# Proposed Industrial Estate
# Land West of Dearne Valley Parkway, Birdwell, Barnsley

## Transport Assessment

October 2023

Client: Carnell Management Services Ltd

Ref: RHC-22-065-TA Revision A

Roberts Highway Consultants Limited
Company Number: 13958498

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**Revision History**

| Revision | Comments | Written By |
|---|---|---|
| -<br>July 2023 | Initial submission | Andrew Roberts BA (Hons) MCIHT MTPS |
| A<br>Oct 2023 | In response to National Highways comments (05/10/2023) | |

# 1.0 REVISION SUMMARY

1.1 Roberts Highway Consultants Limited has prepared a revised Transport Assessment to address comments received by National Highways as part of planning application reference 2023/0815 submitted to Barnsley Metropolitan Borough Council. A summary of the alterations can be found below, for ease of reference.

**Proposed Development**

1.2 The proposed development will comprise seven separate units under the E(g)(ii), E(g)(iii) (Research and development of products or processes and Industrial Processes); B2 and B8 use classes, with a total Gross Floor Area of 7,192sq.m which applies to all use classes. At present, it is unknown what split of the Gross Floor Area will be assigned to each land use as this will be subject to demand at the time of tenancy. As such, a breakdown cannot be provided.

**Collision Data**

1.3 A review of additional collision data between the dates of 01/01/2015 and 31/12/2019 (five-year period) has been provided within Paragraph 4.16 of this report. The analysis outlines that there are no known road safety concerns at the M1, J36 which would be exacerbated by the proposed development.

**Person Trip Rates & Mode Share**

1.4 Person trip generation has been calculated for the development when considering the 'Industrial' and ancillary 'Office' uses within the site (Paragraph 6.5 onwards). The person trip rates, obtained from the TRICS database, have been applied to 2011 Journey to Work census data to determine modal splits for users of the site (Paragraph 6.7 onwards).

1.5 The person trip rates have also been adjusted to take into account the Travel Plan targets (Paragraph 6.17), with these anticipated to be achieved by the year 2029.

**Year of Opening**

1.6 It is anticipated that the proposed development would be occupied during the final quarter of 2024, with no phasing. Revised modelling within this report (Paragraph 7.17 onwards) has considered an opening year of 2024 and a future year of 2029, when anticipating a five-year monitoring period in line with the Travel Plan targets. The modelling results outline that the proposed development will result in negligible impacts upon the Strategic Road Network and therefore, cannot be refused in line with the National Planning Policy Framework.


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## 2.0 INTRODUCTION

2.1 Roberts Highway Consultants Limited has been appointed by Carnell Management Services Ltd to provide transport planning support in relation to a planning application for a proposed industrial estate located on land to the west of Dearne Valley Parkway, Birdwell, Barnsley. The broad extent of the site is outlined on **Plan 1**, with a proposed site plan contained within **Appendix A**.

**Plan 1: Contextual Site Location Plan**

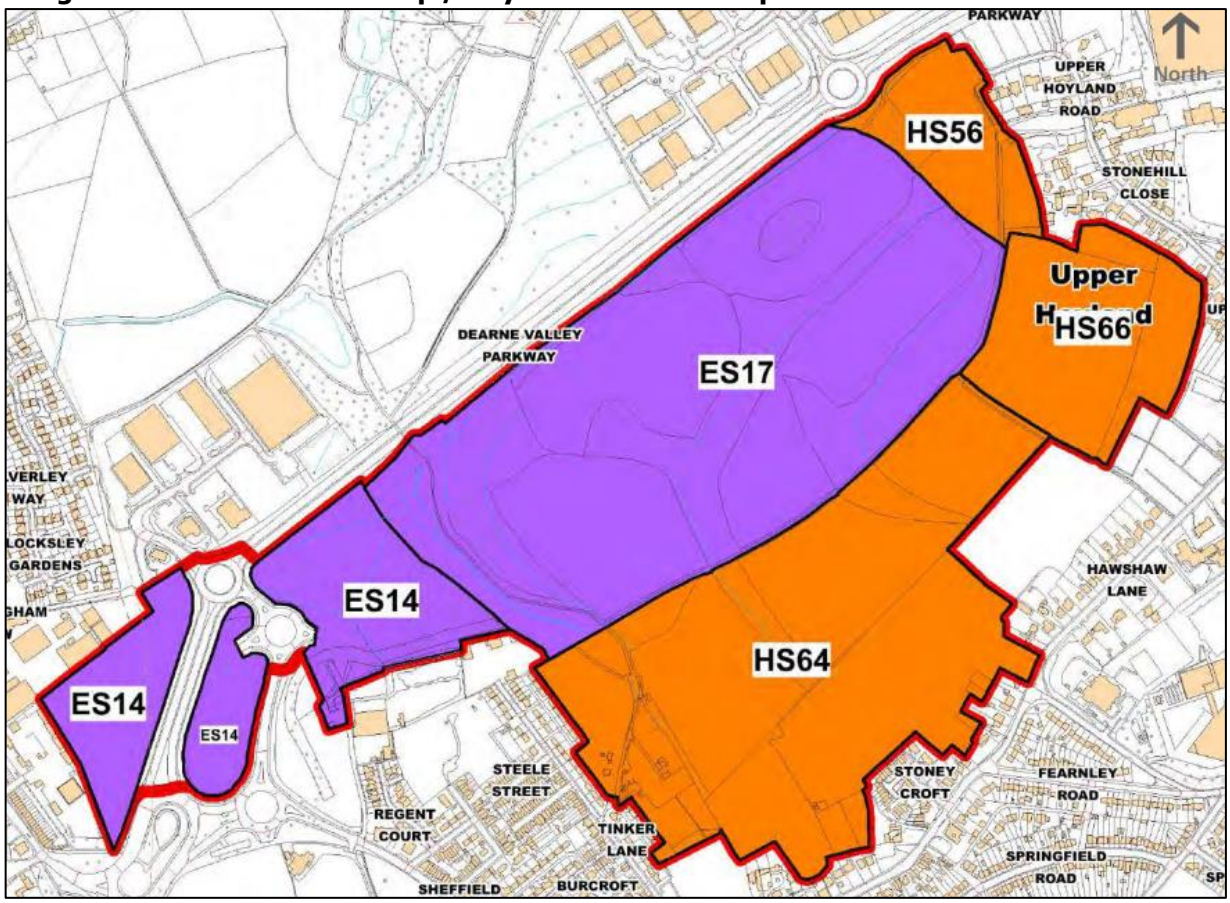

*© Google Maps*

2.2 The site is located within the unitary authority of Barnsley Metropolitan Borough Council, who act as both the Local Planning Authority and the Local Highway Authority for the area. This report will be submitted to Barnsley Metropolitan Borough Council's highways department for consultation.

**Hoyland North Masterplan Framework**

2.3 The application site is allocated within the Barnsley Metropolitan Borough Council Local Plan and forms part of the wider Hoyland North Masterplan Framework. This site is allocated for employment use within policy ES14 (Western Parcel), as can be seen from **Image 1**.

**Image 1: Local Plan Polices Map / Hoyland North Masterplan**




*Source: Barnsley Metropolitan Borough Council*

2.4 The Hoyland North Masterplan Framework was informed by various technical supporting documents. Fore Consulting provided a Transport and Access Appraisal Report which details the various land uses and trip rates associated with the allocated sites within the Hoyland North Masterplan area, including the proposed Industrial Estate on site ES14 (Waddington), which is the subject of this Transport Assessment.

2.5 In addition to the above, an outline planning application (ref: 2019/1573) for 102,193sq.m of employment land uses on allocated sites ES15 and ES17 (land to the north and south of Dearne Valley Parkway) known as The Rockingham Phase 2 and 3 development, was approved in August 2020.

2.6 The Transport Assessment submitted in support of the planning application was prepared by Mosodi Limited and considers the full impacts of the Hoyland North Masterplan Framework, including the impact of the proposed Industrial Estate, on site ES14 (Waddington) which is the subject of this Transport Assessment.

2.7 The principle of employment development on the site and the impact on the local Strategic Road Network have already been established and accepted by both Barnsley Metropolitan Borough Council and National Highways, with this Transport Assessment providing further information in relation to likely vehicle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impacts specific to the site.

**Methodology and Scoping**

2.8 This Transport Assessment has been prepared in accordance with the National Planning Policy Framework (NPPF) and seeks to demonstrate that:

- Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location.
- Safe and suitable access to the site can be achieved for all users.
- Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

2.9 In addition to the above, this report has been prepared with reference to the following national policy/guidance documents:

- National Planning Policy Framework (July 2021).
- Inclusive Mobility - A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure.
- Design Manual for Roads and Bridges.
- National Highways 'The Strategic Road Network: Planning for The Future' document.
- Planning Policy Paper (Circular 01/2022) 'Strategic road network and the delivery of sustainable development'.
- Manual for Streets / Manual for Streets 2.

2.10 Engagement with Barnsley Metropolitan Borough Council as Local Highway Authority and National Highways has been undertaken to inform the preparation of this Transport Assessment. The aim has been to establish an agreed set of principles and assumptions upon which the assessments included within this Transport Assessment are based.

2.11 A scoping note was issued to Barnsley Metropolitan Borough Council highways on 11th April 2023. The scoping note set out the methodological approach for assessing the potential transport impacts of the proposed development on both the local and Strategic Road Network in regards to capacity, road safety and sustainable travel modes. Comments were received from the Barnsley Metropolitan Borough Council highways' Highway Officer on 2nd May 2023 (see **Appendix B**).

2.12 The same scoping note was also issued to National Highways on 11th April 2023, with a formal response received on 5th May 2023 (see **Appendix B**).


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2.13 In summary, the methodology presented within the scoping note was accepted by both Barnsley Metropolitan Borough Council highways and National Highways as a basis for further assessment therefore, this report will use the principles outlined within the scoping note presented.

**Report Structure**

2.14 This Transport Assessment will review all existing and proposed highway elements, providing appropriate conclusions to assess the impact of proposed development upon the local highway network. The structure of this report is as follows:

- A summary of relevant national and local planning policy and guidance is located within **Chapter 2.0**.
- A review of the existing site, alongside the local highway network, collisions records and accessibility are covered within **Chapter 3.0**.
- The development proposals, which will include for: development quantum, the proposed site access and car parking arrangements are included within **Chapter 4.0**.
- Analysis of the projected vehicle movements associated with the development proposals and their distribution onto the highway network will be outlined within **Chapter 5.0**.
- Junction Capacity Assessments are included within **Chapter 6.0**.
- Mitigation Measures can be found within **Chapter 7.0**.
- The summary and conclusions of the report can be found within **Chapter 8.0**.

2.15 A separate Framework Travel Plan document has been prepared by Roberts Highway Consultants for the proposed development (report reference: RHC-22-065-TP Revision A), and this should be read in conjunction with this Transport Assessment.

**Disclaimer**

2.16 Roberts Highway Consultants Limited has completed this report for the benefit of the individuals referred to in paragraph 1.1, and any relevant statutory authority, which may require reference in relation to approvals for the proposed development. Other third parties should not use or rely upon the contents of this report unless explicit written approval has been gained from Roberts Highway Consultants Limited.

2.17 Roberts Highway Consultants Limited accepts no responsibility or liability for:

a) The consequence of this documentation being used for any purpose or project other than that for which it was commissioned.

b) The issue of this document to any third party with whom approval for use has not been agreed.


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# 3.0 PLANNING POLICY

3.1 This section provides a summary of key national and local policy and guidance relevant to the development and it demonstrates how the development proposals align with these policies and guidance.

**National Planning Policy Framework**

3.2 The National Planning Policy Framework (NPPF) constitutes guidance for local planning authorities and decision-takers both in drawing up development plans and as a material consideration in determining applications.

3.3 The revised National Planning Policy Framework (NPPF) came into force in July 2021 which updated the February 2019 edition of the NPPF. The presumption in favour of sustainable development remains the core objective of the NPPF.

3.4 Section 9 of the NPPF covers 'Promoting Sustainable Transport'. The NPPF advises that developments should be located and designed where practical to:

- Give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use.
- Address the needs of people with disabilities and reduced mobility in relation to all modes of transport.
- Create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards.
- Allow for the efficient delivery of goods, and access by service and emergency vehicles.
- Enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

3.5 The NPPF states, in paragraph 113, that all developments which generate significant amounts of movement should be required to provide a Travel Plan, and the application should be supported by a Transport Statement or Transport Assessment so that the likely impacts of the proposal can be assessed. The document also 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.


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**Planning Practice Guidance**

3.6 The Planning Practice Guidance (PPG) supports the NPPF by stating that:

> *"Transport Assessments and Statements are ways of assessing the potential transport impacts of developments…The Transport Assessment or Transport Statement may propose mitigation measures where these are necessary to avoid unacceptable or "severe" impacts. Travel Plans can play a pivotal role in taking forward those mitigation measures which relate to on-going and operation of the development".*

3.7 Transport Statements, Transport Assessments and Travel Plans are important as they:

- promote and encourage sustainable travel;
- create "accessible, connected, inclusive communities";
- reduce the impact of trip generation;
- reduce the impact on the environment through reducing carbon emissions;
- improve quality of life, health and road safety, and;
- reduce "the need for new development to increase existing road capacity or provide new roads".

**Planning Practice Guidance**

3.8 The DfT's Local Transport White Paper "Creating Growth, Cutting Carbon – Making Sustainable Transport Happen" set out the framework within which detailed policies could be taken forward with the aim of creating:

> *"…a transport system that is an engine for economic growth, but one that is also greener and safer and improves quality of life in our communities."*

3.9 The document supports the continued development of integrated transport policies and seeks to deliver growth whilst reducing the environmental impacts of transport. It also particularly targets shorter journeys, many of which could be undertaken by non-car modes where realistic alternatives are provided, and where interchange between modes can be readily achieved.

**DfT Circular 01/2022 'Strategic Road Network and the Delivery of Sustainable Development'**

3.10 The Strategic Road Network (SRN) and the Delivery of Sustainable Development document sets out the way in which National Highways (formerly Highways England) will engage with the development industry, public bodies and communities to deliver sustainable development and, thus, economic growth, whilst safeguarding the primary function and purpose of the SRN.

3.11 The approach of the DfT Circular 'seeks to make the most efficient use of capacity within the overall


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transport network, improve health and wellbeing, and support government policies, strategies and guidance that aim to reduce the negative environmental impacts of development.

3.12 The key policy aims and applications are as follows:

- **12**. *New development should be facilitating a reduction in the need to travel by private car and focused on locations that are or can be made sustainable*

- **42.** *Local planning authorities and development promoters are encouraged to identify any potential impacts on the SRN that may result from development proposals and discuss them with the company at the earliest opportunity. In the first instance, new developments should give priority to walking, wheeling and cycle movements and facilitate access to high-quality public transport where possible. The needs of people with disabilities and reduced mobility should be appropriately addressed in relation to all modes of transport. This can be achieved through good design and proper consideration of the needs of our communities in accordance with local design codes and Manual for Streets.*

- **47**. *Where the company is requested to do so, it will engage with local planning authorities and development promoters at the pre-application stage on the scope of transport assessments / statements and travel plans. This process should determine the inputs and methodology relevant to establishing the potential impacts on the SRN and net zero principles that will inform the design and use of the scheme. Development promoters are strongly encouraged to engage with the company to resolve any potential issues and maximise opportunities for walking, wheeling, cycling, public transport and shared travel, as early as possible.*

- **49.** *A transport assessment for consideration by the company must also consider existing and forecast levels of traffic on the SRN, alongside any additional trips from committed developments that would impact on the same sections (link or junction) as the proposed development. Assumptions underpinning projected levels of traffic should be clearly stated to avoid the default factoring up of baseline traffic. The scenario(s) to be assessed, which depending on the development and local circumstances may include sensitivity testing, should be agreed with the company; where a scenario with particularly high or low growth is proposed, this should be supported by appropriate evidence. Planned improvements to the SRN or local road network should also be considered in any assessment where there is a high degree of certainty that this will be delivered.*

**Barnsley Local Plan 2019-2033**

3.13 The Barnsley Local Plan was adopted in January 2019 with one of the objectives of the plan to:

*'…to create more and better jobs to improve earnings and increase opportunities for local residents…'*

3.14 The proposed site is allocated for employment use within the Councils Adopted Local Plan, site reference ES14. With refence to the allocation, the specific considerations of the site should be as follows:

> **Site ES14 Rockingham 8.9ha** – *'The development will be subject to the production of a Masterplan Framework covering a number of sites including housing site references: HS64; HS66; HS56 and employment site references: ES14 and ES17. The development will be expected to: Provide appropriate access to employment site ES17 and housing site HS64; Consider the impact on residential amenity and include appropriate mitigation where necessary; and consider the potential impact on the nearby Shortwood and Hay Green Local Wildlife Sites and include appropriate mitigation where necessary; and Retain the hedgerow along the north edge."*

3.15 There are several policies within the Local Plan which are applicable to this Transport Assessment. A summary of these policies are as follows:

3.16 **Policy I1** - Infrastructure and Planning Obligations Development, states that development proposals:

> *'…must be supported by appropriate physical, social, economic and communications infrastructure, including provision for broadband. Development must contribute as necessary to meet all on and off-site infrastructure requirements to enable development to take place satisfactorily. Where the necessary provision is not made directly by the developer, contributions will be secured through planning obligations. Where appropriate, pooled contributions will be used to facilitate delivery of the necessary infrastructure'.*

3.17 **Policy T1** - Accessibility Priority, states that developers will work with city region partners and other stakeholders transport investment will be set out in Transport Strategy programmes focused on development-transport corridors to:

> *'Improve sustainable transport and circulation in the Accessibility Improvement Zone (AIZ) area particularly between Principal Towns'*
>
> *'Implement transport network improvements as supported by evidence from modelling, feasibility studies, consultation, surveys, community engagement etc'*
>
> *'Facilitate sustainable transport links to and from existing and proposed employment, interchange, community and leisure and tourism facilities in the borough, including provision for car parking and enhancing the non-car role of the transport corridor shown on the Accessibility Priorities diagram as 'potential enhanced road based public transport corridor'*


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*'Promote high quality public transport linking the AIZ to significant places of business, employment and national / international interchange in the Leeds - Sheffield City Region corridor including neighbouring Wakefield, Kirklees, Doncaster, Sheffield and Rotherham'*

*'Improve direct public transport and freight links to London, Manchester, other Core Cities, national / international interchanges and the Humber ports.'*

3.18 **Policy T3** - New Development and Sustainable Travel, states that new development will be expected to:

*'Be located and designed to reduce the need to travel, be accessible to public transport and meet the needs of pedestrians and cyclists'.*

*'Provide at least the minimum levels of parking for cycles, motorbikes, scooters, mopeds and disabled people set out in the relevant Supplementary Planning Document'.*

*'Provide a Transport Statement or Assessment in line with guidance set out in the National Planning Policy Framework and guidance including where appropriate regard for cross boundary local authority impact'.*

*'Provide a Travel Plan Statement or a Travel Plan in accordance with guidance set out in National Planning Policy Framework including where appropriate regard for cross boundary local authority impacts. Travel plans will be secured through a planning obligation or a planning condition.*

3.19 The policy goes on to explain that where levels of accessibility through public transport, cycling and walking are unacceptable, developers will be expected to act or make financial contributions, secured through a planning obligation or planning condition.

3.20 **Policy T4** - New development and Transport Safety, states that:

*'New development will be expected to be designed and built to provide all transport users within and surrounding the development with safe, secure and convenient access and movement. If a development is not suitably served by the existing highway, or would create or add to problems of safety or the efficiency of the highway or any adjoining rail infrastructure for users, we will expect developers to take mitigating action or to make a financial contribution to make sure the necessary improvements go ahead. Any contributions will be secured through a planning obligation or planning condition'.*

3.21 **Policy T5** - Reducing the Impact of Road Travel requires that developments will reduce the impact of road travel by:

*'Developing and implementing robust, evidence based air quality action plans to improve air quality'.*

*'Working with our sub regional partners, fleet and freight operators to improve the efficiency of vehicles and goods delivery, and reduce exhaust emissions'.*

*'Implementing measures to ensure the current road system is used efficiently'*

**Barnsley Transport Strategy 2014-2033**

3.22 The Barnsley Transport Strategy was developed to improve transport links and public transport offered in the area.

3.23 There are four key transport priorities within the strategy, which the Local Plan supports. These are:

- Promote Economic Growth and Strategic Connections.
- Promote Inclusion, Accessibility, and Better Quality of Life.
- Promote High Quality Natural Environment, Local Air Quality and Climate Change.
- Promote Safety, Security and Health.

3.24 The report states that by 2033 Barnsley will have:

- Enhanced connectivity to the international airports and ports serving the city regions.
- Improved connections between Barnsley, the city regions and other economic centres especially Leeds, Manchester and London.
- A transport system that will meet the needs of businesses to access markets and their supply chains.
- A well-connected employment, recreation, social and housing locations.
- Connections to High-Speed rail and the regional transport hubs.
- Targeted improvements that enable our road network to perform in the most effective way.
- Promote High Quality Natural Environment, Local Air Quality and Climate Change.
- Promote Safety, Security and Health.

**Policy Summary**

3.25 This Transport Assessment and accompanying Framework Travel Plan have been prepared in accordance with the sustainable development principles set out in national and local policy documents.


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**Vision Statement**

3.26 The proposed development will contribute towards a mode shift away from private vehicles due to its location and the available infrastructure around the site to contribute towards sustainable travel modes. Furthermore, the developer will seek to provide a series of incentives which will help reduce motor traffic dominance, encouraging walking and cycling in addition to public transport use. These incentives, otherwise known as a package of measures, are outlined within this Travel Plan.

3.27 A summary of key measures which will seek to achieve the vision of the development are outlined below:

Increased Bus Service Use

3.28 Encouraging staff to use the local bus services will reduce traffic congestion and promote accessibility. Sheffield Road bus stops, located to the south of the site, provide access to several bus services discussed within this report. The aims to increase bus service use include:

- Promote timetabling to businesses within the site.
- Well-designed site layout to encourage attractive walking routes to the bus stops and reduce walking times.

Encourage Walking and Cycling

3.29 Encouraging walking and cycling will provide several benefits to users (health and financial) and the surrounding area. The aims to increase walking and cycling to and from the site include:

- Well-designed site layout to encourage attractive walking routes to key facilities and amenities and reduce walking times, including for suitable lighting which will provide a safe and healthy environment.
- Improvements and provision to bike storage facilities within prominent/easy to access locations within the site.


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# 4.0 EXISTING CONDITIONS

**Existing Site**

4.1 The development site, which is irregular in shape, is located to the west of the A6195 Dearne Valley Parkway, circa 400m north of Junction 36 of the M1 Motorway and 1.4km to the southeast of Birdwell.

4.2 The site is bound to the north by the existing Costa Coffee, to the northwest by existing industrial buildings, to the southwest by the Council Depot and to the east by the A6195 Dearne Valley Parkway, as shown within **Plan 1**. Access to the site can be achieved via Kestrel Way, to the north.

4.3 As previously mentioned, the application site is allocated within the Barnsley Metropolitan Borough Council Local Plan and forms part of the wider Hoyland North Masterplan Framework. This site is allocated for employment use within policy ES14 (Waddington), as can be seen from **Image 1**.

4.4 Access to the site can be achieved via the continuation of the southern spur of Kestrel Way, as shown within **Image 2**.

**Image 2: Access Location**

*© Google. Image dated August 2022.*

**Local Highway Network**

4.5 The site can be accessed via Kestrel Way, located to the north of the site. Kestrel Way is a cul-de-sac which currently provides access to two separate development parcels to the north and to the south.

4.6 To the south, Kestrel Way serves a Petrol Filling Station (PFS), a Costa Coffee drive-thru and a Taco Bell drive-thru fast-food restaurant. To the north, Kestrel Way serves a mix of uses comprising employment and food/drink units.

4.7 The carriageway of Kestrel Way measures circa 7.3m in width and comprises of 30mph speed limit. Parking restrictions are located along the carriageway in the form of double yellow lines, with several access points to the commercial premises located directly via the carriageway.

4.8 Street-lit footways greater than 2m in width are located along either side of the carriageway, which provide an unbroken pedestrian link to the wider footway network along Dearne Valley Parkway. Dropped kerb crossings, which are located across the access roads into both Costa Coffee and the PFS, benefit from tactile paving. **Image 3** and **Image 4** outline the existing characteristics of the carriageway close to the site.

**Image 3: Kestrel Way (View: North)**

**Image 4: Kestrel Way (View: South)**

*© Google. Images Dated: August 2022.*

4.9 Kestrel Way links with Rockingham Roundabout, which is a four-arm roundabout connecting with the A6195 Dearne Valley Parkway, located to the east of the site. The A6195 Dearne Valley Parkway is an adopted dual carriageway road subject to the national speed limit along the eastern boundary of the site.

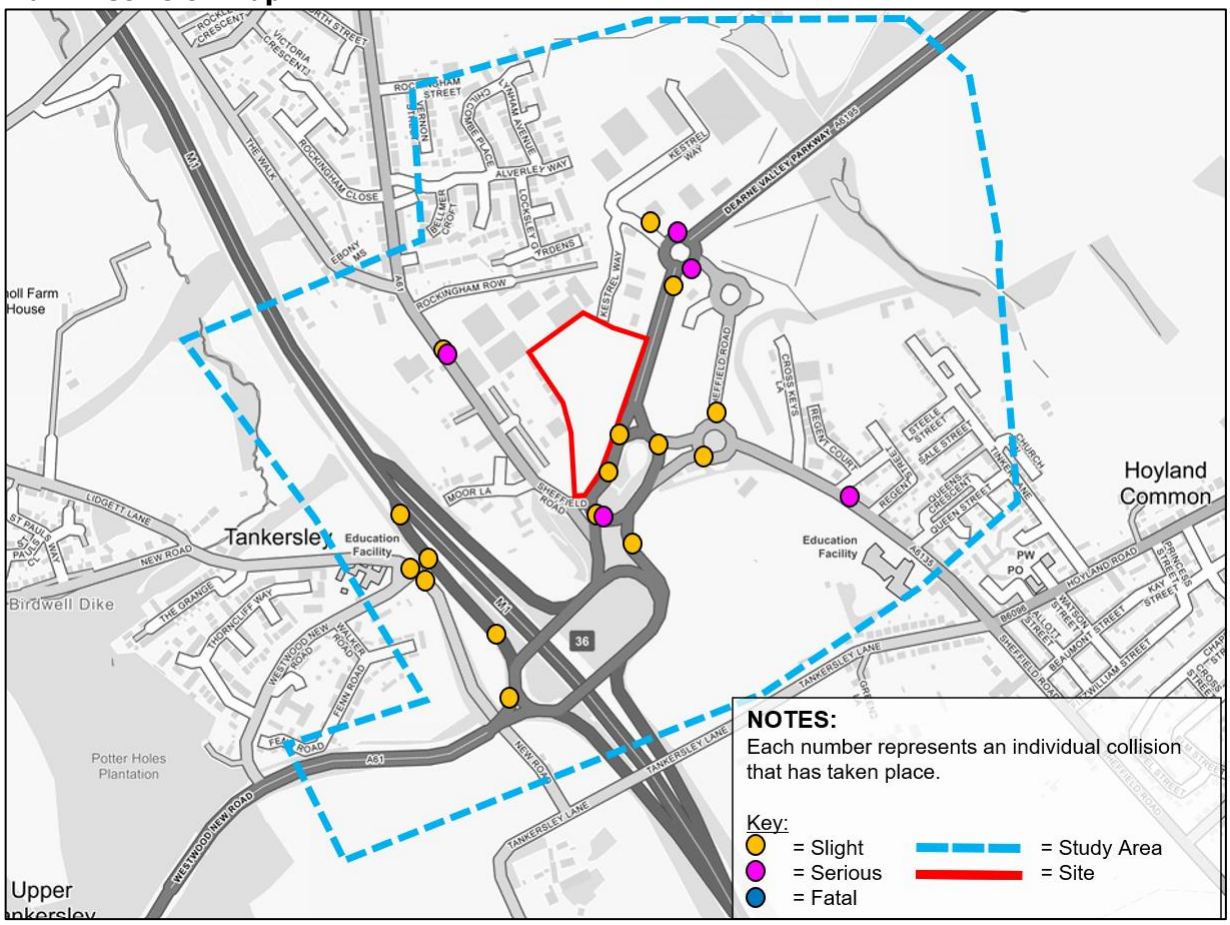
4.10 Both the A6195 Dearne Valley Parkway northbound and southbound arms are dual carriageway, with two lanes in each direction, separated by a central reservation. Shared footways/cycleways are situated along both sides of the carriageway adjacent to the site to the south of the Rockingham Roundabout, with no footways provided to the north. However, it is noted that a Public Right of Way (reference: 11) does proceed to the north of the roundabout, setback from the carriageway edge.

4.11 The Birdwell Roundabout, located circa 320m to the south of the Rockingham Roundabout is a four-arm signalised roundabout benefitting from a series of bypass lanes. This roundabout was converted from a conventional roundabout to a signalised roundabout as part of the Dearne Valley regeneration, which was completed in September 2017. The A6195 Dearne Valley Parkway forms the northern arm as described previously, with the junction linking with the Tankersley Roundabout (M1 Junction 36) to the south.

**Road Collision Data**

4.12 Personal Injury Collision (PIC) data has been obtained from Crashmap.co.uk for collisions recorded by local police forces using the STATS19 form. The results have been obtained for the most recently available five-year period (01/01/2017 to 31/12/2021) and indicate that 21 collisions occurred within the chosen study area. **Plan 2** outlines the locations of these collisions in context to the site.

**Plan 2: Collision Map**




*© OS Mapping*

4.13 A single 'slight' vehicle collision occurred along Kestrel Way outside of KFC, involving two vehicles during 2019. A 'serious' collision also occurred along Kestrel Way at the junction with Rockingham Roundabout and involved a single vehicle during 2017. A further two collisions were recorded at the junction along different approach arms.

4.14 A total of five vehicle collisions were recorded at the Birdwell Roundabout however, it should be noted that some of the PIC's outlined within **Plan 2** may have occurred before the reconfiguration of the junction to its signal state.

4.15 With regards to the remainder of the highway network within the study area, and based on the level of information available through the Crashmap, the severity of collisions, and the average accident rate per

annum, there is no available evidence to suggest an existing road safety concern which would be exacerbated by the development proposals.

4.16 Further analysis of collision data for the Strategic Road Network has been undertaken between the dates of 01/01/2015 and 31/12/2019 (five-year period) upon request of National Highways. The results outline that there were two collisions recorded at the Tankersley Roundabout southern arm, with all other collisions being along different sections of the network.

4.17 It should be noted that Figure 3 within the Technical Memorandum prepared by Jacobs SYSTRA Joint Venture (JSJV) outlines collisions between 2015 and 2021, despite JSJV stating that the years 2020-2021 should not be used as traffic flows would be influenced by the Covid-19 pandemic. When considering collisions recorded between 01/01/2015 and 31/12/2019, there are no 'cluster' areas where collisions have occurred, with a maximum of two collisions occurring within one location. No further analysis work is therefore required.

**Sustainable Transport Opportunities**

4.18 An accessibility assessment has been undertaken to determine the location of key local facilities and amenities in relation to walking and cycling to highlight travel time to these services. **Table 1** provides a summary of key amenities and facilities using these travel modes.

**Table 1: Accessibility Assessment to Local Amenities/Facilities**

| Amenity/Facility | Approx. Distance (m) | Approx. Walking Time | Approx. Cycling Time |
|---|---|---|---|
| Retail | | | |
| Co-Op Convenience Store | 120 | 1 | 1 |
| Mace Convenience Store | 760 | 9 | 3 |
| Aldi | 900 | 11 | 4 |
| Leisure & Hospitality | | | |
| Costa Coffee | 80 | 1 | 0 |
| Greggs | 100 | 1 | 0 |
| Taco Bell | 160 | 2 | 1 |
| Dunkin | 280 | 3 | 1 |
| KFC | 280 | 3 | 1 |
| Dearne Valley Farm- Dining and Carvery | 360 | 4 | 2 |
| McDonalds | 460 | 5 | 2 |
| Starbucks | 500 | 6 | 2 |
| The Keys Restaurant | 760 | 9 | 3 |
| Café 334 | 900 | 11 | 4 |
| Master Fryer Takeaway | 900 | 11 | 4 |
| The Hare and Hounds Pub | 960 | 11 | 4 |
| Saville Square Pub | 1000 | 12 | 4 |
| Mayfair Chinese Takeaway | 1100 | 13 | 5 |
| Health | | | |
| Well Pharmacy | 1100 | 13 | 5 |
| Other Facilities | | | |
| InPost Parcel Locker | 80 | 1 | 0 |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| | | | |
|---|---|---|---|
| BP Petrol Station | 140 | 2 | 1 |
| Shell Petrol Station | 760 | 9 | 3 |
| Evri ParcelShop | 760 | 9 | 3 |

**Assumes a walking speed of 1.4m/s (3.2mph or 5.0kph) taken from the Guidance for Providing for Journeys on Foot (IHT, 2000) and cycling speed of 4m/s (9mph or 14.4kph), taken from Local Transport Note 1/86.*

**Accessibility on Foot**

4.19 The DfT National Travel Survey (England) 2021 found that walking constitutes 31% of all journeys made in a year, and that the average walking trip time was 19 minutes (1.6km). **Table 1** demonstrates that there are numerous key facilities and amenities prospective employees of the site may require within the local area which are located within the 1.6km distance desired by the DfT.

4.20 There are yet further facilities and amenities located beyond those outlined within **Table 1**. Diagram 001, attached within **Appendix C**, outlines the location of these facilities and amenities in context to the site.

4.21 Direct access to the site can be achieved via Kestrel Way, which adjoins with the A6195 (Dearne Valley Parkway) to the north of the site. Established street-lit footways can be found either side of the carriageway, deemed of suitable width for pedestrians. Dropped kerbs with tactile paving can be found at various junctions surrounding the site, with a crossing in place at the Rockingham Roundabout/Kestrel Way junction. Various Toucan Crossings can be found along both Dearne Valley Parkway to the south of the site and at the Birdwell Roundabout, providing onward travel to Sheffield Road and other surrounding footway networks.

4.22 A footpath can be found approximately 200m from the site, which connects the westbound side of Kestrel way with that of Alverley Way. This footpath provides pedestrian access to the site from the well-developed residential area to the west (Birdwell).


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**Plan 3: 2km Walking Map Shown in 1km Isochrones**

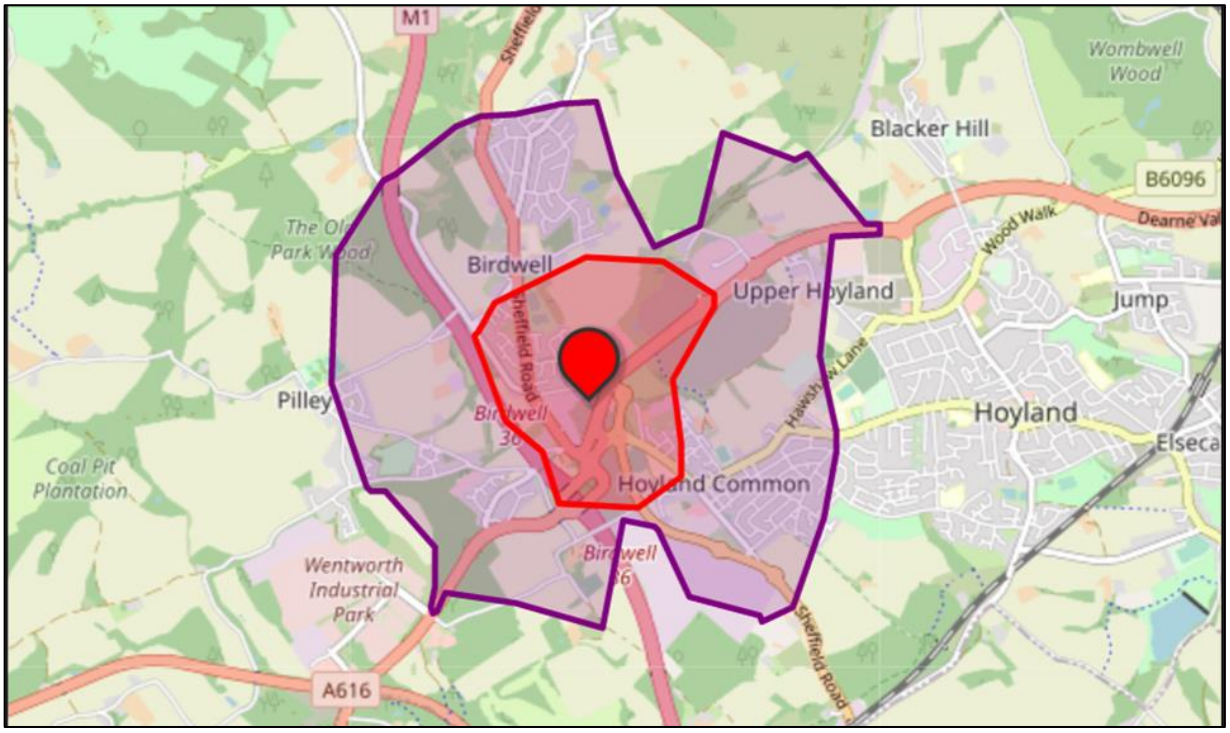


*Image Source: Openrouteservice.org*

4.23 **Plan 3** illustrates that the residential areas of Birdwell, Hoyland Common and Upper Hoyland are located within a 2km walking distance of the site. These areas provide further facilities, amenities and public transports opportunities which employees and visitors could utilise as part of a journey to the site.

**Accessibility by Cycle**

4.24 A review of Sustrains.org.uk indicates that National Cycle Route 67 can be joined approximately 1km south of the site. **Plan 4** illustrates that journeys by cycling connect Upper Tankersley with residential areas to the south and east. National Cycle Route 62 can be located approximately 3km to the North of the site, to the south of Worsbrough. This route forms the west and central sections of The Trans Pennine Trail which is a long-distance path running from coast to coast across northern England.

4.25 In addition to the above, a combined pedestrian/cycleway is located outside the eastern boundary of the site, which proceeds along the southern boundary towards Birdwell. This pedestrian/cycleway also progresses to the east of the site across Dearne Valley Parkway via a Toucan crossing.

4.26 A local cycle route can be found to the south of the site, at Hoyland Common. This route provides cyclists with an on-road route of travel which terminates at Elsecar Railway Station approximately 3km to the east.


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**Plan 4: National Cycle Network Route Map**

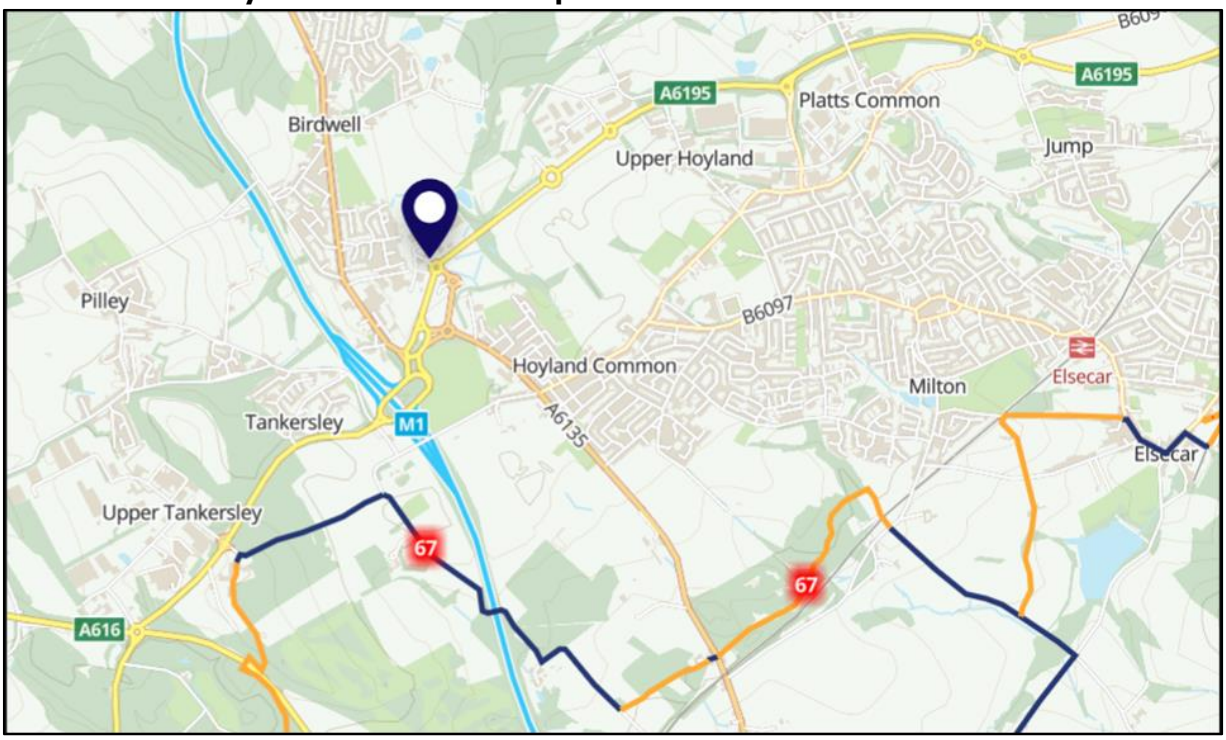


*Image Source: Sustrans.org / Map Layer: OS Maps*

**Accessibility by Bus**

4.27 The nearest bus stops to the site are located approximately 400m south, along Sheffield Road, with both a northbound and a southbound stop available. The southbound stop comprises of a flag-and-pole design with timetable information, with the northbound stop comprising of a bus shelter with timetable information and a designated layby. The stops are located within a 400m walk from the site, with this distance recognised as a maximum walking distance from a bus stop (CIHT, 2018: Buses in Urban Developments).

4.28 A summary of the bus services which operate from the Sheffield Road bus stops can be found within **Table 2**, alongside additional services which operate within proximity of the site. A public transport plan identifying these stops can be found within **Appendix D**.


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**Table 2: Summary of Bus Service Adjacent to Site**

| Service | Operating Days | Approx. Operating Times | Approx. Frequency (up to) | Route | Provider |
|---|---|---|---|---|---|
| 2 | Mon-Fri | 06:55-22:46 | Hourly | Barnsley Town Centre – Sheffield Centre | Stagecoach Yorkshire |
| | Sat | 08:12-22:46 | | | |
| | Sun | 08:26-22:46 | | | |
| 66 | Mon-Fri | 05:43-23:54 | 20 mins | Barnsley - Elsecar Circular | |
| | Sat | 06:38-23:54 | | | |
| | Sun | 08:44-23:53 | 30 mins | | |
| 67 | Mon-Fri | 05:27-21:48 | Hourly | Barnsley Town Centre - Wombwell | |
| | Sat | | | | |
| | Sun | 19:04-23:04 | 120 mins | | |
| 67c | Mon-Fri | 17:43 | Single Service | Wombwell – Barnsley Town Centre | |
| | Sat | 17:42 | | | |
| | Sun | 09:21-17:21 | 120 mins | | |
| 67b | Mon-Sat | 05:44-22:15 | Three Services | Maple Road – Barnsley Town Centre | |
| X17 | Mon-Fri | 07:08-20:53 | 60 mins | Barnsley Town Centre – Pond Street | |
| | Sat | 07:26-20:53 | | | |
| | Sun | 09:55-17:45 | | | |

*Timetable data taken from 'traveline.info' accessed 14/10/2023*

4.29 The bus timetable information demonstrates that employees of the site will be able to use the aforementioned bus services to access residential

4.30 villages and towns, as well as Sheffield City Centre.

**Accessibility by Rail**

4.31 The nearest railway station to the site is Elsecar Railway Station, approximately 4km walking distance to the east. Bus service No. 66 provides direct travel from the site to Elsecar Railway Station, with travel times of approximately 20 minutes during peak hours.

4.32 The station benefits from several facilities, with a summary as follows:

- Ticket Machines.
- ATM Machines.
- Bicycle Parking (18 covered spaces and CCTV).
- Car Park (79 Spaces).
- Information services.
- Customer Help Points.

4.33 **Table 3** provides details on rail services to the major destinations from Elsecar Railway Station.


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**Table 3: Summary of Main Services Operating from Elsecar Railway Station**

| Destination | Frequency (Peak Hours) |
|---|---|
| Barnsley | 30 mins |
| Sheffield | 30 mins |
| Huddersfield | 30 mins |

*Timetable data taken from 'traveline.info' accessed 03/06/2023*

4.34 Direct travel from Elsecar Railway Station to destinations such as Barnsley and Sheffield can be achieved within 20 minutes during peak hours. Direct travel to Huddersfield Railway Station can be achieved within an hour.

**Sustainability Conclusion**

4.35 Upon reviewing the information within this chapter, the site can be described as being in accordance with Paragraph 105 of the NPPF which states:

> *'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.'*

4.36 The proposed development would be well accommodated by the existing infrastructure within the site's locale, with direct access to public transport links as well as existing amenities.


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# 5.0 PROPOSED DEVELOPMENT

**Schedule of Accommodation**

5.1 The development proposals will seek planning permission for seven separate units with a total Gross Floor Area (GFA) of 7,192sq.m. At present, it is unknown what split of the Gross Floor Area will be assigned to each land use as this will be subject to demand at the time of sale. As such, a breakdown cannot be provided. A summary of the land uses proposed are as follows:

- E(g)(ii) – Research and development of products or processes.
- E(g)(iii) – Industrial Processes.
- B2 – General Industrial.
- B8 – Storage and distribution.

5.2 The units are likely to be a mix of warehouse/distribution and traditional industrial, with ancillary office space totalling 845sq.m of the 7,192sq.m proposed. A breakdown of the GFA for each of the units is provided within **Table 4**.

**Table 4**: **Schedule of Accommodation**

| | GFA (sq.m) | Parking Spaces | Cycle Spaces | Motorcycle Spaces |
|---|---|---|---|---|
| Unit 1 | 931 | 17 | 12 | 2 |
| Unit 2 | 1,551 | 24 | 12 | 2 |
| Unit 3 | 1,493 | 23 | 12 | 2 |
| Unit 4 | 1,915 | 32 | 12 | 2 |
| Unit 5 | 652 | 11 | 12 | 2 |
| Unit 6 | 316 | 6 | Shared | Shared |
| Unit 7 | 334 | 6 | Shared | Shared |
| ***Total*** | ***7,192*** | ***119*** | ***60*** | ***10*** |

**Vehicle and Pedestrian Access**

5.3 Access to the site for both vehicles and pedestrians will be via the continuation of the industrial access road off Kestrel Way, as outlined within **Image 2**.

5.4 The access road will continue to measure 7.3m width, in keeping with the existing carriageway which serves the commercial units and PFS to the north of the site. Footways measuring a minimum of 2m width will be located either side of the carriageway, with these footways being the only point of access for pedestrians.

**Vehicle Parking**

5.5 Page five of the Barnsley Metropolitan Borough Council Parking Supplementary Planning Document (November 2019) sets out the Local Planning Authority's adopted parking standards for B2/B8


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developments.

5.6 The site is situated within the 'borough wide' area therefore, the below standards are recommended for developments over 1,000sqm.

- B2 – One Space per 50sq.m
- B8 – One Space per 3 staff or one space per 150sq.m.

5.7 The above standards recommend parking provision could range between 145 car parking spaces should the proposals be solely B2 land use, to 48 vehicle car parking spaces should the proposals be solely B8 land use. Given the likely mix of occupiers at the site, the proposed allocation of 119 spaces (one space per 61sq.m) is considered appropriate.

5.8 The proposed level of car parking will also help to promote access by alternative modes of transport, especially when considering the sustainable location of the development and the potential impacts of the Framework Travel Plan.

5.9 Accessible parking will also be provided at each of the proposed units in accordance with the required Parking Supplementary Planning Document.

**Cycle Parking/Storage**

5.10 Cycle storage will be provided within the car parking areas of each unit, with the number of spaces provided in accordance with the Parking Supplementary Planning Document.

**Servicing**

5.11 Servicing will be carried out within the site. Refuse vehicles and delivery vehicles will therefore need access to the site via the proposed access point previously mentioned.

5.12 The access road will be designed to adoptable highway standards, with a suitably designed turning head positioned at the end of the internal road. The turning head will allow for the councils refuse vehicle, along with other service vehicles, to turn suitably, being able to exit onto Kestrel Way within a forward gear.

5.13 Waste receptacles will be located within 10m of the highway, in accordance with BS 5906: 2005. This distance is considered suitable for waste operatives to carry a four wheeled container to the refuse vehicle. Where suitable, sufficient turning space will be available within each unit area to allow for refuse vehicle movements.

5.14 Sufficient turning space will be provided within each of the parking areas for HGVs to enter and exit within a forward gear. These areas are marked out as concrete areas on the proposed site plan.


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# 6.0 VEHICLE IMPACT

**Traffic Generation**

6.1 Development traffic from the site has been calculated using the Trip Rate Information Computer System (TRICS), a computer program which assists in estimating trip rates to and from sites. Given that the site will be a mix of B2, B8, E(g)(ii) and E(g)(iii) land uses, it is important to apply the appropriate professional judgement by selecting surveys of sites that are comparable, in terms of scale, type, location and accessibility.

6.2 Upon reviewing the TRICS database, the closest land use classification considered replicable to the development proposals would be the land use '02 Employment, Class D Industrial Estate'. Trip rates associated with sites in 'suburban' or 'edge of town' locations have been used.

6.3 The proposals will comprise a total of 7,192sq.m GFA, with 6,347sq.m being of industrial use and 845sq.m GFA being ancillary office space within each of the buildings (<12%). In accordance with the TRICS Good Practise Guide 2021, ancillary space within buildings is considered within each survey, including for office space. In addition, the land use sub-category definitions outlined within TRICS states that if sites have multiple buildings which are predominantly industrial, then the land use class 02/D (Industrial Estate) should be used.

6.4 However, given that the breakdown of the individual use classes is not known, Roberts Highway Consultants Limited have separated the office use from the industrial uses when determining vehicle impact, given this land use would generate larger vehicle numbers, ensuring for a robust assessment.

6.5 National Highways have requested that person trip rates be used to determine movements to and from the site for all travel modes and therefore, analysis of the TRICS database using both the land use '02 Employment, Class D Industrial Estate' and the land use '02 Employment, Class A Office' have been used.

6.6 **Table 5** provides the resultant person trip rates obtained for the 'Industrial Estate', with **Table 6** demonstrating the person trip rates associated with the 'Office' areas. Full results can be found within **Appendix E**.

**Table 5: Site Person Trip Generation (Industrial Estate)**

| | AM Peak (8am to 9am) | | | PM Peak (5pm to 6pm) | | |
|---|---|---|---|---|---|---|
| | Arrival | Departure | Two-Way | Arrival | Departure | Two-Way |
| Trip Rates (per 100sq.m) | 0.497 | 0.264 | 0.743 | 0.256 | 0.476 | 0.732 |
| Trip Generation (6,347sq.m) | 30 | 17 | 47 | 16 | 30 | 46 |

**Table 6: Site Person Trip Generation (Office)**

| | AM Peak (8am to 9am) | | | PM Peak (5pm to 6pm) | | |
|---|---|---|---|---|---|---|
| | Arrival | Departure | Two-Way | Arrival | Departure | Two-Way |
| Trip Rates (per 100sq.m) | 3.365 | 0.238 | 3.603 | 0.000 | 2.415 | 2.415 |
| Trip Generation (845sq.m) | 28 | 2 | 30 | 0 | 20 | 20 |


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**Modal Splits of Trip Generation**

6.7 To ascertain usual travel patterns for workers travelling to the Barnsley 028 Medium Super Output Area (MSOA), the 2011 census data has been obtained from NOMIS for travel modes to workplaces.

6.8 Given travel patterns and movements were influenced by the Covid-19 pandemic during the time of the 2021 census, it is considered that the 2011 census data for Method of Travel to work is a more robust dataset when considering vehicle impacts upon the immediate highway network. This data has therefore been used as part of any analysis work within this report.

6.9 **Table 7** provides a summary of the Travel to Work statistics for workers travelling to the Barnsley 028 MSOA, taken from the 2011 census. A copy of the census data can be found within **Appendix F**.

**Table 7: Summary of Travel to Work Statistics**

| Method of Travel to Work | Persons | Percentage % |
|---|---|---|
| Work from Home | n/a | n/a |
| Underground/Metro/Tram | 5 | 0.2% |
| Train | 11 | 0.3% |
| Bus, Minibus/Coach | 204 | 6.2% |
| Taxi | 18 | 0.5% |
| Motorcycle/Scooter/Moped | 25 | 0.8% |
| Driving a Car or Van | 2,502 | 75.7% |
| Passenger in a Car or Van | 238 | 7.2% |
| Bicycle | 35 | 1.1% |
| On Foot | 262 | 7.9% |
| Other method of Travel to work | 6 | 0.2% |
| Total | 3,306 | 100% |

6.10 The census data provided shows most workers within the Barnsley 028 MSOA drive to work (75.7%), with an additional 7.2% being car passengers. The percentage of single occupancy vehicles (68.5%) can be estimated by subtracting the percentage of car passengers from the percentage of car drivers. Walking and cycling make up 9% of all journeys to work, with public transport totaling 7.2% of trips to work.

6.11 The likely mode share of journeys to and from the site can be estimated by using the person trip rates within **Table 5** and **Table 6**, applying them to the 2011 Journey to Work data presented within **Table 7**. The resultant mode share for the development can be found within **Table 8**.


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**Table 8: Person Trips Based on TRICS and Census Data**

| Method of Travel to Work | Industrial | | Office | | Total | |
|---|---|---|---|---|---|---|
| | AM Peak | PM Peak | AM Peak | PM Peak | AM Peak | PM Peak |
| Work from Home | 0 | 0 | 0 | 0 | 0 | 0 |
| Underground/Metro/Tram | 0 | 0 | 0 | 0 | 0 | 0 |
| Train | 0 | 0 | 0 | 0 | 0 | 0 |
| Bus, Minibus/Coach | 3 | 3 | 2 | 1 | 5 | 4 |
| Taxi | 0 | 0 | 0 | 0 | 0 | 0 |
| Motorcycle/Scooter/Moped | 1 | 1 | 0 | 0 | 1 | 1 |
| Driving a Car or Van | 36 | 35 | 23 | 15 | 59 | 51 |
| Passenger in a Car or Van | 3 | 3 | 2 | 1 | 5 | 4 |
| Bicycle | 0 | 0 | 1 | 1 | 1 | 1 |
| On Foot | 4 | 4 | 2 | 2 | 6 | 6 |
| Other method of Travel to work | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 47 | 46 | 30 | 20 | 77 | 66 |

**Rounding Adjustments Made*

6.12 **Table 8** provides the combined modes of travel likely to be associated with the proposed development during the generic AM and PM peak periods. The analysis outlines how the development could generate 59 two-way vehicle movements during the generic AM peak hour, and 51 two-way vehicle movements during the generic PM peak hour. These flows have been taken forward as part of the forthcoming development distribution analysis work, to determine the development impact upon local junctions.

**Travel Plan Targets**

6.13 Targets have been set within the Framework Travel Plan to reduce the modal split for single occupancy car trips from 68.5% to 61.7%, a reduction of 10% over a five-year period. **Table 9** therefore shows the person trips by all modes with the target mode share from the Travel Plan applied.

**Table 9: Adjusted Person Trips Based on Travel Plan Targets**

| Method of Travel to Work | Industrial | | Office | | Total | |
|---|---|---|---|---|---|---|
| | AM Peak | PM Peak | AM Peak | PM Peak | AM Peak | PM Peak |
| Work from Home | 0 | 0 | 0 | 0 | 0 | 0 |
| Underground/Metro/Tram | 0 | 0 | 0 | 0 | 0 | 0 |
| Train | 0 | 0 | 0 | 0 | 0 | 0 |
| Bus, Minibus/Coach | 4 | 3 | 2 | 2 | 6 | 5 |
| Taxi | 0 | 0 | 0 | 0 | 0 | 0 |
| Motorcycle/Scooter/Moped | 1 | 1 | 0 | 0 | 1 | 1 |
| Driving a Car or Van | 32 | 32 | 21 | 14 | 53 | 46 |
| Passenger in a Car or Van | 5 | 5 | 3 | 2 | 8 | 7 |
| Bicycle | 0 | 0 | 1 | 1 | 1 | 1 |
| On Foot | 5 | 5 | 3 | 2 | 8 | 7 |
| Other method of Travel to work | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 47 | 46 | 30 | 20 | 77 | 66 |

**Rounding Adjustments Made*


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6.14 Upon applying the Travel Plan targets to the anticipated mode shares across the development, there would be an increase in public transport users, car sharers and pedestrian movements, with a subsequent reduction in single car occupancy vehicle movements. These targets would be achieved by the year 2029, five years after the anticipated opening year (2024).

