (Antrim Road)	1511	1541	1611	1642	1712	1742	1812	1836	1937	2037	2227
Richmond Lane (Antrim Road)	1512	1542	1612	1643	1713	1743	1813	1837	1938	2038	2228
Salisbury Avenue (Antrim Road)	1516	1546	1615	1646	1716	1746	1816	1840	1941	2041	2231
Serpentine Road (Antrim Road)	1521	1551	1621	1652	1722	1752	1822	1846	1947	2047	2237
Belfast Zoo (Antrim Road)	1524	1554	1624	1655	1725	1755	1825	1849	1950	2050	2240
Glengormley Centre (Antrim Road)	1528	1558	1628	1659	1729	1759	1829	1853	1953	2053	2243
Edmund Rice College (Hightown Road)	1531	1601	1631	1702	1732	1802	1832	1856	1956	2056	2246
Ballyrobert Garage (Mallusk Road)	1533	1603	1633	1704	1734	1804	1834	1858	1958	2058	2248
Parkmount (Mallusk Road)	1537	1607	1637	1708	1738	1812	1842	1906	2002	2102	2252
Roughfort Turning Circle (Coach Road)	1540	1610	1640	1711	1741	1816	1846	1910	2006	2106	2256

Service Restrictions: 1 - from 28 Oct 2024 to 1 Nov 2024 2 - does not operate 28 Oct 2024 to 1 Nov  
 Notes: LF - Operated by Low Floor vehicles

**Sundays**

Service	1e	1e	1e	1e	1e	1e	1e	1j		
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF		
Donegall Place (Donegall Place)	0740	1115	15	1615	1715	1815	1915	2130		
North Street (North Street 3)	0744	1122	22	1622	1722	1822	1922	2135		
Carlisle Circus Antrim Road (Antrim Road)	0748	1127	27	1627	1727	1827	1927	2139		
Atlantic Avenue (Antrim Road)	0750	1130	then	30	1630	1730	1830	1930	2142	
Richmond Lane (Antrim Road)	0751	1131	at	31	1631	1731	1831	1931	2143	
Salisbury Avenue (Antrim Road)	0753	1134	these	34	1634	1734	1834	1934	2146	
Serpentine Road (Antrim Road)	0758	1140	mins	40	until	1640	1740	1840	1940	2151
Belfast Zoo (Antrim Road)	0801	1143	past	43	1643	1745	1845	1945	2154	
Glengormley Centre (Antrim Road)	0804	1147	each	47	1647	1748	1848	1948	2157	
Edmund Rice College (Hightown Road)	0807	1150	hour	50	1650	1751	1851	1951	2159	
Ballyrobert Garage (Mallusk Road)	-	1152		52	1652	1753	1853	1953		
Parkmount (Mallusk Road)	-	1156		56	1656	1758	1858	1958		
Roughfort Turning Circle (Coach Road)	-	1159		59	1659	1802	1902	2002		
Royal Mail (Enterprise Way)	-	-	-	-	-	-	-	2202		

Notes: LF - Operated by Low Floor vehicles

**Mondays to Fridays**

Service	1j	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Service Restrictions			2	1	2	1	2	1	2	1	2	1	2	1	1	2
Notes											PX					
Roughfort Turning Circle (Coach Road)	—	0653	0710	0711	0733	0740	0748	0759	—	0814	0824	0852	0856	0926	0927	0956
Parkmount (Mallusk Road)	—	0656	0714	0715	0737	0744	0752	0804	—	0818	0829	0856	0901	0931	0931	1001
Ballyrobert Garage (Mallusk Road)	—	0701	0719	0720	0742	0749	0758	0809	—	0824	0834	0902	0906	0936	0936	1006
Royal Mail (Enterprise Way)	0614															
Edmund Rice College (Hightown Road)	0617	0704	0722	0723	0745	0752	0802	0811	0813	0828	0836	0905	0908	0938	0938	1008
Glengormley Centre (Antrim Road)	0620	0708	0726	0727	0751	0756	0808	0815	0819	0834	0840	0910	0912	0942	0942	1012
Belfast Zoo (Antrim Road)	0622	0711	0729	0730	0755	0759	0812	0818	0823	0838	0843	0913	0915	0945	0945	1015
Serpentine Road (Antrim Road)	0625	0715	0733	0734	0801	0802	0818	0821	0829	0844	0846	0917	0918	0948	0948	1018
Salisbury Avenue (Antrim Road)	0630	0721	0739	0740	0810	0809	0827	0828	0838	0853	0853	0924	0925	0955	0955	1025
Hopefield Avenue (Antrim Road)	0631	0722	0740	0741	0811	0810	0828	0829	0839	0854	0854	0925	0926	0956	0956	1026
Atlantic Avenue (Antrim Road)	0634	0725	0743	0744	0815	0814	0832	0833	0843	0858	0858	0929	0930	1000	1000	1030
Carlisle Circus Antrim Road (Antrim Road)	0636	0728	0746	0747	0820	0817	0837	0836	0848	0903	0901	0933	0933	1003	1003	1033
CastleCourt (Royal Avenue)	0641	0733	0752	0752	0826	0823	0843	0842	0854	0909	0907	0939	0939	1009	1009	1039
Donegall Place (Donegall Place)	0642	0734	0753	0753	0827	0825	0844	0844	0855	0911	0909	0941	0941	1011	1011	1041

**Mondays to Fridays**

Service	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Roughfort Turning Circle (Coach Road)	1026	1056	1126	1159	1228	1258	1328	1358	1426	1456	1532	1604	1640	1705	1730	1759
Parkmount (Mallusk Road)	1031	1101	1131	1204	1235	1305	1335	1405	1433	1503	1535	1607	1643	1708	1733	1802
Ballyrobert Garage (Mallusk Road)	1036	1106	1136	1209	1240	1310	1340	1410	1438	1509	1541	1615	1651	1717	1742	1811
Edmund Rice College (Hightown Road)	1038	1108	1138	1212	1243	1313	1343	1413	1441	1512	1544	1618	1654	1720	1745	1814
Glengormley Centre (Antrim Road)	1042	1112	1142	1216	1247	1317	1347	1417	1445	1517	1549	1623	1659	1725	1750	1819
Belfast Zoo (Antrim Road)	1045	1115	1145	1219	1250	1320	1350	1420	1448	1520	1552	1626	1702	1728	1753	1822
Serpentine Road (Antrim Road)	1048	1118	1148	1222	1253	1323	1353	1423	1451	1523	1555	1629	1705	1731	1756	1825
Salisbury Avenue (Antrim Road)	1055	1125	1155	1230	1301	1331	1401	1431	1459	1533	1605	1636	1711	1737	1802	1831
Hopefield Avenue (Antrim Road)	1056	1126	1156	1231	1302	1332	1402	1432	1500	1534	1606	1637	1712	1738	1803	1832
Atlantic Avenue (Antrim Road)	1100	1130	1200	1235	1306	1336	1406	1436	1504	1538	1610	1641	1716	1742	1807	1835
Carlisle Circus Antrim Road (Antrim Road)	1103	1133	1204	1239	1310	1340	1410	1440	1511	1545	1615	1646	1719	1745	1810	1838
CastleCourt (Royal Avenue)	1109	1139	1210	1245	1316	1346	1416	1446	1517	1551	1621	1652	1725	1751	1816	1844
Donegall Place (Donegall Place)	1111	1141	1212	1247	1318	1348	1418	1448	1519	1553	1623	1654	1727	1753	1817	1845

**Mondays to Fridays**

Service	1e	1e	1e	1j	1j
Vehicle Type	LF	LF	LF	LF	LF
Roughfort Turning Circle (Coach Road)	1822	1852	2014	2113	—
Parkmount (Mallusk Road)	1825	1855	2017	2116	—
Ballyrobert Garage (Mallusk Road)	1830	1900	2022	2121	—
Royal Mail (Enterprise Way)				2140	2210
Edmund Rice College (Hightown Road)	1832	1902	2024	2123	2143
Glengormley Centre (Antrim Road)	1836	1905	2027	2126	2146
Belfast Zoo (Antrim Road)	1839	1908	2029	2128	2148
Serpentine Road (Antrim Road)	1842	1911	2032	2131	2151
Salisbury Avenue (Antrim Road)	1848	1917	2037	2136	2156
Hopefield Avenue (Antrim Road)	1849	1918	2037	2136	2156
Atlantic Avenue (Antrim Road)	1852	1921	2040	2139	2159
Carlisle Circus Antrim Road (Antrim Road)	1855	1924	2042	2141	2201
CastleCourt (Royal Avenue)	1901	1930	2047	2146	2206
Donegall Place (Donegall Place)	1902	1931	2048	2147	2207

**Saturdays**

Service	1j	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Roughfort Turning Circle (Coach Road)	—	0708	0738	0808	0838	0912	0942	1020	1058	1128	1158	1228	1258	1328	1358	1428
Parkmount (Mallusk Road)	—	0711	0741	0811	0841	0916	0946	1024	1102	1132	1202	1231	1301	1331	1401	1431
Ballyrobert Garage (Mallusk Road)	—	0715	0745	0815	0845	0920	0950	1028	1106	1136	1207	1236	1306	1336	1406	1436
Royal Mail (Enterprise Way)	0614															
Edmund Rice College (Hightown Road)	0617	0717	0747	0817	0847	0922	0952	1030	1108	1138	1210	1239	1309	1339	1409	1439
Glengormley Centre (Antrim Road)	0619	0719	0750	0820	0850	0926	0956	1034	1112	1142	1214	1243	1313	1343	1413	1443
Belfast Zoo (Antrim Road)	0621	0721	0752	0822	0852	0929	0959	1037	1115	1145	1217	1246	1316	1346	1416	1446
Serpentine Road (Antrim Road)	0624	0724	0755	0825	0855	0932	1002	1040	1118	1148	1220	1249	1319	1349	1419	1449
Salisbury Avenue (Antrim Road)	0628	0728	0800	0830	0900	0938	1008	1046	1124	1154	1226	1255	1325	1355	1425	1455
Hopefield Avenue (Antrim Road)	0628	0728	0800	0830	0901	0939	1009	1047	1125	1155	1227	1256	1326	1356	1426	1456
Atlantic Avenue (Antrim Road)	0630	0731	0803	0833	0904	0942	1012	1051	1129	1159	1231	1300	1330	1400	1430	1500
Carlisle Circus Antrim Road (Antrim Road)	0632	0733	0805	0835	0907	0945	1015	1054	1132	1202	1234	1303	1333	1403	1433	1503
CastleCourt (Royal Avenue)	0635	0737	0809	0839	0911	0949	1019	1100	1138	1208	1240	1309	1339	1409	1439	1509
Donegall Place (Donegall Place)	0637	0739	0811	0841	0913	0951	1021	1102	1140	1210	1242	1311	1341	1411	1441	1511

**Saturdays**

Service	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	
Roughfort Turning Circle (Coach Road)	1458	1528	1603	1633	1703	1733	1805	1835	1900	2019	2119
Parkmount (Mallusk Road)	1501	1531	1606	1636	1706	1736	1808	1838	1903	2022	2122
Ballyrobert Garage (Mallusk Road)	1506	1536	1610	1640	1710	1740	1811	1841	1906	2026	2126
Edmund Rice College (Hightown Road)	1509	1539	1612	1642	1712	1742	1813	1843	1908	2028	2128
Glengormley Centre (Antrim Road)	1513	1543	1615	1645	1715	1745	1816	1846	1911	2031	2131
Belfast Zoo (Antrim Road)	1516	1546	1618	1648	1718	1748	1819	1849	1913	2033	2133
Serpentine Road (Antrim Road)	1519	1549	1621	1651	1721	1751	1822	1852	1916	2036	2136
Salisbury Avenue (Antrim Road)	1525	1555	1627	1657	1727	1757	1827	1857	1921	2041	2141
Hopefield Avenue (Antrim Road)	1526	1556	1628	1658	1728	1758	1828	1858	1922	2042	2142
Atlantic Avenue (Antrim Road)	1530	1600	1631	1701	1731	1801	1831	1901	1925	2044	2144
Carlisle Circus Antrim Road (Antrim Road)	1533	1603	1634	1704	1734	1804	1834	1903	1927	2046	2146
CastleCourt (Royal Avenue)	1539	1608	1639	1709	1739	1809	1839	1908	1932	2051	2151
Donegall Place (Donegall Place)	1541	1610	1641	1711	1741	1811	1841	1910	1934	2053	2153

Service Restrictions: 1 - from 28 Oct 2024 to 1 Nov 2024    3 - does not operate 28 Oct 2024 to 1 Nov, 23 Dec 2024 to 3 Jan 2025, 10 Feb to 14 Feb, 17 Mar, 17 Apr to 25 Apr, 26 May  
 2 - does not operate 28 Oct 2024 to 1 Nov

Notes: PX - Additional Services on Schooldays    LF - Operated by Low Floor vehicles

**Sundays**

Service	1e	1e	1e	1e	1e	1e	1e	1e	1e	1e	1j
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
<b>Roughfort Turning Circle (Coach Road)</b>	1007	1207	1307	1407	1507	1607	1707	1811	1911	2011	—
<b>Parkmount (Mallusk Road)</b>	1011	1211	1311	1411	1511	1611	1711	1814	1914	2014	—
<b>Ballyrobert Garage (Mallusk Road)</b>	1015	1216	1316	1416	1516	1616	1716	1818	1918	2018	—
<b>Royal Mail (Enterprise Way)</b>											2205
<b>Edmund Rice College (Hightown Road)</b>	1017	1218	1318	1418	1518	1618	1718	1820	1920	2020	2208
<b>Glengormley Centre (Antrim Road)</b>	1021	1223	1323	1423	1523	1623	1723	1823	1923	2023	2210
<b>Belfast Zoo (Antrim Road)</b>	1023	1226	1326	1426	1526	1626	1726	1826	1926	2026	2212
<b>Serpentine Road (Antrim Road)</b>	1026	1230	1330	1430	1530	1630	1730	1829	1929	2029	2215
<b>Salisbury Avenue (Antrim Road)</b>	1033	1238	1338	1438	1538	1638	1736	1835	1935	2035	2219
<b>Hopefield Avenue (Antrim Road)</b>	1034	1239	1339	1439	1539	1639	1737	1836	1936	2035	2219
<b>Atlantic Avenue (Antrim Road)</b>	1038	1243	1343	1443	1543	1643	1740	1839	1939	2038	2222
<b>Carlisle Circus Antrim Road (Antrim Road)</b>	1041	1246	1346	1446	1546	1646	1743	1842	1942	2040	2224
<b>CastleCourt (Royal Avenue)</b>	1046	1251	1351	1451	1551	1651	1748	1847	1947	2043	2227
<b>Donegall Place (Donegall Place)</b>	1048	1253	1353	1453	1553	1653	1750	1849	1949	2045	2229

Notes: LF - Operated by Low Floor vehicles

**Mondays to Fridays**

Service	13	13	13	13a	13a	13	13	13	13	13	13	13	13	13c	13	
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	
Service Restrictions	1	2	1	2	2	1										
Trench Road (Trench Road)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1634	-
Donegall Place (Donegall Place)	-	-	-	-	-	0845	0845	0945	1045	1145	1245	1345	1445	1550	1640	
North Street (North Street 2)	-	-	-	-	-	0850	0851	0951	1051	1151	1251	1351	1451	1557	1648	
Ulster University Belfast (York Street)	-	-	-	-	-	0851	0852 <sub>p</sub>	0952 <sub>p</sub>	1052 <sub>p</sub>	1152	1252 <sub>p</sub>	1352 <sub>p</sub>	1452 <sub>p</sub>	1559 <sub>p</sub>	1649 <sub>p</sub>	
Sandyknowes Park (Ballyhenry Road)	0700	0735	0741	-	-	0904	0905	1004	1104	1204	1305	1405	1505	1612	1645	1702
Prince Charles Way (Prince Charles Way)	0702	0737	0743	0811	0814	0906	0907	1006	1106	1207	1308	1408	1508	1616	1649	1706
Carnvue (Carnmoney Road)	0704	0739	0745	0813	0816	0908	0909	1008	1108	1209	1310	1410	1510	1618	1651	1708
Beverley Shops (Fairview Road)	0706	0741	0747	0815	0818	0910	0911	1010	1110	1211	1312	1412	1512	1620	1653	1710
Glenkyle (Fairview Road)	0706	0741	0747	0815	0818	0910	0911	1010	1110	1211	1312	1412	1512	1620	1653	1710
Dunkeld Gardens (Ballyfore Road)	0710	0745	0751	0819	0822	0914	0915	1014	1114	1215	1316	1416	1516	1624	1657	1714
Cherrylands (Doagh Road)	0712	0748	0753	0822	0824	0916	0918	1016	1116	1217	1318	1418	1518	1626	1659	1716
Kings Road (Doagh Road)	0713	0749	0754	0823	0825	0917	0919	1017	1117	1218	1319	1419	1519	1627	1700	1717
Cloughfern Corner (Doagh Road)	0716	0754	0757			0920	0923	1019	1119	1220	1321	1421	1522	1629	1702	1719
Green End Doagh Road (Doagh Road)	0718	0756	0759			0922	0925	1021	1121	1222	1323	1423	1524	1631	1703	1720
Loughshore Manor (Shore Road)	0720	0758	0801			0924	0927	1023	1123	1224	1325	1425	1526	1633	1705	1722
Princes Drive (Station Road)				0830	0832											
Northern Regional College (Shore Road)				0833	0835											
Nelson Street Bus Lane (Nelson Street)	0727 <sub>s</sub>	0806 <sub>s</sub>	0808	0840 <sub>s</sub>	0842	0931	0933 <sub>s</sub>	1030 <sub>s</sub>	1130 <sub>s</sub>	1231 <sub>s</sub>	1332 <sub>s</sub>	1432 <sub>s</sub>	1533 <sub>s</sub>	1640 <sub>s</sub>	1711 <sub>s</sub>	1728 <sub>s</sub>
Ulster University Belfast (York Street)	0730 <sub>s</sub>	0810 <sub>s</sub>	0811	0844 <sub>s</sub>	0845	0934	0936 <sub>s</sub>	1033 <sub>s</sub>	1133 <sub>s</sub>	1234 <sub>s</sub>	1335 <sub>s</sub>	1435 <sub>s</sub>	1537 <sub>s</sub>	1644 <sub>s</sub>	1715 <sub>s</sub>	1732 <sub>s</sub>
CastleCourt (Royal Avenue)	0732	0812	0813	0846	0847	0936	0938	1035	1135	1236	1337	1437	1539	1646	1717	1734
Donegall Place (Donegall Place)	0733	0814	0814	0848	0848	0937	0939	1036	1136	1237	1338	1438	1540	1647	1718	1735

**Mondays to Fridays**

Service	13	13	13b	13	13	13b
Vehicle Type	LF	LF	LF	LF	LF	LF
Donegall Place (Donegall Place)	1710	1735	1805	1835	1945	2045
North Street (North Street 2)	1718	1743	1813	1841	1950	2050
Ulster University Belfast (York Street)	1719 <sub>p</sub>	1744 <sub>p</sub>	1814 <sub>p</sub>	1842 <sub>p</sub>	1951 <sub>p</sub>	2051 <sub>p</sub>
Sandyknowes Park (Ballyhenry Road)	1732	1757	1827	1854	2003	2103
Prince Charles Way (Prince Charles Way)	1736	1801	1830	1857	2005	2105
Carnvue (Carnmoney Road)	1738	1803	1832	1859	2007	2107
Beverley Shops (Fairview Road)	1740	1805	1834	1901	2009	2109
Glenkyle (Fairview Road)	1740	1805	1834	1901	2009	2109
Dunkeld Gardens (Ballyfore Road)	1744	1809	1837	1904	2012	2112
Cherrylands (Doagh Road)	1746	1811	1839	1906	2014	2114
Glenville (Monkstown Avenue)			1841			2115
Kings Road (Doagh Road)	1747	1812	-	1907	2015	-
Cloughfern Corner (Doagh Road)	1749	1814	-	1909	2016	-
Green End Doagh Road (Doagh Road)	1750	1815	-	1910	2017	-
Loughshore Manor (Shore Road)	1752	1816	-	1911	2018	-
Nelson Street Bus Lane (Nelson Street)	1758 <sub>s</sub>	1822 <sub>s</sub>	-	1917	2024	-
Ulster University Belfast (York Street)	1802 <sub>s</sub>	1825 <sub>s</sub>	-	1920	2027	-
CastleCourt (Royal Avenue)	1804	1827	-	1922	2028	-
Donegall Place (Donegall Place)	1805	1828	-	1923	2029	-

**Saturdays**

Service	13	13	13	13	13	13	13b	13b	
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	
Donegall Place (Donegall Place)	-	1145	1245	1345	1445	1545	1645	1745	1815
North Street (North Street 2)	-	1151	1253	1353	1453	1553	1653	1753	1824
Ulster University Belfast (York Street)	-	1153	1254 <sub>p</sub>	1354 <sub>p</sub>	1454 <sub>p</sub>	1554 <sub>p</sub>	1655 <sub>p</sub>	1755 <sub>p</sub>	1826 <sub>p</sub>
Sandyknowes Park (Ballyhenry Road)	-	1205	1307	1407	1507	1607	1707	1807	1838
Prince Charles Way (Prince Charles Way)	1100	1208	1310	1410	1510	1610	1710	1810	1841
Carnvue (Carnmoney Road)	1102	1210	1312	1412	1512	1612	1712	1812	1843
Beverley Shops (Fairview Road)	1104	1212	1314	1414	1514	1614	1714	1814	1845
Glenkyle (Fairview Road)	1104	1212	1314	1414	1514	1614	1714	1814	1845
Dunkeld Gardens (Ballyfore Road)	1108	1216	1318	1418	1518	1618	1718	1817	1848
Cherrylands (Doagh Road)	1110	1218	1320	1420	1520	1620	1720	1819	1850
Glenville (Monkstown Avenue)							1821	1852	
Kings Road (Doagh Road)	1111	1219	1321	1421	1521	1621	1721	-	-
Cloughfern Corner (Doagh Road)	1113	1222	1324	1424	1524	1623	1723	-	-
Green End Doagh Road (Doagh Road)	1115	1224	1326	1426	1526	1624	1724	-	-
Loughshore Manor (Shore Road)	1118	1226	1328	1428	1528	1626	1726	-	-
Nelson Street Bus Lane (Nelson Street)	1124 <sub>s</sub>	1232 <sub>s</sub>	1334 <sub>s</sub>	1434 <sub>s</sub>	1534 <sub>s</sub>	1632 <sub>s</sub>	1732 <sub>s</sub>	-	-
Ulster University Belfast (York Street)	1127 <sub>s</sub>	1235 <sub>s</sub>	1337 <sub>s</sub>	1437 <sub>s</sub>	1537 <sub>s</sub>	1635 <sub>s</sub>	1735 <sub>s</sub>	-	-
CastleCourt (Royal Avenue)	1129	1237	1339	1439	1539	1637	1737	-	-
Donegall Place (Donegall Place)	1130	1239	1341	1441	1541	1639	1739	-	-

