

West Cumberland Hospital Phase 2

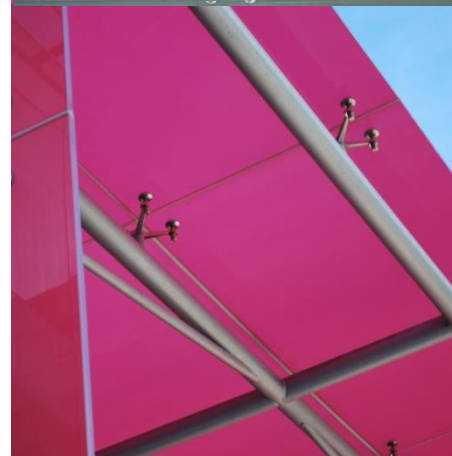
Transport Assessment

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Table of Contents

1.0	Introduction	1
1.1	Introduction.....	1
1.2	Purpose and Scope of this Report	1
1.3	Background	1
1.4	Pre-Application and Scoping Discussions.....	2
1.5	Structure of the Report.....	2
2.0	Existing Situation	3
2.1	Site Location.....	3
2.2	Existing Access Arrangements	4
2.3	Surrounding Highway Network.....	4
3.0	Highway Safety	6
3.1	Highway Safety Records Review	6
3.2	Summary	7
4.0	Development Proposals	8
4.1	Proposed Development.....	8
4.2	Vehicular Access.....	9
4.3	Pedestrian/Cycle Access	10
4.4	Parking	11
5.0	Accessibility by Sustainable Modes of Transport	13
5.1	Introduction.....	13
5.2	Pedestrian Accessibility.....	13
5.3	Accessibility by Cycle	15
5.4	Public Transport Accessibility	17
5.5	Summary	18
6.0	Highway Impact	19
6.1	Introduction.....	19
6.2	Baseline Traffic Data	19
6.3	Traffic Generation.....	20
6.4	Traffic Assignment.....	21
6.5	Junction Assessments.....	21
6.6	Junction Modelling Results	22



6.7	Highway Impact Summary	24
7.0	Transport Planning Policy.....	26
7.1	Introduction.....	26
7.2	National Planning Policy Framework	26
7.3	National Planning Policy Guidance (NPPG)	27
7.4	Cumbria County Council Local Transport Plan 3 (LTP3).....	27
7.5	Conclusions	28
8.0	Summary and Conclusion.....	29
8.1	Summary	29
8.2	Conclusion.....	30

Appendices

Appendix A – Network Figures

Appendix B – TRICS Report

Appendix C – Junction Modelling Outputs

1.0 Introduction

1.1 Introduction

1.1.1 Curtins has been appointed on behalf of North Cumbria University Hospital NHS Trust to provide traffic and transportation advice in relation to a proposed development at West Cumberland Hospital (WCH). The development consists of refurbishing the existing hospital buildings. Included within the development proposals is the addition of further formal parking spaces on the WCH site. The above works are known as Phase 2 re-development of WCH.

1.2 Purpose and Scope of this Report

1.2.1 This Transport Assessment (TA) has been prepared to inform Highways Officers at Cumbria County Council (CCC) on all traffic and transportation matters associated with the application. On the above basis, this TA contains the following:

- A description of the highway network in the vicinity of the site;
- A review of the accident record in the vicinity of the site (over the most recent three-year period);
- A summary of the development proposals, including access and parking arrangements;
- A summary of local and national transport planning policy;
- A review of accessibility of the site by sustainable modes of travel;
- Details of the calculated trip generation for the new proposed development at the site;
- Details of the distribution of the development traffic; and,
- An assessment of the potential impact of the development traffic on local junctions.

1.2.2 This TA has been prepared in broad accordance with the Ministry of Housing, Communities and Local Government's National Planning Policy Framework (NPPF) and Planning Practice Guidance for TAs.

1.3 Background

1.3.1 The initial WCH site was constructed between 1959 and 1964, with a number of smaller extensions and reconfigurations carried out over the ensuing years. WCH was the first new hospital in England to be built following the inception of the National Health Service (NHS). It was officially opened in 1964 with a gross internal floor area of approximately 55,500m² on a site of 11.2 hectares. It is a general hospital providing 24-hour A&E, a consultant-led maternity unit and special baby unit, a range of specialist clinical services and several outpatient clinics. It has 191 inpatient beds and serves mainly the Whitehaven and West Cumbria areas.

1.4 Pre-Application and Scoping Discussions

1.4.1 Scoping discussions have been ongoing with Development Management Officers at CCC regarding the development proposals. These discussions have been taken into consideration in the formation of this TA. In summary the following topics have been discussed to date:

- The proposed methodology for traffic distribution and trip generation;
- Existing operation of the local highway network;
- Committed developments; and,
- Highway safety.

1.5 Structure of the Report

1.5.1 Following this introduction, **Section 2** of the report provides a comprehensive description of the existing site and its location. This includes the local highway network and facilities for pedestrians, cyclists and public transport users.

1.5.2 **Section 3** contains an analysis of the local area in terms of highways safety, whereas **Section 4** contains details of the development proposals. **Section 5** contains an assessment of the site by non-car modes of transport.

1.5.3 **Section 6** outlines the traffic forecasting methodology used and the likely traffic generation associated with the development proposals. **Section 6** also analyses the likely highway impact of the proposals by presenting results of the junction capacity assessments undertaken to determine the impact of the development on the existing highway network.

1.5.4 A review of local and national transport planning policy is included in **Section 7**, and the report is summarised and concluded in **Section 8**.

2.0 Existing Situation

2.1 Site Location

2.1.1 The development is located upon the existing WCH site, approximately 2.5km south-east of Whitehaven in Cumbria. The Phase 2 site currently comprise of existing hospital buildings, some of which will be demolished/re-furbished as part of the new development. Phase 1 of the WCH works were completed in October 2015 and will be linked with Phase 2 (when complete).

2.1.2 WCH is bound to the north by residential properties fronting onto Homewood Road and industrial buildings associated with Sneckyeat Road Industrial Estate, to the east by agricultural land, to the south by further residential properties and to the west by Homewood Road itself. **Figure 2.1** below shows the site location:



Figure 2.1 – Site Location Plan

2.2 Existing Access Arrangements

- 2.2.1 WCH will maintain the majority of the existing access arrangements which are located around the perimeter of the hospital site. There will however be a revised access onto Homewood Road to the north-west of the development which is discussed in greater detail within **Section 3** of this report.

2.3 Surrounding Highway Network

Homewood Road

- 2.3.1 Forming the northern boundary of the site, Homewood Road extends on a general north-to-south alignment for approximately 1.5km. Homewood Road is a single carriageway road typically 7m wide, with 3m footway provisions and street lighting present along both sides of the road for the majority of its length. Homewood Road is subject to a 30mph speed limit.
- 2.3.2 At its southern end Homewood Road connects with the B5292 Egremont Road and A595 via a roundabout arrangement. There are pedestrian guardrails in place at this location to enhance highway safety and across the A595(S) approach arm there are pedestrian crossing facilities in place in the form of a refuge island complete with dropped kerbs and tactile paving.
- 2.3.3 At its northern end Homewood Road connects with Cleator Moor Road via a priority junction arrangement. Similarly, there are pedestrian crossing facilities present at this location in the form of dropped kerbs.
- 2.3.4 Bus stops are provided at various points along Homewood Road with the closest located immediately adjacent to the existing hospital entrance. Both stops provide shelters, timetable information and level access provisions for passengers. The northbound stop is located in a layby arrangement. The accessibility section of this TA (**Section 5**) discusses the bus services calling at the stops on Homewood Road in greater detail.

B2595 Cleator Moor Road

- 2.3.5 Cleator Moor Road is located to the north-east of the development site. From its priority junction arrangement with Homewood Road, Cleator Moor Road runs in western direction for approximately 400m until a mini-roundabout junction with Main Street and Moresby Road, and in an eastern direction for 600m until a priority junction arrangement with Keekle Terrace.
- 2.3.6 Along this section Cleator Moor Road operates as a single carriageway road typically 7m wide, with footway present along at least one side of the road. When transecting the surrounding residential areas street lighting is also provided. To the north Cleator Moor Road is subject to a 30mph speed limit, which increases to 40mph in the south as the road becomes more rural in nature.

2.3.7 There are pedestrian crossing facilities in place at the mini-roundabout junction with Main Street and Moresby Road, in the form of pedestrian refuge islands complete with dropped kerbs and tactile paving.

B5295 Egremont Road

2.3.8 From the roundabout junction with Homewood Road, the B5295 Egremont Road runs in a northern direction through the residential areas of Hensingham, before terminating at the mini-roundabout junction with Main Street. For the entirety of its length Egremont Road operates as a single carriageway road, approximately 7m wide and is subject to a 30mph speed limit.

2.3.9 Egremont Road is street lit, and along its length has a number of priority junction arrangements which serve the surrounding residential area. Footways are present along both sides of the carriageway.

A595

2.3.10 A short distance west of the development, the A595 can be reached. From its roundabout junction with Homewood Road the A595 provides journeys north towards Whitehaven and Workington. In a southern direction the A595 provides journeys through Egremont towards south-west Cumbria.

2.3.11 The A595 forms part of the Strategic Road Network (SRN) and is therefore managed by Highways England (HE). The SRN is shown as the red line on **Figure 2.2** below and demonstrates how the site is well situated to benefit from the excellent transportation links nearby.

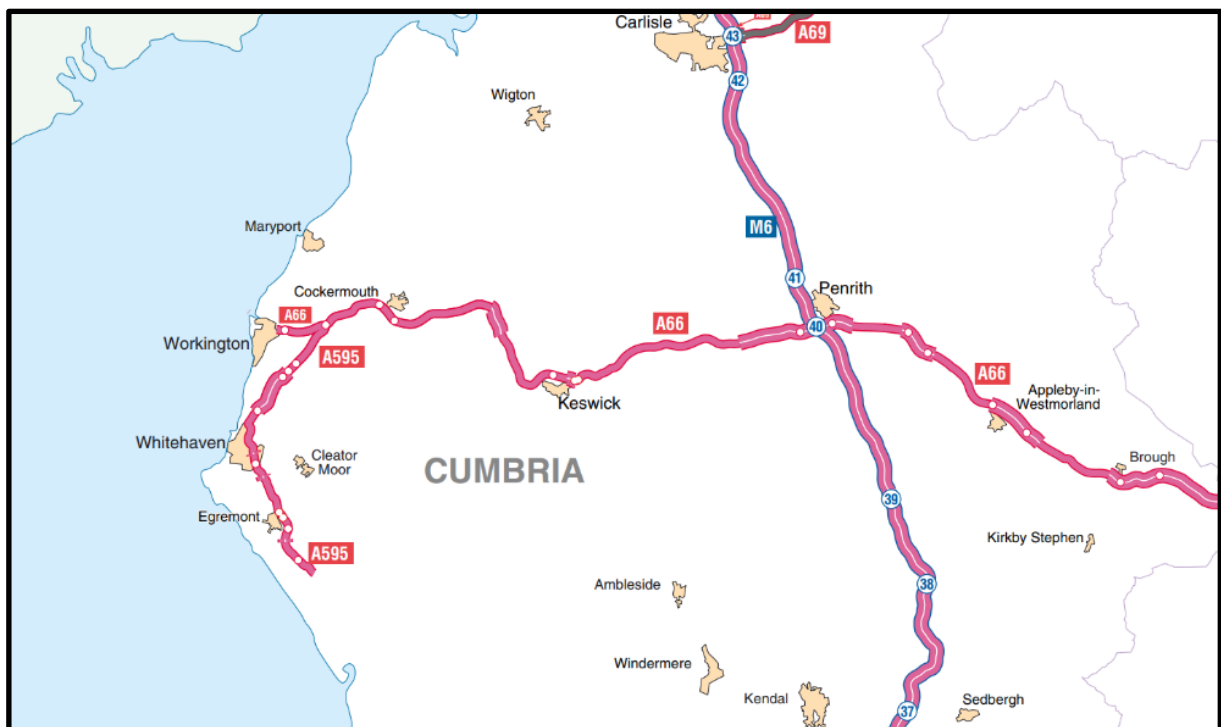


Figure 2.2 – Strategic Road Network Map (SRN)

3.0 Highway Safety

3.1 Highway Safety Records Review

3.1.1 The study area considered for the Personal Injury Accident (PIA) review is shown on the plan in **Figure 3.1** below. As shown on the plan the extents include the following junctions (those also considered for capacity assessments):

- A595/Homewood Road/Egremont Road;
- Homewood Road/B5295 Cleator Moor Road; and,
- A595/Mirehouse Road.

3.1.2 The accident data review covers a 3-year time period (2016 to 2018 inclusive) using the online Crashmap resource.

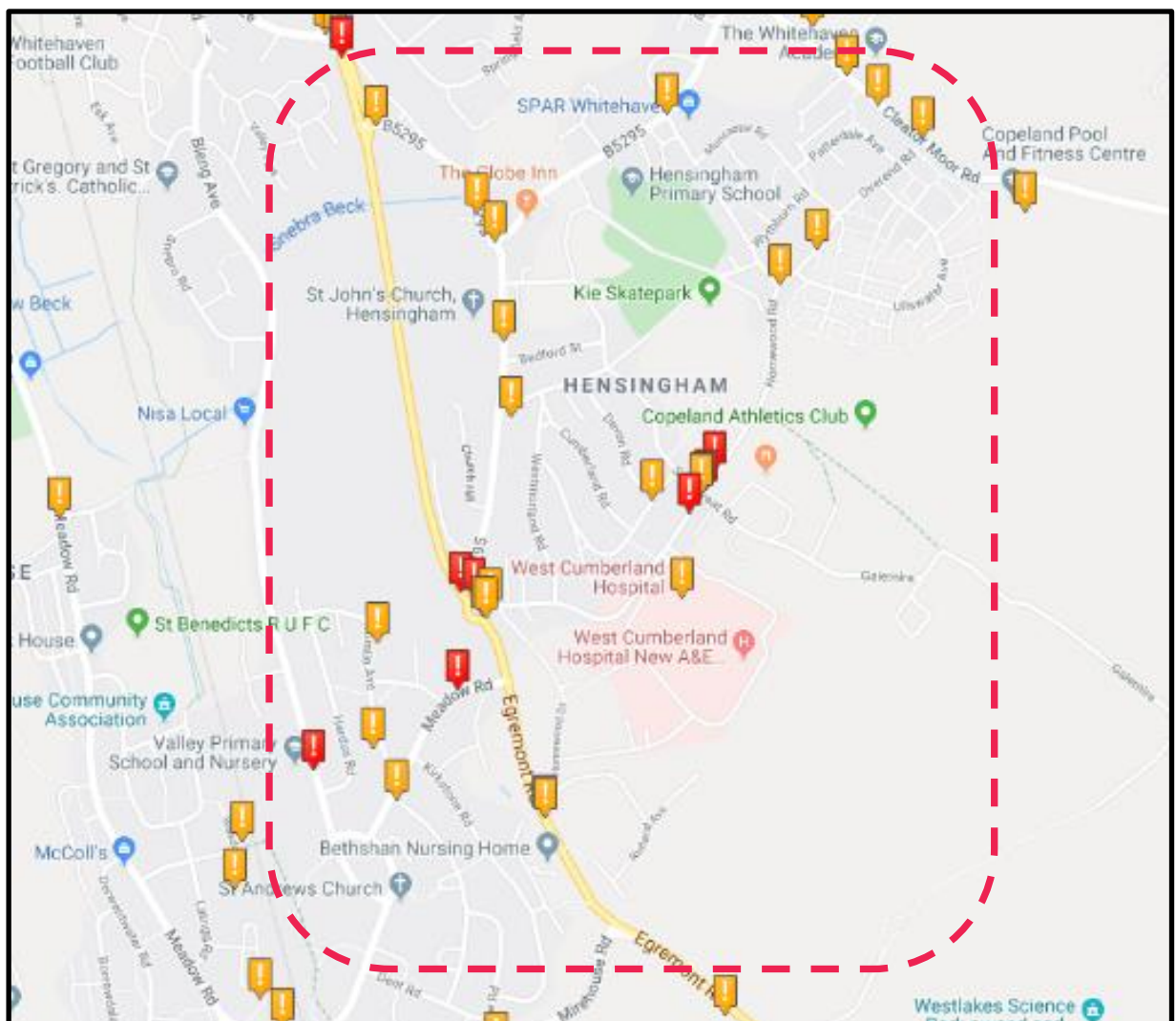


Figure 3.1 – Accident Data Plot (Crashmap)

- 3.1.3 In total there were 32 accidents within the large study area over the 3-year time period. These comprised 7 serious accidents and 25 slight accidents, with no fatal accidents recorded. The annual breakdown of the accidents is shown in **Table 3.1** below.

Severity	Recorded Collisions			
	2016	2017	2018	Total
Fatal	0	0	0	0
Serious	3	3	1	7
Slight	9	9	7	25
Total	12	12	8	32

Table 3.1 – Recorded Collisions (Severity)

- 3.1.4 A review of the plans shows that the above accidents are generally dispersed across the junctions within the study area, with no clear identifiable clusters. No accidents were recorded at the existing hospital main entrance junction on Homewood Road. The pre-existing residential area surrounding the site ensures that the development is situated adjacent to good levels of pedestrian/cycling infrastructure, which is reflected within the accident data records shown in **Table 3.1**.

3.2 Summary

- 3.2.1 Following a review of recent accident records, there were a total of 32 accidents recorded in the time period across the study area. This includes 25 slight accidents and 7 serious accidents, with no fatal accidents recorded.
- 3.2.2 No significant correlations have been identified to suggest that highway condition, layout or design were significant contributory factors in any of the collisions. It is not considered that there is an existing safety issue that is likely to be exacerbated by the proposed development. It can therefore be considered that the development would not have a significant effect on highway safety.

4.0 Development Proposals

4.1 Proposed Development

4.1.1 This TA has been produced in support of Phase 2 of the re-development of WCH. As discussed previously Phase 1 was completed in 2015 and comprised a £90million redevelopment to the eastern side of the hospital, in which various facilities such as ophthalmology and retinal, were improved. The works associated with Phases 2 are summarised as follows:

Phase 2

4.1.2 Phase 2 of the WCH redevelopment consists of 3 stages, 2A, 2B and 2C. In order to facilitate the expansion of Phase 2 –substantial areas of the existing hospital will be demolished. Demolition will be undertaken across two distinct phases in order to maintain a fully operating facility during the construction process.

4.1.3 Phase 2A involves the construction of a three-storey extension to the existing Phase 1 scheme, comprising of a new main entrance on Level 3 joining into Phase 1 and the replacement of accommodation for services currently in the existing hospital across Blocks F, H and M. It is shown **Figure 4.1** below as the green area, containing a hatched building that represents the new build of the

hospital. **Figure 4.1** also represents the extents of the phase 2b refurbishments, and the phase 2C external demolition works.

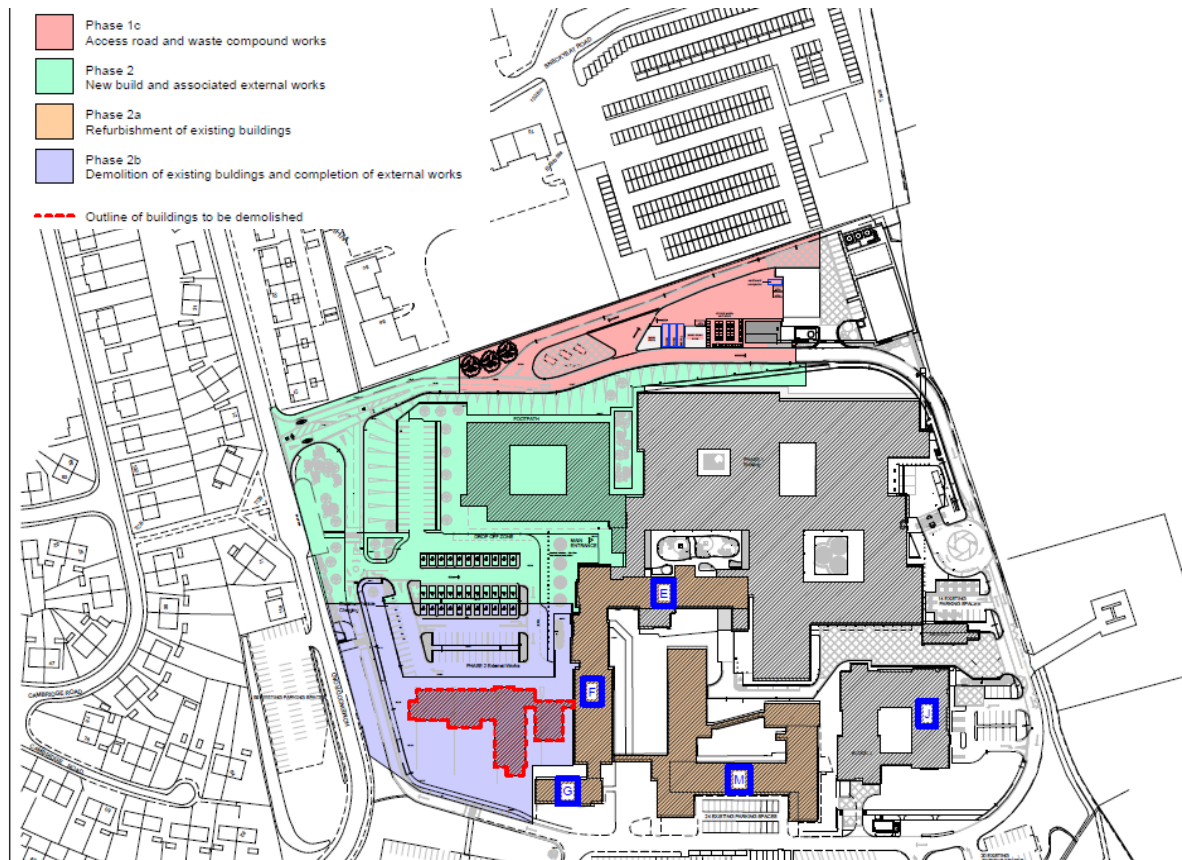


Figure 4.1 – Phase 2 extents

4.2 Vehicular Access

- 4.2.1 The proposed site layout aims to minimise patient travel distances by adding an additional 166 standard parking bays as well as an additional 33 accessible bays close to the primary WCH entrance point off Homewood Road.
- 4.2.2 Through the formation of a one-way traffic stream around the perimeter of the hospital; staff and facility management are diverted away from the busy entrance area to a separate standalone parking area utilising the existing bays to the south of the site.
- 4.2.3 Reference should be made to **Figure 4.5** overleaf which shows the proposed internal site traffic routing.

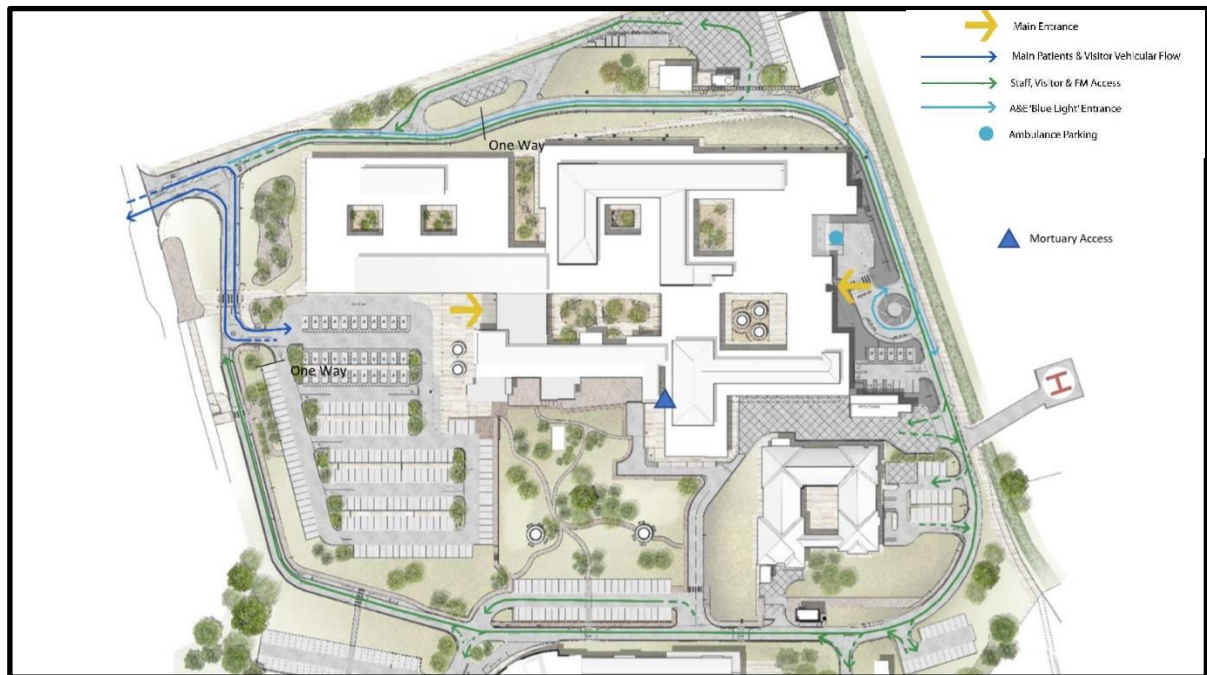


Figure 4.5 – Proposed Internal Traffic Routing

- 4.2.4 As demonstrated on the proposed site layout, the previous site access junction on Homewood Road is to serve the majority of the proposed hospital redevelopment. The access will be upgraded and widened include a pedestrian refuge island (to assist with pedestrian movements north/south on Homewood Road) and a ghost island right turn lane for traffic wishing to turn in the direction of the main car park.
- 4.2.5 Visibility splays in excess of the existing 30 mph speed limit (2.4m x 43m) can be provided in both directions from the upgrade site access in line with the prevailing standards found within the Department for Transport's (DfT) Manual for Streets (MfS) Guidance.

4.3 Pedestrian/Cycle Access

- 4.3.1 It is envisaged that pedestrians and cyclists would access the site by utilising the aforementioned access point on Homewood Road, as well as the existing infrastructure surrounding the development site.
- 4.3.2 As demonstrated on the site layout, the internal layout has been designed to provide multiple direct and convenient connections for pedestrians and cyclists to support the creation of a sustainable development site. This includes wide footways on all the internal roads with dropped kerbs and zebra crossings provided at the key pedestrian desire lines.

4.4 Parking

4.4.1 Car parking is to be provided in broad accordance with the maximum standards set out by CCC, in their Supplementary Planning Document (SPD). These are set out in Appendix 1 of the Development Design Guide and have been included at **Figure 4.6** for ease of reference.

Type of development	Essential Operational Parking	Disabled Parking	Cars	Motorcycles	Pedal Cycles
C2 Residential institutions					
Residential care homes	1 delivery / ambulance space Plus 1 space per resident staff	1 space or number equivalent to 5% of car requirement whichever is greater	1 space per 4 bed spaces PLUS 1 space per 3 non-resident staff (working at one time)	1 space or number equivalent to 5% of car requirement when more than 20 car spaces needed	1 space per 5 staff PLUS minimum of 2 spaces
Hospitals	50m2 of usable service space per 250m2 gross floor area Plus turning space PLUS access to ambulance	As above	2 spaces per 3 bed spaces PLUS 3 spaces per consulting room PLUS 1 space per 2 staff	As above	1 space per 5 staff PLUS number equivalent to 10 % of car requirement (minimum of 2 spaces)
Residential schools / Colleges / Training centres	1 coach space Plus 1 space per resident staff	As above		As above	1 space per 5 staff PLUS 14 space per 4 students

Figure 4.6 – CCC Parking Standards

4.4.2 Whilst due accordance has been made with regards to the parking standards for hospital uses set out by CCC. It is also appropriate to ensure that developer end user requirements are met to guarantee that no overspill parking occurs onto the internal site access road, or wider network. This is considered of particular importance given the nature of the proposals (with ambulance and emergency vehicle movements). It is considered that there is adequate onsite parking for staff and visitors to support the necessary functions on site, based upon the previous operations and knowledge of developments elsewhere.

4.4.3 The proposed parking changes as a result of Phases 2 and 3 are presented in the following subsections.

Phase 2A

4.4.4 The proposed site layout aims to minimise patient travel and walking distances. Phase 2A adds 33 accessible bays close to the primary entrance point off Homewood Road.

Phase 2B

4.4.5 No proposed changes to the car parking arrangements included as part of the Phase 2B works.

Phase 2C

4.4.6 Phase 2C involves the integration of 213 patient car parking spaces.

5.0 Accessibility by Sustainable Modes of Transport

5.1 Introduction

5.1.1 A key element of national and local policy is to ensure that new developments are located in areas where alternative modes of travel are available. It is important to ensure that developments are not isolated but are located close to complementary land uses. This supports the aims of integrating planning and transport, providing more sustainable transport choices, and reducing overall travel and car use.

5.1.2 The accessibility of the proposed development is considered in this context for the following modes of travel:

- Pedestrian accessibility;
- Cycle accessibility; and,
- Public transport.

5.2 Pedestrian Accessibility

5.2.1 Research has indicated that acceptable walking distances depend on a number of factors, including the quality of the development, the type of amenity offered, the surrounding area, and other local facilities. The Chartered Institution of Highways and Transportation (CIHT) document entitled 'Providing for Journeys on Foot' suggests walking distances which are relevant to this planning application. These are reproduced in **Table 5.1**.

CIHT Classification	Town Centres (m)	Commuting/School/Sightseeing (m)	Elsewhere/Local Services (m)
Desirable	200	500	400
Acceptable	400	1,000	800
Preferred Maximum	800	2,000	1,200

Table 5.1 – CIHT Recommended Walking Distances

5.2.2 To assist in summarising, the accessibility of the site by foot, an indicative pedestrian catchment plan has been produced. Distances of 500m, 1,000m and 2,000m have been considered which are termed '*Desirable*', '*Acceptable*' and the '*Preferred Maximum*' by the CIHT for commuting trips. The plan is shown at **Figure 5.1** overleaf for ease of reference.

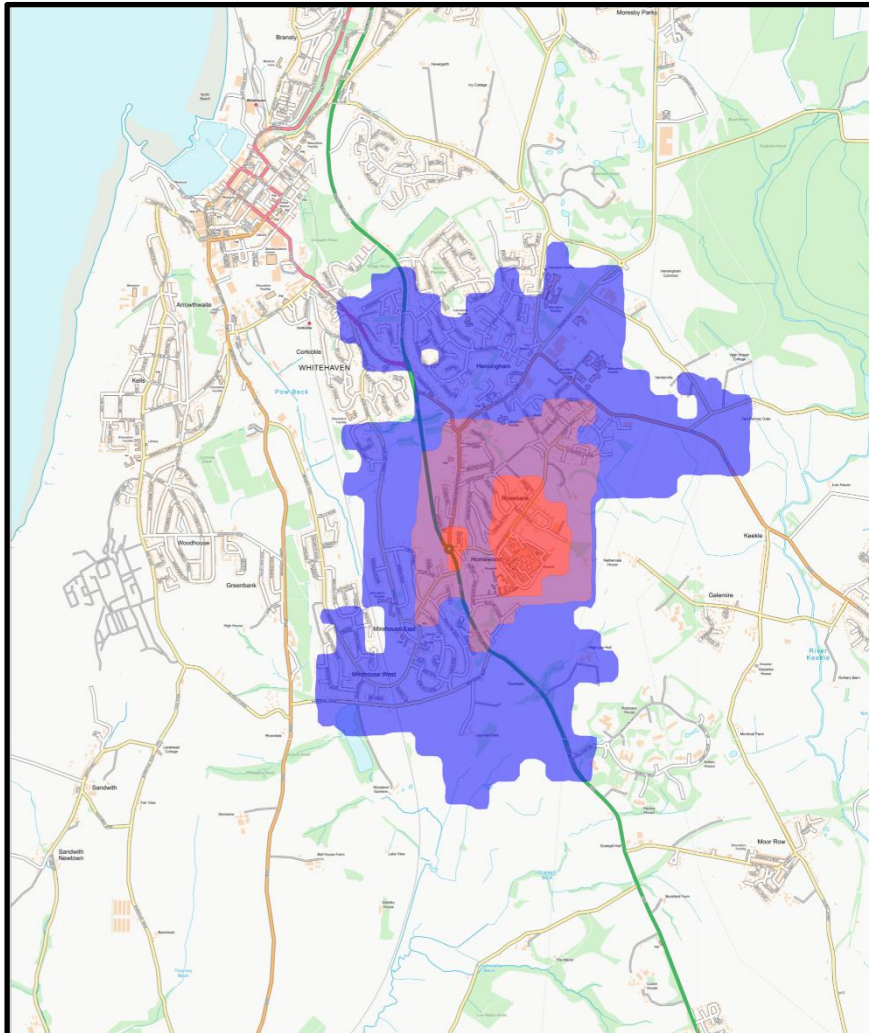


Figure 5.1 – Indicative Pedestrian Catchment Plan

- 5.2.3 The surrounding land uses around the development location, and the pre-existing residential areas surrounding Whitehaven, ensures that the site is situated adjacent to nearby facilities and there are good levels of pedestrian infrastructure in place. It is therefore considered from an accessibility perspective, that the development location is highly suitable.
- 5.2.4 As mentioned in **Section 4**, the internal site layout has been designed to provide wide footways on all the internal roads. After which, pedestrians will be able to access wider residential areas surrounding Whitehaven where pedestrian facilities already exist and are generally of a high standard.
- 5.2.5 The site is located within an acceptable walk distance of the majority of Hensingham and Mirehouse, two established residential areas. There are a row of shops located due west of the site on Meadow Road in Mirehouse which provides a Post Office, newsagent, takeaway food establishments, amongst many others. This coupled with the existing hospital facilities will reduce the use of cars by staff members as they will not need to travel elsewhere during breaks/ lunchtime.