**Development Distribution & Assignment**

6.15 The distribution and assignment of traffic associated with the proposed development has been predicted utilising a gravity model derived from analysis of travel to work patterns for workers within the Barnsley 028 Medium Super Output Area (MSOA), in which the site is situated. Both Barnsley Metropolitan Borough Council and National Highways agreed during the scoping discussions what this approach was acceptable when determining distribution from the proposed development.

6.16 The development will be accessed via Kestrel Way, therefore, this will be the point where all development traffic joins the highway network. The resulting distribution model considers traffic travelling between the site and MSOAs for the district of Barnsley, coupled with all districts throughout the rest of the UK.

6.17 Google Maps route finder has been used to make route choices based on the distance and/or time taken. Details of proposed assigned distributions are included in **Appendix G**, along with the results of the gravity model. A summary of the distribution is shown in **Table 10**.

**Table 10: Gravity Model Results**

| Route | Route | Percentage Split |
|---|---|---|
| A | Dearne Valley Parkway | 15.1% |
| B | Ryecroft Bank | 4.1% |
| C | Shortwood Way | 0.0% |
| D | Sheffield Road (E) | 4.0% |
| E | Olympus Way | 9.3% |
| F | M1 SOUTH | 30.3% |
| G | A61 | 8.9% |
| H | M1 NORTH | 17.8% |
| I | Sheffield Road (W) | 10.6% |
| ALL | | 100.0% |

6.18 Using the results of the gravity model, it was agreed with both Barnsley Metropolitan Borough Council and National Highways during the scoping discussions that the following junctions would require further assessment, based on anticipated vehicle movements associated with the proposed development. The study area is as follows:

- Junction 1: Rockingham Roundabout
- Junction 2: Bidwell Roundabout (Signal Junction)


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- Junction 3: Tankersley Roundabout (Signal Junction)

6.19 The following section of the report considers the impact of the proposed development on each individual junction.

# 7.0 JUNCTION CAPACITY ASSESSMENTS

7.1 This section of the report lists junctions within the project study area that have been assessed based on the development impact outlined within **Section 5.0** of this report. It includes a summary of the performance of these junctions, based on the model outputs from the baseline junction capacity assessment.

**Traffic Surveys**

7.2 Manual Classified Turning Counts (CTCs) were undertaken by PCC Traffic Information Consultancy on Tuesday 23rd May 2023 to determine the vehicle movements (by classification) at each of the junctions identified within the study area.

7.3 The traffic surveys were undertaken on a neutral weekday within a neutral month (during school term time) and therefore, it is considered that the number of vehicles upon the network is representative of typical traffic conditions. **Plan 5** outlines the location of the CTCs undertaken, with full traffic survey data contained within **Appendix H**.

**Plan 5: Traffic Survey Locations**


*© Google Maps*

**Peak Hours**

7.4 To establish baseline peak hours, the total volume of traffic at the surveyed junctions has been analysed, with the results disaggregated to 15-minute accuracy in accordance with industry practice. The results of

the surveys indicated that the network peak hours across the study junctions were 08:00-09:00 during the weekday AM (12,496 movements) and 16:30-17:30 during the weekday PM (13,600 movements). These peak hours reflect the largest total number of vehicle movements, in terms of Passenger Car Units (PCUs), recorded across the combined surveyed junctions.

7.5 During the AM survey period, it was noted that there was an incident along the M1 southbound, which resulted in standstill queuing along the slip road, backing up towards the Rockingham Roundabout. The queuing on the slip road commenced at 07:43, lasting for approximately 17 minutes before clearing at 07:55.

7.6 As a result of the incident on the M1, queues were noted to back up to the Rockingham Road roundabout, commencing at 07:52 before clearing at 08:15, lasting for 23 minutes. No such queueing was noted during the PM peak hour. A video log evidencing this can be found within **Appendix I**.

7.7 During the PM peak hour (the busiest peak), there were 1,104 more movements on the network when compared to the AM peak hour. Therefore, when evaluating assessment results during the AM peak hour, caution should be taken because of the abnormal conditions recorded. The PM peak hour is a more reliable indicator of "normal" highway conditions and should be given greater consideration as a result.

**TEMPro Factors**

7.8 To achieve a 2024 opening year, the 2023 baseline flows have been factored using rates obtained from TEMPro 7.2c/NTM dataset RTF 2018 Scenario 1 - Reference for MSOA Barnsley 028. These growth rates are illustrated within **Table 11** with the same methodology used to determine a future year of 2029.

**Table 11: TEMPro Growth Rates**

| Period | AM Peak | PM Peak |
|---|---|---|
| 2023 - 2024 | 1.009 | 1.009 |
| 2024 - 2029 | 1.040 | 1.040 |

**Committed Developments**

7.9 Barnsley Metropolitan Borough Council outlined a series of committed developments which should be included within any assessment work undertaken, above the growth rates outlined within **Table 11**.

7.10 A summary of the committed developments which have been considered as part of the assessment work can be found within **Table 12**.


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**Table 12: Committed Developments**

| Allocation | Allocation/ Application No. | Development Description |
|---|---|---|
| ES15, ES17 | 2019/1573, 2021/1007, 2021/1691, 2023/0015 | Hybrid planning application for a development up to 102,193sqm of employment uses (use classes B1/B2 and B8) |
| ES14 | 2021/0479 | Erection of 3no industrial/warehouse units (use classes B2 and B8 and E(g)(ii) and E(g)(iii) totaling 11,585sqm floorspace |
| ES13, HS57 | 2020/0647, 2021/1159 | Hybrid planning application for a development up to 103,086sqm of employment uses (use classes B1/B2 and B8) |
| HS59 | 2020/0577 | Residential development of up to 118 dwellings accessed via Hay Green Lane |
| - | 2021/1150 | Residential development of 83 dwellings accessed via Wood Walk |

7.11 Vehicle movements associated with the above committed developments have been extracted from the Transport Assessments submitted as part of each planning application and implemented upon the highway network in addition to the 2023 surveyed flows. These committed development flows can be found on the committed development flow diagrams attached within **Appendix J**.

**Modelling Software**

7.12 Junctions 10 is a traffic analysis software developed by UK-based transportation engineering company, TRL Limited. The software allows users to formally assess the operational capacity of non-signal junctions along a road network.

7.13 The Junctions 10 software has been used within this report to undertake an assessment of the Rockingham Roundabout, to determine the operation of the junction. Junctions 10 software allows a range of traffic flow profiles to be adopted when undertaking peak period model runs. Generally, an RFC (Ratio of Flow to Capacity) of below 0.85 (for roundabout and priority junctions) indicates that a junction operates within capacity for the assessed flows. An RFC of over 1.0 indicates that a junction is operating over capacity.

7.14 LinSig3 is a traffic analysis software developed by JCT Consultancy. The software is widely used within the industry to model and analyse signal junctions, allowing users to simulate and optimise the performance of signal-controlled junctions.

7.15 LinSig3 has been used within this report to analyse the two signalised junctions within the study area (Birdwell Roundabout and Tankersley Roundabout). For signalised junctions, a Max Degree of Saturation (DOS) value of 0.90 (90%) or less typically demonstrate that a junction arm is operating "within capacity" and is therefore unlikely to experience regular queuing. The Practical Reserve Capacity (PRC) of the whole junction is measured as a percentage, with a positive percentage illustrating that the junction can accept further traffic. A negative percentage states that the junction is operating over capacity.


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7.16 The geometry measurements entered into the Junctions 10 and LinSig v3 models have been measured using Ordnance Survey mapping measured in AutoCAD (Rockingham Roundabout) or through measurements taken from Google earth (Birdwell Roundabout and Tankersley Roundabout).

**Assessment Scenarios**

7.17 The operational capacity of the study area junctions has been assessed in the following traffic flow scenarios:

- 2023 Base.
- 2024 'Do Minimum' (without the proposed development or committed developments).
- 2024 'Do Something' (as above but with the proposed development flows).
- 2029 'Do Minimum' (without the proposed development but with committed developments).
- 2029 'Do Something' (as above but with the proposed development flows when considering Travel Plan targets).

7.18 As outlined above, the assessments will consider junction operation at a base survey year of 2023, an opening year of 2024 (with and without development), and a future year of 2029 (with and without development). Flow diagrams of the above scenarios can be found within **Appendix K**.

**Junction 1 Assessment**

7.19 An assessment of the Rockingham Roundabout junction has been undertaken using the industry recognised Junctions 10 modelling software. The junction is located circa 150m to the northeast of the site and comprises of four arms. The layout of the junction is shown within **Plan 6**.


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**Plan 6: Aerial Image of Junction 1**


*© Google Maps*

7.20 **Table 13** provides a summary of predicted RFC values and queue lengths for the Rockingham Roundabout during all scenarios. A geometry measurement drawing along with the capacity assessment results, can be found in **Appendix L**.

**Table 13: Assessment Results of Junction 1**

| Arm | 2023 Base | | | |
|---|---|---|---|---|
| | AM Peak | | PM Peak | |
| | RFC | Queue | RFC | Queue |
| A6195 North | 0.56 | 1.3 | 0.61 | 1.6 |
| Sheffield Road | 0.18 | 0.2 | 0.22 | 0.3 |
| A6195 South | 0.59 | 1.6 | 0.71 | 2.5 |
| Kestrel Way | 0.21 | 0.3 | 0.30 | 0.4 |
| | 2024 'Do Minimum' | | | |
| A6195 North | 0.56 | 1.4 | 0.62 | 1.6 |
| Sheffield Road | 0.18 | 0.2 | 0.23 | 0.3 |
| A6195 South | 0.60 | 1.6 | 0.72 | 2.5 |
| Kestrel Way | 0.21 | 0.3 | 0.30 | 0.4 |
| | 2024 'Do Something' | | | |
| A6195 North | 0.57 | 1.4 | 0.62 | 1.7 |
| Sheffield Road | 0.19 | 0.2 | 0.23 | 0.3 |
| A6195 South | 0.62 | 1.7 | 0.72 | 2.5 |
| Kestrel Way | 0.22 | 0.3 | 0.30 | 0.5 |
| | 2029 'Do Minimum' | | | |
| A6195 North | 0.68 | 2.2 | 0.73 | 2.7 |
| Sheffield Road | 0.26 | 0.4 | 0.34 | 0.5 |
| A6195 South | 0.70 | 2.5 | 0.81 | 4.3 |
| Kestrel Way | 0.25 | 0.3 | 0.39 | 0.6 |
| | 2029 'Do Something' | | | |
| A6195 North | 0.68 | 2.2 | 0.74 | 2.8 |

| | | | | |
|---|---|---|---|---|
| Sheffield Road | 0.27 | 0.4 | 0.35 | 0.5 |
| A6195 South | 0.72 | 2.7 | 0.82 | 4.4 |
| Kestrel Way | 0.26 | 0.4 | 0.43 | 0.7 |

7.21 **Table 13** demonstrates how the Rockingham Roundabout operates within capacity during the AM and PM peak periods during all scenarios considered. The AM peak hour assumed no incident occurred on the M1, representing 'typical' operations at the junction, confirmed by the PM peak hour results.

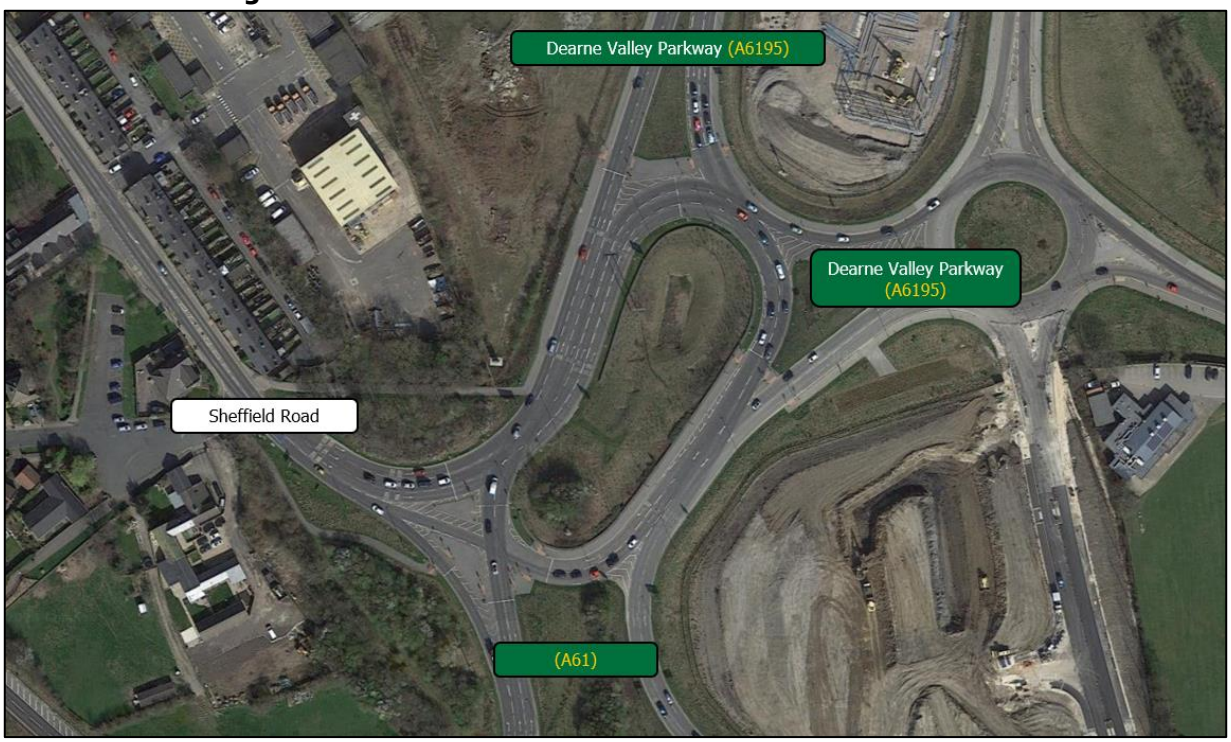
7.22 Between the 2029 'Do Minimum' scenario and the 2029 'Do Something' scenario, the highest increase in RFC was observed to be 0.04 along the Kestrel Way arm during the PM peak hour. The results outline how the proposed development will have negligible impacts upon the operation of the junction and therefore, no further assessment work has been undertaken.

**Junction 2 Assessment**

7.23 An assessment of the Birdwell Roundabout has been undertaken using the industry recognised LinSig3 modelling software. The junction is located circa 50m to the south of the site and comprises of four arms.

7.24 The Birdwell Roundabout underwent improvements during 2017, becoming an elongated signalised roundabout junction replacing what was a conventional four arm roundabout linking the A6195 with Junction 36 of the M1. The layout of the junction is shown within **Plan 7**.

**Plan 7: Aerial Image of Junction 2**




*© Google Maps*

7.25 The councils signal partner Yunex Traffic provided the datasheet for the junction which sets out the junction phasing, staging and intergreens. Saturation flows for each arm were calculated within LinSig based on geometry.

7.26 **Table 14** provides a summary of the LinSig results for the three scenarios considered, with full LinSig results provided within **Appendix M**.

**Table 14: Assessment Results of Junction 2**

| Lane Description | 2023 Base | | | |
|---|---|---|---|---|
| | AM Peak | | PM Peak | |
| | DoS% | Queue | DoS% | Queue |
| A61 Sheffield Rd (NW) Left | 33.5% | 3.5 | 39.8% | 3.6 |
| A61 Sheffield Rd (NW) Ahead | 82.3% | 10.8 | 79.7% | 9.1 |
| A6195 Dearne Valley Pkway Ahead Left | 62.4% | 8.8 | 87.0% | 14.2 |
| A6195 Dearne Valley Pkway Ahead | 62.3% | 8.8 | 87.1% | 14.3 |
| A6195 Sheffield Rd (E) Ahead | 85.6% | 10.0 | 68.7% | 5.7 |
| A6195 Sheffield Rd (E) Ahead | 71.7% | 7.1 | 93.1% | 10.0 |
| A61 (S) Left | 53.1% | 7.4 | 59.5% | 9.5 |
| A61 (S) Ahead | 83.4% | 26.3 | 97.6% | 28.3 |
| NW Circ Right | 76.8% | 10.3 | 86.6% | 16.4 |
| NW Circ Right | 53.1% | 1.7 | 28.1% | 0.2 |
| NW Circ Right | 49.7% | 1.3 | 35.1% | 0.3 |
| SW Circ Right | 70.4% | 0.2 | 79.3% | 0.1 |
| SW Circ Right Right2 | 70.3% | 0.1 | 80.1% | 0.1 |
| NE Circ Right | 83.4% | 11.0 | 72.5% | 5.9 |
| NE Circ Right Right2 | 81.7% | 9.9 | 79.0% | 7.6 |
| SE Circ Right | 85.6% | 10.1 | 95.2% | 16.4 |
| SE Circ Right Right2 | 2.0% | 0.1 | 23.6% | 1.9 |
| A6195 Exit Peds Ahead | 50.2% | 0.8 | 65.6% | 1.1 |
| A6195 Exit Peds Ahead | 41.6% | 1.5 | 43.2% | 1.8 |
| Practical Reserve Capacity | -9.2% | | -11.3% | |
| | 2024 'Do Minimum' | | | |
| A61 Sheffield Rd (NW) Left | 33.7% | 3.5 | 40.1% | 3.6 |
| A61 Sheffield Rd (NW) Ahead | 83.2% | 11.0 | 79.6% | 9.1 |
| A6195 Dearne Valley Pkway Ahead Left | 64.6% | 9.2 | 89.4% | 15.2 |
| A6195 Dearne Valley Pkway Ahead | 61.1% | 8.5 | 86.3% | 13.8 |
| A6195 Sheffield Rd (E) Ahead | 91.6% | 11.9 | 69.2% | 5.8 |
| A6195 Sheffield Rd (E) Ahead | 76.9% | 7.6 | 93.8% | 10.3 |
| A61 (S) Left | 53.5% | 7.6 | 59.7% | 9.5 |
| A61 (S) Ahead | 85.6% | 26.6 | 98.8% | 28.4 |
| NW Circ Right | 77.4% | 10.4 | 87.4% | 16.8 |
| NW Circ Right | 53.9% | 1.8 | 27.8% | 0.2 |
| NW Circ Right | 49.9% | 1.4 | 36.1% | 0.3 |
| SW Circ Right | 73.2% | 0.2 | 79.6% | 0.2 |
| SW Circ Right Right2 | 68.7% | 0.1 | 81.1% | 0.0 |
| NE Circ Right | 83.5% | 10.7 | 73.8% | 5.9 |
| NE Circ Right Right2 | 78.8% | 9.5 | 79.2% | 7.7 |
| SE Circ Right | 86.3% | 10.4 | 96.2% | 17.2 |
| SE Circ Right Right2 | 2.0% | 0.1 | 23.6% | 1.9 |
| A6195 Exit Peds Ahead | 52.1% | 0.8 | 65.8% | 1.2 |
| A6195 Exit Peds Ahead | 40.5% | 1.5 | 43.9% | 1.7 |
| Practical Reserve Capacity | -9.9% | | -12.8% | |
| | 2024 'Do Something' | | | |
| A61 Sheffield Rd (NW) Left | 100.4% | 3.6 | 40.3% | 3.6 |
| A61 Sheffield Rd (NW) Ahead | 72.1% | 11.0 | 79.6% | 9.1 |

| | | | | |
|---|---|---|---|---|
| A6195 Dearne Valley Pkway Ahead Left | 89.2% | 9.4 | 90.8% | 16.1 |
| A6195 Dearne Valley Pkway Ahead | 85.7% | 8.6 | 88.4% | 14.8 |
| A6195 Sheffield Rd (E) Ahead | 80.7% | 11.9 | 69.2% | 5.8 |
| A6195 Sheffield Rd (E) Ahead | 98.2% | 7.6 | 93.8% | 10.3 |
| A61 (S) Left | 92.3% | 7.6 | 59.6% | 9.5 |
| A61 (S) Ahead | 39.5% | 26.9 | 99.1% | 28.4 |
| NW Circ Right | 99.7% | 10.4 | 87.3% | 16.8 |
| NW Circ Right | 17.8% | 1.8 | 27.8% | 0.2 |
| NW Circ Right | 83.7% | 1.4 | 36.1% | 0.3 |
| SW Circ Right | 47.1% | 0.2 | 79.9% | 0.2 |
| SW Circ Right Right2 | 68.6% | 0.1 | 81.3% | 0.0 |
| NE Circ Right | 39.1% | 10.8 | 74.6% | 6.0 |
| NE Circ Right Right2 | 25.4% | 9.6 | 80.5% | 7.9 |
| SE Circ Right | 65.0% | 10.5 | 96.9% | 18.1 |
| SE Circ Right Right2 | 50.4% | 0.1 | 23.6% | 1.9 |
| A6195 Exit Peds Ahead | 52.9% | 0.8 | 66.1% | 1.2 |
| A6195 Exit Peds Ahead | 41.7% | 1.5 | 44.2% | 1.7 |
| Practical Reserve Capacity | -11.6% | | -12.8% | |
| | 2029 'Do Minimum' | | | |
| A61 Sheffield Rd (NW) Left | 38.6% | 4.1 | 44.8% | 4.1 |
| A61 Sheffield Rd (NW) Ahead | 89.7% | 14.0 | 87.1% | 11.3 |
| A6195 Dearne Valley Pkway Ahead Left | 72.8% | 11.2 | 100.9% | 29.0 |
| A6195 Dearne Valley Pkway Ahead | 72.5% | 11.1 | 103.0% | 34.4 |
| A6195 Sheffield Rd (E) Ahead | 126.6% | 73.1 | 135.6% | 65.0 |
| A6195 Sheffield Rd (E) Ahead | 84.3% | 9.2 | 131.0% | 47.6 |
| A61 (S) Left | 56.0% | 8.1 | 60.6% | 9.8 |
| A61 (S) Ahead | 84.2% | 26.3 | 95.5% | 28.2 |
| NW Circ Right | 79.9% | 10.6 | 86.5% | 16.4 |
| NW Circ Right | 52.7% | 1.9 | 29.6% | 0.2 |
| NW Circ Right | 57.9% | 1.7 | 37.7% | 0.3 |
| SW Circ Right | 70.2% | 0.2 | 74.9% | 0.1 |
| SW Circ Right Right2 | 71.0% | 0.1 | 78.6% | 0.0 |
| NE Circ Right | 89.3% | 12.4 | 81.6% | 7.2 |
| NE Circ Right Right2 | 92.8% | 17.8 | 88.8% | 10.1 |
| SE Circ Right | 94.9% | 15.8 | 97.7% | 18.9 |
| SE Circ Right Right2 | 2.1% | 0.1 | 20.3% | 1.5 |
| A6195 Exit Peds Ahead | 50.0% | 0.8 | 61.9% | 1.0 |
| A6195 Exit Peds Ahead | 46.3% | 1.8 | 45.8% | 2.1 |
| Practical Reserve Capacity | -44.1% | | -50.7% | |
| | 2029 'Do Something' | | | |
| A61 Sheffield Rd (NW) Left | 89.7% | 4.2 | 45.0% | 4.1 |
| A61 Sheffield Rd (NW) Ahead | 73.5% | 14.0 | 87.1% | 11.3 |
| A6195 Dearne Valley Pkway Ahead Left | 72.8% | 11.5 | 102.3% | 32.5 |
| A6195 Dearne Valley Pkway Ahead | 126.6% | 11.2 | 105.0% | 40.1 |
| A6195 Sheffield Rd (E) Ahead | 84.3% | 73.1 | 135.6% | 65.0 |
| A6195 Sheffield Rd (E) Ahead | 56.1% | 9.2 | 131.0% | 47.6 |
| A61 (S) Left | 83.9% | 8.1 | 60.6% | 9.8 |
| A61 (S) Ahead | 79.2% | 26.2 | 96.2% | 28.2 |
| NW Circ Right | 52.7% | 10.4 | 86.3% | 16.3 |
| NW Circ Right | 57.9% | 1.9 | 29.6% | 0.2 |
| NW Circ Right | 70.1% | 1.7 | 37.7% | 0.3 |
| SW Circ Right | 70.7% | 0.2 | 74.2% | 0.1 |
| SW Circ Right Right2 | 89.9% | 0.1 | 79.2% | 0.0 |
| NE Circ Right | 92.9% | 12.6 | 81.6% | 7.2 |
| NE Circ Right Right2 | 95.1% | 18.4 | 88.8% | 10.1 |
| SE Circ Right | 2.1% | 16.0 | 97.2% | 18.3 |
| SE Circ Right Right2 | 0.0% | 0.1 | 20.1% | 1.5 |
| A6195 Exit Peds Ahead | 50.3% | 0.8 | 61.5% | 1.0 |
| A6195 Exit Peds Ahead | 46.3% | 1.8 | 46.4% | 2.1 |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| | | |
|---|---|---|
| Practical Reserve Capacity | -48.5% | -50.7% |

**Junction 3 Assessment**

7.27 An assessment of the Tankersley Roundabout junction has been undertaken using the industry recognised LinSig3 modelling software. The junction is located circa 200m to the south of the site and comprises of four arms. The layout of the junction is shown within **Plan 8**.

**Plan 8: Aerial Image of Junction 3**


*© Google Maps*

7.28 The councils signal partner Yunex Traffic provided the datasheet for the junction which sets out the junction phasing, staging and intergreens. Saturation flows for each arm were calculated within LinSig based on geometry.

7.29 **Table 15** provides a summary of the LinSig results for the three scenarios considered, with full LinSig results provided within **Appendix M**.

**Table 15: Assessment Results of Junction 3**

| Lane Description | 2023 Base | | | |
|---|---|---|---|---|
| | AM Peak | | PM Peak | |
| | DoS% | Queue | DoS% | Queue |
| M1 SB offslip Left | 98.3% | 20.1 | 95.5% | 21.0 |
| M1 SB offslip Ahead | 71.4% | 8.2 | 64.5% | 8.4 |
| A61 (NE) Ahead Ahead2 | 86.9% | 6.0 | 93.3% | 21.8 |
| A61 (NE) Ahead | 85.7% | 18.8 | 78.7% | 10.5 |
| M1 NB offslip Ahead Ahead2 | 76.6% | 8.6 | 88.3% | 18.2 |
| A61 (W) Ahead Left | 96.9% | 21.7 | 100.1% | 24.1 |

| | | | | |
|---|---|---|---|---|
| A61 (W) Ahead | 91.2% | 14.1 | 96.3% | 14.9 |
| North Overbridge Circ Ahead | 39.3% | 4.2 | 98.1% | 22.7 |
| North Overbridge Circ Ahead | 96.4% | 18.0 | 99.2% | 29.1 |
| North Overbridge Circ Right | 17.6% | 2.8 | 15.9% | 2.6 |
| East Circ Right Ahead | 87.2% | 10.7 | 74.0% | 6.3 |
| South Overbridge Circ Ahead | 47.6% | 4.3 | 76.1% | 11.8 |
| South Overbridge Circ Right Ahead | 73.7% | 13.1 | 96.3% | 19.0 |
| South Overbridge Circ Right | 31.8% | 5.2 | 34.7% | 3.1 |
| West Circ Ahead | 33.2% | 0.4 | 30.7% | 4.2 |
| West Circ Right Ahead | 56.8% | 8.9 | 77.6% | 12.8 |
| West Circ Right | 47.9% | 8.5 | 61.5% | 11.5 |
| Practical Reserve Capacity | -9.2% | | -11.3% | |
| | 2024 'Do Minimum' | | | |
| M1 SB offslip Left | 98.9% | 21.0 | 95.8% | 21.4 |
| M1 SB offslip Ahead | 72.1% | 8.4 | 65.1% | 8.5 |
| A61 (NE) Ahead Ahead2 | 88.6% | 7.4 | 93.8% | 22.2 |
| A61 (NE) Ahead | 85.4% | 18.8 | 79.7% | 10.7 |
| M1 NB offslip Ahead Ahead2 | 79.0% | 8.9 | 88.6% | 20.7 |
| A61 (W) Ahead Left | 98.2% | 23.6 | 101.5% | 26.7 |
| A61 (W) Ahead | 91.6% | 14.3 | 96.5% | 15.1 |
| North Overbridge Circ Ahead | 39.0% | 4.3 | 99.1% | 24.3 |
| North Overbridge Circ Ahead | 98.1% | 21.2 | 99.5% | 29.6 |
| North Overbridge Circ Right | 17.8% | 2.8 | 16.0% | 2.6 |
| East Circ Right Ahead | 83.7% | 7.3 | 76.2% | 6.6 |
| South Overbridge Circ Ahead | 47.0% | 4.4 | 77.6% | 12.4 |
| South Overbridge Circ Right Ahead | 68.6% | 11.3 | 96.4% | 19.1 |
| South Overbridge Circ Right | 38.8% | 6.9 | 34.6% | 3.1 |
| West Circ Ahead | 25.4% | 0.3 | 31.4% | 4.3 |
| West Circ Right Ahead | 64.1% | 10.6 | 78.1% | 12.9 |
| West Circ Right | 49.4% | 8.8 | 61.7% | 11.6 |
| Practical Reserve Capacity | -9.9% | | -12.8% | |
| | 2024 'Do Something' | | | |
| M1 SB offslip Left | 100.4% | 23.9 | 96.1% | 21.8 |
| M1 SB offslip Ahead | 72.1% | 8.4 | 65.1% | 8.5 |
| A61 (NE) Ahead Ahead2 | 89.2% | 7.6 | 95.5% | 24.3 |
| A61 (NE) Ahead | 85.7% | 18.9 | 80.4% | 11.0 |
| M1 NB offslip Ahead Ahead2 | 80.7% | 9.1 | 88.6% | 22.5 |
| A61 (W) Ahead Left | 98.2% | 23.6 | 101.5% | 26.7 |
| A61 (W) Ahead | 92.3% | 14.7 | 96.7% | 15.3 |
| North Overbridge Circ Ahead | 39.5% | 4.3 | 99.2% | 24.6 |
| North Overbridge Circ Ahead | 99.7% | 27.2 | 99.6% | 29.9 |
| North Overbridge Circ Right | 17.8% | 2.8 | 16.0% | 2.6 |
| East Circ Right Ahead | 83.7% | 7.3 | 76.2% | 6.6 |
| South Overbridge Circ Ahead | 47.1% | 4.4 | 78.1% | 12.5 |
| South Overbridge Circ Right Ahead | 68.6% | 11.3 | 97.6% | 20.4 |
| South Overbridge Circ Right | 39.1% | 7.0 | 34.6% | 3.1 |
| West Circ Ahead | 25.4% | 0.3 | 32.1% | 4.4 |
| West Circ Right Ahead | 65.0% | 11.0 | 78.2% | 13.0 |
| West Circ Right | 50.4% | 9.0 | 61.7% | 11.6 |
| Practical Reserve Capacity | -11.6% | | -12.8% | |
| | 2029 'Do Minimum' | | | |
| M1 SB offslip Left | 127.0% | 105.0 | 121.0% | 118.2 |
| M1 SB offslip Ahead | 74.9% | 8.9 | 67.7% | 9.0 |
| A61 (NE) Ahead Ahead2 | 99.1% | 32.1 | 100.6% | 35.7 |
| A61 (NE) Ahead | 95.0% | 26.5 | 94.6% | 23.3 |
| M1 NB offslip Ahead Ahead2 | 129.7% | 80.0 | 122.3% | 125.9 |
| A61 (W) Ahead Left | 101.9% | 31.4 | 105.0% | 34.8 |
| A61 (W) Ahead | 128.7% | 89.2 | 123.8% | 62.6 |
| North Overbridge Circ Ahead | 41.4% | 4.3 | 98.4% | 21.8 |


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| | | | | |
|---|---|---|---|---|
| North Overbridge Circ Ahead | 98.8% | 22.8 | 99.4% | 29.4 |
| North Overbridge Circ Right | 14.4% | 1.7 | 13.5% | 2.2 |
| East Circ Right Ahead | 88.4% | 8.7 | 95.1% | 12.7 |
| South Overbridge Circ Ahead | 50.8% | 5.0 | 87.7% | 17.2 |
| South Overbridge Circ Right Ahead | 74.6% | 12.8 | 96.4% | 17.1 |
| South Overbridge Circ Right | 43.0% | 7.4 | 45.1% | 4.7 |
| West Circ Ahead | 28.4% | 0.4 | 26.4% | 4.4 |
| West Circ Right Ahead | 71.4% | 12.4 | 83.1% | 13.0 |
| West Circ Right | 83.3% | 10.3 | 60.6% | 11.3 |
| Practical Reserve Capacity | -44.1% | | -50.7% | |
| | 2029 'Do Something' | | | |
| M1 SB offslip Left | 128.4% | 109.5 | 121.3% | 119.4 |
| M1 SB offslip Ahead | 74.9% | 8.9 | 67.7% | 9.0 |
| A61 (NE) Ahead Ahead2 | 99.5% | 35.3 | 101.4% | 38.1 |
| A61 (NE) Ahead | 95.3% | 26.8 | 94.3% | 23.0 |
| M1 NB offslip Ahead Ahead2 | 133.6% | 90.1 | 122.9% | 127.5 |
| A61 (W) Ahead Left | 101.7% | 31.0 | 105.0% | 34.8 |
| A61 (W) Ahead | 129.8% | 91.9 | 124.0% | 63.1 |
| North Overbridge Circ Ahead | 40.9% | 4.3 | 98.4% | 21.8 |
| North Overbridge Circ Ahead | 99.0% | 23.6 | 99.4% | 29.4 |
| North Overbridge Circ Right | 14.3% | 1.7 | 13.5% | 2.2 |
| East Circ Right Ahead | 79.7% | 8.7 | 95.1% | 12.6 |
| South Overbridge Circ Ahead | 50.9% | 5.0 | 87.1% | 17.0 |
| South Overbridge Circ Right Ahead | 74.8% | 12.8 | 95.8% | 16.6 |
| South Overbridge Circ Right | 43.0% | 7.4 | 45.1% | 4.7 |
| West Circ Ahead | 28.6% | 0.4 | 26.0% | 4.3 |
| West Circ Right Ahead | 71.0% | 12.1 | 83.1% | 13.0 |
| West Circ Right | 83.3% | 10.3 | 60.6% | 11.3 |
| Practical Reserve Capacity | -48.5% | | -50.7% | |

7.30 Both **Table 14** and **Table 15** demonstrates how the Birdwell Roundabout and Tankersley Roundabout operate over capacity during both the AM and PM weekday peak hours. During the 2023 Base Scenario, a Practical Reserve Capacity (PRC) of -9.2% during the AM peak hour and -11.3% during the PM peak hour were noted across both junctions. This gradually worsens during the 2024 'Do Minimum scenario' before significantly exacerbated in the 2029 'Do Minimum' scenario, where the PRC during the AM peak hour decreases to -44.1% and -50.7% during the PM peak hour.

7.31 The addition of the proposed development traffic will not impact upon the PRC during the 2029 PM peak period however, there will be a loss of -4.4% during the AM peak given the nature of movements and already existing queues noted within the Do Minimum scenario. Based on this, it is considered that the proposals will not result in a severe impact upon the immediate highway network given the results during the 2029 Do Something AM peak hour are exponential, with no impacts noted during the 2029 Do Something PM peak hour.

7.32 In addition to the above, it is worth highlighting that both junctions operate under MOVA control, which would adjust the green times on a cycle-by-cycle basis, depending on demand, to allow the most efficient operation at the junctions. Therefore, the operation of both junctions would operate better than that forecast by LinSig and that summarised within **Tables 14** and **15**.


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7.33 Overall, the proposed development would not result in a severe impact on the operation of the junctions, and no mitigation measures are required as a result of the proposed development. This is consistent with the conclusion reached as part of historic modelling, which has been accepted by Barnsley Metropolitan Borough Council (discussed below).

**Wider Highway Modelling**

7.34 As previously outlined, the site forms part of the Barnsley Local Plan as site ES14 (Waddington), and forms part of the wider Hoyland North Masterplan which was produced in December 2019.

7.35 The impact of an employment allocation within the site has previously been modelled (VISSIM) and accepted by both Barnsley Metropolitan Borough Council and National Highways as part of the Fore Consulting Transport and Access Appraisal Report.

7.36 In addition to the above, vehicle movements associated with the site were also considered within the Mosodi Transport Assessment which was submitted in support of the approved Rockingham Phase 2 and 3 development. The Mosodi Transport Assessment considered the impact of all sites within the Hoyland North Masterplan, including for the application site ES14 (Waddington).

7.37 Within the Mosodi Transport Assessment, the report considered the application site to comprise of 501sq.m B1 use, 2,843sq.m B8 use with a 69-room hotel, resulting in a trip generation of 43 two-way movements during the AM peak period and 33 two-way movements during the PM peak period.

7.38 The person TRICS assessment undertaken as part of this report outlines that the proposed development would only result in an increase of 16 two-way movements during the AM peak hour and 18 two-way movements during the PM hour to what was previously accepted as part of the Mosodi assessment. This does not consider the effects of the Framework Travel Plan where vehicle movements are likely to be further reduced, bringing the development impacts further in line with what was previously approved.

7.39 When considering the junction assessments undertaken as part of this Transport Assessment, in addition to the previous modelling work undertaken as part of the Fore Consulting Transport and Access Appraisal Report and the Mosodi Transport Assessment, the development proposals will not result in a severe impact upon the operation of the immediate highway network and therefore, cannot be refused in accordance with Paragraph 111 of the National Planning Policy Framework.


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# 8.0 MITIGATION PROPOSALS

8.1 Based on the information provided in this report, this section will list all improvements deemed necessary to help facilitate the development.

**Framework Travel Plan**

8.2 A Framework Travel Plan has been prepared alongside this Transport Assessment to assist in reducing the number of single car occupancy vehicle trips associated with the application site.

8.3 The Framework Travel Plan, which will be adopted by all units within the site, provides a package of measures to encourage all staff and visitors to use sustainable transport modes, reducing the sites impact upon the immediate highway network.

8.4 A Framework Travel Plan can offer substantial gains towards sustainable transport objectives of central and local government, as well as providing several benefits to staff of the proposed development. The overarching aim of the framework RTP is:

> *"To create a sustainable, community-driven environment that promotes a range of lifestyle and travel choices and reduces reliance on the private car."*

8.5 Travel planning is an on-going process which will grow and develop with time. The Framework Travel Plan and subsequent Full Travel Plans prepared by the occupiers of each unit, will reflect the changing circumstances faced by the occupiers, and the environment in which they operate.

8.6 The impacts of the Framework Travel Plan upon the highway network, through the proposed 10% reduction in single car occupancy vehicle trips, can be seen as part of the junction modelling results during the 2029 'Do Something' scenarios.


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# 9.0 CONCLUSION

9.1 This Transport Assessment has been produced to provide information in support of a proposed industrial estate located on land to the west of Dearne Valley Parkway, Birdwell, Barnsley.

9.2 A review of available collision data supplied by crashmap.co.uk highlights that there are no road safety concerns within the study area.

9.3 The site is well located in terms of access to local amenities and facilities by foot, cycle or public transport. Access to residential areas are within a suitable commute via alternative transport modes other than use of the car, adhering to policies T1 and T3 within the Barnsley Local Plan.

9.4 Access to the site for both vehicles and pedestrians will be via the continuation of the industrial access road off Kestrel Way. The access road will be designed to adoptable highway standards, with a suitably designed turning head positioned at the end of the road.

9.5 The recommend parking provision within the site could range between 145 car parking spaces should the proposals be solely B2 land use, to 48 vehicle car parking spaces should the proposals be solely B8 land use. Given the likely mix of occupiers at the site, the proposed allocation of 119 spaces (one space per 61sq.m) is considered appropriate to meet with likely demand.

9.6 When considering the junction assessments undertaken as part of this Transport Assessment, in addition to previous modelling work undertaken as part of the wider Hoyland North Masterplan, the proposed development will not result in a severe impact upon the operation of the immediate highway network and therefore, cannot be refused in accordance with Paragraph 111 of the National Planning Policy Framework.

9.7 Transport policy (detailed in **Chapter 2.0**) seeks to maximise travel by public transport and active modes. Therefore, the mitigation measures proposed through a Framework Travel Plan, focus on maximising future staff and visitor travel opportunities by sustainable and active modes, rather than increasing vehicle capacity on the local network which would not support the policy objectives.

9.8 The Framework Travel Plan that accompanies this Transport Assessment sets out in detail a package of measures for incorporation into future detailed Travel Plans associated with each unit, to encourage all staff and visitors to use sustainable transport, avoiding single car occupancy vehicle trips.

9.9 Based on the information provided above and attached, it is considered that there are no highways or transportation reasons why the Local Highway Authority cannot provide an 'in principle' support for the proposed planning application.


enquiries@robertshighwayconsultants.co.uk
Company Number: 13958498

# Appendix A: -

Note. This drawing is based on the topographical survey. by Ramowski Clarke Ltd, ref. 3508-02-b-US, dated 05/23.

Line of extg. sewers & easments as shown on dwg. no. 10-336-PH1-DE-500-001-REV J. (Hartwood).

This drawing is subject to Client & Planning approval,and is to be read in conjunction with all other consultants drawings.

Note. Retaining walls shown are to be brick facing, except where noted, to structural engineers design/details.

Bins areas to be 1.8m high timber on galv. steel posts.

Easement to extg. overhead electricity cables - 4.6m from each conductor or earth wire.

EVC ● indicates electric car charging points.

SL indicates street lighting to new estate road. Final details, locations, etc to be agreed.

W indicates external water supply in green steel lockable cabinet. Final details, locations, etc to be agreed.

Car parking bays to be generally 5.0m long x 2.5m wide. Disabled bays to incl. 1.2m aisle as shown and pictogram/signage.


| Rev | Description | Drn | Vf'd | Date |
|---|---|---|---|---|
| P16 | Gates between unit 1 & 2 omitted. Fencing extended. | SW | SW | 08/23 |
| P15 | Car parking amended & numbers added to units 5/6/7. Addtional EVC point added adj. unit 6. | SW | SW | 07/23 |
| P14 | Drawing status updated. Water points & street lights added. Cycles to unit 1 relocated. EVC's to units 1, 3 & 4 relocated. | SW | SW | 06/23 |
| P13 | Minor changes to the layout. Floor plans added. Retaining walls added. Area schedule updated. | SW | SW | 06/23 |

As outlined in section 2.3 of the CITB Industry Guidance to Designers, insignificant risks can usually be ignored, as can risks arising from routine construction activities, unless the design compounds or significantly alters these risks. In accordance with CDM Regulations 8, 9 and 11, any significant risks relating to the design features shown on this drawing have been identified and are annotated thus: !

☐ No significant risks have been identified.

☒ Significant risks have been identified - refer to notes on drawing for information on residual risks and any control measures to be employed.

Refer to the current Designer's Risk Assessment sheets for further details.

Designer's Signature | Date

Drawing Status: PLANNING.

| UNIT | GROUND | | FIRST | | TOTAL | | OFFICE AREA, excl. circ/toilets | | OFFICE % TO GIA | CARS | CYCLES | M/CYCLE | EAVES/HAUNCH HEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | sq.m | sq.ft | sq.m | sq.ft | sq.m | sq.ft | sq.m | sq.ft | | | | | |
| 1 | 822 | 8,848 | 109 | 1,173 | 931 | 10,021 | 108.00 | 1,167.00 | **11.60** | 17 | 12 | 2 | 8m |
| 2 | 1,394 | 15,005 | 157 | 1,690 | 1,551 | 16,695 | 185.00 | 1,993.00 | **11.93** | 24 | 12 | 2 | 8m |
| 3 | 1,352 | 14,553 | 141 | 1,517 | 1,493 | 16,070 | 147.00 | 1,582.00 | **9.85** | 23 | 12 | 2 | 8m |
| 4 | 1,731 | 18,632 | 184 | 1,980 | 1,915 | 20,612 | 230.00 | 2,475.00 | **12.01** | 32 | 12 | 2 | 8m |
| 5 | 559 | 6,017 | 93 | 1,000 | 652 | 7,017 | 103.00 | 1,114.00 | **15.80** | 11 | 12 | 2 | 6m |
| 6 | 316 | 3,401 | 0 | 0 | 316 | 3,401 | 36.00 | 387.50 | **11.39** | 6 | Shared. | Shared. | 6m |
| 7 | 334 | 3,595 | 0 | 0 | 334 | 3,595 | 36.00 | 387.50 | **10.78** | 6 | Shared. | Shared. | 6m |
| TOTAL | 6,508 | 70,051 | 684 | 7,360 | **7,192** | **77,411** | **845** | **9,106** | | 119 | 60 | 10 | |

williamsaunders
architecture: engineering: building consultancy
The Beacon
Cafferata Way
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Tel: 01636 704361
W: wm-saunders.co.uk
Also at Leeds, Lincoln, Wirksworth

Project: Proposed Development, Rockingham.

Client: Carnell Management Services Ltd.

Title: Proposed Site Plan.

| WmS Project Ref. | Drawn | Date | Scale |
|---|---|---|---|
| 12215 | SW | Feb. 2022 | 1:500 @ A1 |

Drawing/Document Reference

| Project | Originator | Zone | Level | Type | Role | Number | Status | Rev. |
|---|---|---|---|---|---|---|---|---|
| 12215 | WMS | XX | XX | DR | A | 10003 | S8 | P16 |

# Appendix B: -

Our ref: SE 349 005
Your ref: 2022/ENQ/00280

Barnsley Metropolitan Borough Council
1 Westgate
Western Street
Barnsley
S70 2DR

**FAO: Elaine Ward**

Batool Menaz
National Highways
8 City Walk
Leeds
LS11 9AT

Direct Line: +44 (0) 300 4702420

May 5 2023

Dear Elaine,

**Scoping: Land West of Dearne Valley Parkway, Birdwell, Barnsley**

Thank you for engaging in pre-application discussions with National Highways for the proposed development located in a parcel of the ES14 allocation of the Barnsley Local Plan [2019].

We note that the gross floor area [GFA] is stated to be 7,963sqm in the Highway Scoping Note [Note], however, there are alternatives figures presented in the appendices. Any future submission should provide clarification on the GFA.

We are content with the trip rates presented, however, the assessed development quantum [6,386sqm] is lower than the 7,963sqm stated in the Note. Clarification should be provided on this point in any future submission. Further, we note that any proposed development within the Masterplan area should not exceed any of the previously approved trip generations set out, as this could then result in significant impacts on the SRN, namely junction 36 of the M1. Information should be presented comparing the previously assessed figures with the proposed development trip generation.

We also note that in any future submissions, multi-modal [person] trip rates should be presented before and after the implementation of measures / initiatives to maximise active and sustainable travel, and in line with the vision for the proposed development; this is in accordance with Circular 01/2022 and is detailed later in this letter.

With regards to traffic distribution, we request that the traffic distribution is presented on a traffic flow diagram including percentages of traffic routing via Tankersley Roundabout, including M1 on and off-slips. We will withhold comment on the traffic distribution until this information is presented.

We do, however, note that on the basis of the number of trips potentially routing via M1 Junction 36 [Tankersley Roundabout], this should be formally assessed as part of any future submission, this information should be presented in a Transport Assessment developed in accordance with prevailing policy, particularly Circular 01/2022.

We request that the applicant should review and include any relevant committed development traffic flows in the area that are likely to affect the flows at the relevant junctions in the assessment years. We also note that any assumptions underpinning the projected levels of traffic should be clearly stated so as to avoid the default factoring up of baseline traffic.

*Transport Assessment*

The transport impacts of the development should be assessed based on relevant regional and national planning policy. In terms of the impact on the SRN, the applicant should make reference to at least the following policies:

- Barnsley Local Plan (January 2019);
- DfT Circular 01/2022 The Strategic Road Network and the Delivery of Sustainable Development. Particularly paragraphs 47 to 54 which relate to the assessment of development proposals; and
- National Highways' guidance document 'The Strategic Road Network: Planning for The Future'. The following paragraphs from this guidance are particularly relevant to the scoping stage
    - Paragraph 37. "Transport assessments should generally be carried out in line with prevailing government guidance in agreement with us [National Highways], through preapplication and scoping, such as a Road Safety Audit (Stage 1)".
    - Paragraphs 87 and 88. "If the development is in an approved local plan and has had an appropriate level of assessment of the impact of the development undertaken, we do not anticipate the need to repeat the full assessment process at the planning application stage. If, however, the development proposed has not been subject to an appropriate level of assessment or is not included or consistent with an approved local plan, then we would anticipate agreeing the scope of work required to make a full assessment. For those sites that have been considered at local plan stage, we will take into account any assessment already undertaken.
    - Paragraph 94. "Formal pre-application discussions are an effective means of gaining a good, early understanding of the development, its benefits, its likely impacts and its infrastructure needs. By consulting with us pre-application, you will ensure that the transport assessment you prepare is appropriately scoped and is based on the most relevant and up-to-date data. It will also ensure that you are made aware of, and can take account of, any SRN issues that might have a bearing on the way in which the development is planned and/or delivered. This, in turn, helps avoid delays and difficulties further into the application process".
    - Paragraph 98. "If a scoping report is to be prepared, we would advise that this includes:
        - Details of the development, such as location, access arrangements, use class, size or number of units, likely phasing, maximum number of parking spaces and any other relevant information;

- Proposed methodology for estimating the vehicular trip generation and distribution on the SRN, and resulting trip generation figures;
- Proposed methodology for assessing the impact of this trip generation on the SRN; and
- Proposed methodology for assessing the environmental consequences of the transport impacts of the development"

Further, in accordance with the Circular 01/2022 the Transport Assessment should set out a vision for the development and how the vision will be achieved. Significant emphasis should be given to reducing the need to travel, especially by car, and maximising the use of active modes and public transport. Hence, the trip generation set out in the Transport Assessment should accord with that established in the Travel Plan. We would expect to see multi-modal [person] trip rates before and after the implementation of measures to maximise active and sustainable travel and limit the use of the private car.

Should conflicting requirements be identified, it is important to note that the Planning Policy Paper 'Circular 01/2022' will take precedence over the National Highways document 'The Strategic Road Network Planning for the Future' (2015) which is due to be amended.

*Travel Plan*

A Travel Plan, developed in accordance with prevailing policy, should also accompany any future submission.

With regards to the preparation of a Travel Plan, we note the following paragraphs from the Planning Policy Paper (Circular 01/2022) 'Strategic road network and the delivery of sustainable development':

> *44. Travel plans are an effective means of incentivising the use of sustainable modes of transport. Where these are required, development promoters must put forward clear targets and commitments to manage down the traffic impact of development and maximise the accessibility of and within sites by walking, wheeling, cycling, public transport and shared travel. Targets for achieving a modal shift to sustainable transport will need to be subject to sustained monitoring and management by an appointed travel plan coordinator. Advice on preparing and monitoring travel plans is contained in the planning practice guidance.*
>
> *47. Where the company is requested to do so, it will engage with local planning authorities and development promoters at the pre-application stage on the scope of transport assessments/statements and travel plans. This process should determine the inputs and methodology relevant to establishing the potential impacts on the SRN and net zero principles that will inform the design and use of the scheme. Development promoters are strongly encouraged to engage with the company to resolve any potential issues and maximise opportunities for walking, wheeling, cycling, public transport and shared travel, as early as possible.*

As discussed, National Highways requires that the Applicant set out a vision for the development, clearly describe any aims, in terms of transport, and explain how these aims will be achieved and why they accord with the prevailing policy.

Particularly, National Highways will expect the Applicant to promote and enable a reduction in the need to travel, especially by private car, and prioritise sustainable transport opportunities ahead of capacity enhancements.

With reference to the Circular 01/2022, National Highways *"will support initiatives that reduce the need to travel by private car and enable the necessary behavioural change to make walking, wheeling, cycling and public transport the natural first choice for all who can take it".*

The Travel Plan should include targets for mode shift away from the private car and confirmation of person trips by mode; the plan must set out clear targets and commitments to manage down the traffic impact of development and maximise the accessibility by walking, wheeling, cycling, public transport, and shared travel.

Hence, suitable multi-modal (person) trip rates should be set out alongside any travel planning targets. This approach will enable an assessment of residual transport impacts relative to the current land use (see Circular 01/2022, particularly, paragraphs 47-54).

National Highways will support the preparation of a robust Travel Plan designed to limit the volume of private vehicle trips to and from the development and to promote sustainable modes of travel. To ensure a robust and effective Travel Plan, we request that the Travel Plan includes but not be limited to:

- Quantifiable mode shift targets which relate to the trip generation and mode share set out;
- A firm financial commitment with regards to funding for a range of measures (including infrastructure, incentive and information-based measures) proposed in the short, medium and long term;
- Details of the phasing of any proposed measures relative to any phasing of the development itself;
- A clear outline of the responsibilities of the different parties involved in implementing, monitoring and funding the Travel Plan;
- A strategy designed to monitor the volume of vehicle trips; and
- The funding to be committed and made available for the implementation of further measures should the Travel Plan fail to achieve its stated targets.

With reference to the DfT document 'Decarbonising Transport: A Better, Greener Britain' (July 2021), the Travel Plan should also consider how the design of the development will facilitate and ensure that 'public transport and active travel are the natural first choice for daily activities.' National Highways will look favourably at initiatives to encourage employees to work from home where possible and, thereby, reduce the need to travel in peak periods.

*Assessments*

Subject to the impact of the proposed development on the Strategic Road Network, further assessments may be required. With regards to a threshold which may warrant a junction capacity assessment, the applicant should make reference to the following guidance:

- National Planning Policy Framework (Ministry of Housing, Communities and Local Government, 2021);
- National Highways' document 'The Strategic Road Network: planning for the future' (National Highways, 2015); and
- The Department for Transport's Circular 01/2022.

In particular, we refer the applicant to 'The Strategic Road Network: Planning for the Future', which states that National Highways will look at planning applications assessed as being 'severe' on a case-by-case basis. This will take into account the performance and character of the relevant section of the SRN and the predicted effects of the development on its safe operation."

We also refer the applicant to Paragraph 34 of the document which states that *"assessments should consider the likely impact of residual trips (once measures to reduce the need to travel by car and improve access by sustainable modes have been considered) and ensure that what is proposed promotes sustainable transport and avoids unnecessary works to the SRN"*. Hence, the developer's commitment to promoting sustainable modes of transport is an important consideration as part of junction assessments.

Further, the Applicant should note that the 2007 DfT guidance that describes a '30-vehicle threshold for discussions' does not, for National Highways, justify junction capacity assessments not being undertaken.

If assessments are required, we offer the following comments:

- Weekday peak hours – the applicant should take into account that the peak hour periods at SRN junctions may differ to those of the local highway network, and these should be agreed prior to the assessments being carried out;
- A weekday inter-peak period assessment may be required subject to the operation of the development, shift change patterns, and the volume of traffic on the network compared with the typical peak periods;
- Assessment years – in accordance with paragraph 50 of the Circular 01/2022, assessments should be conducted at an opening year to include trips generated by the proposed development, forecasted growth and committed development. Further, for multi-phase developments, additional assessments shall be provided based on the opening of each phase; and
- In accordance with the Circular 01/2022 – *"Planned improvements to the SRN or local road network should also be considered in any assessment where there is a high degree of certainty that this will be delivered"*. Confirmation of any planned transport improvements should be agreed with BMBC.

*Committed Development*

The applicant should review and include any relevant committed development traffic flows in the area that are likely to affect the flows at the relevant junctions in the assessment years. In accordance with Planning Practice Guidance, these should include development that is consented or allocated where there is a reasonable degree of certainty will proceed within the next 3 years. Appropriate committed development flows should be agreed with BMBC.

*Forecasted Growth*

Any assumptions underpinning the projected levels of traffic should be clearly stated so as to avoid the default factoring up of baseline traffic.

*Mitigation*

If the opening year assessments demonstrate that a mitigation scheme is required in order to accommodate the impact of the proposed development, there will be a number of requirements prior to determination of the planning application:

- GG142 walking, cycling and horse-riding assessment should be undertaken at the outset to inform the design of any mitigation scheme;
- The design of road improvements should meet DMRB standards or clearly identify any departures from standard required;
- A Departure from Standards application may be required if the standards set out in DMRB are not achieved. This applies equally to over and under achievement of design standards; and
- A Stage 1 Road Safety Audit should be undertaken prior to the submission of the planning application.

*Conclusion*

In summary, the forthcoming planning application should be accompanied by Transport Assessment and Travel Plan, both to be prepared with reference to and in accordance with this correspondence.

I trust this response is helpful, and I look forward to hearing from you once the proposed transport documents have been prepared. Should you require any further information please do not hesitate to contact me.

Yours sincerely

**Simon GP Geoghegan**
For: Batool Menaz
Email: batool.menaz@nationalhighways.co.uk

## Andy Roberts

**From:** Lake , Wayne (GROUP LEADER HDC) <WayneLake@barnsley.gov.uk>
**Sent:** 02 May 2023 16:09
**To:** Andy Roberts
**Cc:** Ward , Elaine (SENIOR PLANNING OFFICER); HighwaysPlngApps
**Subject:** RE: 2022/ENQ/00280 (TA-1) - Pre-application land off Dearne Valley Parkway

Good afternoon Andy,

Further to previous correspondence and following a review of the Highway Scoping Note, please find the following comments. These are provided without prejudice to any further comments that may be received by the planning officer from National Highways as it is noted within the report that no consultation has been had with National Highways. You should therefore await a response from the planning officer in respect of this.