**Sundays**

no service

Service Restrictions: 1 - does not operate 28 Oct 2024 to 1 Nov 2 - from 28 Oct 2024 to 1 Nov 2024

Notes: p - picks up only s - sets down only LF - Operated by Low Floor vehicles

**Mondays to Fridays**

Service	14b	14c	14b	14b	14c	14b	14	14	14	14	14	14	14	14	14	14
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Service Restrictions					1	2	1	2	1	2	1	2	1	2	1	2
Donegall Place (Donegall Place)	-	-	-	-	-	-	0720	0725	0740	0745	0800	0805	-	-	0915	0915
North Street (North Street 2)	-	-	-	-	-	-	0726	0731	0746	0752	0806	0812	-	-	0922	0922
Ulster University Belfast (York Street)	-	-	-	-	-	-	0727 <sup>p</sup>	0732	0747 <sup>p</sup>	0754	0807 <sup>p</sup>	0814	-	-	0924	0924 <sup>p</sup>
Loughshore Manor (Shore Road)	-	-	-	-	-	-	0735	0740	0755	0802	0815	0822	-	-	0932	0933
Green End Doagh Road (Doagh Road)	-	0657	-	-	0717	-	0737	0742	0757	0804	0817	0824	0847	0854	0934	0935
Cloughfern Corner (Doagh Road)	-	0658	-	-	0718	-	0738	0743	0759	0805	0819	0825	0849	0855	0935	0936
Kings Road (Doagh Road)	-	0659	-	-	0719	-	0739	0744	0800	0806	0820	0826	0850	0856	0936	0937
Glenville (Monkstown Avenue)	0638	-	0658	0717	-	0718	-	-	-	-	-	-	-	-	-	-
Cherrylands (Doagh Road)	0640	0700	0700	0719	0720	0720	0740	0745	0802	0807	0822	0827	0852	0857	0937	0938
Dunkeld Gardens (Ballyfore Road)	0642	0702	0702	0721	0722	0722	0742	0747	0804	0809	0824	0829	0854	0859	0939	0940
Glenkyle (Fairview Road)	0644	0704	0704	0723	0724	0724	0744	0749	0807	0811	0827	0831	0857	0901	0941	0942
Beverley Shops (Fairview Road)	0647	0706	0706	0725	0726	0726	0746	0751	0809	0813	0829	0833	0859	0903	0943	0944
Carnvue (Carnmoney Road)	0649	0708	0708	0727	0728	0728	0748	0753	0811	0815	0831	0835	0901	0905	0945	0946
Glebe Road (Prince Charles Way)	0651	0711	0711	0730	0731	0731	0752	0756	0815	0818	0835	0838	0905	0908	0948	0949
Sandyknowes Park (Ballyhenry Road)	0654	0714	0714	0733	0734	0734	0756	0759	0819	0821	0839	0841	0909	0911	0951	0952
Nelson Street Bus Lane (Nelson Street)	0702 <sup>s</sup>	-	0724 <sup>s</sup>	0743	-	0744 <sup>s</sup>	0810 <sup>s</sup>	0808	0833 <sup>s</sup>	0830	0853 <sup>s</sup>	0850	0920 <sup>s</sup>	0920	1000	1001 <sup>s</sup>
Ulster University Belfast (York Street)	0706 <sup>s</sup>	-	0728 <sup>s</sup>	0747	-	0748 <sup>s</sup>	0814 <sup>s</sup>	0812	0837 <sup>s</sup>	0834	0857 <sup>s</sup>	0854	0924 <sup>s</sup>	0924	1004	1005 <sup>s</sup>
CastleCourt (Royal Avenue)	0708	-	0730	0750	-	0750	0816	0815	0839	0837	0859	0857	0927	0927	1007	1008
Donegall Place (Donegall Place)	0710	-	0732	0752	-	0752	0818	0817	0841	0839	0901	0859	0929	0929	1009	1010
Trench Road (Trench Road)	-	0720	-	-	0740	-	-	-	-	-	-	-	-	-	-	-

**Mondays to Fridays**

Service	14	14	14	14	14	14	14a	14	14a	14	14	14	14
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Donegall Place (Donegall Place)	1015	1115	1215	1315	1415	1515	1625	1655	1725	1750	1820	1920	2015
North Street (North Street 2)	1022	1122	1222	1322	1422	1522	1633	1703	1733	1758	1827	1926	2020
Ulster University Belfast (York Street)	1024 <sup>p</sup>	1124 <sup>p</sup>	1224 <sup>p</sup>	1324 <sup>p</sup>	1424 <sup>p</sup>	1524 <sup>p</sup>	1635 <sup>p</sup>	1705 <sup>p</sup>	1735 <sup>p</sup>	1800 <sup>p</sup>	1828 <sup>p</sup>	1927 <sup>p</sup>	2021 <sup>p</sup>
Loughshore Manor (Shore Road)	1032	1132	1233	1333	1433	1535	-	1715	-	1810	1837	1935	2029
Green End Doagh Road (Doagh Road)	1034	1134	1235	1335	1435	1538	-	1717	-	1812	1839	1937	2031
Cloughfern Corner (Doagh Road)	1035	1135	1237	1337	1437	1541	-	1720	-	1815	1841	1938	2032
Northern Regional College (Shore Road)	-	-	-	-	-	-	1644	-	1745	-	-	-	-
Cloughfern Station Road (Station Road)	-	-	-	-	-	-	1647	-	1747	-	-	-	-
Kings Road (Doagh Road)	1036	1136	1238	1338	1438	1542	1648	1721	1749	1816	1842	1939	2033
Cherrylands (Doagh Road)	1037	1137	1240	1340	1440	1545	1651	1723	1751	1818	1844	1941	2034
Dunkeld Gardens (Ballyfore Road)	1039	1139	1242	1342	1442	1547	1653	1725	1753	1820	1846	1943	2036
Glenkyle (Fairview Road)	1041	1141	1244	1344	1444	1549	1655	1727	1755	1822	1848	1944	2038
Beverley Shops (Fairview Road)	1043	1143	1246	1346	1446	1551	1658	1729	1757	1824	1850	1946	2039
Carnvue (Carnmoney Road)	1045	1145	1248	1348	1448	1553	1700	1731	1759	1826	1852	1947	2040
Glebe Road (Prince Charles Way)	1048	1148	1251	1351	1451	1557	1703	1734	1802	1828	1854	1949	2042
Sandyknowes Park (Ballyhenry Road)	1051	1151	1254	1354	1454	1600	1706	1737	1805	-	1856	1951	-
Nelson Street Bus Lane (Nelson Street)	1100 <sup>s</sup>	1200 <sup>s</sup>	1302 <sup>s</sup>	1402 <sup>s</sup>	1502 <sup>s</sup>	1609 <sup>s</sup>	1715 <sup>s</sup>	1746 <sup>s</sup>	1814 <sup>s</sup>	-	1904 <sup>s</sup>	1959 <sup>s</sup>	-
Ulster University Belfast (York Street)	1104 <sup>s</sup>	1204 <sup>s</sup>	1306 <sup>s</sup>	1406 <sup>s</sup>	1506 <sup>s</sup>	1614 <sup>s</sup>	1719 <sup>s</sup>	1750 <sup>s</sup>	1818 <sup>s</sup>	-	1907 <sup>s</sup>	2002 <sup>s</sup>	-
CastleCourt (Royal Avenue)	1107	1207	1309	1409	1509	1617	1721	1752	1820	-	1909	2004	-
Donegall Place (Donegall Place)	1109	1208	1310	1410	1510	1619	1722	1753	1821	-	1910	2005	-

**Saturdays**

Service	14b	14	14	14	14	14	14	14	14	14
Vehicle Type	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
Donegall Place (Donegall Place)	-	0915	1015	1115	1215	1315	1415	1515	1615	1715
North Street (North Street 2)	-	0921	1021	1121	1223	1323	1423	1523	1623	1723
Ulster University Belfast (York Street)	-	0922 <sup>p</sup>	1022 <sup>p</sup>	1123 <sup>p</sup>	1225 <sup>p</sup>	1325 <sup>p</sup>	1425 <sup>p</sup>	1525 <sup>p</sup>	1625 <sup>p</sup>	1725 <sup>p</sup>
Loughshore Manor (Shore Road)	-	0930	1030	1131	1233	1333	1433	1533	1633	1733
Green End Doagh Road (Doagh Road)	-	0931	1032	1133	1236	1336	1436	1536	1635	1735
Cloughfern Corner (Doagh Road)	-	0932	1034	1135	1238	1338	1438	1538	1637	1737
Kings Road (Doagh Road)	-	0934	1035	1136	1239	1339	1439	1539	1638	1738
Glenville (Monkstown Avenue)	0820	-	-	-	-	-	-	-	-	-
Cherrylands (Doagh Road)	0822	0936	1037	1138	1241	1341	1441	1541	1640	1740
Dunkeld Gardens (Ballyfore Road)	0824	0938	1039	1140	1243	1343	1443	1543	1642	1742
Glenkyle (Fairview Road)	0826	0941	1041	1142	1246	1346	1446	1546	1644	1744
Beverley Shops (Fairview Road)	0828	0943	1043	1144	1248	1348	1448	1548	1646	1746
Carnvue (Carnmoney Road)	0830	0945	1045	1146	1250	1350	1450	1550	1648	1748
Glebe Road (Prince Charles Way)	0833	0947	1049	1150	1254	1354	1454	1554	1651	1751
Sandyknowes Park (Ballyhenry Road)	0836	0950	1053	1154	1258	1358	1458	1558	1654	1754
Nelson Street Bus Lane (Nelson Street)	0844 <sup>s</sup>	0958 <sup>s</sup>	1102 <sup>s</sup>	1203 <sup>s</sup>	1307 <sup>s</sup>	1407 <sup>s</sup>	1507 <sup>s</sup>	1607 <sup>s</sup>	1702 <sup>s</sup>	1802 <sup>s</sup>
Ulster University Belfast (York Street)	0847 <sup>s</sup>	1002 <sup>s</sup>	1105 <sup>s</sup>	1206 <sup>s</sup>	1310 <sup>s</sup>	1410 <sup>s</sup>	1510 <sup>s</sup>	1610 <sup>s</sup>	1705 <sup>s</sup>	1805 <sup>s</sup>
CastleCourt (Royal Avenue)	0849	1004	1108	1209	1313	1413	1513	1613	1708	1807
Donegall Place (Donegall Place)	0850	1005	1110	1211	1315	1415	1515	1615	1710	1809

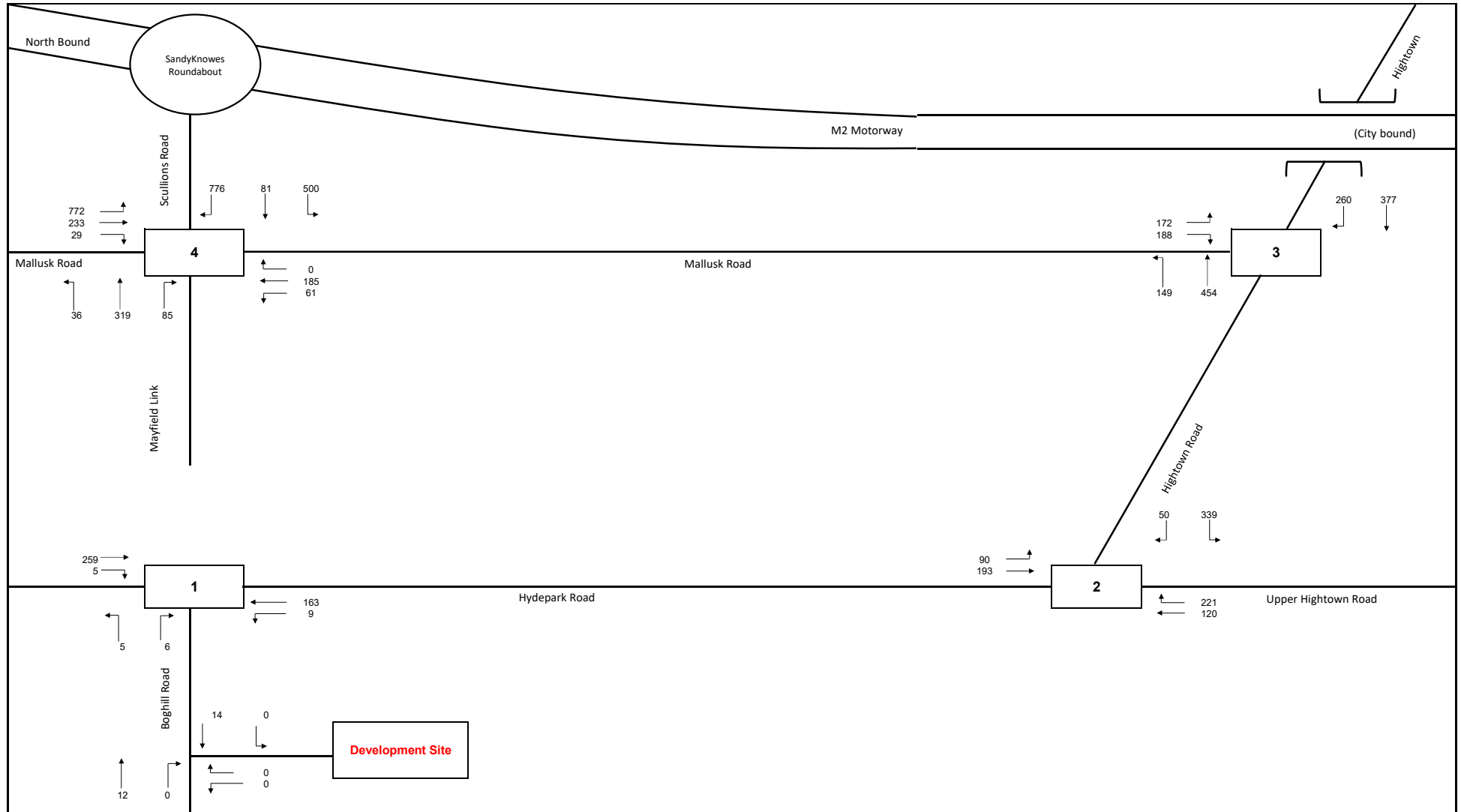
**Sundays**

no service

Service Restrictions: 1 - from 28 Oct 2024 to 1 Nov 2024 2 - does not operate 28 Oct 2024 to 1 Nov

Notes: p - picks up only s - sets down only LF - Operated by Low Floor vehicles

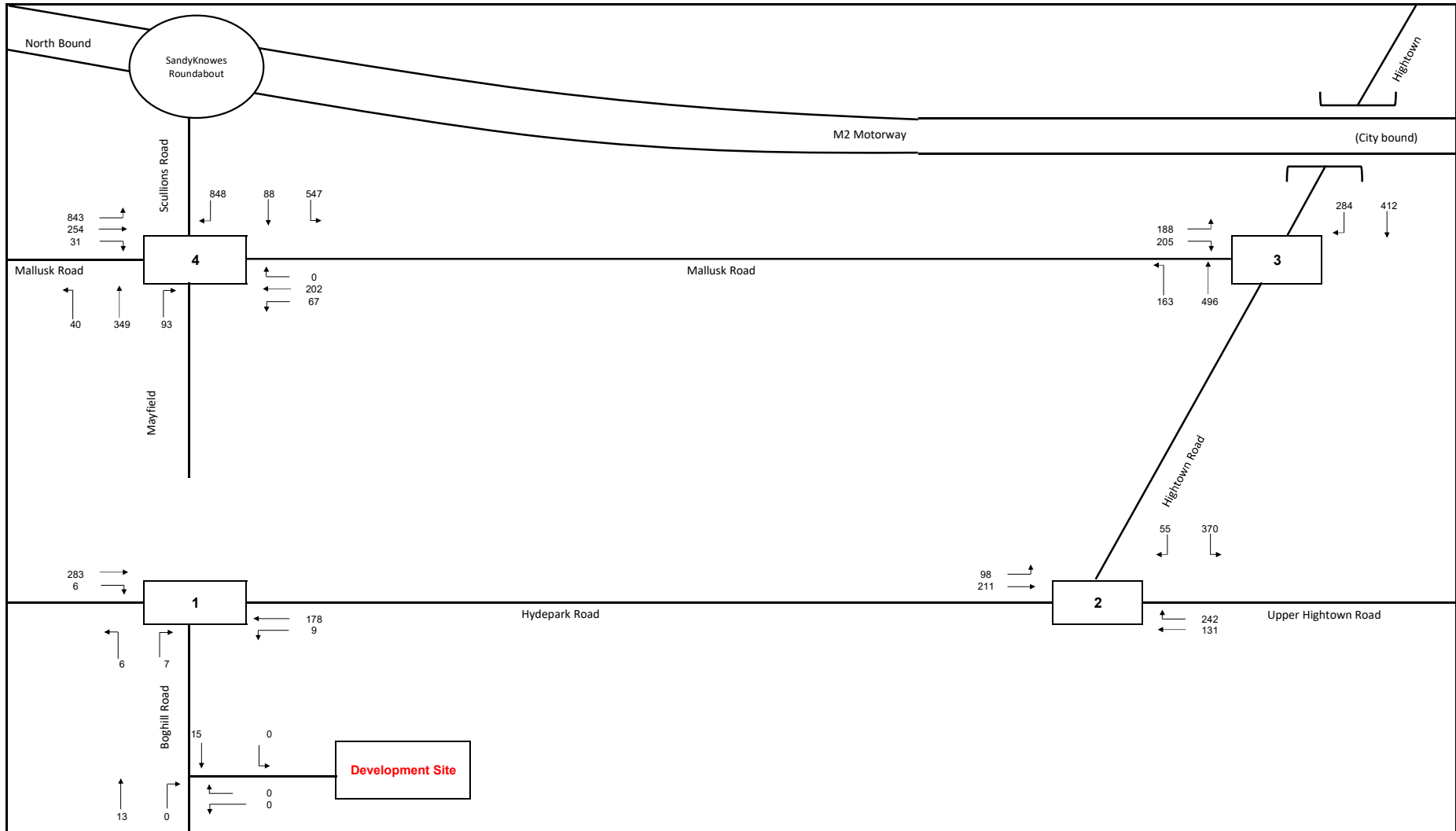
# Appendix C



**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 2030 Base  
 AM Peak (07:45-08:45)

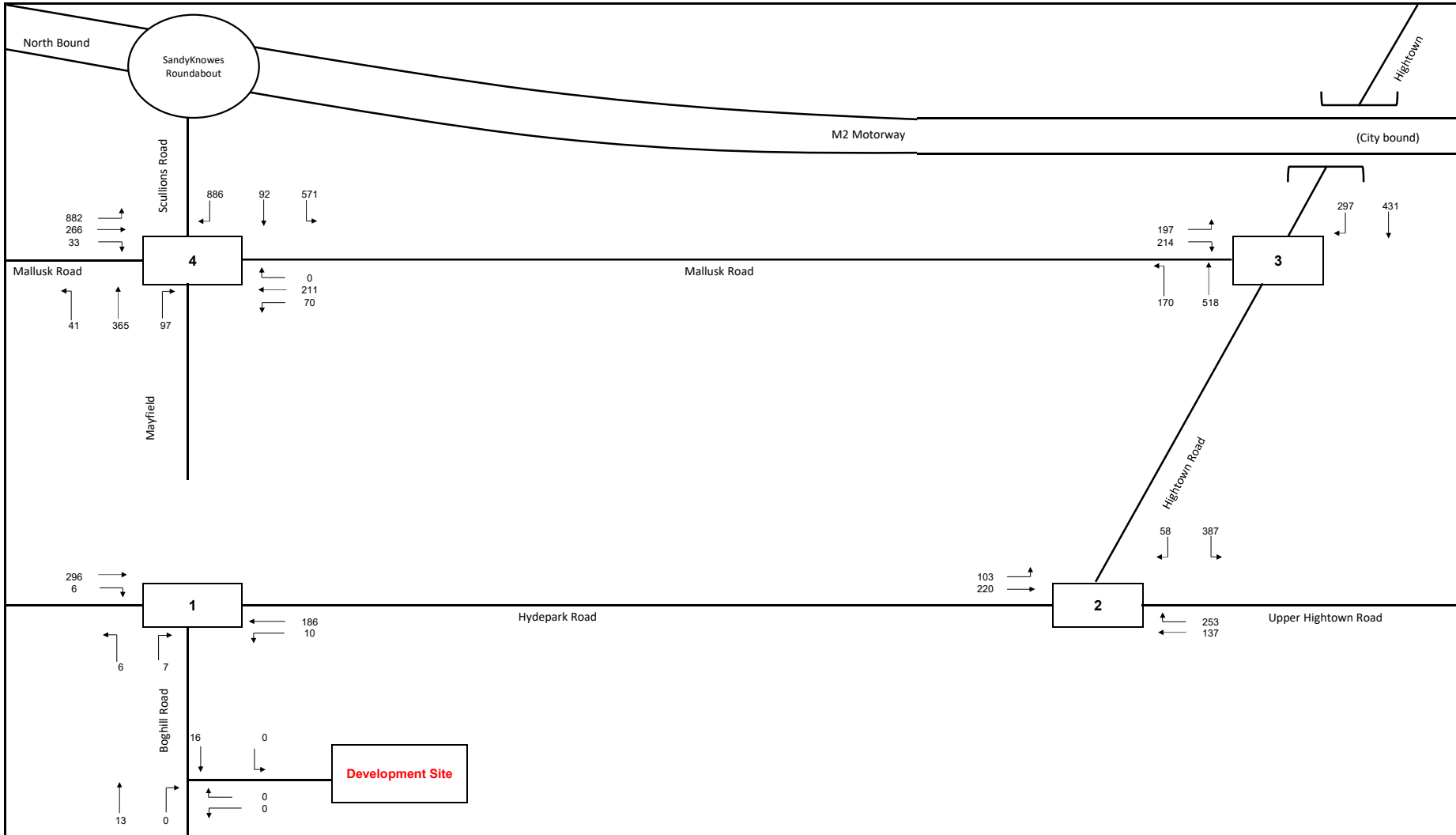
Growth Factor: 1.065





**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 2045 Base  
 AM Peak (07:45 - 08:45)  
 Growth Factor: 1.163





**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**

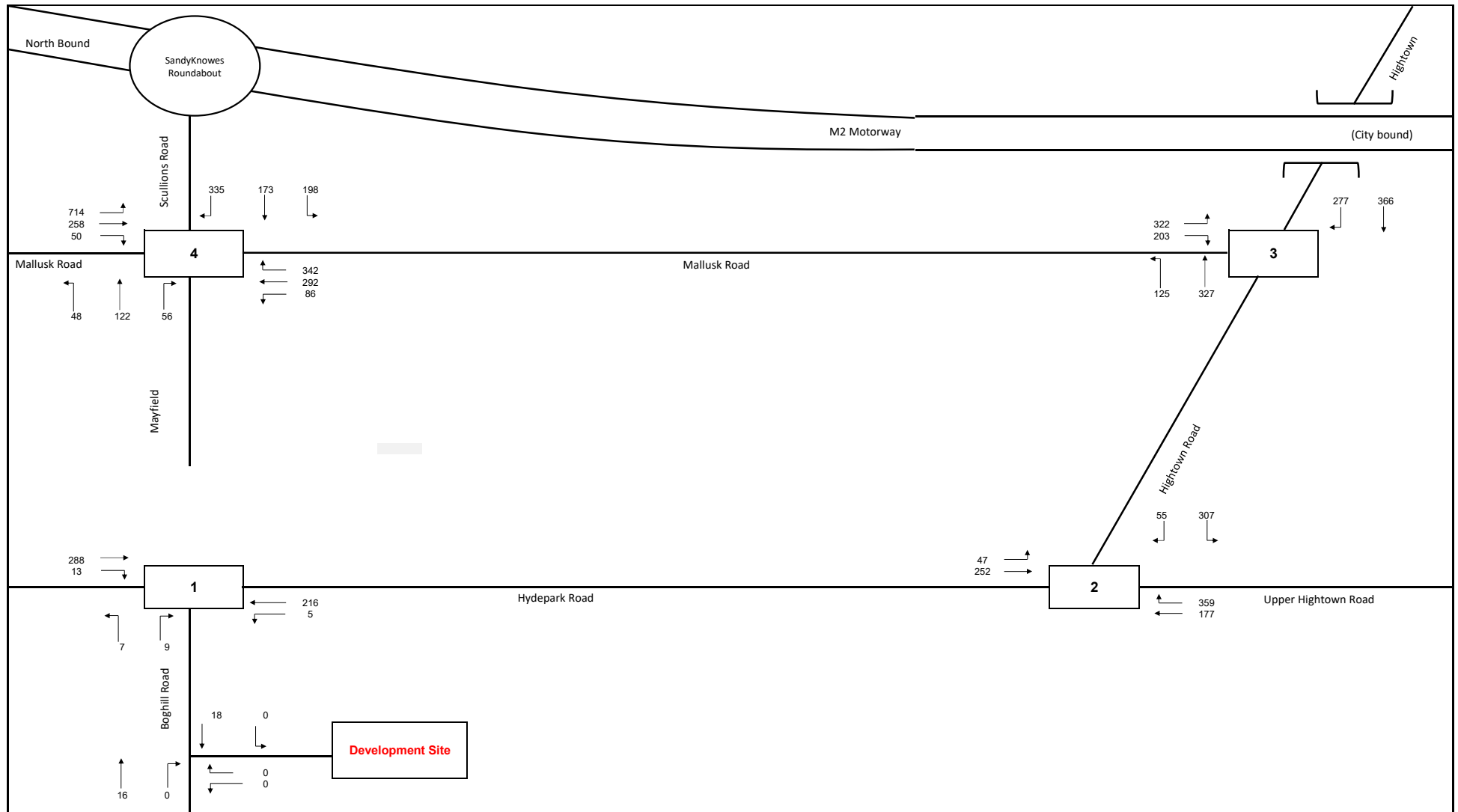
Traffic Flow Diagram (PCUs)