5.2.6 The nearest bus stops to the proposed development are located as a pair on Homewood Road, in the vicinity of the site access. Corkickle Rail Station is located approximately 2km walk distance from the centre of the site. The public transport section of this Chapter discusses the available bus and rail services in further detail.

5.2.7 In summary, in light of the site's location close to existing pre-existing residential areas around Whitehaven it has been demonstrated that the site is accessible for pedestrians.

5.3 Accessibility by Cycle

5.3.1 In order to assist in assessing the accessibility of the site by cycle an 8km cycle catchment for the site has been considered. The 8km cycling distance refers to a recommendation by Cycling England in the document 'Integrating Cycling into Development Proposals' (2009). This equates to a journey time of around 40 minutes, cycling at a speed of 12kph. The catchment extends as far as Lowca in the north, Frizington to the east, Thornhill in the south and St Bees to the west. The plan is shown at **Figure 5.2** below for ease of reference.

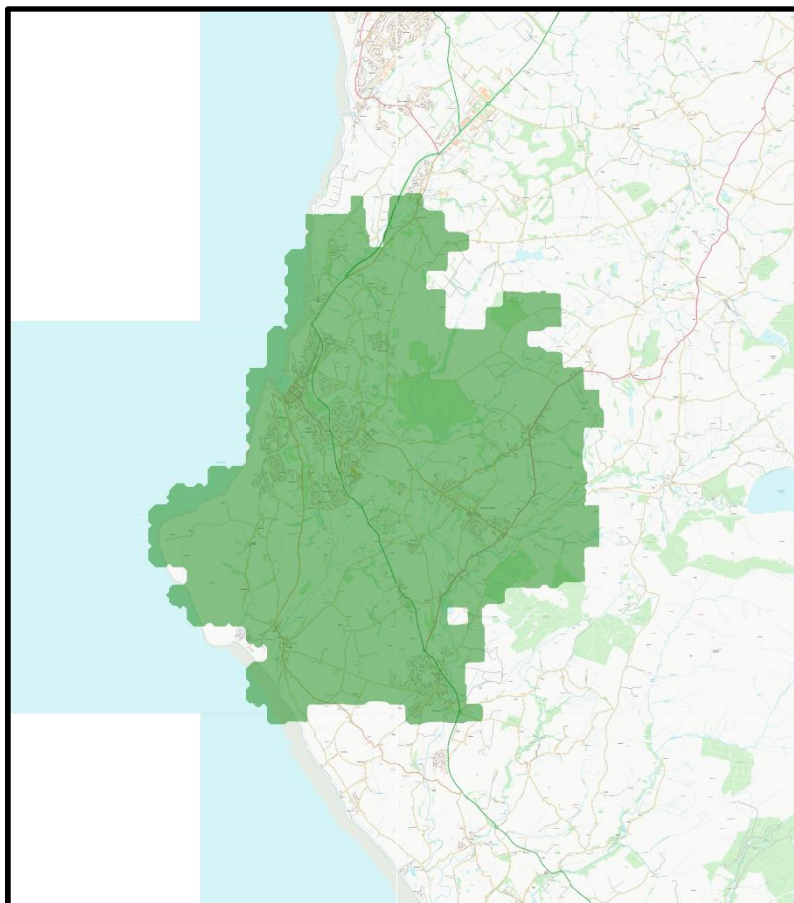


Figure 5.2 – Indicative Cycle Catchment Plan

5.3.2 Of the immediate roads surrounding the site, a number are considered suitable for cycling on carriageway due to the existing low volumes of traffic and slow vehicle speeds. In addition to this, National Cycle Network (NCN) Route 72 is located 1.2km west of the proposed development (in the vicinity of Mirehouse East). Locally, NCN Route 72 connects Whitehaven and Egremont, utilising a mixture of quiet roads and traffic free paths throughout western Cumbria.

5.3.3 Reference should be made to **Figure 5.3** below which details the NCN in the vicinity of the site.

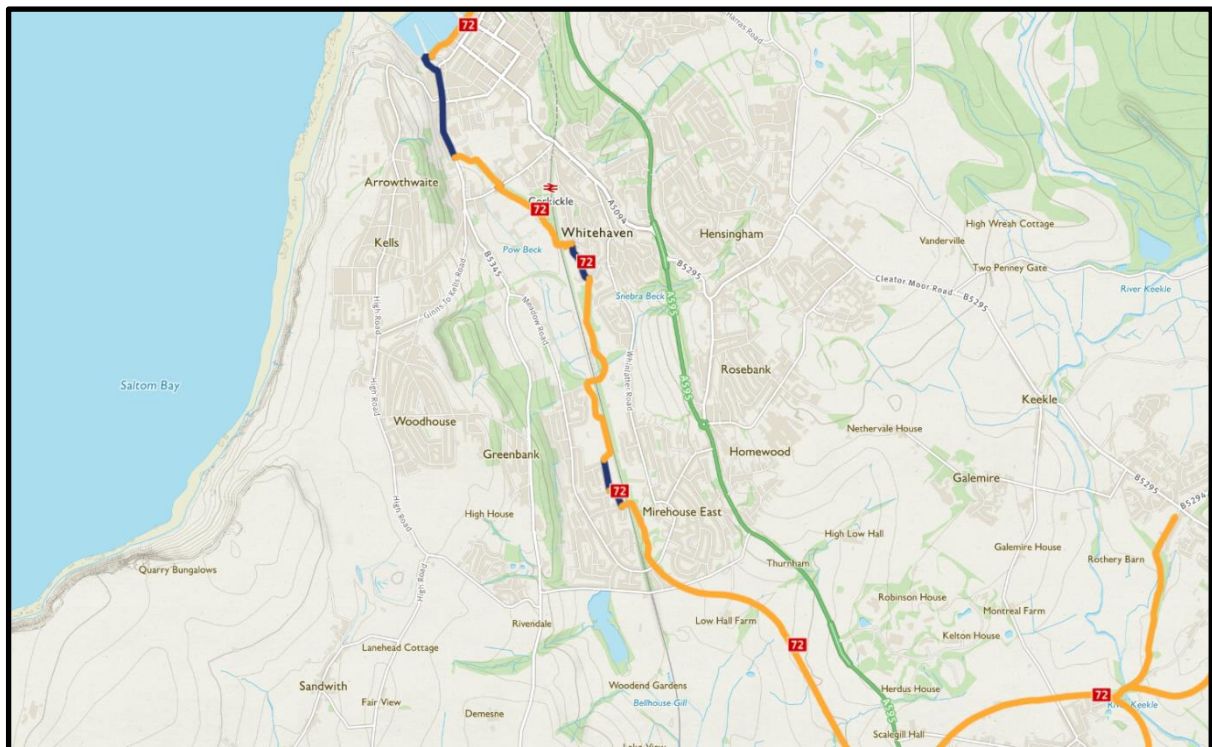


Figure 5.3 – Local NCN Network (Whitehaven)

5.3.4 All of the previously described residential, leisure and employment opportunities found within an accessible walk distance, can be reached within 10-minute cycle journey. The 8km catchment covers the entirety of Whitehaven, as well as a number of key residential areas such as Cleator Moor and Egremont.

5.3.5 Therefore, in summary, it is considered that cycling is a realistic mode of travel for future employees and residents at the development site.

5.4 Public Transport Accessibility

Bus

5.4.1 The CIHT document, 'Planning for Public Transport in Developments' recommends that developments should ideally be located within 400m of a bus stop.

5.4.2 The nearest pair of bus stops to the site are located on Homewood Road immediately adjacent to the WCH site access and well within an 400m walk from the site. Both stops provided shelters, timetable information, level access for pedestrians and the northbound stop is situated in a layby arrangement.

Table 5.2 details the regular bus services that call at the stops on Homewood Road and their associated frequencies:

Bus Service	Journey	Frequency		
		Monday to Friday	Saturday	Sunday
21	Frizington - Cleator Moor - W.C. Hospital - Whitehaven	30 mins	-	-
30	Maryport- Thornhill via Workington, Whitehaven & Egremont	30 mins	30 mins	60 mins
32	Whitehaven • Cleator Moor • Wath Brow • Egremont • Frizington	60 mins	60 mins	120 mins

Table 5.2 – Homewood Road Bus Service Summary

5.4.3 In summary, in light of the site's location close to a number of existing services on Homewood Road, it has been demonstrated that the site is highly accessible by bus.

Rail

5.4.4 The CIHT document, 'Planning for Public Transport in Developments' notes that visitors travelling to a site by rail will typically be prepared to walk further to the site than visitors travelling by bus, with a preferred distance of 800m. Corkickle Railway Station is located on Bedford Road, approximately 2km walk/ cycle distance from the centre of the site.

5.4.5 Whilst the walking distance from the site to the railway station is above the desired maximum, it may still be viable for some rail users, particularly those who cycle or 'park and ride'. Furthermore, there are bus stops located on Inkerman Terrace adjacent to the railway station, which are also served by the No.30 and 32 buses.

5.4.6 It is therefore considered that a multi-modal journey would be viable for staff and residents at the site to who are unable or unwilling to walk/cycle the distance.

5.4.7 The Northern service operates from Corkickle and the station provides regular and frequent trains (hourly) northbound towards Carlisle and southbound towards Barrow-in-Furness, as well as many of the nearby local stations across western Cumbria. At the station itself there is CCTV coverage, payphones and ramps for mobility access.

5.4.8 In view of the availability of connecting bus services to access Corkickle Railway Station, and the level of service available at the station, it is considered that the site is accessible for travel by rail.

5.5 Summary

5.5.1 In summary, the site is located such as to benefit from existing walking, cycling and public transport opportunities. The site is located in close proximity to a variety of key services and facilities as well as a number of pre-existing residential areas. The site is therefore considered to be accessible from sustainable modes of travel in line with national and local transport planning policy outlined in **Section 7** of this TA.

6.0 Highway Impact

6.1 Introduction

6.1.1 As the proposed development predominantly involves the demolition and refurbishment of existing/redundant hospital facilities at WCH. It is considered that there is negligible net impact on the local highway network, when comparing the existing trip generation potential of the hospital and proposed facilities coming forward as Phase 2.

6.1.2 Notwithstanding the above, this section of the report details the methodology used to predict the demand associated with the proposed development and describes the results of the junction impact assessments that have been undertaken as part of a **sensitivity test** of the local highway network.

6.2 Baseline Traffic Data

6.2.1 Manual classified turning count traffic surveys were undertaken in July 2019 at nearby junctions on the highway network. Additionally, an Automatic Traffic Counter (ATC) was installed in the vicinity of the proposed access on Homewood Road, which collected 7 complete days of data. The raw survey data can be provided upon request.

6.2.2 The surveyed flows have been converted to Passenger Car Units (PCUs) and shown in **Figures 1 and 2** in **Appendix A**.

6.2.3 The traffic flows surveyed in 2019 scenarios have been projected to 2026 by applying factors extracted from the DfT's TEMPRO 7.2 program, using the definitive NTEM v7.2 database and the current NTM AF09 dataset in line with TAG Unit M4: Forecasting and Uncertainty. Copeland (003) has been selected as the defined area. Reference should be made to **Table 6.1** which shows the growth factors applied to the base flows.

Scenarios	Time Period	
	AM Peak	PM Peak
2019 - 2026	1.0691	1.0649

Table 6.1 – TEMPRO Growth Factors in Copeland.

6.2.4 As the application is to be submitted in 2019 the future year assessments would ordinarily be undertaken for the year of 2024, which is based on the year of application +5 in line with previous DfT guidance. However, at the time of writing this TA, Copeland District Council's (CDC) Planning Portal is offline and as such information regarding any relevant committed development traffic flows have not been obtainable. As such an additional +2 years of traffic growth has been added to the 2019 survey flows to ensure their robustness.

6.2.5 Reference should be made to **Figures 3 and 4** in **Appendix A** which show the 2026 'No Development' scenarios for the weekday AM and PM peak periods.

6.3 Traffic Generation

6.3.1 The TRICS database (v. 7.6.3) has been interrogated for weekday surveys for residential developments. TRICS is the industry recognised tool for calculating the anticipated future trip demand of a proposed development. The database contains multi-modal surveys of varying land uses in multiple destinations across the UK, including health care and educational uses.

6.3.2 As described in **Section 3** it is envisaged that the proposed development would comprise of the following new build uses (Phase 2B involves a refurbishment of existing building and 2C is associated parking):

- 3986m² hospital buildings (Phase 2A);

6.3.3 The full TRICS outputs are included within **Appendix B** to the rear of this report. After reviewing the data, the following peak hours were obtained:

- AM Peak: 08:00 – 09:00; and,
- PM Peak: 17:00 – 18:00.

6.3.4 The peak hour trip rates and subsequent vehicular trips associated with Phase 2 are provided in **Tables 6.2 - 6.6** below.

TRICS – General Hospital	Average TRICS Trip Rates			Proposed Development Trips		
	Arrive	Depart	Total	Arrive	Depart	Total
AM (08:00 – 09:00)	0.994	0.335	1.329	40	13	53
PM (17:00 – 18:00)	0.315	0.792	1.107	13	32	44

Table 6.2 – Proposed Development Trip Rates and Trip Generation (Phase 2 Hospital Buildings) Per 100m² GFA

6.3.5 However, it should also be noted that the former uses of the site is likely to have generated similar (or more) levels of traffic when in operation, and that the re-use of this previously-developed land should be encouraged from a planning and sustainability perspective.

6.3.6 It is considered that a large proportion of the traffic flows shown at **Table 6.2** are already on the local highway network and would be utilising the existing/previous WCH site. Based on an understanding of the current development proposals it is considered suitable and robust to assume that 50% of trips

would already be on site and therefore 'not new' trips to the network. The values shown above have been amended accordingly and presented in **Table 6.6** below.

	Proposed Development Trips		
	Arrive	Depart	Total
AM (08:00 – 09:00)	20	7	27
PM (17:00 – 18:00)	7	16	22

Table 6.6 – Total Trip Generation (Phase 2)

6.3.7 The above table demonstrate that the scheme could potentially generate approximately 27 and 22 two-way trips in the AM and PM peaks respectively. This has been used to inform the junction capacity analysis in **Section 6.6** below.

6.4 Traffic Assignment

6.4.1 The above traffic generation has been assigned onto the local highway network using the observed turning flow proportions from the recent 2019 survey data. The resultant traffic distribution is shown at **Figures 5 and 6** in **Appendix A**.

6.4.2 The predicted peak hour vehicle trips shown in **Tables 6.6** above have been assigned on the surrounding network using this trip distribution. The resultant development traffic flows are shown at **Figures 7 – 8** in **Appendix A**.

6.4.3 The development generated flows have been added to the flows shown on **Figures 1 - 4** to create the 2019 and 2026 'With Development' scenarios, which are shown as **Figure 9 - 12** in **Appendix A**.

6.5 Junction Assessments

6.5.1 Capacity assessments have been undertaken at the following junctions surrounding the development proposals:

- Homewood Road/site access junction
- A595/Homewood Road/Egremont Road;
- Homewood Road/B5295 Cleator Moor Road; and,
- A595/Mirehouse Road.

6.5.2 The above junctions operating under priority control have been modelled utilising TRL's JUNCTIONS programme and those under signal control via JCT Consultancy's LinSig programme.

- 6.5.3 LinSig allows traffic engineers to model traffic signals and their effect on traffic capacities and queuing. As well as modelling the effects of traffic signals LinSig also optimises signal timings to reduce delay or increase capacity at a junction or group of interlinked junctions.
- 6.5.4 LinSig results refer to the Degree of Saturation (DoS) and Mean Maximum Queue (MMQ) predicted in each lane of the junction. A DoS of 100% indicates that the lane in question is operating at its theoretical capacity (point of saturation), whilst a DoS of 90% or less indicates that the lane is operating within its practical capacity.
- 6.5.5 JUNCTIONS results refer to the Ratio of Flow to Capacity (RFC), delay and queue length predicted on each arm of the junction. An RFC of 1.00 indicates that the arm in question is operating at its theoretical capacity, whilst an RFC of 0.85 or less indicates that the arm is operating within its practical capacity.
- 6.5.6 The results from the junction assessments are shown in the following section and the relevant junction modelling output reports are attached in **Appendix C** to the rear of this report.

6.6 Junction Modelling Results

Homewood Road/Site Access Junction

- 6.6.1 As shown on the proposed site layout the site access junction for WCH on Homewood Road is to serve the majority of the development and has been redesigned as part of the proposals. The JUNCTIONS 8 results of the future year assessments at the site access on Homewood Road are summarised below.

Approach	Movement	AM 2019 With Dev			PM 2019 With Dev		
		Queue (Vehs)	Delay	RFC	Queue (Vehs)	Delay	RFC
Homewood Road	Ahead/Right	0	6 secs	0.02	0	7 secs	0.01
Site Access	Right	0	9 secs	0.01	0	11 secs	0.01
Site Access	Left/	0	6 secs	0.01	0	7 secs	0.02

Table 6.7 – Homewood Road/Site Access: 2019 Scenarios

Approach	Movement	AM 2026 With Dev			PM 2026 With Dev		
		Queue (Vehs)	Delay	RFC	Queue (Vehs)	Delay	RFC
Homewood Road	Ahead/Right	0	6 secs	0.02	0	7 secs	0.01
Site Access	Right	0	9 secs	0.01	0	11 secs	0.01
Site Access	Left/t	0	6 secs	0.01	0	7 secs	0.02

Table 6.8 – Homewood Road/Site Access: 2026 Scenarios

- 6.6.2 It is clear from the results shown in **Table 6.8** that the proposed Homewood Road/Site Access priority junction is predicted to operate well within capacity in the 2026 future year scenarios.

A595/Homewood Road/Egremont Road

6.6.3 The results of the existing A595/Homewood Road/Egremont Road roundabout junction are summarised below.

Lane Description	2019 Base				2019 With Dev			
	AM Peak		PM Peak		AM Peak		PM Peak	
	RFC	MMQ	RFC	MMQ	RFC	MMQ	RFC	MMQ
Egremont Road-N	0.78	4	0.69	2	0.79	4	0.70	2
B5295	0.23	0	0.17	0	0.23	0	0.18	0
Homewood Rd	0.58	1	0.88	6	0.59	1	0.90	7
Egremont Rd-S	0.90	8	1.03	37	0.90	8	1.04	39

Table 6.9 – A595/Homewood Road/Egremont Road: '2019 Base' Scenarios

Lane Description	2026 No Development				2026 With Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	RFC	MMQ	RFC	MMQ	RFC	MMQ	RFC	MMQ
Egremont Road-N	0.87	5	0.74	3	0.87	5	0.74	3
B5295	0.26	0	0.19	0	0.26	0	0.19	0
Homewood Rd	0.65	2	0.99	14	0.67	2	1.01	17
Egremont Rd-S	0.96	15	1.11	73	0.97	16	1.11	77

Table 6.10 – A595/Homewood Road/Egremont Road: 2026 Scenarios

6.6.4 The results shown in **Tables 6.9** and **6.10** demonstrate that the existing A595/Homewood Road/Egremont Road roundabout junction is predicted to operate over capacity in the baseline scenarios. However, with the proposed development in place there are minimal increases in the RFC and queue lengths of the junction approaches. It should be noted that once over theoretical capacity, JUNCTIONS results increase exponentially with even very minor increases in traffic flows.

Homewood Road/Cleator Moor Road

6.6.5 The results of the existing Homewood Road/Cleator Moor Road priority junction are summarised below.

Lane Description	2019 Base				2019 With Dev			
	AM Peak		PM Peak		AM Peak		PM Peak	
	RFC	MMQ	RFC	MMQ	RFC	MMQ	RFC	MMQ
Overend Rd- Left	0.17	0	0.29	0	0.18	0	0.30	0
Overend Rd- Right	0.37	1	0.49	1	0.38	1	0.50	1
Cleator Moor Rd- Ahead/Right	0.77	3	0.21	0	0.78	3	0.21	0

Table 6.11 – Overend Road/Cleator Moor Road: '2019 Base' Scenarios

Lane Description	2026 No Development				2026 With Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	RFC	MMQ	RFC	MMQ	RFC	MMQ	RFC	MMQ
Overend Rd- Left	0.19	0	0.34	1	0.20	0	0.35	1
Overend Rd- Right	0.43	1	0.56	1	0.44	1	0.58	1
Cleator Moor Rd- Ahead/Right	0.85	4	0.23	0	0.86	5	0.24	0

Table 6.12 – Overend Road/Cleator Moor Road: 2026 Scenarios

6.6.6 The results shown in **Tables 6.11** and **6.12** demonstrate that the existing Homewood Road/Cleator Moor Road priority junction is predicted to operate close to theoretical capacity in the 2026 future year scenarios. However, with the proposed development in place there are minimal increases in RFC and queue lengths at the junction.

A595/Mirehouse Road

6.6.7 The results of the existing A595/Mirehouse Road traffic signal junction are summarised below.

Lane Description	2019 Base				2019 With Dev			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Dos	MMQ	Dos	MMQ	Dos	MMQ	Dos	MMQ
Egremont Road West Ahead Right	66.4%	12	56.0%	7	66.5%	12	56.4%	7
Mirehouse Road Right Left	74.0%	6	98.4%	14	74.0%	6	98.4%	14
Egremont Road East Ahead Left	77.0%	15	102.2%	46	77.5%	15	102.6%	48

Table 6.13 – A595/Mirehouse Road: '2019 Base' Scenarios

Lane Description	2026 No Development				2026 With Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	DoS	MMQ	DoS	MMQ	DoS	MMQ	DoS	MMQ
Egremont Road West Ahead Right	71.0%	14	59.6%	8	71.1%	14	60.0%	8
Mirehouse Road Right Left	78.9%	6	104.7%	22	78.9%	6	104.7%	22
Egremont Road East Ahead Left	82.3%	17	108.8%	76	82.9%	17	109.3%	78

Table 6.14 – A595/Mirehouse Road: 2026 Scenarios

6.6.8 The results shown in **Tables 6.13** and **6.14** demonstrate that the existing A595/Mirehouse Road traffic signals are predicted to operate over capacity in the baseline scenarios. However, with the proposed development in place there are minimal increases in the RFC and queue lengths of the junction

approaches. It should be noted that once over theoretical capacity, LINSIG results increase exponentially with even very minor increases in traffic flows.

6.7 Highway Impact Summary

- 6.7.1 The highway impacts of the traffic predicted to be generated by the proposed development have been properly assessed at key junctions on the road network as part of a sensitivity test.
- 6.7.2 Those impacts have been demonstrated to be immaterial and are far from being able to be categorised as severe. Therefore, no highway capacity mitigation measures are proposed in order to make the development proposals acceptable in planning terms.
- 6.7.3 It should also be noted that the former uses of the site is likely to have generated similar levels of traffic when in operation, and that the re-use of this previously-developed land should be encouraged from a planning and sustainability perspective.
- 6.7.4 As the proposed development predominantly involves the demolition and refurbishment of existing/redundant hospital facilities at WCH. It is considered that there is negligible net impact on the local highway network, when comparing the existing trip generation potential of the hospital and proposed facilities coming forward as Phase 2. Notwithstanding the above this section of the report seeks to provide a sensitivity test of the local highway network for information purposes.

7.0 Transport Planning Policy

7.1 Introduction

7.1.1 The following section sets out key national and local Transport Planning policies and how the proposals accord with these.

7.2 National Planning Policy Framework

7.2.1 NPPF sets out the current national transport planning policy and outlines the important role that transport policies have to play in facilitating sustainable development. From the outset, the Minister for Planning's Foreword lays the foundations for current policy thinking;

"The purpose of the planning system is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs".

7.2.2 Paragraph 11 states that at the heart of NPPF is a "presumption in favour of sustainable development". For decision making this means granting permission unless:

"...any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole."

7.2.3 Section 9 of the NPPF is entitled Promoting Sustainable Transport, and outlines the important role that transport policies have to play in facilitating sustainable development. The section states that:

"The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making".

7.2.4 Paragraph 108 of the NPPF states that:

"In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

a) *Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location".*

- b) *Safe and suitable access to the site can be achieved for all users, and,*
- c) *Any significant impacts from the development of the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree”.*

7.2.5 Paragraph 109 of the NPPF states that:

“Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe”.

7.2.6 It has been demonstrated throughout this TA that the proposed development is situated in an accessible location and the residual cumulative impacts of the proposed development would not be 'severe' from a highways and transportation perspective. Therefore, proposed development accords with the NPPF.

7.3 National Planning Policy Guidance (NPPG)

7.3.1 In addition to the NPPF, a National Planning Policy Guidance (NPPG) document has also been developed by the government. Within this document there is a specific section that clarifies the over-arching principles on Travel Plans, Transport Assessments and Transport Statements.

7.3.2 The guidance on Transport Assessments and Statements re-iterates the circumstances in which either document would usually be required. It also clarifies the process for establishing a scope for the assessment, and what the document should contain.

7.3.3 The NPPG has been considered in the production of this TA.

7.4 Cumbria County Council Local Transport Plan 3 (LTP3)

7.4.1 The Local Transport Plan for Cumbria sets out the vision and objectives for transport in the County over the next 15 years and the approach to be taken to achieve these objectives. It sets out the County Council's strategic policies for transport and measures that will be needed to tackle the transport priorities for the county.

7.4.2 The key transport priorities within the LTP3 are as follows:

- To develop transport infrastructure to support improvements to the Cumbrian economy;
- To improve accessibility to jobs, education and training, health and other key services;
- To reduce the high level of road casualties;
- To maintain the extensive road network to a high standard; and,

- Reduce the need to travel and help people to get to where they need to go safely and with reduced environmental impact.

7.4.3 The proposed development is in accordance with the above key transport priorities of CCC's LTP3.

7.5 Conclusions

7.5.1 It is considered that the proposed development is in accordance with national and local transport policies and guidance. The site is located within an area which has a range of existing local facilities and plenty of sustainable travel choices.

8.0 Summary and Conclusion

8.1 Summary

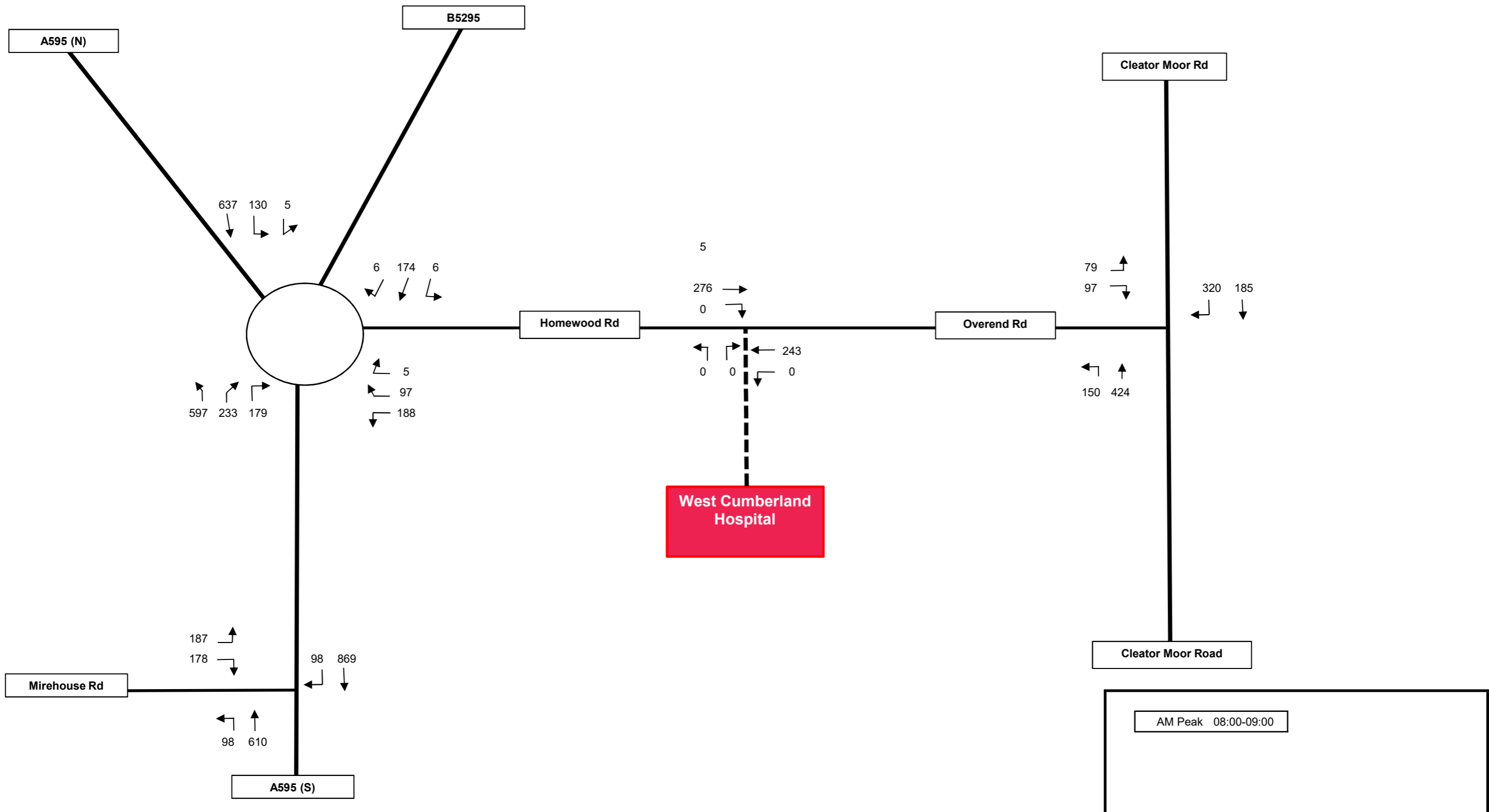
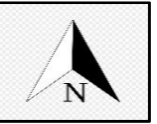
- 8.1.1 Curtins has been appointed on behalf of North Cumbria University Hospital NHS Trust to provide traffic and transportation advice in relation to a proposed development at WCH. The development consists of refurbishing the existing hospital buildings, Included within the development proposals is the addition of further formal parking spaces on the WCH site. The above works are known as Phase 2 of the wider re-development of WCH.
- 8.1.2 As demonstrated on the proposed site layout, the previous site access junction on Homewood Road is to serve the majority of the proposed hospital redevelopment. The access will be upgraded and widened include a pedestrian refuge island (to assist with pedestrian movements north/south on Homewood Road) and a ghost island right turn lane for traffic wishing to turn in the direction of the main car park.
- 8.1.3 It is envisaged that pedestrians and cyclists would access the site by utilising the aforementioned access points on Homewood Road. The site is adjacent to an existing residential area where pedestrian facilities already exist and are of a high standard with well-lit, well-used and well-defined footway networks close to the site.
- 8.1.4 The internal layout has been designed to provide multiple direct and convenient connections for pedestrians and cyclists to support the creation of a sustainable development site.
- 8.1.5 A review of accidents on the local highway network does not indicate any correlations that would suggest that highway condition, layout or design were significant contributory factors in the accidents.
- 8.1.6 The walking, cycling and public transport opportunities at the site constitute alternative modes of travel to the car which are considered to be realistic modes of travel for a range of different journey types. The site is therefore considered to be accessible from sustainable modes of travel in line with national and local transport planning policy.
- 8.1.7 The highway impacts of the traffic predicted to be generated by the proposed development have been properly assessed at key junctions on the road network.
- 8.1.8 Those impacts have been demonstrated to be immaterial and are far from being able to be categorised as severe. Therefore, no highway capacity mitigation measures are proposed in order to make the development proposals acceptable in planning terms.