With regards the content it is noted that access to the site will be via Kestrel Way, however Kestrel Way is not adopted public highway and therefore there is a need to ensure that the developer has a right of access over it.

I acknowledge the use of the TRICS datasets , however they are presented incorrectly in Tables 1 and 2 as the AM trip generation figures are PM trip rates and PM trip rates are AM trip generation figures. Notwithstanding this, I have recalculated and confirm the trip rates do accord with the relevant trip generation figures. However, I note from the TRICS data that the AM period 09:00-10:00 trip rates for Class D are greater that during the AM peak period selected and a similar scenario (not same time periods) exist for the PM peak.

The use of the MSOA 028 is considered suitable and distribution patterns seem sensible, however it is noted that the Tankerseley roundabout is omitted from your list of junctions requiring assessment and refer you to my previous comments in that:

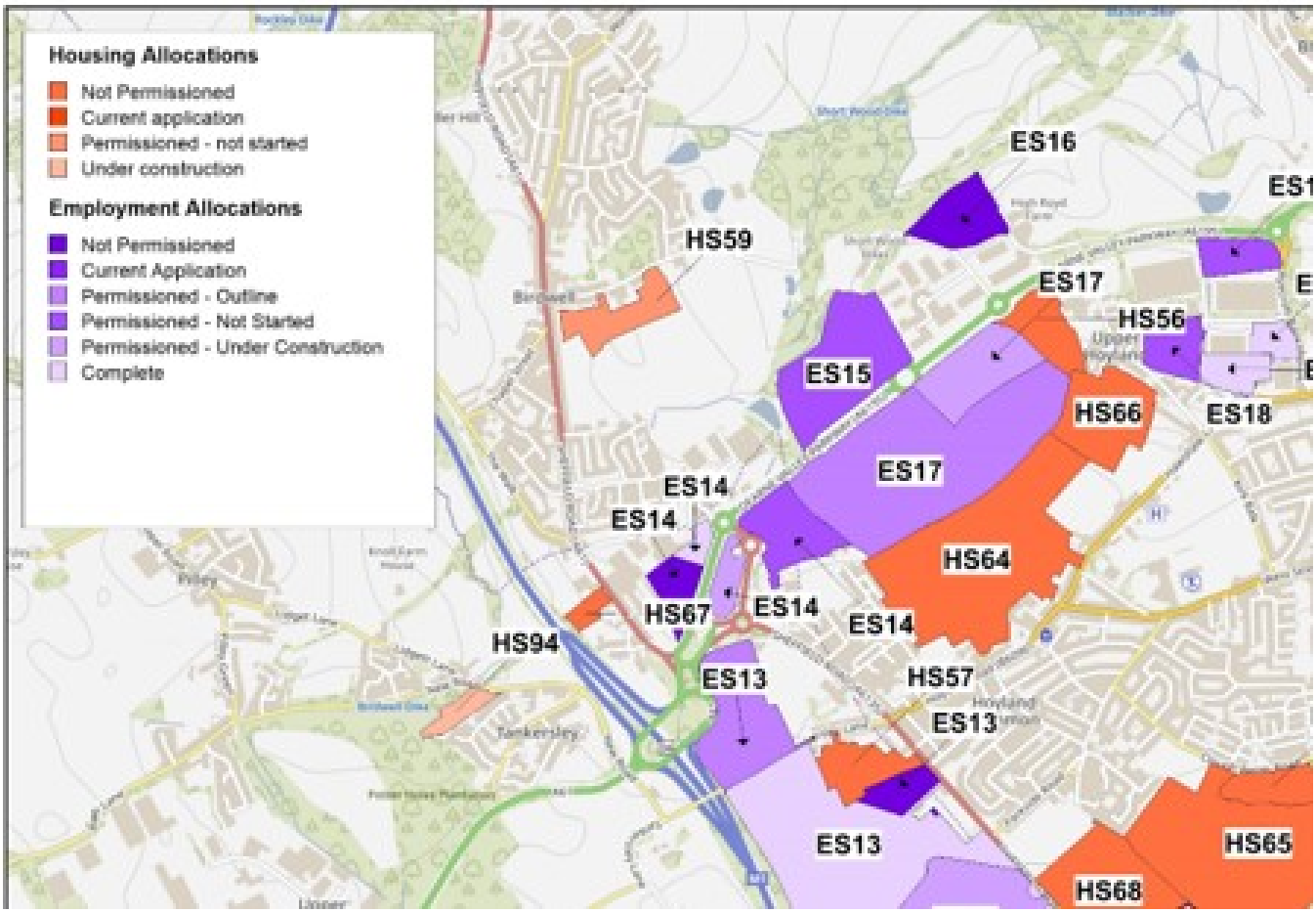
*Current adopted supplementary planning guidance provides the underlying thresholds of assessment. This includes any development generating 30 or more two-way vehicles movements in any hour and/or any development generating 100 or more two-way vehicle movements per day. Where there are no firm threshold figures within current TAG guidance for practitioners and appraisers, current policy conforms to the now withdrawn Department for Transport document Guidance on Transport Assessment. This is not purely used to determine the need for a transport assessment but should also be considered as the appropriate metric for determining network impact and therefore the need for individual junction assessment with the TA submission.*

Traffic Surveys are to be undertaken in neutral months, however given the current position in relation to Trade Union strike action, you are to be mindful of future dates whereby the traffic could be affected by any industrial action or similar being undertaken. Should survey dates clash with any forthcoming days affected by industrial action, there will be a need for these to be re-done. The surveys are to capture queue lengths by observation or video in order to calibrate and validate the base model(s).

Comment is made in reference to committed developments are assumed to be included in the rates, however this should not be taken as an assumption. Whilst appropriate NTEM / Tempro growth factors are to be applied to background traffic growth, there will be a need to determine the planning assumptions associated with these in order to avoid double counting when adding in committed development traffic flows. Committed development traffic is to be included in the future year scenario and flows obtained from the associated Transport Assessments where available. You will no doubt be aware of latest government guidance which reads:
*It is important to give appropriate consideration to the cumulative impacts arising from other committed development (i.e. development that is consented or allocated where there is a reasonable degree of certainty will proceed within the*

*next 3 years). At the decision-taking stage this may require the developer to carry out an assessment of the impact of those adopted Local Plan allocations which have the potential to impact on the same sections of transport network as well as other relevant local sites benefitting from as yet unimplemented planning approval.*

Please see image below in relation to recent planning status for allocated sites in and around J36 / Hoyland. Further to the above, there will need to be a definitive list of committed developments to be agreed for inclusion in consideration of cumulative impact.




In response to your two questions – please find below:

***Do highways have an existing LinSig model for the Bidwell Roundabout? If so, could this be sent over to us to use for the modelling. If there is no existing model, could you advise on how to obtain signal timing specifications for the junction.***

Having liaised with our traffic signals section, I can confirm that they do not have an existing Linsig model for the Birdwell / Tankersley roundabouts. However signal timings and specifications can be provided by Yunex, who are the Councils traffic signal contractors and they can provide a price for obtaining any data as required. We also have the details for the National Highways roundabout with us being responsible for it at the minute,

The most appropriate contact is:

Nick Rule
**Yunex Traffic | Consultancy Services**
Principal Engineer
Mobile: +44 7808 824137
nick.rule@yunextraffic.com

***Are you able to pass this note onto National Highways given the proximity of the site to the M1 junction (if you believe they will require consultation)?***
This note was passed on to the planning officer for forwarding to National Highways.

I trust this is satisfactory,

Kind Regards

Wayne

Wayne Lake MSc MCIHT
Group Leader - Highways Development Control
Transport
Growth and Sustainability
Barnsley Council

Telephone: 01226 772587
Email: waynelake@barnsley.gov.uk
Mail: PO Box 634, BARNSLEY. S70 9GG

*Sat Nav reference: S70 2DR

---

**From:** Andy Roberts <andy@robertshighwayconsultants.co.uk>
**Sent:** 11 April 2023 11:18
**To:** Lake , Wayne (GROUP LEADER HDC) <WayneLake@barnsley.gov.uk>
**Subject:** 2022/ENQ/00280 (TA) - Pre-application land off Dearne Valley Parkway

---



---

Good morning Wayne,

We have been commissioned to assist with an upcoming planning application for the development of several industrial units at land to the west of Dearne Valley Parkway.

As part of the planning submission, we will prepare the Transport Assessment and Travel Plan requested as part of the above enquiry and your response to Stuart Willows dated 4th April.

I am contacting you to agree the scope of the off-site junction assessments required as per the development.

We have undertaken initial analysis of projected vehicle movements from the site, in addition to undertaking a distribution and assignment exercise for vehicles travelling to the area.

The attached scope note outlines the findings of the analysis work which identifies the following junctions for assessment:

- Junction 1: Rockingham Roundabout
- Junction 2: Bidwell Roundabout (Signal Junction)

Do highways have an existing LinSig model for the Bidwell Roundabout? If so, could this be sent over to us to use for the modelling. If there is no existing model, could you advise on how to obtain signal timing specifications for the junction.

Are you able to pass this note onto National Highways given the proximity of the site to the M1 junction (if you believe they will require consultation)?

I will welcome any comments you have regarding the above/attached prior to commencement of the reports.

Kind Regards,

**Andy Roberts BA (Hons) MCIHT MTPS**
Managing Director

**Roberts Highway Consultants Limited**

**T: 07935 229 255**
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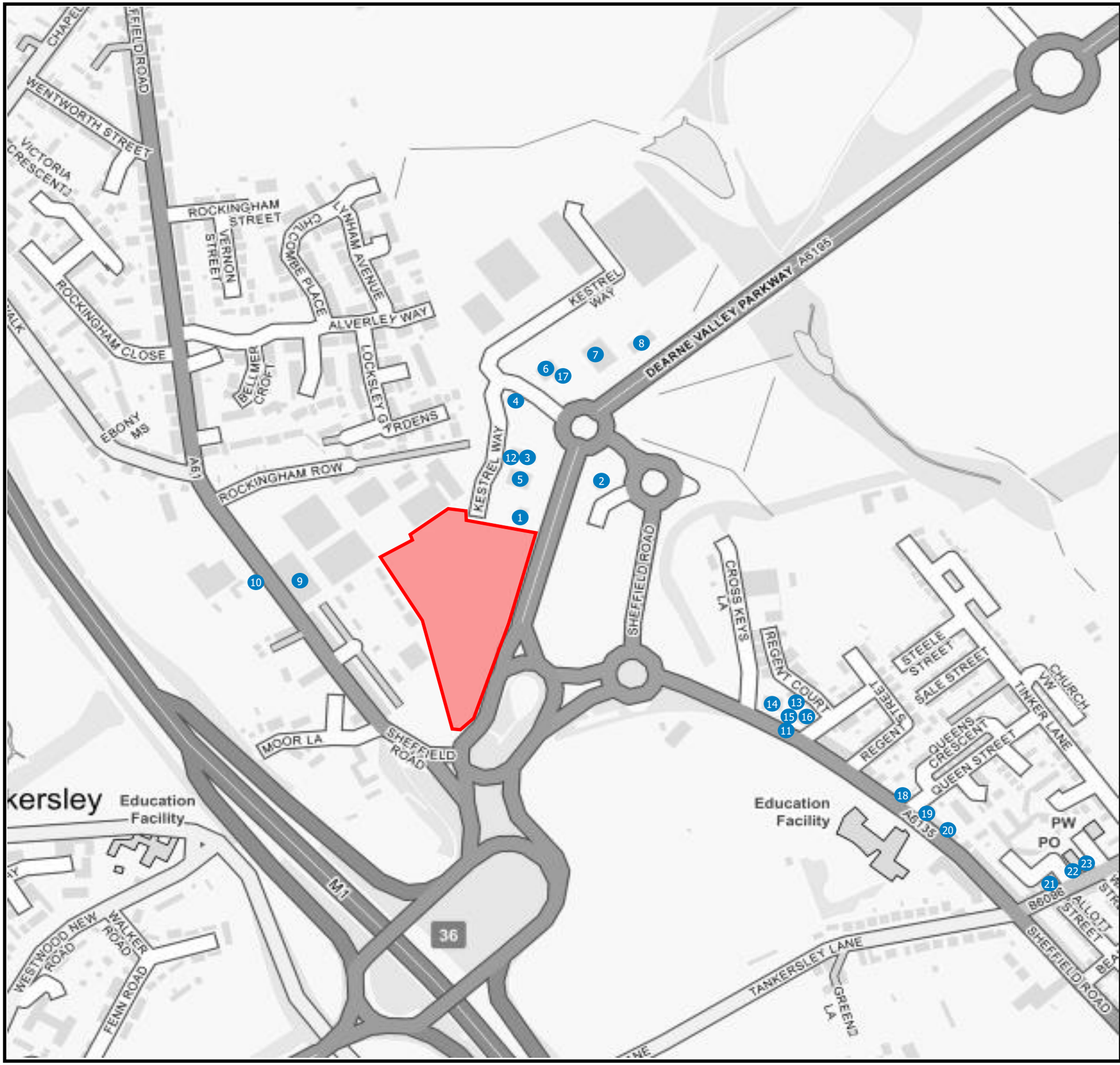
**W: www.robertshighwayconsultants.co.uk**

Roberts
Highway Consultants

**Transport Assessments/Statements ~ Travel Plans ~ Swept Path Analysis ~ Access Designs ~ Access Feasibility Studies ~ Construction Traffic Management Plans ~ Travel Plan Coordinator Services ~ Public Consultation Services ~ Road Safety Audits ~ Traffic, Parking & Speed Surveys**

# Appendix C: -




**Scale:**

Not To Scale.

N

**Notes:**

1. Do Not Scale From This Figure.
2. This Figure May Include Data Provided By 3rd Parties No Liability Is Accepted For The Accuracy Of Such Data.
3. This Figure Is Not Intended As A Comprehensive Listing, And Shows Only Selected Local Facilities Considered Of Significance.
4. Paved Footways May Not Be Available On All Routes.

Site Location

Local Facilities Key

1. Costa Coffee
2. Starbucks
3. BP Petrol Station
4. Taco Bell
5. Greggs
6. Dunkin
7. Deane Valley Farm-Dining
8. McDonalds
9. Aldi
10. Café 334
11. Bus Stop
12. InPost Parcel Locker
13. Evri Parcel Shop
14. The Keys Restaurant
15. Mace Convenience Store
16. Shell Petrol Station
17. KFC
18. Master Fryer Takeaway
19. The Hare and Hounds Pub
20. Saville Square Pub
21. Mayfair Takeaway
22. Well Pharmacy
23. Co-Op Convenience Store

Client:
Carnell Management Services Ltd

Project:
Dearne Valley Parkway
Birdwell
Barnsley

Diagram Title:
Facilities & Amenities Plan
Diagram 001

Drawn & Checked By: AR

Date: 03/06/2023

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Roberts Highway Consultants

# Appendix D: -


**Scale:**

Not To Scale.

N

**Notes:**

1. Do Not Scale From This Figure.
2. This Figure May Include Data Provided By 3rd Parties No Liability Is Accepted For The Accuracy Of Such Data.
3. This Figure Is Not Intended As A Comprehensive Listing, And Shows Only Selected Local Facilities Considered Of Significance.
4. Paved Footways May Not Be Available On All Routes.

Site Location

Selected Bus Stops Close To Site

Client:
Carnell Management Services Ltd

Project:
Dearne Valley Parkway
Birdwell
Barnsley

Diagram Title:
Public Transport Plan
Diagram 002

| Drawn & Checked By: | Date: |
|---|---|
| AR | 03/06/2023 |

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Roberts Highway Consultants

# Appendix E: -

Calculation Reference: AUDIT-608801-231014-1055

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : D - INDUSTRIAL ESTATE
MULTI-MODAL TOTAL VEHICLES

*Selected regions and areas:*

| | | | |
|---|---|---|---|
| 02 | SOUTH EAST | | |
| | EX | ESSEX | 2 days |
| 03 | SOUTH WEST | | |
| | DV | DEVON | 1 days |
| | SD | SWINDON | 1 days |
| 04 | EAST ANGLIA | | |
| | NF | NORFOLK | 1 days |
| 05 | EAST MIDLANDS | | |
| | DY | DERBY | 1 days |
| 07 | YORKSHIRE & NORTH LINCOLNSHIRE | | |
| | AK | WAKEFIELD | 2 days |
| | AL | CALDERDALE | 1 days |
| | DR | DONCASTER | 1 days |
| 09 | NORTH | | |
| | TW | TYNE & WEAR | 2 days |

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

Primary Filtering selection:

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

| | |
|---|---|
| Parameter: | Gross floor area |
| Actual Range: | 3191 to 11305 (units: sqm) |
| Range Selected by User: | 2000 to 12000 (units: sqm) |

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/15 to 14/09/22

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

*Selected survey days:*

| | |
|---|---|
| Monday | 2 days |
| Tuesday | 4 days |
| Wednesday | 4 days |
| Friday | 2 days |

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

*Selected survey types:*

| | |
|---|---|
| Manual count | 12 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 undertaking using machines.*

*Selected Locations:*

| | |
|---|---|
| Suburban Area (PPS6 Out of Centre) | 4 |
| Edge of Town | 8 |

*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:*

| | |
|---|---|
| Industrial Zone | 5 |
| Development Zone | 1 |
| Residential Zone | 1 |
| No Sub Category | 5 |

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

*Inclusion of Servicing Vehicles Counts:*

| | |
|---|---|
| Servicing vehicles Included | 4 days - Selected |
| Servicing vehicles Excluded | 8 days - Selected |

Secondary Filtering selection:

*Use Class:*

| | |
|---|---|
| Not Known | 12 days |

*This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.*

*Filter by Site Operations Breakdown:*
All Surveys Included

*Population within 500m Range:*
All Surveys Included

Secondary Filtering selection (Cont.):

*Population within 1 mile:*

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

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

*Population within 5 miles:*

| | |
|---|---|
| 125,001 to 250,000 | 10 days |
| 250,001 to 500,000 | 2 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 | 5 days |
| 1.1 to 1.5 | 7 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 | 12 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 | 12 days |

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

*LIST OF SITES relevant to selection parameters*

1 AK-02-D-02 INDUSTRIAL ESTATE (PART) WAKEFIELD
PIONEER WAY
CASTLEFORD

Edge of Town
Industrial Zone
Total Gross floor area: 4328 sqm
*Survey date: TUESDAY* *23/05/17* *Survey Type: MANUAL*

2 AK-02-D-03 INDUSTRIAL ESTATE WAKEFIELD
THUNDERHEAD RIDGE RD
CASTLEFORD
GLASSHOUGHTON
Edge of Town
No Sub Category
Total Gross floor area: 3191 sqm
*Survey date: MONDAY* *15/05/17* *Survey Type: MANUAL*

3 AL-02-D-01 INDUSTRIAL ESTATE CALDERDALE
MILL LANE
HALIFAX

Edge of Town
No Sub Category
Total Gross floor area: 11305 sqm
*Survey date: WEDNESDAY* *17/10/18* *Survey Type: MANUAL*

4 DR-02-D-03 INDUSTRIAL ESTATE DONCASTER
MIDDLE BANK
DONCASTER

Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 6737 sqm
*Survey date: TUESDAY* *21/09/21* *Survey Type: MANUAL*

5 DV-02-D-07 INDUSTRIAL ESTATE DEVON
BITTERN ROAD
EXETER
SOWTON IND. ESTATE
Edge of Town
Industrial Zone
Total Gross floor area: 3600 sqm
*Survey date: MONDAY* *03/07/17* *Survey Type: MANUAL*

6 DY-02-D-01 INDUSTRIAL ESTATE DERBY
SHAFTESBURY STREET
DERBY
ROSE HILL
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Gross floor area: 5686 sqm
*Survey date: WEDNESDAY* *25/09/19* *Survey Type: MANUAL*

7 EX-02-D-03 INDUSTRIAL ESTATE ESSEX
WYNCOLLS ROAD
COLCHESTER
SEVERALLS INDUSTRIAL PK
Edge of Town
Industrial Zone
Total Gross floor area: 4876 sqm
*Survey date: FRIDAY* *18/05/18* *Survey Type: MANUAL*

*LIST OF SITES relevant to selection parameters (Cont.)*

8 EX-02-D-05 INDUSTRIAL ESTATE ESSEX
HECKWORTH CLOSE
COLCHESTER
SEVERALLS INDUSTRIAL PK
Edge of Town
Industrial Zone
Total Gross floor area: 7280 sqm
*Survey date: FRIDAY* *18/05/18* *Survey Type: MANUAL*

9 NF-02-D-04 INDUSTRIAL ESTATE NORFOLK
DRAYTON HIGH ROAD
NORWICH

Edge of Town
No Sub Category
Total Gross floor area: 10673 sqm
*Survey date: WEDNESDAY* *14/09/22* *Survey Type: MANUAL*

10 SD-02-D-01 INDUSTRIAL ESTATE SWINDON
HEADLANDS GROVE
SWINDON

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 10000 sqm
*Survey date: TUESDAY* *20/09/16* *Survey Type: MANUAL*

11 TW-02-D-08 INDUSTRIAL ESTATE TYNE & WEAR
NORTH HYLTON ROAD
SUNDERLAND
SOUTHWICK
Suburban Area (PPS6 Out of Centre)
Development Zone
Total Gross floor area: 8310 sqm
*Survey date: TUESDAY* *04/04/17* *Survey Type: MANUAL*

12 TW-02-D-09 INDUSTRIAL ESTATE TYNE & WEAR
ELEVENTH AVENUE
GATESHEAD
TEAM VALLEY
Edge of Town
No Sub Category
Total Gross floor area: 6200 sqm
*Survey date: WEDNESDAY* *18/05/22* *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 Rates for Key Periods | | Trips per 100 sqm GFA | |
|---|---|---|---|
| Period | Inbound | Outbound | Total |
| 0800-0900 | 0.666 | 0.336 | 1.002 |
| 1700-1800 | 0.393 | 0.776 | 1.169 |

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.44

| | ARRIVALS | | | DEPARTURES | | | TOTALS | | |
|---|---|---|---|---|---|---|---|---|---|
| Time Range | 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 | 4 | 7324 | 0.157 | 4 | 7324 | 0.003 | 4 | 7324 | 0.160 |
| 06:00 - 07:00 | 4 | 7324 | 0.099 | 4 | 7324 | 0.034 | 4 | 7324 | 0.133 |
| 07:00 - 08:00 | 12 | 6849 | 0.298 | 12 | 6849 | 0.114 | 12 | 6849 | 0.412 |
| 08:00 - 09:00 | 12 | 6849 | 0.479 | 12 | 6849 | 0.264 | 12 | 6849 | 0.743 |
| 09:00 - 10:00 | 12 | 6849 | 0.464 | 12 | 6849 | 0.392 | 12 | 6849 | 0.856 |
| 10:00 - 11:00 | 12 | 6849 | 0.427 | 12 | 6849 | 0.377 | 12 | 6849 | 0.804 |
| 11:00 - 12:00 | 12 | 6849 | 0.430 | 12 | 6849 | 0.439 | 12 | 6849 | 0.869 |
| 12:00 - 13:00 | 12 | 6849 | 0.445 | 12 | 6849 | 0.443 | 12 | 6849 | 0.888 |
| 13:00 - 14:00 | 12 | 6849 | 0.411 | 12 | 6849 | 0.476 | 12 | 6849 | 0.887 |
| 14:00 - 15:00 | 12 | 6849 | 0.376 | 12 | 6849 | 0.438 | 12 | 6849 | 0.814 |
| 15:00 - 16:00 | 12 | 6849 | 0.341 | 12 | 6849 | 0.398 | 12 | 6849 | 0.739 |
| 16:00 - 17:00 | 12 | 6849 | 0.404 | 12 | 6849 | 0.471 | 12 | 6849 | 0.875 |
| 17:00 - 18:00 | 12 | 6849 | 0.256 | 12 | 6849 | 0.476 | 12 | 6849 | 0.732 |
| 18:00 - 19:00 | 12 | 6849 | 0.096 | 12 | 6849 | 0.204 | 12 | 6849 | 0.300 |
| 19:00 - 20:00 | 4 | 7324 | 0.020 | 4 | 7324 | 0.082 | 4 | 7324 | 0.102 |
| 20:00 - 21:00 | 4 | 7324 | 0.010 | 4 | 7324 | 0.017 | 4 | 7324 | 0.027 |
| 21:00 - 22:00 | | | | | | | | | |
| 22:00 - 23:00 | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | |
| Total Rates: | | | 4.713 | | | 4.628 | | | 9.341 |

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

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

Parameter summary

| | |
|---|---|
| Trip rate parameter range selected: | 3191 - 11305 (units: sqm) |
| Survey date date range: | 01/01/15 - 14/09/22 |
| Number of weekdays (Monday-Friday): | 12 |
| 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.*

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.44

| | ARRIVALS | | | DEPARTURES | | | TOTALS | | |
|---|---|---|---|---|---|---|---|---|---|
| Time Range | 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 | 4 | 7324 | 0.164 | 4 | 7324 | 0.003 | 4 | 7324 | 0.167 |
| 06:00 - 07:00 | 4 | 7324 | 0.143 | 4 | 7324 | 0.034 | 4 | 7324 | 0.177 |
| 07:00 - 08:00 | 12 | 6849 | 0.406 | 12 | 6849 | 0.134 | 12 | 6849 | 0.540 |
| 08:00 - 09:00 | 12 | 6849 | 0.666 | 12 | 6849 | 0.336 | 12 | 6849 | 1.002 |
| 09:00 - 10:00 | 12 | 6849 | 0.669 | 12 | 6849 | 0.498 | 12 | 6849 | 1.167 |
| 10:00 - 11:00 | 12 | 6849 | 0.604 | 12 | 6849 | 0.484 | 12 | 6849 | 1.088 |
| 11:00 - 12:00 | 12 | 6849 | 0.611 | 12 | 6849 | 0.625 | 12 | 6849 | 1.236 |
| 12:00 - 13:00 | 12 | 6849 | 0.636 | 12 | 6849 | 0.646 | 12 | 6849 | 1.282 |
| 13:00 - 14:00 | 12 | 6849 | 0.583 | 12 | 6849 | 0.703 | 12 | 6849 | 1.286 |
| 14:00 - 15:00 | 12 | 6849 | 0.549 | 12 | 6849 | 0.623 | 12 | 6849 | 1.172 |
| 15:00 - 16:00 | 12 | 6849 | 0.489 | 12 | 6849 | 0.579 | 12 | 6849 | 1.068 |
| 16:00 - 17:00 | 12 | 6849 | 0.663 | 12 | 6849 | 0.691 | 12 | 6849 | 1.354 |
| 17:00 - 18:00 | 12 | 6849 | 0.393 | 12 | 6849 | 0.776 | 12 | 6849 | 1.169 |
| 18:00 - 19:00 | 12 | 6849 | 0.134 | 12 | 6849 | 0.364 | 12 | 6849 | 0.498 |
| 19:00 - 20:00 | 4 | 7324 | 0.027 | 4 | 7324 | 0.099 | 4 | 7324 | 0.126 |
| 20:00 - 21:00 | 4 | 7324 | 0.010 | 4 | 7324 | 0.020 | 4 | 7324 | 0.030 |
| 21:00 - 22:00 | | | | | | | | | |
| 22:00 - 23:00 | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | |
| Total Rates: | | | 6.747 | | | 6.615 | | | 13.362 |

*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.*

Roberts Highway Consultants Limited 154 Rothley Road Leicestershire Licence No: 608801

Calculation Reference: AUDIT-608801-231014-1057

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : A - OFFICE
MULTI-MODAL TOTAL PEOPLE

*Selected regions and areas:*

| | | | |
|---|---|---|---|
| 04 | EAST ANGLIA | | |
| | NF | NORFOLK | 1 days |
| 06 | WEST MIDLANDS | | |
| | WK | WARWICKSHIRE | 1 days |
| 07 | YORKSHIRE & NORTH LINCOLNSHIRE | | |
| | AK | WAKEFIELD | 1 days |

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

Primary Filtering selection:

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

| | |
|---|---|
| Parameter: | Gross floor area |
| Actual Range: | 500 to 1230 (units: sqm) |
| Range Selected by User: | 200 to 1500 (units: sqm) |

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/15 to 23/11/22

*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:*

| | |
|---|---|
| Tuesday | 1 days |
| Wednesday | 2 days |

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

*Selected survey types:*

| | |
|---|---|
| Manual count | 3 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 undertaking using machines.*

*Selected Locations:*

| | |
|---|---|
| Edge of Town | 3 |

*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:*

| | |
|---|---|
| Industrial Zone | 1 |
| Commercial Zone | 1 |
| No Sub Category | 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.*

*Inclusion of Servicing Vehicles Counts:*

| | |
|---|---|
| Servicing vehicles Included | 3 days - Selected |
| Servicing vehicles Excluded | 1 days - Selected |

Secondary Filtering selection:

*Use Class:*

| | |
|---|---|
| Not Known | 3 days |

*This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.*

*Filter by Site Operations Breakdown:*
All Surveys Included

*Population within 500m Range:*
All Surveys Included

Secondary Filtering selection (Cont.):

*Population within 1 mile:*

| | |
|---|---|
| 1,001 to 5,000 | 1 days |
| 10,001 to 15,000 | 1 days |
| 15,001 to 20,000 | 1 days |

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

*Population within 5 miles:*

| | |
|---|---|
| 100,001 to 125,000 | 1 days |
| 125,001 to 250,000 | 2 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 |

*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 | 3 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 | 3 days |

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

*LIST OF SITES relevant to selection parameters*

1 AK-02-A-01 OFFICES WAKEFIELD
PIONEER WAY
CASTLEFORD
WHITWOOD
Edge of Town
No Sub Category
Total Gross floor area: 1230 sqm
*Survey date: TUESDAY 23/05/17 Survey Type: MANUAL*

2 NF-02-A-04 BUILDING CONSULTANT NORFOLK
WHITING ROAD
NORWICH

Edge of Town
Commercial Zone
Total Gross floor area: 500 sqm
*Survey date: WEDNESDAY 13/11/19 Survey Type: MANUAL*

3 WK-02-A-03 ENGINEERING CONSULTANTS WARWICKSHIRE
BUDBROOKE ROAD
WARWICK

Edge of Town
Industrial Zone
Total Gross floor area: 796 sqm
*Survey date: WEDNESDAY 23/11/22 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.*

*MANUALLY DESELECTED SITES*

| Site Ref | Reason for Deselection |
|---|---|
| GM-02-A-10 | Covid Site |

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.44

| | ARRIVALS | | | DEPARTURES | | | TOTALS | | |
|---|---|---|---|---|---|---|---|---|---|
| Time Range | 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 | 3 | 842 | 1.742 | 3 | 842 | 0.040 | 3 | 842 | 1.782 |
| 08:00 - 09:00 | 3 | 842 | 3.365 | 3 | 842 | 0.238 | 3 | 842 | 3.603 |
| 09:00 - 10:00 | 3 | 842 | 1.108 | 3 | 842 | 0.396 | 3 | 842 | 1.504 |
| 10:00 - 11:00 | 3 | 842 | 0.554 | 3 | 842 | 0.158 | 3 | 842 | 0.712 |
| 11:00 - 12:00 | 3 | 842 | 0.238 | 3 | 842 | 0.554 | 3 | 842 | 0.792 |
| 12:00 - 13:00 | 3 | 842 | 1.227 | 3 | 842 | 1.821 | 3 | 842 | 3.048 |
| 13:00 - 14:00 | 3 | 842 | 1.742 | 3 | 842 | 0.911 | 3 | 842 | 2.653 |
| 14:00 - 15:00 | 3 | 842 | 0.515 | 3 | 842 | 0.673 | 3 | 842 | 1.188 |
| 15:00 - 16:00 | 3 | 842 | 0.356 | 3 | 842 | 1.069 | 3 | 842 | 1.425 |
| 16:00 - 17:00 | 3 | 842 | 0.396 | 3 | 842 | 2.732 | 3 | 842 | 3.128 |
| 17:00 - 18:00 | 3 | 842 | 0.000 | 3 | 842 | 2.415 | 3 | 842 | 2.415 |
| 18:00 - 19:00 | 2 | 648 | 0.231 | 2 | 648 | 0.849 | 2 | 648 | 1.080 |
| 19:00 - 20:00 | | | | | | | | | |
| 20:00 - 21:00 | | | | | | | | | |
| 21:00 - 22:00 | | | | | | | | | |
| 22:00 - 23:00 | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | |
| Total Rates: | | | 11.474 | | | 11.856 | | | 23.330 |

*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.*

# Appendix F: -

**WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)**



| | |
|---|---|
| population | All usual residents aged 16 and over in employment the week before the census |
| units | Persons |
| date | 2011 |
| place of work | E02001536 : Barnsley 028 (2011 super output area - middle layer) |

| usual residence : 2011 census merged local authority district | All categories: Method of travel to work (2001 specification) | Work mainly at or from home | Underground, metro, light rail or tram | Train | Bus, minibus or coach | Taxi | Motorcycle, scooter or moped | Driving a car or van | Passenger in a car or van | Bicycle | On foot | Other method of travel to work |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barnsley | 1,725 | 0 | 1 | 4 | 135 | 11 | 14 | 1,149 | 154 | 20 | 232 | 5 |
| Sheffield | 649 | 0 | 3 | 2 | 49 | 6 | 6 | 512 | 45 | 8 | 18 | 0 |
| Rotherham | 302 | 0 | 1 | 1 | 9 | 0 | 4 | 262 | 19 | 5 | 0 | 1 |
| Wakefield | 106 | 0 | 0 | 1 | 4 | 1 | 0 | 91 | 5 | 1 | 3 | 0 |
| Kirklees | 95 | 0 | 0 | 0 | 0 | 0 | 0 | 90 | 4 | 0 | 1 | 0 |
| Doncaster | 85 | 0 | 0 | 0 | 3 | 0 | 0 | 76 | 3 | 0 | 3 | 0 |
| Leeds | 72 | 0 | 0 | 3 | 0 | 0 | 0 | 68 | 0 | 0 | 1 | 0 |
| North East Derbyshire | 48 | 0 | 0 | 0 | 1 | 0 | 1 | 45 | 1 | 0 | 0 | 0 |
| Bradford | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 1 | 0 | 0 | 0 |
| Bassetlaw | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 1 | 0 | 2 | 0 |
| Calderdale | 14 | 0 | 0 | 0 | 2 | 0 | 0 | 12 | 0 | 0 | 0 | 0 |
| Chesterfield | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 2 | 0 | 0 | 0 |
| High Peak | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 |
| Bolsover | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 |
| North East Lincolnshire | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 1 | 0 |
| Sefton | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 0 |
| York | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 |
| Stockport | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 |
| Trafford | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 |
| Kingston upon Hull, City | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 |
| Selby | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 |
| Derbyshire Dales | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 |
| Cheshire East | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Tameside | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| East Riding of Yorkshire | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| North Lincolnshire | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| Harrogate | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| Ashfield | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| Newark and Sherwood | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| Bury | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Oldham | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Hambleton | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Amber Valley | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Hartlepool | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Stockton-on-Tees | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Gateshead | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Halton | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Cheshire West and Che | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Preston | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Manchester | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Wigan | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Nottingham | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Erewash | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| West Lindsey | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Corby | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Rushcliffe | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Cannock Chase | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| North Warwickshire | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Sutton | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| South Hams | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Northumberland | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Warrington | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Blackpool | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| South Lakeland | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Chorley | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Bolton | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Rochdale | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Liverpool | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Richmondshire | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Ryedale | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| South Derbyshire | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Blaby | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Charnwood | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| South Northamptonshire | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Lichfield | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Tamworth | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Warwick | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Redditch | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Worcester | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Birmingham | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Walsall | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Peterborough | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Bedford | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| St Albans | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Stevenage | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Reigate and Banstead | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Wiltshire | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Poole | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| West Dorset | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Flintshire | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| | 3,306 | 0 | 5 | 11 | 204 | 18 | 25 | 2,502 | 238 | 35 | 262 | 6 |
| | | 0.0% | 0.2% | 0.3% | 6.2% | 0.5% | 0.8% | 75.7% | 7.2% | 1.1% | 7.9% | 0.2% |

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest geographies.

# Appendix G: -

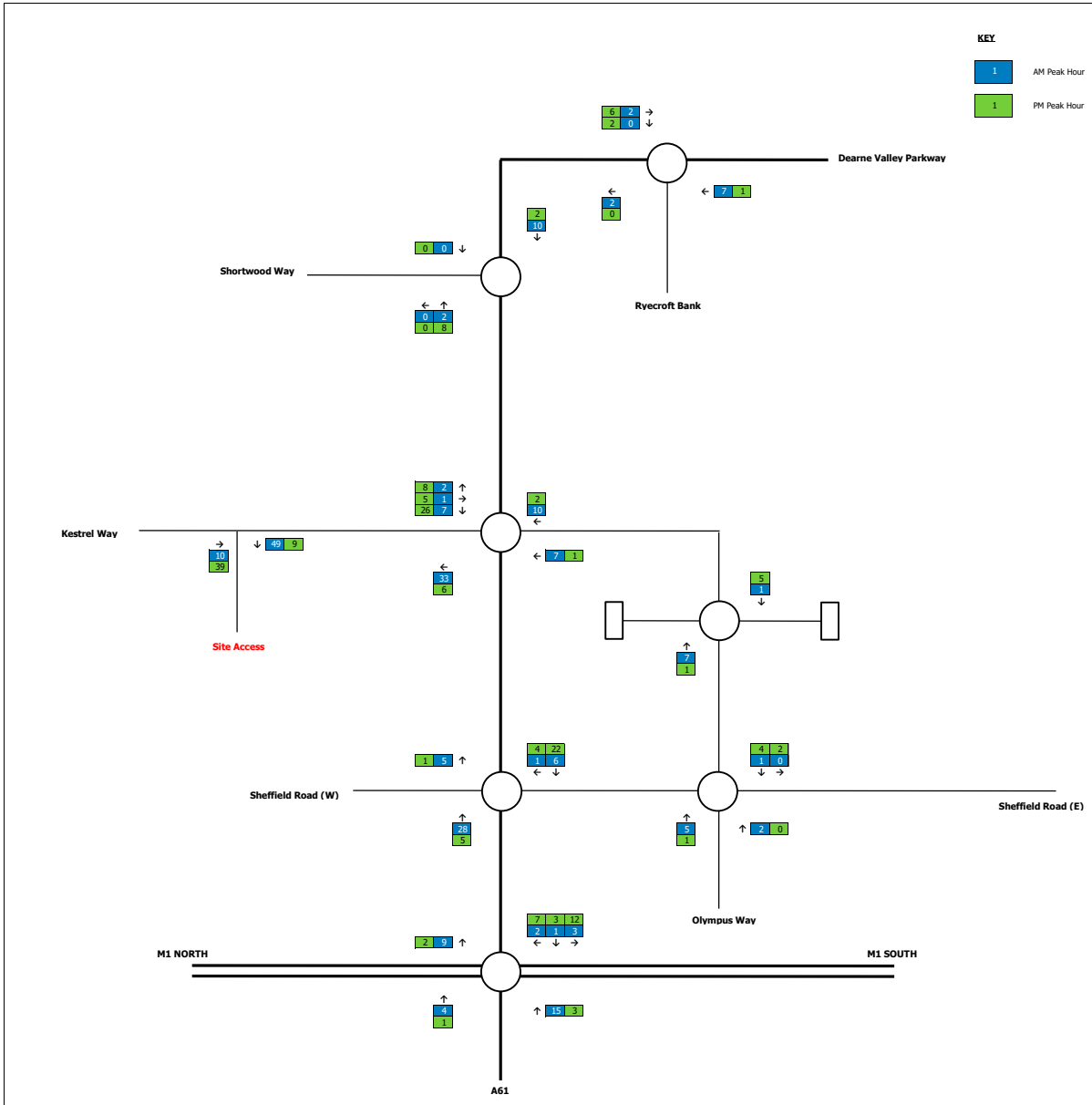
## GRAVITY MODEL

**E02001536 : Barnsley 028 (2011 super output area - middle layer)**



area of employment: Barnsley 028
date: 2011

| area of workplace : pre-2009 local authority: district / unitary | All categories: Method of travel to work (2001 specification) | Driving a car or van | % of allCar Trips | A<br>Dearne Valley Parkway | B<br>Ryecroft Bank | C<br>Shortwood Way | D<br>Sheffield Road (E) | E<br>Olympus Way | F<br>M1 SOUTH | G<br>A61 | H<br>M1 NORTH | I<br>Sheffield Road (W) | TOTAL<br>ALL | A<br>Dearne Valley Parkway | B<br>Ryecroft Bank | C<br>Shortwood Way | D<br>Sheffield Road (E) | E<br>Olympus Way | F<br>M1 SOUTH | G<br>A61 | H<br>M1 NORTH | I<br>Sheffield Road (W) | TOTAL<br>ALL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E02001509 : Barnsley 001 | 16 | 13 | 0.5% | | | | | | | | 50% | 50% | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 13 |
| E02001510 : Barnsley 002 | 24 | 15 | 0.6% | | | | | | | | 50% | 50% | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 8 | 15 |
| E02001511 : Barnsley 003 | 9 | 7 | 0.3% | 100% | | | | | | | | | 100% | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| E02001512 : Barnsley 004 | 43 | 32 | 1.3% | | | | | | | | 100% | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 32 |
| E02001513 : Barnsley 005 | 36 | 30 | 1.2% | | | | | | | | 100% | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 30 |
| E02001514 : Barnsley 006 | 15 | 12 | 0.5% | 100% | | | | | | | | | 100% | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| E02001515 : Barnsley 007 | 22 | 16 | 0.6% | | | | | | | | | 100% | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 16 |
| E02001516 : Barnsley 008 | 31 | 28 | 1.1% | 100% | | | | | | | | | 100% | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| E02001517 : Barnsley 009 | 44 | 37 | 1.5% | | | | | | | | | 100% | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 37 |
| E02001518 : Barnsley 010 | 54 | 36 | 1.4% | | | | | | | | | 100% | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 36 |
| E02001519 : Barnsley 011 | 21 | 11 | 0.4% | | | | | | | | | 100% | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 11 |
| E02001520 : Barnsley 012 | 61 | 54 | 2.2% | | | | | | | | 100% | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 0 | 54 |
| E02001521 : Barnsley 013 | 64 | 48 | 1.9% | | | | | | | | 50% | 50% | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 24 | 48 |
| E02001522 : Barnsley 014 | 19 | 14 | 0.6% | 100% | | | | | | | | | 100% | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| E02001523 : Barnsley 015 | 37 | 30 | 1.2% | | | | | | | | 50% | 50% | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 15 | 30 |
| E02001524 : Barnsley 016 | 33 | 32 | 1.3% | | | | | | | | 50% | 50% | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 16 | 32 |
| E02001525 : Barnsley 017 | 34 | 21 | 0.8% | | | | | | | | 50% | 50% | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 11 | 21 |
| E02001526 : Barnsley 018 | 26 | 21 | 0.8% | | | | | | | | | 100% | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 21 |
| E02001527 : Barnsley 019 | 39 | 37 | 1.5% | | | | | | | | 100% | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 37 |
| E02001528 : Barnsley 020 | 39 | 35 | 1.4% | 100% | | | | | | | | | 100% | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| E02001529 : Barnsley 021 | 85 | 57 | 2.3% | | | | | | | | | 100% | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57 | 57 |
| E02001530 : Barnsley 022 | 8 | 8 | 0.3% | 100% | | | | | | | | | 100% | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| E02001531 : Barnsley 023 | 42 | 30 | 1.2% | 100% | | | | | | | | | 100% | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| E02001532 : Barnsley 024 | 63 | 55 | 2.2% | | | | | | | 100% | | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 55 | 0 | 0 | 55 |
| E02001533 : Barnsley 025 | 13 | 10 | 0.4% | 100% | | | | | | | | | 100% | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| E02001534 : Barnsley 026 | 58 | 46 | 1.8% | 100% | | | | | | | | | 100% | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| E02001535 : Barnsley 027 | 40 | 34 | 1.4% | | | | | | | 100% | | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 0 | 34 |
| E02001536 : Barnsley 028 | 363 | 182 | 7.3% | | 34% | | 33% | 33% | | | | | 100% | 0 | 62 | 0 | 60 | 60 | 0 | 0 | 0 | 0 | 182 |
| E02001537 : Barnsley 029 | 168 | 86 | 3.4% | 100% | | | | | | | | | 100% | 86 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 86 |
| E02001538 : Barnsley 030 | 219 | 112 | 4.5% | | 34% | | 33% | 33% | | | | | 100% | 0 | 38 | 0 | 37 | 37 | 0 | 0 | 0 | 0 | 112 |
| Sheffield | 649 | 512 | 20.5% | | | | | | 100% | | | | 100% | 0 | 0 | 0 | 0 | 0 | 512 | 0 | 0 | 0 | 512 |
| Rotherham | 302 | 262 | 10.5% | | | | | 50% | 50% | | | | 100% | 0 | 0 | 0 | 0 | 131 | 131 | 0 | 0 | 0 | 262 |
| Wakefield | 106 | 91 | 3.6% | | | | | | | | 100% | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 91 | 0 | 91 |
| Kirklees | 95 | 90 | 3.6% | | | | | | | 100% | | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 90 | 0 | 0 | 90 |
| Doncaster | 85 | 76 | 3.0% | 100% | | | | | | | | | 100% | 76 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| Leeds | 72 | 68 | 2.7% | | | | | | | | 100% | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 68 | 0 | 68 |
| North East Derbyshire | 48 | 45 | 1.8% | | | | | | 100% | | | | 100% | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 0 | 45 |
| Bradford | 15 | 14 | 0.6% | | | | | | | | 100% | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 |
| Bassetlaw | 15 | 12 | 0.5% | | | | | | 100% | | | | 100% | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 12 |
| Calderdale | 14 | 12 | 0.5% | | | | | | | | 100% | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 12 |
| Chesterfield | 12 | 10 | 0.4% | | | | | | 100% | | | | 100% | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 10 |
| High Peak | 10 | 10 | 0.4% | | | | | | | 100% | | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 10 |
| Bolsover | 9 | 9 | 0.4% | | | | | | 100% | | | | 100% | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 9 |
| North East Lincolnshire | 8 | 6 | 0.2% | 100% | | | | | | | | | 100% | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| York | 6 | 6 | 0.2% | | | | | | | | 100% | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 |
| Sefton | 6 | 5 | 0.2% | | | | | | | 100% | | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 |
| Trafford | 5 | 5 | 0.2% | | | | | | | 100% | | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 |
| Kingston upon Hull, City of | 5 | 5 | 0.2% | | | | | | | | 100% | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 |
| Selby | 5 | 5 | 0.2% | 100% | | | | | | | | | 100% | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Derbyshire Dales | 5 | 5 | 0.2% | | | | | | 100% | | | | 100% | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 5 |
| Stockport | 4 | 4 | 0.2% | | | | | | | 100% | | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 |
| Tameside | 4 | 4 | 0.2% | | | | | | | 100% | | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 |
| East Riding of Yorkshire | 4 | 4 | 0.2% | 50% | | | | | 50% | | | | 100% | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 4 |
| North Lincolnshire | 4 | 4 | 0.2% | 50% | | | | | 50% | | | | 100% | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 4 |
| Harrogate | 4 | 4 | 0.2% | | | | | | | | 100% | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 |
| Ashfield | 4 | 4 | 0.2% | | | | | | 100% | | | | 100% | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 |
| Newark and Sherwood | 4 | 4 | 0.2% | | | | | | 100% | | | | 100% | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 |
| Cheshire East | 4 | 3 | 0.1% | | | | | | | 100% | | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 |
| Bury | 3 | 3 | 0.1% | | | | | | | 100% | | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 |
| Oldham | 3 | 3 | 0.1% | | | | | | | 100% | | | 100% | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 |
| Hambleton | 3 | 3 | 0.1% | 50% | | | | | | | 50% | | 100% | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 |
| Amber Valley | 3 | 3 | 0.1% | | | | | | 100% | | | | 100% | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 |
| **AUTHORITIES WITH <3 DISREGARDED** | | | | | | | | | | | | | | | | | | | | | | | |
| Hartlepool | 2 | 2 | 0.1% | | | | | | | | | | | | | | | | | | | | |
| Stockton-on-Tees | 2 | 2 | 0.1% | | | | | | | | | | | | | | | | | | | | |
| Gateshead | 2 | 2 | 0.1% | | | | | | | | | | | | | | | | | | | | |
| Halton | 2 | 2 | 0.1% | | | | | | | | | | | | | | | | | | | | |
| Cheshire West and Chester | 2 | 2 | 0.1% | | | | | | | | | | | | | | | | | | | | |
| Preston | 2 | 2 | 0.1% | | | | | | | | | | | | | | | | | | | | |
| Manchester | 2 | 2 | 0.1% | | | | | | | | | | | | | | | | | | | | |
| Wigan | 2 | 2 | 0.1% | | | | | | | | | | | | | | | | | | | | |
| Nottingham | 2 | 2 | 0.1% | | | | | | | | | | | | | | | | | | | | |
| Erewash | 2 | 2 | 0.1% | | | | | | | | | | | | | | | | | | | | |
| West Lindsey | 2 | 2 | 0.1% | | | | | | | | | | | | | | | | | | | | |
| Corby | 2 | 2 | 0.1% | | | | | | | | | | | | | | | | | | | | |
| Rushcliffe | 2 | 2 | 0.1% | | | | | | | | | | | | | | | | | | | | |
| Cannock Chase | 2 | 2 | 0.1% | | | | | | | | | | | | | | | | | | | | |
| North Warwickshire | 2 | 2 | 0.1% | | | | | | | | | | | | | | | | | | | | |
| Sutton | 2 | 2 | 0.1% | | | | | | | | | | | | | | | | | | | | |
| South Hams | 2 | 2 | 0.1% | | | | | | | | | | | | | | | | | | | | |
| Northumberland | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Warrington | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Blackpool | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| South Lakeland | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Chorley | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Bolton | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Rochdale | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Liverpool | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Richmondshire | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Ryedale | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| South Derbyshire | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Blaby | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Charnwood | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| South Northamptonshire | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Lichfield | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Tamworth | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Warwick | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Redditch | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Worcester | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Birmingham | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Walsall | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Peterborough | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Bedford | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| St Albans | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Stevenage | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Reigate and Banstead | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Wiltshire | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Flintshire | 1 | 1 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| Poole | 1 | 0 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| West Dorset | 1 | 0 | 0.0% | | | | | | | | | | | | | | | | | | | | |
| **Total** | **3,306** | **2,502** | **100%** | | | | | | | | | | | | | | | | | | | | |
| Total (less disregarded areas) | 3,178 | 2,378 | **98%** | | | | | | | | | | | **369** | **100** | **0** | **97** | **228** | **739** | **216** | **434** | **258** | **2,440** |
| | | | | | | | | | | | | | | **15.1%** | **4.1%** | **0.0%** | **4.0%** | **9.3%** | **30.3%** | **8.9%** | **17.8%** | **10.6%** | **100.0%** |