2045 Base

AM Peak (07:45 - 08:45)

Growth Factor: 1.216

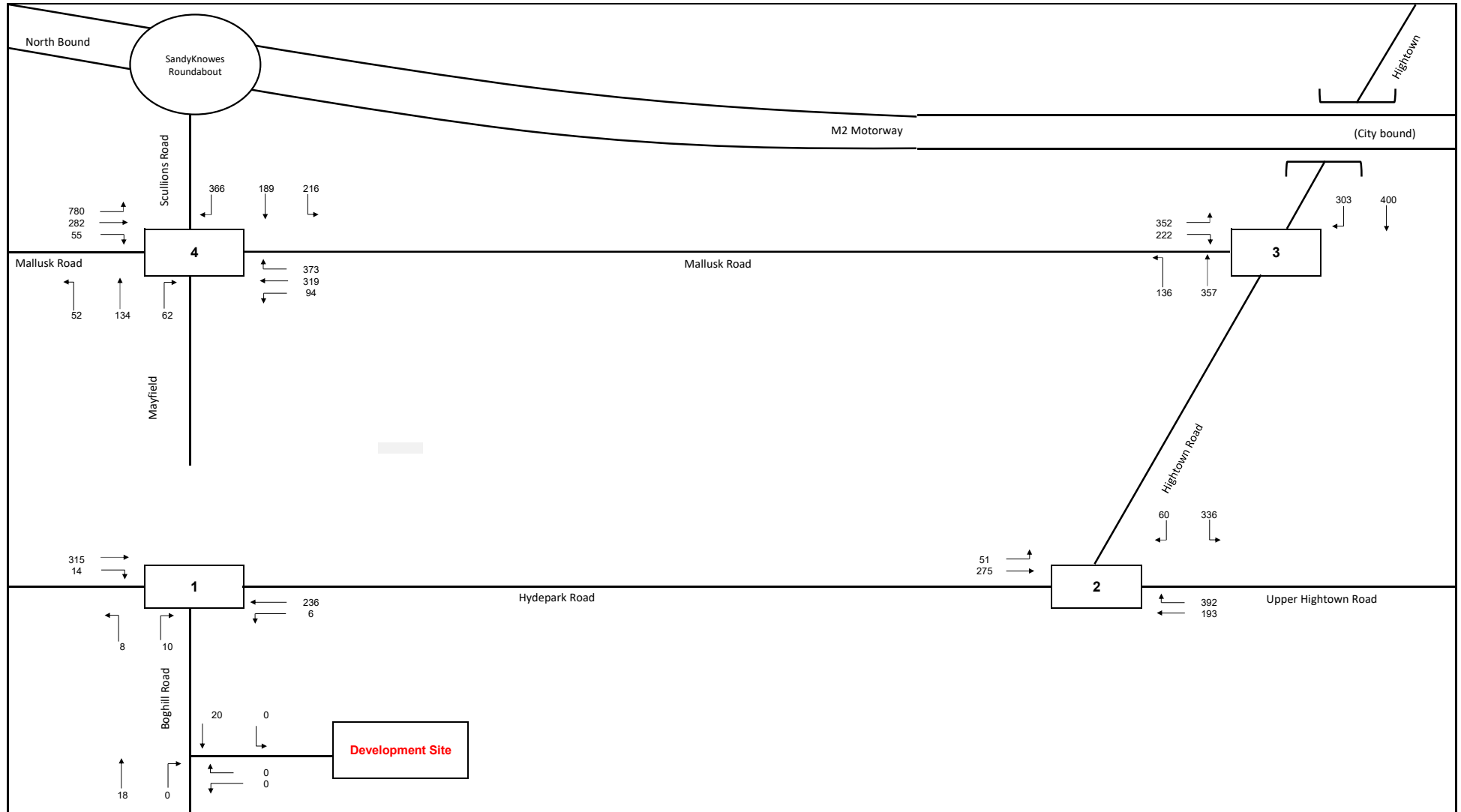




**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 2030 Base  
 PM Peak (16:30-17:30)

Growth Factor: 1.065

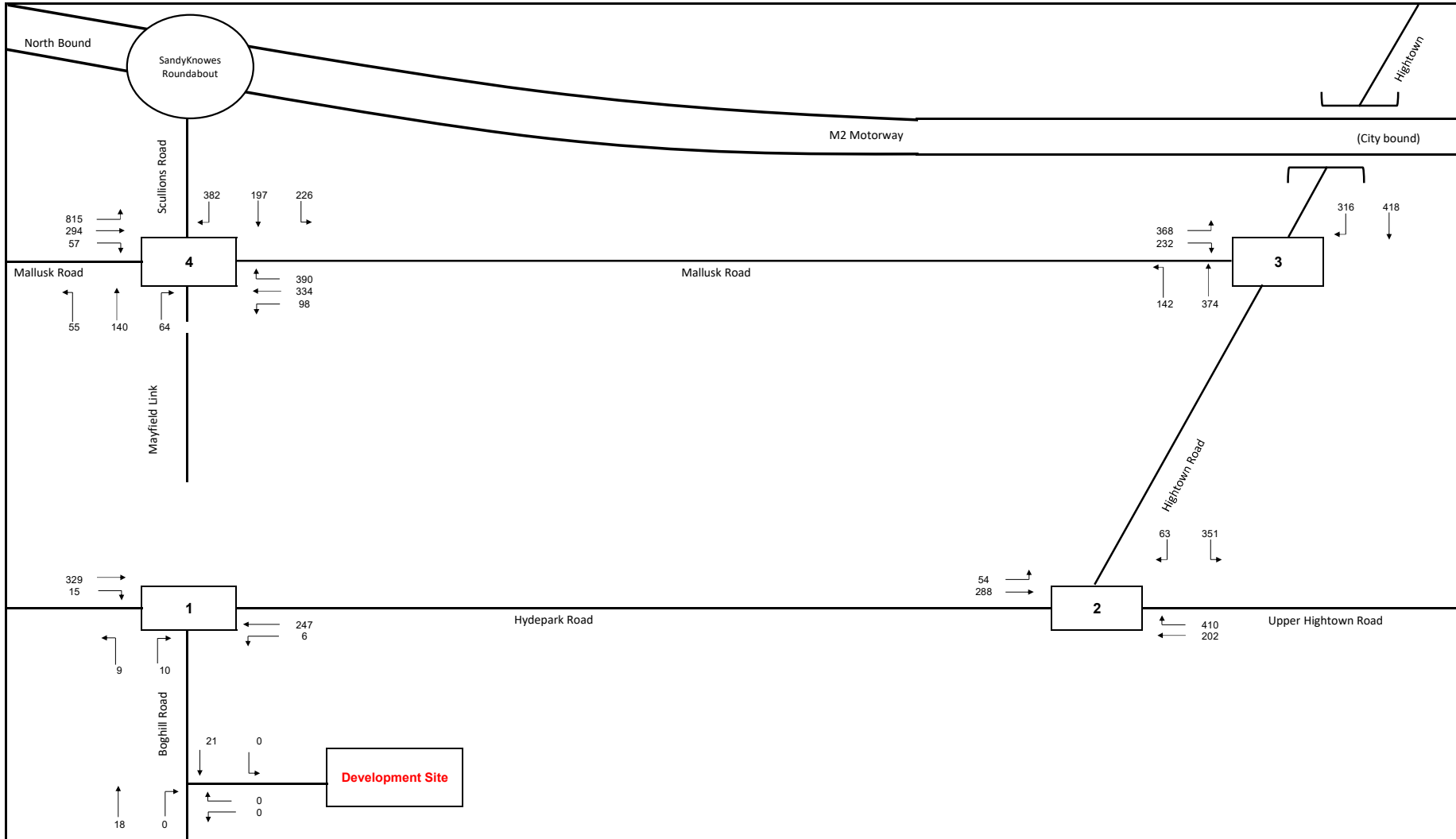




**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 2040 Base  
 PM Peak (16:30-17:30)

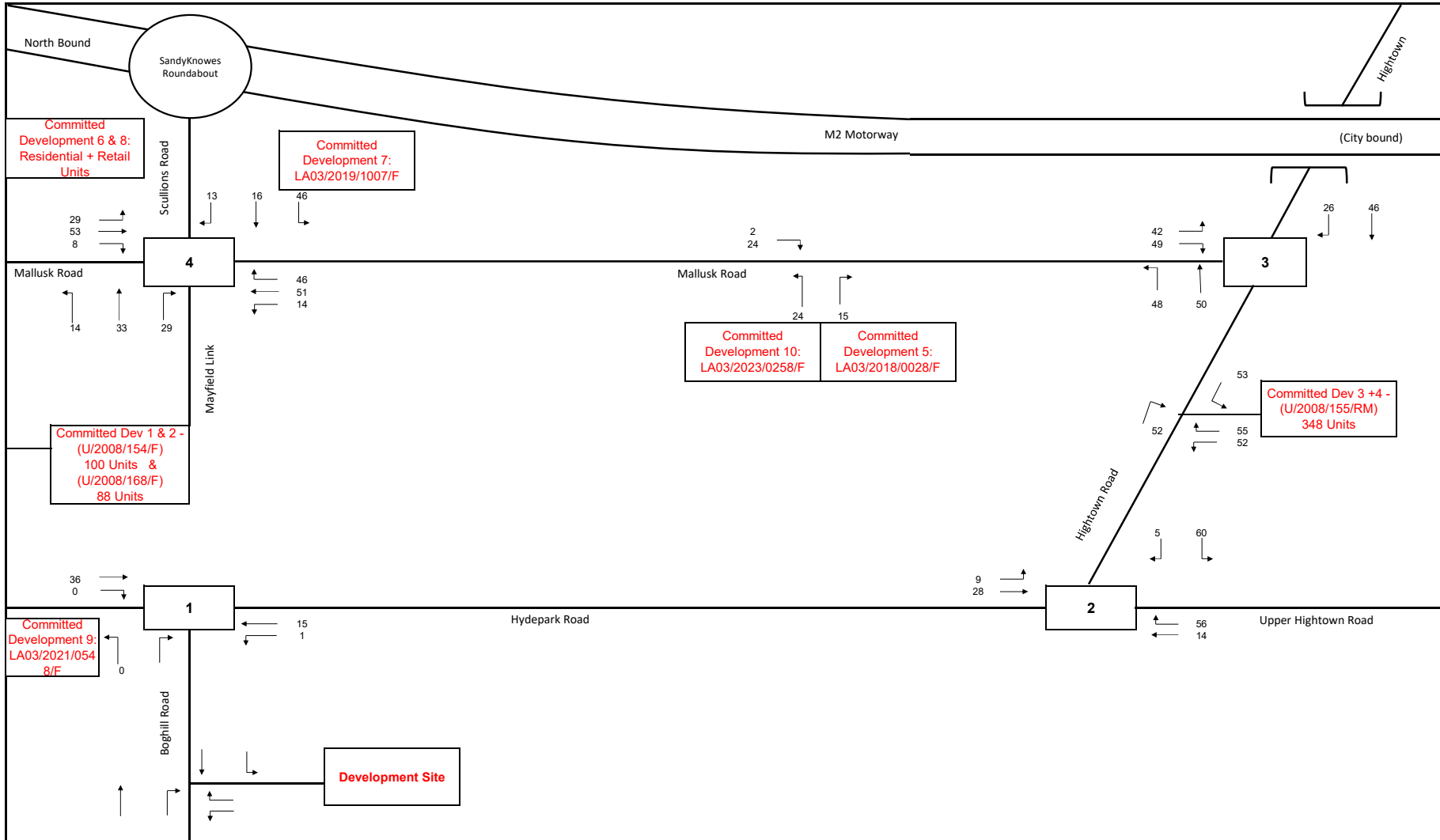
Growth Factor:





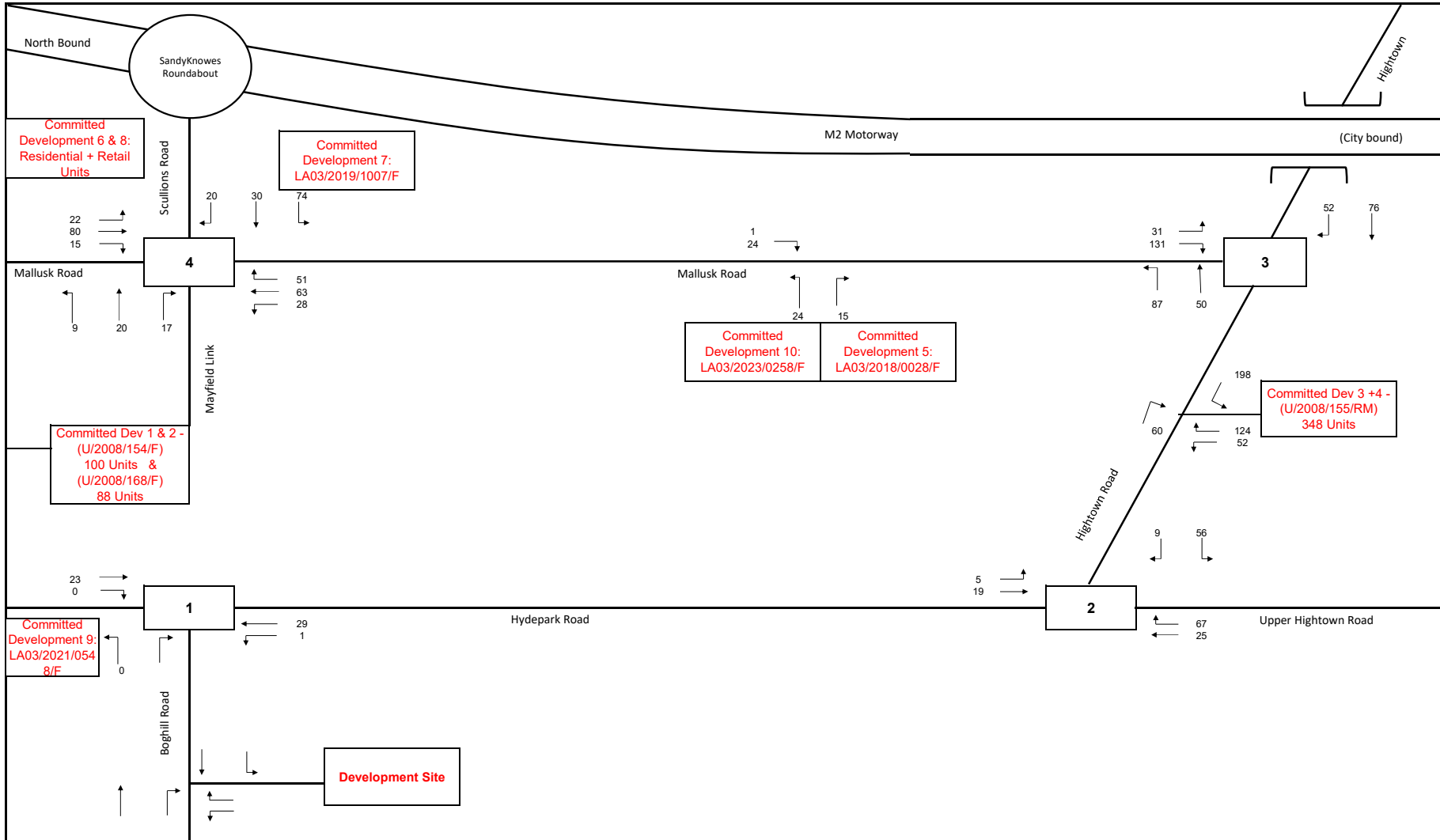
**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 2045 Base  
 PM Peak (16:30-17:30)  
 Growth Factor: 1.216





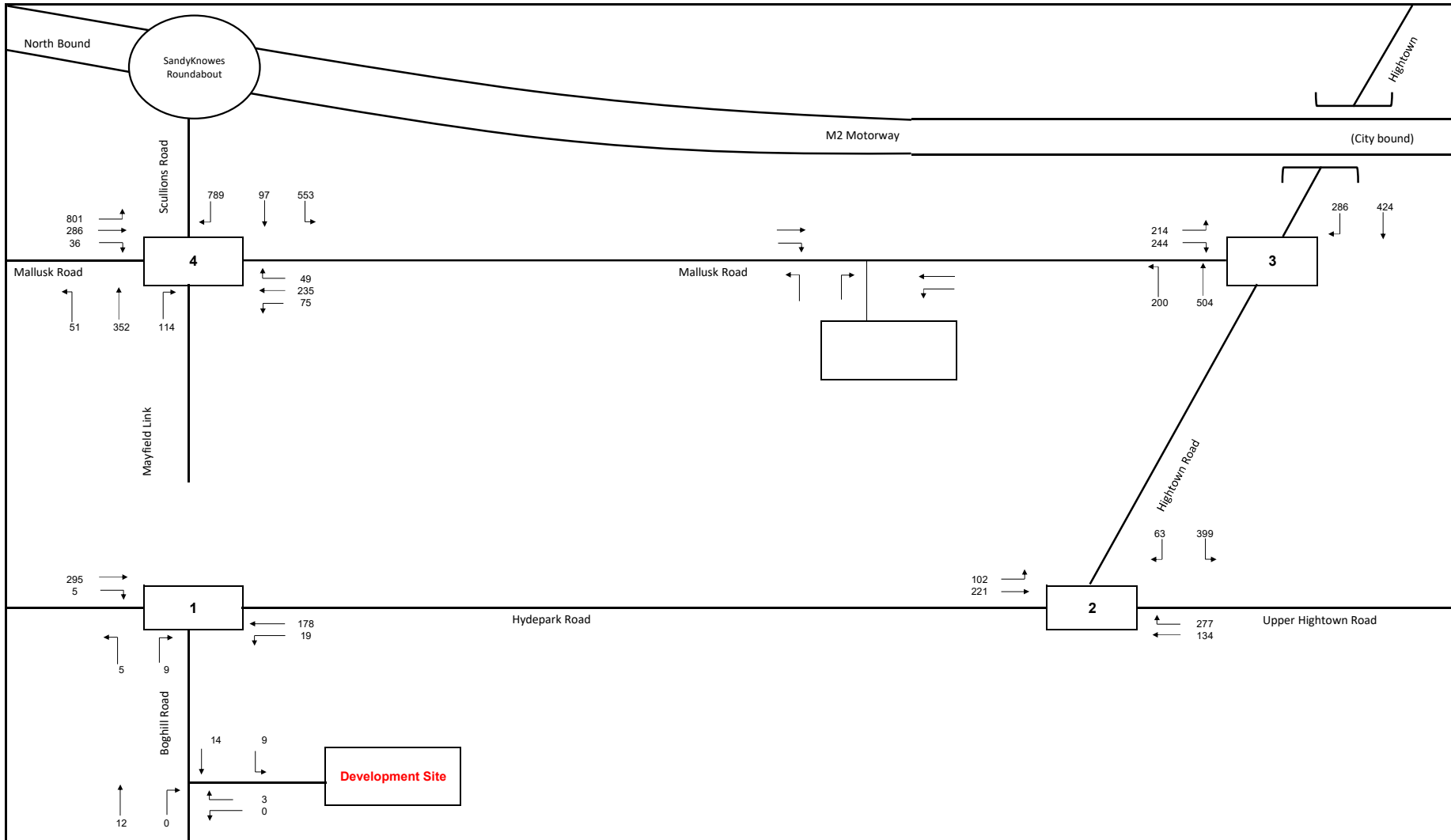
**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 Total Committed Development 1-10  
 AM Peak