- 8.1.9 It should also be noted that the former uses of the site is likely to have generated similar (or more) levels of traffic when in operation, and that the re-use of this previously–developed land should be encouraged from a planning and sustainability perspective.
- 8.1.10 As the proposed development predominantly involves the demolition and refurbishment of existing/redundant hospital facilities at WCH. It is considered that there is negligible net impact on the local highway network, when comparing the existing trip generation potential of the hospital and proposed facilities coming forward as Phase 2.
- 8.1.11 A review of relevant local and national transport planning guidance has been undertaken. It is considered that the proposed development conforms with such policy.

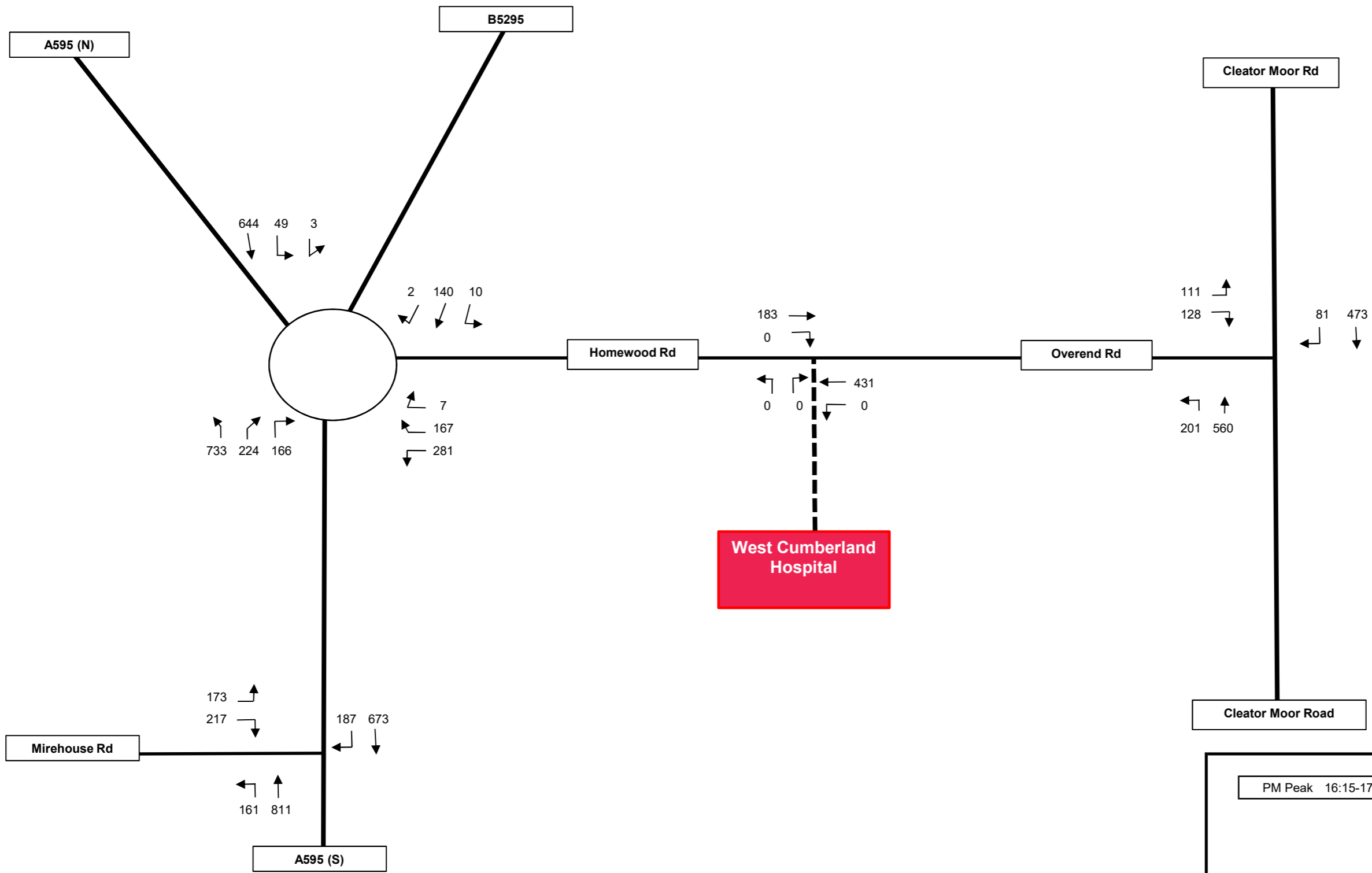
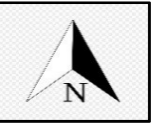
8.2 Conclusion

- 8.2.1 The proposed development meets the sustainable objectives of the National Planning Policy Framework and its residual traffic impacts are not severe. From a traffic and transportation perspective there are no reasons why the development proposals should not be granted planning approval.

Appendix A – Network Figures

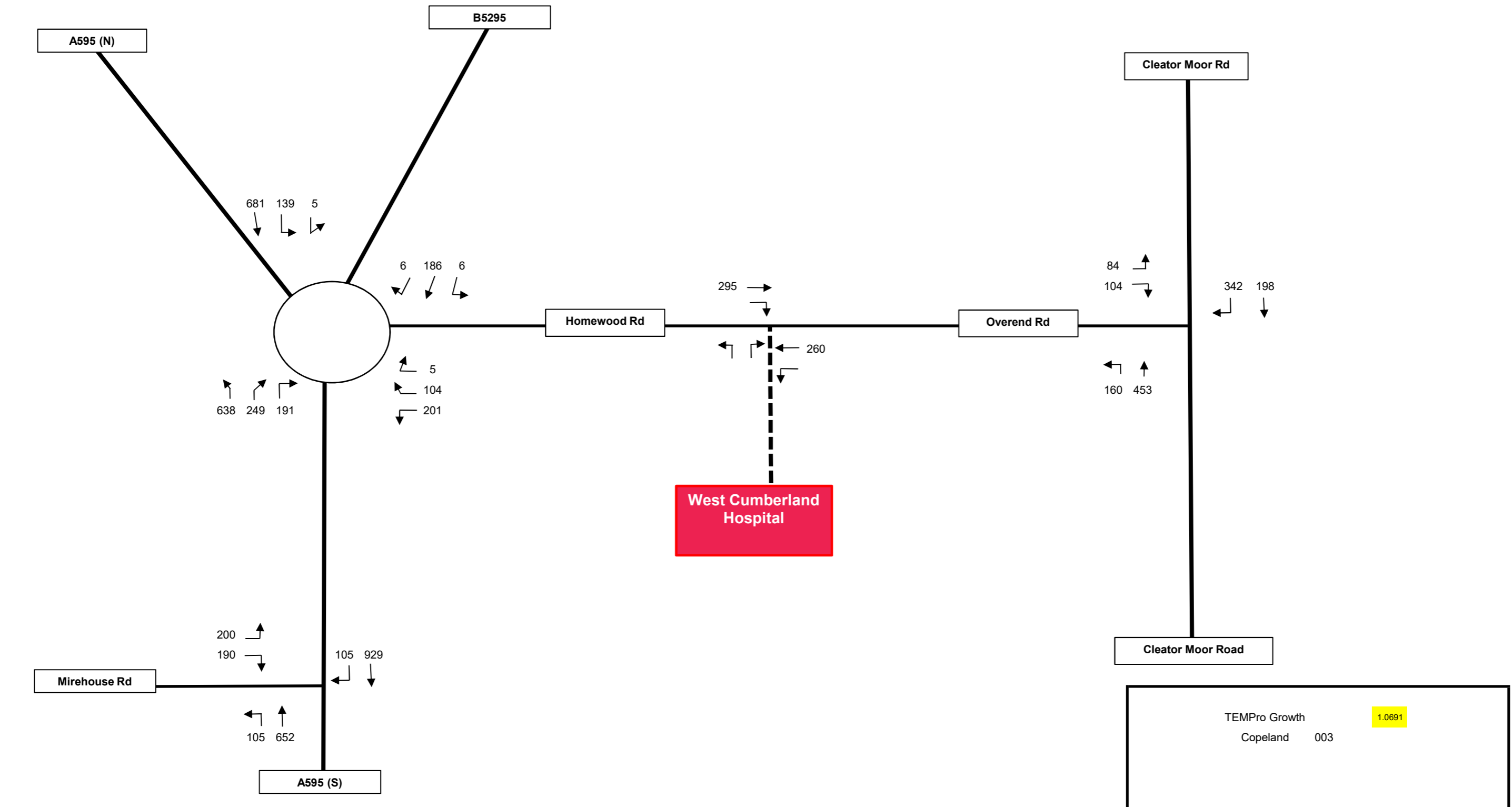
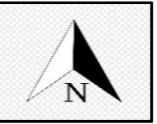


	Surveyed Flows AM Peak 2019 (PCU)	17 October 2019	073096
	West Cumberland Hospital	Figure 1	

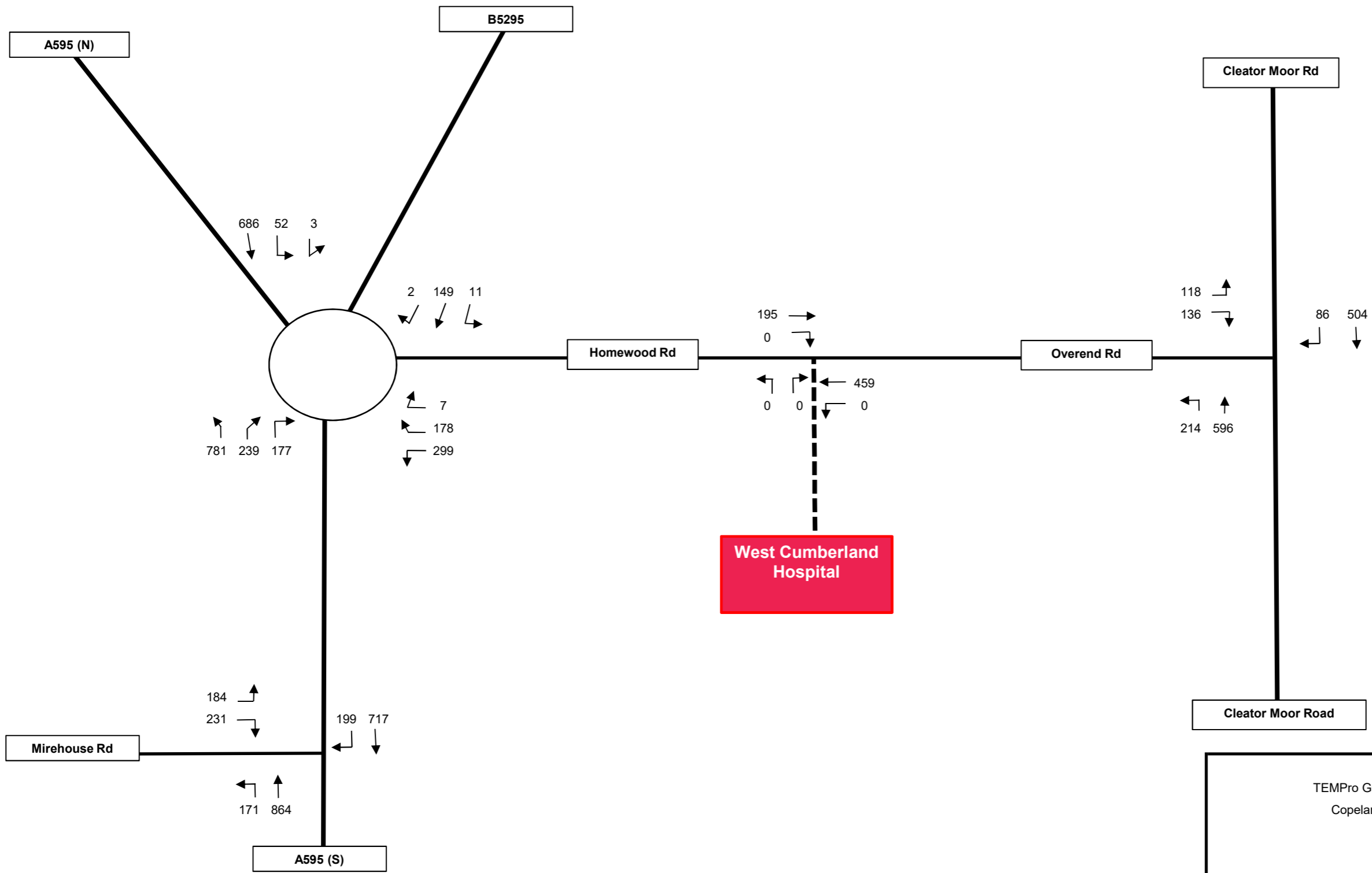
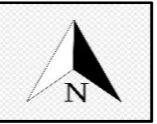


PM Peak 16:15-17:15

	Surveyed Flows PM Peak 2019 (PCU)	17 October 2019	073096
	West Cumberland Hospital	Figure 2	

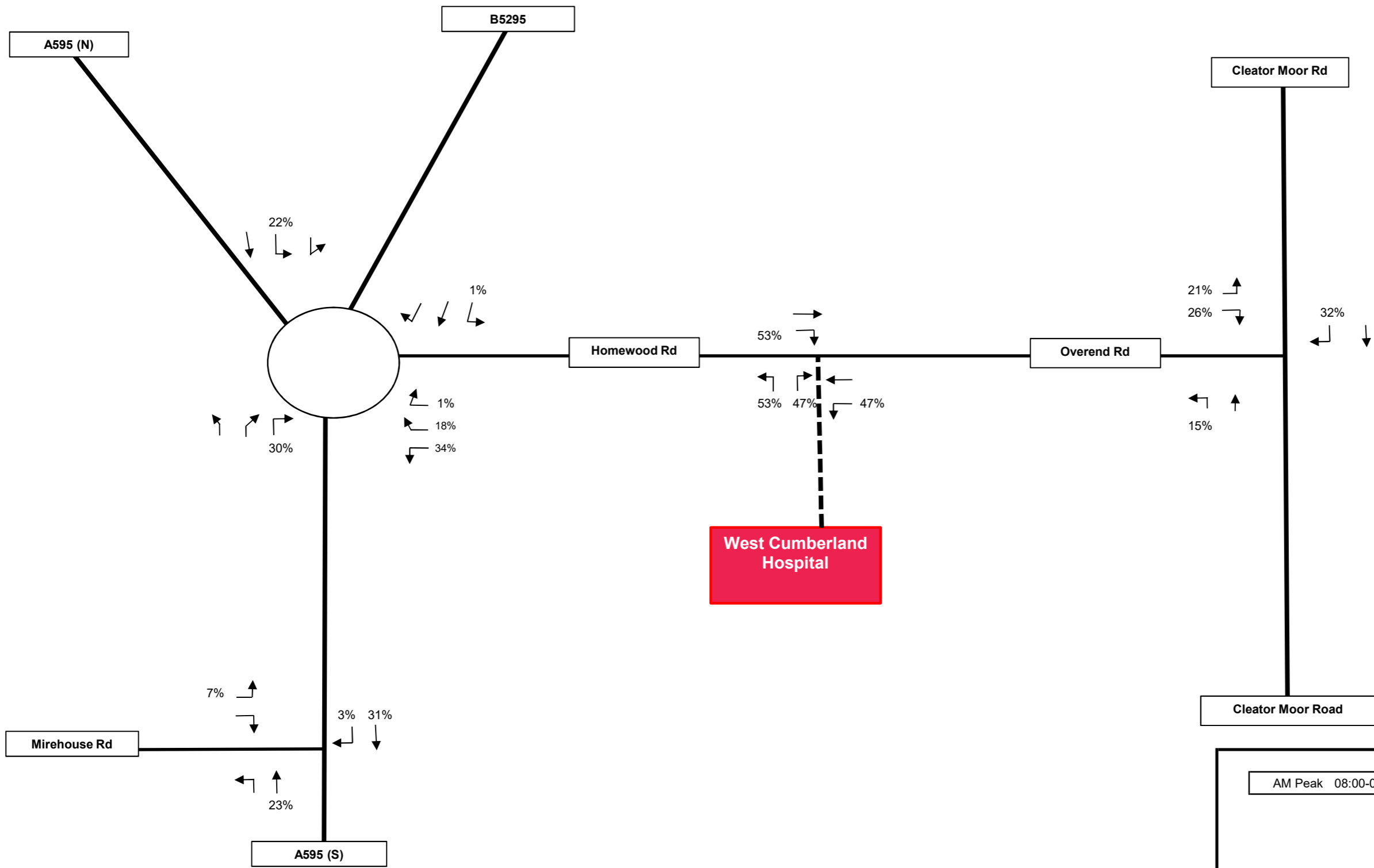
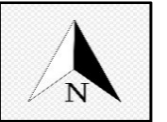


	Base Flows 2026 AM	17 October 2019	073096
	West Cumberland Hospital	Figure 3	

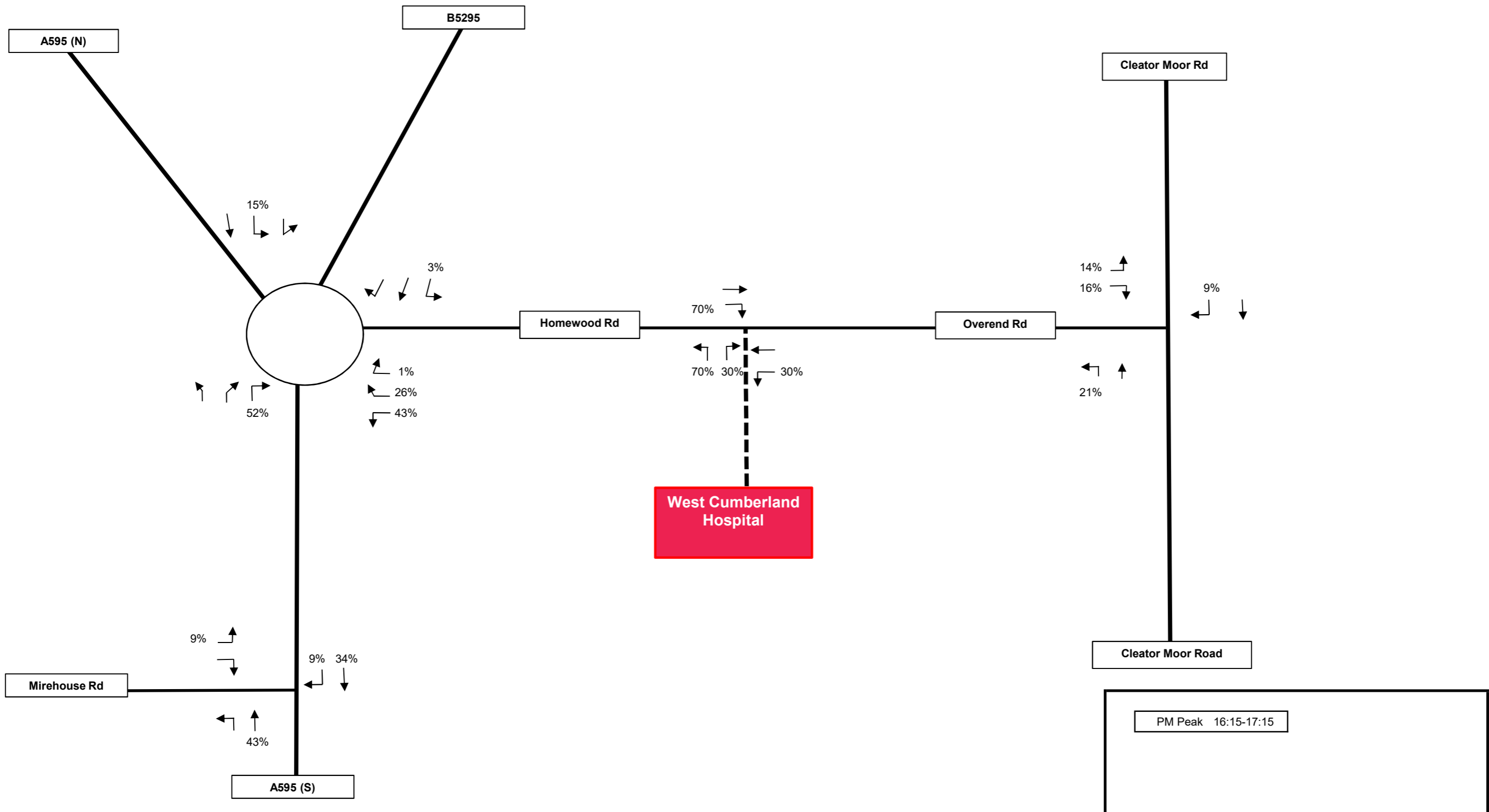


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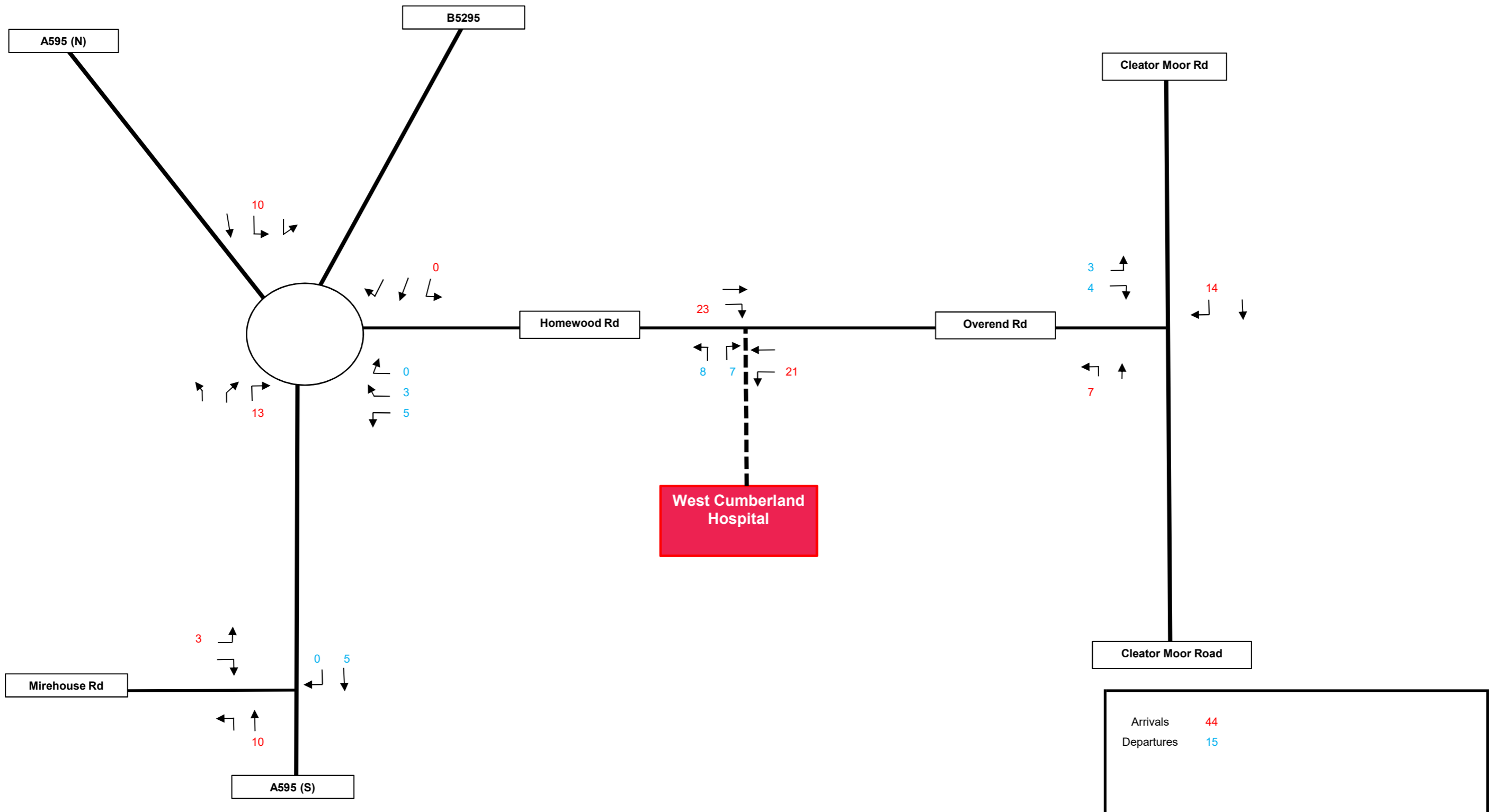
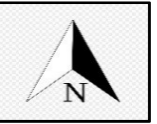
	Base Flows 2026 PM	17 October 2019	073096
	West Cumberland Hospital	Figure 4	



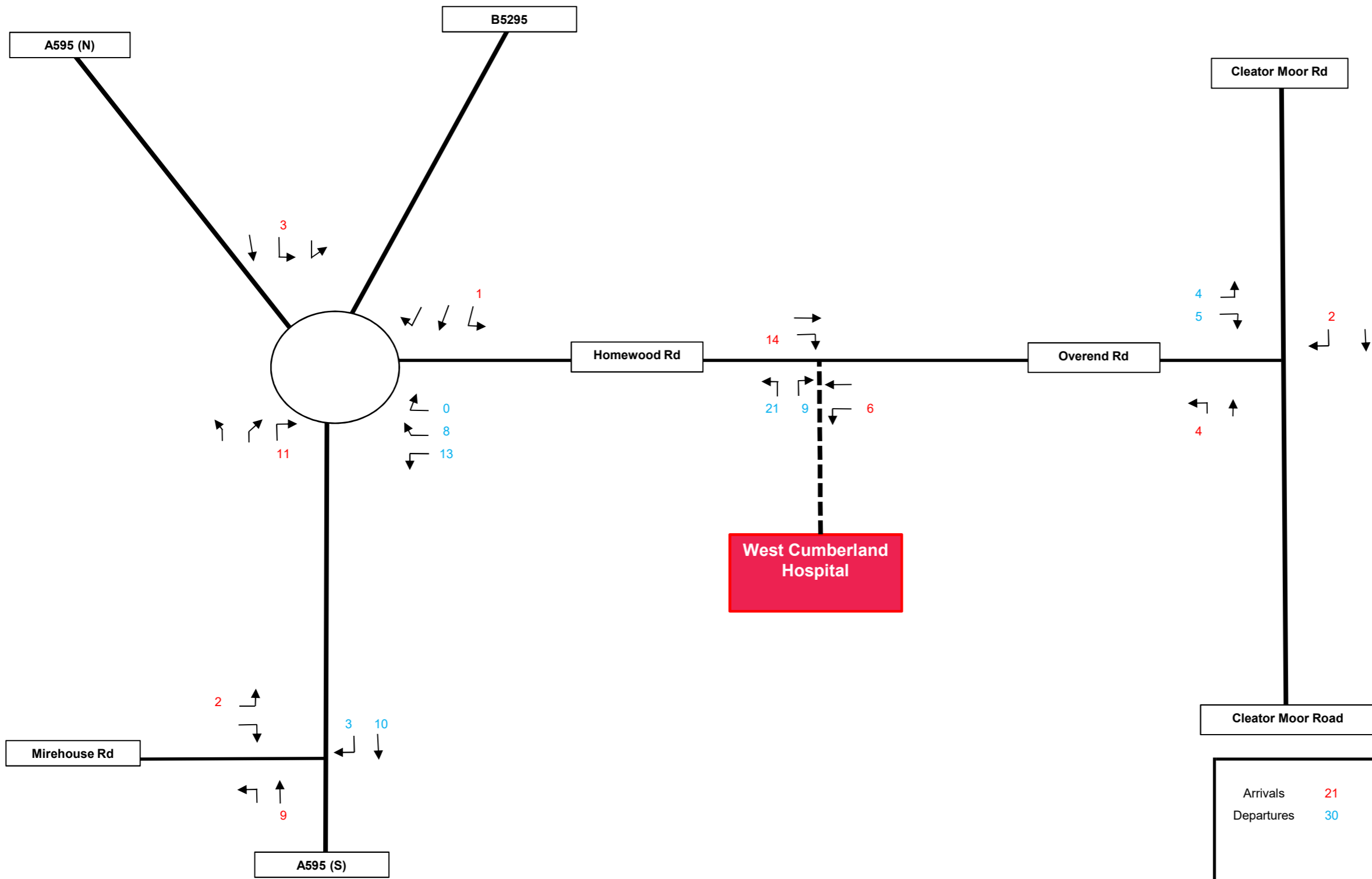
	Traffic Distribution AM Peak	17 October 2019	073096
	West Cumberland Hospital	Figure 5	



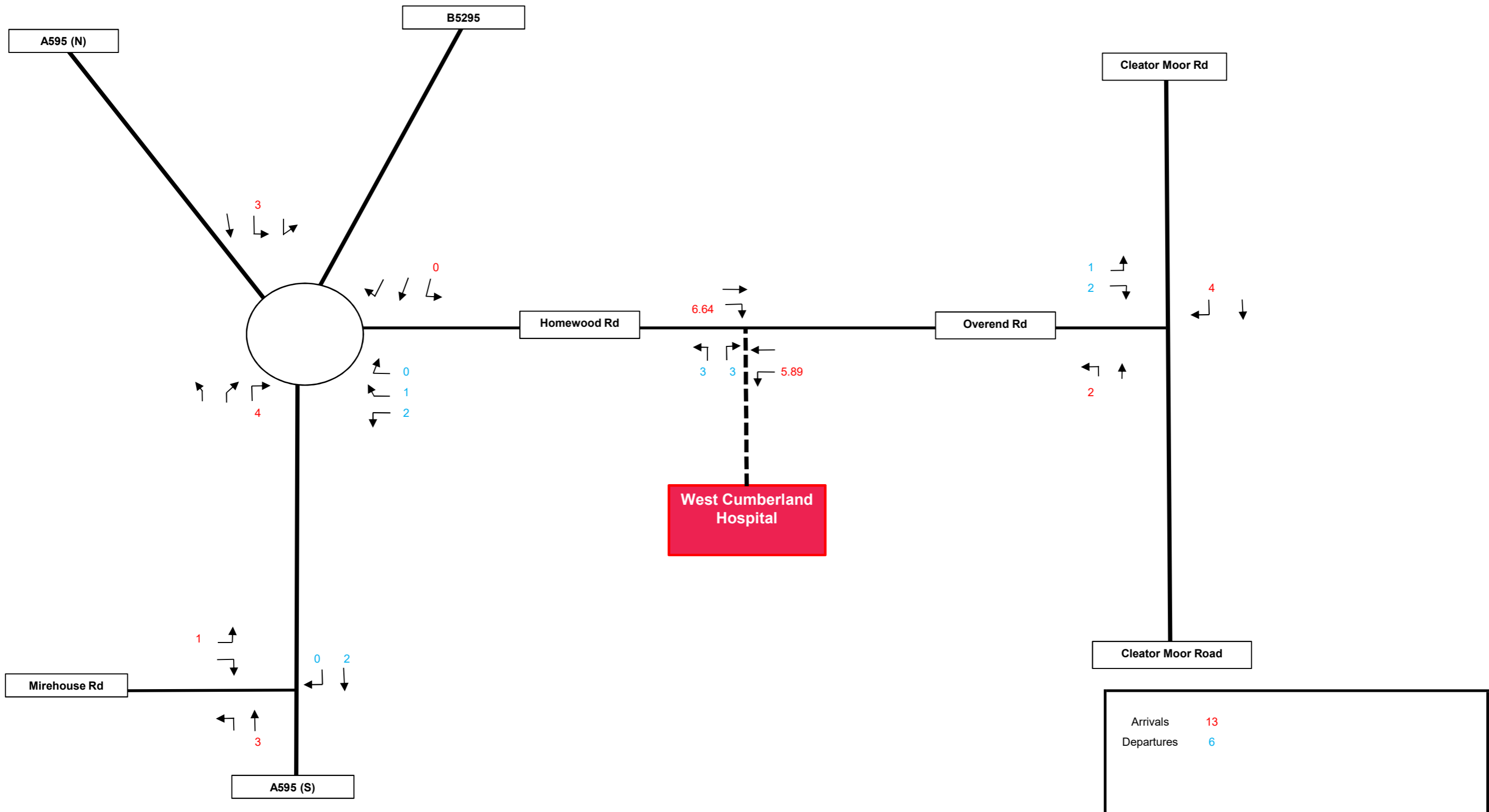
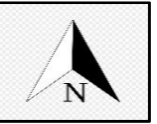
	Traffic Distribution PM Peak	17 October 2019	073096
	West Cumberland Hospital	Figure 6	