**Notes**

All Flows Provided in PCUs

Diagram 01: Development Distribution

Project Title: Land West of Dearne Valley Parkway, Birdwell, Barnsley

Roberts Highway Consultants

# Appendix H: -

Barnsley, Tuesday 23rd May 2023

**Junction:** 1

**U-Turn**

**Vehicle Class:** All Vehicles

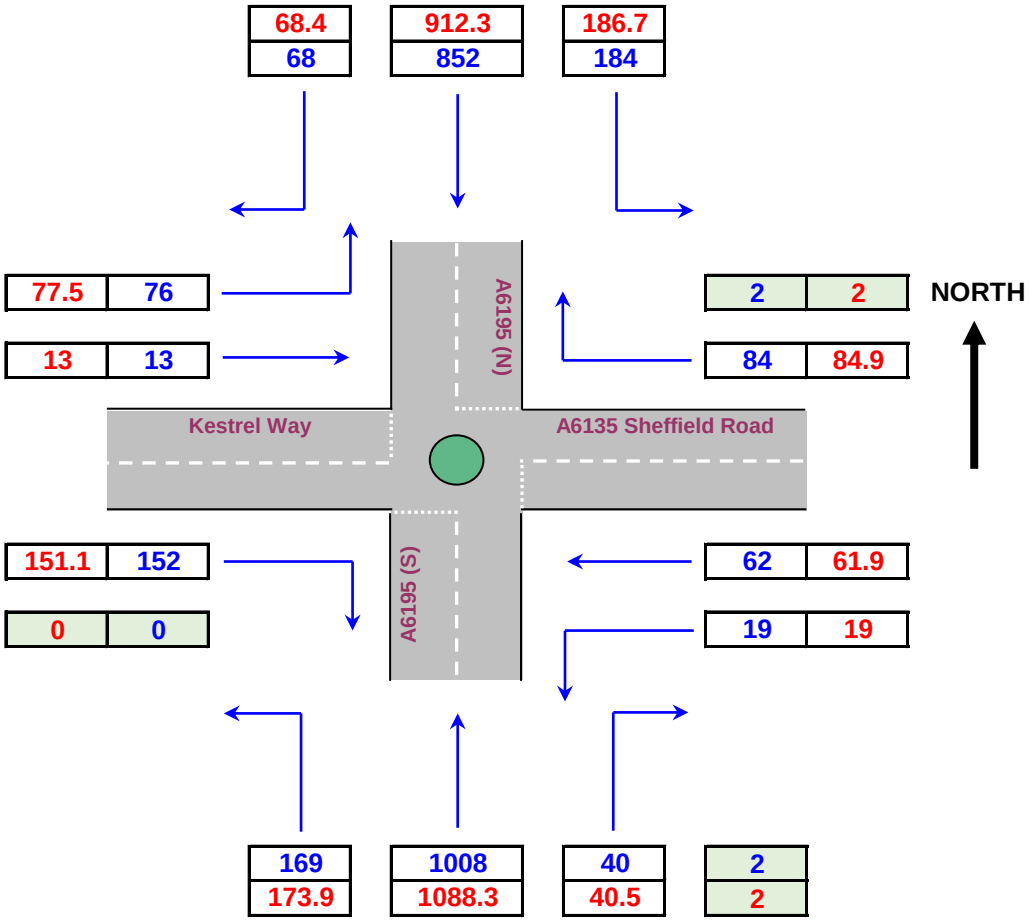
**Start Time:** 1) 08:00

**End Time:** 1) 09:00

**Show Peak Hour:** ☐

**Show PCUs:** ☑

Show Session 2



Barnsley, Tuesday 23rd May 2023

**Junction:** 1

**U-Turn**

**Vehicle Class:** All Vehicles

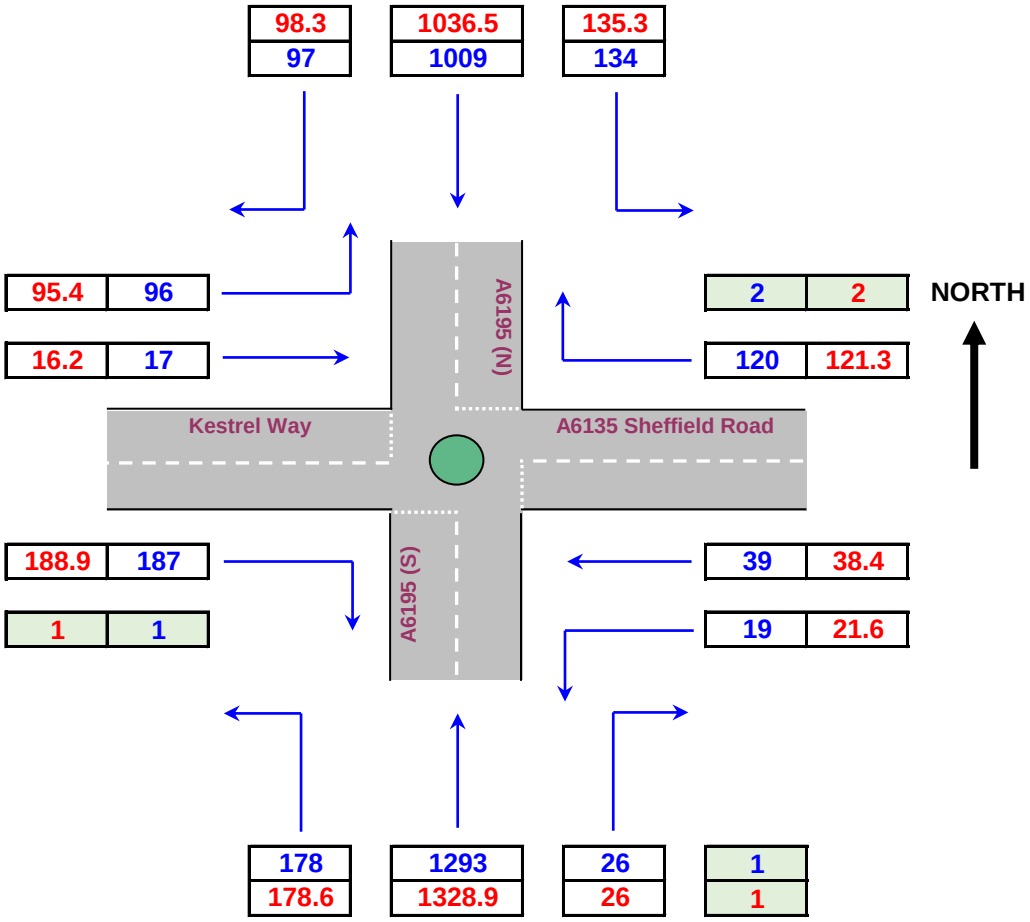
**Start Time:** 2) 16:30

**End Time:** 2) 17:30

**Show Peak Hour:** ☐

**Show PCUs:** ☑

Show Session 2



Barnsley, Tuesday 23rd May 2023

**Junction:** 2

**U-Turn**

**Vehicle Class:** All Vehicles

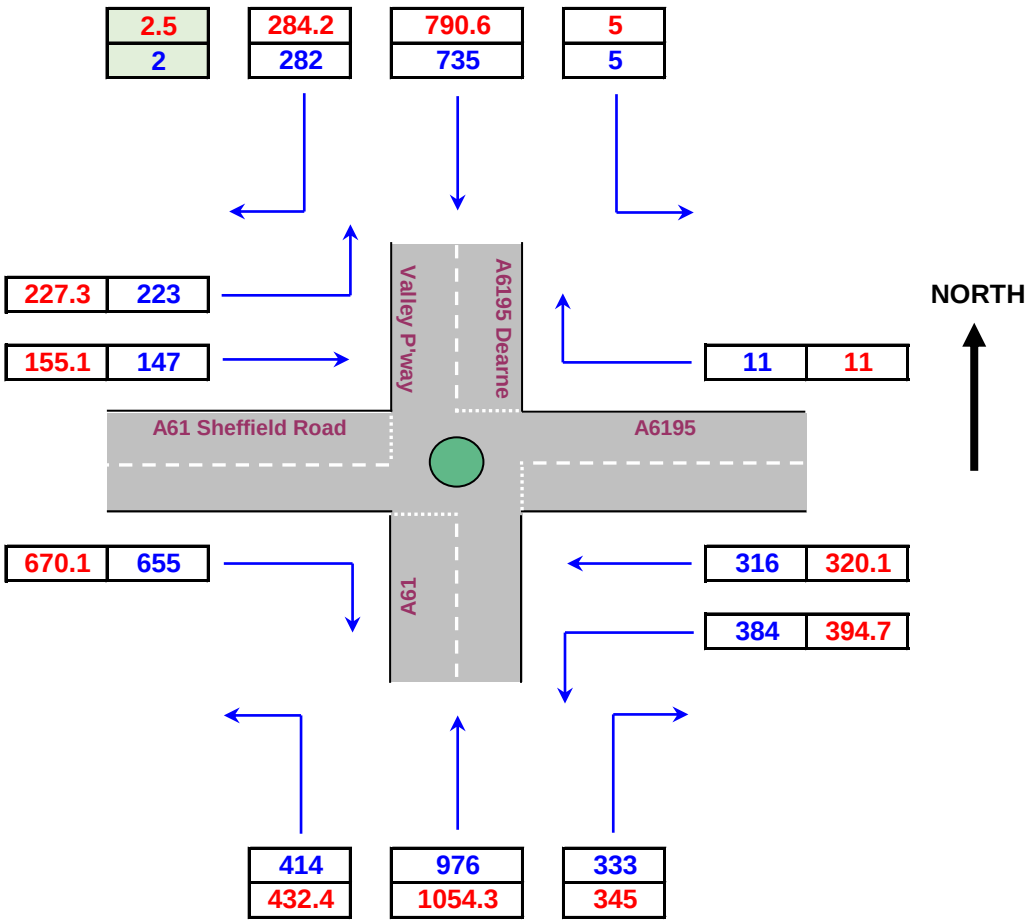
**Start Time:** 1) 08:00

**End Time:** 1) 09:00

**Show Peak Hour:** ☐

**Show PCUs:** ☑

Show Session 2



Barnsley, Tuesday 23rd May 2023

**Junction:** 2

**U-Turn**

**Vehicle Class:** All Vehicles

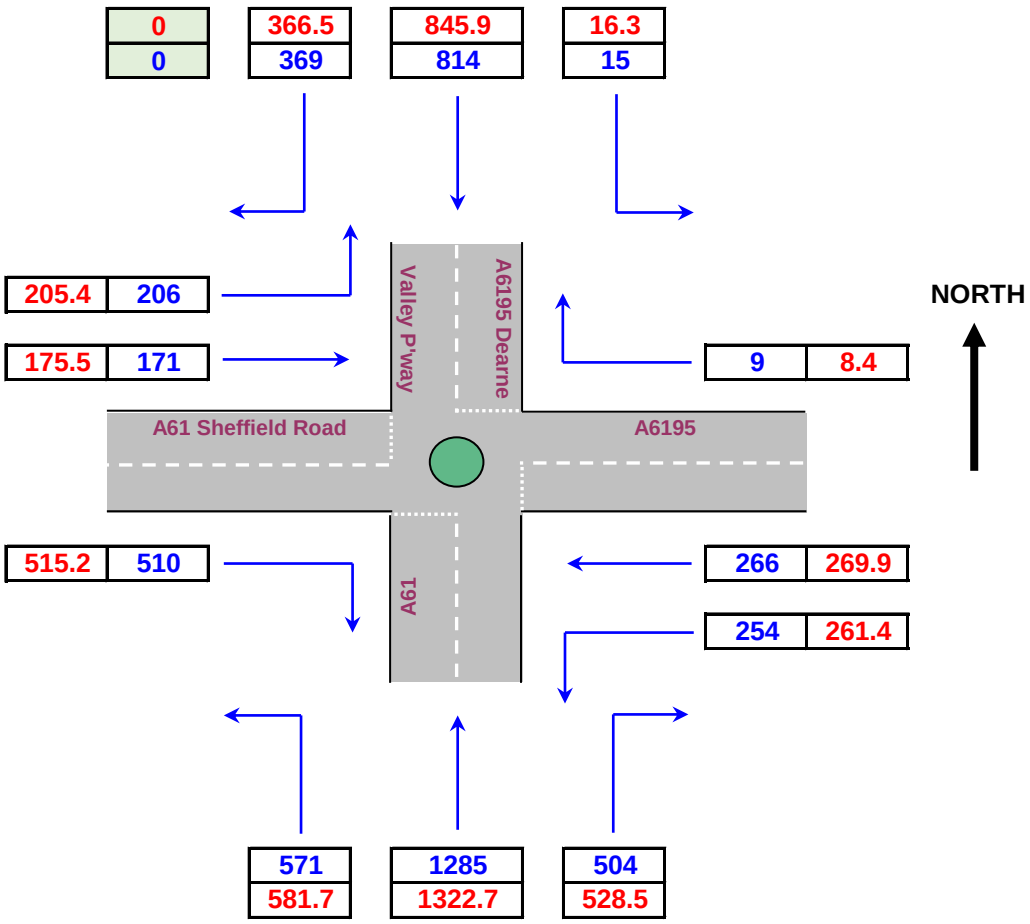
**Start Time:** 2) 16:30

**End Time:** 2) 17:30

**Show Peak Hour:** ☐

**Show PCUs:** ☑

Show Session 2



Barnsley, Tuesday 23rd May 2023

**Junction:** 3

**Vehicle Class:** All Vehicles

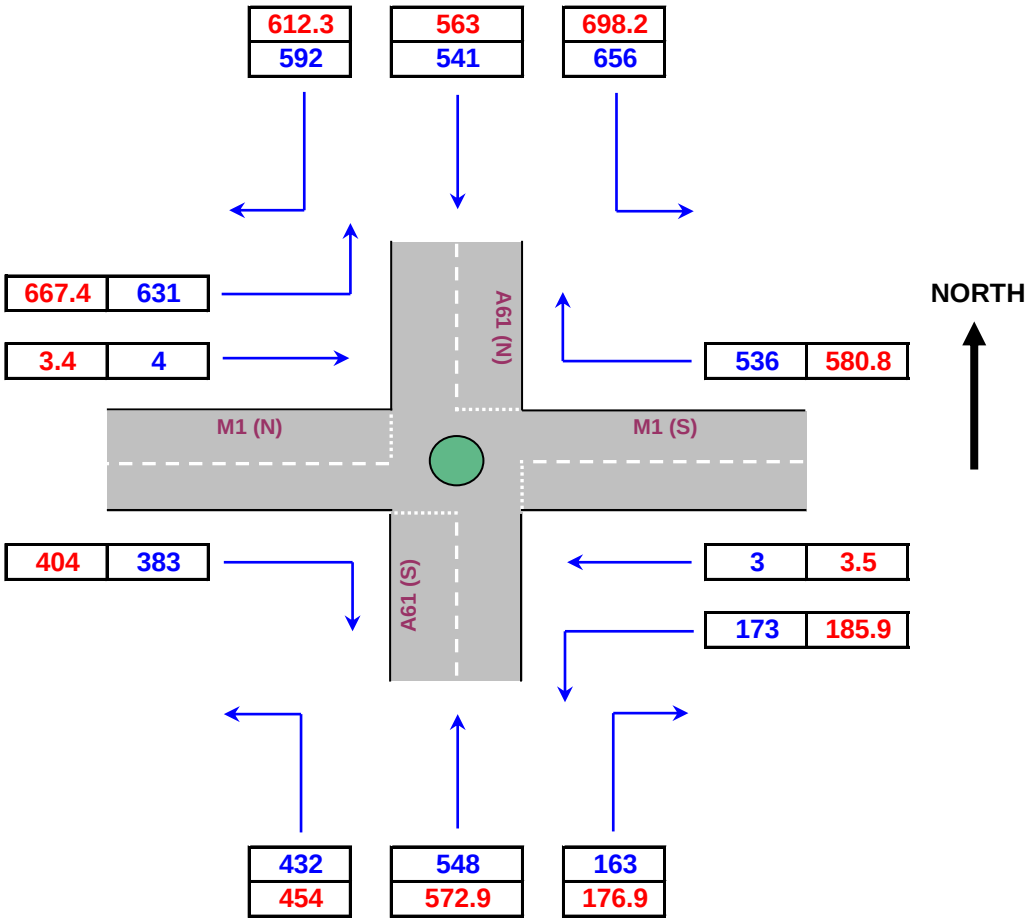
**Start Time:** 1) 08:00

**End Time:** 1) 09:00

**Show Peak Hour:** ☐

**Show PCUs:** ☑

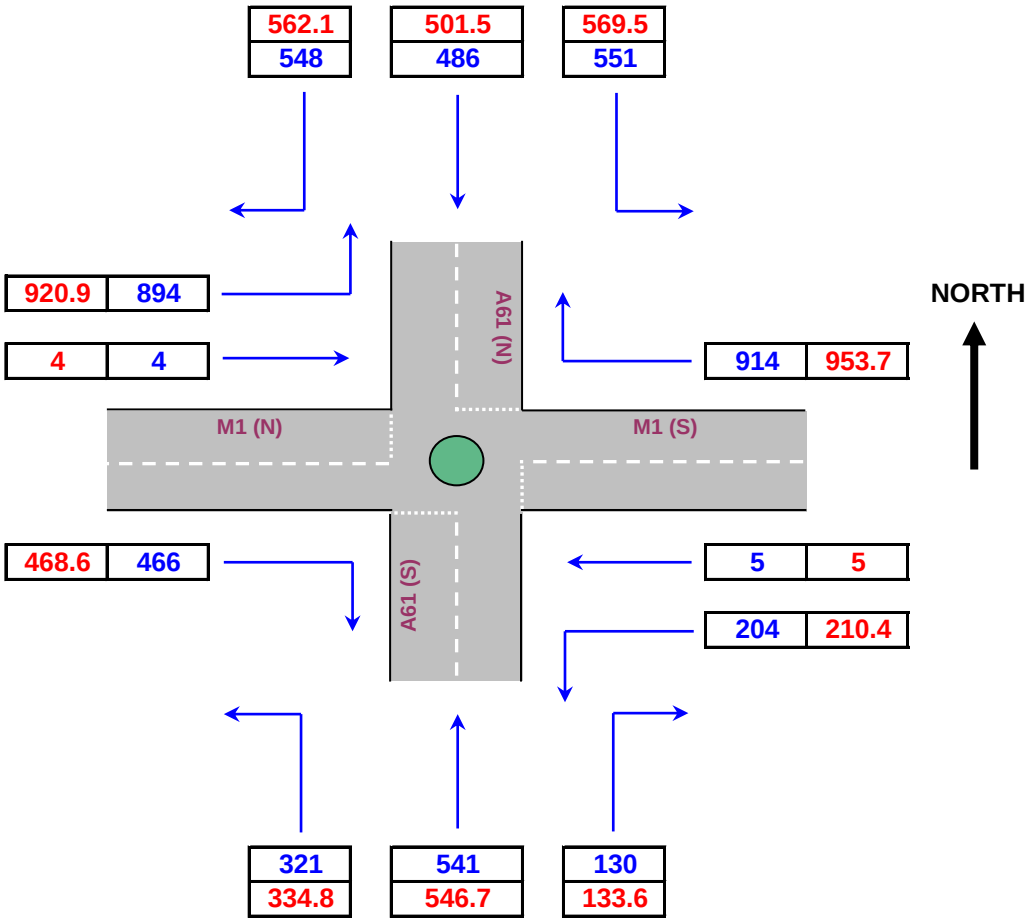
Show Session 2



Barnsley, Tuesday 23rd May 2023

**Junction:** 3

| | | | |
|---|---|---|---|
| **Vehicle Class:** | All Vehicles | **Show Peak Hour:** | ☐ |
| **Start Time:** | 2) 16:30 | **Show PCUs:** | ☑ |
| **End Time:** | 2) 17:30 | Show Session 2 | |



# Appendix I: -

# Video Log

**Plate 1**: Incident on M1 southbound resulting in slip road queuing (40mph sign lit) 07:43


**Plate 2**: M1 southbound queue clear at 07:55. Queue duration 17 minutes (40mph sign still lit)

# Video Log

**Plate 3**: M1 incident resulting in queues back to the Rockingham Roundabout at 07:52

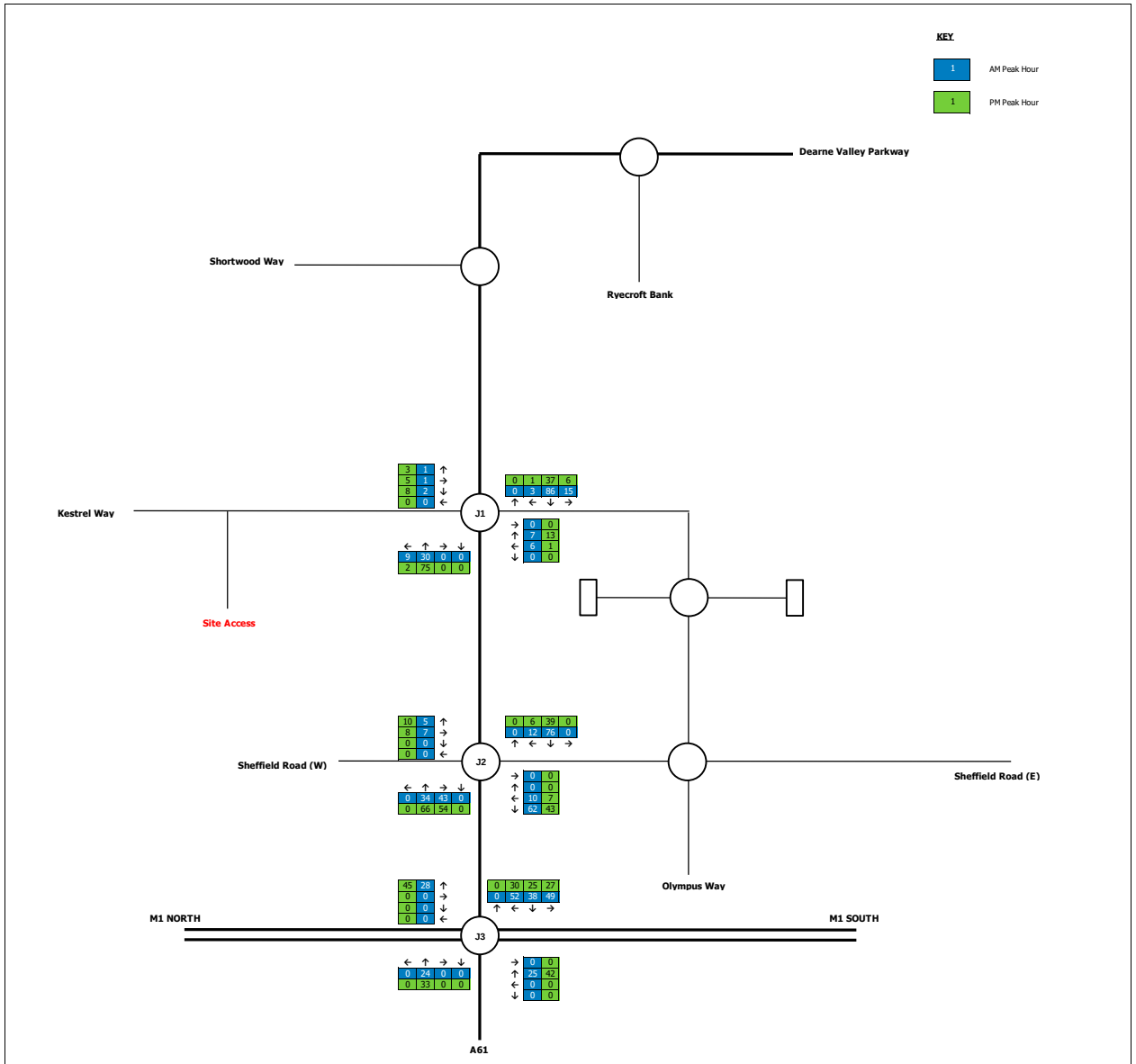

**Plate 4**: Rockingham Roundabout Queue Clear at 08:15 (duration 23 minutes)

# Video Log

**Plate 5**: No incident on M1 during the PM peak hours, with junction (and network) clear.


**Plate 6**: Rockingham Roundabout operating clear with no queues.

# Appendix J: -




**Notes**

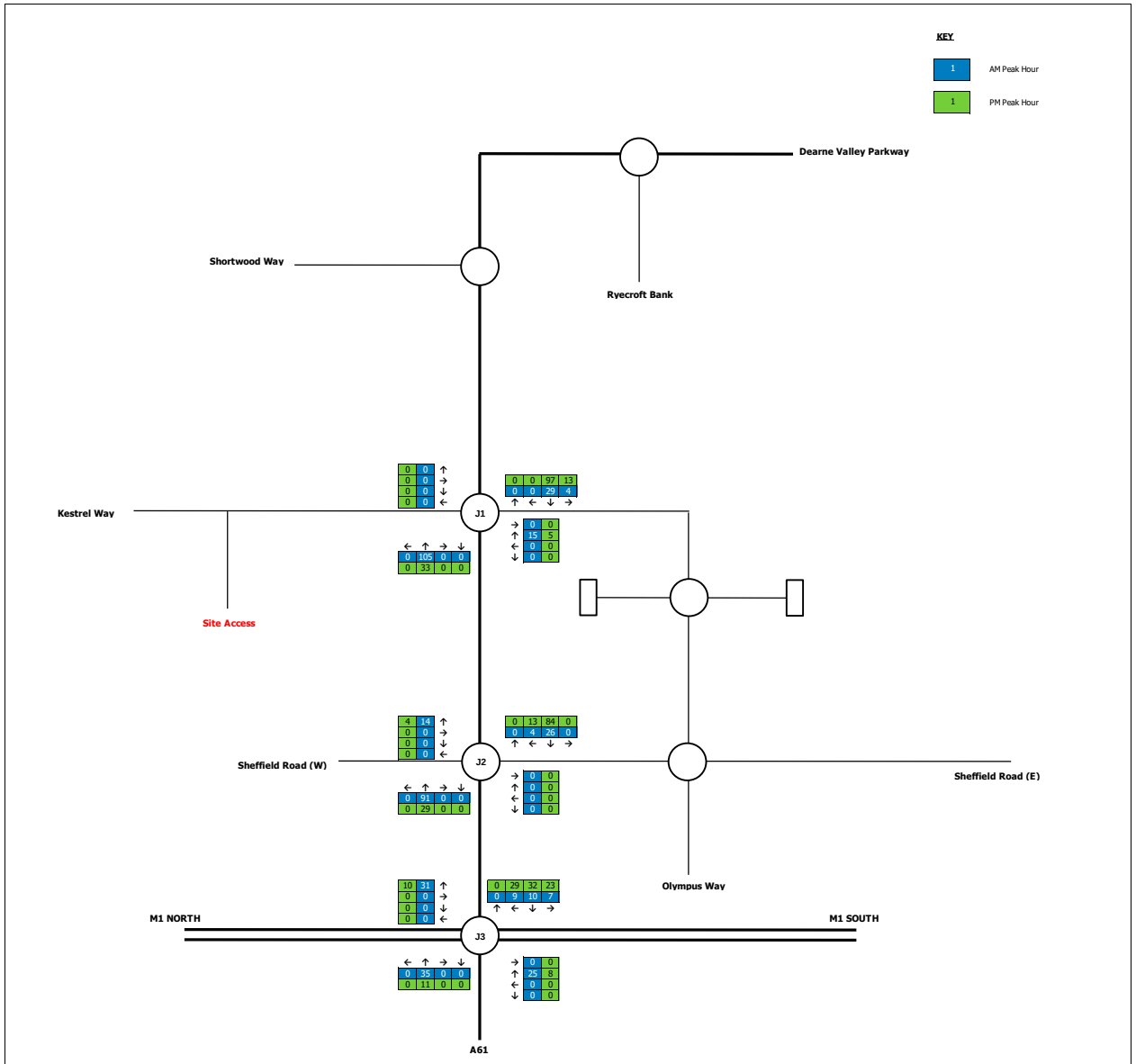
All Flows Provided in PCUs

Information Obtained From Mosodi Transport Assessment Ref: 18005 May 2020 Figures 57 & 58 (ES14 All Sites, HS56, HS64, HS66)

Diagram 05: Committed Development 'Total Hoyland North Masterplan Area' Trip Generation

Project Title: Land West of Dearne Valley Parkway, Birdwell, Barnsley

Roberts Highway Consultants




**Notes**

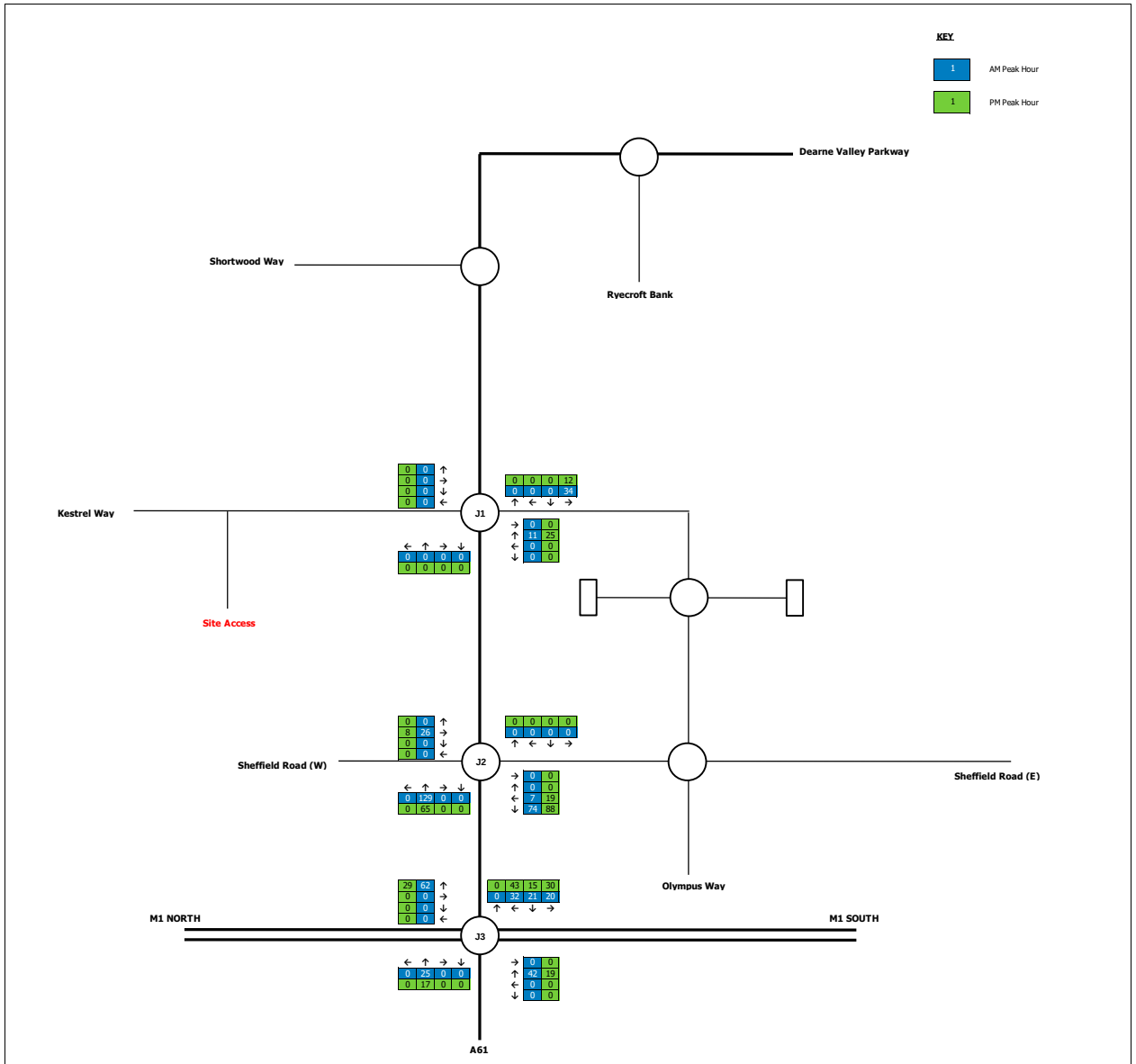
All Flows Provided in PCUs

Information Obtained From Mosodi Transport Assessment Ref: 18005 May 2020 Figures 28 & 29

Diagram 06: Committed Development 'Total Development Traffic ES14, ES15 & ES17'

Project Title: Land West of Dearne Valley Parkway, Birdwell, Barnsley

Roberts Highway Consultants




**Notes**

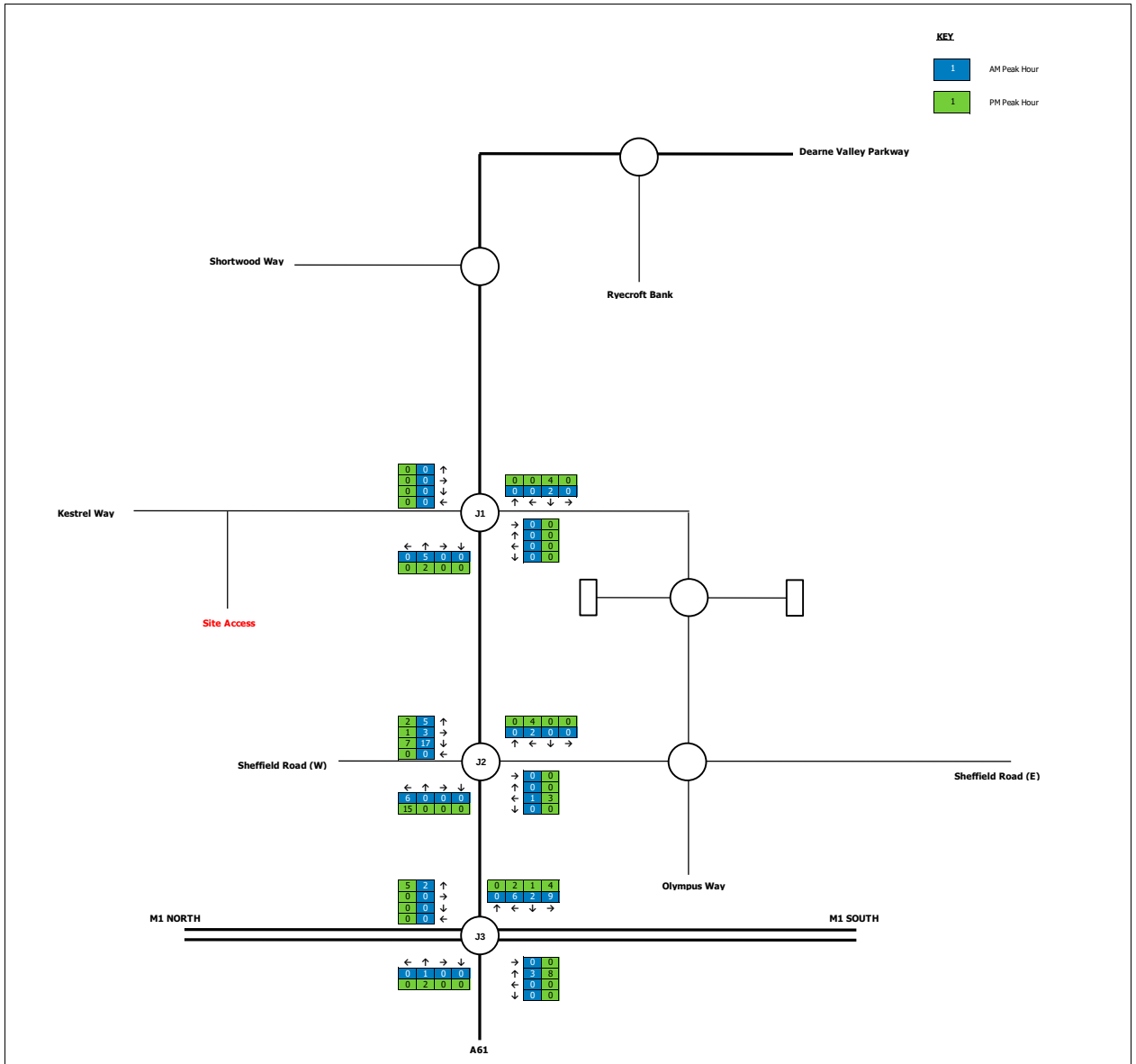
All Flows Provided in PCUs

Information Obtained From FORE Transport Assessment Ref: 3560 October 2020 Rev C Figures 6 & 7 (ES13 & HS57)

Diagram 07: Committed Development 'Total Hoyland West Development Traffic'

Project Title: Land West of Dearne Valley Parkway, Birdwell, Barnsley

Roberts Highway Consultants




**Notes**

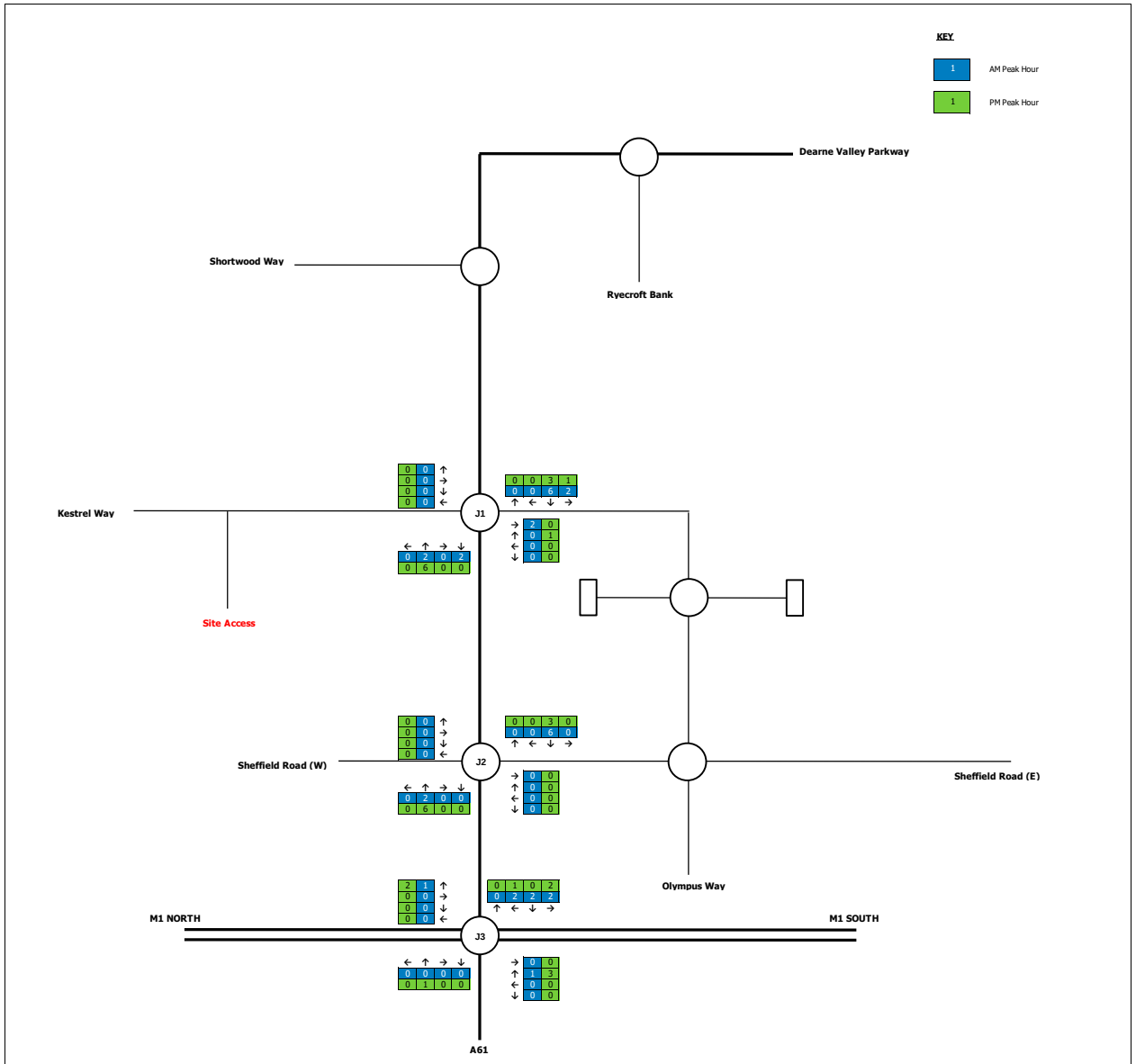
All Flows Provided in PCUs

Information Obtained From Mosodi Transport Assessment Ref: 18039 January 2021 (Rev 3) Figures 13 & 14

Diagram 08: Committed Development 'HS59'

Project Title: Land West of Dearne Valley Parkway, Birdwell, Barnsley

Roberts Highway Consultants




**Notes**

All Flows Provided in PCUs

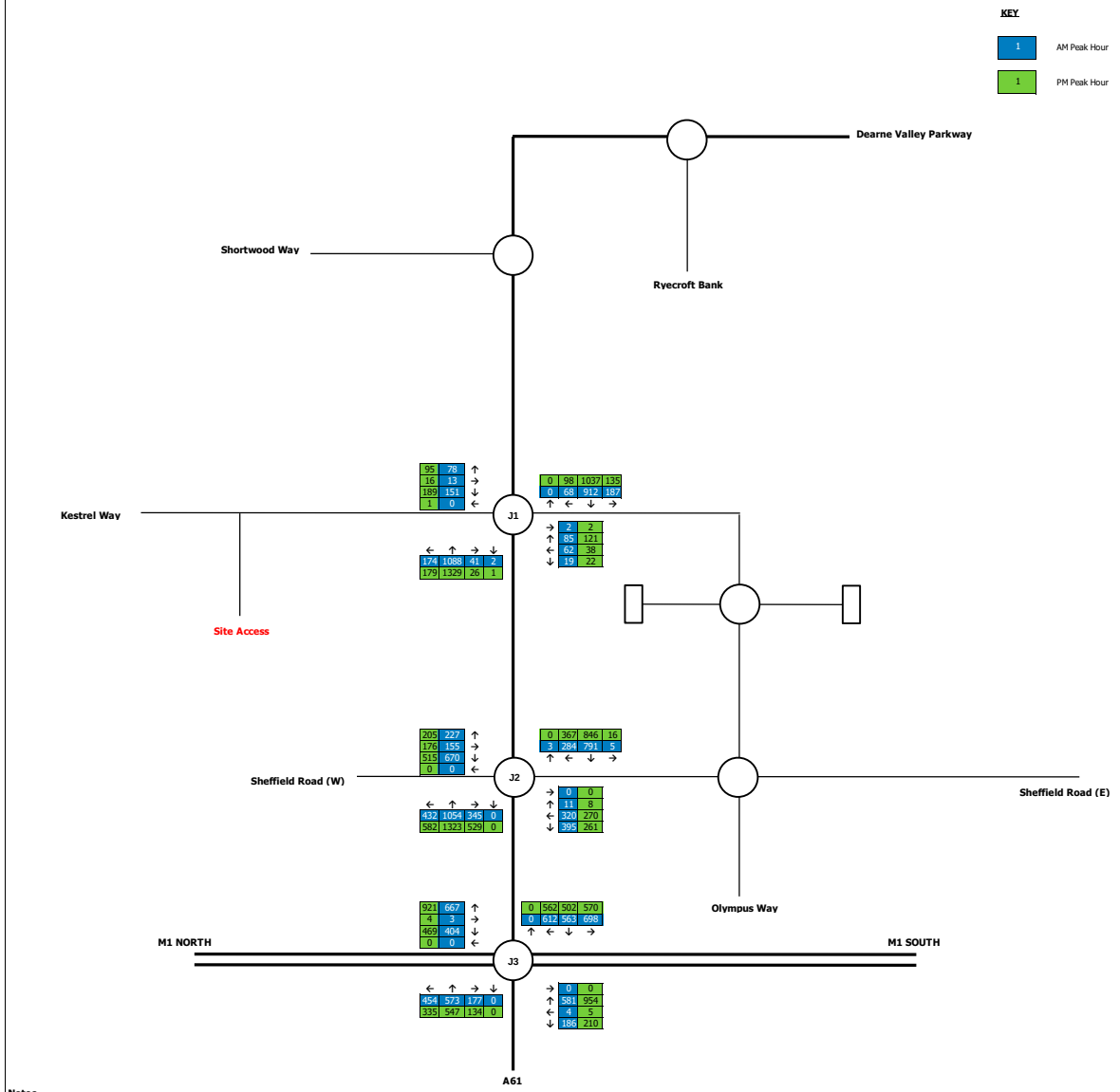
Information Obtained From Via Solutions Transport Assessment Ref: 21002 May 2021 Figures 6 & 7

Diagram 09: Committed Development 'Land North of Wood Walk, Platts Common'

Project Title: Land West of Dearne Valley Parkway, Birdwell, Barnsley

Roberts Highway Consultants

# Appendix K: -




**Notes**

All Flows Provided in PCUs

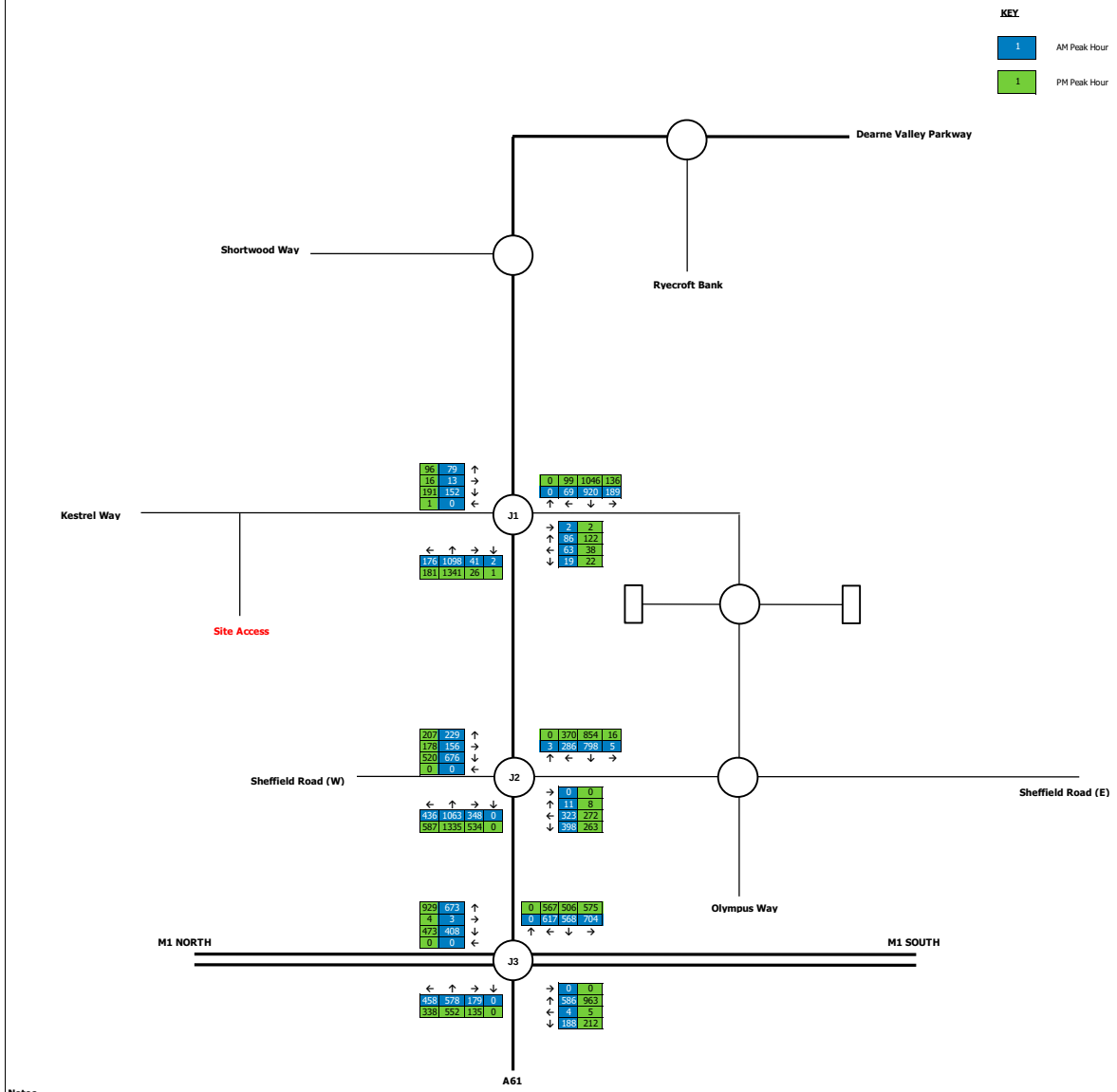
Network Peak Hours 08:00-09:00 & 16:30-17:30

Traffic Data Provided by PCC Ltd 23rd May 2023

Diagram 02: 2023 Base Flows

Project Title: Land West of Dearne Valley Parkway, Birdwell, Barnsley

Roberts Highway Consultants




**Notes**

All Flows Provided in PCUs

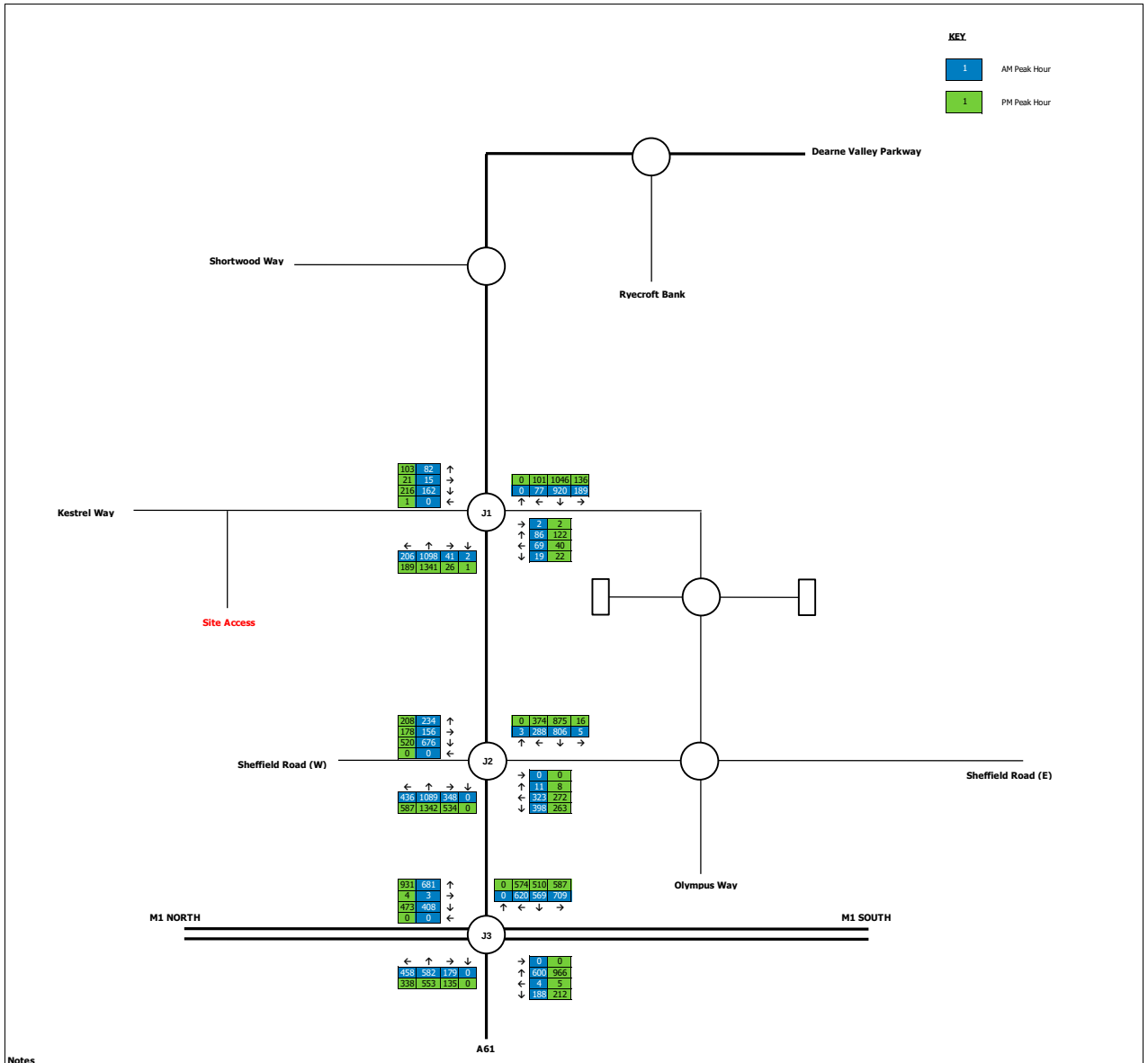
Network Peak Hours 08:00-09:00 & 16:30-17:30

Traffic Data Provided by PCC Ltd 23rd May 2023

Diagram 03: 2024 Opening Year (Do Minimum)

Project Title: Land West of Dearne Valley Parkway, Birdwell, Barnsley

Roberts Highway Consultants




**Notes**

All Flows Provided in PCUs

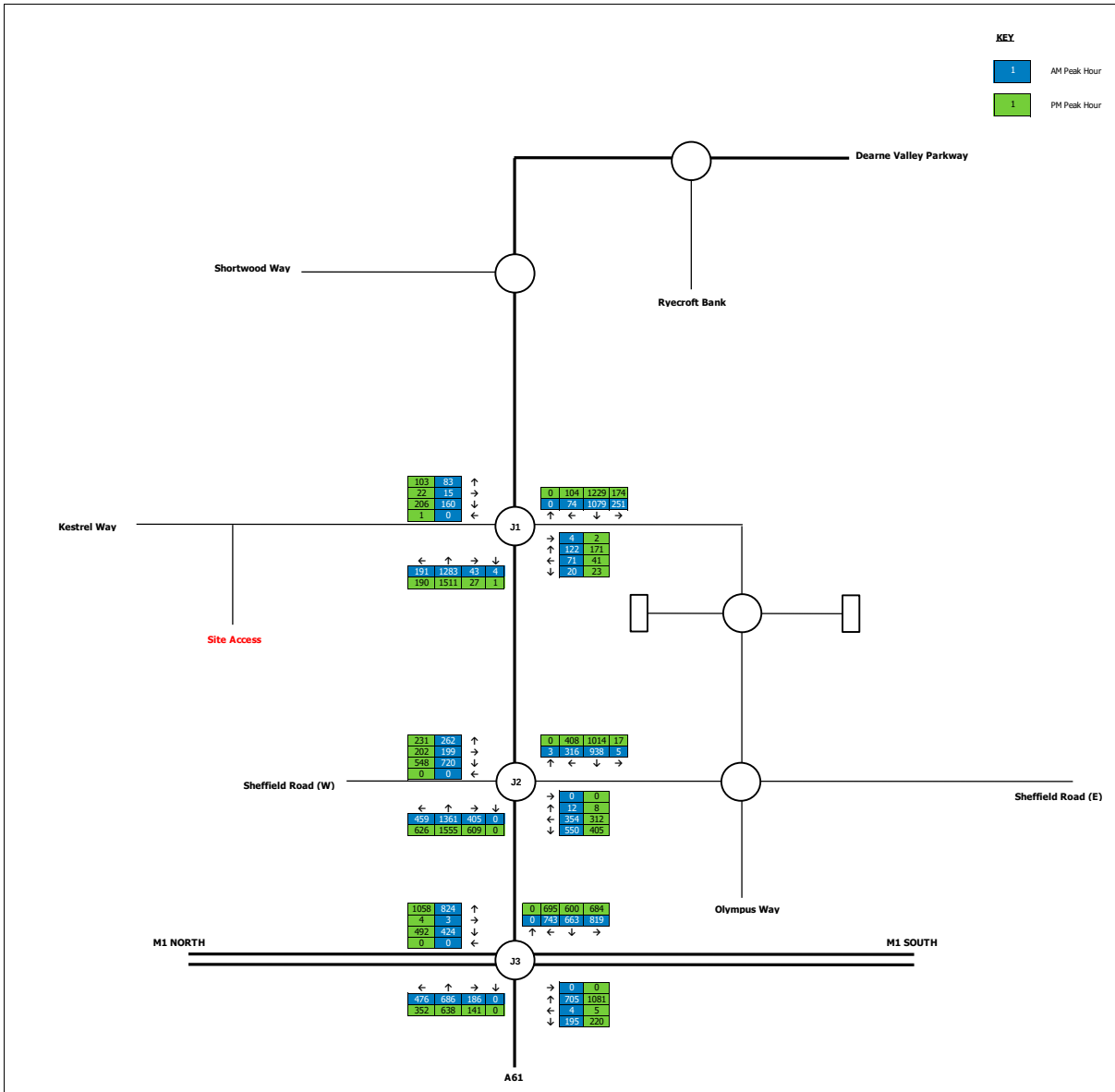
Network Peak Hours 08:00-09:00 & 16:30-17:30

Traffic Data Provided by PCC Ltd 23rd May 2023

Diagram 04: 2024 Opening Year (Do Something)