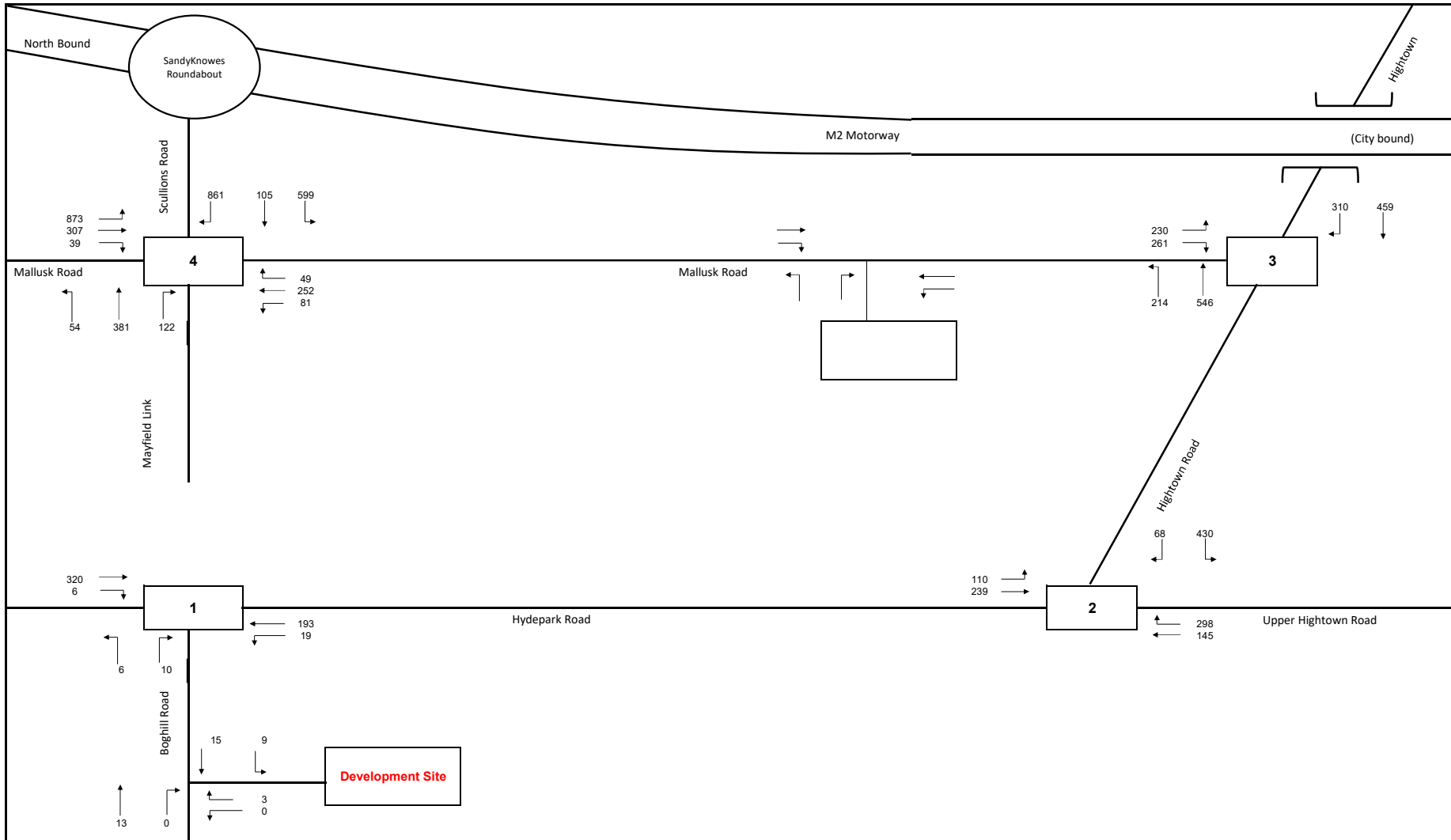
**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 Total Committed Development 1-10  
 PM Peak





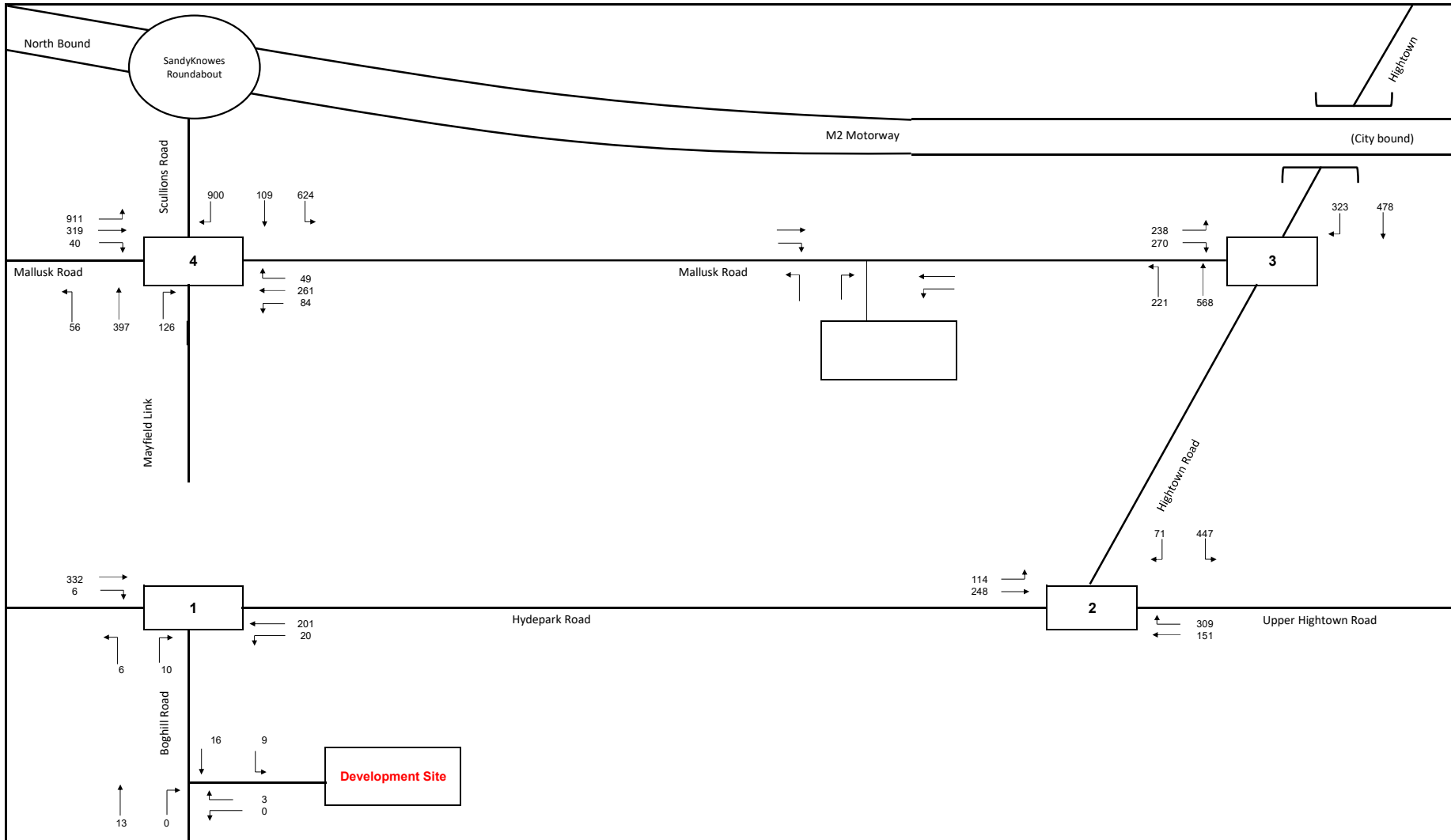
**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 2030 Base + Committed (Quarry + Residential Development)  
 AM Peak (07:45 - 08:45)





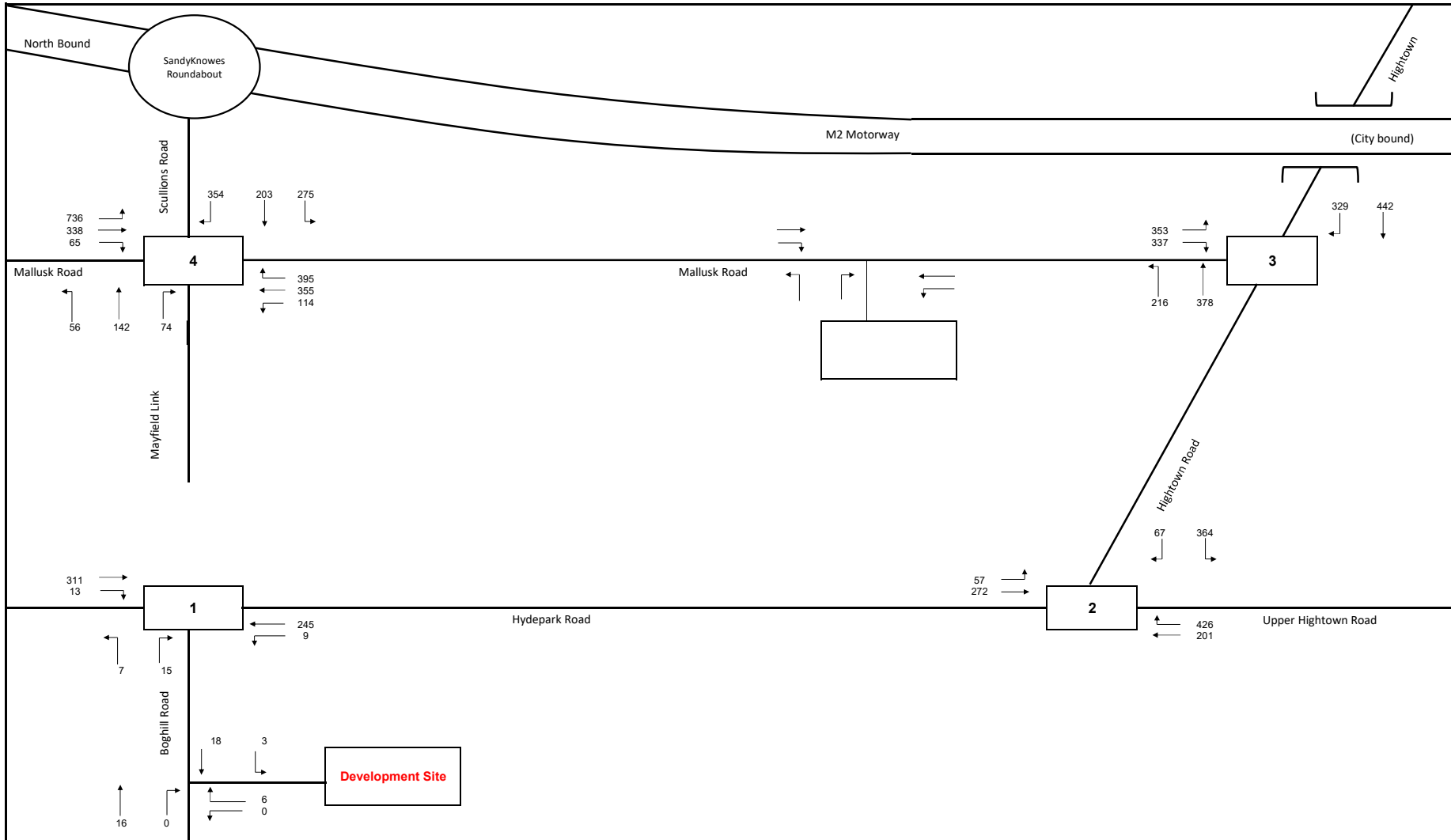
**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 2040 Base + Committed (Quarry + Residential Development)  
 AM Peak (07:45 - 08:45)





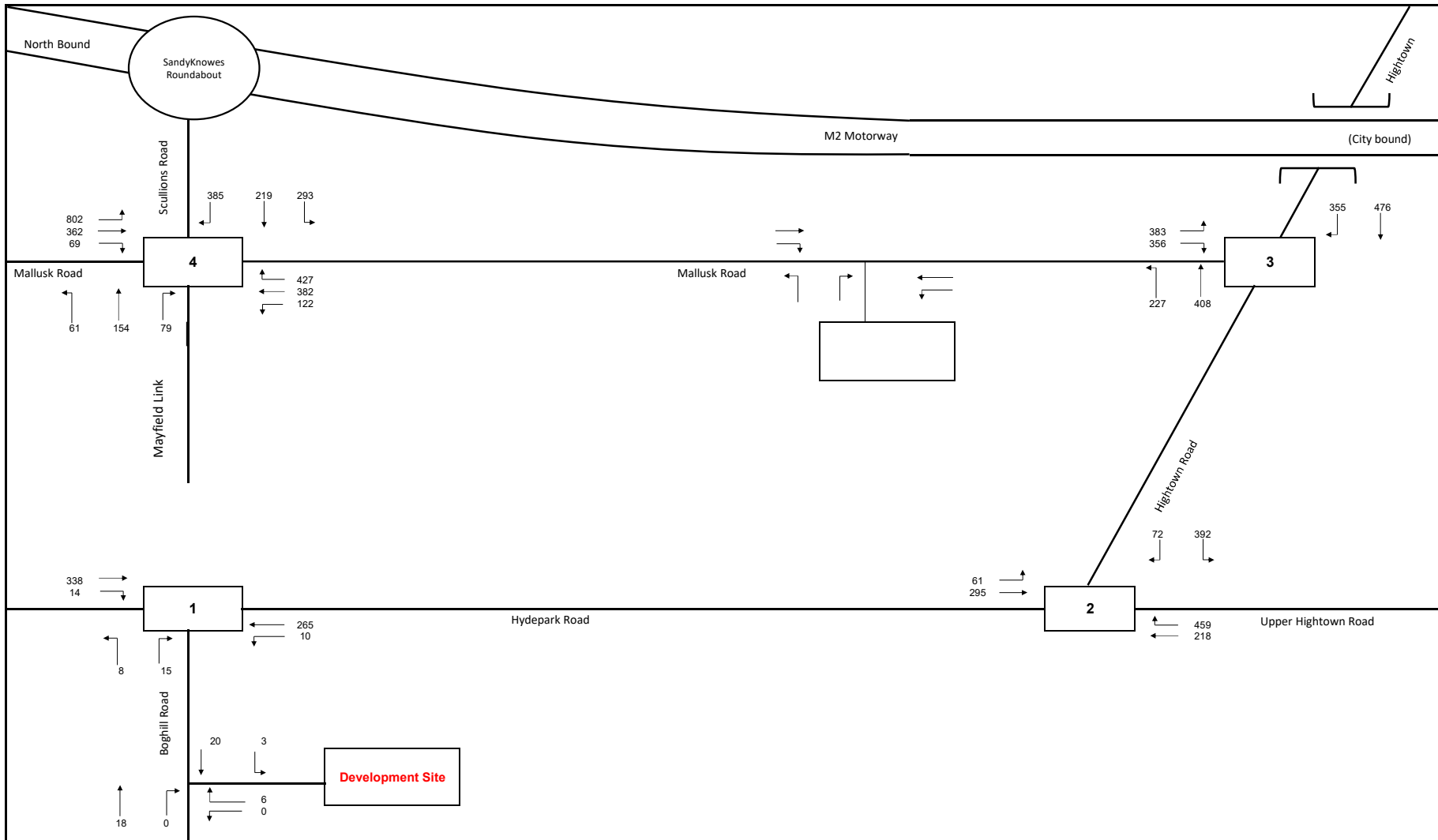
**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 2045 Base + Committed (Quarry + Residential Development)  
 AM Peak (07:45 - 08:45)





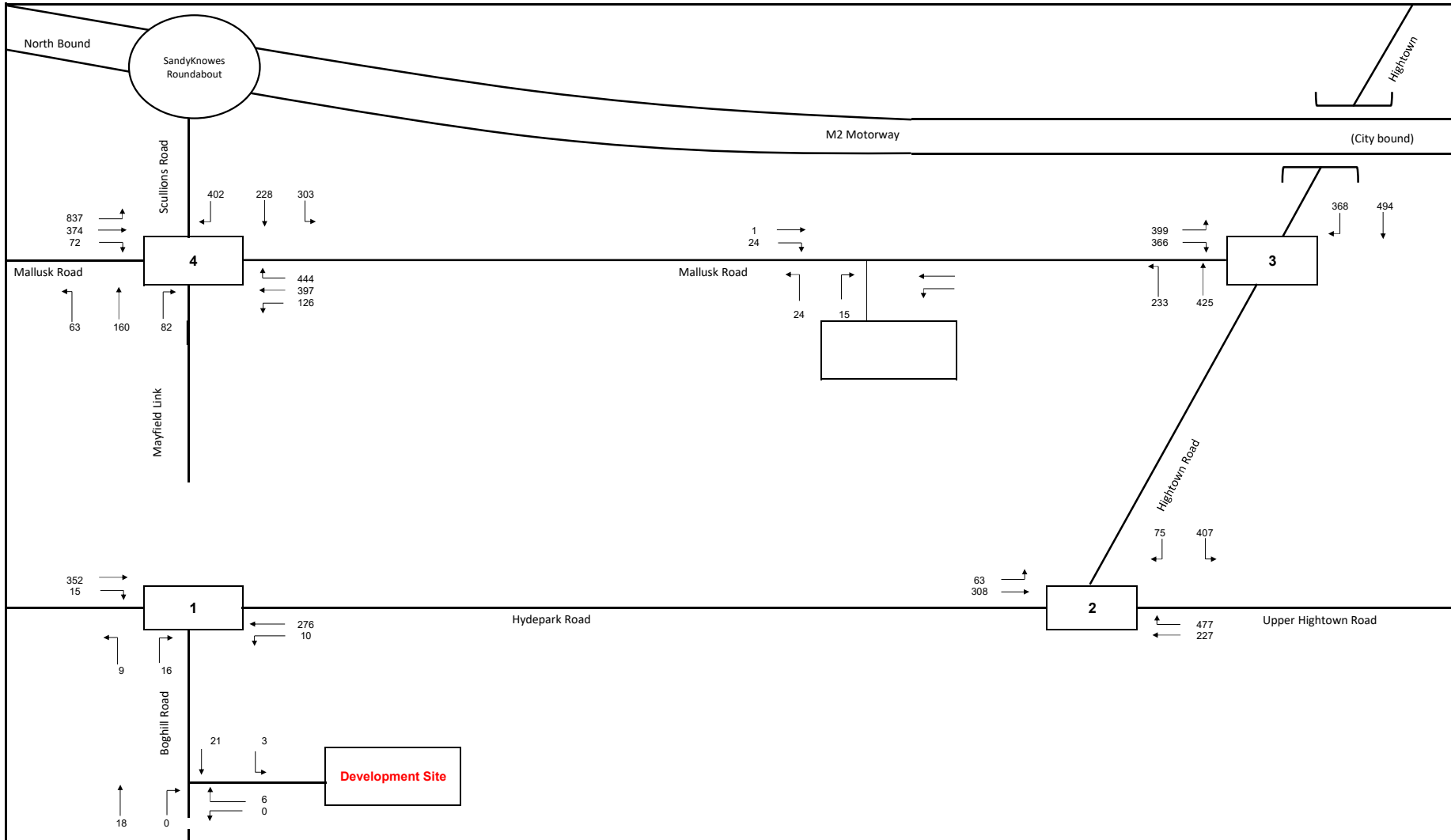
**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 2030 Base + Committed (Quarry + Residential Development)  
 PM Peak (16:30-17:30)





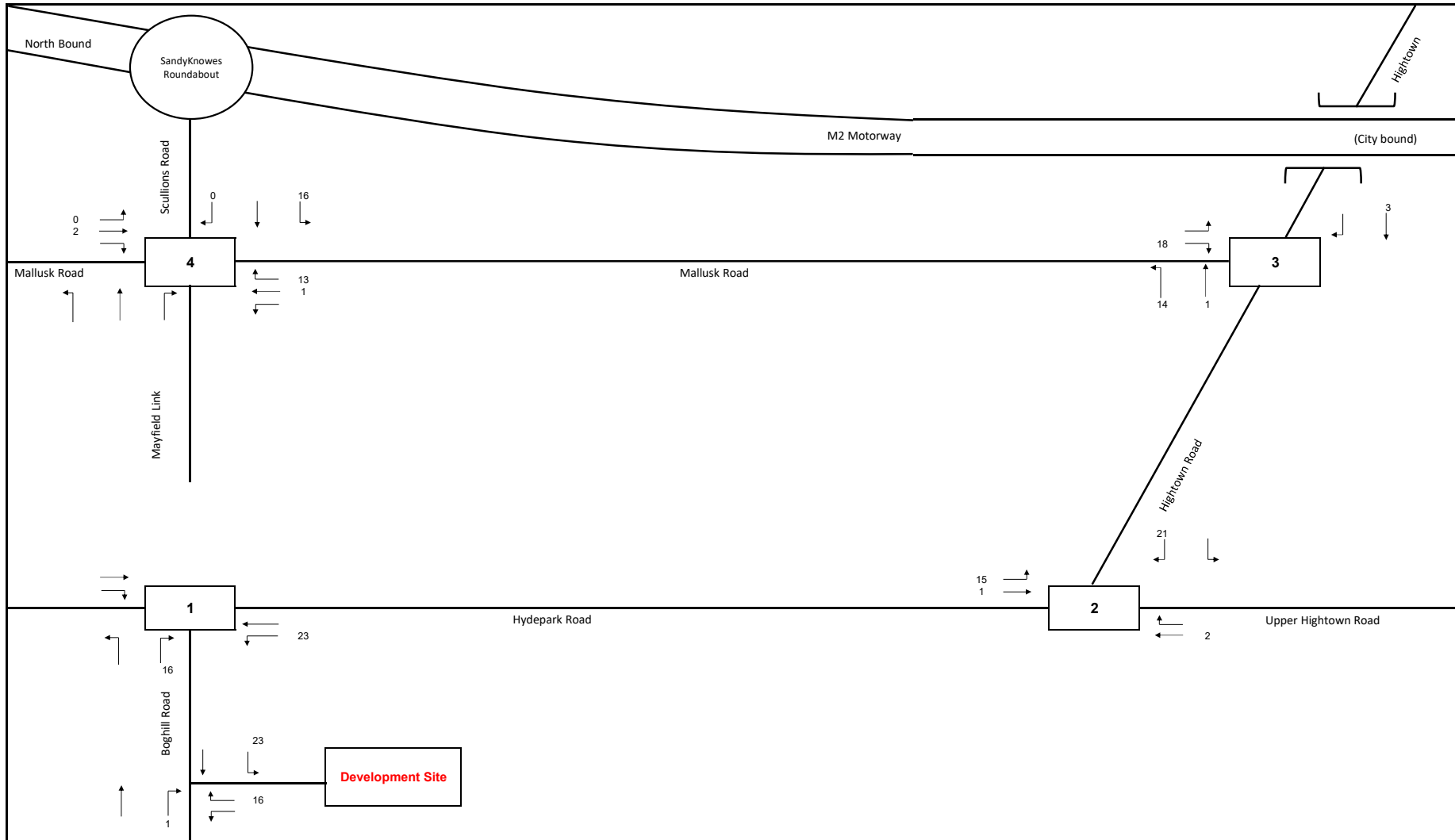
**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 2040 Base + Committed (Quarry + Residential Development)  
 PM Peak (16:30-17:30)





**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 2045 Base + Committed (Quarry + Residential Development)  
 PM Peak (16:30-17:30)