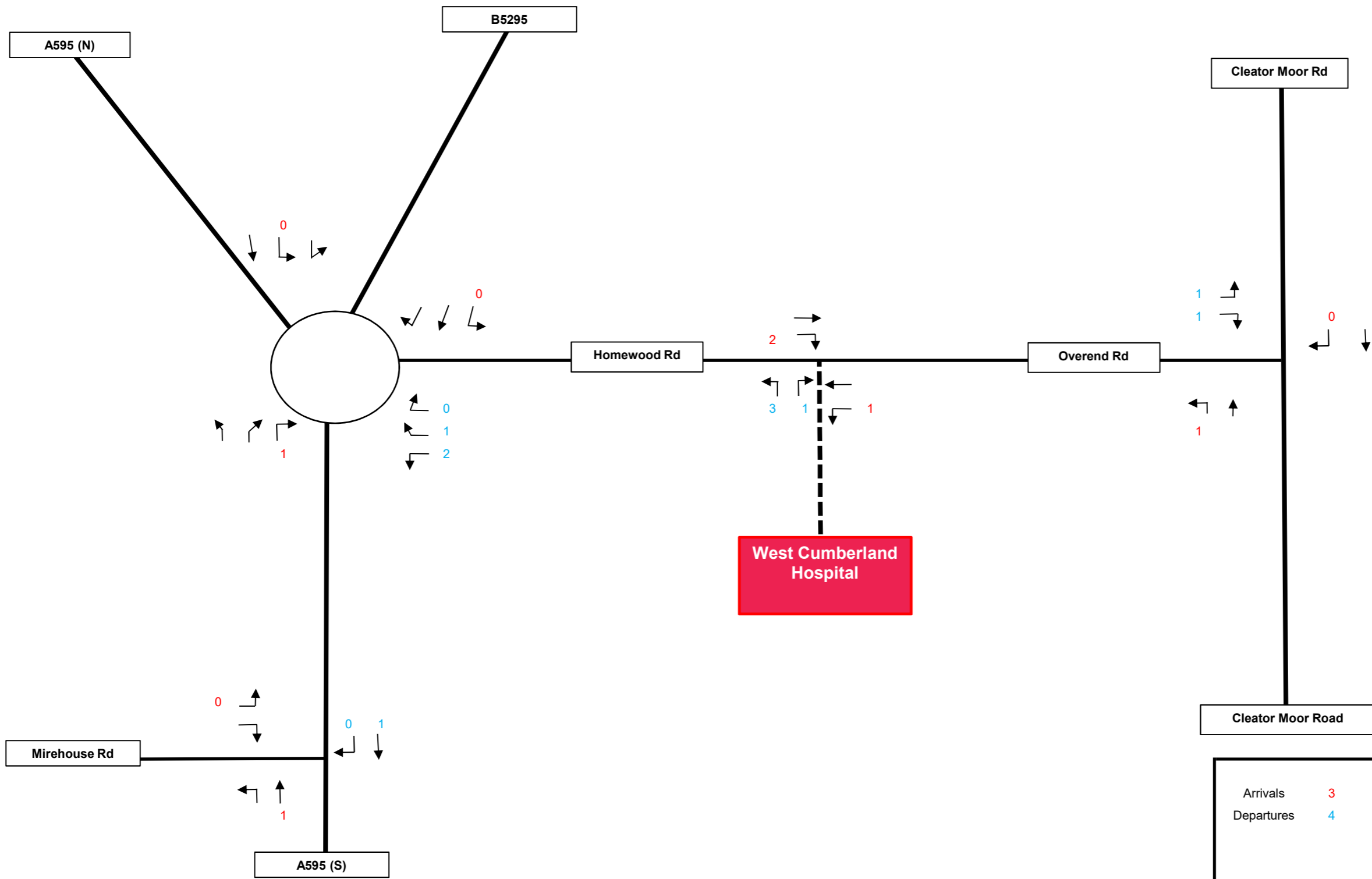
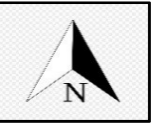
	Trip Generation AM Peak Phase 2	17 October 2019	073096
	West Cumberland Hospital	Figure 7	



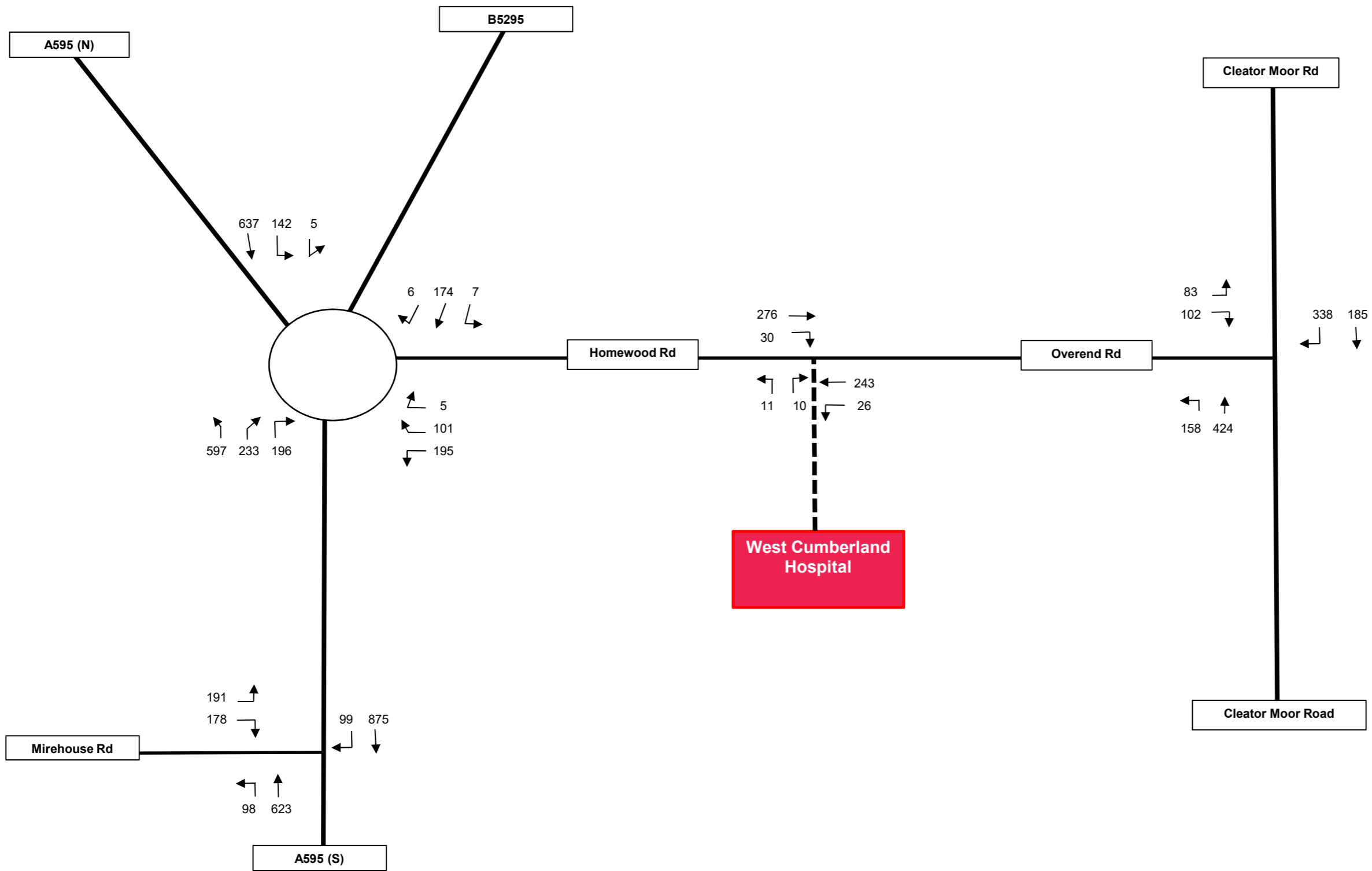
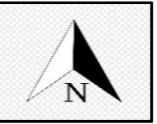
	Trip Generation PM Peak Phase 2	17 October 2019	073096
	West Cumberland Hospital	Figure 8	




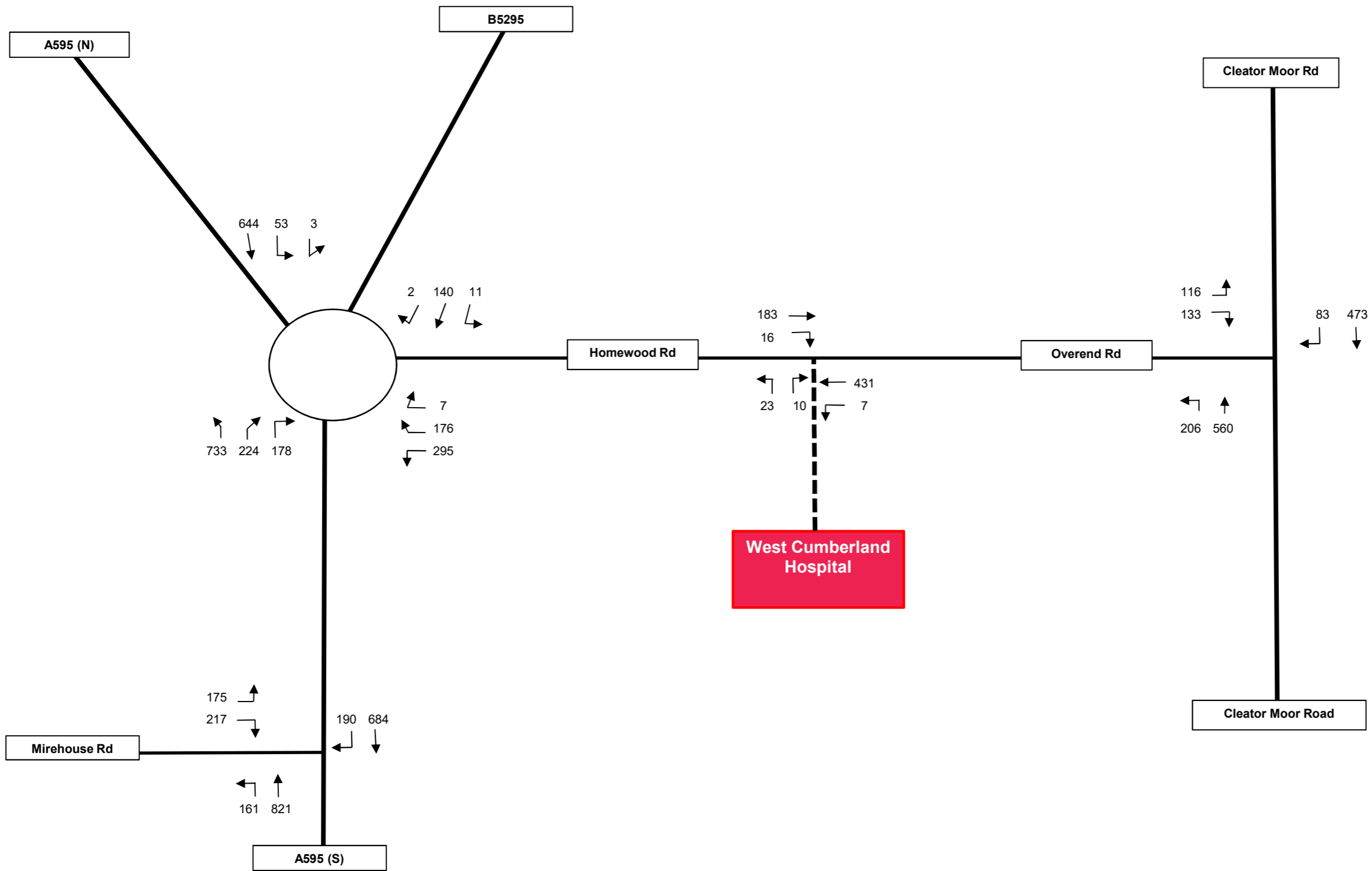
	Trip Generation AM Peak Phase 3	17 October 2019	073096
	West Cumberland Hospital	Figure 9	




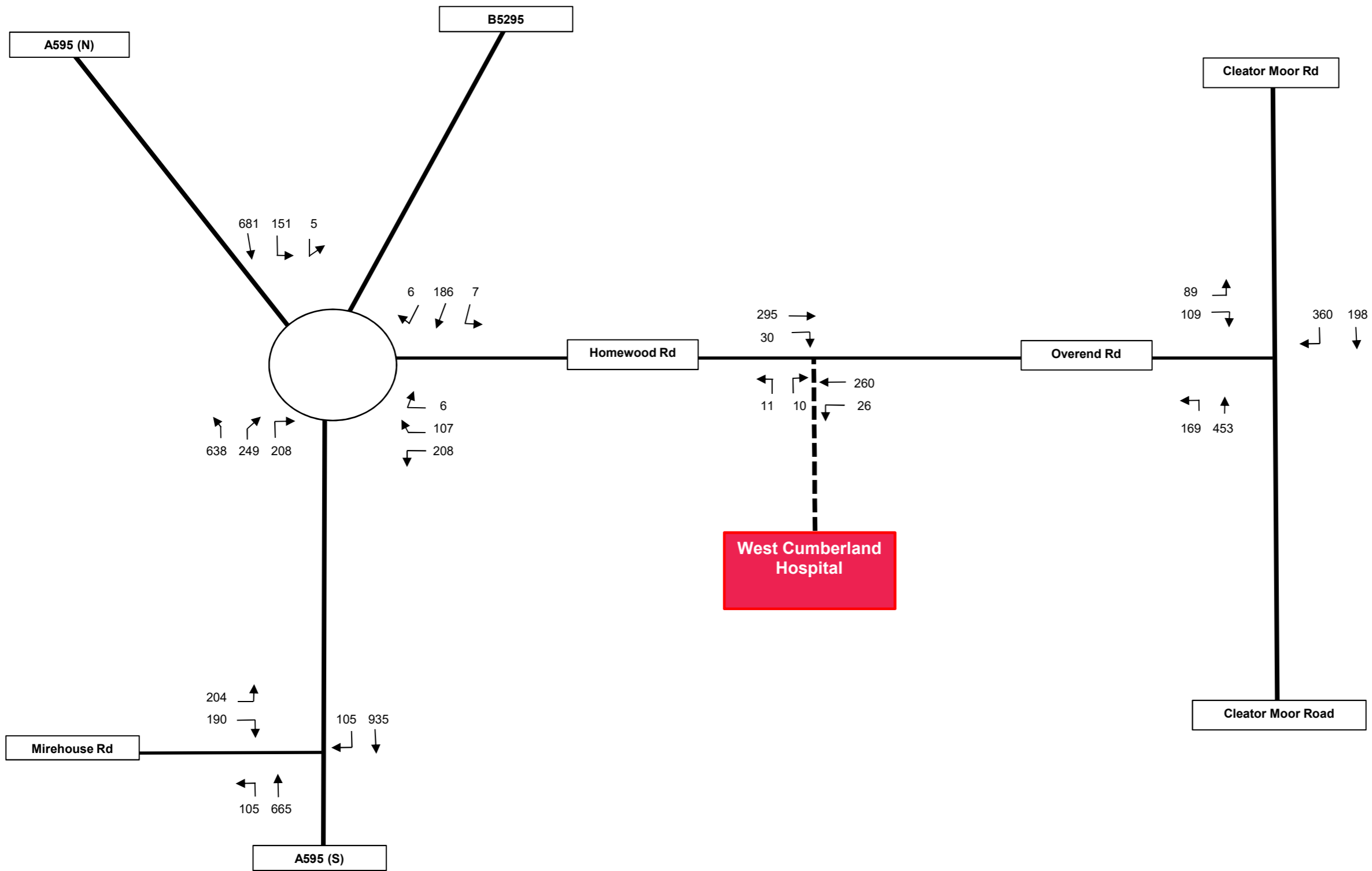
	Trip Generation PM Peak Phase 3	17 October 2019	073096
	West Cumberland Hospital	Figure 10	




	Base Flows 2019 + Phase 2&3 AM	17 October 2019	073096
	West Cumberland Hospital	Figure 11	

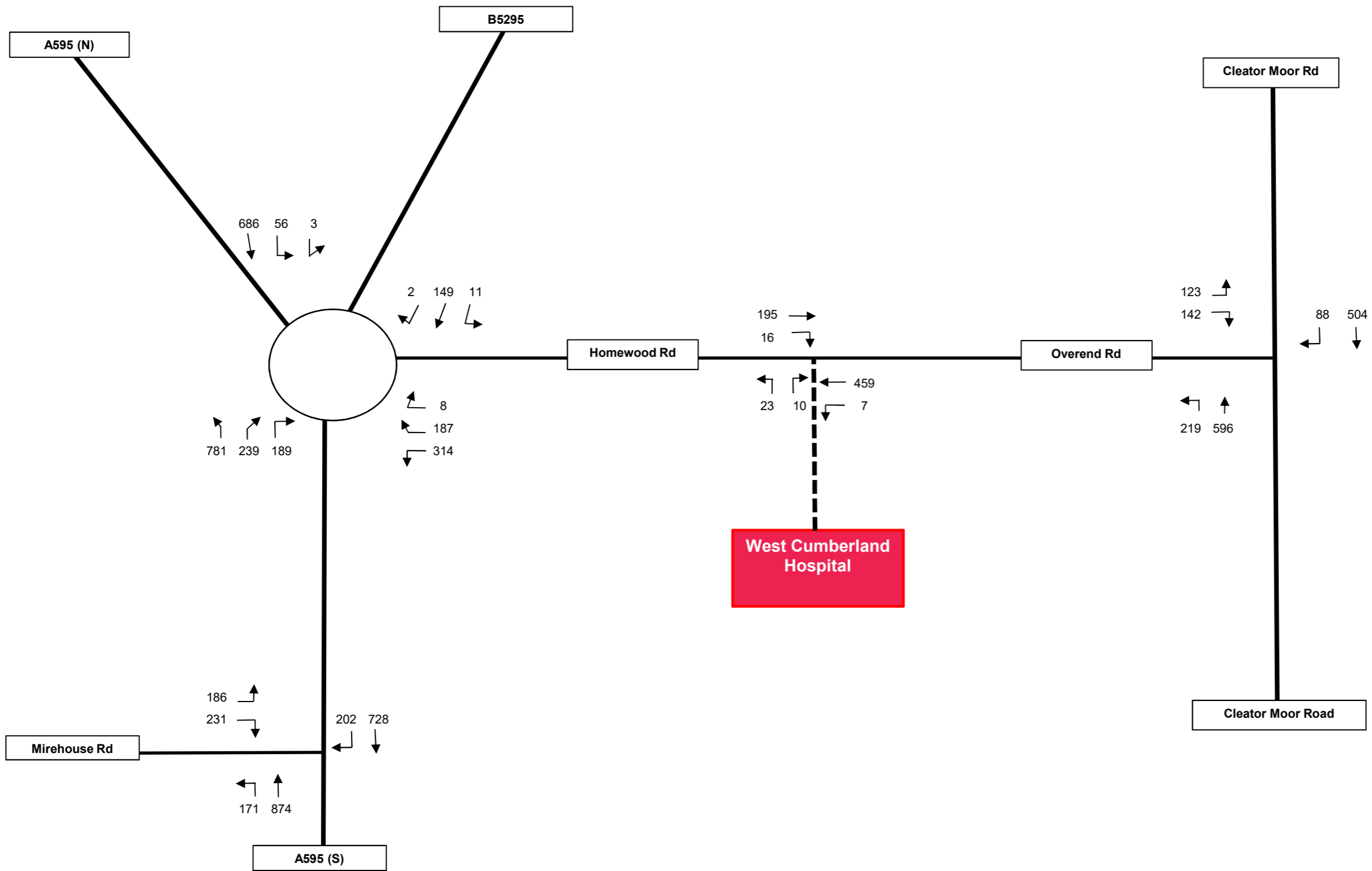



	Base Flows 2019 + Phase 2 & 3 PM	17 October 2019	073096
	West Cumberland Hospital	Figure 11	



West Cumberland Hospital

	Base Flows 2026 + Phase 2 & 3 AM	17 October 2019	073096
	West Cumberland Hospital	Figure 12	



	Base Flows 2026 + Phase 2&3 PM	17 October 2019	073096
	West Cumberland Hospital	Figure 14	

Appendix B – TRICS Report

Calculation Reference: AUDIT-148306-190925-0908

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION
 Category : C - COLLEGE/UNIVERSITY
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	2 days
	EX ESSEX	1 days
	KC KENT	1 days
03	SOUTH WEST	
	GS GLOUCESTERSHIRE	1 days
	WL WILTSHIRE	1 days
10	WALES	
	SW SWANSEA	1 days

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

Secondary Filtering selection:

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

Parameter: Gross floor area
 Actual Range: 3900 to 16600 (units: sqm)
 Range Selected by User: 2435 to 20000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/11 to 25/04/18

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

Selected survey days:

Monday	1 days
Tuesday	2 days
Wednesday	1 days
Thursday	3 days

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

Selected survey types:

Manual count	7 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	7
------------------------------------	---

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

Selected Location Sub Categories:

Residential Zone	6
Built-Up Zone	1

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

Secondary Filtering selection:

Use Class:

D1 7 days

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

Population within 1 mile:

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

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

Population within 5 miles:

25,001 to 50,000 1 days
 50,001 to 75,000 1 days
 75,001 to 100,000 1 days
 100,001 to 125,000 1 days
 125,001 to 250,000 3 days

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

Car ownership within 5 miles:

0.6 to 1.0 2 days
 1.1 to 1.5 5 days

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

Travel Plan:

Yes 1 days
 No 6 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present 7 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	ES-04-C-05 PENLAND ROAD BEXHILL ON SEA	COLLEGE		EAST SUSSEX
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 10125 sqm <i>Survey date: THURSDAY 03/11/11</i>			
2	ES-04-C-07 PARKER ROAD HASTINGS ORE	COLLEGE		EAST SUSSEX
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 8402 sqm <i>Survey date: WEDNESDAY 30/05/12</i>			
3	EX-04-C-02 PRINCES ROAD CHELMSFORD	COLLEGE		ESSEX
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 11000 sqm <i>Survey date: TUESDAY 15/10/13</i>			
4	GS-04-C-02 HORTON ROAD GLOUCESTER	COLLEGE		GLOUCESTERSHIRE
	Suburban Area (PPS6 Out of Centre) Built-Up Zone Total Gross floor area: 13204 sqm <i>Survey date: THURSDAY 28/11/13</i>			
5	KC-04-C-02 BELLEVUE ROAD WHITSTABLE	COLLEGE		KENT
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 12735 sqm <i>Survey date: TUESDAY 26/09/17</i>			
6	SW-04-C-02 WALTER ROAD SWANSEA	COLLEGE		SWANSEA
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 3900 sqm <i>Survey date: MONDAY 21/10/13</i>			
7	WL-04-C-01 NEW COLLEGE DRIVE SWINDON WALCOT	COLLEGE		WILTSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 16600 sqm <i>Survey date: THURSDAY 22/09/16</i>			

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

TRIP RATE for Land Use 04 - EDUCATION/C - COLLEGE/UNIVERSITY

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	10852	0.201	7	10852	0.038	7	10852	0.239
08:00 - 09:00	7	10852	1.478	7	10852	0.566	7	10852	2.044
09:00 - 10:00	7	10852	0.583	7	10852	0.263	7	10852	0.846
10:00 - 11:00	7	10852	0.325	7	10852	0.220	7	10852	0.545
11:00 - 12:00	7	10852	0.337	7	10852	0.338	7	10852	0.675
12:00 - 13:00	7	10852	0.317	7	10852	0.366	7	10852	0.683
13:00 - 14:00	7	10852	0.330	7	10852	0.317	7	10852	0.647
14:00 - 15:00	7	10852	0.284	7	10852	0.427	7	10852	0.711
15:00 - 16:00	7	10852	0.340	7	10852	0.650	7	10852	0.990
16:00 - 17:00	7	10852	0.303	7	10852	0.770	7	10852	1.073
17:00 - 18:00	7	10852	0.349	7	10852	0.455	7	10852	0.804
18:00 - 19:00	6	11261	0.332	6	11261	0.234	6	11261	0.566
19:00 - 20:00	5	11488	0.207	5	11488	0.334	5	11488	0.541
20:00 - 21:00	4	11059	0.161	4	11059	0.601	4	11059	0.762
21:00 - 22:00	4	11059	0.020	4	11059	0.274	4	11059	0.294
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			5.567			5.853			11.420

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

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

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Parameter summary

Trip rate parameter range selected:	3900 - 16600 (units: sqm)
Survey date date range:	01/01/11 - 25/04/18
Number of weekdays (Monday-Friday):	7
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

Calculation Reference: AUDIT-148306-190925-0954

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 05 - HEALTH
 Category : A - GENERAL HOSPITAL - WITH CASUALTY
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	2 days
	EX ESSEX	1 days
	SC SURREY	1 days
03	SOUTH WEST	
	DC DORSET	1 days
	WL WILTSHIRE	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	1 days
08	NORTH WEST	
	GM GREATER MANCHESTER	1 days

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

Secondary Filtering selection:

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

Parameter: Gross floor area
 Actual Range: 13332 to 246876 (units: sqm)
 Range Selected by User: 5200 to 246876 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/11 to 10/05/18

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

Selected survey days:

Monday	1 days
Tuesday	4 days
Thursday	3 days
Sunday	1 days

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

Selected survey types:

Manual count	9 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	3
Edge of Town	5
Neighbourhood Centre (PPS6 Local Centre)	1

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

Selected Location Sub Categories:

Residential Zone	5
Village	1
Out of Town	1
No Sub Category	2

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

Secondary Filtering selection:

Use Class:

C2 9 days

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

Population within 1 mile:

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

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

Population within 5 miles:

25,001 to 50,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	6 days
250,001 to 500,000	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	6 days

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

Travel Plan:

Yes	7 days
No	2 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	9 days
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This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	CA-05-A-01 HILLS ROAD CAMBRIDGE	GENERAL HOSPITAL	CAMBRI DGESHI RE
	Edge of Town Residential Zone Total Gross floor area: 246876 sqm <i>Survey date: THURSDAY 04/12/14</i>		<i>Survey Type: MANUAL</i>
2	DC-05-A-07 CASTLE LANE EAST BOURNEMOUTH	GENERAL HOSPITAL	DORSET
	Edge of Town No Sub Category Total Gross floor area: 105900 sqm <i>Survey date: TUESDAY 25/03/14</i>		<i>Survey Type: MANUAL</i>
3	ES-05-A-04 KING'S DRIVE EASTBOURNE	GENERAL HOSPITAL	EAST SUSSEX
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 65000 sqm <i>Survey date: TUESDAY 06/10/15</i>		<i>Survey Type: MANUAL</i>
4	ES-05-A-05 THE RIDGE HASTINGS	HOSPITAL	EAST SUSSEX
	Edge of Town Residential Zone Total Gross floor area: 41500 sqm <i>Survey date: THURSDAY 08/10/15</i>		<i>Survey Type: MANUAL</i>
5	EX-05-A-02 HOSPITAL APPROACH NEAR CHELMSFORD BROOMFIELD	GENERAL HOSPITAL	ESSEX
	Neighbourhood Centre (PPS6 Local Centre) Village Total Gross floor area: 13332 sqm <i>Survey date: THURSDAY 10/05/18</i>		<i>Survey Type: MANUAL</i>
6	GM-05-A-06 POPLAR GROVE STOCKPORT HAZEL GROVE	GENERAL HOSPITAL	GREATER MANCHESTER
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 79220 sqm <i>Survey date: TUESDAY 18/11/14</i>		<i>Survey Type: MANUAL</i>
7	NE-05-A-01 SCARMO ROAD GRIMSBY	HOSPITAL	NORTH EAST LI NCOLNSHI RE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 38800 sqm <i>Survey date: SUNDAY 25/05/14</i>		<i>Survey Type: MANUAL</i>
8	SC-05-A-07 CANADA AVENUE REDHILL	HOSPITAL	SURREY
	Edge of Town No Sub Category Total Gross floor area: 53146 sqm <i>Survey date: MONDAY 06/10/14</i>		<i>Survey Type: MANUAL</i>
9	WL-05-A-01 MARLBOROUGH ROAD SWINDON	HOSPITAL	WILTSHIRE
	Edge of Town Out of Town Total Gross floor area: 67000 sqm <i>Survey date: TUESDAY 20/09/16</i>		<i>Survey Type: MANUAL</i>

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

TRIP RATE for Land Use 05 - HEALTH/A - GENERAL HOSPITAL - WITH CASUALTY

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	3	53215	0.318	3	53215	0.095	3	53215	0.413
07:00 - 08:00	9	78975	0.971	9	78975	0.343	9	78975	1.314
08:00 - 09:00	9	78975	1.125	9	78975	0.373	9	78975	1.498
09:00 - 10:00	9	78975	0.840	9	78975	0.402	9	78975	1.242
10:00 - 11:00	9	78975	0.584	9	78975	0.448	9	78975	1.032
11:00 - 12:00	9	78975	0.503	9	78975	0.501	9	78975	1.004
12:00 - 13:00	9	78975	0.457	9	78975	0.539	9	78975	0.996
13:00 - 14:00	9	78975	0.620	9	78975	0.533	9	78975	1.153
14:00 - 15:00	9	78975	0.606	9	78975	0.631	9	78975	1.237
15:00 - 16:00	9	78975	0.513	9	78975	0.768	9	78975	1.281
16:00 - 17:00	9	78975	0.414	9	78975	1.012	9	78975	1.426
17:00 - 18:00	9	78975	0.352	9	78975	0.908	9	78975	1.260
18:00 - 19:00	9	78975	0.447	9	78975	0.581	9	78975	1.028
19:00 - 20:00	8	57987	0.373	8	57987	0.564	8	57987	0.937
20:00 - 21:00	6	59566	0.240	6	59566	0.606	6	59566	0.846
21:00 - 22:00	4	59845	0.126	4	59845	0.237	4	59845	0.363
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			8.489			8.541			17.030

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

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

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Parameter summary

Trip rate parameter range selected:	13332 - 246876 (units: sqm)
Survey date date range:	01/01/11 - 10/05/18
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	1
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 05 - HEALTH/A - GENERAL HOSPITAL - WITH CASUALTY

CARS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	3	53215	0.286	3	53215	0.070	3	53215	0.356
07:00 - 08:00	9	78975	0.770	9	78975	0.237	9	78975	1.007
08:00 - 09:00	9	78975	0.906	9	78975	0.268	9	78975	1.174
09:00 - 10:00	9	78975	0.632	9	78975	0.268	9	78975	0.900
10:00 - 11:00	9	78975	0.422	9	78975	0.303	9	78975	0.725
11:00 - 12:00	9	78975	0.359	9	78975	0.354	9	78975	0.713
12:00 - 13:00	9	78975	0.320	9	78975	0.388	9	78975	0.708
13:00 - 14:00	9	78975	0.425	9	78975	0.373	9	78975	0.798
14:00 - 15:00	9	78975	0.404	9	78975	0.453	9	78975	0.857
15:00 - 16:00	9	78975	0.353	9	78975	0.565	9	78975	0.918
16:00 - 17:00	9	78975	0.294	9	78975	0.777	9	78975	1.071
17:00 - 18:00	9	78975	0.258	9	78975	0.739	9	78975	0.997
18:00 - 19:00	9	78975	0.326	9	78975	0.453	9	78975	0.779
19:00 - 20:00	8	57987	0.265	8	57987	0.393	8	57987	0.658
20:00 - 21:00	6	59566	0.161	6	59566	0.439	6	59566	0.600
21:00 - 22:00	4	59845	0.079	4	59845	0.171	4	59845	0.250
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			6.260			6.251			12.511