Project Title: Land West of Dearne Valley Parkway, Birdwell, Barnsley

Roberts Highway Consultants



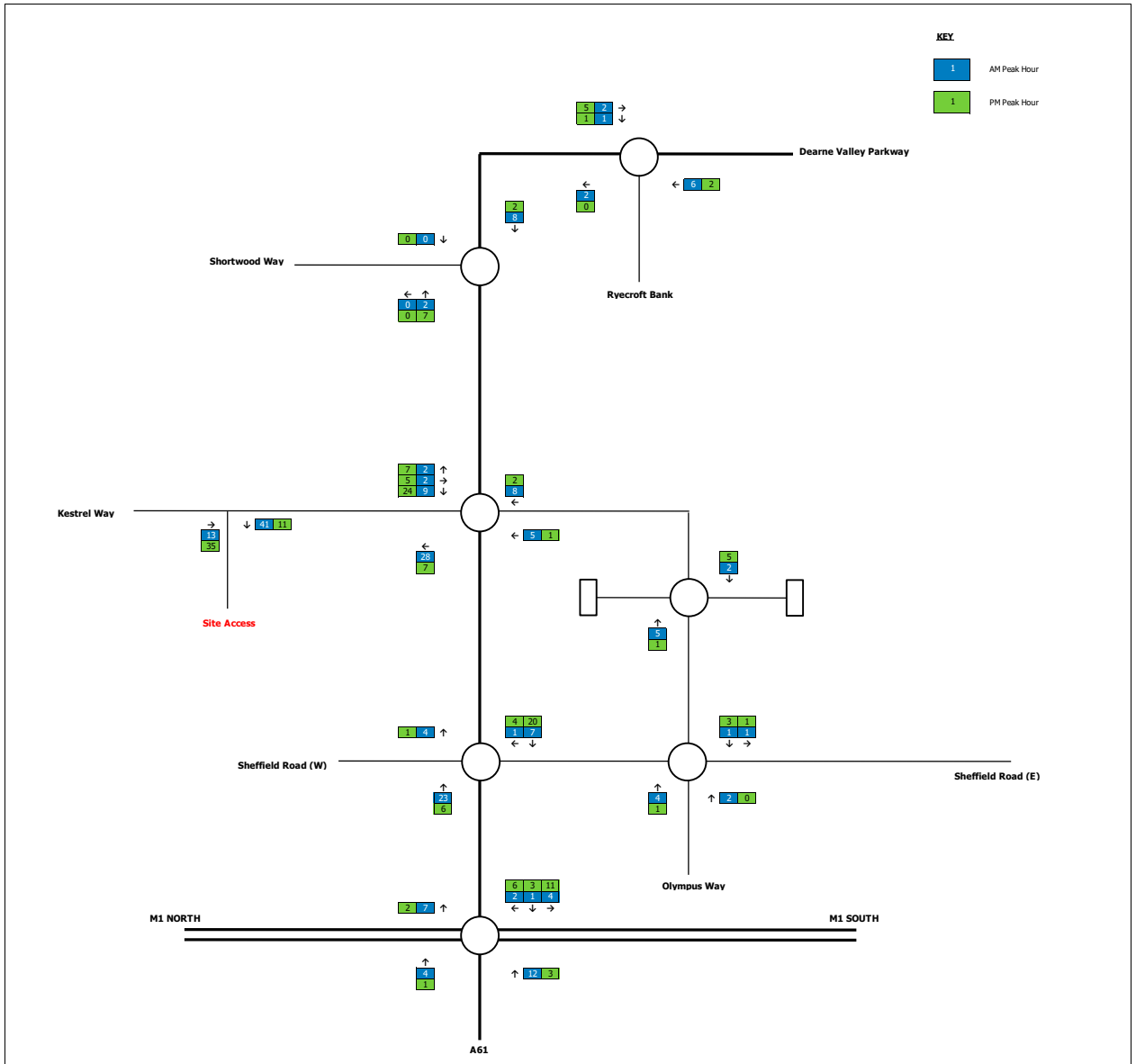

**Notes**

All Flows Provided in PCUs

Diagram 10: 2029 Do Minimum

Project Title: Land West of Dearne Valley Parkway, Birdwell, Barnsley

Roberts Highway Consultants



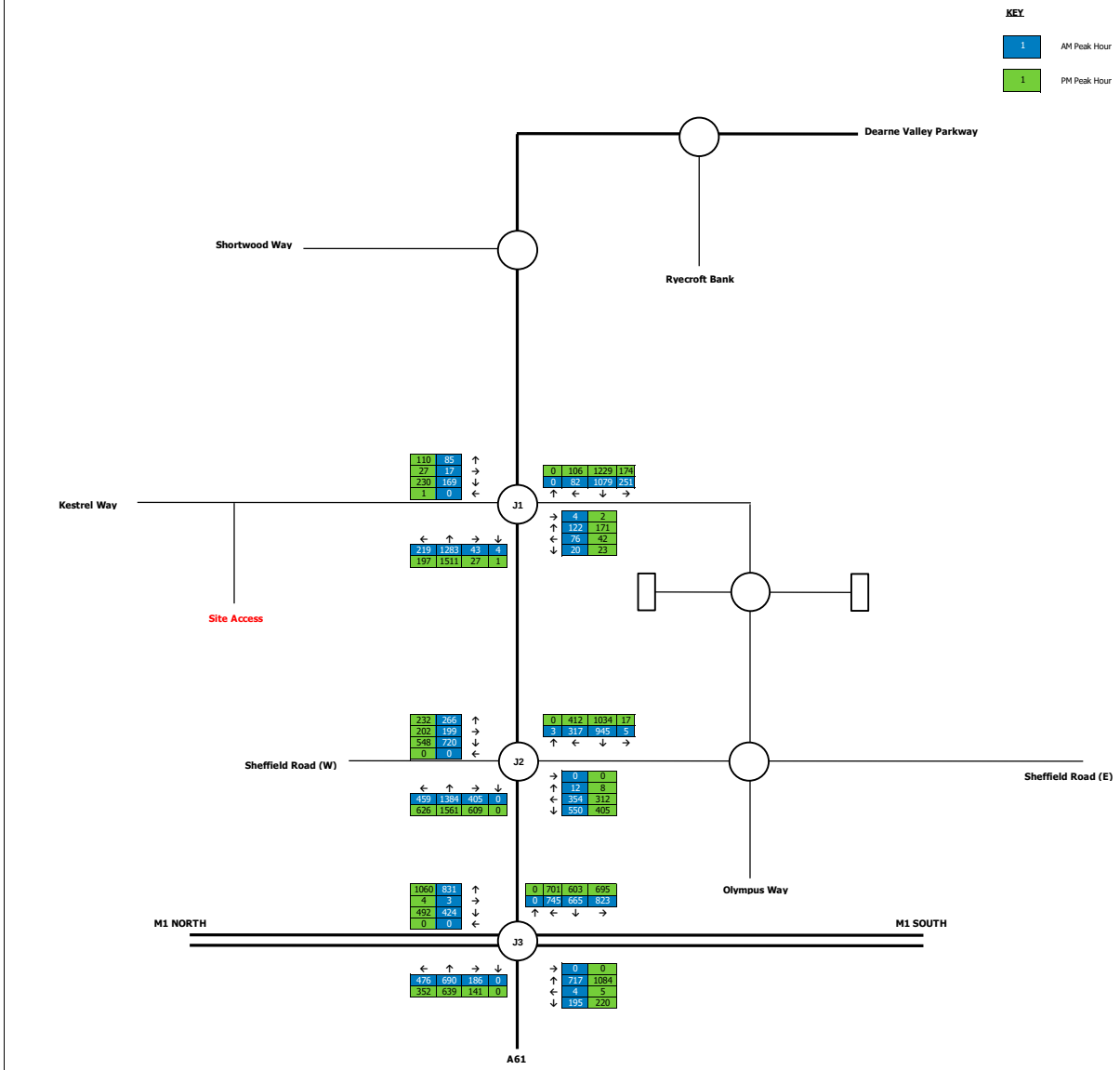

**Notes**

All Flows Provided in PCUs

Diagram 11: Development Distribution With Travel Plan Targets

Project Title: Land West of Dearne Valley Parkway, Birdwell, Barnsley

Roberts Highway Consultants




**Notes**

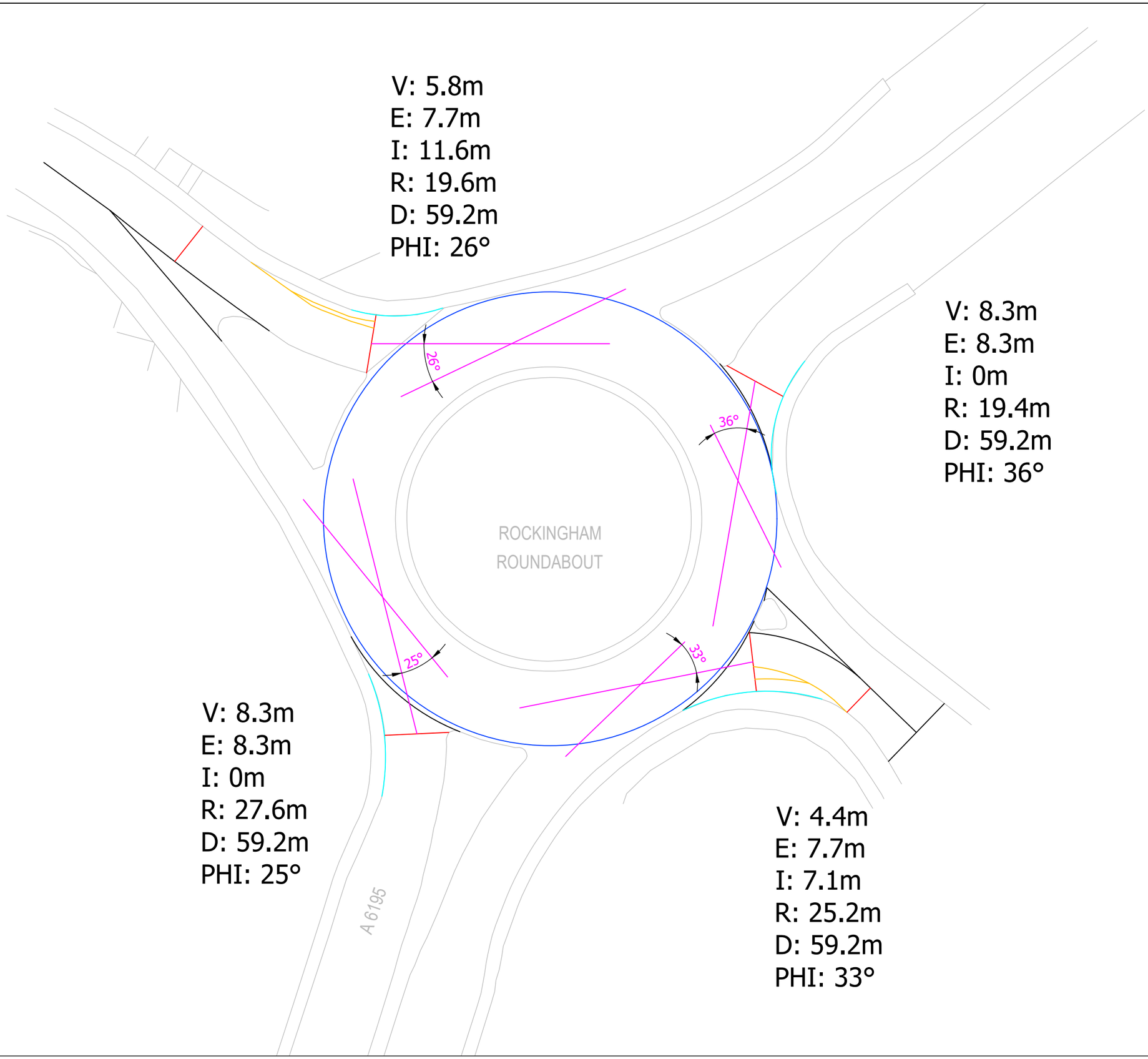
All Flows Provided in PCUs

Diagram 12: 2029 Do Something

Project Title: Land West of Dearne Valley Parkway, Birdwell, Barnsley

Roberts Highway Consultants

# Appendix L: -




Notes:

1. Do Not Scale This Drawing Unless For Planning Purposes Only. Any Dimensions Shown Are Indicative Only And Are Subject To Verification Onsite.
2. The Design Shown Is Aligned With Ordnance Survey ProMap Data And Not Topographical Survey Data. This Drawing Is For Information Only And Should Not Be Used For Construction.

| Rev | Description | Date |
|---|---|---|

Client: Carnell Management Services Ltd

Project: Land West Of Dearne Valley Parkway
Birdwell
Barnsley

Drawing Title: Rockingham Roundabout
Junction Geometries

Drawing Number: RHC-22-065-01

| Revision: | Sheet Size: | Scale: |
|---|---|---|
| - | A3 | 1:500 |
| **Drawn & Checked By:** | **Date:** | **Status:** |
| AR | 02/06/2023 | Information |

E: enquiries@robertshighwayconsultants.co.uk
P: +44 (0)7935 229255
W: www.robertshighwayconsultants.co.uk



Roberts Highway Consultants

# Junctions 10

## ARCADY 10 - Roundabout Module

Version: 10.0.4.1693


For sales and distribution information, program advice and maintenance, contact TRL Software:
+44 (0)1344 379777 software@trl.co.uk trlsoftware.com



**Filename:** Junction 1 Rev A.j10
**Path:** C:\Users\cland\Documents\Roberts Highway Consultants\Project Folder\RHC-22-065 Land West of Dearne Valley Parkway, Birdwell, Barnsley\Calculations\Junction Modelling
**Report generation date:** 15/10/2023 14:20:40

---

## Summary of junction performance

| | AM | | | PM | | |
|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | Queue (PCU) | Delay (s) | RFC |
| | 2023 Base | | | | | |
| 1 - A6195 North | 1.3 | 3.73 | 0.56 | 1.6 | 4.19 | 0.61 |
| 2 - Sheffield Road | 0.2 | 4.39 | 0.18 | 0.3 | 5.19 | 0.22 |
| 3 - A6195 South | 1.6 | 3.93 | 0.59 | 2.5 | 5.32 | 0.71 |
| 4 - Kestrel Way | 0.3 | 3.58 | 0.21 | 0.4 | 4.67 | 0.30 |
| | 2024 Do Minimum | | | | | |
| 1 - A6195 North | 1.4 | 3.78 | 0.56 | 1.6 | 4.14 | 0.62 |
| 2 - Sheffield Road | 0.2 | 4.44 | 0.18 | 0.3 | 5.17 | 0.23 |
| 3 - A6195 South | 1.6 | 3.99 | 0.60 | 2.5 | 5.31 | 0.72 |
| 4 - Kestrel Way | 0.3 | 3.62 | 0.21 | 0.4 | 4.69 | 0.30 |
| | 2024 Do Something | | | | | |
| 1 - A6195 North | 1.4 | 3.85 | 0.57 | 1.7 | 4.27 | 0.63 |
| 2 - Sheffield Road | 0.2 | 4.53 | 0.19 | 0.3 | 5.32 | 0.23 |
| 3 - A6195 South | 1.7 | 4.18 | 0.62 | 2.5 | 5.41 | 0.72 |
| 4 - Kestrel Way | 0.3 | 3.68 | 0.22 | 0.5 | 4.95 | 0.34 |
| | 2029 Do Minimum | | | | | |
| 1 - A6195 North | 2.2 | 5.11 | 0.68 | 2.7 | 5.96 | 0.73 |
| 2 - Sheffield Road | 0.4 | 5.50 | 0.26 | 0.5 | 7.04 | 0.34 |
| 3 - A6195 South | 2.5 | 5.50 | 0.70 | 4.3 | 8.27 | 0.81 |
| 4 - Kestrel Way | 0.3 | 4.37 | 0.25 | 0.6 | 6.20 | 0.39 |
| | 2029 Do Something | | | | | |
| 1 - A6195 North | 2.2 | 5.23 | 0.68 | 2.8 | 6.21 | 0.74 |
| 2 - Sheffield Road | 0.4 | 5.64 | 0.27 | 0.5 | 7.29 | 0.35 |
| 3 - A6195 South | 2.7 | 5.84 | 0.72 | 4.4 | 8.46 | 0.82 |
| 4 - Kestrel Way | 0.4 | 4.45 | 0.26 | 0.7 | 6.66 | 0.43 |

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

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

## File summary

### File Description

| | |
|---|---|
| Title | Rockingham Roundabout |
| Location | Birdwell, Barnsley |
| Site number | |
| Date | 02/06/2023 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | Carnell Management Services Ltd |
| Jobnumber | RHC-22-065 |
| Enumerator | AR |
| Description | |

## Units

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


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

## Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Show lane queues in feet / metres | Show all PICADY stream intercepts | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) | Use iterations with HCM roundabouts | Max number of iterations for roundabouts |
|---|---|---|---|---|---|---|---|---|---|---|
| 5.75 | | | | | | 0.85 | 36.00 | 20.00 | | 500 |

## Demand Set Summary

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D1 | 2023 Base | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |
| D2 | 2023 Base | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |
| D3 | 2024 Do Minimum | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |
| D4 | 2024 Do Minimum | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |
| D5 | 2024 Do Something | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |
| D6 | 2024 Do Something | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |
| D7 | 2029 Do Minimum | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |
| D8 | 2029 Do Minimum | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |
| D9 | 2029 Do Something | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |
| D10 | 2029 Do Something | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

## Analysis Set Details

| ID | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|---|---|---|---|
| A1 | ✓ | 100.000 | 100.000 |

# 2023 Base, AM

### Data Errors and Warnings

*No errors or warnings*

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Rockingham Roundabout | Standard Roundabout | | 1, 2, 3, 4 | 3.85 | A |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 3.85 | A |

## Arms

### Arms

| Arm | Name | Description | No give-way line |
|---|---|---|---|
| 1 | A6195 North | | |
| 2 | Sheffield Road | | |
| 3 | A6195 South | | |
| 4 | Kestrel Way | | |

### Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Entry only | Exit only |
|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 8.30 | 8.30 | 0.0 | 19.4 | 59.2 | 36.0 | | |
| 2 - Sheffield Road | 4.40 | 7.70 | 7.1 | 25.2 | 59.2 | 33.0 | | |
| 3 - A6195 South | 8.30 | 8.30 | 0.0 | 27.6 | 59.2 | 25.0 | | |
| 4 - Kestrel Way | 5.80 | 7.70 | 11.6 | 19.6 | 59.2 | 26.0 | | |

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

| Arm | Final slope | Final intercept (PCU/hr) |
|---|---|---|
| 1 - A6195 North | 0.688 | 2459 |
| 2 - Sheffield Road | 0.567 | 1735 |
| 3 - A6195 South | 0.726 | 2592 |
| 4 - Kestrel Way | 0.646 | 2163 |

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

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D1 | 2023 Base | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 - A6195 North | | ONE HOUR | ✓ | 1167 | 100.000 |
| 2 - Sheffield Road | | ONE HOUR | ✓ | 168 | 100.000 |
| 3 - A6195 South | | ONE HOUR | ✓ | 1305 | 100.000 |
| 4 - Kestrel Way | | ONE HOUR | ✓ | 242 | 100.000 |

## Origin-Destination Data

### Demand (PCU/hr)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 187 | 912 | 68 |
| | 2 - Sheffield Road | 85 | 2 | 19 | 62 |
| | 3 - A6195 South | 1088 | 41 | 2 | 174 |
| | 4 - Kestrel Way | 78 | 13 | 151 | 0 |

## Vehicle Mix

### Heavy Vehicle Percentages

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 3 | 6 | 3 |
| | 2 - Sheffield Road | 4 | 0 | 0 | 2 |
| | 3 - A6195 South | 8 | 2 | 0 | 4 |
| | 4 - Kestrel Way | 4 | 0 | 2 | 0 |

## Results

### Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| 1 - A6195 North | 0.56 | 3.73 | 1.3 | A | 1071 | 1606 |
| 2 - Sheffield Road | 0.18 | 4.39 | 0.2 | A | 154 | 231 |
| 3 - A6195 South | 0.59 | 3.93 | 1.6 | A | 1197 | 1796 |
| 4 - Kestrel Way | 0.21 | 3.58 | 0.3 | A | 222 | 333 |

### Main Results for each time segment

#### 07:45 - 08:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 879 | 220 | 157 | 2351 | 0.374 | 876 | 939 | 0.0 | 0.6 | 2.567 | A |
| 2 - Sheffield Road | 126 | 32 | 851 | 1252 | 0.101 | 126 | 182 | 0.0 | 0.1 | 3.282 | A |
| 3 - A6195 South | 982 | 246 | 163 | 2474 | 0.397 | 980 | 814 | 0.0 | 0.7 | 2.579 | A |
| 4 - Kestrel Way | 182 | 46 | 914 | 1572 | 0.116 | 182 | 228 | 0.0 | 0.1 | 2.654 | A |

### 08:00 - 08:15

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1049 | 262 | 188 | 2330 | 0.450 | 1048 | 1124 | 0.6 | 0.9 | 2.958 | A |
| 2 - Sheffield Road | 151 | 38 | 1018 | 1157 | 0.131 | 151 | 218 | 0.1 | 0.2 | 3.675 | A |
| 3 - A6195 South | 1173 | 293 | 195 | 2451 | 0.479 | 1172 | 974 | 0.7 | 1.0 | 3.015 | A |
| 4 - Kestrel Way | 218 | 54 | 1094 | 1456 | 0.149 | 217 | 273 | 0.1 | 0.2 | 2.978 | A |

### 08:15 - 08:30

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1285 | 321 | 230 | 2301 | 0.559 | 1283 | 1375 | 0.9 | 1.3 | 3.720 | A |
| 2 - Sheffield Road | 185 | 46 | 1246 | 1028 | 0.180 | 185 | 267 | 0.2 | 0.2 | 4.386 | A |
| 3 - A6195 South | 1437 | 359 | 239 | 2419 | 0.594 | 1435 | 1192 | 1.0 | 1.6 | 3.914 | A |
| 4 - Kestrel Way | 266 | 67 | 1339 | 1298 | 0.205 | 266 | 334 | 0.2 | 0.3 | 3.576 | A |

### 08:30 - 08:45

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1285 | 321 | 230 | 2300 | 0.559 | 1285 | 1377 | 1.3 | 1.3 | 3.733 | A |
| 2 - Sheffield Road | 185 | 46 | 1247 | 1027 | 0.180 | 185 | 268 | 0.2 | 0.2 | 4.393 | A |
| 3 - A6195 South | 1437 | 359 | 239 | 2419 | 0.594 | 1437 | 1193 | 1.6 | 1.6 | 3.930 | A |
| 4 - Kestrel Way | 266 | 67 | 1341 | 1297 | 0.205 | 266 | 335 | 0.3 | 0.3 | 3.581 | A |

### 08:45 - 09:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1049 | 262 | 188 | 2329 | 0.450 | 1051 | 1127 | 1.3 | 0.9 | 2.972 | A |
| 2 - Sheffield Road | 151 | 38 | 1020 | 1156 | 0.131 | 151 | 219 | 0.2 | 0.2 | 3.682 | A |
| 3 - A6195 South | 1173 | 293 | 195 | 2451 | 0.479 | 1175 | 976 | 1.6 | 1.0 | 3.034 | A |
| 4 - Kestrel Way | 218 | 54 | 1097 | 1454 | 0.150 | 218 | 274 | 0.3 | 0.2 | 2.985 | A |

### 09:00 - 09:15

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 879 | 220 | 158 | 2350 | 0.374 | 880 | 943 | 0.9 | 0.6 | 2.581 | A |
| 2 - Sheffield Road | 126 | 32 | 854 | 1250 | 0.101 | 127 | 183 | 0.2 | 0.1 | 3.291 | A |
| 3 - A6195 South | 982 | 246 | 164 | 2474 | 0.397 | 984 | 817 | 1.0 | 0.7 | 2.592 | A |
| 4 - Kestrel Way | 182 | 46 | 918 | 1570 | 0.116 | 182 | 229 | 0.2 | 0.1 | 2.662 | A |

# 2023 Base, PM

### Data Errors and Warnings

*No errors or warnings*

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Rockingham Roundabout | Standard Roundabout | | 1, 2, 3, 4 | 4.82 | A |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 4.82 | A |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D2 | 2023 Base | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 - A6195 North | | ONE HOUR | ✓ | 1270 | 100.000 |
| 2 - Sheffield Road | | ONE HOUR | ✓ | 183 | 100.000 |
| 3 - A6195 South | | ONE HOUR | ✓ | 1535 | 100.000 |
| 4 - Kestrel Way | | ONE HOUR | ✓ | 301 | 100.000 |

## Origin-Destination Data

### Demand (PCU/hr)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 135 | 1037 | 98 |
| | 2 - Sheffield Road | 121 | 2 | 22 | 38 |
| | 3 - A6195 South | 1329 | 26 | 1 | 179 |
| | 4 - Kestrel Way | 95 | 16 | 189 | 1 |

## Vehicle Mix

### Heavy Vehicle Percentages

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 1 | 3 | 1 |
| | 2 - Sheffield Road | 1 | 0 | 9 | 0 |
| | 3 - A6195 South | 3 | 0 | 0 | 1 |
| | 4 - Kestrel Way | 0 | 0 | 2 | 0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| 1 - A6195 North | 0.61 | 4.19 | 1.6 | A | 1165 | 1748 |
| 2 - Sheffield Road | 0.22 | 5.19 | 0.3 | A | 168 | 252 |
| 3 - A6195 South | 0.71 | 5.32 | 2.5 | A | 1409 | 2113 |
| 4 - Kestrel Way | 0.30 | 4.67 | 0.4 | A | 276 | 414 |

## Main Results for each time segment

### 16:45 - 17:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 956 | 239 | 176 | 2337 | 0.409 | 953 | 1159 | 0.0 | 0.7 | 2.663 | A |
| 2 - Sheffield Road | 138 | 34 | 995 | 1170 | 0.118 | 137 | 134 | 0.0 | 0.1 | 3.542 | A |
| 3 - A6195 South | 1156 | 289 | 195 | 2451 | 0.472 | 1152 | 937 | 0.0 | 0.9 | 2.838 | A |
| 4 - Kestrel Way | 227 | 57 | 1110 | 1446 | 0.157 | 226 | 237 | 0.0 | 0.2 | 2.986 | A |

### 17:00 - 17:15

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1142 | 285 | 211 | 2314 | 0.493 | 1141 | 1387 | 0.7 | 1.0 | 3.147 | A |
| 2 - Sheffield Road | 165 | 41 | 1191 | 1059 | 0.155 | 164 | 161 | 0.1 | 0.2 | 4.090 | A |
| 3 - A6195 South | 1380 | 345 | 233 | 2423 | 0.570 | 1378 | 1122 | 0.9 | 1.3 | 3.532 | A |
| 4 - Kestrel Way | 271 | 68 | 1328 | 1305 | 0.207 | 270 | 284 | 0.2 | 0.3 | 3.522 | A |

### 17:15 - 17:30

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1398 | 350 | 258 | 2281 | 0.613 | 1396 | 1697 | 1.0 | 1.6 | 4.162 | A |
| 2 - Sheffield Road | 201 | 50 | 1457 | 908 | 0.222 | 201 | 197 | 0.2 | 0.3 | 5.178 | A |
| 3 - A6195 South | 1690 | 423 | 286 | 2385 | 0.709 | 1686 | 1373 | 1.3 | 2.4 | 5.252 | A |
| 4 - Kestrel Way | 331 | 83 | 1624 | 1114 | 0.298 | 331 | 347 | 0.3 | 0.4 | 4.650 | A |

### 17:30 - 17:45

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1398 | 350 | 259 | 2281 | 0.613 | 1398 | 1701 | 1.6 | 1.6 | 4.186 | A |
| 2 - Sheffield Road | 201 | 50 | 1460 | 906 | 0.222 | 201 | 197 | 0.3 | 0.3 | 5.193 | A |
| 3 - A6195 South | 1690 | 423 | 286 | 2385 | 0.709 | 1690 | 1375 | 2.4 | 2.5 | 5.320 | A |
| 4 - Kestrel Way | 331 | 83 | 1628 | 1111 | 0.298 | 331 | 348 | 0.4 | 0.4 | 4.673 | A |

### 17:45 - 18:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1142 | 285 | 212 | 2313 | 0.494 | 1144 | 1393 | 1.6 | 1.0 | 3.166 | A |
| 2 - Sheffield Road | 165 | 41 | 1195 | 1057 | 0.156 | 165 | 161 | 0.3 | 0.2 | 4.107 | A |
| 3 - A6195 South | 1380 | 345 | 234 | 2422 | 0.570 | 1384 | 1125 | 2.5 | 1.4 | 3.575 | A |
| 4 - Kestrel Way | 271 | 68 | 1334 | 1301 | 0.208 | 271 | 285 | 0.4 | 0.3 | 3.542 | A |

**18:00 - 18:15**

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1 - A6195 North** | 956 | 239 | 177 | 2337 | 0.409 | 957 | 1165 | 1.0 | 0.7 | 2.679 | A |
| **2 - Sheffield Road** | 138 | 34 | 1000 | 1167 | 0.118 | 138 | 135 | 0.2 | 0.1 | 3.555 | A |
| **3 - A6195 South** | 1156 | 289 | 196 | 2450 | 0.472 | 1157 | 941 | 1.4 | 0.9 | 2.865 | A |
| **4 - Kestrel Way** | 227 | 57 | 1115 | 1443 | 0.157 | 227 | 238 | 0.3 | 0.2 | 2.998 | A |

# 2024 Do Minimum, AM

### Data Errors and Warnings

*No errors or warnings*

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Rockingham Roundabout | Standard Roundabout | | 1, 2, 3, 4 | 3.90 | A |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 3.90 | A |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D3 | 2024 Do Minimum | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 - A6195 North | | ONE HOUR | ✓ | 1178 | 100.000 |
| 2 - Sheffield Road | | ONE HOUR | ✓ | 170 | 100.000 |
| 3 - A6195 South | | ONE HOUR | ✓ | 1317 | 100.000 |
| 4 - Kestrel Way | | ONE HOUR | ✓ | 244 | 100.000 |

## Origin-Destination Data

### Demand (PCU/hr)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 189 | 920 | 69 |
| | 2 - Sheffield Road | 86 | 2 | 19 | 63 |
| | 3 - A6195 South | 1098 | 41 | 2 | 176 |
| | 4 - Kestrel Way | 79 | 13 | 152 | 0 |

## Vehicle Mix

### Heavy Vehicle Percentages

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 3 | 6 | 3 |
| | 2 - Sheffield Road | 4 | 0 | 0 | 2 |
| | 3 - A6195 South | 8 | 2 | 0 | 4 |
| | 4 - Kestrel Way | 4 | 0 | 2 | 0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| 1 - A6195 North | 0.56 | 3.78 | 1.4 | A | 1081 | 1621 |
| 2 - Sheffield Road | 0.18 | 4.44 | 0.2 | A | 156 | 234 |
| 3 - A6195 South | 0.60 | 3.99 | 1.6 | A | 1209 | 1813 |
| 4 - Kestrel Way | 0.21 | 3.62 | 0.3 | A | 224 | 336 |

## Main Results for each time segment

### 07:45 - 08:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 887 | 222 | 158 | 2350 | 0.377 | 884 | 948 | 0.0 | 0.6 | 2.582 | A |
| 2 - Sheffield Road | 128 | 32 | 858 | 1248 | 0.103 | 128 | 184 | 0.0 | 0.1 | 3.299 | A |
| 3 - A6195 South | 992 | 248 | 165 | 2473 | 0.401 | 989 | 820 | 0.0 | 0.7 | 2.597 | A |
| 4 - Kestrel Way | 184 | 46 | 923 | 1567 | 0.117 | 183 | 231 | 0.0 | 0.1 | 2.665 | A |

### 08:00 - 08:15

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1059 | 265 | 189 | 2329 | 0.455 | 1058 | 1134 | 0.6 | 0.9 | 2.982 | A |
| 2 - Sheffield Road | 153 | 38 | 1027 | 1152 | 0.133 | 153 | 220 | 0.1 | 0.2 | 3.700 | A |
| 3 - A6195 South | 1184 | 296 | 198 | 2449 | 0.483 | 1183 | 982 | 0.7 | 1.0 | 3.046 | A |
| 4 - Kestrel Way | 219 | 55 | 1104 | 1450 | 0.151 | 219 | 277 | 0.1 | 0.2 | 2.998 | A |

### 08:15 - 08:30

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1297 | 324 | 231 | 2300 | 0.564 | 1295 | 1388 | 0.9 | 1.3 | 3.768 | A |
| 2 - Sheffield Road | 187 | 47 | 1257 | 1022 | 0.183 | 187 | 269 | 0.2 | 0.2 | 4.431 | A |
| 3 - A6195 South | 1450 | 363 | 242 | 2417 | 0.600 | 1448 | 1202 | 1.0 | 1.6 | 3.973 | A |
| 4 - Kestrel Way | 269 | 67 | 1351 | 1290 | 0.208 | 268 | 339 | 0.2 | 0.3 | 3.611 | A |

### 08:30 - 08:45

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1297 | 324 | 231 | 2300 | 0.564 | 1297 | 1391 | 1.3 | 1.4 | 3.780 | A |
| 2 - Sheffield Road | 187 | 47 | 1258 | 1021 | 0.183 | 187 | 270 | 0.2 | 0.2 | 4.438 | A |
| 3 - A6195 South | 1450 | 363 | 242 | 2417 | 0.600 | 1450 | 1203 | 1.6 | 1.6 | 3.993 | A |
| 4 - Kestrel Way | 269 | 67 | 1353 | 1289 | 0.208 | 269 | 339 | 0.3 | 0.3 | 3.616 | A |

### 08:45 - 09:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1059 | 265 | 189 | 2329 | 0.455 | 1061 | 1138 | 1.4 | 0.9 | 2.994 | A |
| 2 - Sheffield Road | 153 | 38 | 1029 | 1151 | 0.133 | 153 | 221 | 0.2 | 0.2 | 3.708 | A |
| 3 - A6195 South | 1184 | 296 | 198 | 2449 | 0.484 | 1186 | 984 | 1.6 | 1.0 | 3.065 | A |
| 4 - Kestrel Way | 219 | 55 | 1107 | 1448 | 0.152 | 220 | 277 | 0.3 | 0.2 | 3.005 | A |

**09:00 - 09:15**

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1 - A6195 North** | 887 | 222 | 158 | 2350 | 0.377 | 888 | 952 | 0.9 | 0.6 | 2.594 | A |
| **2 - Sheffield Road** | 128 | 32 | 861 | 1246 | 0.103 | 128 | 185 | 0.2 | 0.1 | 3.311 | A |
| **3 - A6195 South** | 992 | 248 | 166 | 2472 | 0.401 | 993 | 824 | 1.0 | 0.7 | 2.613 | A |
| **4 - Kestrel Way** | 184 | 46 | 926 | 1564 | 0.117 | 184 | 232 | 0.2 | 0.1 | 2.675 | A |

# 2024 Do Minimum, PM

### Data Errors and Warnings

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

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Rockingham Roundabout | Standard Roundabout | | 1, 2, 3, 4 | 4.79 | A |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 4.79 | A |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D4 | 2024 Do Minimum | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 - A6195 North | | ONE HOUR | ✓ | 1281 | 100.000 |
| 2 - Sheffield Road | | ONE HOUR | ✓ | 184 | 100.000 |
| 3 - A6195 South | | ONE HOUR | ✓ | 1549 | 100.000 |
| 4 - Kestrel Way | | ONE HOUR | ✓ | 304 | 100.000 |

## Origin-Destination Data

### Demand (PCU/hr)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 136 | 1046 | 99 |
| | 2 - Sheffield Road | 122 | 2 | 22 | 38 |
| | 3 - A6195 South | 1341 | 26 | 1 | 181 |
| | 4 - Kestrel Way | 96 | 16 | 191 | 1 |

## Vehicle Mix

### Heavy Vehicle Percentages

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 0 | 0 | 0 |
| | 2 - Sheffield Road | 0 | 0 | 0 | 0 |
| | 3 - A6195 South | 0 | 0 | 0 | 0 |
| | 4 - Kestrel Way | 0 | 0 | 0 | 0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| 1 - A6195 North | 0.62 | 4.14 | 1.6 | A | 1175 | 1763 |
| 2 - Sheffield Road | 0.23 | 5.17 | 0.3 | A | 169 | 253 |
| 3 - A6195 South | 0.72 | 5.31 | 2.5 | A | 1421 | 2132 |
| 4 - Kestrel Way | 0.30 | 4.69 | 0.4 | A | 279 | 418 |

## Main Results for each time segment

### 16:45 - 17:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 964 | 241 | 178 | 2336 | 0.413 | 962 | 1170 | 0.0 | 0.7 | 2.613 | A |
| 2 - Sheffield Road | 139 | 35 | 1004 | 1165 | 0.119 | 138 | 135 | 0.0 | 0.1 | 3.504 | A |
| 3 - A6195 South | 1166 | 292 | 197 | 2450 | 0.476 | 1163 | 946 | 0.0 | 0.9 | 2.788 | A |
| 4 - Kestrel Way | 229 | 57 | 1120 | 1440 | 0.159 | 228 | 239 | 0.0 | 0.2 | 2.970 | A |

### 17:00 - 17:15

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1152 | 288 | 213 | 2312 | 0.498 | 1150 | 1400 | 0.7 | 1.0 | 3.096 | A |
| 2 - Sheffield Road | 165 | 41 | 1202 | 1053 | 0.157 | 165 | 162 | 0.1 | 0.2 | 4.055 | A |
| 3 - A6195 South | 1393 | 348 | 235 | 2422 | 0.575 | 1391 | 1132 | 0.9 | 1.3 | 3.486 | A |
| 4 - Kestrel Way | 273 | 68 | 1340 | 1298 | 0.211 | 273 | 286 | 0.2 | 0.3 | 3.513 | A |

### 17:15 - 17:30

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1410 | 353 | 260 | 2280 | 0.619 | 1408 | 1712 | 1.0 | 1.6 | 4.119 | A |
| 2 - Sheffield Road | 203 | 51 | 1471 | 900 | 0.225 | 202 | 198 | 0.2 | 0.3 | 5.154 | A |
| 3 - A6195 South | 1705 | 426 | 288 | 2384 | 0.716 | 1701 | 1385 | 1.3 | 2.5 | 5.240 | A |
| 4 - Kestrel Way | 335 | 84 | 1638 | 1105 | 0.303 | 334 | 350 | 0.3 | 0.4 | 4.668 | A |

### 17:30 - 17:45

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1410 | 353 | 261 | 2279 | 0.619 | 1410 | 1716 | 1.6 | 1.6 | 4.143 | A |
| 2 - Sheffield Road | 203 | 51 | 1473 | 899 | 0.225 | 203 | 198 | 0.3 | 0.3 | 5.171 | A |
| 3 - A6195 South | 1705 | 426 | 288 | 2383 | 0.716 | 1705 | 1387 | 2.5 | 2.5 | 5.309 | A |
| 4 - Kestrel Way | 335 | 84 | 1643 | 1102 | 0.304 | 335 | 351 | 0.4 | 0.4 | 4.691 | A |

### 17:45 - 18:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1152 | 288 | 214 | 2312 | 0.498 | 1154 | 1406 | 1.6 | 1.0 | 3.115 | A |
| 2 - Sheffield Road | 165 | 41 | 1205 | 1051 | 0.157 | 166 | 162 | 0.3 | 0.2 | 4.070 | A |
| 3 - A6195 South | 1393 | 348 | 236 | 2421 | 0.575 | 1397 | 1135 | 2.5 | 1.4 | 3.529 | A |
| 4 - Kestrel Way | 273 | 68 | 1346 | 1294 | 0.211 | 274 | 288 | 0.4 | 0.3 | 3.531 | A |

### 18:00 - 18:15

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 964 | 241 | 179 | 2336 | 0.413 | 966 | 1175 | 1.0 | 0.7 | 2.629 | A |
| 2 - Sheffield Road | 139 | 35 | 1009 | 1162 | 0.119 | 139 | 136 | 0.2 | 0.1 | 3.519 | A |
| 3 - A6195 South | 1166 | 292 | 198 | 2449 | 0.476 | 1168 | 950 | 1.4 | 0.9 | 2.813 | A |
| 4 - Kestrel Way | 229 | 57 | 1125 | 1436 | 0.159 | 229 | 241 | 0.3 | 0.2 | 2.982 | A |

# 2024 Do Something, AM

### Data Errors and Warnings

*No errors or warnings*

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Rockingham Roundabout | Standard Roundabout | | 1, 2, 3, 4 | 4.03 | A |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 4.03 | A |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D5 | 2024 Do Something | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 - A6195 North | | ONE HOUR | ✓ | 1186 | 100.000 |
| 2 - Sheffield Road | | ONE HOUR | ✓ | 176 | 100.000 |
| 3 - A6195 South | | ONE HOUR | ✓ | 1347 | 100.000 |
| 4 - Kestrel Way | | ONE HOUR | ✓ | 259 | 100.000 |

## Origin-Destination Data

### Demand (PCU/hr)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 189 | 920 | 77 |
| | 2 - Sheffield Road | 86 | 2 | 19 | 69 |
| | 3 - A6195 South | 1098 | 41 | 2 | 206 |
| | 4 - Kestrel Way | 82 | 15 | 162 | 0 |

## Vehicle Mix

### Heavy Vehicle Percentages

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 3 | 6 | 3 |
| | 2 - Sheffield Road | 4 | 0 | 0 | 2 |
| | 3 - A6195 South | 8 | 2 | 0 | 4 |
| | 4 - Kestrel Way | 4 | 0 | 2 | 0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| 1 - A6195 North | 0.57 | 3.85 | 1.4 | A | 1088 | 1632 |
| 2 - Sheffield Road | 0.19 | 4.53 | 0.2 | A | 162 | 242 |
| 3 - A6195 South | 0.62 | 4.18 | 1.7 | A | 1236 | 1854 |
| 4 - Kestrel Way | 0.22 | 3.68 | 0.3 | A | 238 | 356 |

## Main Results for each time segment

### 07:45 - 08:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 893 | 223 | 167 | 2344 | 0.381 | 890 | 950 | 0.0 | 0.6 | 2.603 | A |
| 2 - Sheffield Road | 133 | 33 | 872 | 1240 | 0.107 | 132 | 185 | 0.0 | 0.1 | 3.335 | A |
| 3 - A6195 South | 1014 | 254 | 176 | 2465 | 0.411 | 1011 | 828 | 0.0 | 0.7 | 2.648 | A |
| 4 - Kestrel Way | 195 | 49 | 922 | 1567 | 0.124 | 194 | 264 | 0.0 | 0.1 | 2.687 | A |

### 08:00 - 08:15

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1066 | 267 | 199 | 2322 | 0.459 | 1065 | 1137 | 0.6 | 0.9 | 3.013 | A |
| 2 - Sheffield Road | 158 | 40 | 1043 | 1143 | 0.138 | 158 | 222 | 0.1 | 0.2 | 3.754 | A |
| 3 - A6195 South | 1211 | 303 | 210 | 2440 | 0.496 | 1210 | 991 | 0.7 | 1.0 | 3.133 | A |
| 4 - Kestrel Way | 233 | 58 | 1104 | 1450 | 0.161 | 233 | 316 | 0.1 | 0.2 | 3.031 | A |

### 08:15 - 08:30

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1306 | 326 | 244 | 2291 | 0.570 | 1304 | 1391 | 0.9 | 1.4 | 3.833 | A |
| 2 - Sheffield Road | 194 | 48 | 1276 | 1010 | 0.192 | 193 | 272 | 0.2 | 0.2 | 4.527 | A |
| 3 - A6195 South | 1483 | 371 | 257 | 2406 | 0.616 | 1480 | 1213 | 1.0 | 1.7 | 4.157 | A |
| 4 - Kestrel Way | 285 | 71 | 1351 | 1290 | 0.221 | 285 | 387 | 0.2 | 0.3 | 3.670 | A |

### 08:30 - 08:45

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1306 | 326 | 244 | 2291 | 0.570 | 1306 | 1394 | 1.4 | 1.4 | 3.849 | A |
| 2 - Sheffield Road | 194 | 48 | 1278 | 1009 | 0.192 | 194 | 272 | 0.2 | 0.2 | 4.534 | A |
| 3 - A6195 South | 1483 | 371 | 258 | 2405 | 0.617 | 1483 | 1214 | 1.7 | 1.7 | 4.182 | A |
| 4 - Kestrel Way | 285 | 71 | 1353 | 1289 | 0.221 | 285 | 388 | 0.3 | 0.3 | 3.675 | A |

### 08:45 - 09:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1066 | 267 | 200 | 2321 | 0.459 | 1068 | 1140 | 1.4 | 0.9 | 3.032 | A |
| 2 - Sheffield Road | 158 | 40 | 1046 | 1141 | 0.139 | 159 | 222 | 0.2 | 0.2 | 3.765 | A |
| 3 - A6195 South | 1211 | 303 | 211 | 2439 | 0.496 | 1214 | 993 | 1.7 | 1.1 | 3.155 | A |
| 4 - Kestrel Way | 233 | 58 | 1107 | 1448 | 0.161 | 233 | 317 | 0.3 | 0.2 | 3.041 | A |

**09:00 - 09:15**

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1 - A6195 North** | 893 | 223 | 167 | 2344 | 0.381 | 894 | 954 | 0.9 | 0.7 | 2.616 | A |
| **2 - Sheffield Road** | 133 | 33 | 875 | 1238 | 0.107 | 133 | 186 | 0.2 | 0.1 | 3.347 | A |
| **3 - A6195 South** | 1014 | 254 | 176 | 2464 | 0.411 | 1015 | 831 | 1.1 | 0.8 | 2.666 | A |
| **4 - Kestrel Way** | 195 | 49 | 926 | 1564 | 0.125 | 195 | 265 | 0.2 | 0.1 | 2.694 | A |

# 2024 Do Something, PM

### Data Errors and Warnings

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

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Rockingham Roundabout | Standard Roundabout | | 1, 2, 3, 4 | 4.92 | A |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 4.92 | A |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D6 | 2024 Do Something | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 - A6195 North | | ONE HOUR | ✓ | 1283 | 100.000 |
| 2 - Sheffield Road | | ONE HOUR | ✓ | 186 | 100.000 |
| 3 - A6195 South | | ONE HOUR | ✓ | 1557 | 100.000 |
| 4 - Kestrel Way | | ONE HOUR | ✓ | 341 | 100.000 |

## Origin-Destination Data

### Demand (PCU/hr)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 136 | 1046 | 101 |
| | 2 - Sheffield Road | 122 | 2 | 22 | 40 |
| | 3 - A6195 South | 1341 | 26 | 1 | 189 |
| | 4 - Kestrel Way | 103 | 21 | 216 | 1 |

## Vehicle Mix

### Heavy Vehicle Percentages

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 0 | 0 | 0 |
| | 2 - Sheffield Road | 0 | 0 | 0 | 0 |
| | 3 - A6195 South | 0 | 0 | 0 | 0 |
| | 4 - Kestrel Way | 0 | 0 | 0 | 0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| 1 - A6195 North | 0.63 | 4.27 | 1.7 | A | 1177 | 1766 |
| 2 - Sheffield Road | 0.23 | 5.32 | 0.3 | A | 171 | 256 |
| 3 - A6195 South | 0.72 | 5.41 | 2.5 | A | 1429 | 2143 |
| 4 - Kestrel Way | 0.34 | 4.95 | 0.5 | A | 313 | 469 |

## Main Results for each time segment

### 16:45 - 17:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 966 | 241 | 200 | 2321 | 0.416 | 963 | 1175 | 0.0 | 0.7 | 2.645 | A |
| 2 - Sheffield Road | 140 | 35 | 1025 | 1153 | 0.121 | 139 | 139 | 0.0 | 0.1 | 3.549 | A |
| 3 - A6195 South | 1172 | 293 | 200 | 2448 | 0.479 | 1169 | 964 | 0.0 | 0.9 | 2.806 | A |
| 4 - Kestrel Way | 257 | 64 | 1120 | 1440 | 0.178 | 256 | 248 | 0.0 | 0.2 | 3.040 | A |

### 17:00 - 17:15

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1153 | 288 | 240 | 2294 | 0.503 | 1152 | 1406 | 0.7 | 1.0 | 3.151 | A |
| 2 - Sheffield Road | 167 | 42 | 1226 | 1039 | 0.161 | 167 | 166 | 0.1 | 0.2 | 4.127 | A |
| 3 - A6195 South | 1400 | 350 | 239 | 2419 | 0.579 | 1398 | 1154 | 0.9 | 1.4 | 3.519 | A |
| 4 - Kestrel Way | 307 | 77 | 1340 | 1298 | 0.236 | 306 | 297 | 0.2 | 0.3 | 3.631 | A |

### 17:15 - 17:30

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1413 | 353 | 293 | 2257 | 0.626 | 1410 | 1720 | 1.0 | 1.7 | 4.238 | A |
| 2 - Sheffield Road | 205 | 51 | 1500 | 883 | 0.232 | 204 | 203 | 0.2 | 0.3 | 5.298 | A |
| 3 - A6195 South | 1714 | 429 | 292 | 2380 | 0.720 | 1710 | 1412 | 1.4 | 2.5 | 5.330 | A |
| 4 - Kestrel Way | 375 | 94 | 1638 | 1105 | 0.340 | 375 | 364 | 0.3 | 0.5 | 4.926 | A |

### 17:30 - 17:45

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1413 | 353 | 294 | 2256 | 0.626 | 1413 | 1724 | 1.7 | 1.7 | 4.265 | A |
| 2 - Sheffield Road | 205 | 51 | 1503 | 882 | 0.232 | 205 | 204 | 0.3 | 0.3 | 5.316 | A |
| 3 - A6195 South | 1714 | 429 | 293 | 2380 | 0.720 | 1714 | 1415 | 2.5 | 2.5 | 5.405 | A |
| 4 - Kestrel Way | 375 | 94 | 1643 | 1102 | 0.341 | 375 | 364 | 0.5 | 0.5 | 4.954 | A |

### 17:45 - 18:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1153 | 288 | 241 | 2293 | 0.503 | 1156 | 1412 | 1.7 | 1.0 | 3.172 | A |
| 2 - Sheffield Road | 167 | 42 | 1230 | 1037 | 0.161 | 168 | 167 | 0.3 | 0.2 | 4.144 | A |
| 3 - A6195 South | 1400 | 350 | 240 | 2418 | 0.579 | 1404 | 1158 | 2.5 | 1.4 | 3.565 | A |
| 4 - Kestrel Way | 307 | 77 | 1346 | 1294 | 0.237 | 307 | 298 | 0.5 | 0.3 | 3.651 | A |

### 18:00 - 18:15

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 966 | 241 | 201 | 2320 | 0.416 | 967 | 1181 | 1.0 | 0.7 | 2.662 | A |
| 2 - Sheffield Road | 140 | 35 | 1029 | 1151 | 0.122 | 140 | 139 | 0.2 | 0.1 | 3.562 | A |
| 3 - A6195 South | 1172 | 293 | 201 | 2447 | 0.479 | 1174 | 969 | 1.4 | 0.9 | 2.831 | A |
| 4 - Kestrel Way | 257 | 64 | 1125 | 1436 | 0.179 | 257 | 250 | 0.3 | 0.2 | 3.053 | A |

# 2029 Do Minimum, AM

### Data Errors and Warnings

*No errors or warnings*

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Rockingham Roundabout | Standard Roundabout | | 1, 2, 3, 4 | 5.25 | A |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 5.25 | A |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D7 | 2029 Do Minimum | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 - A6195 North | | ONE HOUR | ✓ | 1404 | 100.000 |
| 2 - Sheffield Road | | ONE HOUR | ✓ | 217 | 100.000 |
| 3 - A6195 South | | ONE HOUR | ✓ | 1521 | 100.000 |
| 4 - Kestrel Way | | ONE HOUR | ✓ | 258 | 100.000 |

## Origin-Destination Data

### Demand (PCU/hr)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 251 | 1079 | 74 |
| | 2 - Sheffield Road | 122 | 4 | 20 | 71 |
| | 3 - A6195 South | 1283 | 43 | 4 | 191 |
| | 4 - Kestrel Way | 83 | 15 | 160 | 0 |

## Vehicle Mix

### Heavy Vehicle Percentages

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 3 | 6 | 3 |
| | 2 - Sheffield Road | 4 | 0 | 0 | 2 |
| | 3 - A6195 South | 8 | 2 | 0 | 4 |
| | 4 - Kestrel Way | 4 | 0 | 2 | 0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| 1 - A6195 North | 0.68 | 5.11 | 2.2 | A | 1288 | 1933 |
| 2 - Sheffield Road | 0.26 | 5.50 | 0.4 | A | 199 | 299 |
| 3 - A6195 South | 0.70 | 5.50 | 2.5 | A | 1396 | 2094 |
| 4 - Kestrel Way | 0.25 | 4.37 | 0.3 | A | 237 | 355 |

## Main Results for each time segment

### 07:45 - 08:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1057 | 264 | 170 | 2342 | 0.451 | 1054 | 1117 | 0.0 | 0.9 | 2.935 | A |
| 2 - Sheffield Road | 163 | 41 | 988 | 1174 | 0.139 | 163 | 235 | 0.0 | 0.2 | 3.661 | A |
| 3 - A6195 South | 1145 | 286 | 203 | 2445 | 0.468 | 1141 | 948 | 0.0 | 0.9 | 2.954 | A |
| 4 - Kestrel Way | 194 | 49 | 1092 | 1457 | 0.133 | 194 | 252 | 0.0 | 0.2 | 2.919 | A |

### 08:00 - 08:15

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1262 | 316 | 203 | 2319 | 0.544 | 1261 | 1336 | 0.9 | 1.2 | 3.577 | A |
| 2 - Sheffield Road | 195 | 49 | 1183 | 1064 | 0.183 | 195 | 281 | 0.2 | 0.2 | 4.262 | A |
| 3 - A6195 South | 1367 | 342 | 243 | 2416 | 0.566 | 1366 | 1134 | 0.9 | 1.4 | 3.670 | A |
| 4 - Kestrel Way | 232 | 58 | 1307 | 1319 | 0.176 | 232 | 302 | 0.2 | 0.2 | 3.395 | A |

### 08:15 - 08:30

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1546 | 386 | 248 | 2288 | 0.676 | 1542 | 1634 | 1.2 | 2.2 | 5.057 | A |
| 2 - Sheffield Road | 239 | 60 | 1447 | 914 | 0.262 | 238 | 344 | 0.2 | 0.4 | 5.476 | A |
| 3 - A6195 South | 1675 | 419 | 298 | 2376 | 0.705 | 1670 | 1387 | 1.4 | 2.5 | 5.434 | A |
| 4 - Kestrel Way | 284 | 71 | 1599 | 1130 | 0.251 | 284 | 369 | 0.2 | 0.3 | 4.356 | A |

### 08:30 - 08:45

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1546 | 386 | 249 | 2288 | 0.676 | 1546 | 1638 | 2.2 | 2.2 | 5.108 | A |
| 2 - Sheffield Road | 239 | 60 | 1450 | 912 | 0.262 | 239 | 345 | 0.4 | 0.4 | 5.503 | A |
| 3 - A6195 South | 1675 | 419 | 298 | 2376 | 0.705 | 1675 | 1391 | 2.5 | 2.5 | 5.504 | A |
| 4 - Kestrel Way | 284 | 71 | 1603 | 1128 | 0.252 | 284 | 370 | 0.3 | 0.3 | 4.375 | A |

### 08:45 - 09:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1262 | 316 | 204 | 2319 | 0.544 | 1266 | 1342 | 2.2 | 1.3 | 3.614 | A |
| 2 - Sheffield Road | 195 | 49 | 1187 | 1061 | 0.184 | 196 | 282 | 0.4 | 0.2 | 4.284 | A |
| 3 - A6195 South | 1367 | 342 | 244 | 2415 | 0.566 | 1372 | 1139 | 2.5 | 1.4 | 3.716 | A |
| 4 - Kestrel Way | 232 | 58 | 1313 | 1315 | 0.176 | 232 | 303 | 0.3 | 0.2 | 3.410 | A |

**09:00 - 09:15**

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1 - A6195 North** | 1057 | 264 | 170 | 2341 | 0.451 | 1059 | 1122 | 1.3 | 0.9 | 2.959 | A |
| **2 - Sheffield Road** | 163 | 41 | 993 | 1171 | 0.139 | 164 | 236 | 0.2 | 0.2 | 3.679 | A |
| **3 - A6195 South** | 1145 | 286 | 204 | 2444 | 0.469 | 1147 | 952 | 1.4 | 1.0 | 2.983 | A |
| **4 - Kestrel Way** | 194 | 49 | 1098 | 1454 | 0.134 | 194 | 253 | 0.2 | 0.2 | 2.933 | A |

# 2029 Do Minimum, PM

### Data Errors and Warnings

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

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Rockingham Roundabout | Standard Roundabout | | 1, 2, 3, 4 | 7.10 | A |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 7.10 | A |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D8 | 2029 Do Minimum | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 - A6195 North | | ONE HOUR | ✓ | 1507 | 100.000 |
| 2 - Sheffield Road | | ONE HOUR | ✓ | 237 | 100.000 |
| 3 - A6195 South | | ONE HOUR | ✓ | 1729 | 100.000 |
| 4 - Kestrel Way | | ONE HOUR | ✓ | 332 | 100.000 |

## Origin-Destination Data

### Demand (PCU/hr)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 174 | 1229 | 104 |
| | 2 - Sheffield Road | 171 | 2 | 23 | 41 |
| | 3 - A6195 South | 1511 | 27 | 1 | 190 |
| | 4 - Kestrel Way | 103 | 22 | 206 | 1 |

## Vehicle Mix

### Heavy Vehicle Percentages

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 0 | 0 | 0 |
| | 2 - Sheffield Road | 0 | 0 | 0 | 0 |
| | 3 - A6195 South | 0 | 0 | 0 | 0 |
| | 4 - Kestrel Way | 0 | 0 | 0 | 0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| 1 - A6195 North | 0.73 | 5.96 | 2.7 | A | 1383 | 2074 |
| 2 - Sheffield Road | 0.34 | 7.04 | 0.5 | A | 217 | 326 |
| 3 - A6195 South | 0.81 | 8.27 | 4.3 | A | 1587 | 2380 |
| 4 - Kestrel Way | 0.39 | 6.20 | 0.6 | A | 305 | 457 |

## Main Results for each time segment

### 16:45 - 17:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1135 | 284 | 194 | 2325 | 0.488 | 1131 | 1339 | 0.0 | 0.9 | 3.004 | A |
| 2 - Sheffield Road | 178 | 45 | 1156 | 1079 | 0.165 | 178 | 169 | 0.0 | 0.2 | 3.993 | A |
| 3 - A6195 South | 1302 | 325 | 239 | 2419 | 0.538 | 1297 | 1095 | 0.0 | 1.2 | 3.196 | A |
| 4 - Kestrel Way | 250 | 62 | 1284 | 1333 | 0.187 | 249 | 252 | 0.0 | 0.2 | 3.316 | A |

### 17:00 - 17:15

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1355 | 339 | 232 | 2299 | 0.589 | 1353 | 1602 | 0.9 | 1.4 | 3.797 | A |
| 2 - Sheffield Road | 213 | 53 | 1383 | 950 | 0.224 | 213 | 202 | 0.2 | 0.3 | 4.883 | A |
| 3 - A6195 South | 1554 | 389 | 286 | 2385 | 0.652 | 1552 | 1310 | 1.2 | 1.8 | 4.306 | A |
| 4 - Kestrel Way | 298 | 75 | 1536 | 1171 | 0.255 | 298 | 302 | 0.2 | 0.3 | 4.124 | A |

### 17:15 - 17:30

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1659 | 415 | 284 | 2263 | 0.733 | 1654 | 1956 | 1.4 | 2.7 | 5.862 | A |
| 2 - Sheffield Road | 261 | 65 | 1692 | 775 | 0.337 | 260 | 247 | 0.3 | 0.5 | 6.983 | A |
| 3 - A6195 South | 1904 | 476 | 350 | 2338 | 0.814 | 1894 | 1601 | 1.8 | 4.2 | 7.944 | A |
| 4 - Kestrel Way | 366 | 91 | 1876 | 951 | 0.384 | 364 | 368 | 0.3 | 0.6 | 6.124 | A |

### 17:30 - 17:45

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1659 | 415 | 285 | 2263 | 0.733 | 1659 | 1965 | 2.7 | 2.7 | 5.961 | A |
| 2 - Sheffield Road | 261 | 65 | 1697 | 772 | 0.338 | 261 | 248 | 0.5 | 0.5 | 7.044 | A |
| 3 - A6195 South | 1904 | 476 | 351 | 2338 | 0.814 | 1903 | 1606 | 4.2 | 4.3 | 8.268 | A |
| 4 - Kestrel Way | 366 | 91 | 1885 | 946 | 0.387 | 366 | 370 | 0.6 | 0.6 | 6.204 | A |

### 17:45 - 18:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1355 | 339 | 234 | 2298 | 0.590 | 1360 | 1614 | 2.7 | 1.5 | 3.859 | A |
| 2 - Sheffield Road | 213 | 53 | 1391 | 946 | 0.225 | 214 | 203 | 0.5 | 0.3 | 4.925 | A |
| 3 - A6195 South | 1554 | 389 | 288 | 2384 | 0.652 | 1564 | 1317 | 4.3 | 1.9 | 4.441 | A |
| 4 - Kestrel Way | 298 | 75 | 1548 | 1163 | 0.257 | 300 | 304 | 0.6 | 0.3 | 4.174 | A |

### 18:00 - 18:15

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1135 | 284 | 195 | 2324 | 0.488 | 1137 | 1347 | 1.5 | 1.0 | 3.035 | A |
| 2 - Sheffield Road | 178 | 45 | 1162 | 1075 | 0.166 | 179 | 170 | 0.3 | 0.2 | 4.017 | A |
| 3 - A6195 South | 1302 | 325 | 241 | 2418 | 0.538 | 1305 | 1100 | 1.9 | 1.2 | 3.243 | A |
| 4 - Kestrel Way | 250 | 62 | 1292 | 1329 | 0.188 | 250 | 253 | 0.3 | 0.2 | 3.342 | A |