**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**

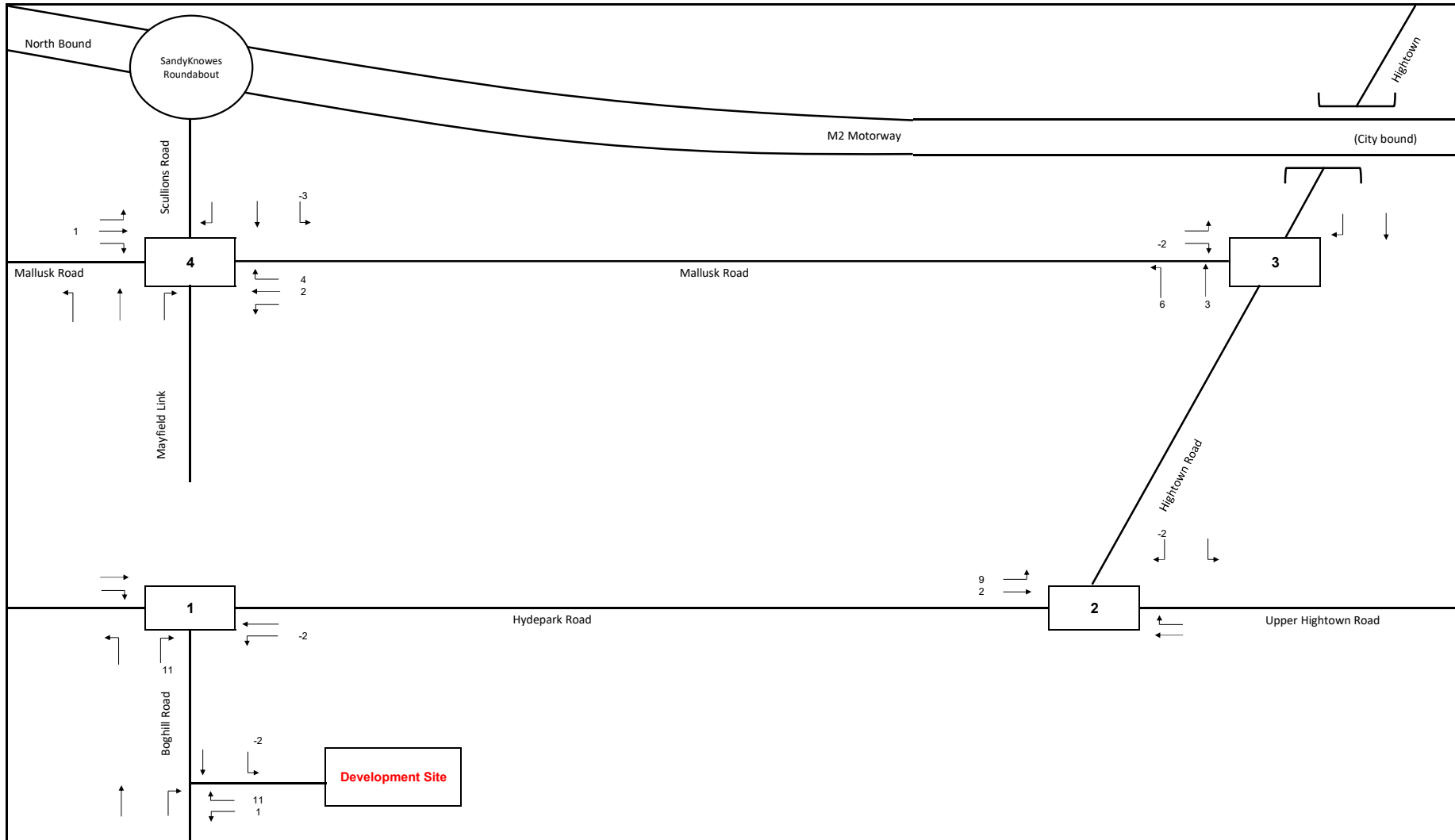
Traffic Flow Diagram (PCUs)

Assignment : Total Nett 'New' Development Traffic (Proposed Development Traffic minus Previous Use Quarry Traffic) - All traffic

Year of Opening 2021

AM Peak





**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**

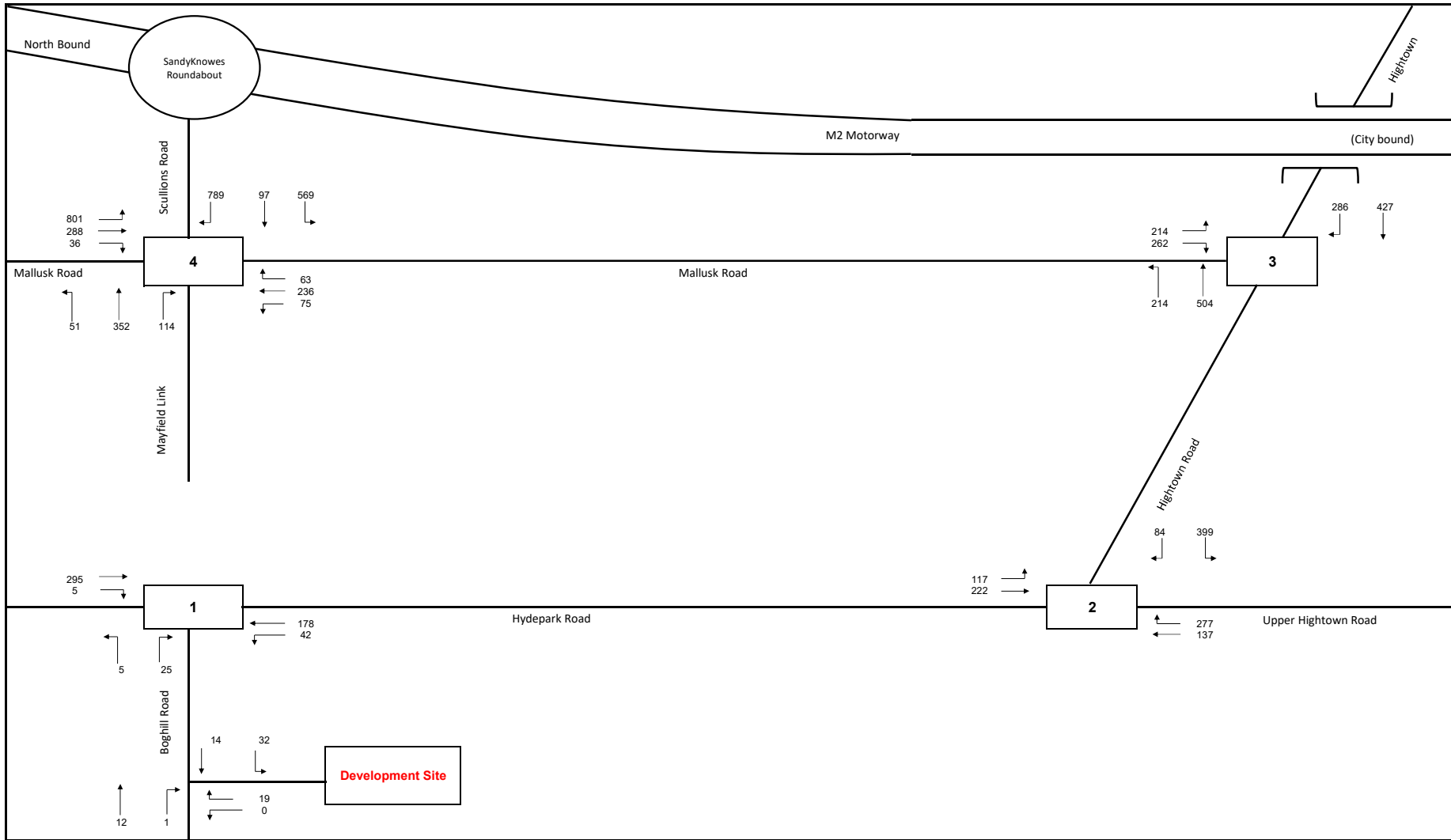
Traffic Flow Diagram (PCUs)

Assignment : Total Nett 'New' Development Traffic (Proposed Development Traffic minus Previous Use Quarry Traffic) - All traffic

Year of Opening 2021

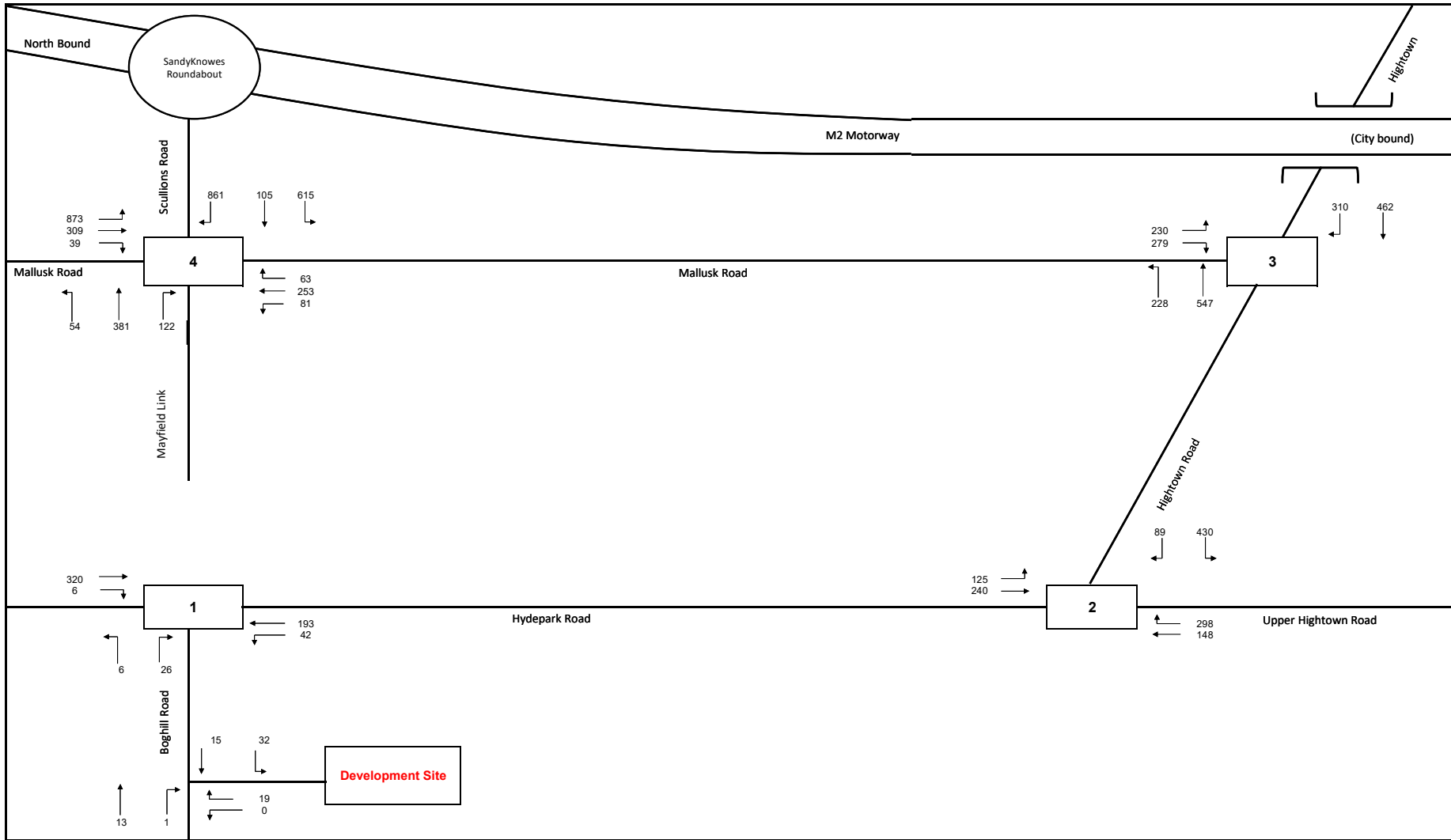
PM Peak





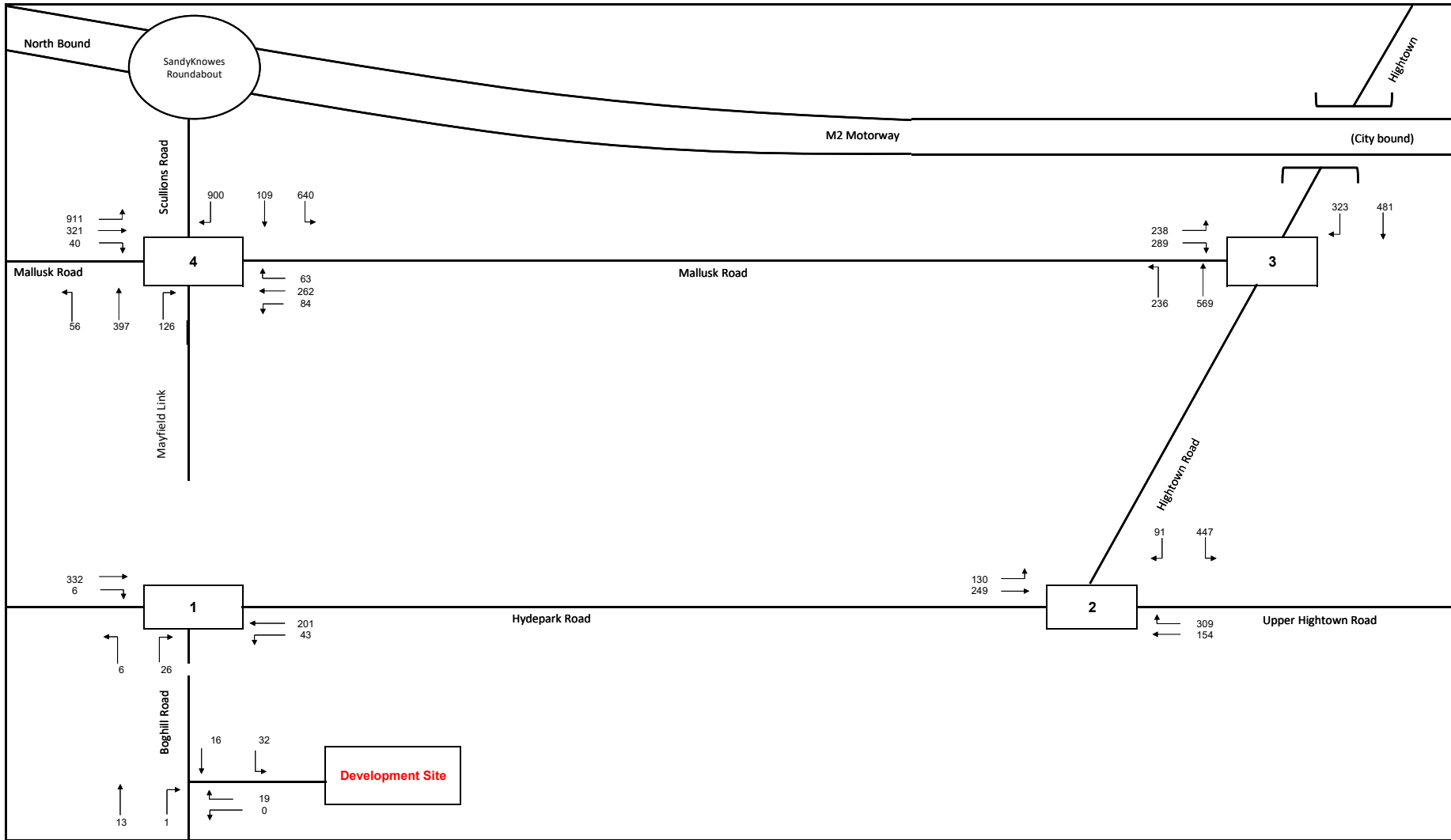
**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 2030 Base + Committed + Development  
 AM Peak (07:45 - 08:45)





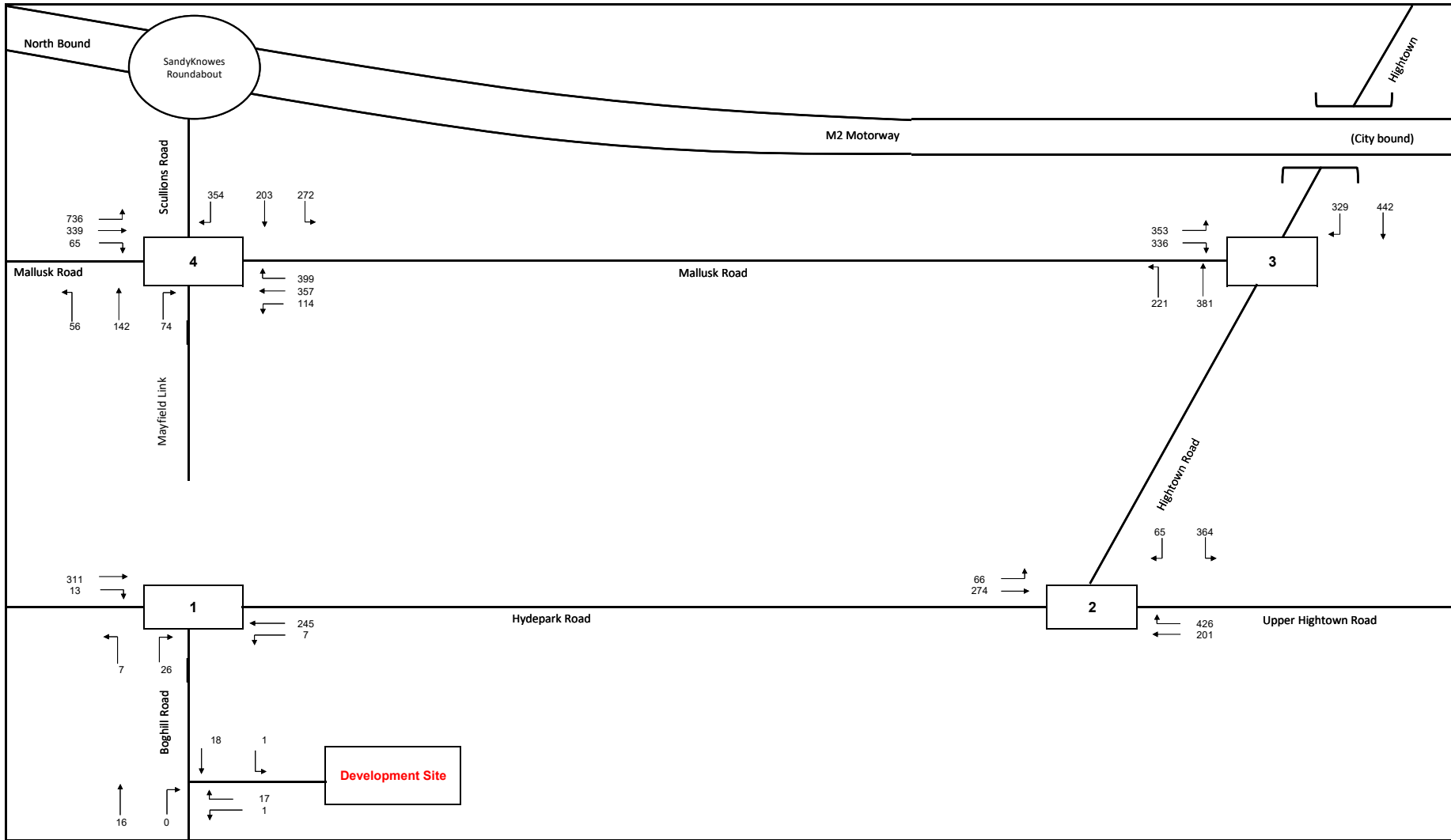
**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 2040 Base + Committed + Development  
 AM Peak (07:45 - 08:45)





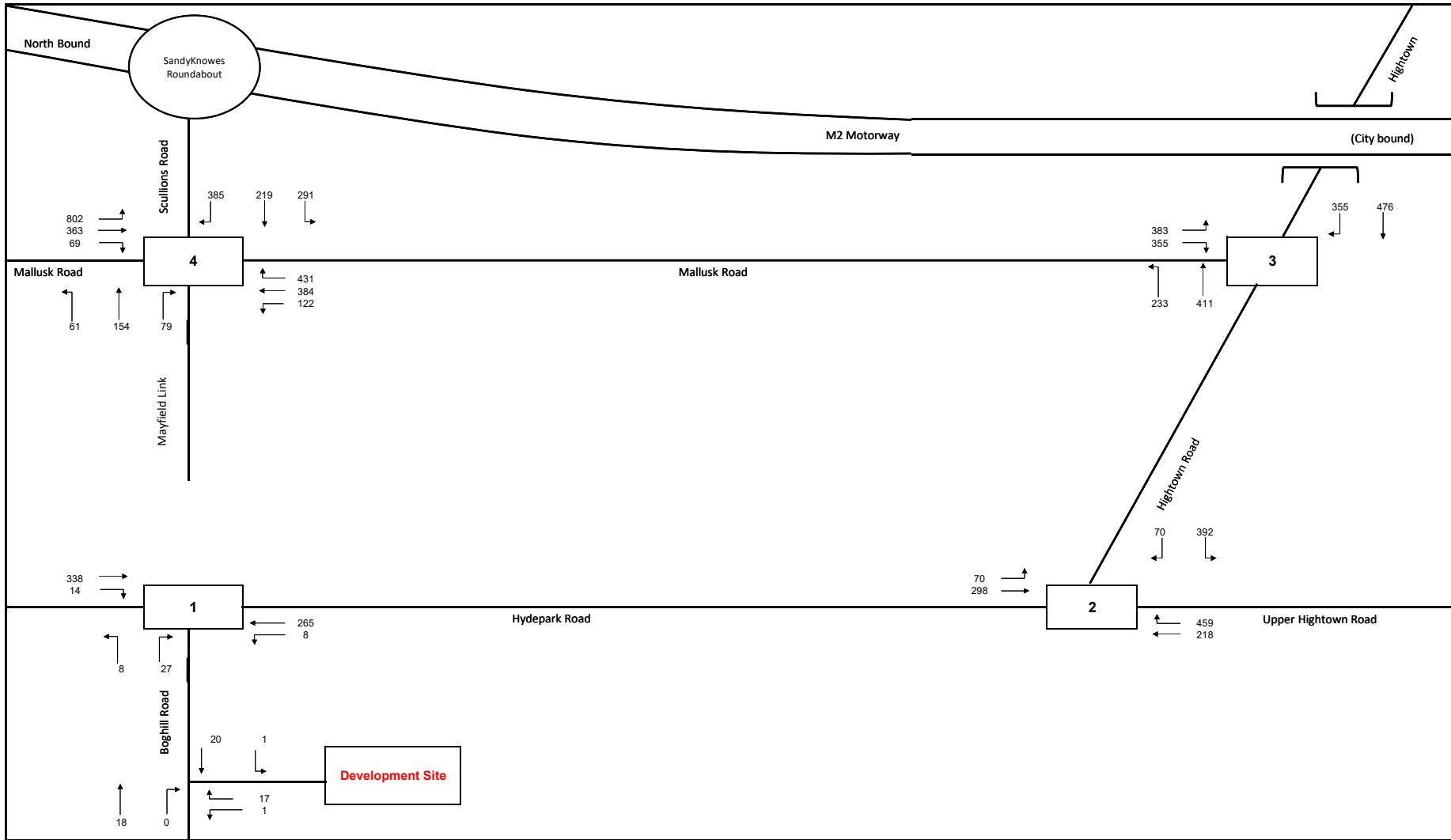
**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 2045 Base + Committed + Development  
 AM Peak (07:45 - 08:45)