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

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

Calculation Reference: AUDIT-148306-190925-0930

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : G - STUDENT ACCOMMODATION
 VEHICLES

Selected regions and areas:

03	SOUTH WEST	
	BA BATH & NORTH EAST SOMERSET	1 days
	DV DEVON	1 days
09	NORTH	
	DH DURHAM	1 days
11	SCOTLAND	
	FI FIFE	1 days

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

Secondary Filtering selection:

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

Parameter: Number of residents
 Actual Range: 110 to 300 (units:)
 Range Selected by User: 15 to 1700 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/11 to 18/10/18

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

Selected survey days:

Wednesday	1 days
Thursday	3 days

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

Selected survey types:

Manual count	4 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	2
Edge of Town	2

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

Selected Location Sub Categories:

Residential Zone	2
No Sub Category	2

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

Secondary Filtering selection:

Use Class:

C3	4 days
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This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Secondary Filtering selection (Cont.):

Population within 1 mile:

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

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

Population within 5 miles:

5,001 to 25,000	1 days
100,001 to 125,000	3 days

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

Car ownership within 5 miles:

1.1 to 1.5	4 days
------------	--------

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

Travel Plan:

No	4 days
----	--------

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	4 days
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This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	BA-03-G-01	STUDENT FLATS	BATH & NORTH EAST SOMERSET
	LOWER BRISTOL ROAD		
	BATH		
	Suburban Area (PPS6 Out of Centre)		
	No Sub Category		
	Total Number of residents:	291	
	Survey date: THURSDAY	04/10/18	Survey Type: MANUAL
2	DH-03-G-01	STUDENT FLATS	DURHAM
	ASHWOOD		
	DURHAM		
	GILESGATE		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of residents:	168	
	Survey date: THURSDAY	18/10/18	Survey Type: MANUAL
3	DV-03-G-02	STUDENT FLATS	DEVON
	COWLEY BRIDGE ROAD		
	EXETER		
	Edge of Town		
	No Sub Category		
	Total Number of residents:	110	
	Survey date: WEDNESDAY	05/10/11	Survey Type: MANUAL
4	FI-03-G-01	STUDENT FLATS	FIFE
	BUCHANAN GARDENS		
	ST ANDREWS		
	Edge of Town		
	Residential Zone		
	Total Number of residents:	300	
	Survey date: THURSDAY	24/05/12	Survey Type: MANUAL

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

TRIP RATE for Land Use 03 - RESIDENTIAL/G - STUDENT ACCOMMODATION

VEHICLES

Calculation factor: 1 RESIDE

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	217	0.006	4	217	0.006	4	217	0.012
08:00 - 09:00	4	217	0.008	4	217	0.024	4	217	0.032
09:00 - 10:00	4	217	0.015	4	217	0.015	4	217	0.030
10:00 - 11:00	4	217	0.020	4	217	0.015	4	217	0.035
11:00 - 12:00	4	217	0.031	4	217	0.037	4	217	0.068
12:00 - 13:00	4	217	0.029	4	217	0.021	4	217	0.050
13:00 - 14:00	4	217	0.018	4	217	0.028	4	217	0.046
14:00 - 15:00	4	217	0.022	4	217	0.024	4	217	0.046
15:00 - 16:00	4	217	0.031	4	217	0.028	4	217	0.059
16:00 - 17:00	4	217	0.036	4	217	0.023	4	217	0.059
17:00 - 18:00	4	217	0.013	4	217	0.020	4	217	0.033
18:00 - 19:00	4	217	0.015	4	217	0.020	4	217	0.035
19:00 - 20:00	2	230	0.011	2	230	0.009	2	230	0.020
20:00 - 21:00	2	230	0.020	2	230	0.017	2	230	0.037
21:00 - 22:00	1	168	0.012	1	168	0.012	1	168	0.024
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.287			0.299			0.586

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

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

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Parameter summary

Trip rate parameter range selected:	110 - 300 (units:)
Survey date date range:	01/01/11 - 18/10/18
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

Appendix C – Junction Output Files

Junctions 8
PICADY 8 - Priority Intersection Module
Version: 8.0.4.487 [15039,24/03/2014] © Copyright TRL Limited, 2020
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Filename: Site Access- Homewood RD.arc8

Path: \\mfs02\Projects\073001 - 074000\073096 - West Cumberland Hospital\Q3-Design\3B-Models\TP\Junction Models

Report generation date: 14/05/2020 11:42:15

« (Default Analysis Set) - 2019 Base+Dev, PM

- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
A1 - 2019 Base+Dev								
Stream B-C	0.01	6.13	0.01	A	0.02	6.52	0.02	A
Stream B-A	0.01	9.45	0.01	A	0.01	10.80	0.01	B
Stream C-AB	0.02	6.37	0.02	A	0.01	6.96	0.01	A
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
A1 - 2026 Base+Dev								
Stream B-C	0.01	6.19	0.01	A	0.02	6.62	0.02	A
Stream B-A	0.01	9.63	0.01	A	0.01	11.08	0.01	B
Stream C-AB	0.02	6.42	0.02	A	0.02	7.06	0.01	A
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-

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

"D1 - 2026 Base+Dev, AM" model duration: 08:00 - 09:30

"D2 - 2026 Base+Dev, PM" model duration: 17:00 - 18:30

"D3 - 2019 Base+Dev, AM" model duration: 08:00 - 09:30

"D4 - 2019 Base+Dev, PM " model duration: 17:00 - 18:30

Run using Junctions 8.0.4.487 at 14/05/2020 11:42:15

File summary

Title	(untitled)
Location	
Site Number	
Date	03/12/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	harrison.drury
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

(Default Analysis Set) - 2019 Base+Dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2019 Base+Dev, PM	2019 Base+Dev	PM		ONE HOUR	17:00	18:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	WCH SITE ACCESS	T-Junction	Two-way	A,B,C	7.53	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Homewood Rd (E)	A	Homewood Rd (E)		Major
Site Access	B	Site Access		Minor
Homewood RD (W)	C	Homewood RD (W)		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Homewood RD (W)	6.20		0.00		2.20	115.00	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	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)
Site Access	One lane plus flare				10.00	6.00	4.60	4.40	4.00	✓	2.00	35	20

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	468.977	0.085	0.214	0.135	0.306
1	B-C	690.450	0.105	0.265	-	-
1	C-B	640.561	0.246	0.246	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

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 Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Homewood Rd (E)	ONE HOUR	✓	434.00	100.000
Site Access	ONE HOUR	✓	13.00	100.000
Homewood RD (W)	ONE HOUR	✓	190.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - WCH SITE ACCESS (for whole period)

		To		
		Homewood Rd (E)	Site Access	Homewood RD (W)
From	Homewood Rd (E)	0.000	3.000	431.000
	Site Access	4.000	0.000	9.000
	Homewood RD (W)	183.000	7.000	0.000

Turning Proportions (PCU) - WCH SITE ACCESS (for whole period)

		To		
		Homewood Rd (E)	Site Access	Homewood RD (W)
From	Homewood Rd (E)	0.00	0.01	0.99
	Site Access	0.31	0.00	0.69
	Homewood RD (W)	0.96	0.04	0.00

Vehicle Mix

Average PCU Per Vehicle - WCH SITE ACCESS (for whole period)

		To		
		Homewood Rd (E)	Site Access	Homewood RD (W)
From	Homewood Rd (E)	1.000	1.000	1.000
	Site Access	1.000	1.000	1.000
	Homewood RD (W)	1.000	1.000	1.000

Heavy Vehicle Percentages - WCH SITE ACCESS (for whole period)

		To		
		Homewood Rd (E)	Site Access	Homewood RD (W)
From	Homewood Rd (E)	0.0	0.0	0.0
	Site Access	0.0	0.0	0.0
	Homewood RD (W)	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.02	6.52	0.02	A
B-A	0.01	10.80	0.01	B
C-AB	0.01	6.96	0.01	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	6.78	6.73	0.00	602.97	0.011	0.01	6.037	A
B-A	3.01	2.98	0.00	379.18	0.008	0.01	9.569	A
C-AB	5.28	5.24	0.00	561.07	0.009	0.01	6.476	A
C-A	137.76	137.76	0.00	-	-	-	-	-
A-B	2.26	2.26	0.00	-	-	-	-	-
A-C	324.48	324.48	0.00	-	-	-	-	-

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	8.09	8.08	0.00	585.81	0.014	0.01	6.230	A
B-A	3.60	3.59	0.00	361.83	0.010	0.01	10.048	B
C-AB	6.31	6.31	0.00	545.90	0.012	0.01	6.671	A
C-A	164.49	164.49	0.00	-	-	-	-	-
A-B	2.70	2.70	0.00	-	-	-	-	-
A-C	387.46	387.46	0.00	-	-	-	-	-

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	9.91	9.89	0.00	562.26	0.018	0.02	6.516	A
B-A	4.40	4.39	0.00	337.73	0.013	0.01	10.799	B
C-AB	7.75	7.74	0.00	525.10	0.015	0.01	6.957	A
C-A	201.44	201.44	0.00	-	-	-	-	-
A-B	3.30	3.30	0.00	-	-	-	-	-
A-C	474.54	474.54	0.00	-	-	-	-	-

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	9.91	9.91	0.00	562.21	0.018	0.02	6.517	A
B-A	4.40	4.40	0.00	337.76	0.013	0.01	10.798	B
C-AB	7.75	7.75	0.00	525.10	0.015	0.01	6.957	A
C-A	201.44	201.44	0.00	-	-	-	-	-
A-B	3.30	3.30	0.00	-	-	-	-	-
A-C	474.54	474.54	0.00	-	-	-	-	-

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	8.09	8.11	0.00	585.69	0.014	0.01	6.234	A
B-A	3.60	3.61	0.00	361.90	0.010	0.01	10.049	B
C-AB	6.31	6.33	0.00	545.90	0.012	0.01	6.671	A
C-A	164.49	164.49	0.00	-	-	-	-	-
A-B	2.70	2.70	0.00	-	-	-	-	-
A-C	387.46	387.46	0.00	-	-	-	-	-

Main results: (18:15-18:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	6.78	6.79	0.00	602.72	0.011	0.01	6.040	A
B-A	3.01	3.02	0.00	379.33	0.008	0.01	9.568	A
C-AB	5.28	5.29	0.00	561.07	0.009	0.01	6.479	A
C-A	137.76	137.76	0.00	-	-	-	-	-
A-B	2.26	2.26	0.00	-	-	-	-	-
A-C	324.48	324.48	0.00	-	-	-	-	-

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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Filename: Egremont Road - Homewood Rd RB.arc8

Path: \\mfs02\Projects\073001 - 074000\073096 - West Cumberland Hospital\Q3-Design\3B-Models\TP\Junction Models

Report generation date: 14/05/2020 13:44:32

« (Default Analysis Set) - 2019 Base+Dev, PM

- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
A1 - 2019 Base								
Egremont Road - N	3.50	15.29	0.78	C	2.21	10.60	0.69	B
B5295	0.30	5.22	0.23	A	0.21	4.55	0.17	A
Homewood Rd	1.35	15.51	0.58	C	6.26	48.36	0.88	E
Egremont Rd - S	7.72	26.56	0.90	D	36.55	101.06	1.03	F
A1 - 2019 Base+Dev								
Egremont Road - N	3.63	15.81	0.79	C	2.24	10.69	0.70	B
B5295	0.30	5.27	0.23	A	0.21	4.57	0.18	A
Homewood Rd	1.38	15.73	0.59	C	7.12	53.98	0.90	F
Egremont Rd - S	8.13	27.85	0.90	D	39.13	106.85	1.04	F
A1 - 2026 Base								
Egremont Road - N	5.23	21.78	0.85	C	2.76	12.45	0.74	B
B5295	0.34	5.68	0.26	A	0.24	4.81	0.19	A
Homewood Rd	1.81	19.68	0.65	C	14.05	97.57	0.99	F
Egremont Rd - S	15.17	48.58	0.96	E	73.20	183.00	1.11	F
A1 - 2026 Base+Dev								
Egremont Road - N	5.47	22.75	0.86	C	2.81	12.64	0.74	B
B5295	0.35	5.75	0.26	A	0.24	4.83	0.19	A
Homewood Rd	1.86	20.03	0.66	C	16.83	112.08	1.01	F
Egremont Rd - S	16.31	51.64	0.97	F	76.52	196.29	1.11	F

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

"D1 - 2019 Base, AM" model duration: 08:00 - 09:30

"D2 - 2019 Base, PM" model duration: 17:00 - 18:30

"D3 - 2026 Base, AM" model duration: 08:00 - 09:30

"D4 - 2026 Base, PM" model duration: 17:00 - 18:30

"D5 - 2026 Base+Dev, AM" model duration: 08:00 - 09:30

"D6 - 2026 Base+Dev, PM" model duration: 17:00 - 18:30

"D7 - 2019 Base+Dev, AM" model duration: 08:00 - 09:30

"D8 - 2019 Base+Dev, PM" model duration: 17:00 - 18:30

Run using Junctions 8.0.4.487 at 14/05/2020 13:44:31

File summary

Title	(untitled)
Location	
Site Number	
Date	26/09/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	jonathan.ashcroft
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

(Default Analysis Set) - 2019 Base+Dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2019 Base+Dev, PM	2019 Base+Dev	PM		ONE HOUR	17:00	18:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4			62.97	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Egremont Road - N	1	Egremont Road - N	
B5295	2	B5295	
Homewood Rd	3	Homewood Rd	
Egremont Rd - S	4	Egremont Rd - S	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Egremont Road - N	0.00	99999.00
B5295	0.00	99999.00
Homewood Rd	0.00	99999.00
Egremont Rd - S	0.00	99999.00

Roundabout Geometry

Name	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
Egremont Road - N	3.50	5.00	15.70	10.00	42.00	31.00	
B5295	3.50	5.44	14.20	33.00	42.00	22.00	
Homewood Rd	2.70	4.50	5.70	12.00	42.00	55.00	
Egremont Rd - S	3.50	4.50	15.00	12.00	42.00	22.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Egremont Road - N		(calculated)	(calculated)	0.549	1334.813
B5295		(calculated)	(calculated)	0.619	1538.610
Homewood Rd		(calculated)	(calculated)	0.454	959.356
Egremont Rd - S		(calculated)	(calculated)	0.557	1303.884

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Egremont Road - N	ONE HOUR	✓	697.00	100.000
B5295	ONE HOUR	✓	152.00	100.000
Homewood Rd	ONE HOUR	✓	464.00	100.000
Egremont Rd - S	ONE HOUR	✓	1128.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To			
		Egremont Road - N	B5295	Homewood Rd	Egremont Rd - S
From	Egremont Road - N	0.000	3.000	50.000	644.000
	B5295	2.000	0.000	10.000	140.000
	Homewood Rd	170.000	7.000	0.000	287.000
	Egremont Rd - S	733.000	224.000	171.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To			
		Egremont Road - N	B5295	Homewood Rd	Egremont Rd - S
From	Egremont Road - N	0.00	0.00	0.07	0.92
	B5295	0.01	0.00	0.07	0.92
	Homewood Rd	0.37	0.02	0.00	0.62
	Egremont Rd - S	0.65	0.20	0.15	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To			
		Egremont Road - N	B5295	Homewood Rd	Egremont Rd - S
From	Egremont Road - N	1.000	1.000	1.000	1.000
	B5295	1.000	1.000	1.000	1.000
	Homewood Rd	1.000	1.000	1.000	1.000
	Egremont Rd - S	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To			
		Egremont Road - N	B5295	Homewood Rd	Egremont Rd - S
From	Egremont Road - N	0.0	0.0	0.0	0.0
	B5295	0.0	0.0	0.0	0.0
	Homewood Rd	0.0	0.0	0.0	0.0
	Egremont Rd - S	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
Egremont Road - N	0.70	10.69	2.24	B
B5295	0.18	4.57	0.21	A
Homewood Rd	0.90	53.98	7.12	F
Egremont Rd - S	1.04	106.85	39.13	F

Main Results for each time segment

Main results: (17:00-17:15)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Egremont Road - N	524.74	521.52	299.56	0.00	1170.41	0.448	0.80	5.522	A
B5295	114.43	113.99	646.71	0.00	1138.30	0.101	0.11	3.512	A
Homewood Rd	349.32	345.34	588.36	0.00	692.05	0.505	1.00	10.271	B
Egremont Rd - S	849.22	840.58	133.23	0.00	1229.68	0.691	2.16	9.062	A

Main results: (17:15-17:30)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Egremont Road - N	626.59	624.99	357.97	0.00	1138.36	0.550	1.20	6.989	A
B5295	136.64	136.50	774.56	0.00	1059.15	0.129	0.15	3.902	A
Homewood Rd	417.13	413.94	704.98	0.00	639.06	0.653	1.79	15.766	C
Egremont Rd - S	1014.05	1004.43	159.70	0.00	1214.94	0.835	4.56	16.377	C

Main results: (17:30-17:45)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Egremont Road - N	767.41	763.51	414.53	0.00	1107.32	0.693	2.18	10.352	B
B5295	167.36	167.10	936.46	0.00	958.94	0.175	0.21	4.545	A
Homewood Rd	510.87	493.73	861.57	0.00	567.92	0.900	6.08	41.400	E
Egremont Rd - S	1241.95	1162.50	190.54	0.00	1197.76	1.037	24.43	57.045	F

Main results: (17:45-18:00)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Egremont Road - N	767.41	767.18	421.95	0.00	1103.25	0.696	2.24	10.690	B
B5295	167.36	167.35	943.24	0.00	954.75	0.175	0.21	4.571	A
Homewood Rd	510.87	506.70	865.18	0.00	566.28	0.902	7.12	53.976	F
Egremont Rd - S	1241.95	1183.14	195.49	0.00	1195.01	1.039	39.13	106.849	F

Main results: (18:00-18:15)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Egremont Road - N	626.59	630.27	407.47	0.00	1111.19	0.564	1.32	7.543	A
B5295	136.64	136.89	801.10	0.00	1042.73	0.131	0.15	3.976	A
Homewood Rd	417.13	437.61	710.22	0.00	636.68	0.655	2.00	19.728	C
Egremont Rd - S	1014.05	1144.75	168.73	0.00	1209.91	0.838	6.46	66.652	F

Main results: (18:15-18:30)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Egremont Road - N	524.74	526.69	308.50	0.00	1165.51	0.450	0.83	5.651	A
B5295	114.43	114.59	655.67	0.00	1132.75	0.101	0.11	3.535	A
Homewood Rd	349.32	353.13	593.69	0.00	689.62	0.507	1.05	10.816	B
Egremont Rd - S	849.22	865.77	136.21	0.00	1228.02	0.692	2.32	10.363	B

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.4.487 [15039,24/03/2014]
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Filename: Cleator Moor Rd-Overend Rd - Priority Junction.arc8

Path: \\mfs02\Projects\073001 - 074000\073096 - West Cumberland Hospital\Q3-Design\3B-Models\TP\Junction Models

Report generation date: 14/05/2020 14:13:57

« (Default Analysis Set) - 2019+Dev Survey, PM

- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
A1 - 2019 Survey								
Stream B-C	0.21	8.60	0.17	A	0.40	11.91	0.29	B
Stream B-A	0.57	19.63	0.37	C	0.94	24.56	0.49	C
Stream C-AB	3.01	25.58	0.77	D	0.30	8.74	0.21	A
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
A1 - 2019+Dev Survey								
Stream B-C	0.21	8.72	0.18	A	0.42	12.16	0.30	B
Stream B-A	0.60	20.20	0.38	C	0.98	25.15	0.50	D
Stream C-AB	3.24	27.32	0.78	D	0.31	8.77	0.21	A
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
A1 - 2026 Survey								
Stream B-C	0.24	9.40	0.19	A	0.51	14.20	0.34	B
Stream B-A	0.73	23.47	0.43	C	1.25	30.99	0.56	D
Stream C-AB	4.28	36.19	0.85	E	0.35	9.00	0.23	A
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
A1 - 2026+Dev								
Stream B-C	0.25	9.55	0.20	A	0.53	14.63	0.35	B
Stream B-A	0.76	24.20	0.44	C	1.30	31.95	0.58	D
Stream C-AB	4.65	39.52	0.86	E	0.36	9.03	0.24	A
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-

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

"D1 - 2019 Survey, AM" model duration: 08:00 - 09:30

"D2 - 2019 Survey, PM" model duration: 17:00 - 18:30

"D3 - 2026 Survey, AM" model duration: 08:00 - 09:30

"D4 - 2026 Survey, PM" model duration: 17:00 - 18:30

"D5 - 2026+Dev, AM" model duration: 08:00 - 09:30

"D6 - 2026+Dev, PM" model duration: 17:00 - 18:30

"D7 - 2019+Dev Survey, AM" model duration: 08:00 - 09:30

"D8 - 2019+Dev Survey, PM" model duration: 17:00 - 18:30

Run using Junctions 8.0.4.487 at 14/05/2020 14:13:57

File summary

Title	(untitled)
Location	
Site Number	
Date	25/09/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	jonathan.ashcroft
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

(Default Analysis Set) - 2019+Dev Survey, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2019+Dev Survey, PM	2019+Dev Survey	PM		ONE HOUR	17:00	18:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C	16.20	C

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Cleator Moor Rd (S)	A	Cleator Moor Rd (S)		Major
Overend Rd	B	Overend Rd		Minor
Cleator Moor Rd (N)	C	Cleator Moor Rd (N)		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Cleator Moor Rd (N)	7.50		0.00		2.20	120.00	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	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)
Overend Rd	One lane plus flare				9.60	4.70	3.40	3.00	3.00	✓	1.00	39	120

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	591.139	0.101	0.254	0.160	0.363
1	B-C	726.988	0.104	0.263	-	-
1	C-B	643.457	0.233	0.233	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

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 Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Cleator Moor Rd (S)	ONE HOUR	✓	763.00	100.000
Overend Rd	ONE HOUR	✓	243.00	100.000
Cleator Moor Rd (N)	ONE HOUR	✓	555.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To		
		Cleator Moor Rd (S)	Overend Rd	Cleator Moor Rd (N)
From	Cleator Moor Rd (S)	0.000	203.000	560.000
	Overend Rd	130.000	0.000	113.000
	Cleator Moor Rd (N)	473.000	82.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To		
		Cleator Moor Rd (S)	Overend Rd	Cleator Moor Rd (N)
From	Cleator Moor Rd (S)	0.00	0.27	0.73
	Overend Rd	0.53	0.00	0.47
	Cleator Moor Rd (N)	0.85	0.15	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To		
		Cleator Moor Rd (S)	Overend Rd	Cleator Moor Rd (N)
From	Cleator Moor Rd (S)	1.000	1.000	1.000
	Overend Rd	1.000	1.000	1.000
	Cleator Moor Rd (N)	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To		
		Cleator Moor Rd (S)	Overend Rd	Cleator Moor Rd (N)
From	Cleator Moor Rd (S)	0.0	0.0	0.0
	Overend Rd	0.0	0.0	0.0
	Cleator Moor Rd (N)	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.30	12.16	0.42	B
B-A	0.50	25.15	0.98	D
C-AB	0.21	8.77	0.31	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	85.07	84.35	0.00	553.93	0.154	0.18	7.656	A
B-A	97.87	96.54	0.00	386.99	0.253	0.33	12.341	B
C-AB	66.96	66.37	0.00	539.79	0.124	0.15	7.593	A
C-A	350.87	350.87	0.00	-	-	-	-	-
A-B	152.83	152.83	0.00	-	-	-	-	-
A-C	421.60	421.60	0.00	-	-	-	-	-

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	101.58	101.31	0.00	507.79	0.200	0.25	8.851	A
B-A	116.87	116.20	0.00	345.60	0.338	0.50	15.646	C
C-AB	83.60	83.38	0.00	529.36	0.158	0.20	8.070	A
C-A	415.34	415.34	0.00	-	-	-	-	-
A-B	182.49	182.49	0.00	-	-	-	-	-
A-C	503.43	503.43	0.00	-	-	-	-	-

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	124.42	123.77	0.00	423.10	0.294	0.41	12.000	B
B-A	143.13	141.32	0.00	286.17	0.500	0.95	24.547	C
C-AB	111.46	111.05	0.00	522.24	0.213	0.31	8.753	A
C-A	499.60	499.60	0.00	-	-	-	-	-
A-B	223.51	223.51	0.00	-	-	-	-	-
A-C	616.57	616.57	0.00	-	-	-	-	-

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	124.42	124.39	0.00	420.28	0.296	0.42	12.164	B
B-A	143.13	143.03	0.00	285.92	0.501	0.98	25.147	D
C-AB	111.46	111.45	0.00	522.24	0.213	0.31	8.769	A
C-A	499.60	499.60	0.00	-	-	-	-	-
A-B	223.51	223.51	0.00	-	-	-	-	-
A-C	616.57	616.57	0.00	-	-	-	-	-

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	101.58	102.23	0.00	505.22	0.201	0.25	8.948	A
B-A	116.87	118.67	0.00	345.46	0.338	0.52	15.996	C
C-AB	83.60	84.00	0.00	529.36	0.158	0.21	8.092	A
C-A	415.34	415.34	0.00	-	-	-	-	-
A-B	182.49	182.49	0.00	-	-	-	-	-
A-C	503.43	503.43	0.00	-	-	-	-	-

Main results: (18:15-18:30)

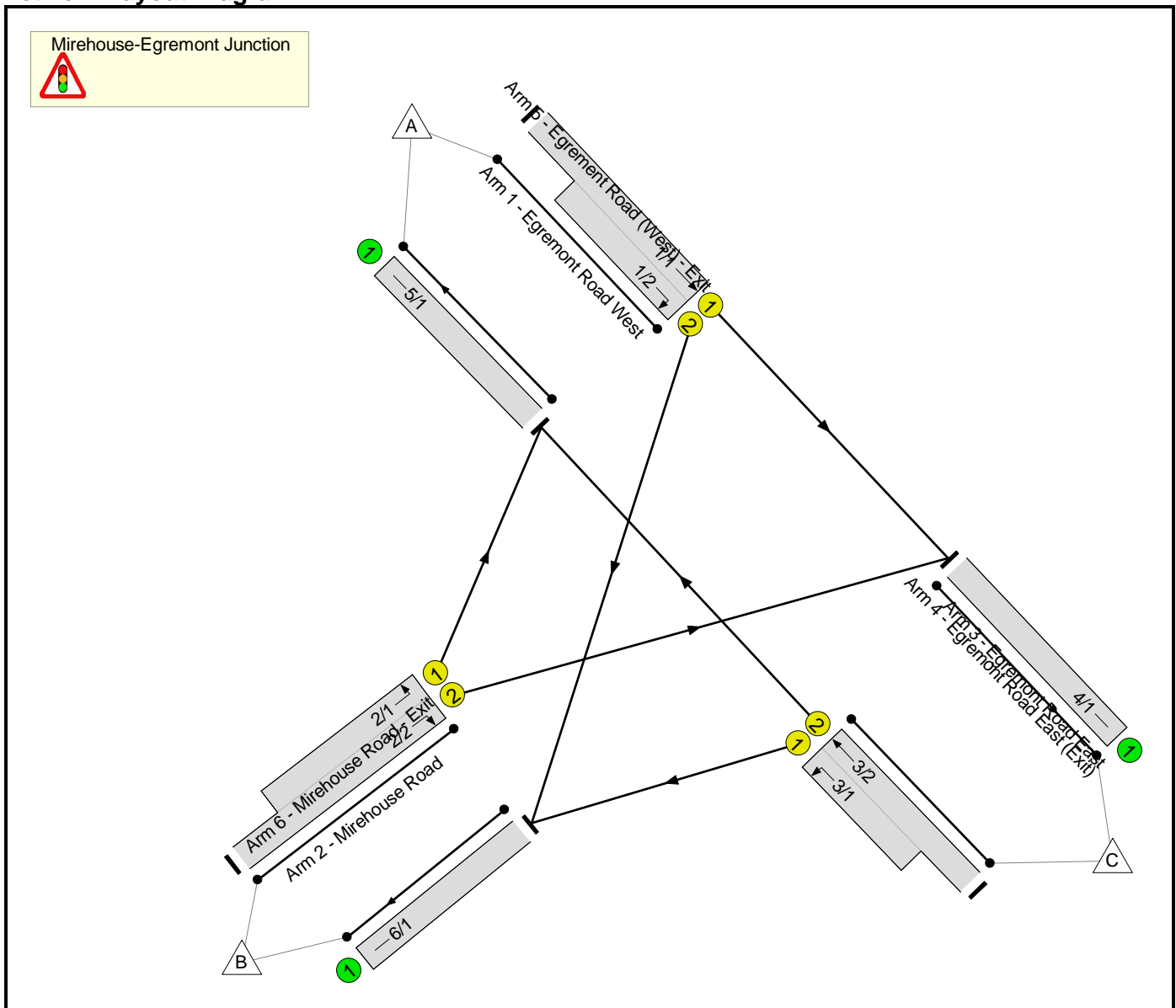
Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	85.07	85.36	0.00	552.30	0.154	0.18	7.715	A
B-A	97.87	98.59	0.00	386.80	0.253	0.34	12.521	B
C-AB	66.96	67.18	0.00	539.79	0.124	0.15	7.620	A
C-A	350.87	350.87	0.00	-	-	-	-	-
A-B	152.83	152.83	0.00	-	-	-	-	-
A-C	421.60	421.60	0.00	-	-	-	-	-

Full Input Data And Results
Full Input Data And Results

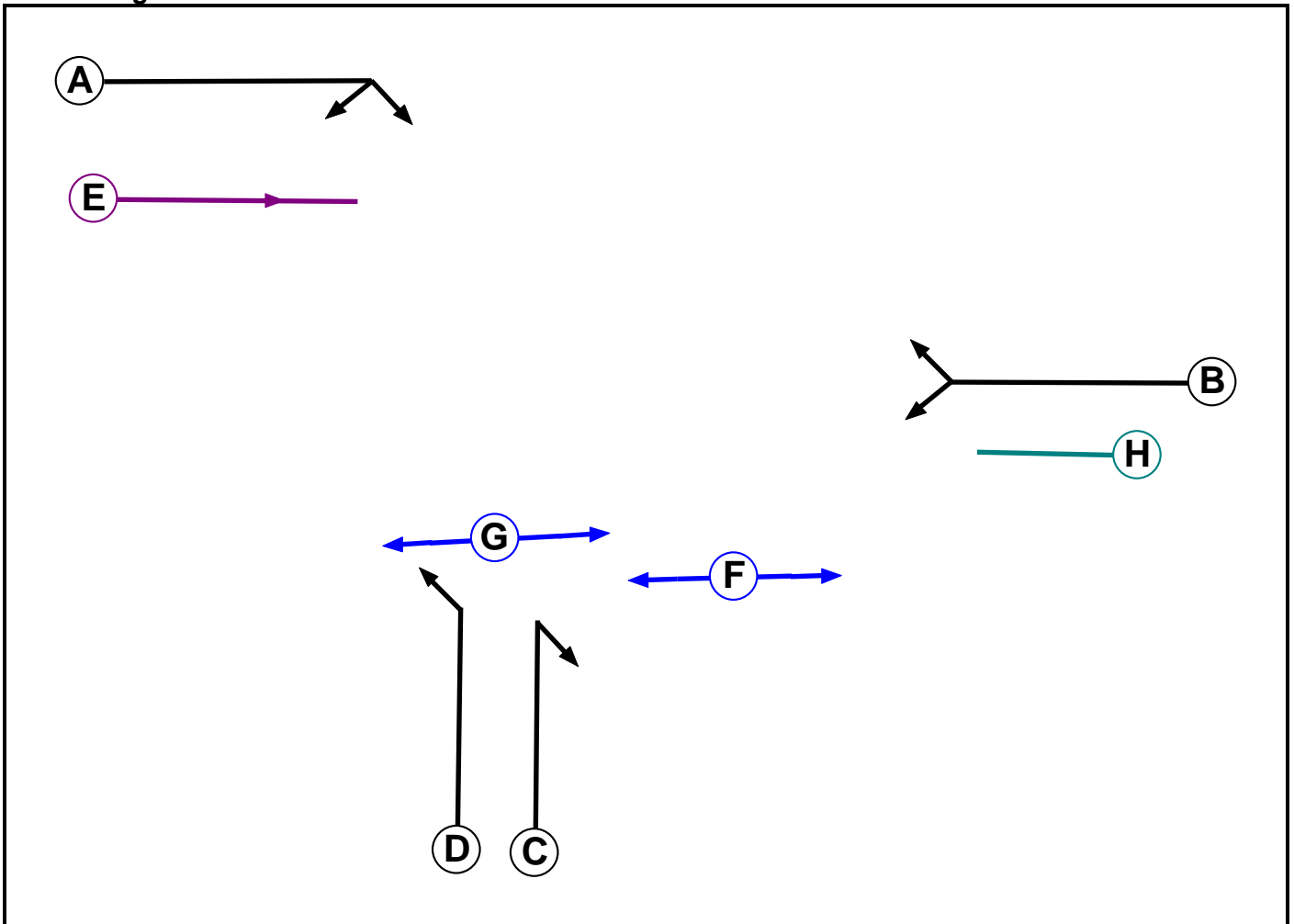
User and Project Details

Project:	WCH
Title:	
Location:	
Date Started:	September 2019
Model Purpose:	Transport Assessment
Additional detail:	
File name:	Traffic Signals Mirehouse Road - Egremont Road.lsg3x
Author:	Jonathan Ashcroft
Company:	Curtins
Address:	51-55 Tithebarn Street