# 2029 Do Something, AM

### Data Errors and Warnings

*No errors or warnings*

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Rockingham Roundabout | Standard Roundabout | | 1, 2, 3, 4 | 5.47 | A |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 5.47 | A |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D9 | 2029 Do Something | AM | ONE HOUR | 07:45 | 09:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 - A6195 North | | ONE HOUR | ✓ | 1412 | 100.000 |
| 2 - Sheffield Road | | ONE HOUR | ✓ | 222 | 100.000 |
| 3 - A6195 South | | ONE HOUR | ✓ | 1549 | 100.000 |
| 4 - Kestrel Way | | ONE HOUR | ✓ | 271 | 100.000 |

## Origin-Destination Data

### Demand (PCU/hr)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 251 | 1079 | 82 |
| | 2 - Sheffield Road | 122 | 4 | 20 | 76 |
| | 3 - A6195 South | 1283 | 43 | 4 | 219 |
| | 4 - Kestrel Way | 85 | 17 | 169 | 0 |

## Vehicle Mix

### Heavy Vehicle Percentages

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 3 | 6 | 3 |
| | 2 - Sheffield Road | 4 | 0 | 0 | 2 |
| | 3 - A6195 South | 8 | 2 | 0 | 4 |
| | 4 - Kestrel Way | 4 | 0 | 2 | 0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| 1 - A6195 North | 0.68 | 5.23 | 2.2 | A | 1296 | 1944 |
| 2 - Sheffield Road | 0.27 | 5.64 | 0.4 | A | 204 | 306 |
| 3 - A6195 South | 0.72 | 5.84 | 2.7 | A | 1421 | 2132 |
| 4 - Kestrel Way | 0.26 | 4.45 | 0.4 | A | 249 | 373 |

## Main Results for each time segment

### 07:45 - 08:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1063 | 266 | 178 | 2336 | 0.455 | 1060 | 1118 | 0.0 | 0.9 | 2.961 | A |
| 2 - Sheffield Road | 167 | 42 | 1001 | 1167 | 0.143 | 166 | 236 | 0.0 | 0.2 | 3.701 | A |
| 3 - A6195 South | 1166 | 292 | 213 | 2438 | 0.478 | 1162 | 954 | 0.0 | 1.0 | 3.017 | A |
| 4 - Kestrel Way | 204 | 51 | 1092 | 1457 | 0.140 | 203 | 283 | 0.0 | 0.2 | 2.941 | A |

### 08:00 - 08:15

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1269 | 317 | 213 | 2312 | 0.549 | 1268 | 1338 | 0.9 | 1.3 | 3.624 | A |
| 2 - Sheffield Road | 200 | 50 | 1198 | 1055 | 0.189 | 199 | 283 | 0.2 | 0.2 | 4.327 | A |
| 3 - A6195 South | 1393 | 348 | 255 | 2407 | 0.578 | 1391 | 1142 | 1.0 | 1.5 | 3.790 | A |
| 4 - Kestrel Way | 244 | 61 | 1307 | 1319 | 0.185 | 243 | 338 | 0.2 | 0.2 | 3.431 | A |

### 08:15 - 08:30

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1555 | 389 | 260 | 2280 | 0.682 | 1551 | 1636 | 1.3 | 2.2 | 5.174 | A |
| 2 - Sheffield Road | 244 | 61 | 1465 | 903 | 0.271 | 244 | 346 | 0.2 | 0.4 | 5.612 | A |
| 3 - A6195 South | 1705 | 426 | 312 | 2366 | 0.721 | 1700 | 1397 | 1.5 | 2.7 | 5.755 | A |
| 4 - Kestrel Way | 298 | 75 | 1598 | 1130 | 0.264 | 298 | 414 | 0.2 | 0.4 | 4.428 | A |

### 08:30 - 08:45

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1555 | 389 | 261 | 2279 | 0.682 | 1555 | 1640 | 2.2 | 2.2 | 5.228 | A |
| 2 - Sheffield Road | 244 | 61 | 1469 | 901 | 0.271 | 244 | 347 | 0.4 | 0.4 | 5.637 | A |
| 3 - A6195 South | 1705 | 426 | 313 | 2366 | 0.721 | 1705 | 1400 | 2.7 | 2.7 | 5.844 | A |
| 4 - Kestrel Way | 298 | 75 | 1603 | 1128 | 0.265 | 298 | 415 | 0.4 | 0.4 | 4.449 | A |

### 08:45 - 09:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1269 | 317 | 214 | 2312 | 0.549 | 1273 | 1344 | 2.2 | 1.3 | 3.661 | A |
| 2 - Sheffield Road | 200 | 50 | 1203 | 1052 | 0.190 | 200 | 284 | 0.4 | 0.2 | 4.350 | A |
| 3 - A6195 South | 1393 | 348 | 256 | 2407 | 0.579 | 1398 | 1147 | 2.7 | 1.5 | 3.845 | A |
| 4 - Kestrel Way | 244 | 61 | 1314 | 1314 | 0.185 | 244 | 340 | 0.4 | 0.2 | 3.448 | A |

**09:00 - 09:15**

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1 - A6195 North** | 1063 | 266 | 179 | 2336 | 0.455 | 1065 | 1124 | 1.3 | 0.9 | 2.987 | A |
| **2 - Sheffield Road** | 167 | 42 | 1006 | 1164 | 0.144 | 167 | 238 | 0.2 | 0.2 | 3.716 | A |
| **3 - A6195 South** | 1166 | 292 | 214 | 2437 | 0.479 | 1168 | 959 | 1.5 | 1.0 | 3.046 | A |
| **4 - Kestrel Way** | 204 | 51 | 1098 | 1454 | 0.140 | 204 | 284 | 0.2 | 0.2 | 2.955 | A |

# 2029 Do Something, PM

### Data Errors and Warnings

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

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | Rockingham Roundabout | Standard Roundabout | | 1, 2, 3, 4 | 7.33 | A |

### Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Left | Normal/unknown | 7.33 | A |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D10 | 2029 Do Something | PM | ONE HOUR | 16:45 | 18:15 | 15 | ✓ |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|---|---|---|---|
| ✓ | ✓ | HV Percentages | 2.00 |

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 - A6195 North | | ONE HOUR | ✓ | 1509 | 100.000 |
| 2 - Sheffield Road | | ONE HOUR | ✓ | 238 | 100.000 |
| 3 - A6195 South | | ONE HOUR | ✓ | 1736 | 100.000 |
| 4 - Kestrel Way | | ONE HOUR | ✓ | 368 | 100.000 |

## Origin-Destination Data

### Demand (PCU/hr)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 174 | 1229 | 106 |
| | 2 - Sheffield Road | 171 | 2 | 23 | 42 |
| | 3 - A6195 South | 1511 | 27 | 1 | 197 |
| | 4 - Kestrel Way | 110 | 27 | 230 | 1 |

## Vehicle Mix

### Heavy Vehicle Percentages

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 - A6195 North | 2 - Sheffield Road | 3 - A6195 South | 4 - Kestrel Way |
| From | 1 - A6195 North | 0 | 0 | 0 | 0 |
| | 2 - Sheffield Road | 0 | 0 | 0 | 0 |
| | 3 - A6195 South | 0 | 0 | 0 | 0 |
| | 4 - Kestrel Way | 0 | 0 | 0 | 0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---|---|---|---|---|---|---|
| 1 - A6195 North | 0.74 | 6.21 | 2.8 | A | 1385 | 2077 |
| 2 - Sheffield Road | 0.35 | 7.29 | 0.5 | A | 218 | 328 |
| 3 - A6195 South | 0.82 | 8.46 | 4.4 | A | 1593 | 2389 |
| 4 - Kestrel Way | 0.43 | 6.66 | 0.7 | A | 338 | 507 |

## Main Results for each time segment

### 16:45 - 17:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1136 | 284 | 216 | 2310 | 0.492 | 1132 | 1344 | 0.0 | 1.0 | 3.046 | A |
| 2 - Sheffield Road | 179 | 45 | 1176 | 1067 | 0.168 | 178 | 173 | 0.0 | 0.2 | 4.046 | A |
| 3 - A6195 South | 1307 | 327 | 241 | 2417 | 0.541 | 1302 | 1113 | 0.0 | 1.2 | 3.216 | A |
| 4 - Kestrel Way | 277 | 69 | 1284 | 1333 | 0.208 | 276 | 260 | 0.0 | 0.3 | 3.401 | A |

### 17:00 - 17:15

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1357 | 339 | 258 | 2281 | 0.595 | 1355 | 1608 | 1.0 | 1.5 | 3.879 | A |
| 2 - Sheffield Road | 214 | 53 | 1407 | 936 | 0.228 | 214 | 206 | 0.2 | 0.3 | 4.978 | A |
| 3 - A6195 South | 1561 | 390 | 289 | 2383 | 0.655 | 1558 | 1331 | 1.2 | 1.9 | 4.349 | A |
| 4 - Kestrel Way | 331 | 83 | 1536 | 1171 | 0.283 | 330 | 311 | 0.3 | 0.4 | 4.281 | A |

### 17:15 - 17:30

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1661 | 415 | 316 | 2241 | 0.741 | 1656 | 1964 | 1.5 | 2.8 | 6.096 | A |
| 2 - Sheffield Road | 262 | 66 | 1720 | 759 | 0.345 | 261 | 252 | 0.3 | 0.5 | 7.221 | A |
| 3 - A6195 South | 1911 | 478 | 353 | 2336 | 0.818 | 1902 | 1627 | 1.9 | 4.3 | 8.112 | A |
| 4 - Kestrel Way | 405 | 101 | 1876 | 951 | 0.426 | 404 | 379 | 0.4 | 0.7 | 6.558 | A |

### 17:30 - 17:45

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1661 | 415 | 317 | 2241 | 0.742 | 1661 | 1973 | 2.8 | 2.8 | 6.210 | A |
| 2 - Sheffield Road | 262 | 66 | 1725 | 756 | 0.347 | 262 | 253 | 0.5 | 0.5 | 7.291 | A |
| 3 - A6195 South | 1911 | 478 | 354 | 2335 | 0.819 | 1911 | 1633 | 4.3 | 4.4 | 8.462 | A |
| 4 - Kestrel Way | 405 | 101 | 1885 | 946 | 0.428 | 405 | 381 | 0.7 | 0.7 | 6.659 | A |

### 17:45 - 18:00

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1357 | 339 | 260 | 2280 | 0.595 | 1362 | 1621 | 2.8 | 1.5 | 3.944 | A |
| 2 - Sheffield Road | 214 | 53 | 1414 | 932 | 0.230 | 215 | 208 | 0.5 | 0.3 | 5.025 | A |
| 3 - A6195 South | 1561 | 390 | 291 | 2382 | 0.655 | 1571 | 1339 | 4.4 | 1.9 | 4.491 | A |
| 4 - Kestrel Way | 331 | 83 | 1548 | 1163 | 0.285 | 332 | 313 | 0.7 | 0.4 | 4.341 | A |

### 18:00 - 18:15

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 - A6195 North | 1136 | 284 | 217 | 2309 | 0.492 | 1138 | 1352 | 1.5 | 1.0 | 3.080 | A |
| 2 - Sheffield Road | 179 | 45 | 1182 | 1064 | 0.168 | 180 | 173 | 0.3 | 0.2 | 4.072 | A |
| 3 - A6195 South | 1307 | 327 | 243 | 2416 | 0.541 | 1310 | 1119 | 1.9 | 1.2 | 3.262 | A |
| 4 - Kestrel Way | 277 | 69 | 1292 | 1328 | 0.209 | 278 | 261 | 0.4 | 0.3 | 3.429 | A |

# Appendix M: -

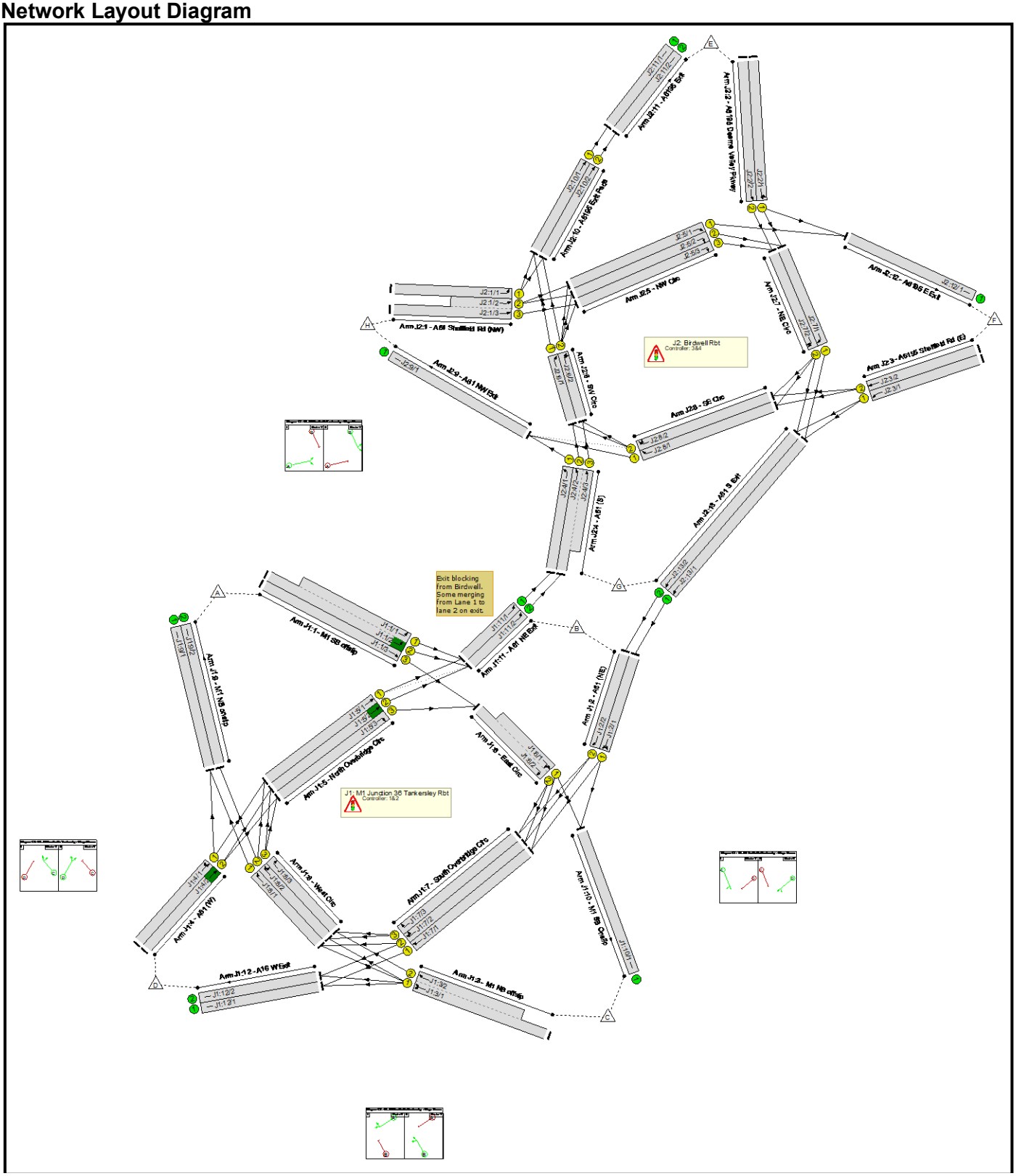
# Full Input Data And Results

## User and Project Details

| | |
|---|---|
| **Project:** | |
| **Title:** | **M1 J36 Tankersley Rbt + Birdwell Rbt** |
| **Location:** | |
| **Additional detail:** | |
| **File name:** | M1J36 Tankersley + Birdwell Rbt (no exit block).lsg3x |
| **Author:** | al |
| **Company:** | |
| **Address:** | |

Full Input Data And Results

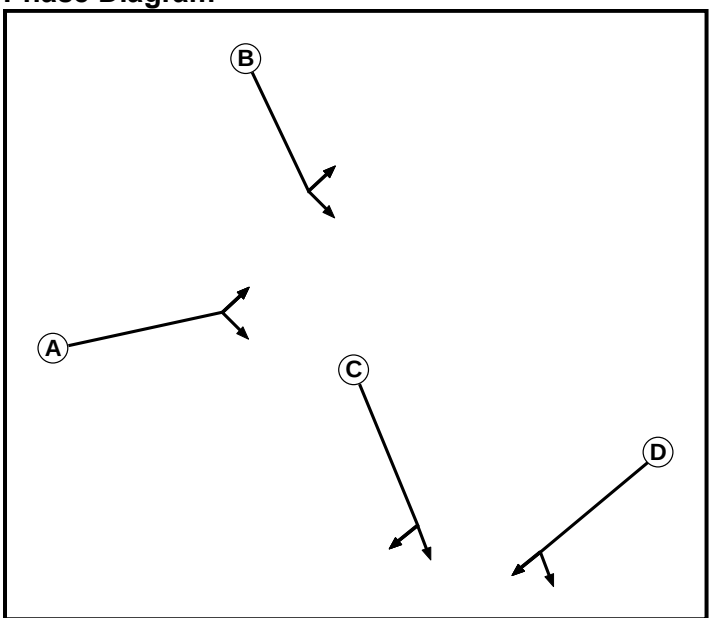
## Network Layout Diagram



Full Input Data And Results

**C1 - M1 J36 Northside Tankersley**

## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |
| C | Traffic | 2 | | 7 | 7 |
| D | Traffic | 2 | | 7 | 7 |

## Phase Intergreens Matrix

| | | Starting Phase | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| Terminating Phase | A | | 7 | - | - |
| | B | 7 | | - | - |
| | C | - | - | | 7 |
| | D | - | - | 7 | |

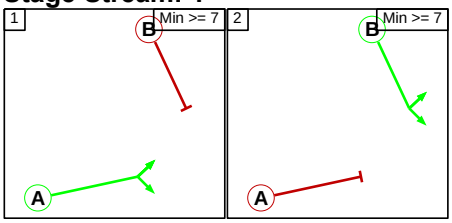
## Phases in Stage

| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A |
| 1 | 2 | B |
| 2 | 1 | C |
| 2 | 2 | D |

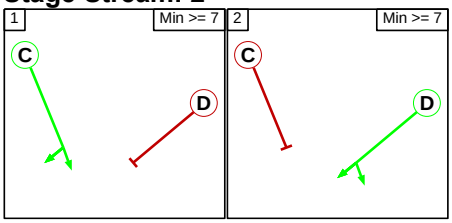
Full Input Data And Results

## Stage Diagram

### Stage Stream: 1




### Stage Stream: 2




## Phase Delays

### Stage Stream: 1

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

### Stage Stream: 2

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

## Prohibited Stage Change

### Stage Stream: 1

| From Stage | To Stage 1 | To Stage 2 |
|---|---|---|
| 1 | | 7 |
| 2 | 7 | |

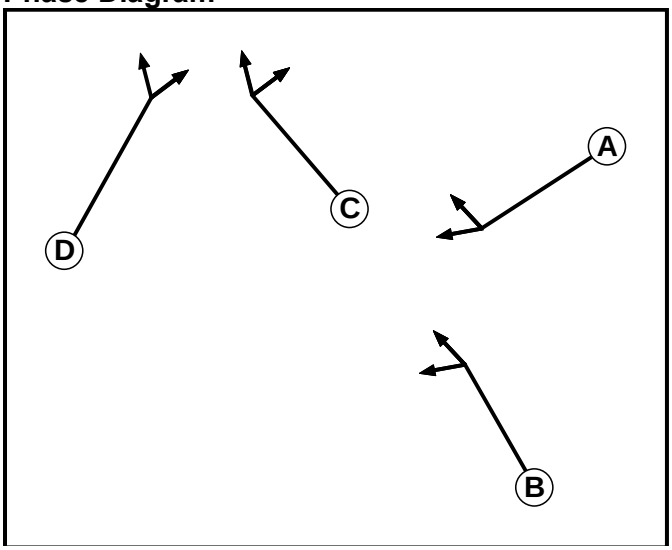
### Stage Stream: 2

| From Stage | To Stage 1 | To Stage 2 |
|---|---|---|
| 1 | | 7 |
| 2 | 7 | |

Full Input Data And Results

**C2 - M1 J36 Southside Tankersley**

## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | -9999 | 7 |
| B | Traffic | 1 | | -9999 | 7 |
| C | Traffic | 2 | | -9999 | 7 |
| D | Traffic | 2 | | -9999 | 7 |

## Phase Intergreens Matrix

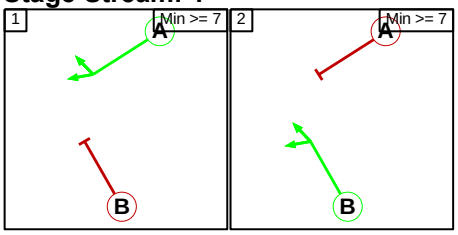
| Terminating Phase \ Starting Phase | A | B | C | D |
|---|---|---|---|---|
| A | | 7 | - | - |
| B | 7 | | - | - |
| C | - | - | | 7 |
| D | - | - | 7 | |

## Phases in Stage

| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A |
| 1 | 2 | B |
| 2 | 1 | C |
| 2 | 2 | D |

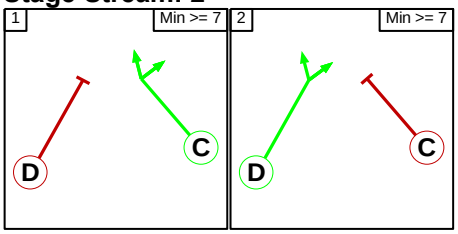
## Stage Diagram

### Stage Stream: 1



Full Input Data And Results

**Stage Stream: 2**




## Phase Delays

**Stage Stream: 1**

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

**Stage Stream: 2**

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

## Prohibited Stage Change

**Stage Stream: 1**

| | To Stage | | |
|---|---|---|---|
| | | 1 | 2 |
| From Stage | 1 | | 7 |
| | 2 | 7 | |

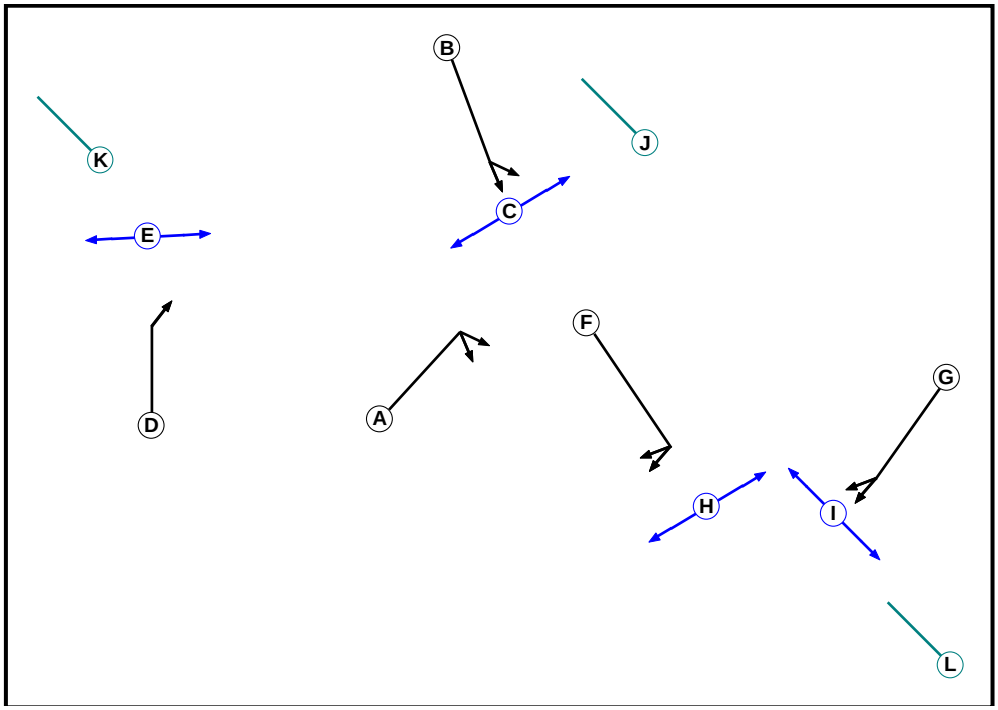
**Stage Stream: 2**

| | To Stage | | |
|---|---|---|---|
| | | 1 | 2 |
| From Stage | 1 | | 7 |
| | 2 | 7 | |

Full Input Data And Results

**C3 - Birdwell North**

## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | -9999 | 7 |
| B | Traffic | 1 | | -9999 | 7 |
| C | Pedestrian | 1 | | -9999 | 6 |
| D | Traffic | 2 | | -9999 | 7 |
| E | Pedestrian | 2 | | -9999 | 6 |
| F | Traffic | 3 | | -9999 | 7 |
| G | Traffic | 3 | | -9999 | 7 |
| H | Pedestrian | 3 | | -9999 | 6 |
| I | Pedestrian | 3 | | -9999 | 6 |
| J | Dummy | 1 | | -9999 | 3 |
| K | Dummy | 2 | | -9999 | 3 |
| L | Dummy | 3 | | -9999 | 3 |

Full Input Data And Results

## Phase Intergreens Matrix

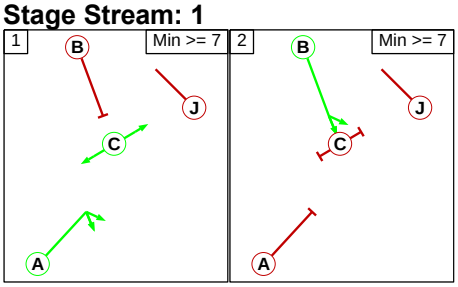
| | | Starting Phase | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | I | J | K | L |
| Terminating Phase | A | | 5 | - | - | - | - | - | - | - | 3 | - | - |
| | B | 6 | | 5 | - | - | - | - | - | - | 3 | - | - |
| | C | - | 10 | | - | - | - | - | - | - | 3 | - | - |
| | D | - | - | - | | 5 | - | - | - | - | - | 3 | - |
| | E | - | - | - | 8 | | - | - | - | - | - | 3 | - |
| | F | - | - | - | - | - | | 5 | 5 | - | - | - | 3 |
| | G | - | - | - | - | - | 5 | | - | 5 | - | - | 3 |
| | H | - | - | - | - | - | 8 | - | | - | - | - | 3 |
| | I | - | - | - | - | - | - | 8 | - | | - | - | 3 |
| | J | 2 | 2 | 2 | - | - | - | - | - | - | | - | - |
| | K | - | - | - | 2 | 2 | - | - | - | - | - | | - |
| | L | - | - | - | - | - | 2 | 2 | 2 | 2 | - | - | |

## Phases in Stage

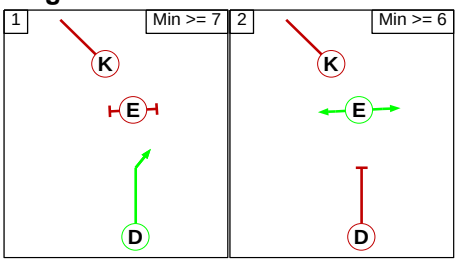
| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A C |
| 1 | 2 | B |
| 2 | 1 | D |
| 2 | 2 | E |
| 3 | 1 | F I |
| 3 | 2 | G H |

## Stage Diagram

### Stage Stream: 1

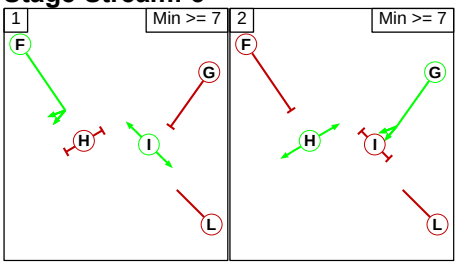



### Stage Stream: 2



Full Input Data And Results

**Stage Stream: 3**




## Phase Delays

**Stage Stream: 1**

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

**Stage Stream: 2**

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

**Stage Stream: 3**

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

## Prohibited Stage Change

**Stage Stream: 1**

| From Stage \ To Stage | 1 | 2 |
|---|---|---|
| 1 | | 10 |
| 2 | 6 | |

**Stage Stream: 2**

| From Stage \ To Stage | 1 | 2 |
|---|---|---|
| 1 | | 5 |
| 2 | 8 | |

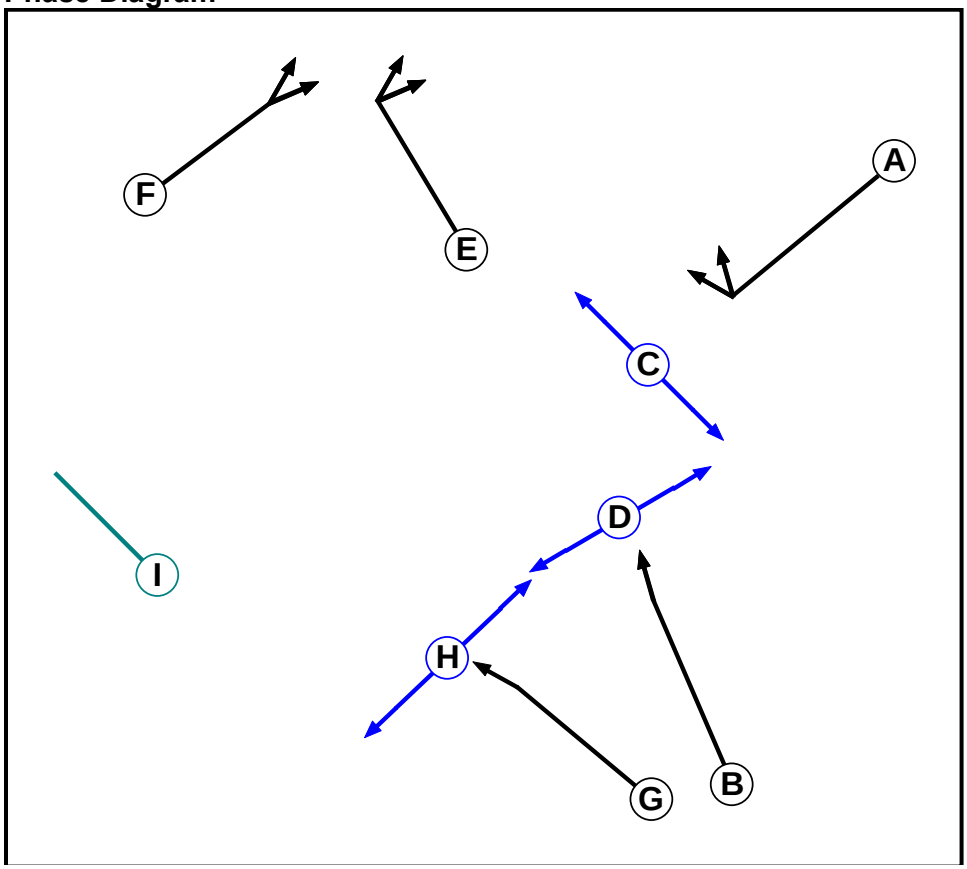
**Stage Stream: 3**

| From Stage \ To Stage | 1 | 2 |
|---|---|---|
| 1 | | 8 |
| 2 | 8 | |

Full Input Data And Results

**C4 - Birdwell South**

## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|
| A | Traffic | | -9999 | 7 |
| B | Traffic | | -9999 | 7 |
| C | Pedestrian | | -9999 | 5 |
| D | Pedestrian | | -9999 | 5 |
| E | Traffic | | -9999 | 7 |
| F | Traffic | | -9999 | 7 |
| G | Traffic | | -9999 | 7 |
| H | Pedestrian | | -9999 | 5 |
| I | Dummy | | -9999 | 3 |

Full Input Data And Results

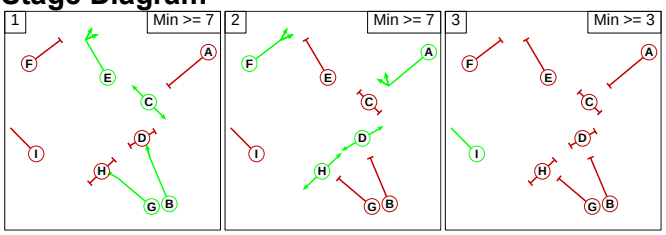
## Phase Intergreens Matrix

| | | Starting Phase | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | I |
| Terminating Phase | A | | 5 | 5 | - | - | - | 8 | - | 3 |
| | B | 5 | | - | 5 | - | - | - | - | 3 |
| | C | 8 | - | | - | - | - | - | - | 3 |
| | D | - | 7 | - | | - | - | - | - | 3 |
| | E | - | - | - | - | | 5 | - | - | 3 |
| | F | - | - | - | - | 5 | | - | - | 3 |
| | G | 5 | - | - | - | - | - | | 5 | 3 |
| | H | - | - | - | - | - | - | 7 | | 3 |
| | I | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |

## Phases in Stage

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

## Stage Diagram




## Phase Delays

| Term. Stage | Start Stage | Phase | Type | Value | Cont value |
|---|---|---|---|---|---|
| 1 | 2 | E | Losing | 4 | 4 |
| 1 | 3 | E | Losing | 4 | 4 |

## Prohibited Stage Change

| | | To Stage | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From Stage | 1 | | 9 | 7 |
| | 2 | 8 | | 3 |
| | 3 | 2 | 2 | |

Full Input Data And Results

## Give-Way Lane Input Data

| Junction: J1: M1 Junction 36 Tankersley Rbt |
| --- |
| There are no Opposed Lanes in this Junction |

| Junction: J2: Birdwell Rbt |
| --- |
| There are no Opposed Lanes in this Junction |

Full Input Data And Results

## Lane Input Data

Full Input Data And Results

| Junction: J1: M1 Junction 36 Tankersley Rbt | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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)** |
| J1:1/1 (M1 SB offslip) | U | B | 2 | 3 | 19.8 | User | 1900 | - | - | - | - | - |
| J1:1/2 (M1 SB offslip) | U | B | 2 | 3 | 62.6 | User | 1900 | - | - | - | - | - |
| J1:1/3 (M1 SB offslip) | U | B | 2 | 3 | 90.4 | User | 1900 | - | - | - | - | - |
| J1:2/1 (A61 (NE)) | U | D | 2 | 3 | 20.5 | User | 1900 | - | - | - | - | - |
| J1:2/2 (A61 (NE)) | U | D | 2 | 3 | 20.5 | User | 1900 | - | - | - | - | - |
| J1:3/1 (M1 NB offslip) | U | B | 2 | 3 | 71.3 | User | 1900 | - | - | - | - | - |
| J1:3/2 (M1 NB offslip) | U | B | 2 | 3 | 48.7 | User | 1900 | - | - | - | - | - |
| J1:4/1 (A61 (W)) | U | D | 2 | 3 | 60.0 | User | 1900 | - | - | - | - | - |
| J1:4/2 (A61 (W)) | U | D | 2 | 3 | 60.0 | User | 1900 | - | - | - | - | - |
| J1:5/1 (North Overbridge Circ) | U | A | 2 | 3 | 28.2 | User | 1900 | - | - | - | - | - |
| J1:5/2 (North Overbridge Circ) | U | A | 2 | 3 | 28.2 | User | 1900 | - | - | - | - | - |
| J1:5/3 (North Overbridge Circ) | U | A | 2 | 3 | 28.2 | User | 1900 | - | - | - | - | - |
| J1:6/1 (East Circ) | U | C | 2 | 3 | 13.9 | User | 1900 | - | - | - | - | - |
| J1:6/2 (East Circ) | U | C | 2 | 3 | 30.4 | User | 1900 | - | - | - | - | - |
| J1:7/1 (South Overbridge Circ) | U | A | 2 | 3 | 43.5 | User | 1900 | - | - | - | - | - |
| J1:7/2 (South Overbridge Circ) | U | A | 2 | 3 | 43.5 | User | 1900 | - | - | - | - | - |
| J1:7/3 (South Overbridge Circ) | U | A | 2 | 3 | 43.5 | User | 1900 | - | - | - | - | - |
| J1:8/1 (West Circ) | U | C | 2 | 3 | 13.0 | User | 1900 | - | - | - | - | - |

Full Input Data And Results

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J1:8/2 (West Circ) | U | C | 2 | 3 | 13.0 | User | 1900 | - | - | - | - | - |
| J1:8/3 (West Circ) | U | C | 2 | 3 | 13.0 | User | 1900 | - | - | - | - | - |
| J1:9/1 (M1 NB onslip) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J1:9/2 (M1 NB onslip) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J1:10/1 (M1 SB Onslip) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J1:11/1 (A61 NE Exit) | U | | 2 | 3 | 8.7 | Inf | - | - | - | - | - | - |
| J1:11/2 (A61 NE Exit) | U | | 2 | 3 | 8.7 | Inf | - | - | - | - | - | - |
| J1:12/1 (A16 W Exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J1:12/2 (A16 W Exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

Full Input Data And Results

| Junction: J2: Birdwell Rbt | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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)** |
| J2:1/1 (A61 Sheffield Rd (NW)) | U | F | 2 | 3 | 8.9 | User | 1900 | - | - | - | - | - |
| J2:1/2 (A61 Sheffield Rd (NW)) | U | F | 2 | 3 | 8.9 | User | 1900 | - | - | - | - | - |
| J2:1/3 (A61 Sheffield Rd (NW)) | U | F | 2 | 3 | 60.0 | User | 1900 | - | - | - | - | - |
| J2:2/1 (A6195 Dearne Valley Pkway) | U | B | 2 | 3 | 41.7 | User | 1900 | - | - | - | - | - |
| J2:2/2 (A6195 Dearne Valley Pkway) | U | B | 2 | 3 | 41.7 | User | 1900 | - | - | - | - | - |
| J2:3/1 (A6195 Sheffield Rd (E)) | U | G | 2 | 3 | 13.0 | User | 1900 | - | - | - | - | - |
| J2:3/2 (A6195 Sheffield Rd (E)) | U | G | 2 | 3 | 13.0 | User | 1900 | - | - | - | - | - |
| J2:4/1 (A61 (S)) | U | G | 2 | 3 | 20.0 | User | 1900 | - | - | - | - | - |
| J2:4/2 (A61 (S)) | U | B | 2 | 3 | 17.4 | User | 1900 | - | - | - | - | - |
| J2:4/3 (A61 (S)) | U | B | 2 | 3 | 17.4 | User | 1900 | - | - | - | - | - |
| J2:5/1 (NW Circ) | U | A | 2 | 3 | 24.3 | User | 1900 | - | - | - | - | - |
| J2:5/2 (NW Circ) | U | A | 2 | 3 | 24.3 | User | 1900 | - | - | - | - | - |
| J2:5/3 (NW Circ) | U | A | 2 | 3 | 24.3 | User | 1900 | - | - | - | - | - |
| J2:6/1 (SW Circ) | U | E | 2 | 3 | 6.1 | User | 1900 | - | - | - | - | - |
| J2:6/2 (SW Circ) | U | E | 2 | 3 | 6.1 | User | 1900 | - | - | - | - | - |
| J2:7/1 (NE Circ) | U | F | 2 | 3 | 15.3 | User | 1900 | - | - | - | - | - |
| J2:7/2 (NE Circ) | U | F | 2 | 3 | 15.3 | User | 1900 | - | - | - | - | - |
| J2:8/1 (SE Circ) | U | A | 2 | 3 | 20.3 | User | 1900 | - | - | - | - | - |
| J2:8/2 (SE Circ) | U | A | 2 | 3 | 20.3 | User | 1900 | - | - | - | - | - |
| J2:9/1 (A61 NW Exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

Full Input Data And Results

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J2:10/1 (A6195 Exit Peds) | U | D | 2 | 3 | 23.0 | User | 1900 | - | - | - | - | - |
| J2:10/2 (A6195 Exit Peds) | U | D | 2 | 3 | 23.0 | User | 1900 | - | - | - | - | - |
| J2:11/1 (A6195 Exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J2:11/2 (A6195 Exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J2:12/1 (A6195 E Exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J2:13/1 (A61 S Exit) | U | | 2 | 3 | 13.9 | Inf | - | - | - | - | - | - |
| J2:13/2 (A61 S Exit) | U | | 2 | 3 | 13.9 | Inf | - | - | - | - | - | - |

## Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---|---|---|---|---|
| 1: '2023 AM Baseline' | 08:00 | 09:00 | 01:00 | |
| 2: '2023 PM Baseline' | 16:30 | 17:30 | 01:00 | |
| 3: '2029 AM Do Minimum' | 08:00 | 09:00 | 01:00 | |
| 4: '2029 PM Do Minimum' | 16:30 | 17:30 | 01:00 | |
| 5: '2029 AM Do Something' | 08:00 | 09:00 | 01:00 | |
| 6: '2029 PM Do Something' | 16:30 | 17:30 | 01:00 | |
| 7: '2024 AM Do Minimum' | 08:00 | 09:00 | 01:00 | |
| 8: '2024 PM Do Minimum' | 16:30 | 17:30 | 01:00 | |
| 9: '2024 AM Do Something' | 08:00 | 09:00 | 01:00 | |
| 10: '2024 PM Do Something' | 16:30 | 17:30 | 01:00 | |

**Scenario 1: '0'** (FG1: '2023 AM Baseline', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| Origin | Destination | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | Tot. |
| | A | 0 | 667 | 3 | 404 | 0 | 0 | 0 | 0 | 1074 |
| | B | 612 | 0 | 698 | 563 | 0 | 0 | 0 | 0 | 1873 |
| | C | 4 | 581 | 0 | 186 | 0 | 0 | 0 | 0 | 771 |
| | D | 454 | 573 | 177 | 0 | 0 | 0 | 0 | 0 | 1204 |
| | E | 0 | 0 | 0 | 0 | 3 | 5 | 791 | 284 | 1083 |
| | F | 0 | 0 | 0 | 0 | 11 | 0 | 395 | 320 | 726 |
| | G | 0 | 0 | 0 | 0 | 1054 | 345 | 0 | 432 | 1831 |
| | H | 0 | 0 | 0 | 0 | 227 | 155 | 670 | 0 | 1052 |
| | Tot. | 1070 | 1821 | 878 | 1153 | 1295 | 505 | 1856 | 1036 | 9614 |

Full Input Data And Results

## Traffic Lane Flows

Full Input Data And Results

| Lane | Scenario 1: 0 |
|---|---|
| **Junction: J1: M1 Junction 36 Tankersley Rbt** | |
| J1:1/1 (short) | 160 |
| J1:1/2 (with short) | 667(In) 507(Out) |
| J1:1/3 | 407 |
| J1:2/1 | 943 |
| J1:2/2 | 930 |
| J1:3/1 (with short) | 771(In) 355(Out) |
| J1:3/2 (short) | 416 |
| J1:4/1 | 684 |
| J1:4/2 | 520 |
| J1:5/1 | 395 |
| J1:5/2 | 759 |
| J1:5/3 | 177 |
| J1:6/1 (short) | 426 |
| J1:6/2 (with short) | 584(In) 158(Out) |
| J1:7/1 | 491 |
| J1:7/2 | 760 |
| J1:7/3 | 328 |
| J1:8/1 | 288 |
| J1:8/2 | 493 |
| J1:8/3 | 416 |
| J1:9/1 | 742 |
| J1:9/2 | 328 |
| J1:10/1 | 878 |
| J1:11/1 | 432 |
| J1:11/2 | 1389 |
| J1:12/1 | 584 |
| J1:12/2 | 569 |
| **Junction: J2: Birdwell Rbt** | |
| J2:1/1 | 227 |
| J2:1/2 (short) | 501 |
| J2:1/3 (with short) | 825(In) 324(Out) |
| J2:2/1 | 542 |
| J2:2/2 | 541 |
| J2:3/1 | 395 |
| J2:3/2 | 331 |
| J2:4/1 | 432 |

Full Input Data And Results

| | |
|---|---|
| J2:4/2<br>(with short) | 1399(In)<br>697(Out) |
| J2:4/3<br>(short) | 702 |
| J2:5/1 | 500 |
| J2:5/2 | 346 |
| J2:5/3 | 324 |
| J2:6/1 | 707 |
| J2:6/2 | 706 |
| J2:7/1 | 883 |
| J2:7/2 | 865 |
| J2:8/1 | 604 |
| J2:8/2 | 14 |
| J2:9/1 | 1036 |
| J2:10/1 | 708 |
| J2:10/2 | 587 |
| J2:11/1 | 708 |
| J2:11/2 | 587 |
| J2:12/1 | 505 |
| J2:13/1 | 931 |
| J2:13/2 | 925 |

Full Input Data And Results

## Lane Saturation Flows

Full Input Data And Results

| Junction: J1: M1 Junction 36 Tankersley Rbt | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (M1 SB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/2 (M1 SB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/3 (M1 SB offslip Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/1 (A61 (NE) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/2 (A61 (NE) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/1 (M1 NB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/2 (M1 NB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/1 (A61 (W) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/2 (A61 (W) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/1 (North Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/2 (North Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/3 (North Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/1 (East Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/2 (East Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/1 (South Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/2 (South Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/3 (South Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/1 (West Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/2 (West Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/3 (West Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:9/1 (M1 NB onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/2 (M1 NB onslip Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:10/1 (M1 SB Onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/1 (A61 NE Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J1:11/2<br>(A61 NE Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J1:12/1<br>(A16 W Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J1:12/2<br>(A16 W Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

Full Input Data And Results

**Junction: J2: Birdwell Rbt**

| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
|---|---|---|---|---|---|---|---|---|
| J2:1/1 (A61 Sheffield Rd (NW) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/2 (A61 Sheffield Rd (NW) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/3 (A61 Sheffield Rd (NW) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/1 (A6195 Dearne Valley Pkway Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/2 (A6195 Dearne Valley Pkway Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/1 (A6195 Sheffield Rd (E) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/2 (A6195 Sheffield Rd (E) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/1 (A61 (S) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/2 (A61 (S) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/3 (A61 (S) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/1 (NW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/2 (NW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/3 (NW Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/1 (SW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/2 (SW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/1 (NE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/2 (NE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/1 (SE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/2 (SE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:9/1 (A61 NW Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:10/1 (A6195 Exit Peds Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:10/2 (A6195 Exit Peds Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:11/1 (A6195 Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J2:11/2<br>(A6195 Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J2:12/1<br>(A6195 E Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/1<br>(A61 S Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/2<br>(A61 S Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

**Scenario 2: '2'** (FG2: '2023 PM Baseline', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | Tot. |
| Origin | A | 0 | 921 | 4 | 469 | 0 | 0 | 0 | 0 | 1394 |
| | B | 562 | 0 | 570 | 502 | 0 | 0 | 0 | 0 | 1634 |
| | C | 5 | 954 | 0 | 210 | 0 | 0 | 0 | 0 | 1169 |
| | D | 335 | 547 | 134 | 0 | 0 | 0 | 0 | 0 | 1016 |
| | E | 0 | 0 | 0 | 0 | 0 | 16 | 846 | 367 | 1229 |
| | F | 0 | 0 | 0 | 0 | 8 | 0 | 261 | 270 | 539 |
| | G | 0 | 0 | 0 | 0 | 1323 | 529 | 0 | 582 | 2434 |
| | H | 0 | 0 | 0 | 0 | 205 | 176 | 515 | 0 | 896 |
| | Tot. | 902 | 2422 | 708 | 1181 | 1536 | 721 | 1622 | 1219 | 10311 |

Full Input Data And Results

## Traffic Lane Flows

Full Input Data And Results

| Lane | Scenario 2: 2 |
|---|---|
| **Junction: J1: M1 Junction 36 Tankersley Rbt** | |
| J1:1/1 (short) | 221 |
| J1:1/2 (with short) | 921(In) 700(Out) |
| J1:1/3 | 473 |
| J1:2/1 | 886 |
| J1:2/2 | 748 |
| J1:3/1 (with short) | 1169(In) 618(Out) |
| J1:3/2 (short) | 551 |
| J1:4/1 | 598 |
| J1:4/2 | 418 |
| J1:5/1 | 666 |
| J1:5/2 | 835 |
| J1:5/3 | 134 |
| J1:6/1 (short) | 462 |
| J1:6/2 (with short) | 607(In) 145(Out) |
| J1:7/1 | 640 |
| J1:7/2 | 601 |
| J1:7/3 | 292 |
| J1:8/1 | 275 |
| J1:8/2 | 695 |
| J1:8/3 | 551 |
| J1:9/1 | 610 |
| J1:9/2 | 292 |
| J1:10/1 | 708 |
| J1:11/1 | 582 |
| J1:11/2 | 1840 |
| J1:12/1 | 745 |
| J1:12/2 | 436 |
| **Junction: J2: Birdwell Rbt** | |
| J2:1/1 | 205 |
| J2:1/2 (short) | 405 |
| J2:1/3 (with short) | 691(In) 286(Out) |
| J2:2/1 | 614 |
| J2:2/2 | 615 |
| J2:3/1 | 261 |
| J2:3/2 | 278 |
| J2:4/1 | 582 |

Full Input Data And Results

| | |
|---|---|
| J2:4/2<br>(with short) | 1852(In)<br>921(Out) |
| J2:4/3<br>(short) | 931 |
| J2:5/1 | 705 |
| J2:5/2 | 229 |
| J2:5/3 | 286 |
| J2:6/1 | 925 |
| J2:6/2 | 935 |
| J2:7/1 | 827 |
| J2:7/2 | 901 |
| J2:8/1 | 517 |
| J2:8/2 | 128 |
| J2:9/1 | 1219 |
| J2:10/1 | 926 |
| J2:10/2 | 610 |
| J2:11/1 | 926 |
| J2:11/2 | 610 |
| J2:12/1 | 721 |
| J2:13/1 | 878 |
| J2:13/2 | 744 |

Full Input Data And Results

## Lane Saturation Flows

Full Input Data And Results

| Junction: J1: M1 Junction 36 Tankersley Rbt | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (M1 SB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/2 (M1 SB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/3 (M1 SB offslip Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/1 (A61 (NE) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/2 (A61 (NE) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/1 (M1 NB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/2 (M1 NB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/1 (A61 (W) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/2 (A61 (W) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/1 (North Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/2 (North Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/3 (North Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/1 (East Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/2 (East Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/1 (South Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/2 (South Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/3 (South Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/1 (West Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/2 (West Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/3 (West Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:9/1 (M1 NB onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/2 (M1 NB onslip Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:10/1 (M1 SB Onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/1 (A61 NE Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J1:11/2<br>(A61 NE Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J1:12/1<br>(A16 W Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J1:12/2<br>(A16 W Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

Full Input Data And Results

**Junction: J2: Birdwell Rbt**

| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
|---|---|---|---|---|---|---|---|---|
| J2:1/1 (A61 Sheffield Rd (NW) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/2 (A61 Sheffield Rd (NW) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/3 (A61 Sheffield Rd (NW) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/1 (A6195 Dearne Valley Pkway Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/2 (A6195 Dearne Valley Pkway Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/1 (A6195 Sheffield Rd (E) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/2 (A6195 Sheffield Rd (E) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/1 (A61 (S) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/2 (A61 (S) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/3 (A61 (S) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/1 (NW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/2 (NW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/3 (NW Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/1 (SW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/2 (SW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/1 (NE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/2 (NE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/1 (SE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/2 (SE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:9/1 (A61 NW Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:10/1 (A6195 Exit Peds Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:10/2 (A6195 Exit Peds Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:11/1 (A6195 Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J2:11/2<br>(A6195 Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J2:12/1<br>(A6195 E Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/1<br>(A61 S Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/2<br>(A61 S Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

**Scenario 3: '3'** (FG3: '2029 AM Do Minimum', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | Tot. |
| Origin | A | 0 | 824 | 3 | 424 | 0 | 0 | 0 | 0 | 1251 |
| | B | 743 | 0 | 819 | 663 | 0 | 0 | 0 | 0 | 2225 |
| | C | 4 | 705 | 0 | 195 | 0 | 0 | 0 | 0 | 904 |
| | D | 476 | 686 | 186 | 0 | 0 | 0 | 0 | 0 | 1348 |
| | E | 0 | 0 | 0 | 0 | 3 | 5 | 938 | 316 | 1262 |
| | F | 0 | 0 | 0 | 0 | 12 | 0 | 550 | 354 | 916 |
| | G | 0 | 0 | 0 | 0 | 1361 | 405 | 0 | 459 | 2225 |
| | H | 0 | 0 | 0 | 0 | 262 | 199 | 720 | 0 | 1181 |
| | Tot. | 1223 | 2215 | 1008 | 1282 | 1638 | 609 | 2208 | 1129 | 11312 |

Full Input Data And Results

## Traffic Lane Flows

Full Input Data And Results

| Lane | Scenario 3: 3 |
|---|---|
| **Junction: J1: M1 Junction 36 Tankersley Rbt** | |
| J1:1/1 (short) | 169 |
| J1:1/2 (with short) | 824(In) 655(Out) |
| J1:1/3 | 427 |
| J1:2/1 | 1108 |
| J1:2/2 | 1117 |
| J1:3/1 (with short) | 904(In) 376(Out) |
| J1:3/2 (short) | 528 |
| J1:4/1 | 719 |
| J1:4/2 | 629 |
| J1:5/1 | 420 |
| J1:5/2 | 971 |
| J1:5/3 | 186 |
| J1:6/1 (short) | 432 |
| J1:6/2 (with short) | 613(In) 181(Out) |
| J1:7/1 | 532 |
| J1:7/2 | 818 |
| J1:7/3 | 480 |
| J1:8/1 | 267 |
| J1:8/2 | 657 |
| J1:8/3 | 528 |
| J1:9/1 | 743 |
| J1:9/2 | 480 |
| J1:10/1 | 1008 |
| J1:11/1 | 459 |
| J1:11/2 | 1756 |
| J1:12/1 | 630 |
| J1:12/2 | 652 |
| **Junction: J2: Birdwell Rbt** | |
| J2:1/1 | 262 |
| J2:1/2 (short) | 542 |
| J2:1/3 (with short) | 919(In) 377(Out) |
| J2:2/1 | 632 |
| J2:2/2 | 630 |
| J2:3/1 | 550 |
| J2:3/2 | 366 |
| J2:4/1 | 459 |

Full Input Data And Results

| | |
|---|---|
| J2:4/2<br>(with short) | 1766(In)<br>874(Out) |
| J2:4/3<br>(short) | 892 |
| J2:5/1 | 604 |
| J2:5/2 | 343 |
| J2:5/3 | 377 |
| J2:6/1 | 885 |
| J2:6/2 | 896 |
| J2:7/1 | 970 |
| J2:7/2 | 1007 |
| J2:8/1 | 670 |
| J2:8/2 | 15 |
| J2:9/1 | 1129 |
| J2:10/1 | 885 |
| J2:10/2 | 753 |
| J2:11/1 | 885 |
| J2:11/2 | 753 |
| J2:12/1 | 609 |
| J2:13/1 | 1126 |
| J2:13/2 | 1082 |

Full Input Data And Results

## Lane Saturation Flows

Full Input Data And Results

| Junction: J1: M1 Junction 36 Tankersley Rbt | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (M1 SB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/2 (M1 SB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/3 (M1 SB offslip Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/1 (A61 (NE) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/2 (A61 (NE) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/1 (M1 NB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/2 (M1 NB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/1 (A61 (W) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/2 (A61 (W) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/1 (North Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/2 (North Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/3 (North Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/1 (East Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/2 (East Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/1 (South Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/2 (South Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/3 (South Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/1 (West Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/2 (West Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/3 (West Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:9/1 (M1 NB onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/2 (M1 NB onslip Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:10/1 (M1 SB Onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/1 (A61 NE Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J1:11/2<br>(A61 NE Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J1:12/1<br>(A16 W Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J1:12/2<br>(A16 W Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

Full Input Data And Results

**Junction: J2: Birdwell Rbt**

| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
|---|---|---|---|---|---|---|---|---|
| J2:1/1 (A61 Sheffield Rd (NW) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/2 (A61 Sheffield Rd (NW) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/3 (A61 Sheffield Rd (NW) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/1 (A6195 Dearne Valley Pkway Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/2 (A6195 Dearne Valley Pkway Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/1 (A6195 Sheffield Rd (E) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/2 (A6195 Sheffield Rd (E) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/1 (A61 (S) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/2 (A61 (S) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/3 (A61 (S) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/1 (NW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/2 (NW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/3 (NW Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/1 (SW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/2 (SW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/1 (NE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/2 (NE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/1 (SE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/2 (SE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:9/1 (A61 NW Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:10/1 (A6195 Exit Peds Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:10/2 (A6195 Exit Peds Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:11/1 (A6195 Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J2:11/2<br>(A6195 Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J2:12/1<br>(A6195 E Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/1<br>(A61 S Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/2<br>(A61 S Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

**Scenario 4: '4'** (FG4: '2029 PM Do Minimum', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | Tot. |
| Origin | A | 0 | 1058 | 4 | 492 | 0 | 0 | 0 | 0 | 1554 |
| | B | 695 | 0 | 684 | 600 | 0 | 0 | 0 | 0 | 1979 |
| | C | 5 | 1081 | 0 | 220 | 0 | 0 | 0 | 0 | 1306 |
| | D | 352 | 638 | 141 | 0 | 0 | 0 | 0 | 0 | 1131 |
| | E | 0 | 0 | 0 | 0 | 0 | 17 | 1014 | 408 | 1439 |
| | F | 0 | 0 | 0 | 0 | 8 | 0 | 405 | 312 | 725 |
| | G | 0 | 0 | 0 | 0 | 1555 | 609 | 0 | 626 | 2790 |
| | H | 0 | 0 | 0 | 0 | 231 | 202 | 548 | 0 | 981 |
| | Tot. | 1052 | 2777 | 829 | 1312 | 1794 | 828 | 1967 | 1346 | 11905 |