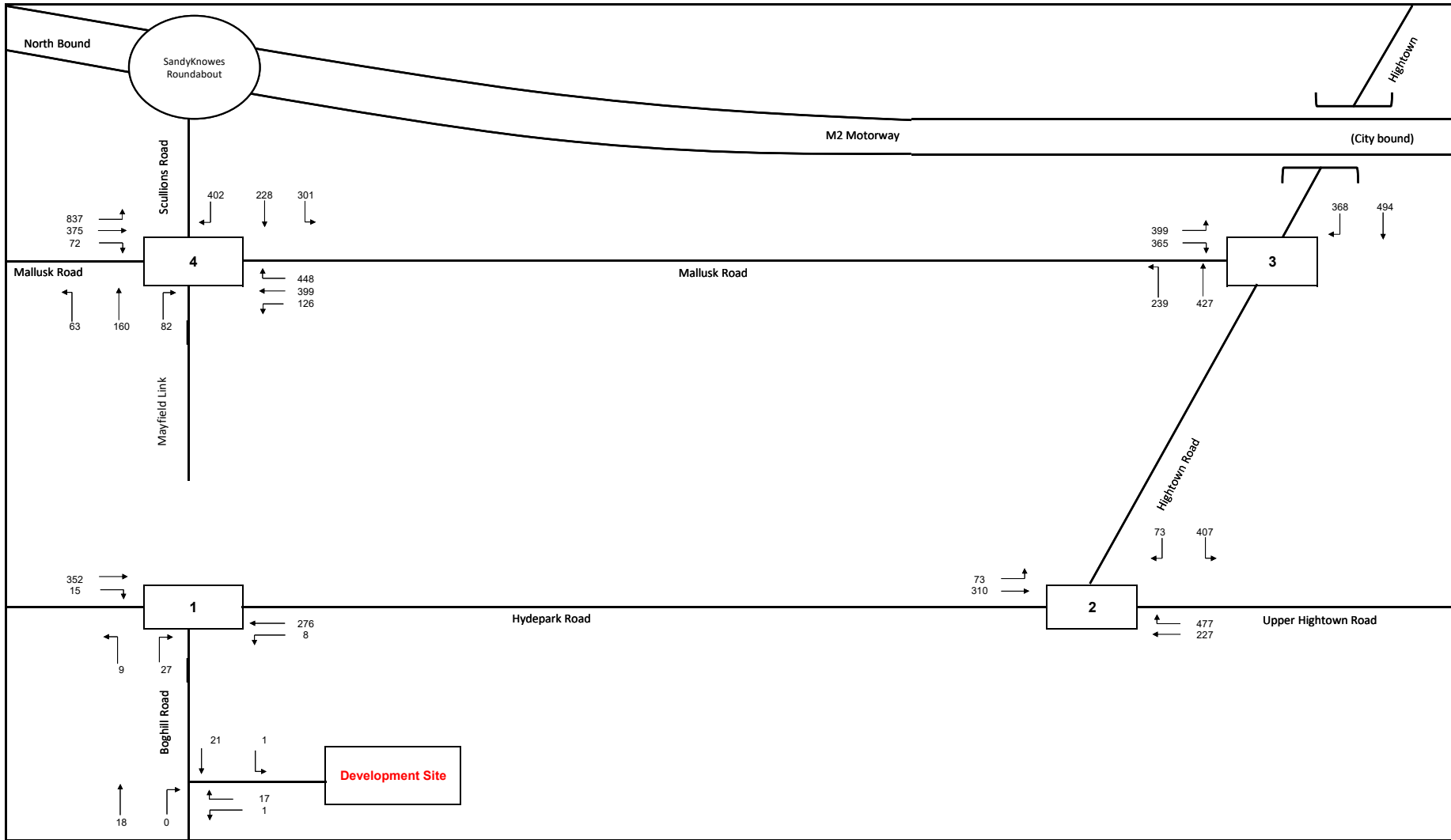
**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 2030 Base + Committed + Development  
 PM Peak





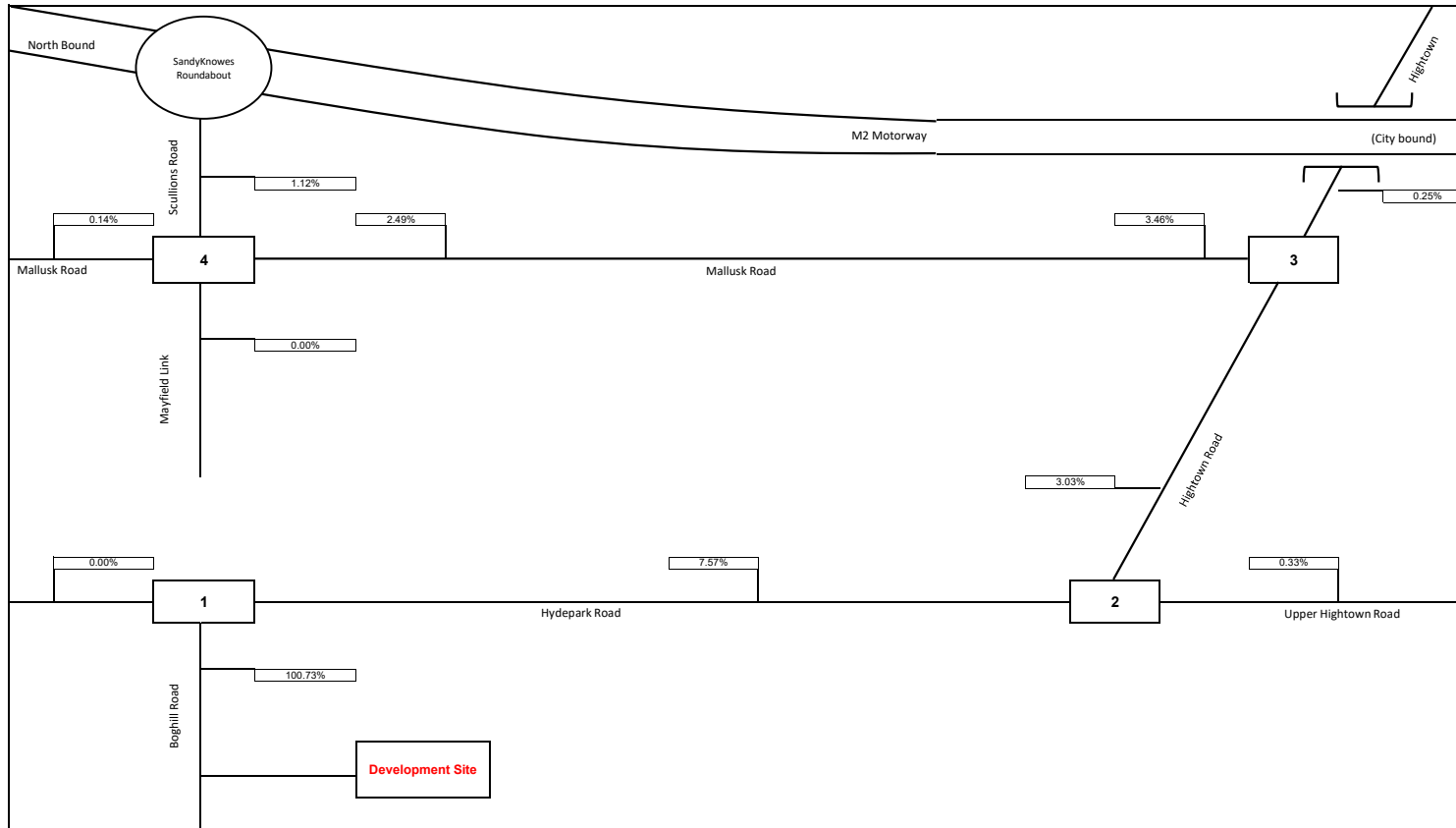
**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 2040 Base + Committed + Development  
 PM Peak





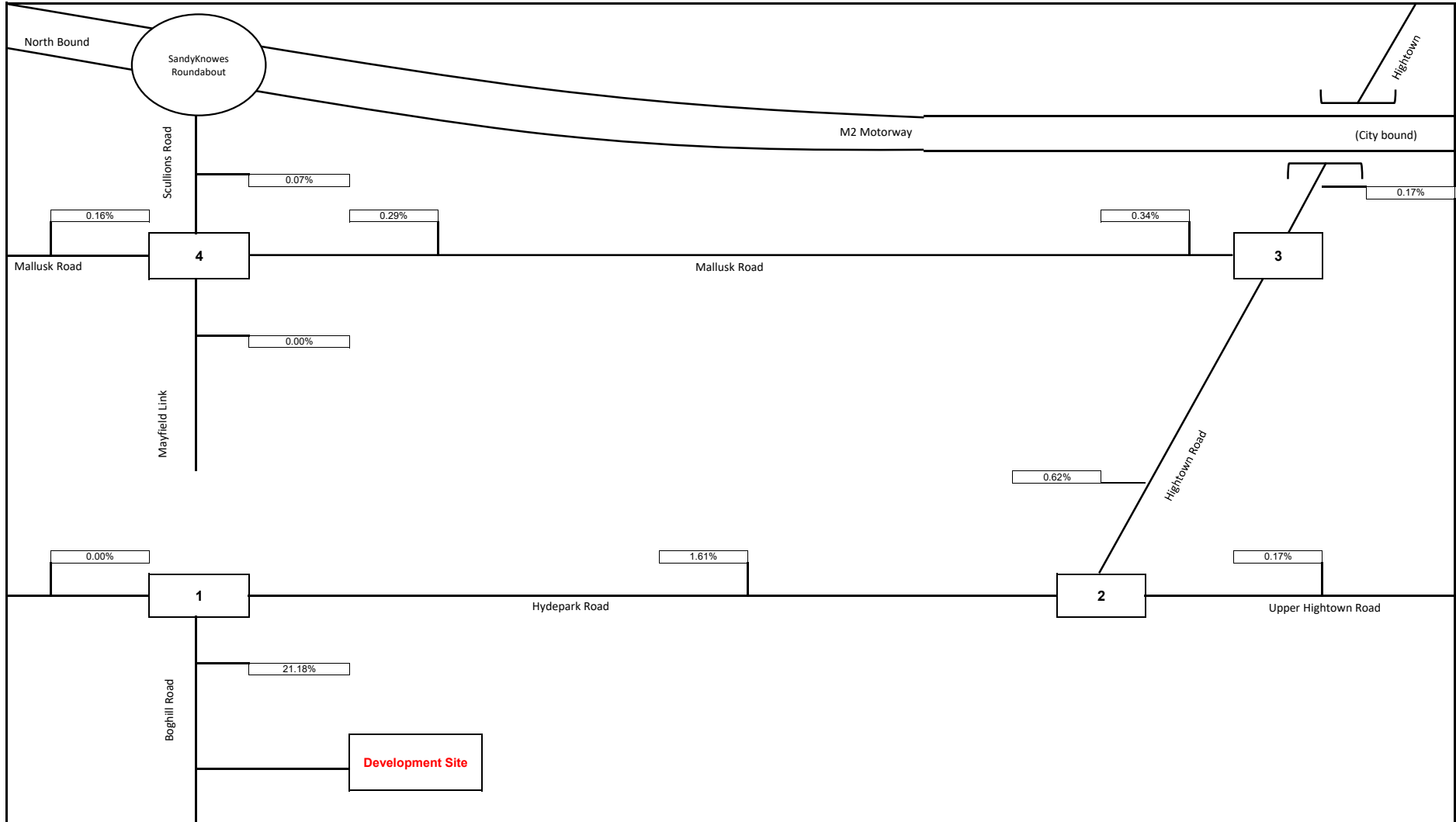
**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 2045 Base + Committed + Development  
 PM Peak





**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 Impact Assessment (%) by 2-Way Movement  
 AM Peak  
 2023





**ARC21 - Waste Treatment Facility, Hightown Quarry, Newtownabbey**  
 Traffic Flow Diagram (PCUs)  
 Impact Assessment (%) by 2-Way Movement  
 PM Peak  
 2023



# Appendix D

Junctions 10
PICADY 10 - Priority Intersection Module
Version: 10.1.1.1905 © Copyright TRL Software Limited, 2023
For sales and distribution information, program advice and maintenance, contact TRL Software: +44 (0)1344 379777 software@trl.co.uk trlsoftware.com
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**Filename:** J1 - Hydepark Rd\_Boghill Rd - Proposed\_v9\_Feb25.j10  
**Path:** P:\GBBTB\TP\HA\Projects\5095039-ARC21 TA\61 Transport Assessment\020 Calcs & Design Data\2.3 Modelling\2.3.4 PICADY\Feb 2025  
**Report generation date:** 19/02/2025 15:07:25

- »Proposed - 2040 Proposed, AM
- »Proposed - 2040 Proposed, PM
- »Proposed - 2045 B+C, AM
- »Proposed - 2045 B+C, PM
- »Proposed - 2045 B+C+D, AM
- »Proposed - 2045 B+C+D, PM

**Summary of junction performance**

	AM			PM		
	Set ID	Queue (PCU)	RFC	Set ID	Queue (PCU)	RFC
Proposed - 2040 Proposed						
Stream B-C	D1	0.0	0.01	D2	0.0	0.01
Stream B-A		0.0	0.02		0.1	0.05
Stream C-AB		0.0	0.02		0.1	0.04
Proposed - 2045 B+C						
Stream B-C	D7	0.0	0.01	D8	0.0	0.02
Stream B-A		0.0	0.03		0.0	0.05
Stream C-AB		0.0	0.02		0.1	0.05
Proposed - 2045 B+C+D						
Stream B-C	D11	0.0	0.01	D12	0.0	0.01
Stream B-A		0.1	0.06		0.2	0.13
Stream C-AB		0.0	0.02		0.1	0.05

*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.*

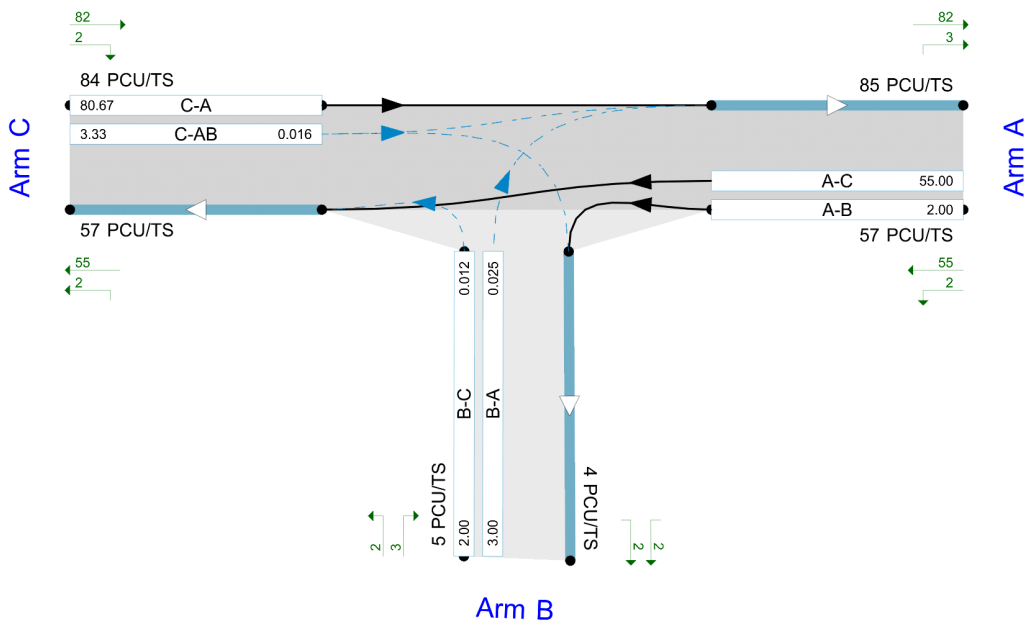
## File summary

### File Description

<b>Title</b>	Boghill Road/ Hydepark Road
<b>Location</b>	Mallusk
<b>Site number</b>	J1
<b>Date</b>	12/06/2012
<b>Version</b>	
<b>Status</b>	
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	5095039
<b>Enumerator</b>	WSATKINSMURR7784
<b>Description</b>	

### Units

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



Flows show modelled flow through junction (PCU/TS).  
Streams (upstream end) show Total Demand (PCU/TS); Streams (downstream end) show RFC ( )

Time Segment: 16:30-16:45

*The junction diagram reflects the last run of Junctions.*

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
5.75						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)	Run automatically
D1	2040 Proposed	AM	DIRECT	07:45	08:45	60	15	✓
D2	2040 Proposed	PM	DIRECT	16:30	17:30	60	15	✓
D7	2045 B+C	AM	DIRECT	07:45	08:45	60	15	✓
D8	2045 B+C	PM	DIRECT	16:30	17:30	60	15	✓
D11	2045 B+C+D	AM	DIRECT	07:45	08:45	60	15	✓
D12	2045 B+C+D	PM	DIRECT	16:30	17:30	60	15	✓

### Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Proposed	✓	100.000	100.000

# Proposed - 2040 Proposed, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

## Junction Network

### Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J1	Hydepark Road/ Boghill Road	T-Junction	Two-way	Two-way	Two-way		0.25	A

### Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.25	A

## Arms

### Arms

Arm	Name	Description	Arm type
A	(untitled)		Major
B	(untitled)		Minor
C	(untitled)		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	6.00			152.3	✓	0.00

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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	10.00	5.60	3.47	3.00	✓	2.00	57	51

## 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	143.920	0.105	0.265	0.167	0.379
B-C	179.765	0.110	0.279	-	-
C-B	165.536	0.257	0.257	-	-

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)	Run automatically
D1	2040 Proposed	AM	DIRECT	07:45	08:45	60	15	✓

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

## Origin-Destination Data

### Demand (PCU/TS)

07:45 - 08:00

		To		
		A	B	C
From	A	0.00	2.00	43.00
	B	2.00	0.00	1.00
	C	91.00	1.00	0.00

### Demand (PCU/TS)

08:00 - 08:15

		To		
		A	B	C
From	A	0.00	1.00	45.00
	B	2.00	0.00	1.00
	C	78.00	2.00	0.00

### Demand (PCU/TS)

08:15 - 08:30

		To		
		A	B	C
From	A	0.00	2.00	40.00
	B	2.00	0.00	2.00
	C	63.00	0.00	0.00

### Demand (PCU/TS)

08:30 - 08:45

		To		
		A	B	C
From	A	0.00	4.00	48.00
	B	1.00	0.00	1.00
	C	52.00	2.00	0.00

## Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Heavy Vehicle %

07:45 - 08:00

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Heavy Vehicle %

08:00 - 08:15

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	0	0	0

Heavy Vehicle %

08:15 - 08:30

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Heavy Vehicle %

08:30 - 08:45

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	0.01	5.44	0.0	A	1.25	5.00
B-A	0.02	7.84	0.0	A	1.75	7.00
C-AB	0.02	4.89	0.0	A	1.94	7.74
C-A					70.31	281.26
A-B					2.25	9.00
A-C					44.00	176.00

### Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	1.00	1.00	166.85	0.006	0.99	0.0	0.0	5.426	A
B-A	2.00	2.00	116.76	0.017	1.98	0.0	0.0	7.840	A
C-AB	1.74	1.74	213.85	0.008	1.73	0.0	0.0	4.242	A
C-A	90.26	90.26			90.26				
A-B	2.00	2.00			2.00				
A-C	43.00	43.00			43.00				

08:00 - 08:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	1.00	1.00	166.39	0.006	1.00	0.0	0.0	5.441	A
B-A	2.00	2.00	118.13	0.017	2.00	0.0	0.0	7.749	A
C-AB	3.23	3.23	205.09	0.016	3.22	0.0	0.0	4.458	A
C-A	76.77	76.77			76.77				
A-B	1.00	1.00			1.00				
A-C	45.00	45.00			45.00				

**08:15 - 08:30**

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2.00	2.00	172.45	0.012	1.99	0.0	0.0	5.279	A
B-A	2.00	2.00	125.14	0.016	2.00	0.0	0.0	7.307	A
C-AB	0.00	0.00	154.76	0.000	0.02	0.0	0.0	0.000	A
C-A	63.00	63.00			63.00				
A-B	2.00	2.00			2.00				
A-C	40.00	40.00			40.00				

**08:30 - 08:45**

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	1.00	1.00	170.29	0.006	1.01	0.0	0.0	5.318	A
B-A	1.00	1.00	123.86	0.008	1.01	0.0	0.0	7.328	A
C-AB	2.77	2.77	186.61	0.015	2.76	0.0	0.0	4.895	A
C-A	51.23	51.23			51.23				
A-B	4.00	4.00			4.00				
A-C	48.00	48.00			48.00				

# Proposed - 2040 Proposed, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

## Junction Network

### Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J1	Hydepark Road/ Boghill Road	T-Junction	Two-way	Two-way	Two-way		0.42	A

### Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.42	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)	Run automatically
D2	2040 Proposed	PM	DIRECT	16:30	17:30	60	15	✓

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

## Origin-Destination Data

### Demand (PCU/TS)

		To			
		A	B	C	
16:30 - 16:45	From	A	0.00	1.00	47.00
		B	1.00	0.00	2.00
		C	74.00	2.00	0.00

### Demand (PCU/TS)

		To			
		A	B	C	
16:45 - 17:00	From	A	0.00	0.00	61.00
		B	6.00	0.00	2.00
		C	66.00	4.00	0.00

**Demand (PCU/TS)**

17:00 - 17:15

		To		
		A	B	C
From	A	0.00	4.00	63.00
	B	1.00	0.00	2.00
	C	105.00	5.00	0.00

**Demand (PCU/TS)**

17:15 - 17:30

		To		
		A	B	C
From	A	0.00	1.00	62.00
	B	2.00	0.00	1.00
	C	72.00	4.00	0.00

## Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

**Heavy Vehicle %**

16:30 - 16:45

		To		
		A	B	C
From	A	0	0	15
	B	0	0	0
	C	0	0	0

**Heavy Vehicle %**

16:45 - 17:00

		To		
		A	B	C
From	A	0	0	8
	B	0	0	0
	C	0	0	0

**Heavy Vehicle %**

17:00 - 17:15

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

**Heavy Vehicle %**

17:15 - 17:30

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	0.01	5.75	0.0	A	1.75	7.00
B-A	0.05	8.52	0.1	A	2.50	10.00
C-AB	0.04	4.79	0.1	A	6.30	25.18
C-A					76.70	306.82
A-B					1.50	6.00
A-C					58.25	233.00