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Ind. Arrow	A	4	4
F	Pedestrian		7	7
G	Pedestrian		7	7
H	Dummy		7	7

Full Input Data And Results

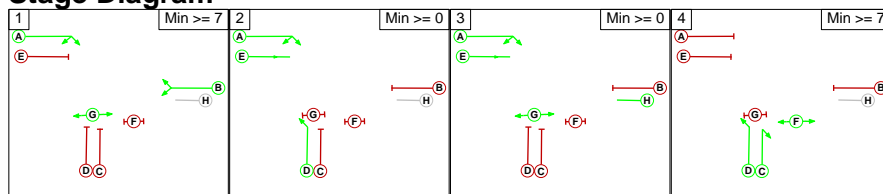
Phase Intergrens Matrix

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A	-	-	7	-	-	-	-	-
	B	-	-	7	7	7	7	-	-
	C	7	7	-	-	7	-	-	-
	D	-	7	-	-	-	-	5	-
	E	-	7	7	-	-	7	-	-
	F	-	7	-	-	7	-	-	-
	G	-	-	-	7	-	-	-	-
	H	-	-	-	-	-	-	-	-

Phases in Stage

Stage No.	Phases in Stage
1	A B G
2	A D E
3	A E G H
4	C D F

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

		To Stage			
		1	2	3	4
From Stage	1	-	7	7	7
	2	7	-	5	7
	3	7	7	-	7
	4	7	7	7	-

Full Input Data And Results

Give-Way Lane Input Data

Junction: Mirehouse-Egremont Junction

There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: Mirehouse-Egremont Junction												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Egremont Road West)	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
1/2 (Egremont Road West)	U	A	2	3	9.0	Geom	-	3.25	0.00	N	Arm 6 Right	19.00
2/1 (Mirehouse Road)	U	D	2	3	10.4	Geom	-	3.25	0.00	Y	Arm 5 Left	15.00
2/2 (Mirehouse Road)	U	C	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Right	20.00
3/1 (Egremont Road East)	U	B	2	3	7.8	Geom	-	3.25	0.00	Y	Arm 6 Left	15.00
3/2 (Egremont Road East)	U	B	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Ahead	Inf
4/1 (Egremont Road East (Exit))	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Egremont Road (West) - Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Mirehouse Road - Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2019 AM Base'	08:00	09:00	01:00	
2: '2019 PM Base'	17:00	18:00	01:00	
3: '2019 AM Base + Dev'	08:00	09:00	01:00	
4: '2019 PM Base + Dev'	17:00	18:00	01:00	
5: '2026 AM Base'	08:00	09:00	01:00	
6: '2026 PM Base'	17:00	18:00	01:00	
7: '2026 AM Base + Dev'	08:00	09:00	01:00	
8: '2026 PM Base + Dev'	17:00	18:00	01:00	

Full Input Data And Results

Scenario 1: '2019 AM Base' (FG1: '2019 AM Base', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
	A	B	C	Tot.	
Origin	A	0	98	869	967
	B	187	0	178	365
	C	610	98	0	708
	Tot.	797	196	1047	2040

Traffic Lane Flows

Lane	Scenario 1: 2019 AM Base
Junction: Mirehouse-Egremont Junction	
1/1 (with short)	967(In) 869(Out)
1/2 (short)	98
2/1 (short)	187
2/2 (with short)	365(In) 178(Out)
3/1 (short)	98
3/2 (with short)	708(In) 610(Out)
4/1	1047
5/1	797
6/1	196

Full Input Data And Results

Lane Saturation Flows

Junction: Mirehouse-Egremont Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Egremont Road West)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/2 (Egremont Road West)	3.25	0.00	N	Arm 6 Right	19.00	100.0 %	1928	1928
2/1 (Mirehouse Road)	3.25	0.00	Y	Arm 5 Left	15.00	100.0 %	1764	1764
2/2 (Mirehouse Road)	3.25	0.00	Y	Arm 4 Right	20.00	100.0 %	1805	1805
3/1 (Egremont Road East)	3.25	0.00	Y	Arm 6 Left	15.00	100.0 %	1764	1764
3/2 (Egremont Road East)	3.25	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1940	1940
4/1 (Egremont Road East (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Egremont Road (West) - Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Mirehouse Road - Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2019 PM Base' (FG2: '2019 PM Base', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	187	673	860
	B	173	0	217	390
	C	811	161	0	972
	Tot.	984	348	890	2222

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2019 PM Base
Junction: Mirehouse-Egremont Junction	
1/1 (with short)	860(In) 673(Out)
1/2 (short)	187
2/1 (short)	173
2/2 (with short)	390(In) 217(Out)
3/1 (short)	161
3/2 (with short)	972(In) 811(Out)
4/1	890
5/1	984
6/1	348

Lane Saturation Flows

Junction: Mirehouse-Egremont Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Egremont Road West)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/2 (Egremont Road West)	3.25	0.00	N	Arm 6 Right	19.00	100.0 %	1928	1928
2/1 (Mirehouse Road)	3.25	0.00	Y	Arm 5 Left	15.00	100.0 %	1764	1764
2/2 (Mirehouse Road)	3.25	0.00	Y	Arm 4 Right	20.00	100.0 %	1805	1805
3/1 (Egremont Road East)	3.25	0.00	Y	Arm 6 Left	15.00	100.0 %	1764	1764
3/2 (Egremont Road East)	3.25	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1940	1940
4/1 (Egremont Road East (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Egremont Road (West) - Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Mirehouse Road - Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: '2019 AM Base + Dev' (FG3: '2019 AM Base + Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	98	871	969
	B	188	0	178	366
	C	615	98	0	713
	Tot.	803	196	1049	2048

Traffic Lane Flows

Lane	Scenario 3: 2019 AM Base + Dev
Junction: Mirehouse-Egremont Junction	
1/1 (with short)	969(In) 871(Out)
1/2 (short)	98
2/1 (short)	188
2/2 (with short)	366(In) 178(Out)
3/1 (short)	98
3/2 (with short)	713(In) 615(Out)
4/1	1049
5/1	803
6/1	196

Full Input Data And Results

Lane Saturation Flows

Junction: Mirehouse-Egremont Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Egremont Road West)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/2 (Egremont Road West)	3.25	0.00	N	Arm 6 Right	19.00	100.0 %	1928	1928
2/1 (Mirehouse Road)	3.25	0.00	Y	Arm 5 Left	15.00	100.0 %	1764	1764
2/2 (Mirehouse Road)	3.25	0.00	Y	Arm 4 Right	20.00	100.0 %	1805	1805
3/1 (Egremont Road East)	3.25	0.00	Y	Arm 6 Left	15.00	100.0 %	1764	1764
3/2 (Egremont Road East)	3.25	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1940	1940
4/1 (Egremont Road East (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Egremont Road (West) - Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Mirehouse Road - Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2019 PM Base + Dev' (FG4: '2019 PM Base + Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
	A	B	C	Tot.	
Origin	A	0	188	678	866
	B	174	0	217	391
	C	815	161	0	976
	Tot.	989	349	895	2233

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: 2019 PM Base + Dev
Junction: Mirehouse-Egremont Junction	
1/1 (with short)	866(In) 678(Out)
1/2 (short)	188
2/1 (short)	174
2/2 (with short)	391(In) 217(Out)
3/1 (short)	161
3/2 (with short)	976(In) 815(Out)
4/1	895
5/1	989
6/1	349

Lane Saturation Flows

Junction: Mirehouse-Egremont Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Egremont Road West)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/2 (Egremont Road West)	3.25	0.00	N	Arm 6 Right	19.00	100.0 %	1928	1928
2/1 (Mirehouse Road)	3.25	0.00	Y	Arm 5 Left	15.00	100.0 %	1764	1764
2/2 (Mirehouse Road)	3.25	0.00	Y	Arm 4 Right	20.00	100.0 %	1805	1805
3/1 (Egremont Road East)	3.25	0.00	Y	Arm 6 Left	15.00	100.0 %	1764	1764
3/2 (Egremont Road East)	3.25	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1940	1940
4/1 (Egremont Road East (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Egremont Road (West) - Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Mirehouse Road - Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 5: '2026 AM Base' (FG5: '2026 AM Base', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	105	929	1034
	B	200	0	190	390
	C	652	105	0	757
	Tot.	852	210	1119	2181

Traffic Lane Flows

Lane	Scenario 5: 2026 AM Base
Junction: Mirehouse-Egremont Junction	
1/1 (with short)	1034(In) 929(Out)
1/2 (short)	105
2/1 (short)	200
2/2 (with short)	390(In) 190(Out)
3/1 (short)	105
3/2 (with short)	757(In) 652(Out)
4/1	1119
5/1	852
6/1	210

Full Input Data And Results

Lane Saturation Flows

Junction: Mirehouse-Egremont Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Egremont Road West)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/2 (Egremont Road West)	3.25	0.00	N	Arm 6 Right	19.00	100.0 %	1928	1928
2/1 (Mirehouse Road)	3.25	0.00	Y	Arm 5 Left	15.00	100.0 %	1764	1764
2/2 (Mirehouse Road)	3.25	0.00	Y	Arm 4 Right	20.00	100.0 %	1805	1805
3/1 (Egremont Road East)	3.25	0.00	Y	Arm 6 Left	15.00	100.0 %	1764	1764
3/2 (Egremont Road East)	3.25	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1940	1940
4/1 (Egremont Road East (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Egremont Road (West) - Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Mirehouse Road - Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2026 PM Base' (FG6: '2026 PM Base', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	199	717	916
	B	184	0	231	415
	C	864	171	0	1035
	Tot.	1048	370	948	2366

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: 2026 PM Base
Junction: Mirehouse-Egremont Junction	
1/1 (with short)	916(In) 717(Out)
1/2 (short)	199
2/1 (short)	184
2/2 (with short)	415(In) 231(Out)
3/1 (short)	171
3/2 (with short)	1035(In) 864(Out)
4/1	948
5/1	1048
6/1	370

Lane Saturation Flows

Junction: Mirehouse-Egremont Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Egremont Road West)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/2 (Egremont Road West)	3.25	0.00	N	Arm 6 Right	19.00	100.0 %	1928	1928
2/1 (Mirehouse Road)	3.25	0.00	Y	Arm 5 Left	15.00	100.0 %	1764	1764
2/2 (Mirehouse Road)	3.25	0.00	Y	Arm 4 Right	20.00	100.0 %	1805	1805
3/1 (Egremont Road East)	3.25	0.00	Y	Arm 6 Left	15.00	100.0 %	1764	1764
3/2 (Egremont Road East)	3.25	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1940	1940
4/1 (Egremont Road East (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Egremont Road (West) - Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Mirehouse Road - Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 7: '2026 AM Base + Dev' (FG7: '2026 AM Base + Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	105	931	1036
	B	201	0	190	391
	C	657	105	0	762
	Tot.	858	210	1121	2189

Traffic Lane Flows

Lane	Scenario 7: 2026 AM Base + Dev
Junction: Mirehouse-Egremont Junction	
1/1 (with short)	1036(In) 931(Out)
1/2 (short)	105
2/1 (short)	201
2/2 (with short)	391(In) 190(Out)
3/1 (short)	105
3/2 (with short)	762(In) 657(Out)
4/1	1121
5/1	858
6/1	210

Full Input Data And Results

Lane Saturation Flows

Junction: Mirehouse-Egremont Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Egremont Road West)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/2 (Egremont Road West)	3.25	0.00	N	Arm 6 Right	19.00	100.0 %	1928	1928
2/1 (Mirehouse Road)	3.25	0.00	Y	Arm 5 Left	15.00	100.0 %	1764	1764
2/2 (Mirehouse Road)	3.25	0.00	Y	Arm 4 Right	20.00	100.0 %	1805	1805
3/1 (Egremont Road East)	3.25	0.00	Y	Arm 6 Left	15.00	100.0 %	1764	1764
3/2 (Egremont Road East)	3.25	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1940	1940
4/1 (Egremont Road East (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Egremont Road (West) - Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Mirehouse Road - Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 8: '2026 PM Base + Dev' (FG8: '2026 PM Base + Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
	A	B	C	Tot.	
Origin	A	0	200	721	921
	B	185	0	231	416
	C	868	171	0	1039
	Tot.	1053	371	952	2376

Traffic Lane Flows

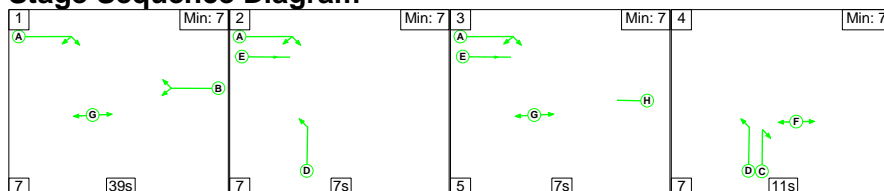
Lane	Scenario 8: 2026 PM Base + Dev
Junction: Mirehouse-Egremont Junction	
1/1 (with short)	921(In) 721(Out)
1/2 (short)	200
2/1 (short)	185
2/2 (with short)	416(In) 231(Out)
3/1 (short)	171
3/2 (with short)	1039(In) 868(Out)
4/1	952
5/1	1053
6/1	371

Lane Saturation Flows

Junction: Mirehouse-Egremont Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Egremont Road West)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/2 (Egremont Road West)	3.25	0.00	N	Arm 6 Right	19.00	100.0 %	1928	1928
2/1 (Mirehouse Road)	3.25	0.00	Y	Arm 5 Left	15.00	100.0 %	1764	1764
2/2 (Mirehouse Road)	3.25	0.00	Y	Arm 4 Right	20.00	100.0 %	1805	1805
3/1 (Egremont Road East)	3.25	0.00	Y	Arm 6 Left	15.00	100.0 %	1764	1764
3/2 (Egremont Road East)	3.25	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1940	1940
4/1 (Egremont Road East (Exit) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Egremont Road (West) - Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Mirehouse Road - Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2019 AM Base' (FG1: '2019 AM Base', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

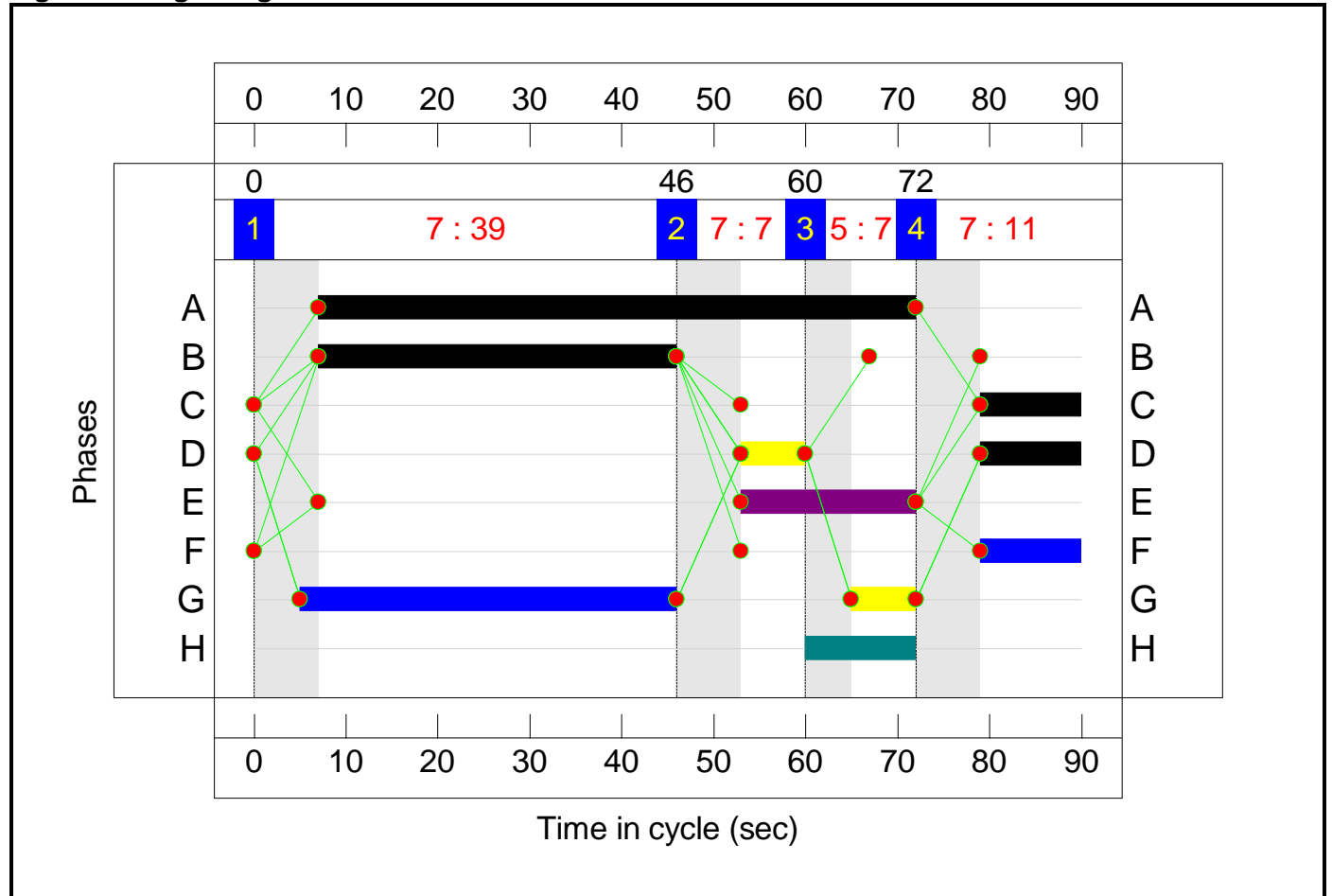


Full Input Data And Results

Stage Timings

Stage	1	2	3	4
Duration	39	7	7	11
Change Point	0	46	60	72

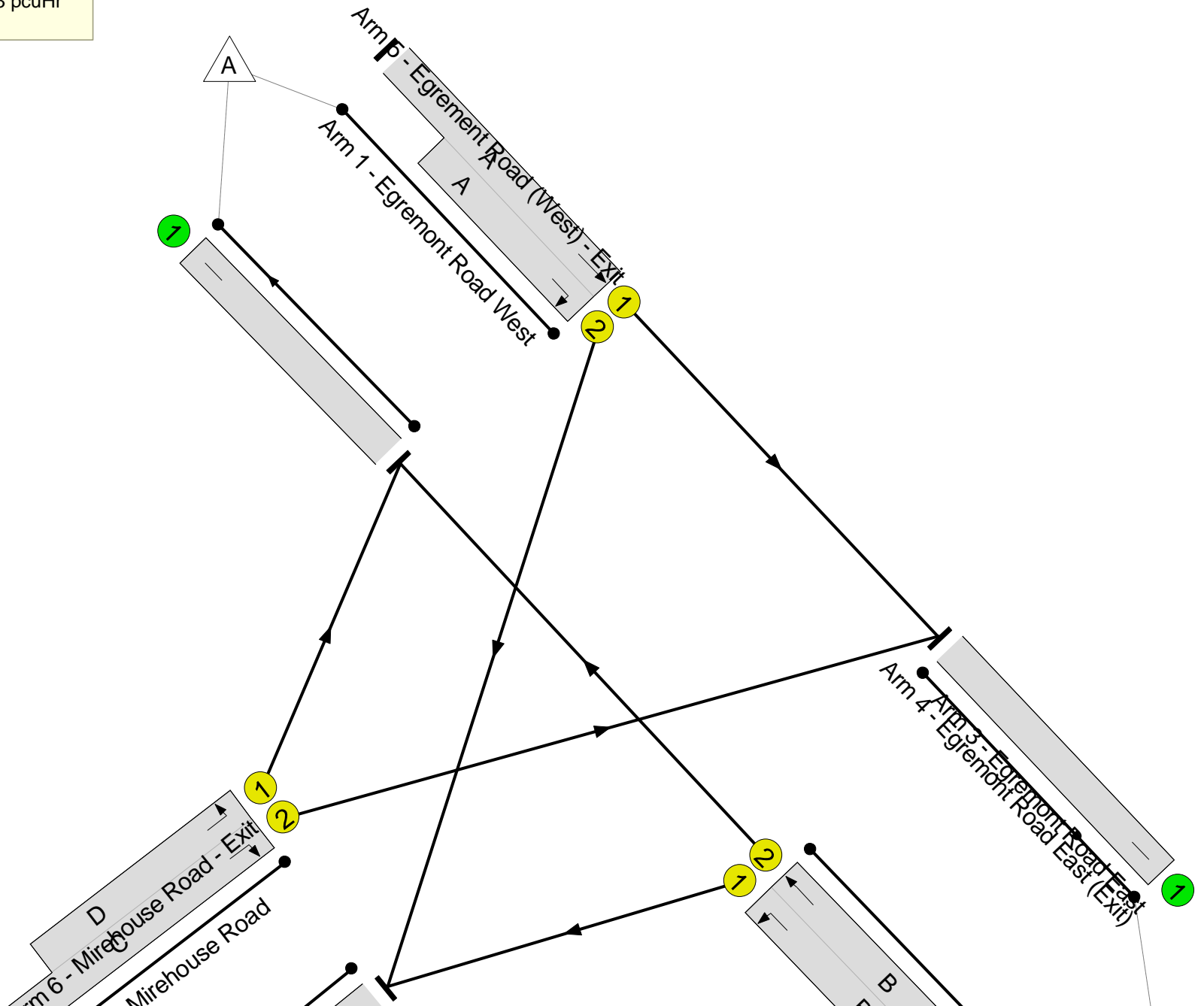

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

Mirehouse-Egremont Junction
PRC: 16.9 %
Total Traffic Delay: 12.3 pcuHr



Full Input Data And Results

Network Results

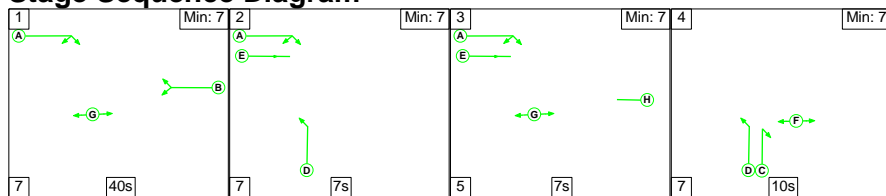
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	77.0%
Mirehouse-Egremont Junction	-	-	N/A	-	-		-	-	-	-	-	-	77.0%
1/1+1/2	Egremont Road West Ahead Right	U	N/A	N/A	A		1	65	-	967	1940:1928	1309+148	66.4 : 66.4%
2/2+2/1	Mirehouse Road Right Left	U	N/A	N/A	C D		1:2	11:18	-	365	1805:1764	241+253	74.0 : 74.0%
3/2+3/1	Egremont Road East Ahead Left	U	N/A	N/A	B		1	39	-	708	1940:1764	792+127	77.0 : 77.0%
4/1	Egremont Road East (Exit)	U	N/A	N/A	-		-	-	-	1047	Inf	Inf	0.0%
5/1	Egremont Road (West) - Exit	U	N/A	N/A	-		-	-	-	797	Inf	Inf	0.0%
6/1	Mirehouse Road - Exit	U	N/A	N/A	-		-	-	-	196	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	8.3	4.0	0.0	12.3	-	-	-	-
Mirehouse-Egremont Junction	-	-	0	0	0	8.3	4.0	0.0	12.3	-	-	-	-
1/1+1/2	967	967	-	-	-	1.5	1.0	-	2.5	9.3	10.9	1.0	11.9
2/2+2/1	365	365	-	-	-	2.8	1.4	-	4.2	41.7	4.3	1.4	5.6
3/2+3/1	708	708	-	-	-	3.9	1.6	-	5.6	28.3	13.3	1.6	14.9
4/1	1047	1047	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	797	797	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	196	196	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
<p>C1 PRC for Signalled Lanes (%): 16.9 Total Delay for Signalled Lanes (pcuHr): 12.27 Cycle Time (s): 90</p> <p> PRC Over All Lanes (%): 16.9 Total Delay Over All Lanes(pcuHr): 12.27</p>													

Full Input Data And Results

Full Input Data And Results

Scenario 2: '2019 PM Base' (FG2: '2019 PM Base', Plan 1: 'Network Control Plan 1')

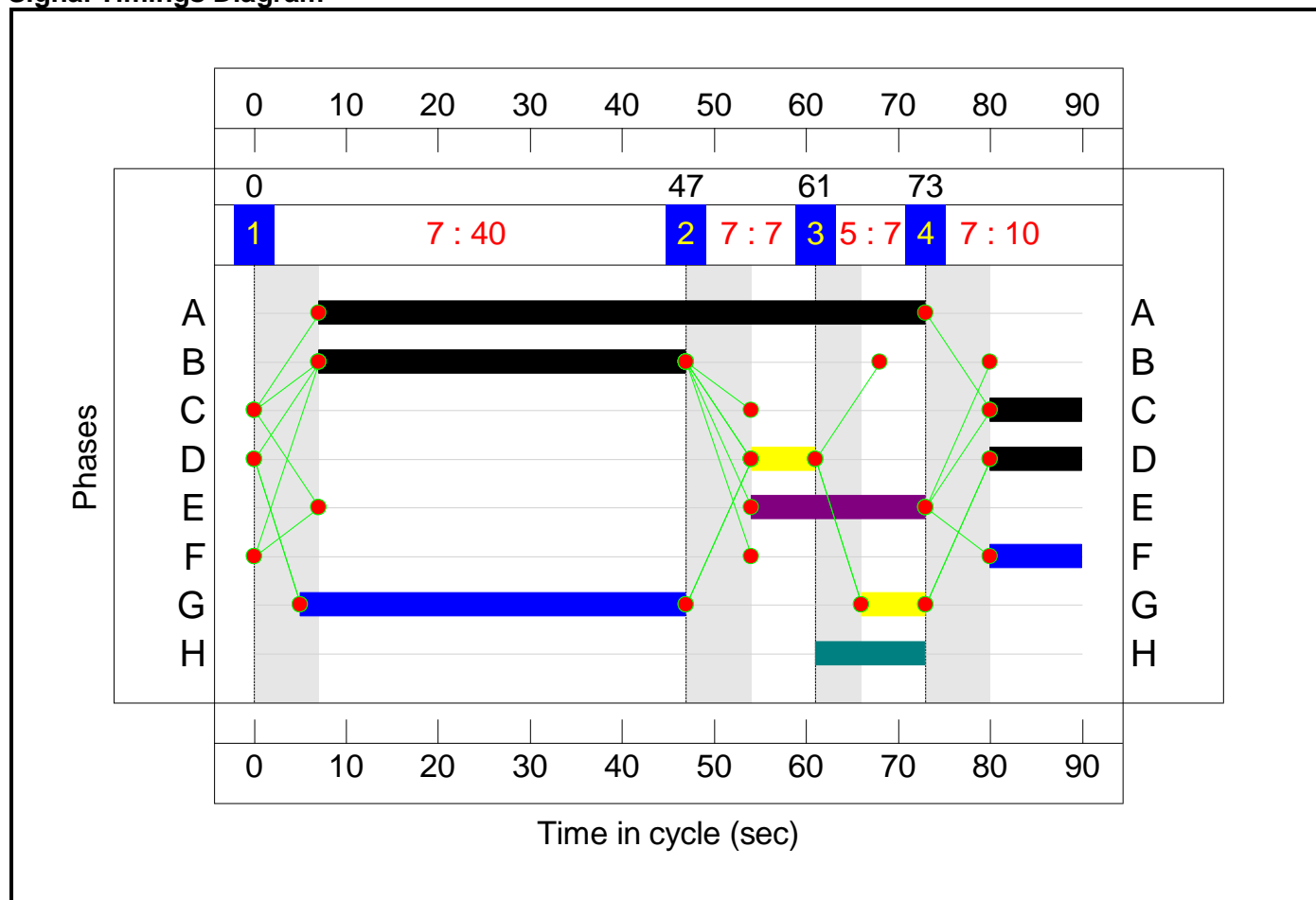
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	40	7	7	10
Change Point	0	47	61	73