Full Input Data And Results

## Traffic Lane Flows

Full Input Data And Results

| Lane | Scenario 4: 4 |
|---|---|
| **Junction: J1: M1 Junction 36 Tankersley Rbt** | |
| J1:1/1 (short) | 237 |
| J1:1/2 (with short) | 1058(In) 821(Out) |
| J1:1/3 | 496 |
| J1:2/1 | 978 |
| J1:2/2 | 1001 |
| J1:3/1 (with short) | 1306(In) 642(Out) |
| J1:3/2 (short) | 664 |
| J1:4/1 | 627 |
| J1:4/2 | 504 |
| J1:5/1 | 692 |
| J1:5/2 | 1027 |
| J1:5/3 | 141 |
| J1:6/1 (short) | 621 |
| J1:6/2 (with short) | 637(In) 16(Out) |
| J1:7/1 | 770 |
| J1:7/2 | 581 |
| J1:7/3 | 436 |
| J1:8/1 | 264 |
| J1:8/2 | 853 |
| J1:8/3 | 664 |
| J1:9/1 | 616 |
| J1:9/2 | 436 |
| J1:10/1 | 829 |
| J1:11/1 | 624 |
| J1:11/2 | 2153 |
| J1:12/1 | 885 |
| J1:12/2 | 427 |
| **Junction: J2: Birdwell Rbt** | |
| J2:1/1 | 231 |
| J2:1/2 (short) | 443 |
| J2:1/3 (with short) | 750(In) 307(Out) |
| J2:2/1 | 712 |
| J2:2/2 | 727 |
| J2:3/1 | 405 |
| J2:3/2 | 320 |
| J2:4/1 | 626 |

Full Input Data And Results

| | |
|---|---|
| J2:4/2<br>(with short) | 2164(In)<br>1052(Out) |
| J2:4/3<br>(short) | 1112 |
| J2:5/1 | 811 |
| J2:5/2 | 241 |
| J2:5/3 | 307 |
| J2:6/1 | 1060 |
| J2:6/2 | 1112 |
| J2:7/1 | 936 |
| J2:7/2 | 1034 |
| J2:8/1 | 600 |
| J2:8/2 | 128 |
| J2:9/1 | 1346 |
| J2:10/1 | 1060 |
| J2:10/2 | 734 |
| J2:11/1 | 1060 |
| J2:11/2 | 734 |
| J2:12/1 | 828 |
| J2:13/1 | 999 |
| J2:13/2 | 968 |

Full Input Data And Results

## Lane Saturation Flows

Full Input Data And Results

| Junction: J1: M1 Junction 36 Tankersley Rbt | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (M1 SB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/2 (M1 SB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/3 (M1 SB offslip Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/1 (A61 (NE) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/2 (A61 (NE) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/1 (M1 NB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/2 (M1 NB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/1 (A61 (W) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/2 (A61 (W) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/1 (North Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/2 (North Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/3 (North Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/1 (East Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/2 (East Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/1 (South Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/2 (South Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/3 (South Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/1 (West Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/2 (West Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/3 (West Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:9/1 (M1 NB onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/2 (M1 NB onslip Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:10/1 (M1 SB Onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/1 (A61 NE Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J1:11/2<br>(A61 NE Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J1:12/1<br>(A16 W Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J1:12/2<br>(A16 W Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

Full Input Data And Results

**Junction: J2: Birdwell Rbt**

| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
|---|---|---|---|---|---|---|---|---|
| J2:1/1 (A61 Sheffield Rd (NW) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/2 (A61 Sheffield Rd (NW) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/3 (A61 Sheffield Rd (NW) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/1 (A6195 Dearne Valley Pkway Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/2 (A6195 Dearne Valley Pkway Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/1 (A6195 Sheffield Rd (E) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/2 (A6195 Sheffield Rd (E) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/1 (A61 (S) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/2 (A61 (S) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/3 (A61 (S) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/1 (NW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/2 (NW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/3 (NW Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/1 (SW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/2 (SW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/1 (NE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/2 (NE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/1 (SE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/2 (SE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:9/1 (A61 NW Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:10/1 (A6195 Exit Peds Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:10/2 (A6195 Exit Peds Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:11/1 (A6195 Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J2:11/2<br>(A6195 Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J2:12/1<br>(A6195 E Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/1<br>(A61 S Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/2<br>(A61 S Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

**Scenario 5: '5'** (FG5: '2029 AM Do Something', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | Tot. |
| Origin | A | 0 | 831 | 3 | 424 | 0 | 0 | 0 | 0 | 1258 |
| | B | 745 | 0 | 823 | 665 | 0 | 0 | 0 | 0 | 2233 |
| | C | 4 | 717 | 0 | 195 | 0 | 0 | 0 | 0 | 916 |
| | D | 476 | 690 | 186 | 0 | 0 | 0 | 0 | 0 | 1352 |
| | E | 0 | 0 | 0 | 0 | 3 | 5 | 945 | 317 | 1270 |
| | F | 0 | 0 | 0 | 0 | 12 | 0 | 550 | 354 | 916 |
| | G | 0 | 0 | 0 | 0 | 1384 | 405 | 0 | 459 | 2248 |
| | H | 0 | 0 | 0 | 0 | 266 | 199 | 720 | 0 | 1185 |
| | Tot. | 1225 | 2238 | 1012 | 1284 | 1665 | 609 | 2215 | 1130 | 11378 |

Full Input Data And Results

## Traffic Lane Flows

Full Input Data And Results

| Lane | Scenario 5: 5 |
|---|---|
| **Junction: J1: M1 Junction 36 Tankersley Rbt** | |
| J1:1/1 (short) | 169 |
| J1:1/2 (with short) | 831(In) 662(Out) |
| J1:1/3 | 427 |
| J1:2/1 | 1113 |
| J1:2/2 | 1120 |
| J1:3/1 (with short) | 916(In) 372(Out) |
| J1:3/2 (short) | 544 |
| J1:4/1 | 718 |
| J1:4/2 | 634 |
| J1:5/1 | 415 |
| J1:5/2 | 992 |
| J1:5/3 | 186 |
| J1:6/1 (short) | 432 |
| J1:6/2 (with short) | 613(In) 181(Out) |
| J1:7/1 | 533 |
| J1:7/2 | 821 |
| J1:7/3 | 480 |
| J1:8/1 | 269 |
| J1:8/2 | 653 |
| J1:8/3 | 544 |
| J1:9/1 | 745 |
| J1:9/2 | 480 |
| J1:10/1 | 1012 |
| J1:11/1 | 458 |
| J1:11/2 | 1780 |
| J1:12/1 | 631 |
| J1:12/2 | 653 |
| **Junction: J2: Birdwell Rbt** | |
| J2:1/1 | 266 |
| J2:1/2 (short) | 542 |
| J2:1/3 (with short) | 919(In) 377(Out) |
| J2:2/1 | 638 |
| J2:2/2 | 632 |
| J2:3/1 | 550 |
| J2:3/2 | 366 |
| J2:4/1 | 459 |

Full Input Data And Results

| | |
|---|---|
| J2:4/2<br>(with short) | 1789(In)<br>886(Out) |
| J2:4/3<br>(short) | 903 |
| J2:5/1 | 604 |
| J2:5/2 | 343 |
| J2:5/3 | 377 |
| J2:6/1 | 897 |
| J2:6/2 | 907 |
| J2:7/1 | 976 |
| J2:7/2 | 1009 |
| J2:8/1 | 671 |
| J2:8/2 | 15 |
| J2:9/1 | 1130 |
| J2:10/1 | 903 |
| J2:10/2 | 762 |
| J2:11/1 | 903 |
| J2:11/2 | 762 |
| J2:12/1 | 609 |
| J2:13/1 | 1132 |
| J2:13/2 | 1083 |

Full Input Data And Results

## Lane Saturation Flows

Full Input Data And Results

| Junction: J1: M1 Junction 36 Tankersley Rbt | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (M1 SB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/2 (M1 SB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/3 (M1 SB offslip Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/1 (A61 (NE) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/2 (A61 (NE) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/1 (M1 NB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/2 (M1 NB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/1 (A61 (W) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/2 (A61 (W) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/1 (North Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/2 (North Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/3 (North Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/1 (East Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/2 (East Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/1 (South Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/2 (South Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/3 (South Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/1 (West Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/2 (West Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/3 (West Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:9/1 (M1 NB onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/2 (M1 NB onslip Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:10/1 (M1 SB Onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/1 (A61 NE Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J1:11/2<br>(A61 NE Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J1:12/1<br>(A16 W Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J1:12/2<br>(A16 W Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

Full Input Data And Results

**Junction: J2: Birdwell Rbt**

| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
|---|---|---|---|---|---|---|---|---|
| J2:1/1 (A61 Sheffield Rd (NW) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/2 (A61 Sheffield Rd (NW) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/3 (A61 Sheffield Rd (NW) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/1 (A6195 Dearne Valley Pkway Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/2 (A6195 Dearne Valley Pkway Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/1 (A6195 Sheffield Rd (E) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/2 (A6195 Sheffield Rd (E) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/1 (A61 (S) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/2 (A61 (S) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/3 (A61 (S) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/1 (NW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/2 (NW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/3 (NW Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/1 (SW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/2 (SW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/1 (NE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/2 (NE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/1 (SE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/2 (SE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:9/1 (A61 NW Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:10/1 (A6195 Exit Peds Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:10/2 (A6195 Exit Peds Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:11/1 (A6195 Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J2:11/2<br>(A6195 Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J2:12/1<br>(A6195 E Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/1<br>(A61 S Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/2<br>(A61 S Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

**Scenario 6: '6'** (FG6: '2029 PM Do Something', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | Tot. |
| Origin | A | 0 | 1060 | 4 | 492 | 0 | 0 | 0 | 0 | 1556 |
| | B | 695 | 0 | 701 | 603 | 0 | 0 | 0 | 0 | 1999 |
| | C | 5 | 1084 | 0 | 220 | 0 | 0 | 0 | 0 | 1309 |
| | D | 352 | 639 | 141 | 0 | 0 | 0 | 0 | 0 | 1132 |
| | E | 0 | 0 | 0 | 0 | 0 | 17 | 1034 | 412 | 1463 |
| | F | 0 | 0 | 0 | 0 | 8 | 0 | 405 | 312 | 725 |
| | G | 0 | 0 | 0 | 0 | 1561 | 609 | 0 | 626 | 2796 |
| | H | 0 | 0 | 0 | 0 | 232 | 202 | 548 | 0 | 982 |
| | Tot. | 1052 | 2783 | 846 | 1315 | 1801 | 828 | 1987 | 1350 | 11962 |

Full Input Data And Results

## Traffic Lane Flows

Full Input Data And Results

| Lane | Scenario 6: 6 |
|---|---|
| **Junction: J1: M1 Junction 36 Tankersley Rbt** | |
| J1:1/1 (short) | 237 |
| J1:1/2 (with short) | 1060(In) 823(Out) |
| J1:1/3 | 496 |
| J1:2/1 | 995 |
| J1:2/2 | 1004 |
| J1:3/1 (with short) | 1309(In) 642(Out) |
| J1:3/2 (short) | 667 |
| J1:4/1 | 627 |
| J1:4/2 | 505 |
| J1:5/1 | 692 |
| J1:5/2 | 1031 |
| J1:5/3 | 141 |
| J1:6/1 (short) | 621 |
| J1:6/2 (with short) | 637(In) 16(Out) |
| J1:7/1 | 770 |
| J1:7/2 | 581 |
| J1:7/3 | 439 |
| J1:8/1 | 261 |
| J1:8/2 | 856 |
| J1:8/3 | 667 |
| J1:9/1 | 613 |
| J1:9/2 | 439 |
| J1:10/1 | 846 |
| J1:11/1 | 624 |
| J1:11/2 | 2159 |
| J1:12/1 | 885 |
| J1:12/2 | 430 |
| **Junction: J2: Birdwell Rbt** | |
| J2:1/1 | 232 |
| J2:1/2 (short) | 443 |
| J2:1/3 (with short) | 750(In) 307(Out) |
| J2:2/1 | 722 |
| J2:2/2 | 741 |
| J2:3/1 | 405 |
| J2:3/2 | 320 |
| J2:4/1 | 626 |

Full Input Data And Results

| | |
|---|---|
| J2:4/2<br>(with short) | 2170(In)<br>1046(Out) |
| J2:4/3<br>(short) | 1124 |
| J2:5/1 | 811 |
| J2:5/2 | 241 |
| J2:5/3 | 307 |
| J2:6/1 | 1054 |
| J2:6/2 | 1124 |
| J2:7/1 | 946 |
| J2:7/2 | 1048 |
| J2:8/1 | 604 |
| J2:8/2 | 128 |
| J2:9/1 | 1350 |
| J2:10/1 | 1055 |
| J2:10/2 | 746 |
| J2:11/1 | 1055 |
| J2:11/2 | 746 |
| J2:12/1 | 828 |
| J2:13/1 | 1009 |
| J2:13/2 | 978 |

Full Input Data And Results

## Lane Saturation Flows

Full Input Data And Results

| Junction: J1: M1 Junction 36 Tankersley Rbt | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (M1 SB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/2 (M1 SB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/3 (M1 SB offslip Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/1 (A61 (NE) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/2 (A61 (NE) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/1 (M1 NB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/2 (M1 NB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/1 (A61 (W) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/2 (A61 (W) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/1 (North Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/2 (North Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/3 (North Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/1 (East Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/2 (East Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/1 (South Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/2 (South Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/3 (South Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/1 (West Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/2 (West Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/3 (West Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:9/1 (M1 NB onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/2 (M1 NB onslip Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:10/1 (M1 SB Onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/1 (A61 NE Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J1:11/2<br>(A61 NE Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J1:12/1<br>(A16 W Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J1:12/2<br>(A16 W Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

Full Input Data And Results

**Junction: J2: Birdwell Rbt**

| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
|---|---|---|---|---|---|---|---|---|
| J2:1/1 (A61 Sheffield Rd (NW) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/2 (A61 Sheffield Rd (NW) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/3 (A61 Sheffield Rd (NW) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/1 (A6195 Dearne Valley Pkway Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/2 (A6195 Dearne Valley Pkway Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/1 (A6195 Sheffield Rd (E) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/2 (A6195 Sheffield Rd (E) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/1 (A61 (S) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/2 (A61 (S) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/3 (A61 (S) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/1 (NW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/2 (NW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/3 (NW Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/1 (SW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/2 (SW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/1 (NE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/2 (NE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/1 (SE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/2 (SE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:9/1 (A61 NW Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:10/1 (A6195 Exit Peds Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:10/2 (A6195 Exit Peds Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:11/1 (A6195 Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J2:11/2<br>(A6195 Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J2:12/1<br>(A6195 E Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/1<br>(A61 S Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/2<br>(A61 S Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

**Scenario 7: '7'** (FG7: '2024 AM Do Minimum', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | Tot. |
| Origin | A | 0 | 673 | 3 | 408 | 0 | 0 | 0 | 0 | 1084 |
| | B | 617 | 0 | 704 | 568 | 0 | 0 | 0 | 0 | 1889 |
| | C | 4 | 586 | 0 | 188 | 0 | 0 | 0 | 0 | 778 |
| | D | 458 | 578 | 179 | 0 | 0 | 0 | 0 | 0 | 1215 |
| | E | 0 | 0 | 0 | 0 | 3 | 5 | 798 | 286 | 1092 |
| | F | 0 | 0 | 0 | 0 | 11 | 0 | 398 | 323 | 732 |
| | G | 0 | 0 | 0 | 0 | 1063 | 348 | 0 | 436 | 1847 |
| | H | 0 | 0 | 0 | 0 | 229 | 156 | 676 | 0 | 1061 |
| | Tot. | 1079 | 1837 | 886 | 1164 | 1306 | 509 | 1872 | 1045 | 9698 |

Full Input Data And Results

## Traffic Lane Flows

Full Input Data And Results

| Lane | Scenario 7: 7 |
|---|---|
| **Junction: J1: M1 Junction 36 Tankersley Rbt** | |
| J1:1/1 (short) | 163 |
| J1:1/2 (with short) | 673(In) 510(Out) |
| J1:1/3 | 411 |
| J1:2/1 | 962 |
| J1:2/2 | 927 |
| J1:3/1 (with short) | 778(In) 349(Out) |
| J1:3/2 (short) | 429 |
| J1:4/1 | 693 |
| J1:4/2 | 522 |
| J1:5/1 | 392 |
| J1:5/2 | 772 |
| J1:5/3 | 179 |
| J1:6/1 (short) | 409 |
| J1:6/2 (with short) | 590(In) 181(Out) |
| J1:7/1 | 485 |
| J1:7/2 | 708 |
| J1:7/3 | 400 |
| J1:8/1 | 221 |
| J1:8/2 | 557 |
| J1:8/3 | 429 |
| J1:9/1 | 679 |
| J1:9/2 | 400 |
| J1:10/1 | 886 |
| J1:11/1 | 432 |
| J1:11/2 | 1405 |
| J1:12/1 | 576 |
| J1:12/2 | 588 |
| **Junction: J2: Birdwell Rbt** | |
| J2:1/1 | 229 |
| J2:1/2 (short) | 507 |
| J2:1/3 (with short) | 832(In) 325(Out) |
| J2:2/1 | 561 |
| J2:2/2 | 531 |
| J2:3/1 | 398 |
| J2:3/2 | 334 |
| J2:4/1 | 436 |

Full Input Data And Results

| | |
|---|---|
| J2:4/2<br>(with short) | 1411(In)<br>725(Out) |
| J2:4/3<br>(short) | 686 |
| J2:5/1 | 504 |
| J2:5/2 | 351 |
| J2:5/3 | 325 |
| J2:6/1 | 735 |
| J2:6/2 | 690 |
| J2:7/1 | 907 |
| J2:7/2 | 856 |
| J2:8/1 | 609 |
| J2:8/2 | 14 |
| J2:9/1 | 1045 |
| J2:10/1 | 735 |
| J2:10/2 | 571 |
| J2:11/1 | 735 |
| J2:11/2 | 571 |
| J2:12/1 | 509 |
| J2:13/1 | 966 |
| J2:13/2 | 906 |

Full Input Data And Results

## Lane Saturation Flows

Full Input Data And Results

| Junction: J1: M1 Junction 36 Tankersley Rbt | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (M1 SB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/2 (M1 SB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/3 (M1 SB offslip Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/1 (A61 (NE) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/2 (A61 (NE) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/1 (M1 NB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/2 (M1 NB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/1 (A61 (W) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/2 (A61 (W) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/1 (North Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/2 (North Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/3 (North Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/1 (East Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/2 (East Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/1 (South Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/2 (South Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/3 (South Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/1 (West Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/2 (West Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/3 (West Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:9/1 (M1 NB onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/2 (M1 NB onslip Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:10/1 (M1 SB Onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/1 (A61 NE Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J1:11/2<br>(A61 NE Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J1:12/1<br>(A16 W Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J1:12/2<br>(A16 W Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

Full Input Data And Results

**Junction: J2: Birdwell Rbt**

| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
|---|---|---|---|---|---|---|---|---|
| J2:1/1 (A61 Sheffield Rd (NW) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/2 (A61 Sheffield Rd (NW) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/3 (A61 Sheffield Rd (NW) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/1 (A6195 Dearne Valley Pkway Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/2 (A6195 Dearne Valley Pkway Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/1 (A6195 Sheffield Rd (E) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/2 (A6195 Sheffield Rd (E) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/1 (A61 (S) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/2 (A61 (S) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/3 (A61 (S) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/1 (NW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/2 (NW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/3 (NW Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/1 (SW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/2 (SW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/1 (NE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/2 (NE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/1 (SE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/2 (SE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:9/1 (A61 NW Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:10/1 (A6195 Exit Peds Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:10/2 (A6195 Exit Peds Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:11/1 (A6195 Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J2:11/2<br>(A6195 Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J2:12/1<br>(A6195 E Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/1<br>(A61 S Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/2<br>(A61 S Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

**Scenario 8: '8'** (FG8: '2024 PM Do Minimum', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | Tot. |
| Origin | A | 0 | 929 | 4 | 473 | 0 | 0 | 0 | 0 | 1406 |
| | B | 567 | 0 | 575 | 506 | 0 | 0 | 0 | 0 | 1648 |
| | C | 5 | 963 | 0 | 212 | 0 | 0 | 0 | 0 | 1180 |
| | D | 338 | 552 | 135 | 0 | 0 | 0 | 0 | 0 | 1025 |
| | E | 0 | 0 | 0 | 0 | 0 | 16 | 854 | 370 | 1240 |
| | F | 0 | 0 | 0 | 0 | 8 | 0 | 263 | 272 | 543 |
| | G | 0 | 0 | 0 | 0 | 1335 | 534 | 0 | 587 | 2456 |
| | H | 0 | 0 | 0 | 0 | 207 | 178 | 520 | 0 | 905 |
| | Tot. | 910 | 2444 | 714 | 1191 | 1550 | 728 | 1637 | 1229 | 10403 |

Full Input Data And Results

## Traffic Lane Flows

Full Input Data And Results

| Lane | Scenario 8: 8 |
|---|---|
| **Junction: J1: M1 Junction 36 Tankersley Rbt** | |
| J1:1/1 (short) | 227 |
| J1:1/2 (with short) | 929(In) 702(Out) |
| J1:1/3 | 477 |
| J1:2/1 | 891 |
| J1:2/2 | 757 |
| J1:3/1 (with short) | 1180(In) 627(Out) |
| J1:3/2 (short) | 553 |
| J1:4/1 | 606 |
| J1:4/2 | 419 |
| J1:5/1 | 678 |
| J1:5/2 | 837 |
| J1:5/3 | 135 |
| J1:6/1 (short) | 476 |
| J1:6/2 (with short) | 612(In) 136(Out) |
| J1:7/1 | 653 |
| J1:7/2 | 602 |
| J1:7/3 | 291 |
| J1:8/1 | 281 |
| J1:8/2 | 701 |
| J1:8/3 | 553 |
| J1:9/1 | 619 |
| J1:9/2 | 291 |
| J1:10/1 | 714 |
| J1:11/1 | 587 |
| J1:11/2 | 1857 |
| J1:12/1 | 760 |
| J1:12/2 | 431 |
| **Junction: J2: Birdwell Rbt** | |
| J2:1/1 | 207 |
| J2:1/2 (short) | 404 |
| J2:1/3 (with short) | 698(In) 294(Out) |
| J2:2/1 | 631 |
| J2:2/2 | 609 |
| J2:3/1 | 263 |
| J2:3/2 | 280 |
| J2:4/1 | 587 |

Full Input Data And Results

| | |
|---|---|
| J2:4/2<br>(with short) | 1869(In)<br>922(Out) |
| J2:4/3<br>(short) | 947 |
| J2:5/1 | 712 |
| J2:5/2 | 226 |
| J2:5/3 | 294 |
| J2:6/1 | 930 |
| J2:6/2 | 947 |
| J2:7/1 | 841 |
| J2:7/2 | 903 |
| J2:8/1 | 522 |
| J2:8/2 | 128 |
| J2:9/1 | 1229 |
| J2:10/1 | 930 |
| J2:10/2 | 620 |
| J2:11/1 | 930 |
| J2:11/2 | 620 |
| J2:12/1 | 728 |
| J2:13/1 | 877 |
| J2:13/2 | 760 |

Full Input Data And Results

## Lane Saturation Flows

Full Input Data And Results

| Junction: J1: M1 Junction 36 Tankersley Rbt | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (M1 SB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/2 (M1 SB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/3 (M1 SB offslip Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/1 (A61 (NE) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/2 (A61 (NE) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/1 (M1 NB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/2 (M1 NB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/1 (A61 (W) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/2 (A61 (W) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/1 (North Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/2 (North Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/3 (North Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/1 (East Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/2 (East Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/1 (South Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/2 (South Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/3 (South Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/1 (West Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/2 (West Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/3 (West Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:9/1 (M1 NB onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/2 (M1 NB onslip Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:10/1 (M1 SB Onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/1 (A61 NE Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J1:11/2<br>(A61 NE Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J1:12/1<br>(A16 W Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J1:12/2<br>(A16 W Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

Full Input Data And Results

**Junction: J2: Birdwell Rbt**

| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
|---|---|---|---|---|---|---|---|---|
| J2:1/1 (A61 Sheffield Rd (NW) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/2 (A61 Sheffield Rd (NW) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/3 (A61 Sheffield Rd (NW) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/1 (A6195 Dearne Valley Pkway Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/2 (A6195 Dearne Valley Pkway Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/1 (A6195 Sheffield Rd (E) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/2 (A6195 Sheffield Rd (E) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/1 (A61 (S) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/2 (A61 (S) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/3 (A61 (S) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/1 (NW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/2 (NW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/3 (NW Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/1 (SW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/2 (SW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/1 (NE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/2 (NE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/1 (SE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/2 (SE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:9/1 (A61 NW Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:10/1 (A6195 Exit Peds Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:10/2 (A6195 Exit Peds Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:11/1 (A6195 Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J2:11/2<br>(A6195 Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J2:12/1<br>(A6195 E Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/1<br>(A61 S Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/2<br>(A61 S Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

**Scenario 9: '9'** (FG9: '2024 AM Do Something', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | Tot. |
| Origin | A | 0 | 681 | 3 | 408 | 0 | 0 | 0 | 0 | 1092 |
| | B | 620 | 0 | 709 | 569 | 0 | 0 | 0 | 0 | 1898 |
| | C | 4 | 600 | 0 | 188 | 0 | 0 | 0 | 0 | 792 |
| | D | 458 | 582 | 179 | 0 | 0 | 0 | 0 | 0 | 1219 |
| | E | 0 | 0 | 0 | 0 | 3 | 5 | 806 | 288 | 1102 |
| | F | 0 | 0 | 0 | 0 | 11 | 0 | 398 | 323 | 732 |
| | G | 0 | 0 | 0 | 0 | 1089 | 348 | 0 | 436 | 1873 |
| | H | 0 | 0 | 0 | 0 | 234 | 156 | 676 | 0 | 1066 |
| | Tot. | 1082 | 1863 | 891 | 1165 | 1337 | 509 | 1880 | 1047 | 9774 |

Full Input Data And Results

## Traffic Lane Flows

Full Input Data And Results

| Lane | Scenario 9: 9 |
|---|---|
| **Junction: J1: M1 Junction 36 Tankersley Rbt** | |
| J1:1/1 (short) | 163 |
| J1:1/2 (with short) | 681(In) 518(Out) |
| J1:1/3 | 411 |
| J1:2/1 | 968 |
| J1:2/2 | 930 |
| J1:3/1 (with short) | 792(In) 354(Out) |
| J1:3/2 (short) | 438 |
| J1:4/1 | 693 |
| J1:4/2 | 526 |
| J1:5/1 | 397 |
| J1:5/2 | 785 |
| J1:5/3 | 179 |
| J1:6/1 (short) | 409 |
| J1:6/2 (with short) | 590(In) 181(Out) |
| J1:7/1 | 486 |
| J1:7/2 | 708 |
| J1:7/3 | 403 |
| J1:8/1 | 221 |
| J1:8/2 | 565 |
| J1:8/3 | 438 |
| J1:9/1 | 679 |
| J1:9/2 | 403 |
| J1:10/1 | 891 |
| J1:11/1 | 437 |
| J1:11/2 | 1426 |
| J1:12/1 | 577 |
| J1:12/2 | 588 |
| **Junction: J2: Birdwell Rbt** | |
| J2:1/1 | 234 |
| J2:1/2 (short) | 507 |
| J2:1/3 (with short) | 832(In) 325(Out) |
| J2:2/1 | 565 |
| J2:2/2 | 537 |
| J2:3/1 | 398 |
| J2:3/2 | 334 |
| J2:4/1 | 436 |

Full Input Data And Results

| | |
|---|---|
| J2:4/2<br>(with short) | 1437(In)<br>738(Out) |
| J2:4/3<br>(short) | 699 |
| J2:5/1 | 504 |
| J2:5/2 | 351 |
| J2:5/3 | 325 |
| J2:6/1 | 748 |
| J2:6/2 | 703 |
| J2:7/1 | 911 |
| J2:7/2 | 862 |
| J2:8/1 | 611 |
| J2:8/2 | 14 |
| J2:9/1 | 1047 |
| J2:10/1 | 748 |
| J2:10/2 | 589 |
| J2:11/1 | 748 |
| J2:11/2 | 589 |
| J2:12/1 | 509 |
| J2:13/1 | 970 |
| J2:13/2 | 910 |

Full Input Data And Results

## Lane Saturation Flows

Full Input Data And Results

| Junction: J1: M1 Junction 36 Tankersley Rbt | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (M1 SB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/2 (M1 SB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/3 (M1 SB offslip Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/1 (A61 (NE) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/2 (A61 (NE) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/1 (M1 NB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/2 (M1 NB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/1 (A61 (W) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/2 (A61 (W) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/1 (North Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/2 (North Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/3 (North Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/1 (East Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/2 (East Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/1 (South Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/2 (South Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/3 (South Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/1 (West Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/2 (West Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/3 (West Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:9/1 (M1 NB onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/2 (M1 NB onslip Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:10/1 (M1 SB Onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/1 (A61 NE Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J1:11/2<br>(A61 NE Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J1:12/1<br>(A16 W Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J1:12/2<br>(A16 W Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

Full Input Data And Results

**Junction: J2: Birdwell Rbt**

| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
|---|---|---|---|---|---|---|---|---|
| J2:1/1 (A61 Sheffield Rd (NW) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/2 (A61 Sheffield Rd (NW) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/3 (A61 Sheffield Rd (NW) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/1 (A6195 Dearne Valley Pkway Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/2 (A6195 Dearne Valley Pkway Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/1 (A6195 Sheffield Rd (E) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/2 (A6195 Sheffield Rd (E) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/1 (A61 (S) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/2 (A61 (S) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/3 (A61 (S) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/1 (NW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/2 (NW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/3 (NW Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/1 (SW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/2 (SW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/1 (NE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/2 (NE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/1 (SE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/2 (SE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:9/1 (A61 NW Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:10/1 (A6195 Exit Peds Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:10/2 (A6195 Exit Peds Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:11/1 (A6195 Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J2:11/2<br>(A6195 Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J2:12/1<br>(A6195 E Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/1<br>(A61 S Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/2<br>(A61 S Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

**Scenario 10: '10'** (FG10: '2024 PM Do Something', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | Tot. |
| Origin | A | 0 | 931 | 4 | 473 | 0 | 0 | 0 | 0 | 1408 |
| | B | 574 | 0 | 587 | 510 | 0 | 0 | 0 | 0 | 1671 |
| | C | 5 | 966 | 0 | 212 | 0 | 0 | 0 | 0 | 1183 |
| | D | 338 | 553 | 135 | 0 | 0 | 0 | 0 | 0 | 1026 |
| | E | 0 | 0 | 0 | 0 | 0 | 16 | 875 | 374 | 1265 |
| | F | 0 | 0 | 0 | 0 | 8 | 0 | 263 | 272 | 543 |
| | G | 0 | 0 | 0 | 0 | 1342 | 534 | 0 | 587 | 2463 |
| | H | 0 | 0 | 0 | 0 | 208 | 178 | 520 | 0 | 906 |
| | Tot. | 917 | 2450 | 726 | 1195 | 1558 | 728 | 1658 | 1233 | 10465 |

Full Input Data And Results

## Traffic Lane Flows

Full Input Data And Results

| Lane | Scenario 10: 10 |
|---|---|
| **Junction: J1: M1 Junction 36 Tankersley Rbt** | |
| J1:1/1 (short) | 227 |
| J1:1/2 (with short) | 931(In) 704(Out) |
| J1:1/3 | 477 |
| J1:2/1 | 907 |
| J1:2/2 | 764 |
| J1:3/1 (with short) | 1183(In) 630(Out) |
| J1:3/2 (short) | 553 |
| J1:4/1 | 606 |
| J1:4/2 | 420 |
| J1:5/1 | 681 |
| J1:5/2 | 838 |
| J1:5/3 | 135 |
| J1:6/1 (short) | 476 |
| J1:6/2 (with short) | 612(In) 136(Out) |
| J1:7/1 | 657 |
| J1:7/2 | 609 |
| J1:7/3 | 291 |
| J1:8/1 | 288 |
| J1:8/2 | 704 |
| J1:8/3 | 553 |
| J1:9/1 | 626 |
| J1:9/2 | 291 |
| J1:10/1 | 726 |
| J1:11/1 | 587 |
| J1:11/2 | 1863 |
| J1:12/1 | 764 |
| J1:12/2 | 431 |
| **Junction: J2: Birdwell Rbt** | |
| J2:1/1 | 208 |
| J2:1/2 (short) | 404 |
| J2:1/3 (with short) | 698(In) 294(Out) |
| J2:2/1 | 641 |
| J2:2/2 | 624 |
| J2:3/1 | 263 |
| J2:3/2 | 280 |
| J2:4/1 | 587 |

Full Input Data And Results

| | |
|---|---|
| J2:4/2<br>(with short) | 1876(In)<br>926(Out) |
| J2:4/3<br>(short) | 950 |
| J2:5/1 | 712 |
| J2:5/2 | 226 |
| J2:5/3 | 294 |
| J2:6/1 | 934 |
| J2:6/2 | 950 |
| J2:7/1 | 851 |
| J2:7/2 | 918 |
| J2:8/1 | 526 |
| J2:8/2 | 128 |
| J2:9/1 | 1233 |
| J2:10/1 | 934 |
| J2:10/2 | 624 |
| J2:11/1 | 934 |
| J2:11/2 | 624 |
| J2:12/1 | 728 |
| J2:13/1 | 892 |
| J2:13/2 | 766 |

Full Input Data And Results

## Lane Saturation Flows

Full Input Data And Results

| Junction: J1: M1 Junction 36 Tankersley Rbt | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (M1 SB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/2 (M1 SB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:1/3 (M1 SB offslip Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/1 (A61 (NE) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:2/2 (A61 (NE) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/1 (M1 NB offslip Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/2 (M1 NB offslip Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/1 (A61 (W) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/2 (A61 (W) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/1 (North Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/2 (North Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:5/3 (North Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/1 (East Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:6/2 (East Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/1 (South Overbridge Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/2 (South Overbridge Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:7/3 (South Overbridge Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/1 (West Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/2 (West Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:8/3 (West Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:9/1 (M1 NB onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/2 (M1 NB onslip Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:10/1 (M1 SB Onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/1 (A61 NE Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J1:11/2<br>(A61 NE Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J1:12/1<br>(A16 W Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J1:12/2<br>(A16 W Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

Full Input Data And Results

**Junction: J2: Birdwell Rbt**

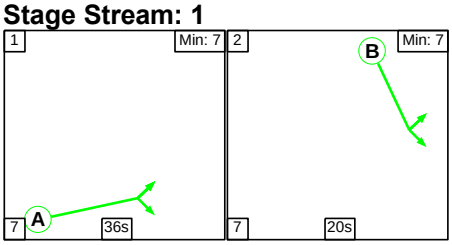
| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
|---|---|---|---|---|---|---|---|---|
| J2:1/1 (A61 Sheffield Rd (NW) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/2 (A61 Sheffield Rd (NW) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:1/3 (A61 Sheffield Rd (NW) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/1 (A6195 Dearne Valley Pkway Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:2/2 (A6195 Dearne Valley Pkway Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/1 (A6195 Sheffield Rd (E) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:3/2 (A6195 Sheffield Rd (E) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/1 (A61 (S) Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/2 (A61 (S) Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:4/3 (A61 (S) Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/1 (NW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/2 (NW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:5/3 (NW Circ Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/1 (SW Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:6/2 (SW Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/1 (NE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:7/2 (NE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/1 (SE Circ Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:8/2 (SE Circ Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:9/1 (A61 NW Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:10/1 (A6195 Exit Peds Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:10/2 (A6195 Exit Peds Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J2:11/1 (A6195 Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

| | | | |
|---|---|---|---|
| J2:11/2<br>(A6195 Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
| J2:12/1<br>(A6195 E Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/1<br>(A61 S Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| J2:13/2<br>(A61 S Exit Lane 2) | Infinite Saturation Flow | Inf | Inf |

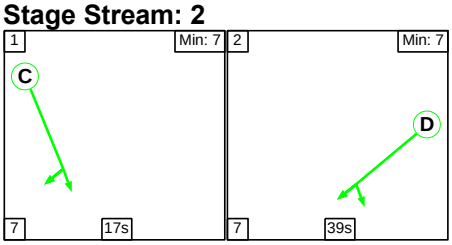
**Scenario 1: '0'** (FG1: '2023 AM Baseline', Plan 1: 'Network Control Plan 1')
**C1 - M1 J36 Northside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

### Stage Stream: 1

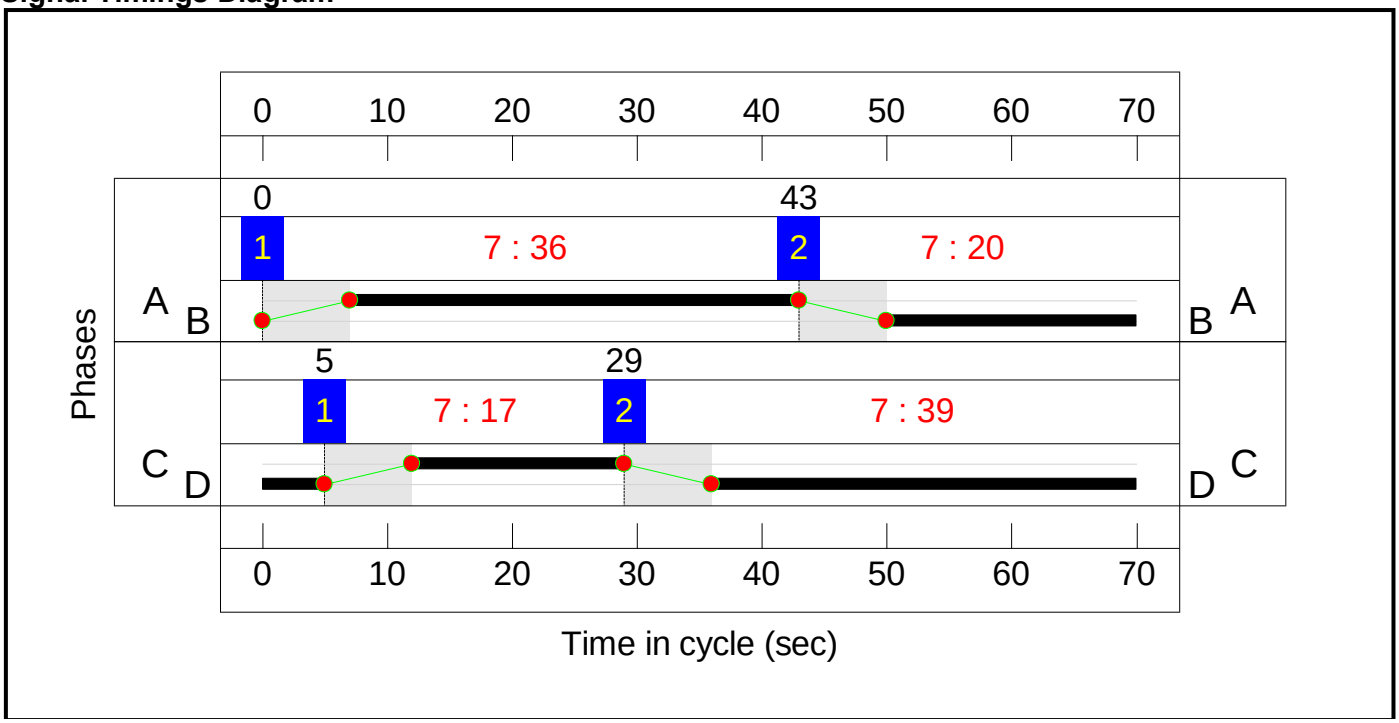
| Stage | 1 | 2 |
|---|---|---|
| Duration | 36 | 20 |
| Change Point | 0 | 43 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 17 | 39 |
| Change Point | 5 | 29 |

Full Input Data And Results

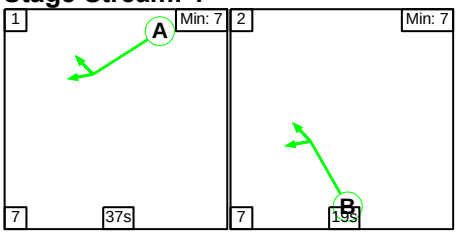
## Signal Timings Diagram



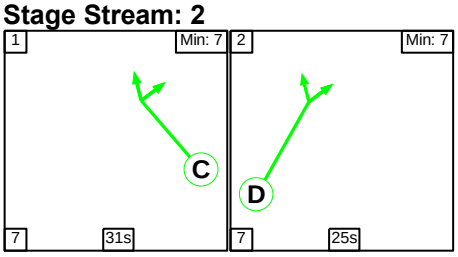

### C2 - M1 J36 Southside Tankersley

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

### Stage Stream: 1

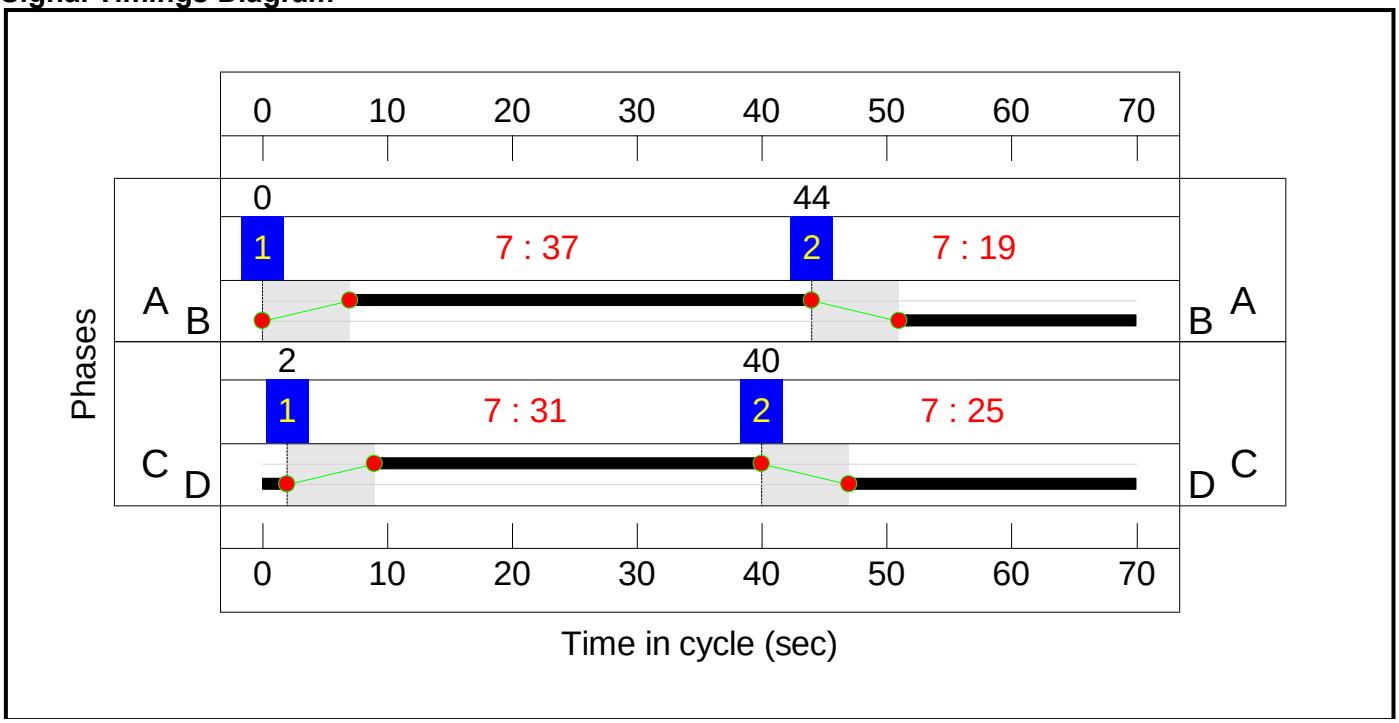
| Stage | 1 | 2 |
|---|---|---|
| Duration | 37 | 19 |
| Change Point | 0 | 44 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 31 | 25 |
| Change Point | 2 | 40 |

Full Input Data And Results

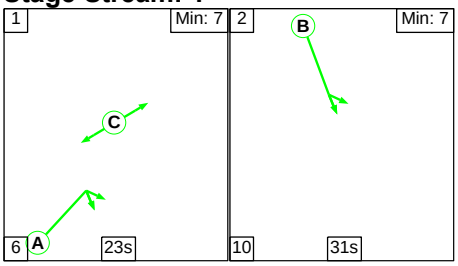
## Signal Timings Diagram



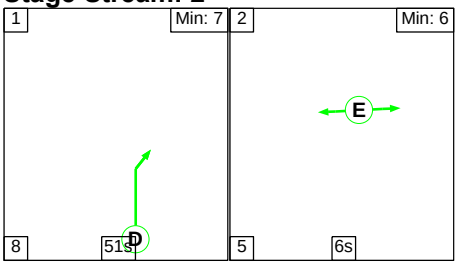

### C3 - Birdwell North

### Stage Sequence Diagram

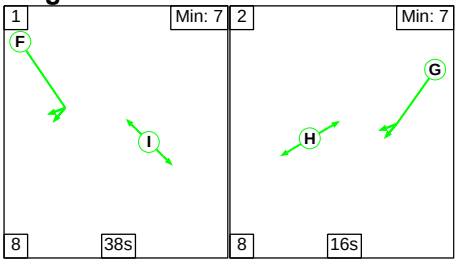
#### Stage Stream: 1




#### Stage Stream: 2




#### Stage Stream: 3



Full Input Data And Results

## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 23 | 31 |
| Change Point | 65 | 24 |

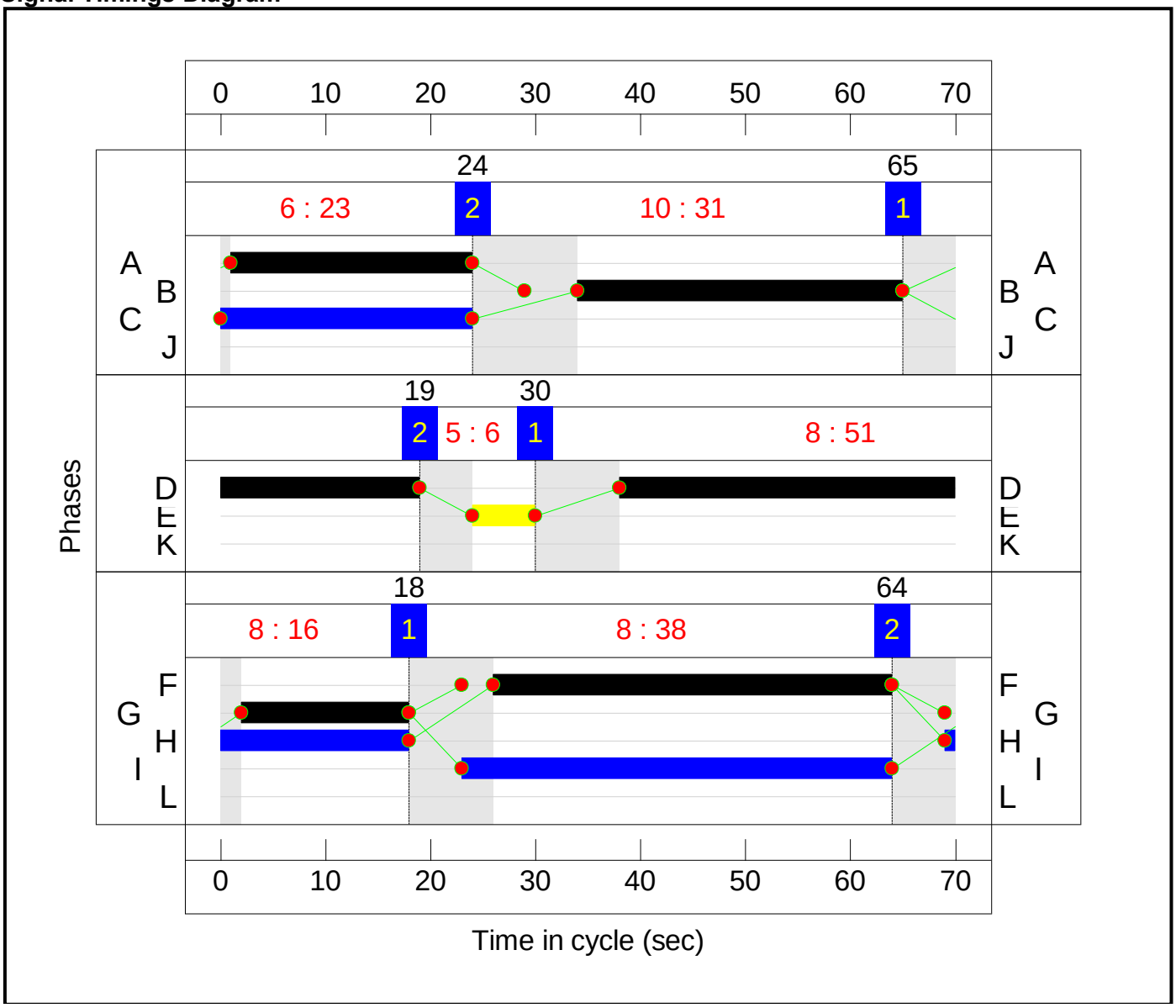
### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 51 | 6 |
| Change Point | 30 | 19 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 38 | 16 |
| Change Point | 18 | 64 |

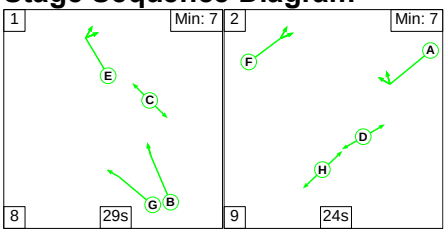
## Signal Timings Diagram



Full Input Data And Results

**C4 - Birdwell South**

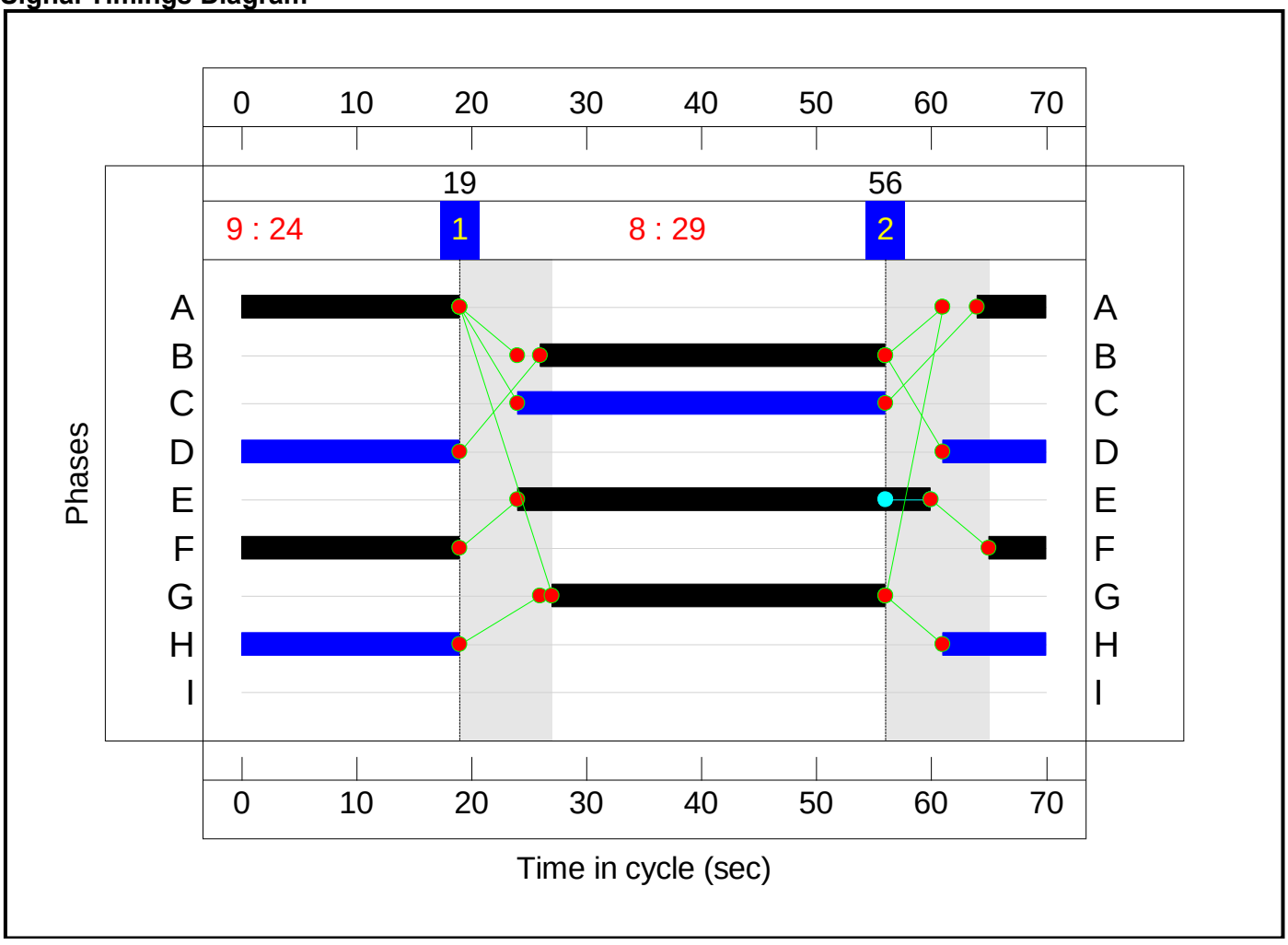
**Stage Sequence Diagram**




**Stage Timings**

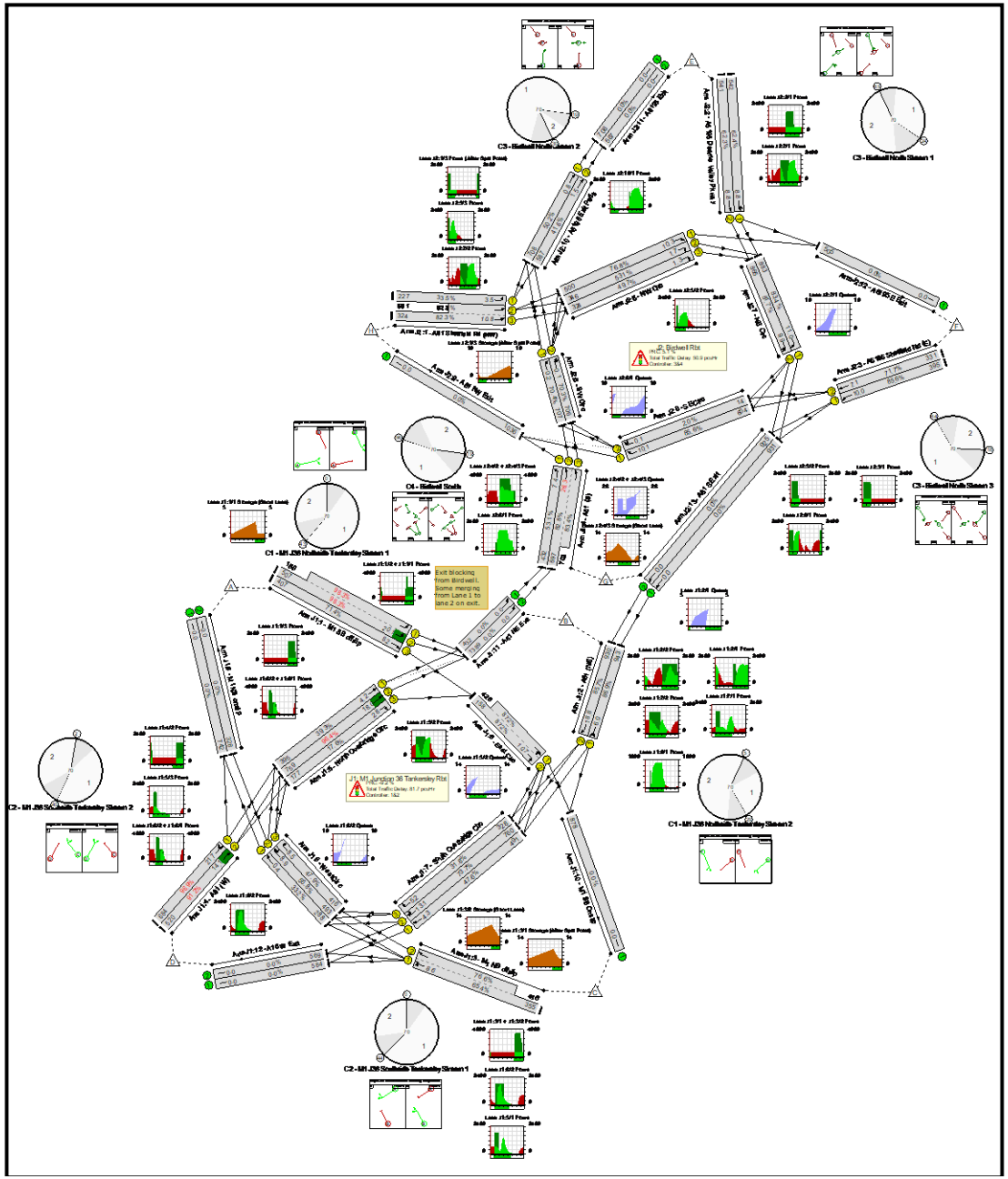
| Stage | 1 | 2 |
|---|---|---|
| Duration | 29 | 24 |
| Change Point | 19 | 56 |