### Main Results for each time segment

#### 16:30 - 16:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2.00	2.00	167.50	0.012	1.99	0.0	0.0	5.437	A
B-A	1.00	1.00	117.35	0.009	0.99	0.0	0.0	7.734	A
C-AB	3.16	3.16	202.03	0.016	3.14	0.0	0.0	4.525	A
C-A	72.84	72.84			72.84				
A-B	1.00	1.00			1.00				
A-C	47.00	47.00			47.00				

#### 16:45 - 17:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2.00	2.00	158.40	0.013	2.00	0.0	0.0	5.753	A
B-A	6.00	6.00	116.19	0.052	5.95	0.0	0.1	8.160	A
C-AB	6.07	6.07	193.91	0.031	6.05	0.0	0.0	4.790	A
C-A	63.93	63.93			63.93				
A-B	0.00	0.00			0.00				
A-C	61.00	61.00			61.00				

#### 17:00 - 17:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2.00	2.00	162.46	0.012	2.00	0.0	0.0	5.610	A
B-A	1.00	1.00	106.75	0.009	1.04	0.1	0.0	8.518	A
C-AB	9.64	9.64	218.74	0.044	9.62	0.0	0.1	4.303	A
C-A	100.36	100.36			100.36				
A-B	4.00	4.00			4.00				
A-C	63.00	63.00			63.00				

#### 17:15 - 17:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	1.00	1.00	161.71	0.006	1.01	0.0	0.0	5.599	A
B-A	2.00	2.00	113.83	0.018	1.99	0.0	0.0	8.047	A
C-AB	6.31	6.31	197.49	0.032	6.34	0.1	0.0	4.708	A
C-A	69.69	69.69			69.69				
A-B	1.00	1.00			1.00				
A-C	62.00	62.00			62.00				

# Proposed - 2045 B+C, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

## Junction Network

### Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J1	Hydepark Road/ Boghill Road	T-Junction	Two-way	Two-way	Two-way		0.26	A

### Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.26	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)	Run automatically
D7	2045 B+C	AM	DIRECT	07:45	08:45	60	15	✓

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

## Origin-Destination Data

### Demand (PCU/TS)

		To			
		A	B	C	
07:45 - 08:00	From	A	0.00	5.00	50.00
		B	3.00	0.00	1.00
		C	106.00	1.00	0.00

### Demand (PCU/TS)

		To			
		A	B	C	
08:00 - 08:15	From	A	0.00	2.00	51.00
		B	3.00	0.00	1.00
		C	91.00	2.00	0.00

**Demand (PCU/TS)**

08:15 - 08:30

		To		
		A	B	C
From	A	0.00	5.00	46.00
	B	3.00	0.00	2.00
	C	74.00	0.00	0.00

**Demand (PCU/TS)**

08:30 - 08:45

		To		
		A	B	C
From	A	0.00	7.00	55.00
	B	1.00	0.00	1.00
	C	61.00	2.00	0.00

## Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

**Heavy Vehicle %**

07:45 - 08:00

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

**Heavy Vehicle %**

08:00 - 08:15

		To		
		A	B	C
From	A	0	0	5
	B	0	0	0
	C	0	0	0

**Heavy Vehicle %**

08:15 - 08:30

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

**Heavy Vehicle %**

08:30 - 08:45

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	0.01	5.59	0.0	A	1.25	5.00
B-A	0.03	8.17	0.0	A	2.50	10.00
C-AB	0.02	4.80	0.0	A	2.09	8.36
C-A					82.16	328.64
A-B					4.75	19.00
A-C					50.50	202.00

### Main Results for each time segment

#### 07:45 - 08:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	1.00	1.00	161.85	0.006	0.99	0.0	0.0	5.594	A
B-A	3.00	3.00	113.04	0.027	2.97	0.0	0.0	8.175	A
C-AB	1.92	1.92	221.76	0.009	1.91	0.0	0.0	4.093	A
C-A	105.08	105.08			105.08				
A-B	5.00	5.00			5.00				
A-C	50.00	50.00			50.00				

#### 08:00 - 08:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	1.00	1.00	161.90	0.006	1.00	0.0	0.0	5.592	A
B-A	3.00	3.00	115.23	0.026	3.00	0.0	0.0	8.020	A
C-AB	3.51	3.51	212.22	0.017	3.50	0.0	0.0	4.311	A
C-A	89.49	89.49			89.49				
A-B	2.00	2.00			2.00				
A-C	51.00	51.00			51.00				

#### 08:15 - 08:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2.00	2.00	167.22	0.012	1.99	0.0	0.0	5.446	A
B-A	3.00	3.00	123.34	0.024	3.00	0.0	0.0	7.478	A
C-AB	0.00	0.00	152.45	0.000	0.02	0.0	0.0	0.000	A
C-A	74.00	74.00			74.00				
A-B	5.00	5.00			5.00				
A-C	46.00	46.00			46.00				

#### 08:30 - 08:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	1.00	1.00	167.87	0.006	1.01	0.0	0.0	5.395	A
B-A	1.00	1.00	120.16	0.008	1.02	0.0	0.0	7.554	A
C-AB	2.94	2.94	190.35	0.015	2.93	0.0	0.0	4.802	A
C-A	60.06	60.06			60.06				
A-B	7.00	7.00			7.00				
A-C	55.00	55.00			55.00				

# Proposed - 2045 B+C, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
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
J1	Hydepark Road/ Boghill Road	T-Junction	Two-way	Two-way	Two-way		0.49	A

### Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.49	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)	Run automatically
D8	2045 B+C	PM	DIRECT	16:30	17:30	60	15	✓

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

## Origin-Destination Data

### Demand (PCU/TS)

16:30 - 16:45

		To		
		A	B	C
From	A	0.00	3.00	68.00
	B	5.00	0.00	2.00
	C	113.00	3.00	0.00

### Demand (PCU/TS)

16:45 - 17:00

		To		
		A	B	C
From	A	0.00	1.00	70.00
	B	5.00	0.00	2.00
	C	96.00	6.00	0.00

**Demand (PCU/TS)**

17:00 - 17:15

		To		
		A	B	C
From	A	0.00	3.00	62.00
	B	5.00	0.00	3.00
	C	79.00	0.00	0.00

**Demand (PCU/TS)**

17:15 - 17:30

		To		
		A	B	C
From	A	0.00	4.00	75.00
	B	2.00	0.00	2.00
	C	64.00	6.00	0.00

## Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

**Heavy Vehicle %**

16:30 - 16:45

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

**Heavy Vehicle %**

16:45 - 17:00

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

**Heavy Vehicle %**

17:00 - 17:15

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

**Heavy Vehicle %**

17:15 - 17:30

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	0.02	5.81	0.0	A	2.25	9.00
B-A	0.05	8.89	0.0	A	4.25	17.00
C-AB	0.05	5.01	0.1	A	6.54	26.17
C-A					85.21	340.83
A-B					2.75	11.00
A-C					68.75	275.00

### Main Results for each time segment

#### 16:30 - 16:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2.00	2.00	157.31	0.013	1.99	0.0	0.0	5.794	A
B-A	5.00	5.00	106.12	0.047	4.95	0.0	0.0	8.893	A
C-AB	6.07	6.07	223.33	0.027	6.04	0.0	0.0	4.142	A
C-A	109.93	109.93			109.93				
A-B	3.00	3.00			3.00				
A-C	68.00	68.00			68.00				

#### 16:45 - 17:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2.00	2.00	156.97	0.013	2.00	0.0	0.0	5.807	A
B-A	5.00	5.00	107.50	0.047	5.00	0.0	0.0	8.781	A
C-AB	10.98	10.98	211.90	0.052	10.94	0.0	0.1	4.479	A
C-A	91.02	91.02			91.02				
A-B	1.00	1.00			1.00				
A-C	70.00	70.00			70.00				

#### 17:00 - 17:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	3.00	3.00	161.46	0.019	2.99	0.0	0.0	5.678	A
B-A	5.00	5.00	113.51	0.044	5.00	0.0	0.0	8.295	A
C-AB	0.03	0.03	201.75	0.000	0.11	0.1	0.0	4.466	A
C-A	78.97	78.97			78.97				
A-B	3.00	3.00			3.00				
A-C	62.00	62.00			62.00				

#### 17:15 - 17:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2.00	2.00	162.10	0.012	2.01	0.0	0.0	5.623	A
B-A	2.00	2.00	113.01	0.018	2.03	0.0	0.0	8.110	A
C-AB	9.08	9.08	188.61	0.048	9.01	0.0	0.1	5.010	A
C-A	60.92	60.92			60.92				
A-B	4.00	4.00			4.00				
A-C	75.00	75.00			75.00				

# Proposed - 2045 B+C+D, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

## Junction Network

### Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J1	Hydepark Road/ Boghill Road	T-Junction	Two-way	Two-way	Two-way		0.67	A

### Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.67	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)	Run automatically
D11	2045 B+C+D	AM	DIRECT	07:45	08:45	60	15	✓

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

## Origin-Destination Data

### Demand (PCU/TS)

07:45 - 08:00

		To		
		A	B	C
From	A	0.00	11.00	50.00
	B	7.00	0.00	1.00
	C	106.00	1.00	0.00

### Demand (PCU/TS)

08:00 - 08:15

		To		
		A	B	C
From	A	0.00	5.00	51.00
	B	7.00	0.00	1.00
	C	91.00	2.00	0.00

**Demand (PCU/TS)**

08:15 - 08:30

		To		
		A	B	C
From	A	0.00	11.00	46.00
	B	7.00	0.00	2.00
	C	74.00	0.00	0.00

**Demand (PCU/TS)**

08:30 - 08:45

		To		
		A	B	C
From	A	0.00	16.00	55.00
	B	4.00	0.00	1.00
	C	61.00	2.00	0.00

## Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

**Heavy Vehicle %**

07:45 - 08:00

		To		
		A	B	C
From	A	0	37	0
	B	61	0	0
	C	0	0	0

**Heavy Vehicle %**

08:00 - 08:15

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	0	0	0

**Heavy Vehicle %**

08:15 - 08:30

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

**Heavy Vehicle %**

08:30 - 08:45

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	0.01	5.79	0.0	A	1.25	5.00
B-A	0.06	13.54	0.1	B	6.25	25.00
C-AB	0.02	4.85	0.0	A	2.10	8.40
C-A					82.15	328.60
A-B					10.75	43.00
A-C					50.50	202.00

### Main Results for each time segment

#### 07:45 - 08:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	1.00	1.00	156.33	0.006	0.99	0.0	0.0	5.793	A
B-A	7.00	7.00	113.82	0.062	6.90	0.0	0.1	13.540	B
C-AB	1.93	1.93	220.58	0.009	1.92	0.0	0.0	4.115	A
C-A	105.07	105.07			105.07				
A-B	11.00	11.00			11.00				
A-C	50.00	50.00			50.00				

#### 08:00 - 08:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	1.00	1.00	156.69	0.006	1.00	0.0	0.0	5.780	A
B-A	7.00	7.00	116.37	0.060	7.02	0.1	0.1	10.304	B
C-AB	3.51	3.51	211.60	0.017	3.50	0.0	0.0	4.324	A
C-A	89.49	89.49			89.49				
A-B	5.00	5.00			5.00				
A-C	51.00	51.00			51.00				

#### 08:15 - 08:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2.00	2.00	160.15	0.012	1.99	0.0	0.0	5.690	A
B-A	7.00	7.00	119.58	0.059	7.02	0.1	0.1	7.997	A
C-AB	0.00	0.00	150.91	0.000	0.02	0.0	0.0	0.000	A
C-A	74.00	74.00			74.00				
A-B	11.00	11.00			11.00				
A-C	46.00	46.00			46.00				

#### 08:30 - 08:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	1.00	1.00	157.60	0.006	1.01	0.0	0.0	5.749	A
B-A	4.00	4.00	118.32	0.034	4.03	0.1	0.0	7.877	A
C-AB	2.96	2.96	188.35	0.016	2.94	0.0	0.0	4.854	A
C-A	60.04	60.04			60.04				
A-B	16.00	16.00			16.00				
A-C	55.00	55.00			55.00				

# Proposed - 2045 B+C+D, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

## Junction Network

### Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
J1	Hydepark Road/ Boghill Road	T-Junction	Two-way	Two-way	Two-way		0.61	A

### Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.61	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)	Run automatically
D12	2045 B+C+D	PM	DIRECT	16:30	17:30	60	15	✓

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

## Origin-Destination Data

### Demand (PCU/TS)

16:30 - 16:45

		To		
		A	B	C
From	A	0.00	2.00	55.00
	B	3.00	0.00	2.00
	C	82.00	2.00	0.00

### Demand (PCU/TS)

16:45 - 17:00

		To		
		A	B	C
From	A	0.00	0.00	72.00
	B	15.00	0.00	2.00
	C	73.00	4.00	0.00

**Demand (PCU/TS)**

17:00 - 17:15

		To		
		A	B	C
From	A	0.00	5.00	75.00
	B	3.00	0.00	2.00
	C	117.00	5.00	0.00

**Demand (PCU/TS)**

17:15 - 17:30

		To		
		A	B	C
From	A	0.00	2.00	73.00
	B	6.00	0.00	1.00
	C	80.00	4.00	0.00

## Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

**Heavy Vehicle %**

16:30 - 16:45

		To		
		A	B	C
From	A	0	12	0
	B	0	0	0
	C	4	0	0

**Heavy Vehicle %**

16:45 - 17:00

		To		
		A	B	C
From	A	0	0	3
	B	0	0	0
	C	0	0	0

**Heavy Vehicle %**

17:00 - 17:15

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

**Heavy Vehicle %**

17:15 - 17:30

		To		
		A	B	C
From	A	0	0	3
	B	0	0	0
	C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/TS)	Total Junction Arrivals (PCU)
B-C	0.01	6.13	0.0	A	1.75	7.00
B-A	0.13	9.11	0.2	A	6.75	27.00
C-AB	0.05	4.77	0.1	A	6.72	26.87
C-A					85.03	340.13
A-B					2.25	9.00
A-C					68.75	275.00

### Main Results for each time segment

#### 16:30 - 16:45

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2.00	2.00	165.04	0.012	1.99	0.0	0.0	5.519	A
B-A	3.00	3.00	119.00	0.025	2.97	0.0	0.0	7.755	A
C-AB	3.33	3.33	205.41	0.016	3.31	0.0	0.0	4.522	A
C-A	80.67	80.67			80.67				
A-B	2.00	2.00			2.00				
A-C	55.00	55.00			55.00				

#### 16:45 - 17:00

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2.00	2.00	148.71	0.013	2.00	0.0	0.0	6.133	A
B-A	15.00	15.00	113.58	0.132	14.88	0.0	0.2	9.108	A
C-AB	6.38	6.38	196.21	0.033	6.35	0.0	0.0	4.766	A
C-A	70.62	70.62			70.62				
A-B	0.00	0.00			0.00				
A-C	72.00	72.00			72.00				

#### 17:00 - 17:15

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2.00	2.00	158.66	0.013	2.00	0.0	0.0	5.744	A
B-A	3.00	3.00	106.10	0.028	3.12	0.2	0.0	8.750	A
C-AB	10.48	10.48	224.32	0.047	10.46	0.0	0.1	4.208	A
C-A	111.52	111.52			111.52				
A-B	5.00	5.00			5.00				
A-C	75.00	75.00			75.00				

#### 17:15 - 17:30

Stream	Total Demand (PCU/TS)	Junction Arrivals (PCU)	Capacity (PCU/TS)	RFC	Throughput (PCU/TS)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	1.00	1.00	151.98	0.007	1.01	0.0	0.0	5.963	A
B-A	6.00	6.00	111.60	0.054	5.97	0.0	0.1	8.519	A
C-AB	6.68	6.68	200.31	0.033	6.71	0.1	0.0	4.649	A
C-A	77.32	77.32			77.32				
A-B	2.00	2.00			2.00				
A-C	73.00	73.00			73.00				

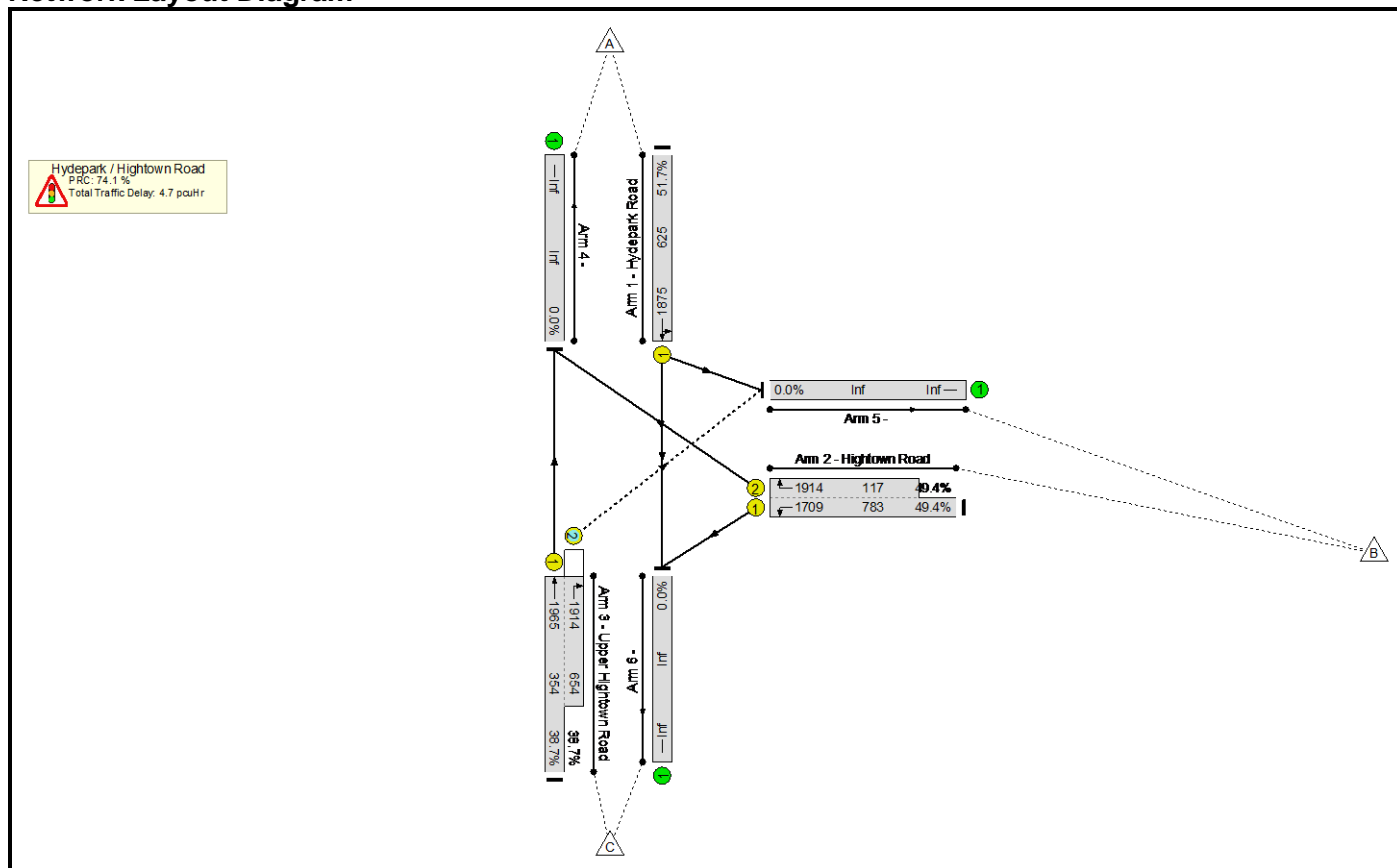
Basic Results Summary  
**Basic Results Summary**

**User and Project Details**

<b>Project:</b>	
<b>Title:</b>	
<b>Location:</b>	
<b>Additional detail:</b>	
<b>File name:</b>	Hydepark Rd Hightown Rd v0.3_Feb25.lsg3x
<b>Author:</b>	
<b>Company:</b>	
<b>Address:</b>	

**Scenario 9: 'AM Peak 2045 B'** (FG9: '2045 AM Peak B', Plan 1: 'Network Control Plan 1')

**Network Layout Diagram**



Basic Results Summary

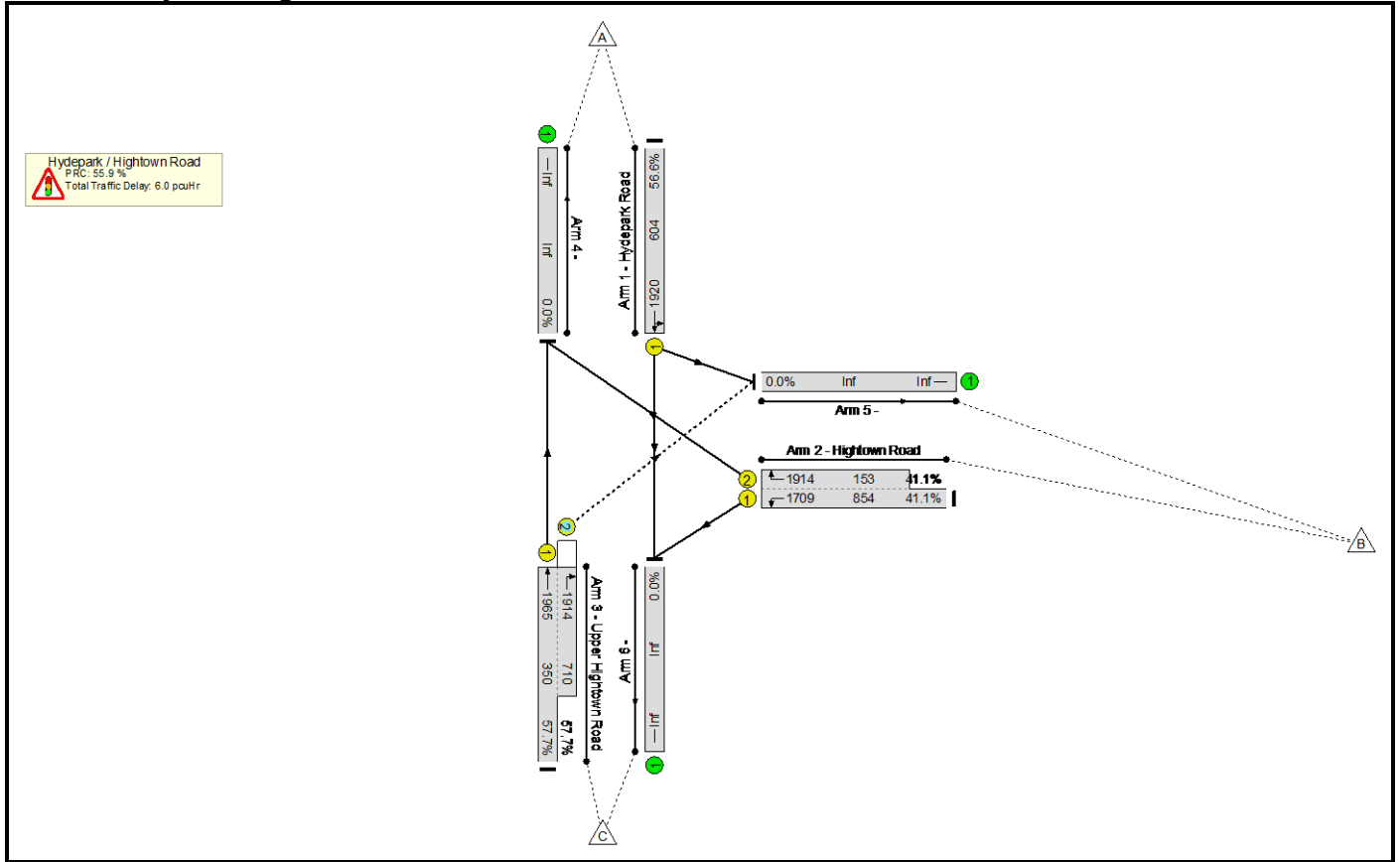
**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	51.7%	190	53	11	4.7	-	-
Hydepark / Hightown Road	-	-	-		-	-	-	-	-	-	51.7%	190	53	11	4.7	-	-
1/1	Hydepark Road Left Ahead	U	A		1	15	-	323	1875	625	51.7%	-	-	-	1.7	18.8	3.9
2/1+2/2	Hightown Road Right Left	U	B C		1	21:7	-	445	1709:1914	783+117	49.4 : 49.4%	-	-	-	1.7 (1.4+0.3)	14.1 (13.1:21.2)	4.0
3/1+3/2	Upper Hightown Road Ahead Right	U+O	D	E	1	23	7	390	1965:1914	354+654	38.7 : 38.7%	190	53	11	1.3 (0.4+0.9)	11.6 (9.4:12.8)	2.2
				C1	PRC for Signalled Lanes (%):		74.1	Total Delay for Signalled Lanes (pcuHr):				4.69	Cycle Time (s):		48		
					PRC Over All Lanes (%):		74.1	Total Delay Over All Lanes(pcuHr):				4.69					