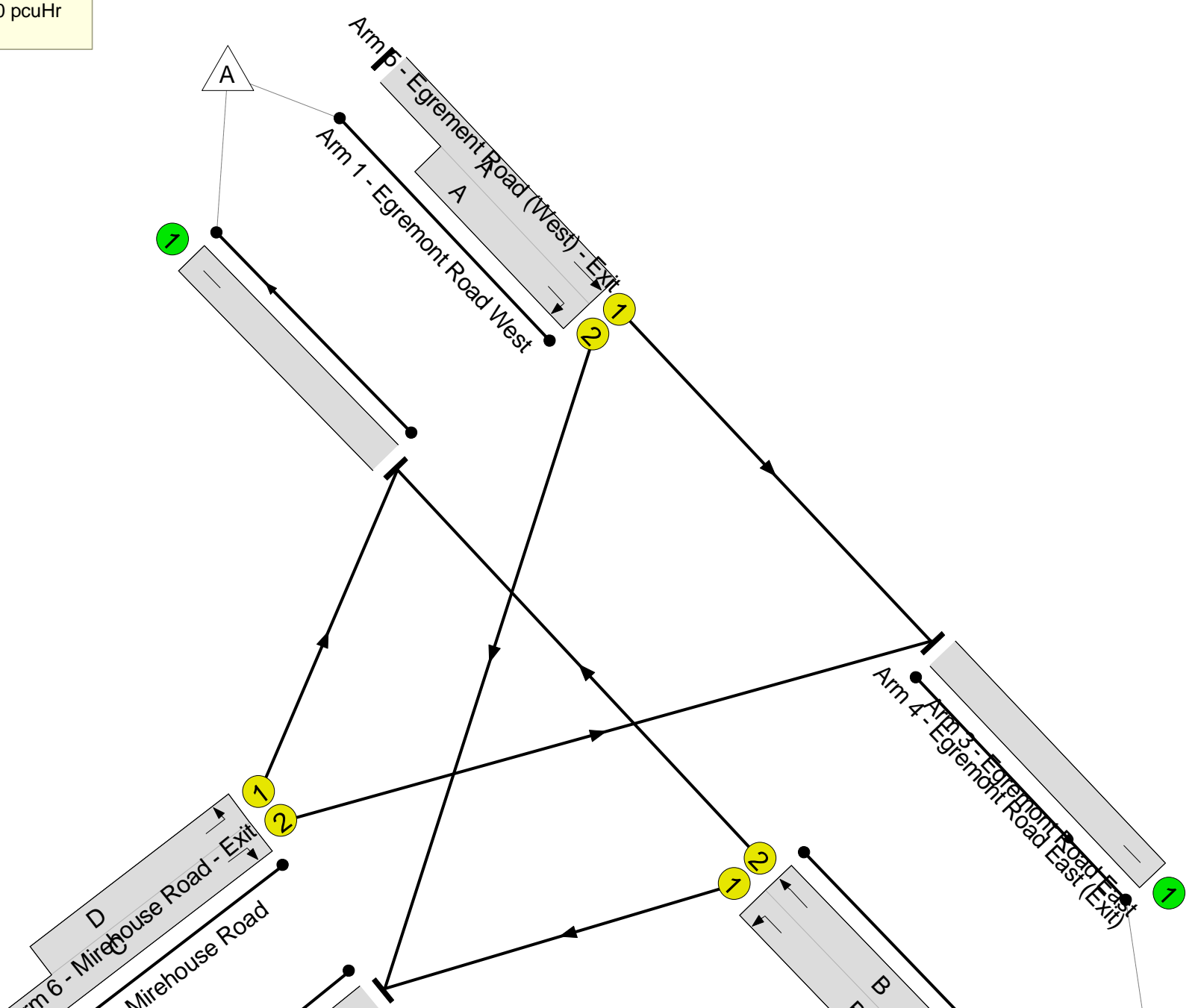

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

Mirehouse-Egremont Junction
PRC: -13.5 %
Total Traffic Delay: 42.0 pcuHr



Full Input Data And Results

Network Results

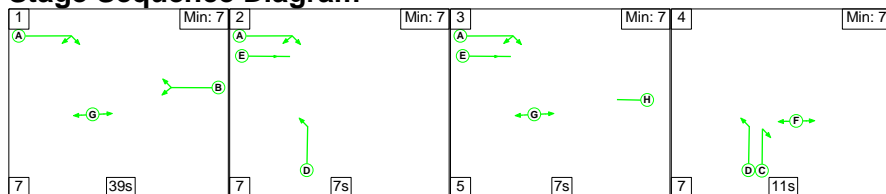
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)		
Network	-	-	N/A	-	-		-	-	-	-	-	-	102.2%		
Mirehouse-Egremont Junction	-	-	N/A	-	-		-	-	-	-	-	-	102.2%		
1/1+1/2	Egremont Road West Ahead Right	U	N/A	N/A	A		1	66	-	860	1940:1928	1202+334	56.0 : 56.0%		
2/2+2/1	Mirehouse Road Right Left	U	N/A	N/A	C D		1:2	10:17	-	390	1805:1764	221+176	98.4 : 98.4%		
3/2+3/1	Egremont Road East Ahead Left	U	N/A	N/A	B		1	40	-	972	1940:1764	794+158	102.2 : 102.2%		
4/1	Egremont Road East (Exit)	U	N/A	N/A	-		-	-	-	890	Inf	Inf	0.0%		
5/1	Egremont Road (West) - Exit	U	N/A	N/A	-		-	-	-	984	Inf	Inf	0.0%		
6/1	Mirehouse Road - Exit	U	N/A	N/A	-		-	-	-	348	Inf	Inf	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)		
Network	-	-	0	0	0	11.5	30.6	0.0	42.0	-	-	-	-		
Mirehouse-Egremont Junction	-	-	0	0	0	11.5	30.6	0.0	42.0	-	-	-	-		
1/1+1/2	860	860	-	-	-	1.0	0.6	-	1.6	6.9	6.5	0.6	7.2		
2/2+2/1	390	390	-	-	-	3.3	8.4	-	11.7	107.9	5.4	8.4	13.7		
3/2+3/1	972	951	-	-	-	7.1	21.6	-	28.7	106.3	24.1	21.6	45.6		
4/1	890	890	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0		
5/1	967	967	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0		
6/1	345	345	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0		
C1			PRC for Signalled Lanes (%): -13.5		Total Delay for Signalled Lanes (pcuHr): 42.04		Cycle Time (s): 90		PRC Over All Lanes (%): -13.5					Total Delay Over All Lanes(pcuHr): 42.04	

Full Input Data And Results

Full Input Data And Results

Scenario 3: '2019 AM Base + Dev' (FG3: '2019 AM Base + Dev', Plan 1: 'Network Control Plan 1')

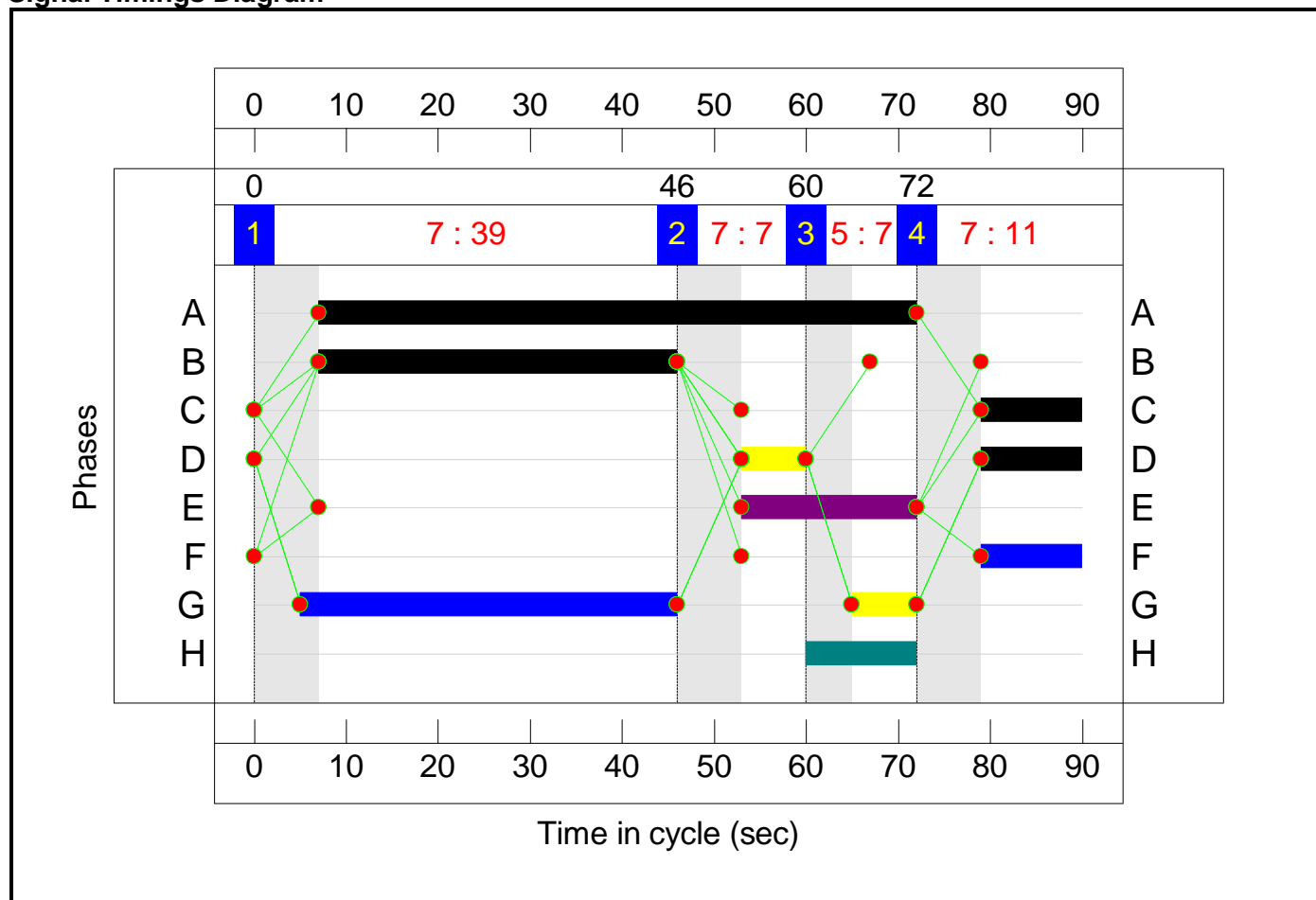
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	39	7	7	11
Change Point	0	46	60	72

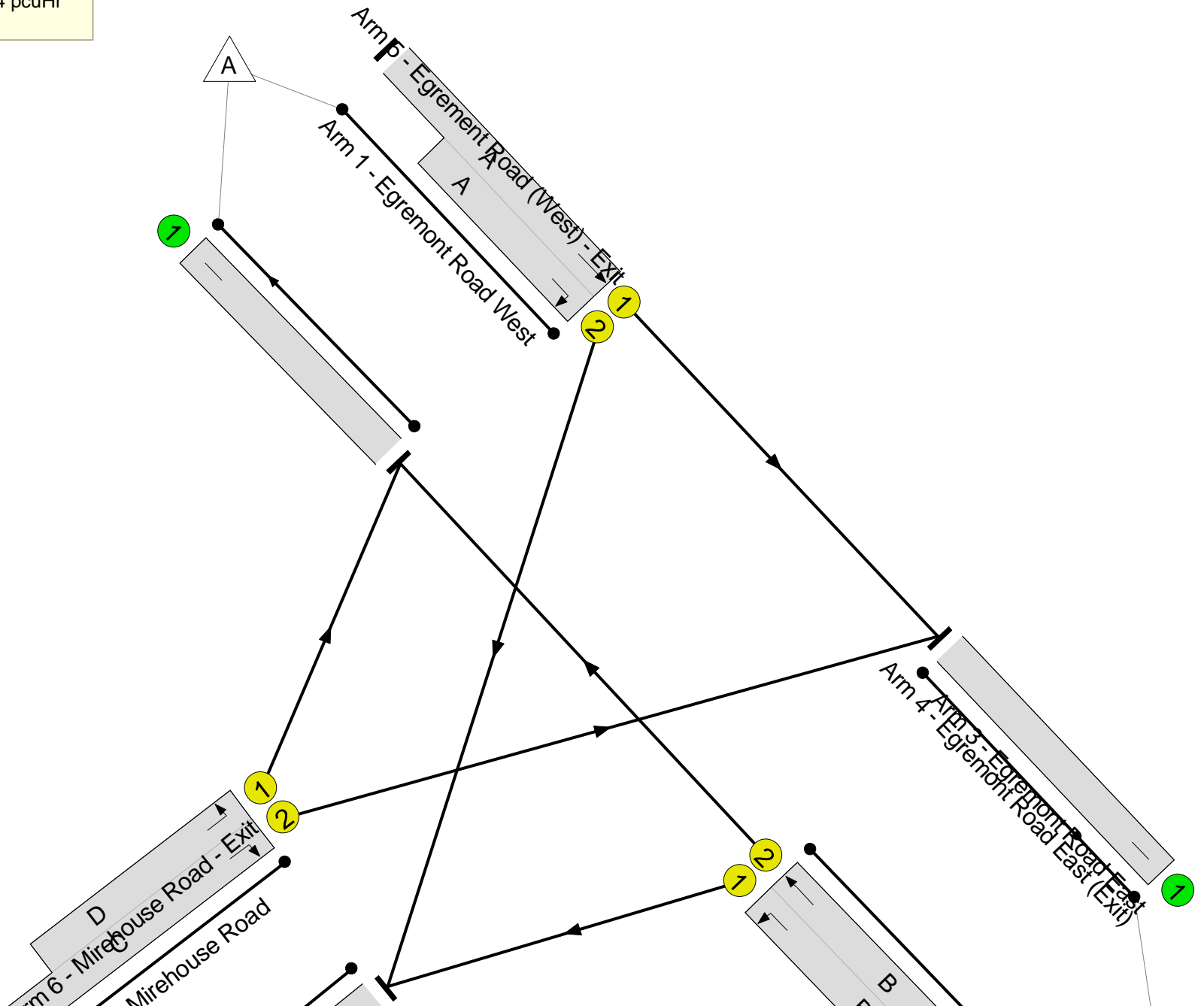
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

Mirehouse-Egremont Junction
PRC: 16.1 %
Total Traffic Delay: 12.4 pcuHr



Full Input Data And Results

Network Results

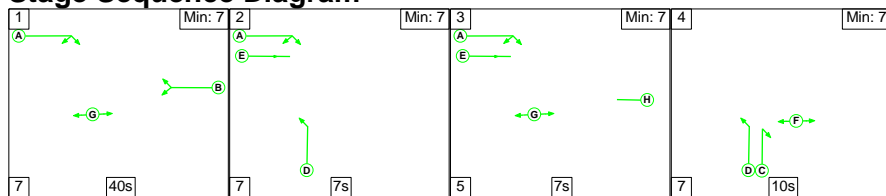
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	77.5%
Mirehouse-Egremont Junction	-	-	N/A	-	-		-	-	-	-	-	-	77.5%
1/1+1/2	Egremont Road West Ahead Right	U	N/A	N/A	A		1	65	-	969	1940:1928	1309+147	66.5 : 66.5%
2/2+2/1	Mirehouse Road Right Left	U	N/A	N/A	C D		1:2	11:18	-	366	1805:1764	241+254	74.0 : 74.0%
3/2+3/1	Egremont Road East Ahead Left	U	N/A	N/A	B		1	39	-	713	1940:1764	793+126	77.5 : 77.5%
4/1	Egremont Road East (Exit)	U	N/A	N/A	-		-	-	-	1049	Inf	Inf	0.0%
5/1	Egremont Road (West) - Exit	U	N/A	N/A	-		-	-	-	803	Inf	Inf	0.0%
6/1	Mirehouse Road - Exit	U	N/A	N/A	-		-	-	-	196	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	8.3	4.1	0.0	12.4	-	-	-	-
Mirehouse-Egremont Junction	-	-	0	0	0	8.3	4.1	0.0	12.4	-	-	-	-
1/1+1/2	969	969	-	-	-	1.5	1.0	-	2.5	9.3	10.9	1.0	11.9
2/2+2/1	366	366	-	-	-	2.8	1.4	-	4.2	41.6	4.3	1.4	5.6
3/2+3/1	713	713	-	-	-	4.0	1.7	-	5.7	28.6	13.4	1.7	15.1
4/1	1049	1049	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	803	803	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	196	196	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
<p>C1 PRC for Signalled Lanes (%): 16.1 Total Delay for Signalled Lanes (pcuHr): 12.39 Cycle Time (s): 90</p> <p> PRC Over All Lanes (%): 16.1 Total Delay Over All Lanes(pcuHr): 12.39</p>													

Full Input Data And Results

Full Input Data And Results

Scenario 4: '2019 PM Base + Dev' (FG4: '2019 PM Base + Dev', Plan 1: 'Network Control Plan 1')

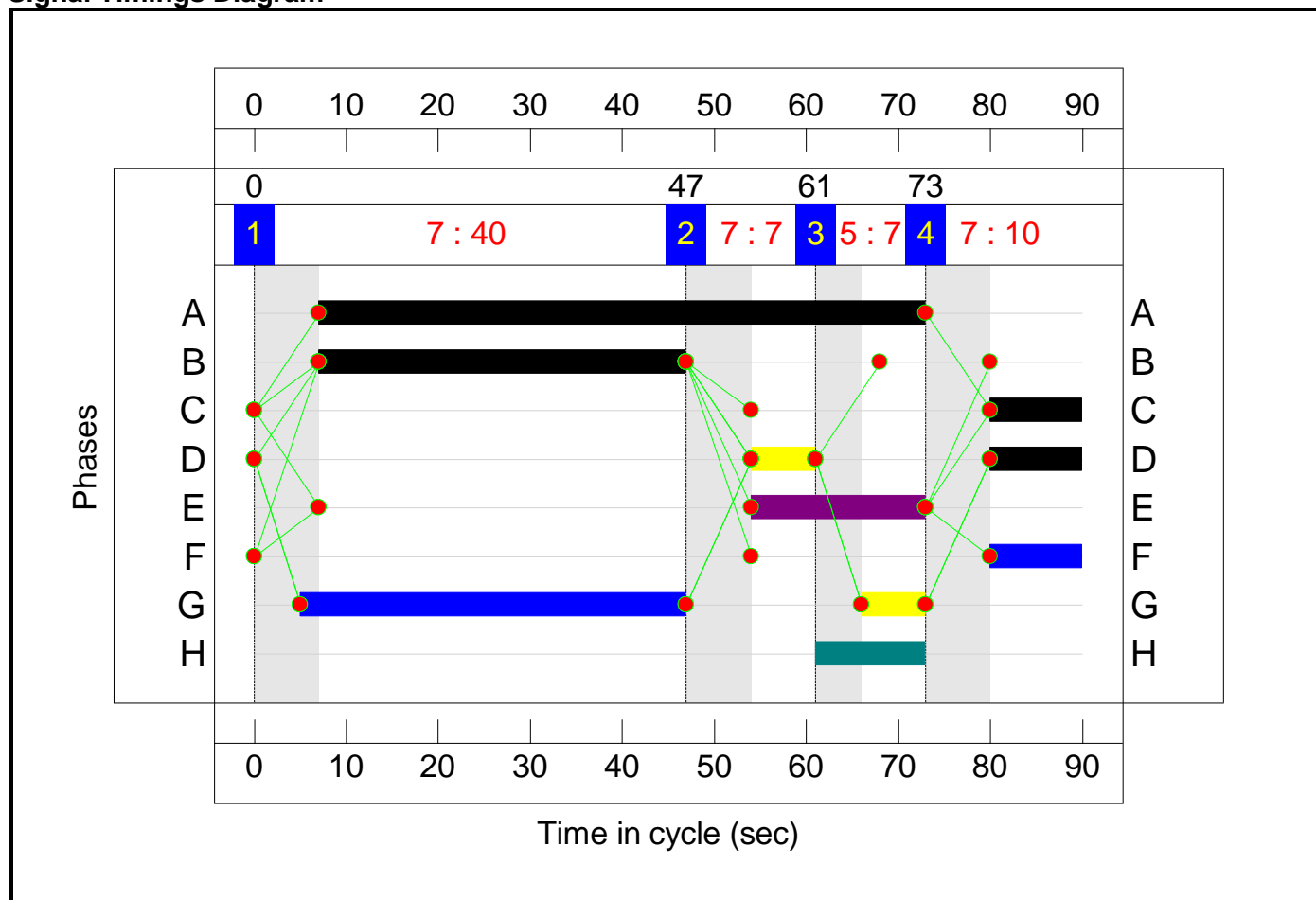
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	40	7	7	10
Change Point	0	47	61	73

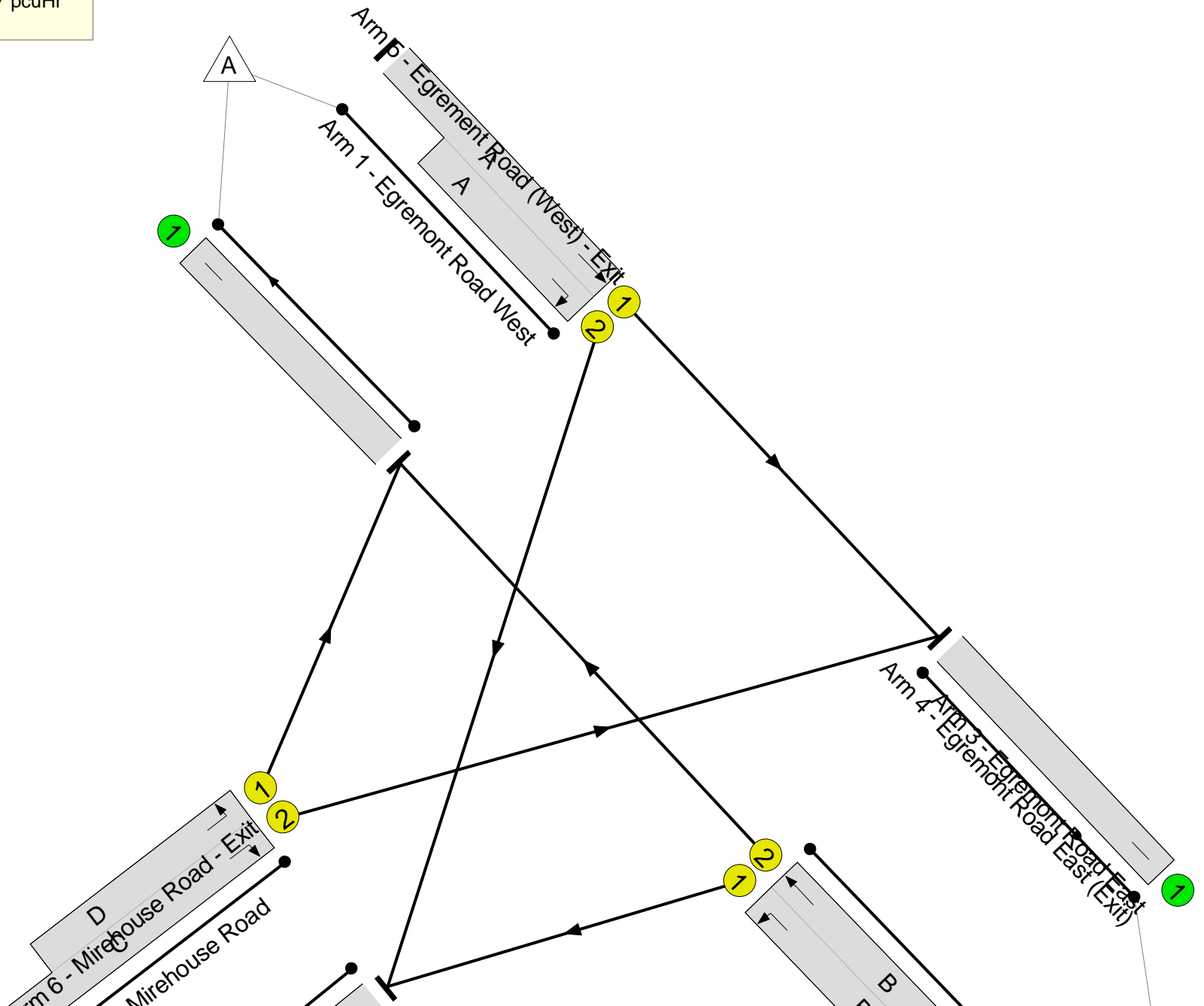

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

Mirehouse-Egremont Junction
PRC: -14.0 %
Total Traffic Delay: 43.7 pcuHr



Full Input Data And Results

Network Results

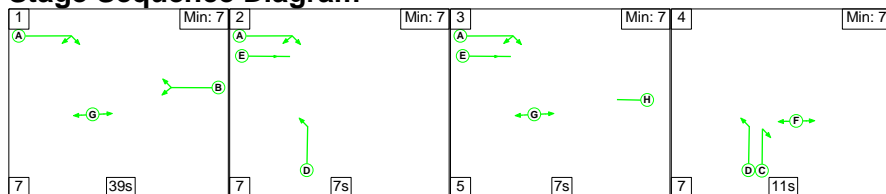
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	102.6%
Mirehouse-Egremont Junction	-	-	N/A	-	-		-	-	-	-	-	-	102.6%
1/1+1/2	Egremont Road West Ahead Right	U	N/A	N/A	A		1	66	-	866	1940:1928	1203+333	56.4 : 56.4%
2/2+2/1	Mirehouse Road Right Left	U	N/A	N/A	C D		1:2	10:17	-	391	1805:1764	221+177	98.4 : 98.4%
3/2+3/1	Egremont Road East Ahead Left	U	N/A	N/A	B		1	40	-	976	1940:1764	794+157	102.6 : 102.6%
4/1	Egremont Road East (Exit)	U	N/A	N/A	-		-	-	-	895	Inf	Inf	0.0%
5/1	Egremont Road (West) - Exit	U	N/A	N/A	-		-	-	-	989	Inf	Inf	0.0%
6/1	Mirehouse Road - Exit	U	N/A	N/A	-		-	-	-	349	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	11.7	32.1	0.0	43.7	-	-	-	-
Mirehouse-Egremont Junction	-	-	0	0	0	11.7	32.1	0.0	43.7	-	-	-	-
1/1+1/2	866	866	-	-	-	1.0	0.6	-	1.7	6.9	6.6	0.6	7.2
2/2+2/1	391	391	-	-	-	3.3	8.4	-	11.7	107.8	5.4	8.4	13.8
3/2+3/1	976	951	-	-	-	7.4	23.0	-	30.4	112.0	24.6	23.0	47.6
4/1	895	895	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	968	968	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	345	345	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): -14.0		Total Delay for Signalled Lanes (pcuHr): 43.74		Cycle Time (s): 90						
			PRC Over All Lanes (%): -14.0		Total Delay Over All Lanes(pcuHr): 43.74								

Full Input Data And Results

Full Input Data And Results

Scenario 5: '2026 AM Base' (FG5: '2026 AM Base', Plan 1: 'Network Control Plan 1')

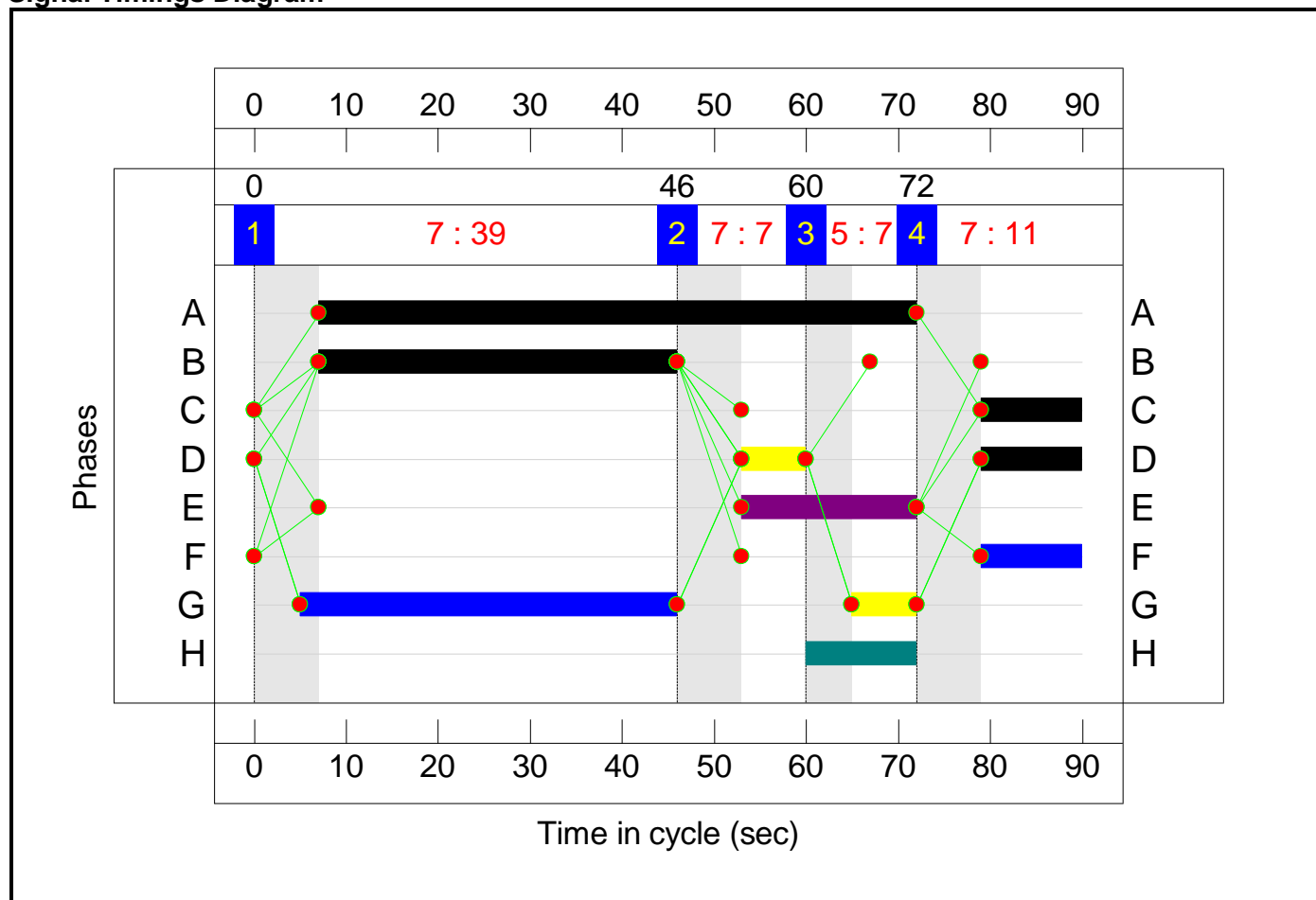
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	39	7	7	11
Change Point	0	46	60	72

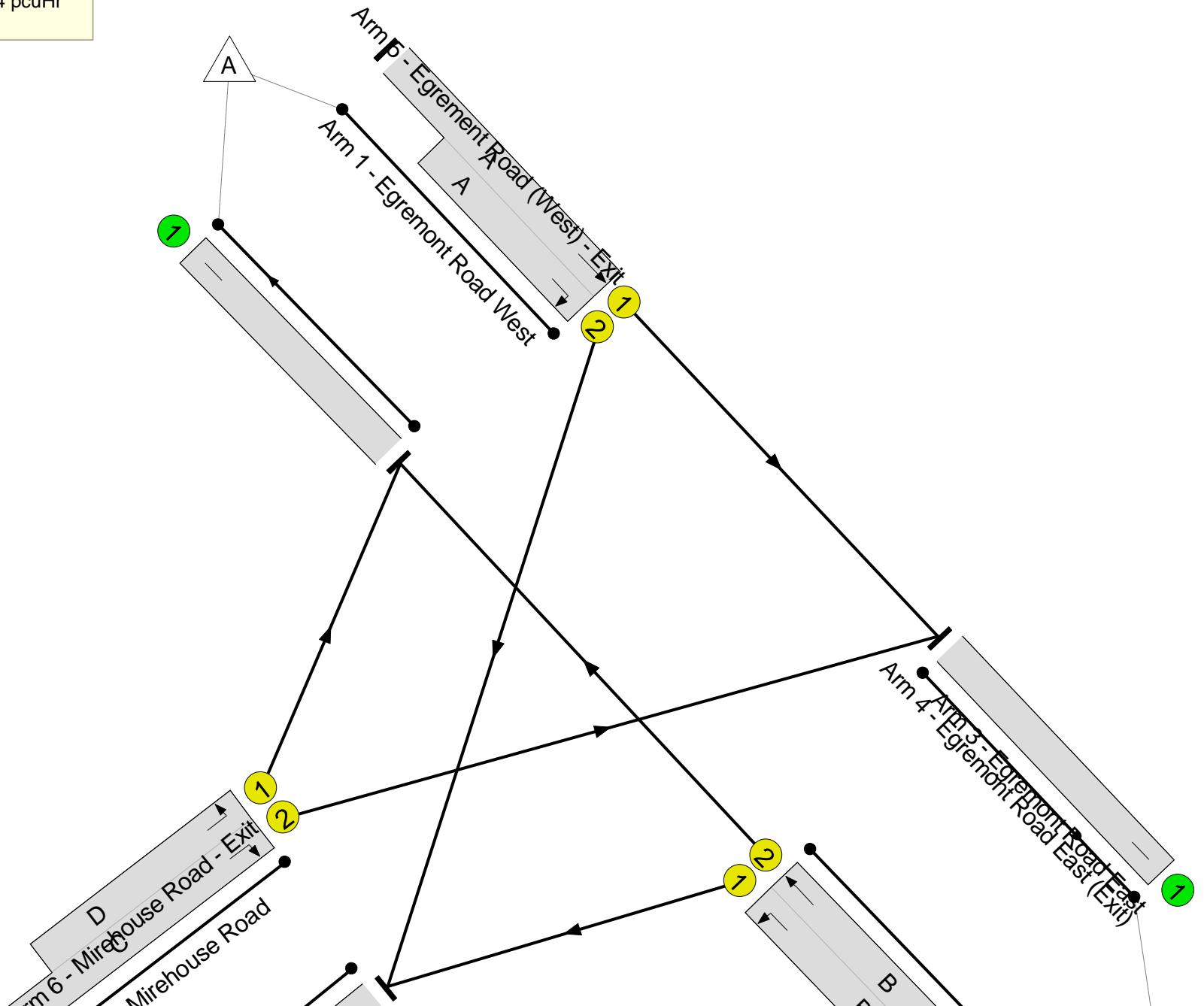
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