Basic Results Summary

Scenario 10: 'PM Peak 2045 B' (FG10: '2045 PM Peak B', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

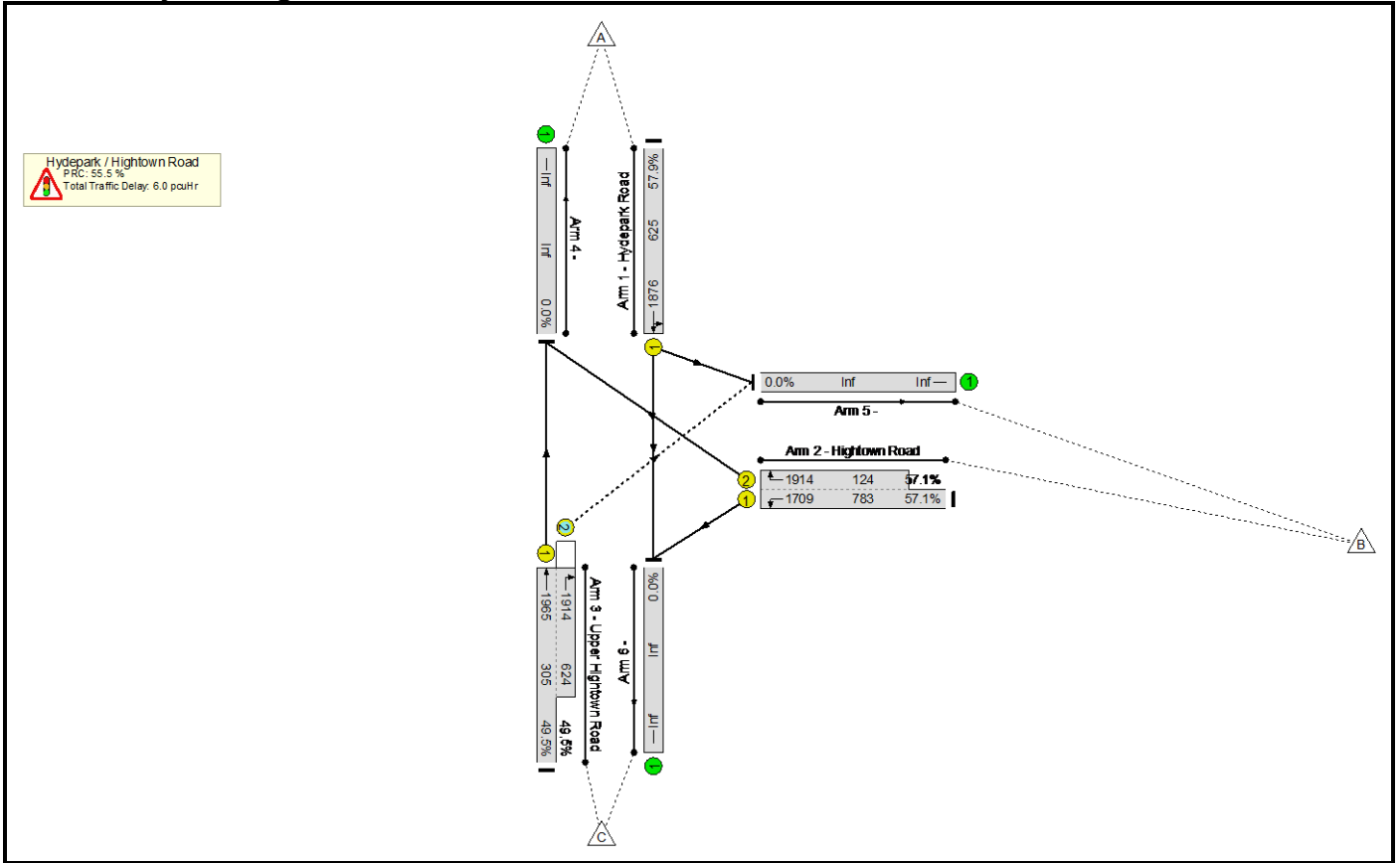
**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	
Network	-	-	-		-	-	-	-	-	-	57.7%	177	218	15	6.0	-	-	
Hydepark / Hightown Road	-	-	-		-	-	-	-	-	-	57.7%	177	218	15	6.0	-	-	
1/1	Hydepark Road Left Ahead	U	A		1	16	-	342	1920	604	56.6%	-	-	-	2.1	22.2	4.9	
2/1+2/2	Hightown Road Right Left	U	B C		1	26:7	-	414	1709:1914	854+153	41.1 : 41.1%	-	-	-	1.5 (1.1+0.4)	13.3 (11.5:23.4)	3.6	
3/1+3/2	Upper Hightown Road Ahead Right	U+O	D	E	1	29	12	612	1965:1914	350+710	57.7 : 57.7%	177	218	15	2.3 (0.6+1.8)	13.6 (10.0:15.4)	4.9	
C1					PRC for Signalled Lanes (%):		55.9	Total Delay for Signalled Lanes (pcuHr):				5.96	Cycle Time (s):		54			
					PRC Over All Lanes (%):		55.9	Total Delay Over All Lanes(pcuHr):				5.96						

Basic Results Summary

Scenario 11: 'AM Peak 2045 B+C' (FG11: '2045 AM Peak B+C', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

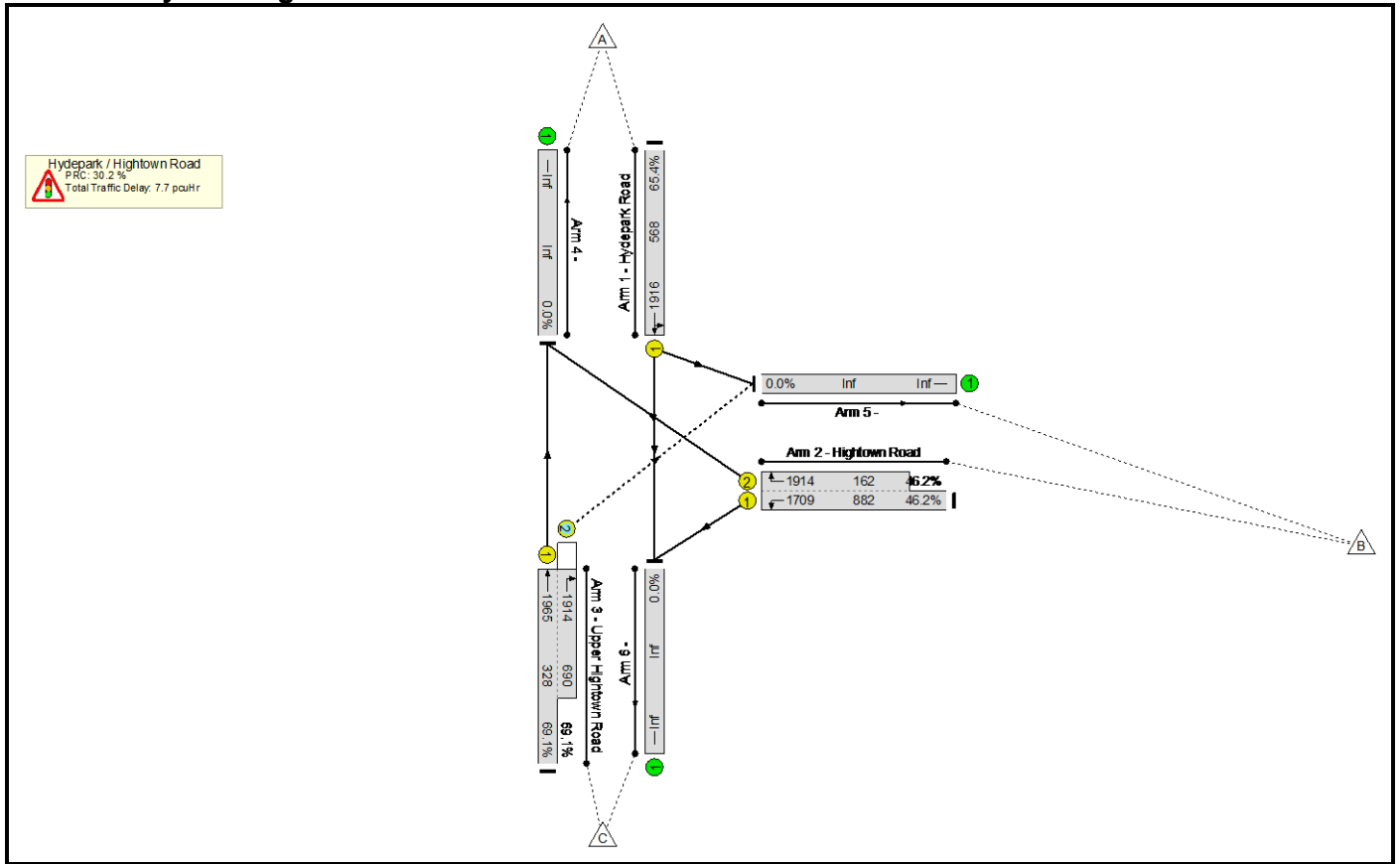
**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	
Network	-	-	-		-	-	-	-	-	-	57.9%	174	122	13	6.0	-	-	
Hydepark / Hightown Road	-	-	-		-	-	-	-	-	-	57.9%	174	122	13	6.0	-	-	
1/1	Hydepark Road Left Ahead	U	A		1	15	-	362	1876	625	57.9%	-	-	-	2.0	20.0	4.6	
2/1+2/2	Hightown Road Right Left	U	B C		1	21:7	-	518	1709:1914	783+124	57.1 : 57.1%	-	-	-	2.2 (1.8+0.4)	15.2 (14.1:22.0)	5.0	
3/1+3/2	Upper Hightown Road Ahead Right	U+O	D	E	1	23	7	460	1965:1914	305+624	49.5 : 49.5%	174	122	13	1.7 (0.4+1.3)	13.7 (10.3:15.3)	3.3	
C1					PRC for Signalled Lanes (%):		55.5	Total Delay for Signalled Lanes (pcuHr):				5.95	Cycle Time (s):		48			
					PRC Over All Lanes (%):		55.5	Total Delay Over All Lanes(pcuHr):				5.95						

Basic Results Summary

Scenario 12: ' PM Peak 2045 B+C' (FG12: '2045 PM Peak B+C', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

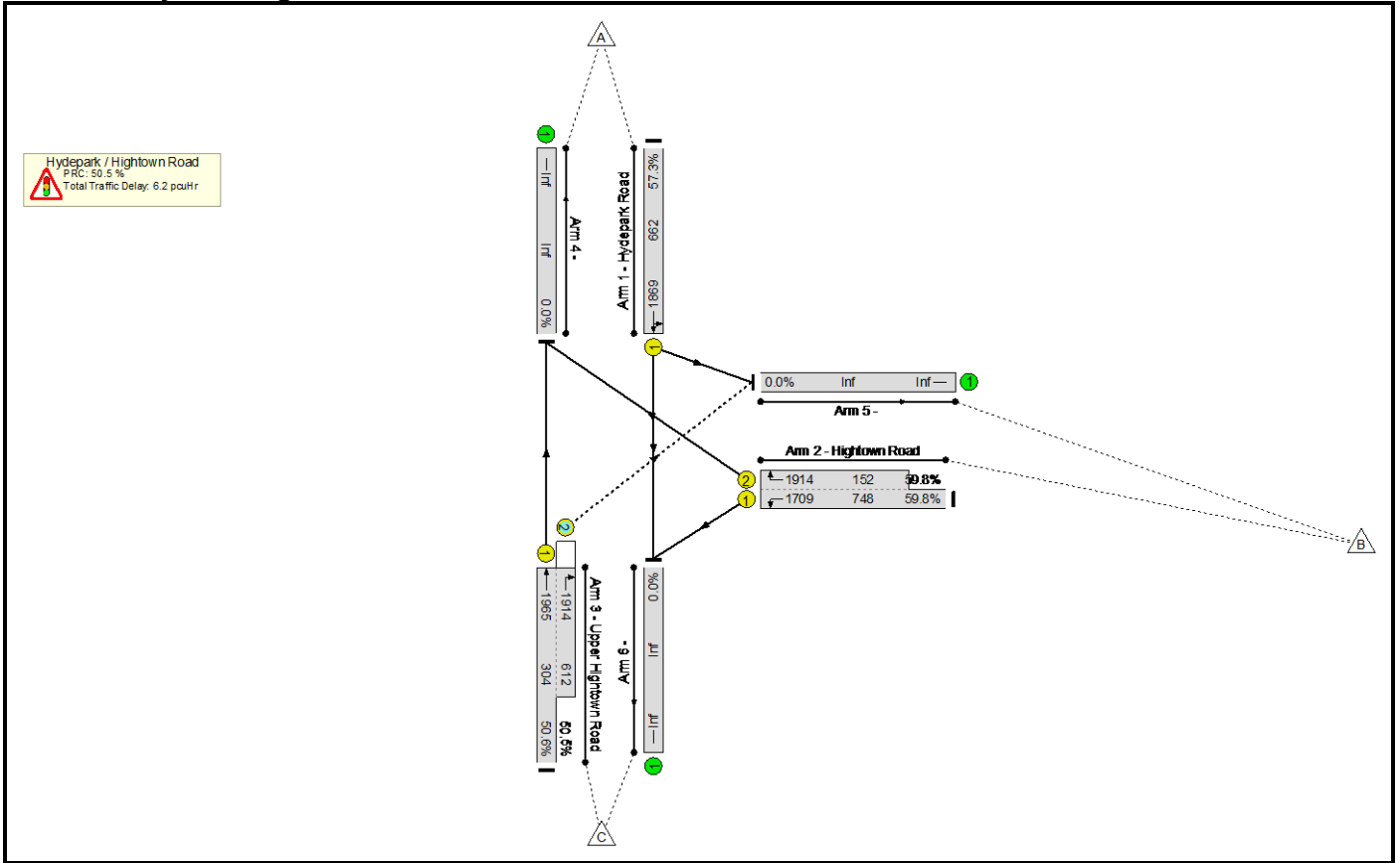
**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	
Network	-	-	-		-	-	-	-	-	-	69.1%	130	329	18	7.7	-	-	
Hydepark / Hightown Road	-	-	-		-	-	-	-	-	-	69.1%	130	329	18	7.7	-	-	
1/1	Hydepark Road Left Ahead	U	A		1	15	-	371	1916	568	65.4%	-	-	-	2.6	25.6	5.8	
2/1+2/2	Hightown Road Right Left	U	B C		1	27:7	-	482	1709:1914	882+162	46.2 : 46.2%	-	-	-	1.8 (1.3+0.5)	13.3 (11.4:23.6)	4.3	
3/1+3/2	Upper Hightown Road Ahead Right	U+O	D	E	1	29	13	704	1965:1914	328+690	69.1 : 69.1%	130	329	18	3.2 (0.7+2.5)	16.5 (11.7:18.8)	6.7	
C1					PRC for Signalled Lanes (%): 30.2			Total Delay for Signalled Lanes (pcuHr): 7.66			Cycle Time (s): 54							
					PRC Over All Lanes (%): 30.2			Total Delay Over All Lanes(pcuHr): 7.66										

Basic Results Summary

Scenario 13: 'AM Peak 2045 B+C+D' (FG13: '2045 AM Peak B+C+D', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

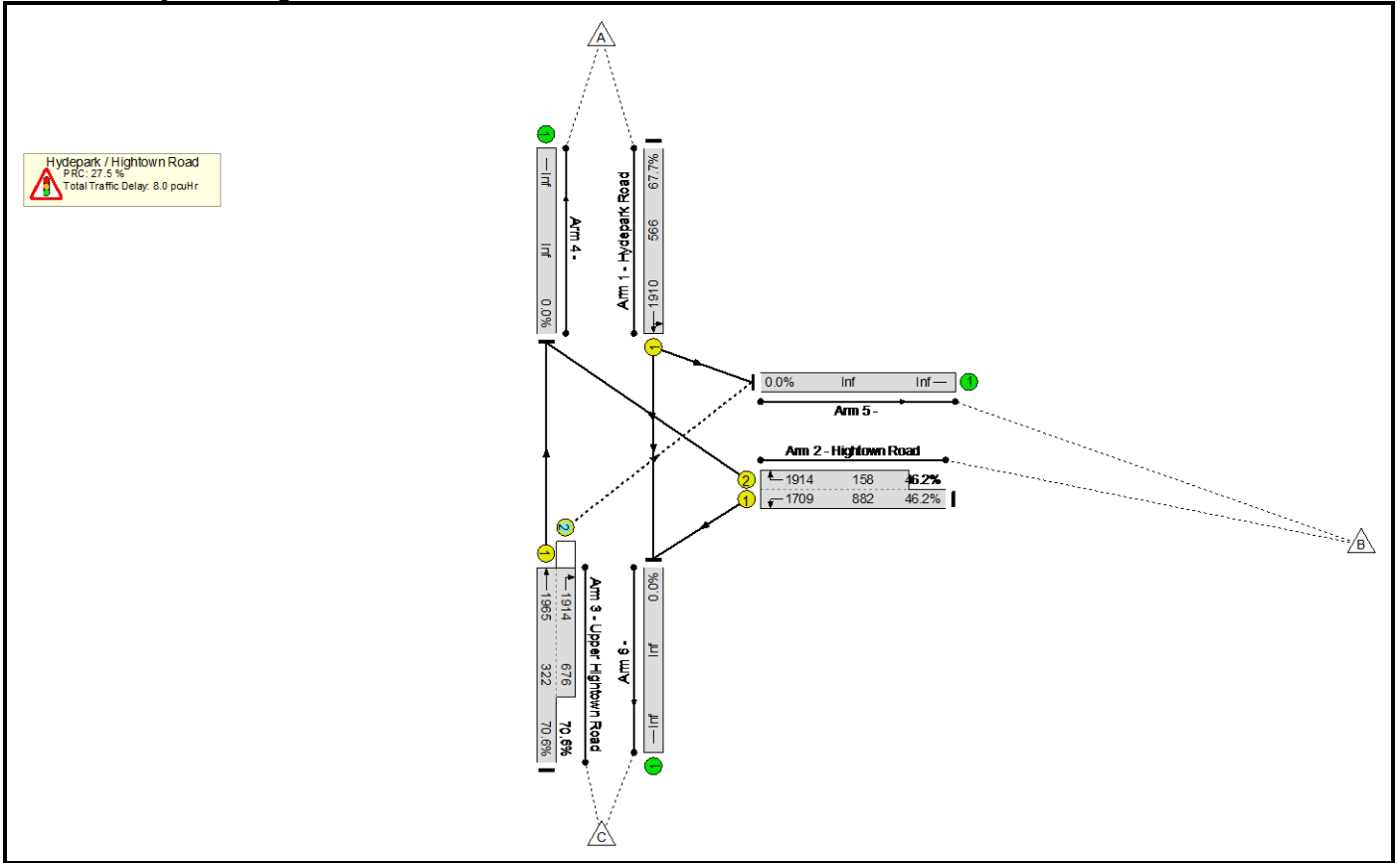
**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	
Network	-	-	-		-	-	-	-	-	-	59.8%	192	104	13	6.2	-	-	
Hydepark / Hightown Road	-	-	-		-	-	-	-	-	-	59.8%	192	104	13	6.2	-	-	
1/1	Hydepark Road Left Ahead	U	A		1	16	-	379	1869	662	57.3%	-	-	-	2.0	18.9	4.7	
2/1+2/2	Hightown Road Right Left	U	B C		1	20:7	-	538	1709:1914	748+152	59.8 : 59.8%	-	-	-	2.5 (1.9+0.6)	16.5 (15.2:22.5)	5.2	
3/1+3/2	Upper Hightown Road Ahead Right	U+O	D	E	1	23	6	463	1965:1914	304+612	50.6 : 50.5%	192	104	13	1.8 (0.4+1.3)	13.9 (10.5:15.6)	3.3	
C1					PRC for Signalled Lanes (%):		50.5	Total Delay for Signalled Lanes (pcuHr):				6.23	Cycle Time (s):		48			
					PRC Over All Lanes (%):		50.5	Total Delay Over All Lanes(pcuHr):				6.23						

Basic Results Summary

Scenario 14: 'PM Peak 2045 B+C+D' (FG14: '2045 PM Peak B+C+D', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	
Network	-	-	-		-	-	-	-	-	-	70.6%	116	343	18	8.0	-	-	
Hydepark / Hightown Road	-	-	-		-	-	-	-	-	-	70.6%	116	343	18	8.0	-	-	
1/1	Hydepark Road Left Ahead	U	A		1	15	-	383	1910	566	67.7%	-	-	-	2.8	26.5	6.0	
2/1+2/2	Hightown Road Right Left	U	B C		1	27:7	-	480	1709:1914	882+158	46.2 : 46.2%	-	-	-	1.8 (1.3+0.5)	13.3 (11.4:23.6)	4.3	
3/1+3/2	Upper Hightown Road Ahead Right	U+O	D	E	1	29	13	704	1965:1914	322+676	70.6 : 70.6%	116	343	18	3.4 (0.8+2.6)	17.3 (12.1:19.7)	6.8	
C1					PRC for Signalled Lanes (%): 27.5			Total Delay for Signalled Lanes (pcuHr): 7.97			Cycle Time (s): 54							
					PRC Over All Lanes (%): 27.5			Total Delay Over All Lanes(pcuHr): 7.97										