Mirehouse-Egremont Junction
PRC: 9.4 %
Total Traffic Delay: 14.4 pcuHr



Full Input Data And Results

Network Results

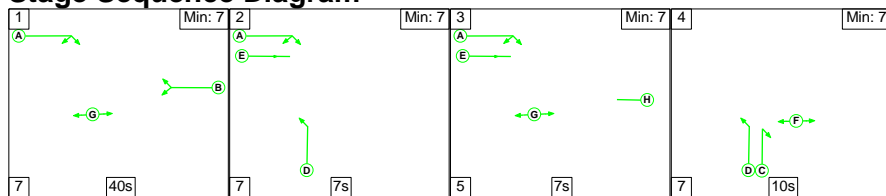
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	82.3%
Mirehouse-Egremont Junction	-	-	N/A	-	-		-	-	-	-	-	-	82.3%
1/1+1/2	Egremont Road West Ahead Right	U	N/A	N/A	A		1	65	-	1034	1940:1928	1308+148	71.0 : 71.0%
2/2+2/1	Mirehouse Road Right Left	U	N/A	N/A	C D		1:2	11:18	-	390	1805:1764	241+253	78.9 : 78.9%
3/2+3/1	Egremont Road East Ahead Left	U	N/A	N/A	B		1	39	-	757	1940:1764	792+128	82.3 : 82.3%
4/1	Egremont Road East (Exit)	U	N/A	N/A	-		-	-	-	1119	Inf	Inf	0.0%
5/1	Egremont Road (West) - Exit	U	N/A	N/A	-		-	-	-	852	Inf	Inf	0.0%
6/1	Mirehouse Road - Exit	U	N/A	N/A	-		-	-	-	210	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	9.1	5.3	0.0	14.4	-	-	-	-
Mirehouse-Egremont Junction	-	-	0	0	0	9.1	5.3	0.0	14.4	-	-	-	-
1/1+1/2	1034	1034	-	-	-	1.7	1.2	-	2.9	10.2	12.7	1.2	14.0
2/2+2/1	390	390	-	-	-	3.0	1.8	-	4.9	44.9	4.6	1.8	6.4
3/2+3/1	757	757	-	-	-	4.4	2.3	-	6.6	31.4	14.9	2.3	17.2
4/1	1119	1119	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	852	852	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	210	210	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
<p>C1 PRC for Signalled Lanes (%): 9.4 Total Delay for Signalled Lanes (pcuHr): 14.41 Cycle Time (s): 90</p> <p> PRC Over All Lanes (%): 9.4 Total Delay Over All Lanes(pcuHr): 14.41</p>													

Full Input Data And Results

Full Input Data And Results

Scenario 6: '2026 PM Base' (FG6: '2026 PM Base', Plan 1: 'Network Control Plan 1')

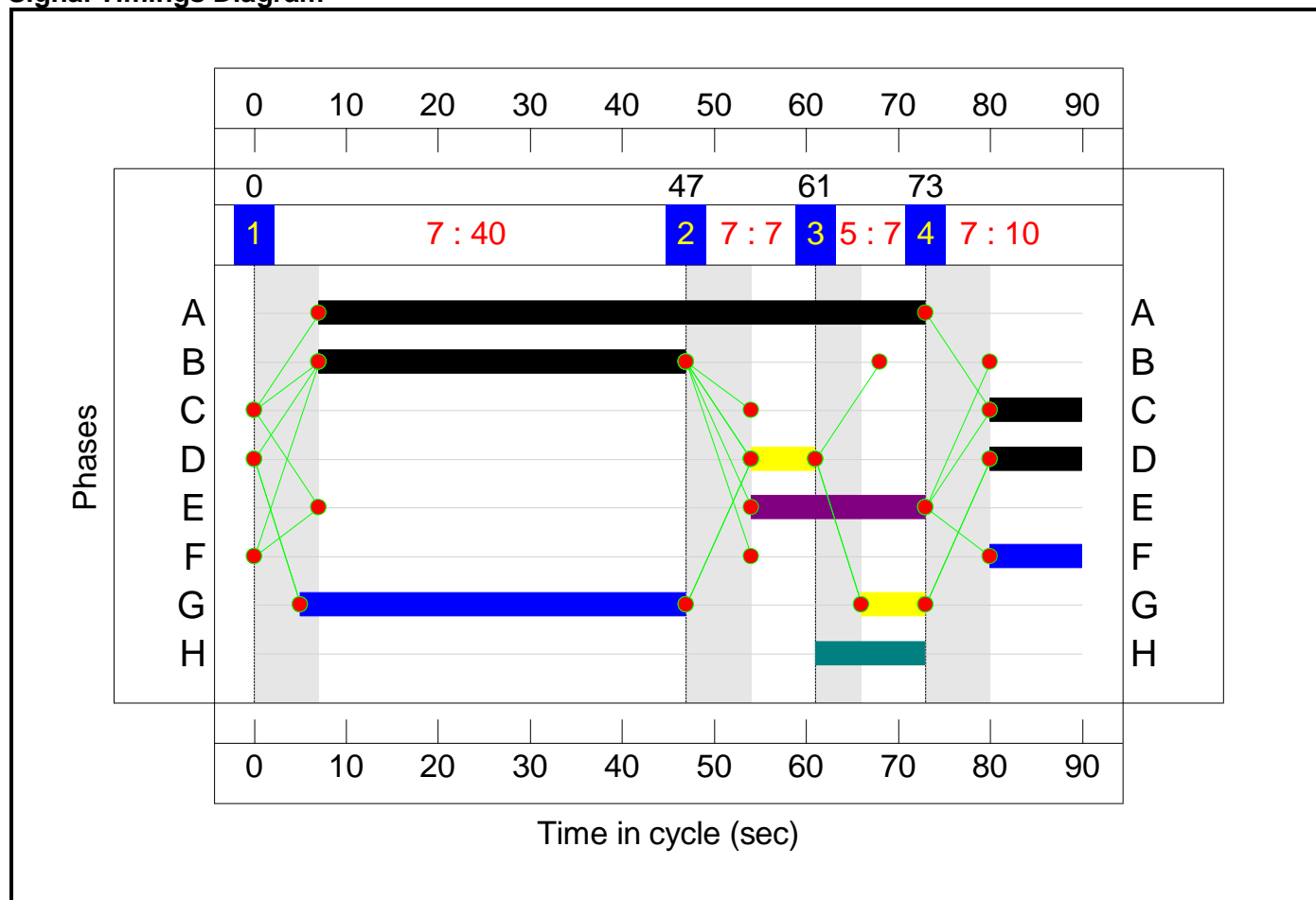
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	40	7	7	10
Change Point	0	47	61	73

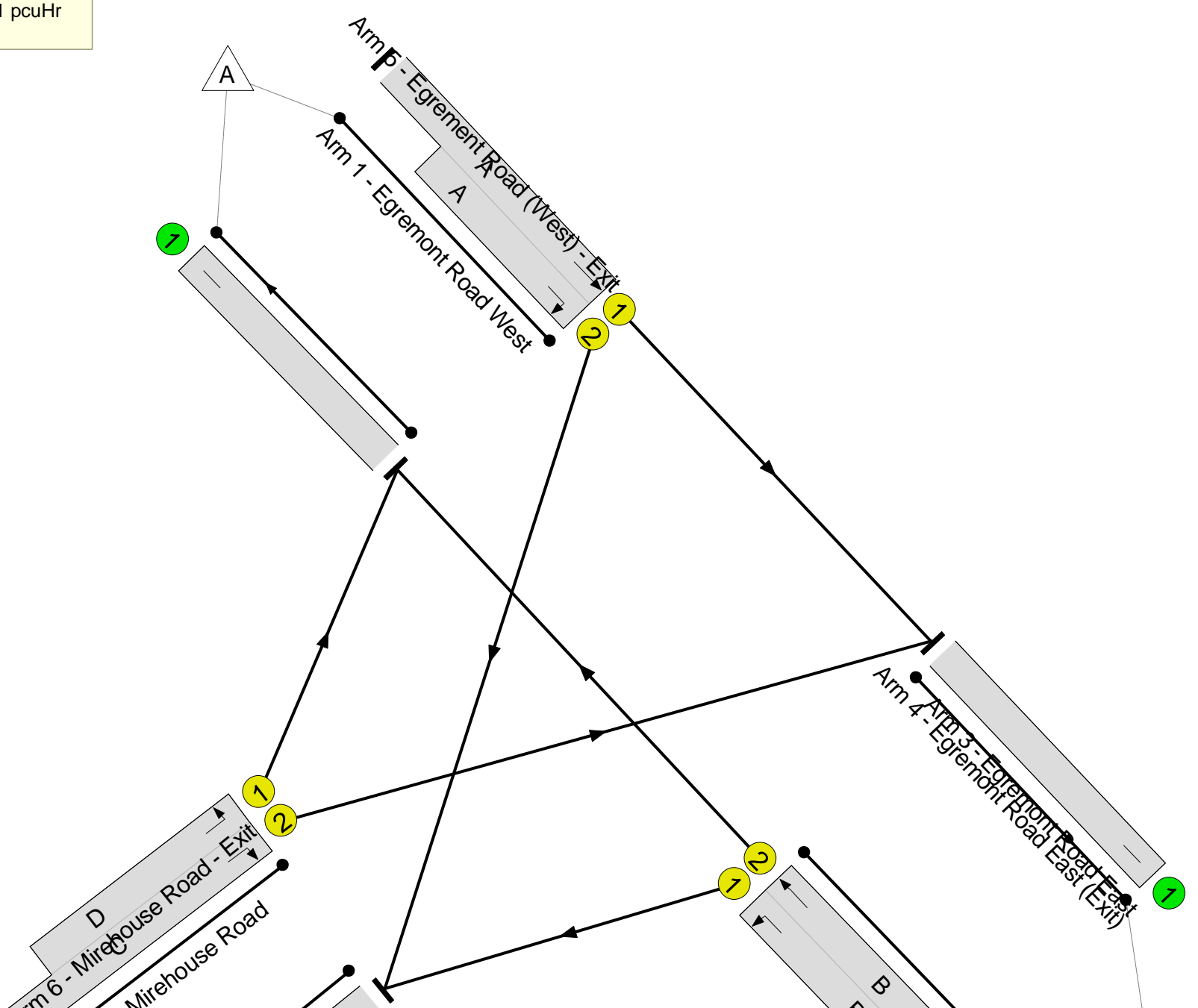

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

Mirehouse-Egremont Junction
PRC: -20.9 %
Total Traffic Delay: 79.1 pcuHr



Full Input Data And Results

Network Results

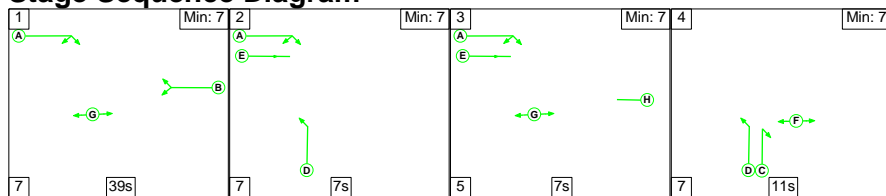
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	108.8%
Mirehouse-Egremont Junction	-	-	N/A	-	-		-	-	-	-	-	-	108.8%
1/1+1/2	Egremont Road West Ahead Right	U	N/A	N/A	A		1	66	-	916	1940:1928	1202+334	59.6 : 59.6%
2/2+2/1	Mirehouse Road Right Left	U	N/A	N/A	C D		1:2	10:17	-	415	1805:1764	221+176	104.7 : 104.7%
3/2+3/1	Egremont Road East Ahead Left	U	N/A	N/A	B		1	40	-	1035	1940:1764	794+157	108.8 : 108.8%
4/1	Egremont Road East (Exit)	U	N/A	N/A	-		-	-	-	948	Inf	Inf	0.0%
5/1	Egremont Road (West) - Exit	U	N/A	N/A	-		-	-	-	1048	Inf	Inf	0.0%
6/1	Mirehouse Road - Exit	U	N/A	N/A	-		-	-	-	370	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	15.1	63.9	0.0	79.1	-	-	-	-
Mirehouse-Egremont Junction	-	-	0	0	0	15.1	63.9	0.0	79.1	-	-	-	-
1/1+1/2	916	916	-	-	-	1.1	0.7	-	1.8	7.3	7.2	0.7	7.9
2/2+2/1	415	405	-	-	-	3.8	15.9	-	19.7	170.6	5.8	15.9	21.7
3/2+3/1	1035	951	-	-	-	10.2	47.3	-	57.6	200.2	28.1	47.3	75.5
4/1	938	938	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	978	978	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	356	356	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): -20.9		Total Delay for Signalled Lanes (pcuHr): 79.07		Cycle Time (s): 90						
			PRC Over All Lanes (%): -20.9		Total Delay Over All Lanes(pcuHr): 79.07								

Full Input Data And Results

Full Input Data And Results

Scenario 7: '2026 AM Base + Dev' (FG7: '2026 AM Base + Dev', Plan 1: 'Network Control Plan 1')

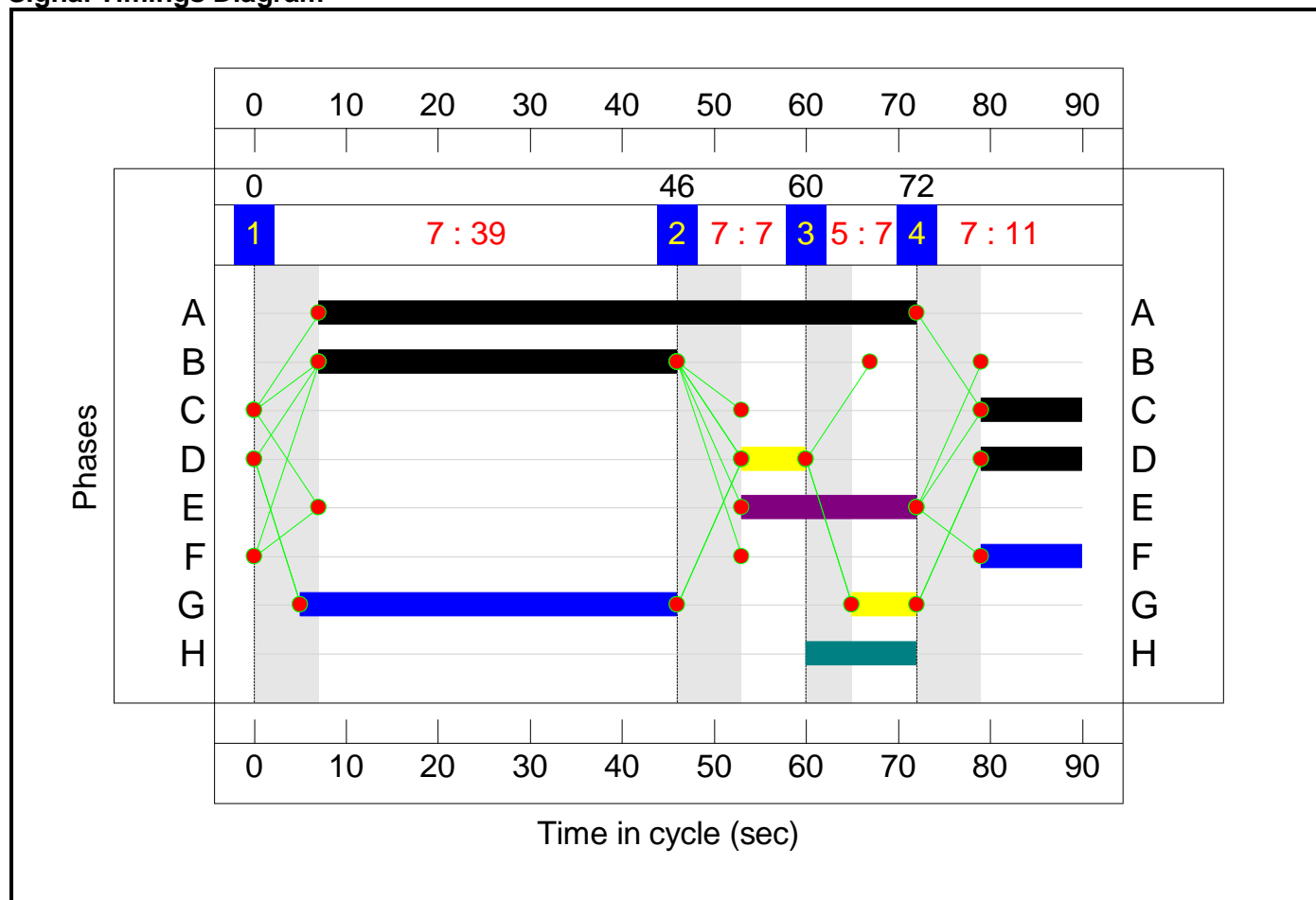
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	39	7	7	11
Change Point	0	46	60	72

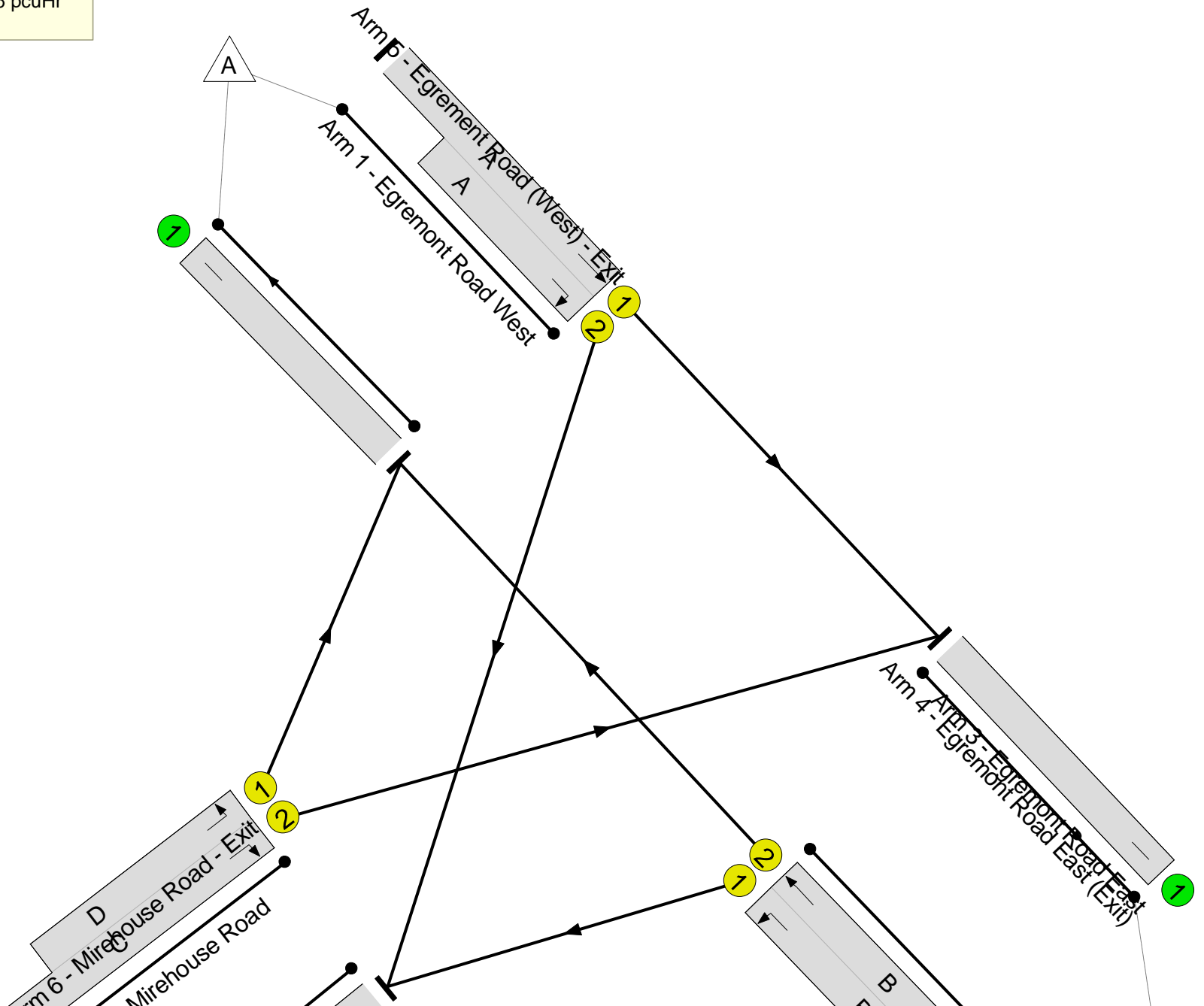
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

Mirehouse-Egremont Junction
PRC: 8.6 %
Total Traffic Delay: 14.6 pcuHr



Full Input Data And Results

Network Results

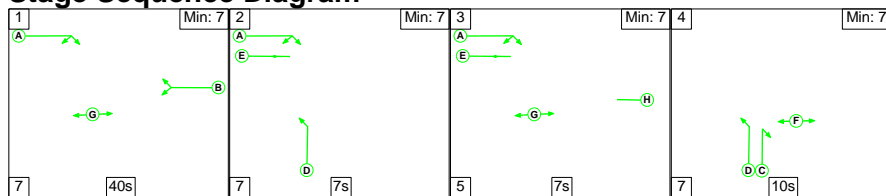
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	82.9%
Mirehouse-Egremont Junction	-	-	N/A	-	-		-	-	-	-	-	-	82.9%
1/1+1/2	Egremont Road West Ahead Right	U	N/A	N/A	A		1	65	-	1036	1940:1928	1309+148	71.1 : 71.1%
2/2+2/1	Mirehouse Road Right Left	U	N/A	N/A	C D		1:2	11:18	-	391	1805:1764	241+255	78.9 : 78.9%
3/2+3/1	Egremont Road East Ahead Left	U	N/A	N/A	B		1	39	-	762	1940:1764	793+127	82.9 : 82.9%
4/1	Egremont Road East (Exit)	U	N/A	N/A	-		-	-	-	1121	Inf	Inf	0.0%
5/1	Egremont Road (West) - Exit	U	N/A	N/A	-		-	-	-	858	Inf	Inf	0.0%
6/1	Mirehouse Road - Exit	U	N/A	N/A	-		-	-	-	210	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	9.2	5.4	0.0	14.6	-	-	-	-
Mirehouse-Egremont Junction	-	-	0	0	0	9.2	5.4	0.0	14.6	-	-	-	-
1/1+1/2	1036	1036	-	-	-	1.7	1.2	-	3.0	10.3	13.0	1.2	14.3
2/2+2/1	391	391	-	-	-	3.1	1.8	-	4.9	44.8	4.6	1.8	6.4
3/2+3/1	762	762	-	-	-	4.4	2.3	-	6.7	31.9	15.1	2.3	17.4
4/1	1121	1121	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	858	858	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	210	210	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
<p>C1 PRC for Signalled Lanes (%): 8.6 Total Delay for Signalled Lanes (pcuHr): 14.57 Cycle Time (s): 90</p> <p> PRC Over All Lanes (%): 8.6 Total Delay Over All Lanes(pcuHr): 14.57</p>													

Full Input Data And Results

Full Input Data And Results

Scenario 8: '2026 PM Base + Dev' (FG8: '2026 PM Base + Dev', Plan 1: 'Network Control Plan 1')

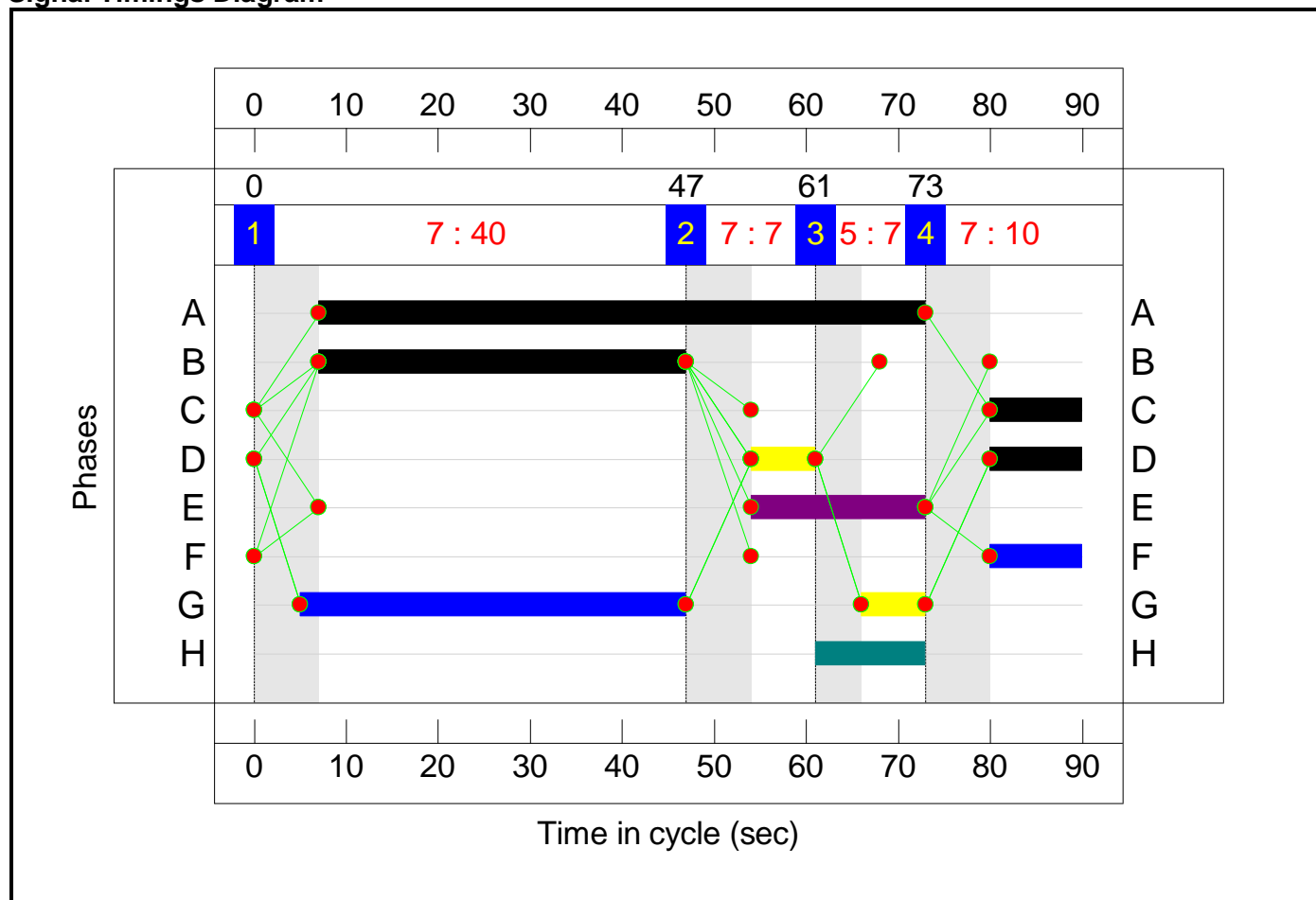
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	40	7	7	10
Change Point	0	47	61	73

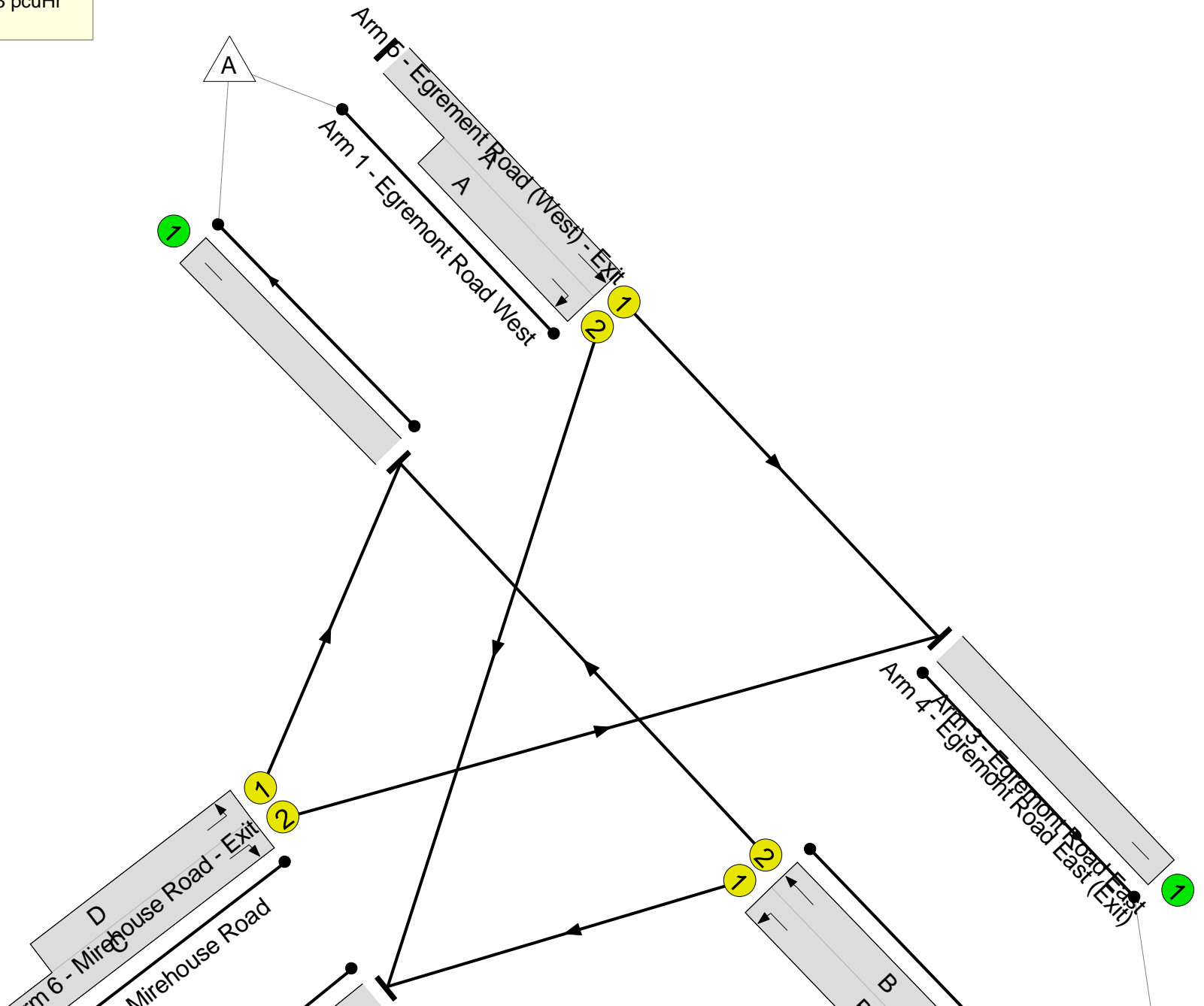

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

Mirehouse-Egremont Junction
PRC: -21.4 %
Total Traffic Delay: 81.3 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	109.3%
Mirehouse-Egremont Junction	-	-	N/A	-	-		-	-	-	-	-	-	109.3%
1/1+1/2	Egremont Road West Ahead Right	U	N/A	N/A	A		1	66	-	921	1940:1928	1203+334	60.0 : 60.0%
2/2+2/1	Mirehouse Road Right Left	U	N/A	N/A	C D		1:2	10:17	-	416	1805:1764	221+177	104.7 : 104.7%
3/2+3/1	Egremont Road East Ahead Left	U	N/A	N/A	B		1	40	-	1039	1940:1764	794+157	109.3 : 109.3%
4/1	Egremont Road East (Exit)	U	N/A	N/A	-		-	-	-	952	Inf	Inf	0.0%
5/1	Egremont Road (West) - Exit	U	N/A	N/A	-		-	-	-	1053	Inf	Inf	0.0%
6/1	Mirehouse Road - Exit	U	N/A	N/A	-		-	-	-	371	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	15.4	65.9	0.0	81.3	-	-	-	-
Mirehouse-Egremont Junction	-	-	0	0	0	15.4	65.9	0.0	81.3	-	-	-	-
1/1+1/2	921	921	-	-	-	1.1	0.7	-	1.9	7.3	7.2	0.7	8.0
2/2+2/1	416	406	-	-	-	3.8	15.9	-	19.7	170.5	5.8	15.9	21.7
3/2+3/1	1039	951	-	-	-	10.4	49.3	-	59.7	206.8	28.4	49.3	77.6
4/1	942	942	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	979	979	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	357	357	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): -21.4		Total Delay for Signalled Lanes (pcuHr): 81.26		Cycle Time (s): 90						
			PRC Over All Lanes (%): -21.4		Total Delay Over All Lanes(pcuHr): 81.26								

Full Input Data And Results

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