**Signal Timings Diagram**



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

## Network Results

Full Input Data And 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **98.3%** |
| **J1: M1 Junction 36 Tankersley Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **98.3%** |
| 1/2+1/1 | M1 SB offslip Left | U | 1:1 | N/A | C1:B | | 1 | 20 | - | 667 | 1900:1900 | 516+163 | 98.3 : 98.3% |
| 1/3 | M1 SB offslip Ahead | U | 1:1 | N/A | C1:B | | 1 | 20 | - | 407 | 1900 | 570 | 71.4% |
| 2/1 | A61 (NE) Ahead Ahead2 | U | 1:2 | N/A | C1:D | | 1 | 39 | - | 943 | 1900 | 1086 | 86.9% |
| 2/2 | A61 (NE) Ahead | U | 1:2 | N/A | C1:D | | 1 | 39 | - | 930 | 1900 | 1086 | 85.7% |
| 3/1+3/2 | M1 NB offslip Ahead Ahead2 | U | 2:1 | N/A | C2:B | | 1 | 19 | - | 771 | 1900:1900 | 543+543 | 65.4 : 76.6% |
| 4/1 | A61 (W) Ahead Left | U | 2:2 | N/A | C2:D | | 1 | 25 | - | 684 | 1900 | 706 | 96.9% |
| 4/2 | A61 (W) Ahead | U | 2:2 | N/A | C2:D | | 1 | 25 | - | 520 | 1900 | 570 | 91.2% |
| 5/1 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 36 | - | 395 | 1900 | 1004 | 39.3% |
| 5/2 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 36 | - | 759 | 1900 | 787 | 96.4% |
| 5/3 | North Overbridge Circ Right | U | 1:1 | N/A | C1:A | | 1 | 36 | - | 177 | 1900 | 1004 | 17.6% |
| 6/2+6/1 | East Circ Right Ahead | U | 1:2 | N/A | C1:C | | 1 | 17 | - | 584 | 1900:1900 | 181+489 | 87.2 : 87.2% |
| 7/1 | South Overbridge Circ Ahead | U | 2:1 | N/A | C2:A | | 1 | 37 | - | 491 | 1900 | 1031 | 47.6% |
| 7/2 | South Overbridge Circ Right Ahead | U | 2:1 | N/A | C2:A | | 1 | 37 | - | 760 | 1900 | 1031 | 73.7% |
| 7/3 | South Overbridge Circ Right | U | 2:1 | N/A | C2:A | | 1 | 37 | - | 328 | 1900 | 1031 | 31.8% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8/1 | West Circ Ahead | U | 2:2 | N/A | C2:C | | 1 | 31 | - | 288 | 1900 | 869 | 33.2% |
| 8/2 | West Circ Right Ahead | U | 2:2 | N/A | C2:C | | 1 | 31 | - | 493 | 1900 | 869 | 56.8% |
| 8/3 | West Circ Right | U | 2:2 | N/A | C2:C | | 1 | 31 | - | 416 | 1900 | 869 | 47.9% |
| 9/1 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 742 | Inf | Inf | 0.0% |
| 9/2 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 328 | Inf | Inf | 0.0% |
| 10/1 | M1 SB Onslip | U | N/A | N/A | - | | - | - | - | 878 | Inf | Inf | 0.0% |
| 11/1 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 432 | Inf | Inf | 0.0% |
| 11/2 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 1389 | Inf | Inf | 0.0% |
| 12/1 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 584 | Inf | Inf | 0.0% |
| 12/2 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 569 | Inf | Inf | 0.0% |
| **J2: Birdwell Rbt** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **85.6%** |
| 1/1 | A61 Sheffield Rd (NW) Left | U | N/A | N/A | C4:F | | 1 | 24 | - | 227 | 1900 | 679 | 33.5% |
| 1/3+1/2 | A61 Sheffield Rd (NW) Ahead | U | N/A | N/A | C4:F | | 1 | 24 | - | 825 | 1900:1900 | 394+609 | 82.3 : 82.3% |
| 2/1 | A6195 Dearne Valley Pkway Ahead Left | U | 3:1 | N/A | C3:B | | 1 | 31 | - | 542 | 1900 | 869 | 62.4% |
| 2/2 | A6195 Dearne Valley Pkway Ahead | U | 3:1 | N/A | C3:B | | 1 | 31 | - | 541 | 1900 | 869 | 62.3% |
| 3/1 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 16 | - | 395 | 1900 | 461 | 85.6% |
| 3/2 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 16 | - | 331 | 1900 | 461 | 71.7% |
| 4/1 | A61 (S) Left | U | N/A | N/A | C4:G | | 1 | 29 | - | 432 | 1900 | 814 | 53.1% |
| 4/2+4/3 | A61 (S) Ahead | U | N/A | N/A | C4:B | | 1 | 30 | - | 1399 | 1900:1900 | 841+841 | 82.8 : 83.4% |
| 5/1 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 23 | - | 500 | 1900 | 651 | 76.8% |
| 5/2 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 23 | - | 346 | 1900 | 651 | 53.1% |
| 5/3 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 23 | - | 324 | 1900 | 651 | 49.7% |
| 6/1 | SW Circ Right | U | N/A | N/A | C4:E | | 1 | 36 | - | 707 | 1900 | 1004 | 70.4% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/2 | SW Circ Right Right2 | U | N/A | N/A | C4:E | | 1 | 36 | - | 706 | 1900 | 1004 | 70.3% |
| 7/1 | NE Circ Right | U | 3:3 | N/A | C3:F | | 1 | 38 | - | 883 | 1900 | 1059 | 83.4% |
| 7/2 | NE Circ Right Right2 | U | 3:3 | N/A | C3:F | | 1 | 38 | - | 865 | 1900 | 1059 | 81.7% |
| 8/1 | SE Circ Right | U | N/A | N/A | C4:A | | 1 | 25 | - | 604 | 1900 | 706 | 85.6% |
| 8/2 | SE Circ Right Right2 | U | N/A | N/A | C4:A | | 1 | 25 | - | 14 | 1900 | 706 | 2.0% |
| 9/1 | A61 NW Exit | U | N/A | N/A | - | | - | - | - | 1036 | Inf | Inf | 0.0% |
| 10/1 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 708 | 1900 | 1411 | 50.2% |
| 10/2 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 587 | 1900 | 1411 | 41.6% |
| 11/1 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 708 | Inf | Inf | 0.0% |
| 11/2 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 587 | Inf | Inf | 0.0% |
| 12/1 | A6195 E Exit | U | N/A | N/A | - | | - | - | - | 505 | Inf | Inf | 0.0% |
| 13/1 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 931 | Inf | Inf | 0.0% |
| 13/2 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 925 | Inf | Inf | 0.0% |

Full Input Data And Results

| 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **65.4** | **67.2** | **0.0** | **132.6** | **-** | **-** | **-** | **-** |
| **J1: M1 Junction 36 Tankersley Rbt** | **-** | **-** | **0** | **0** | **0** | **34.2** | **47.5** | **0.0** | **81.7** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 667 | 667 | - | - | - | 4.4 | 10.4 | - | 14.8 (11.4+3.3) | 79.7 (81.3:74.7) | 9.7 | 10.4 | 20.1 |
| 1/3 | 407 | 407 | - | - | - | 2.5 | 1.2 | - | 3.7 | 32.7 | 7.0 | 1.2 | 8.2 |
| 2/1 | 943 | 943 | - | - | - | 0.9 | 3.2 | - | 4.1 | 15.5 | 2.9 | 3.2 | 6.0 |
| 2/2 | 930 | 930 | - | - | - | 2.4 | 2.9 | - | 5.3 | 20.4 | 15.9 | 2.9 | 18.8 |
| 3/1+3/2 | 771 | 771 | - | - | - | 4.8 | 1.2 | - | 6.0 (2.7+3.3) | 28.1 (27.6:28.5) | 7.4 | 1.2 | 8.6 |
| 4/1 | 684 | 684 | - | - | - | 4.1 | 8.7 | - | 12.8 | 67.6 | 12.9 | 8.7 | 21.7 |
| 4/2 | 520 | 520 | - | - | - | 3.4 | 4.4 | - | 7.8 | 54.2 | 9.7 | 4.4 | 14.1 |
| 5/1 | 395 | 395 | - | - | - | 0.5 | 0.3 | - | 0.8 | 7.3 | 3.9 | 0.3 | 4.2 |
| 5/2 | 759 | 759 | - | - | - | 1.9 | 8.4 | - | 10.3 | 49.1 | 9.6 | 8.4 | 18.0 |
| 5/3 | 177 | 177 | - | - | - | 0.2 | 0.1 | - | 0.3 | 6.7 | 2.7 | 0.1 | 2.8 |
| 6/2+6/1 | 584 | 584 | - | - | - | 1.8 | 3.2 | - | 5.0 (1.4+3.6) | 30.8 (31.9:30.4) | 7.5 | 3.2 | 10.7 |
| 7/1 | 491 | 491 | - | - | - | 0.8 | 0.5 | - | 1.3 | 9.2 | 3.9 | 0.5 | 4.3 |
| 7/2 | 760 | 760 | - | - | - | 2.3 | 1.4 | - | 3.7 | 17.4 | 11.7 | 1.4 | 13.1 |
| 7/3 | 328 | 328 | - | - | - | 0.7 | 0.2 | - | 1.0 | 10.6 | 5.0 | 0.2 | 5.2 |
| 8/1 | 288 | 288 | - | - | - | 0.1 | 0.2 | - | 0.3 | 3.9 | 0.2 | 0.2 | 0.4 |
| 8/2 | 493 | 493 | - | - | - | 1.0 | 0.7 | - | 1.6 | 11.8 | 8.2 | 0.7 | 8.9 |
| 8/3 | 416 | 416 | - | - | - | 2.4 | 0.5 | - | 2.9 | 25.0 | 8.1 | 0.5 | 8.5 |
| 9/1 | 742 | 742 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 328 | 328 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 878 | 878 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/1 | 432 | 432 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/2 | 1389 | 1389 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 584 | 584 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/2 | 569 | 569 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **J2: Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **31.2** | **19.7** | **0.0** | **50.9** | **-** | **-** | **-** | **-** |
| 1/1 | 227 | 227 | - | - | - | 1.0 | 0.3 | - | 1.3 | 20.4 | 3.2 | 0.3 | 3.5 |
| 1/3+1/2 | 825 | 825 | - | - | - | 4.3 | 2.3 | - | 6.6 (2.5+4.1) | 28.7 (27.3:29.6) | 8.5 | 2.3 | 10.8 |
| 2/1 | 542 | 542 | - | - | - | 2.2 | 0.8 | - | 3.0 | 19.9 | 8.0 | 0.8 | 8.8 |
| 2/2 | 541 | 541 | - | - | - | 2.2 | 0.8 | - | 3.0 | 19.9 | 8.0 | 0.8 | 8.8 |
| 3/1 | 395 | 395 | - | - | - | 2.8 | 2.7 | - | 5.5 | 50.4 | 7.2 | 2.7 | 10.0 |
| 3/2 | 331 | 331 | - | - | - | 2.2 | 1.2 | - | 3.5 | 37.8 | 5.9 | 1.2 | 7.1 |
| 4/1 | 432 | 432 | - | - | - | 1.7 | 0.6 | - | 2.3 | 19.2 | 6.9 | 0.6 | 7.4 |
| 4/2+4/3 | 1399 | 1399 | - | - | - | 4.7 | 0.0 | - | 4.7 (2.3+2.4) | 12.0 (12.0:12.1) | 26.3 | 0.0 | 26.3 |
| 5/1 | 500 | 500 | - | - | - | 2.6 | 1.6 | - | 4.2 | 30.2 | 8.6 | 1.6 | 10.3 |
| 5/2 | 346 | 346 | - | - | - | 0.7 | 0.6 | - | 1.3 | 13.2 | 1.2 | 0.6 | 1.7 |
| 5/3 | 324 | 324 | - | - | - | 0.5 | 0.5 | - | 1.0 | 11.2 | 0.9 | 0.5 | 1.3 |
| 6/1 | 707 | 707 | - | - | - | 0.1 | 0.0 | - | 0.1 | 0.3 | 0.2 | 0.0 | 0.2 |
| 6/2 | 706 | 706 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.2 | 0.1 | 0.0 | 0.1 |
| 7/1 | 883 | 883 | - | - | - | 1.8 | 2.4 | - | 4.3 | 17.5 | 8.5 | 2.4 | 11.0 |
| 7/2 | 865 | 865 | - | - | - | 1.8 | 2.2 | - | 4.0 | 16.7 | 7.7 | 2.2 | 9.9 |
| 8/1 | 604 | 604 | - | - | - | 2.3 | 2.8 | - | 5.1 | 30.5 | 7.3 | 2.8 | 10.1 |
| 8/2 | 14 | 14 | - | - | - | 0.0 | 0.0 | - | 0.1 | 13.8 | 0.1 | 0.0 | 0.1 |
| 9/1 | 1036 | 1036 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 708 | 708 | - | - | - | 0.0 | 0.5 | - | 0.5 | 2.6 | 0.2 | 0.5 | 0.8 |
| 10/2 | 587 | 587 | - | - | - | 0.2 | 0.4 | - | 0.5 | 3.2 | 1.2 | 0.4 | 1.5 |
| 11/1 | 708 | 708 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 587 | 587 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 505 | 505 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13/1 | 931 | 931 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13/2 | 925 | 925 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

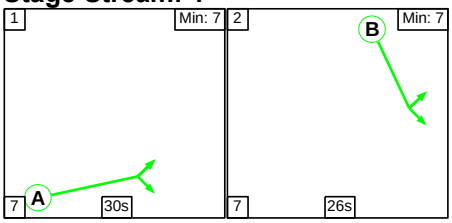
## Full Input Data And Results

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| C1 - M1 J36 Northside Tankersley | Stream: 1 | PRC for Signalled Lanes (%): | -9.2 | Total Delay for Signalled Lanes (pcuHr): | 29.94 | Cycle Time (s): | 70 |
| C1 - M1 J36 Northside Tankersley | Stream: 2 | PRC for Signalled Lanes (%): | 3.2 | Total Delay for Signalled Lanes (pcuHr): | 14.32 | Cycle Time (s): | 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 1 | PRC for Signalled Lanes (%): | 17.4 | Total Delay for Signalled Lanes (pcuHr): | 11.91 | Cycle Time (s): | 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 2 | PRC for Signalled Lanes (%): | -7.7 | Total Delay for Signalled Lanes (pcuHr): | 25.49 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 1 | PRC for Signalled Lanes (%): | 17.3 | Total Delay for Signalled Lanes (pcuHr): | 12.45 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 2 | PRC for Signalled Lanes (%): | 79.4 | Total Delay for Signalled Lanes (pcuHr): | 1.03 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 3 | PRC for Signalled Lanes (%): | 5.1 | Total Delay for Signalled Lanes (pcuHr): | 17.32 | Cycle Time (s): | 70 |
| C4 - Birdwell South | | PRC for Signalled Lanes (%): | 5.2 | Total Delay for Signalled Lanes (pcuHr): | 20.11 | Cycle Time (s): | 70 |
| | | PRC Over All Lanes (%): | -9.2 | Total Delay Over All Lanes(pcuHr): | 132.57 | | |

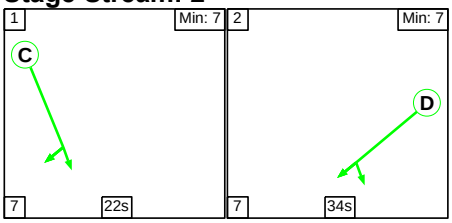
Full Input Data And Results
**Scenario 2: '2'** (FG2: '2023 PM Baseline', Plan 1: 'Network Control Plan 1')
**C1 - M1 J36 Northside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

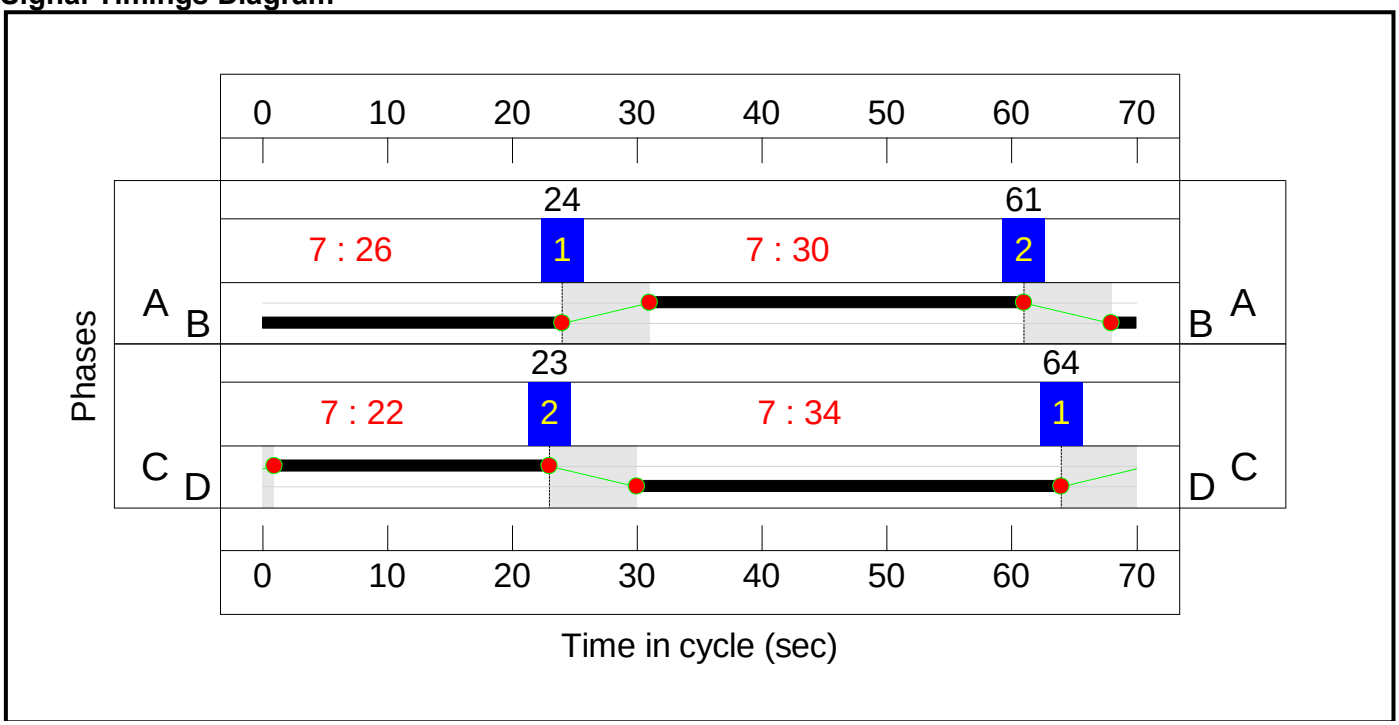
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 30 | 26 |
| Change Point | 24 | 61 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 22 | 34 |
| Change Point | 64 | 23 |

## Signal Timings Diagram

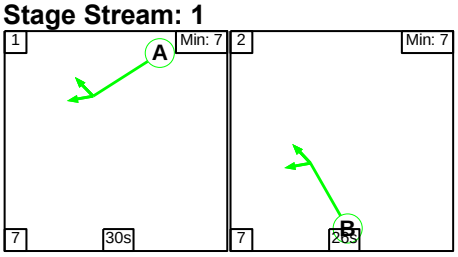


Full Input Data And Results

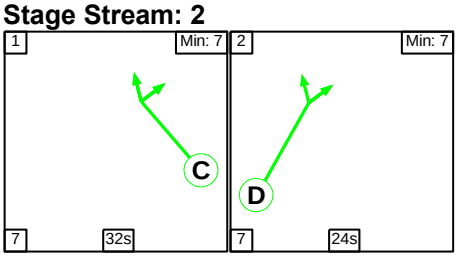
**C2 - M1 J36 Southside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

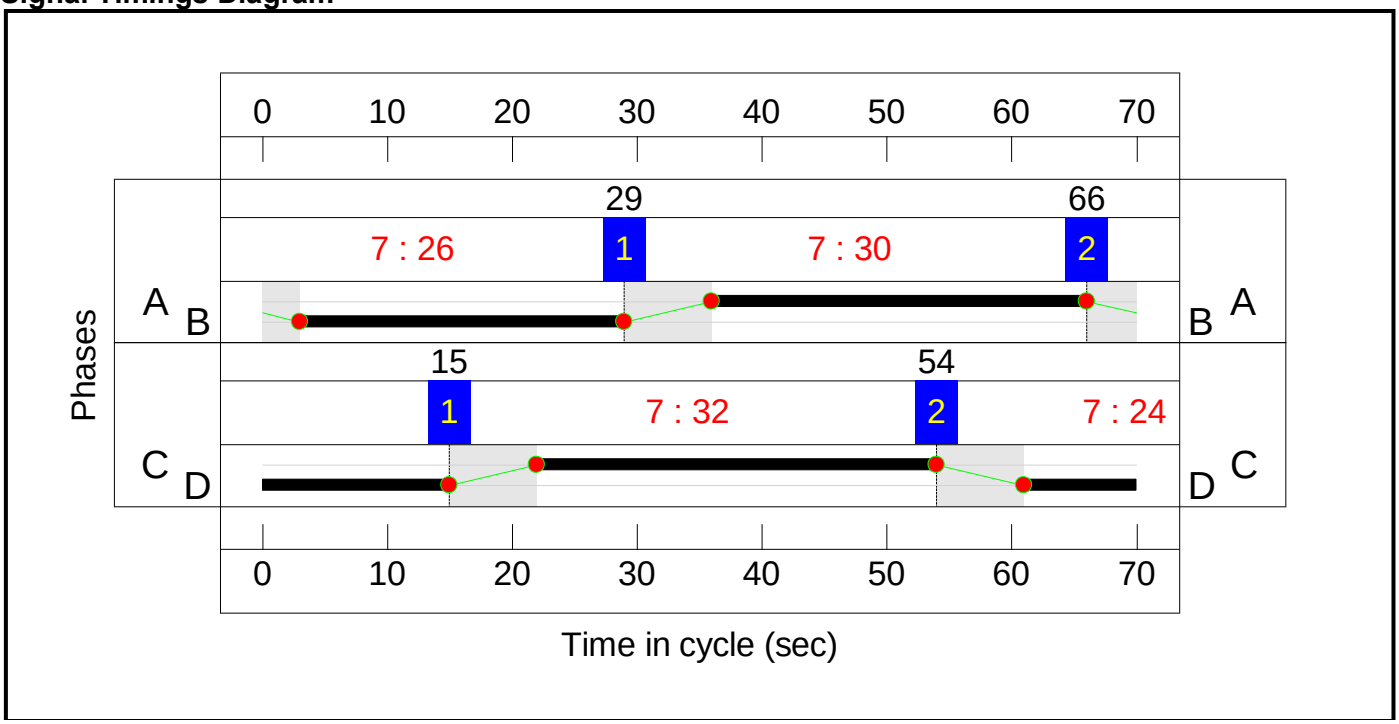
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 30 | 26 |
| Change Point | 29 | 66 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 32 | 24 |
| Change Point | 15 | 54 |

## Signal Timings Diagram

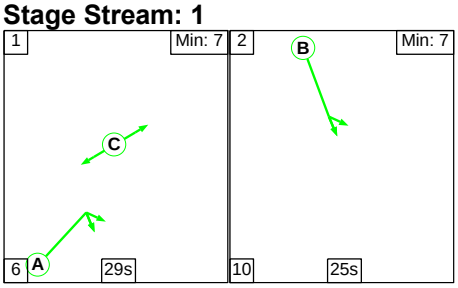


Full Input Data And Results

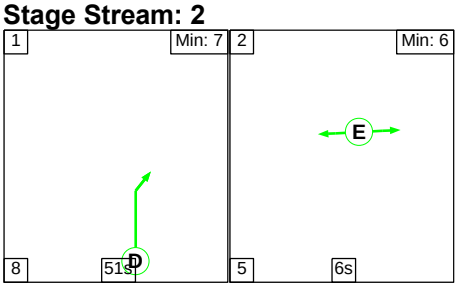
## C3 - Birdwell North

## Stage Sequence Diagram

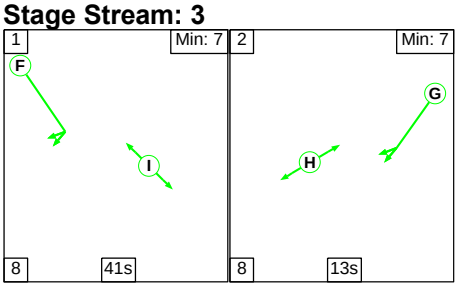
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 29 | 25 |
| Change Point | 63 | 28 |

### Stage Stream: 2

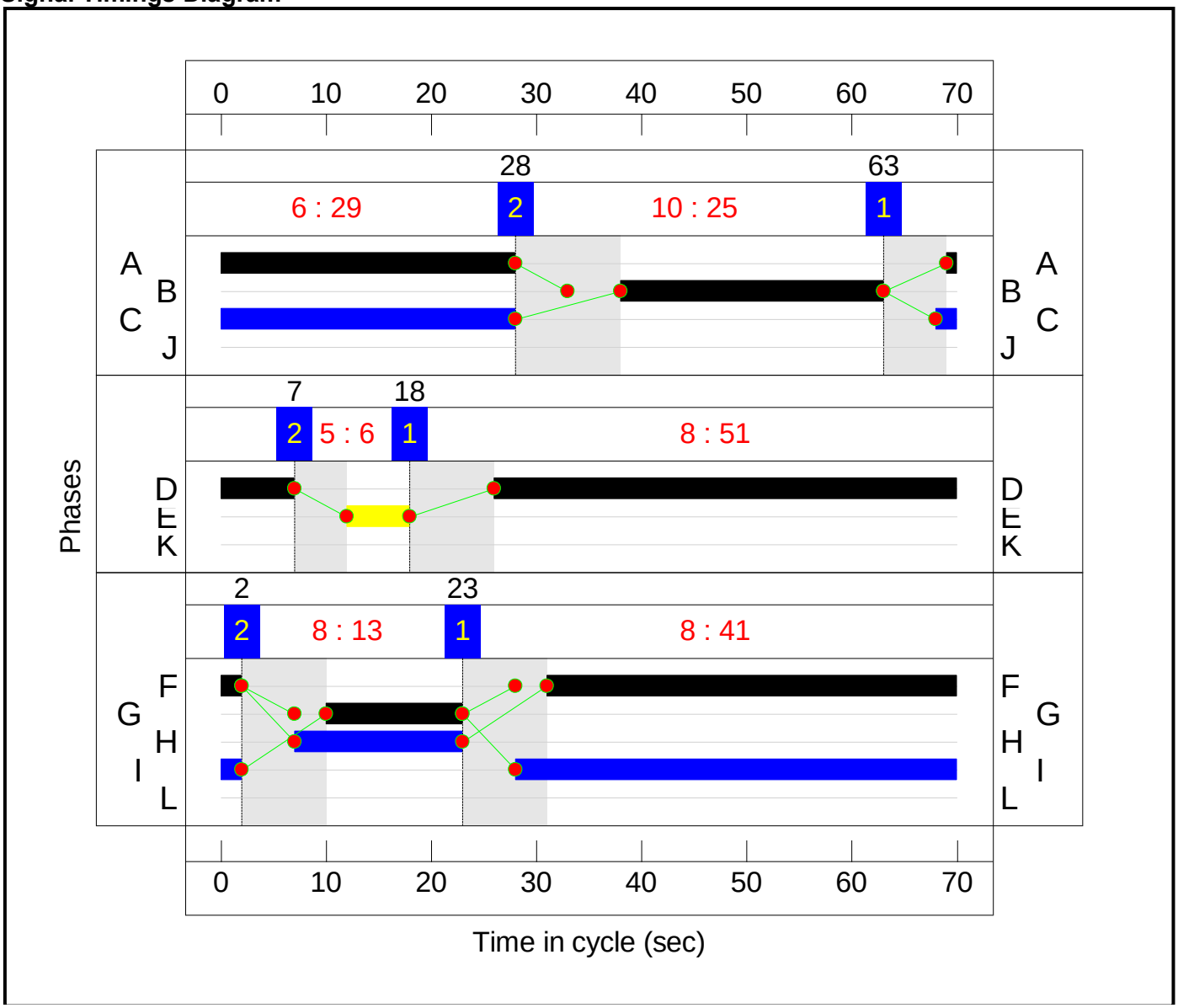
| Stage | 1 | 2 |
|---|---|---|
| Duration | 51 | 6 |
| Change Point | 18 | 7 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 41 | 13 |
| Change Point | 23 | 2 |

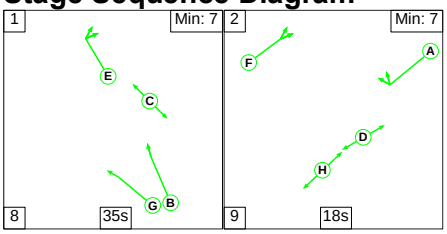
Full Input Data And Results

## Signal Timings Diagram




## C4 - Birdwell South

### Stage Sequence Diagram

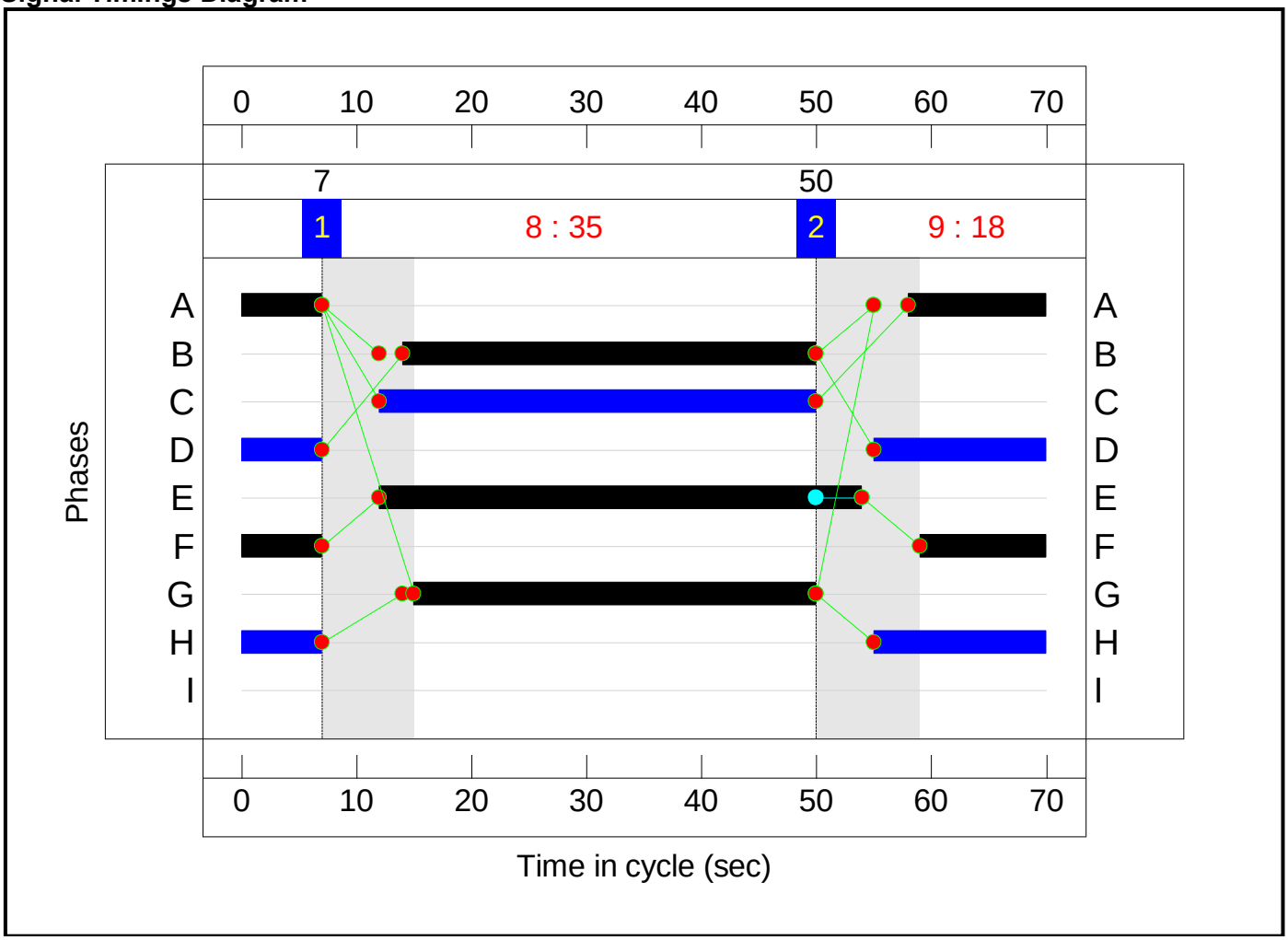



### Stage Timings

| Stage | 1 | 2 |
|---|---|---|
| Duration | 35 | 18 |
| Change Point | 7 | 50 |

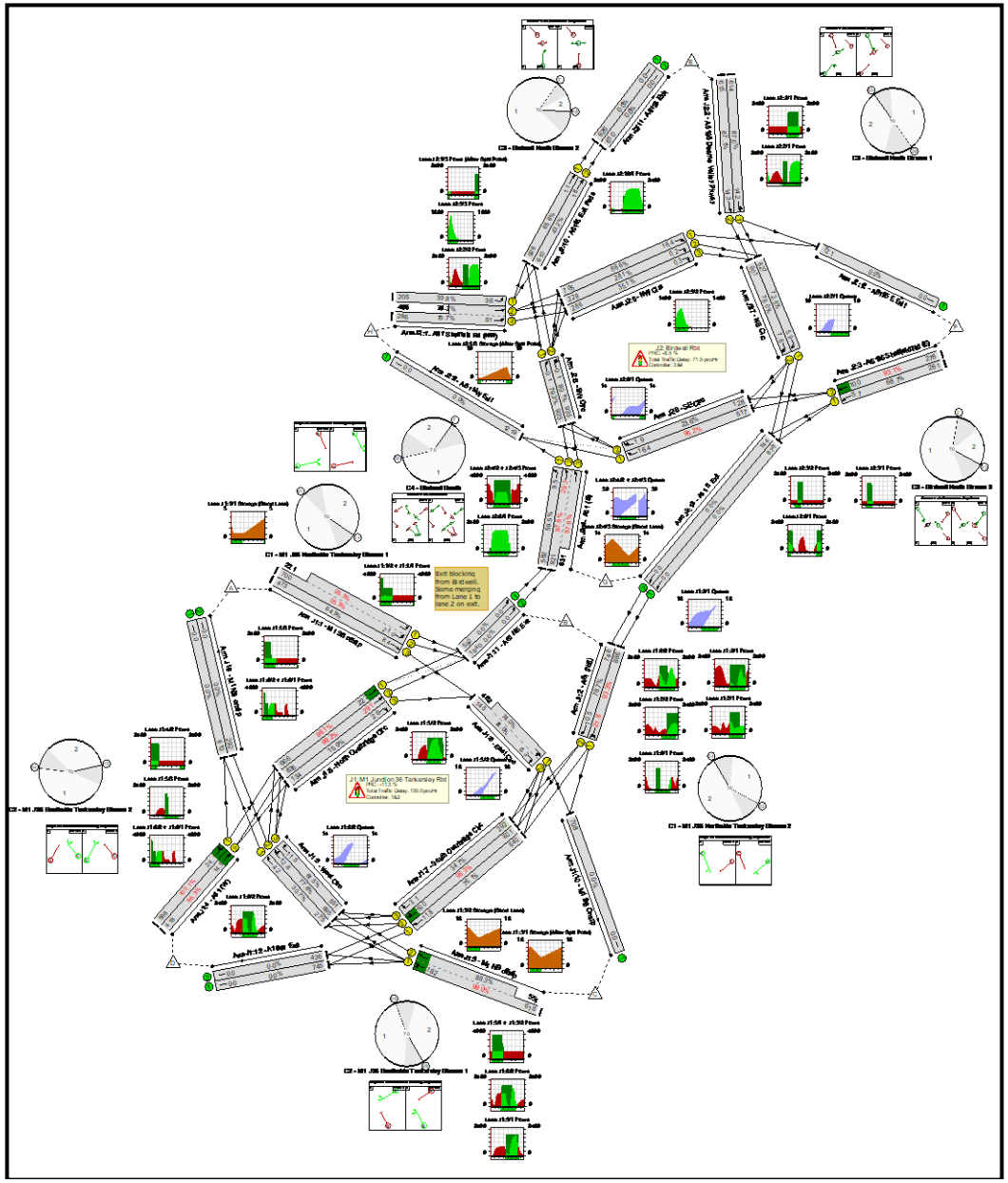
Full Input Data And Results

**Signal Timings Diagram**



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

## Network Results

Full Input Data And 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **100.1%** |
| **J1: M1 Junction 36 Tankersley Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **100.1%** |
| 1/2+1/1 | M1 SB offslip Left | U | 1:1 | N/A | C1:B | | 1 | 26 | - | 921 | 1900:1900 | 733+231 | 95.5 : 95.5% |
| 1/3 | M1 SB offslip Ahead | U | 1:1 | N/A | C1:B | | 1 | 26 | - | 473 | 1900 | 733 | 64.5% |
| 2/1 | A61 (NE) Ahead Ahead2 | U | 1:2 | N/A | C1:D | | 1 | 34 | - | 886 | 1900 | 950 | 93.3% |
| 2/2 | A61 (NE) Ahead | U | 1:2 | N/A | C1:D | | 1 | 34 | - | 748 | 1900 | 950 | 78.7% |
| 3/1+3/2 | M1 NB offslip Ahead Ahead2 | U | 2:1 | N/A | C2:B | | 1 | 26 | - | 1169 | 1900:1900 | 624+624 | 99.0 : 88.3% |
| 4/1 | A61 (W) Ahead Left | U | 2:2 | N/A | C2:D | | 1 | 24 | - | 598 | 1900 | 597 | 100.1% |
| 4/2 | A61 (W) Ahead | U | 2:2 | N/A | C2:D | | 1 | 24 | - | 418 | 1900 | 434 | 96.3% |
| 5/1 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 30 | - | 666 | 1900 | 679 | 98.1% |
| 5/2 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 30 | - | 835 | 1900 | 841 | 99.2% |
| 5/3 | North Overbridge Circ Right | U | 1:1 | N/A | C1:A | | 1 | 30 | - | 134 | 1900 | 841 | 15.9% |
| 6/2+6/1 | East Circ Right Ahead | U | 1:2 | N/A | C1:C | | 1 | 22 | - | 607 | 1900:1900 | 196+624 | 74.0 : 74.0% |
| 7/1 | South Overbridge Circ Ahead | U | 2:1 | N/A | C2:A | | 1 | 30 | - | 640 | 1900 | 841 | 76.1% |
| 7/2 | South Overbridge Circ Right Ahead | U | 2:1 | N/A | C2:A | | 1 | 30 | - | 601 | 1900 | 624 | 96.3% |
| 7/3 | South Overbridge Circ Right | U | 2:1 | N/A | C2:A | | 1 | 30 | - | 292 | 1900 | 841 | 34.7% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8/1 | West Circ Ahead | U | 2:2 | N/A | C2:C | | 1 | 32 | - | 275 | 1900 | 896 | 30.7% |
| 8/2 | West Circ Right Ahead | U | 2:2 | N/A | C2:C | | 1 | 32 | - | 695 | 1900 | 896 | 77.6% |
| 8/3 | West Circ Right | U | 2:2 | N/A | C2:C | | 1 | 32 | - | 551 | 1900 | 896 | 61.5% |
| 9/1 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 610 | Inf | Inf | 0.0% |
| 9/2 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 292 | Inf | Inf | 0.0% |
| 10/1 | M1 SB Onslip | U | N/A | N/A | - | | - | - | - | 708 | Inf | Inf | 0.0% |
| 11/1 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 582 | Inf | Inf | 0.0% |
| 11/2 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 1840 | Inf | Inf | 0.0% |
| 12/1 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 745 | Inf | Inf | 0.0% |
| 12/2 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 436 | Inf | Inf | 0.0% |
| **J2: Birdwell Rbt** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **97.6%** |
| 1/1 | A61 Sheffield Rd (NW) Left | U | N/A | N/A | C4:F | | 1 | 18 | - | 205 | 1900 | 516 | 39.8% |
| 1/3+1/2 | A61 Sheffield Rd (NW) Ahead | U | N/A | N/A | C4:F | | 1 | 18 | - | 691 | 1900:1900 | 359+508 | 79.7 : 79.7% |
| 2/1 | A6195 Dearne Valley Pkway Ahead Left | U | 3:1 | N/A | C3:B | | 1 | 25 | - | 614 | 1900 | 706 | 87.0% |
| 2/2 | A6195 Dearne Valley Pkway Ahead | U | 3:1 | N/A | C3:B | | 1 | 25 | - | 615 | 1900 | 706 | 87.1% |
| 3/1 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 13 | - | 261 | 1900 | 380 | 68.7% |
| 3/2 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 13 | - | 278 | 1900 | 299 | 93.1% |
| 4/1 | A61 (S) Left | U | N/A | N/A | C4:G | | 1 | 35 | - | 582 | 1900 | 977 | 59.5% |
| 4/2+4/3 | A61 (S) Ahead | U | N/A | N/A | C4:B | | 1 | 36 | - | 1852 | 1900:1900 | 943+954 | 97.6 : 97.6% |
| 5/1 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 29 | - | 705 | 1900 | 814 | 86.6% |
| 5/2 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 29 | - | 229 | 1900 | 814 | 28.1% |
| 5/3 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 29 | - | 286 | 1900 | 814 | 35.1% |
| 6/1 | SW Circ Right | U | N/A | N/A | C4:E | | 1 | 42 | - | 925 | 1900 | 1167 | 79.3% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/2 | SW Circ Right Right2 | U | N/A | N/A | C4:E | | 1 | 42 | - | 935 | 1900 | 1167 | 80.1% |
| 7/1 | NE Circ Right | U | 3:3 | N/A | C3:F | | 1 | 41 | - | 827 | 1900 | 1140 | 72.5% |
| 7/2 | NE Circ Right Right2 | U | 3:3 | N/A | C3:F | | 1 | 41 | - | 901 | 1900 | 1140 | 79.0% |
| 8/1 | SE Circ Right | U | N/A | N/A | C4:A | | 1 | 19 | - | 517 | 1900 | 543 | 95.2% |
| 8/2 | SE Circ Right Right2 | U | N/A | N/A | C4:A | | 1 | 19 | - | 128 | 1900 | 543 | 23.6% |
| 9/1 | A61 NW Exit | U | N/A | N/A | - | | - | - | - | 1219 | Inf | Inf | 0.0% |
| 10/1 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 926 | 1900 | 1411 | 65.6% |
| 10/2 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 610 | 1900 | 1411 | 43.2% |
| 11/1 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 926 | Inf | Inf | 0.0% |
| 11/2 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 610 | Inf | Inf | 0.0% |
| 12/1 | A6195 E Exit | U | N/A | N/A | - | | - | - | - | 721 | Inf | Inf | 0.0% |
| 13/1 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 878 | Inf | Inf | 0.0% |
| 13/2 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 744 | Inf | Inf | 0.0% |

Full Input Data And Results

| 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **92.9** | **108.7** | **0.0** | **201.6** | **-** | **-** | **-** | **-** |
| **J1: M1 Junction 36 Tankersley Rbt** | **-** | **-** | **0** | **0** | **0** | **51.1** | **78.9** | **0.0** | **130.0** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 921 | 921 | - | - | - | 5.0 | 7.8 | - | 12.8 (10.0+2.8) | 50.1 (51.5:45.5) | 13.2 | 7.8 | 21.0 |
| 1/3 | 473 | 473 | - | - | - | 2.3 | 0.9 | - | 3.2 | 24.5 | 7.5 | 0.9 | 8.4 |
| 2/1 | 886 | 886 | - | - | - | 5.5 | 5.9 | - | 11.3 | 46.1 | 15.9 | 5.9 | 21.8 |
| 2/2 | 748 | 748 | - | - | - | 2.3 | 1.8 | - | 4.2 | 20.0 | 8.7 | 1.8 | 10.5 |
| 3/1+3/2 | 1169 | 1169 | - | - | - | 7.4 | 6.3 | - | 13.8 (7.4+6.4) | 42.4 (42.9:41.7) | 11.8 | 6.3 | 18.2 |
| 4/1 | 598 | 597 | - | - | - | 4.0 | 12.4 | - | 16.5 | 99.1 | 11.6 | 12.4 | 24.1 |
| 4/2 | 418 | 418 | - | - | - | 3.1 | 6.9 | - | 10.0 | 86.4 | 8.0 | 6.9 | 14.9 |
| 5/1 | 666 | 666 | - | - | - | 2.0 | 10.1 | - | 12.1 | 65.3 | 12.7 | 10.1 | 22.7 |
| 5/2 | 835 | 835 | - | - | - | 2.1 | 12.9 | - | 15.0 | 64.6 | 16.2 | 12.9 | 29.1 |
| 5/3 | 134 | 134 | - | - | - | 0.4 | 0.1 | - | 0.5 | 13.6 | 2.5 | 0.1 | 2.6 |
| 6/2+6/1 | 607 | 607 | - | - | - | 3.1 | 1.4 | - | 4.5 (0.9+3.6) | 26.6 (23.2:27.7) | 4.8 | 1.4 | 6.3 |
| 7/1 | 640 | 640 | - | - | - | 2.8 | 1.6 | - | 4.3 | 24.4 | 10.3 | 1.6 | 11.8 |
| 7/2 | 601 | 601 | - | - | - | 3.6 | 7.7 | - | 11.4 | 68.0 | 11.2 | 7.7 | 19.0 |
| 7/3 | 292 | 292 | - | - | - | 1.3 | 0.3 | - | 1.5 | 18.9 | 2.8 | 0.3 | 3.1 |
| 8/1 | 275 | 275 | - | - | - | 1.7 | 0.2 | - | 1.9 | 25.3 | 4.0 | 0.2 | 4.2 |
| 8/2 | 695 | 695 | - | - | - | 2.7 | 1.7 | - | 4.4 | 22.6 | 11.1 | 1.7 | 12.8 |
| 8/3 | 551 | 551 | - | - | - | 1.9 | 0.8 | - | 2.7 | 17.4 | 10.7 | 0.8 | 11.5 |
| 9/1 | 610 | 610 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 292 | 292 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 708 | 708 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/1 | 582 | 582 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 1840 | 1840 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 745 | 745 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/2 | 436 | 436 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **J2: Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **41.7** | **29.8** | **0.0** | **71.5** | **-** | **-** | **-** | **-** |
| 1/1 | 205 | 205 | - | - | - | 1.2 | 0.3 | - | 1.5 | 26.6 | 3.2 | 0.3 | 3.6 |
| 1/3+1/2 | 691 | 691 | - | - | - | 4.4 | 1.9 | - | 6.3 (2.5+3.8) | 32.9 (31.9:33.6) | 7.2 | 1.9 | 9.1 |
| 2/1 | 614 | 614 | - | - | - | 3.5 | 3.1 | - | 6.6 | 38.8 | 11.1 | 3.1 | 14.2 |
| 2/2 | 615 | 615 | - | - | - | 3.5 | 3.2 | - | 6.7 | 39.0 | 11.1 | 3.2 | 14.3 |
| 3/1 | 261 | 261 | - | - | - | 1.9 | 1.1 | - | 3.0 | 40.8 | 4.6 | 1.1 | 5.7 |
| 3/2 | 278 | 278 | - | - | - | 2.2 | 4.7 | - | 6.9 | 89.4 | 5.3 | 4.7 | 10.0 |
| 4/1 | 582 | 582 | - | - | - | 2.7 | 0.7 | - | 3.5 | 21.5 | 8.7 | 0.7 | 9.5 |
| 4/2+4/3 | 1852 | 1852 | - | - | - | 10.7 | 0.0 | - | 10.7 (5.3+5.4) | 20.8 (20.7:20.8) | 28.3 | 0.0 | 28.3 |
| 5/1 | 705 | 705 | - | - | - | 4.9 | 3.1 | - | 8.0 | 40.9 | 13.4 | 3.1 | 16.4 |
| 5/2 | 229 | 229 | - | - | - | 0.0 | 0.2 | - | 0.2 | 3.3 | 0.0 | 0.2 | 0.2 |
| 5/3 | 286 | 286 | - | - | - | 0.0 | 0.3 | - | 0.3 | 3.6 | 0.0 | 0.3 | 0.3 |
| 6/1 | 925 | 925 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.1 | 0.1 | 0.0 | 0.1 |
| 6/2 | 935 | 935 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.1 | 0.1 | 0.0 | 0.1 |
| 7/1 | 827 | 827 | - | - | - | 1.2 | 1.3 | - | 2.5 | 10.8 | 4.6 | 1.3 | 5.9 |
| 7/2 | 901 | 901 | - | - | - | 1.7 | 1.9 | - | 3.5 | 14.0 | 5.7 | 1.9 | 7.6 |
| 8/1 | 517 | 517 | - | - | - | 2.8 | 6.6 | - | 9.5 | 65.8 | 9.8 | 6.6 | 16.4 |
| 8/2 | 128 | 128 | - | - | - | 0.7 | 0.2 | - | 0.8 | 23.3 | 1.7 | 0.2 | 1.9 |
| 9/1 | 1219 | 1219 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 926 | 926 | - | - | - | 0.0 | 1.0 | - | 1.0 | 3.7 | 0.2 | 1.0 | 1.1 |
| 10/2 | 610 | 610 | - | - | - | 0.2 | 0.4 | - | 0.6 | 3.6 | 1.4 | 0.4 | 1.8 |
| 11/1 | 926 | 926 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 610 | 610 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 721 | 721 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13/1 | 878 | 878 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

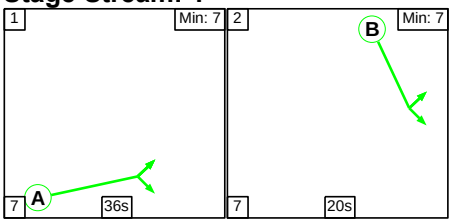
| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13/2 | 744 | 744 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 - M1 J36 Northside Tankersley | Stream: 1 | PRC for Signalled Lanes (%): | -10.3 | Total Delay for Signalled Lanes (pcuHr): | 43.59 | Cycle Time (s): 70 |
| C1 - M1 J36 Northside Tankersley | Stream: 2 | PRC for Signalled Lanes (%): | -3.6 | Total Delay for Signalled Lanes (pcuHr): | 19.99 | Cycle Time (s): 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 1 | PRC for Signalled Lanes (%): | -10.0 | Total Delay for Signalled Lanes (pcuHr): | 30.98 | Cycle Time (s): 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 2 | PRC for Signalled Lanes (%): | -11.3 | Total Delay for Signalled Lanes (pcuHr): | 35.46 | Cycle Time (s): 70 |
| C3 - Birdwell North | Stream: 1 | PRC for Signalled Lanes (%): | 3.3 | Total Delay for Signalled Lanes (pcuHr): | 21.78 | Cycle Time (s): 70 |
| C3 - Birdwell North | Stream: 2 | PRC for Signalled Lanes (%): | 37.2 | Total Delay for Signalled Lanes (pcuHr): | 1.56 | Cycle Time (s): 70 |
| C3 - Birdwell North | Stream: 3 | PRC for Signalled Lanes (%): | -3.5 | Total Delay for Signalled Lanes (pcuHr): | 15.85 | Cycle Time (s): 70 |
| C4 - Birdwell South | | PRC for Signalled Lanes (%): | -8.5 | Total Delay for Signalled Lanes (pcuHr): | 32.34 | Cycle Time (s): 70 |
| | | PRC Over All Lanes (%): | -11.3 | Total Delay Over All Lanes(pcuHr): | 201.55 | |

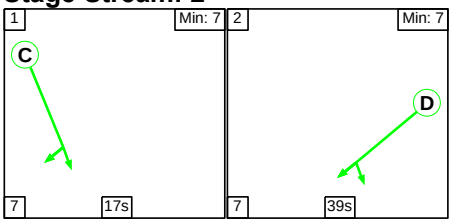
Full Input Data And Results
**Scenario 3: '3'** (FG3: '2029 AM Do Minimum', Plan 1: 'Network Control Plan 1')
**C1 - M1 J36 Northside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

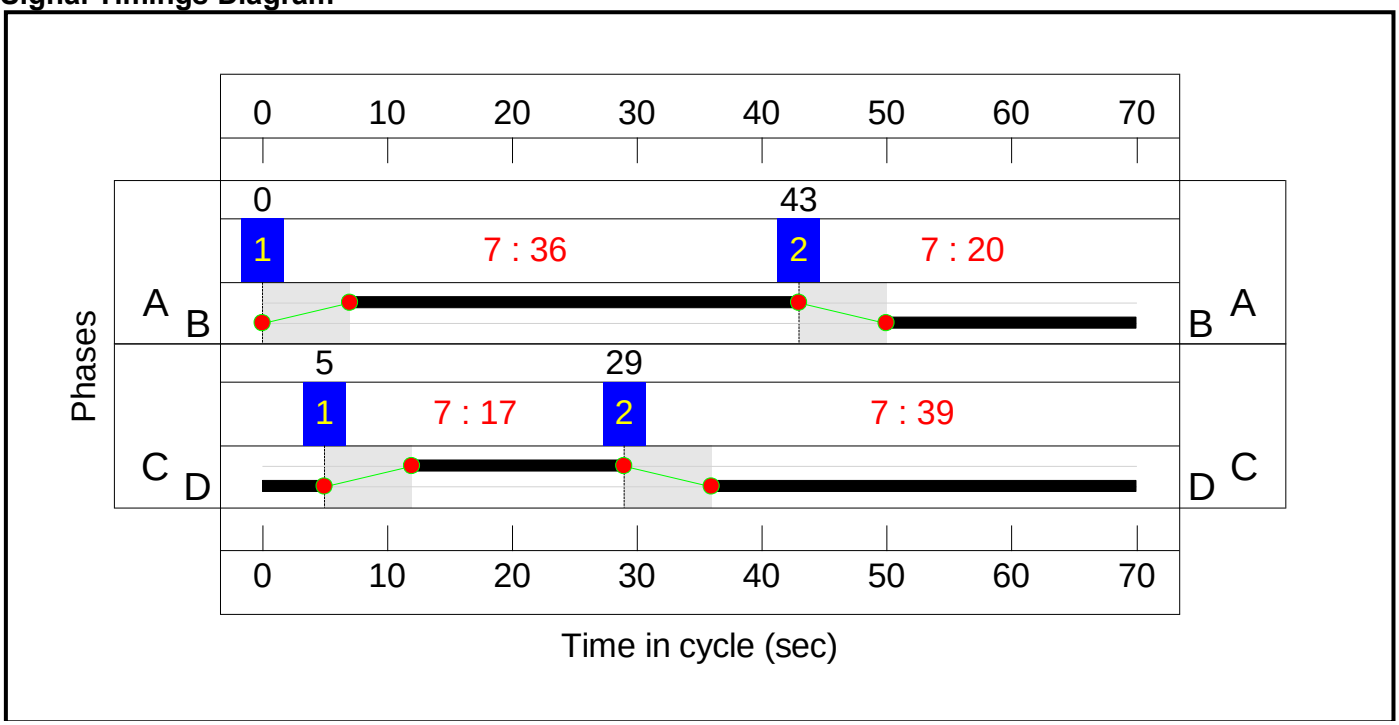
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 36 | 20 |
| Change Point | 0 | 43 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 17 | 39 |
| Change Point | 5 | 29 |

## Signal Timings Diagram

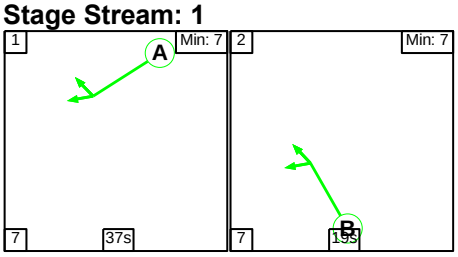


Full Input Data And Results

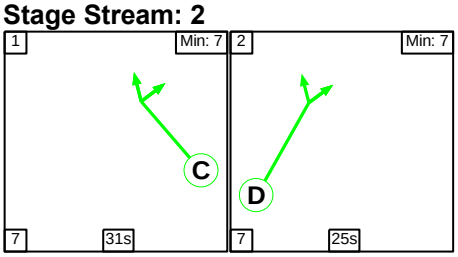
**C2 - M1 J36 Southside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

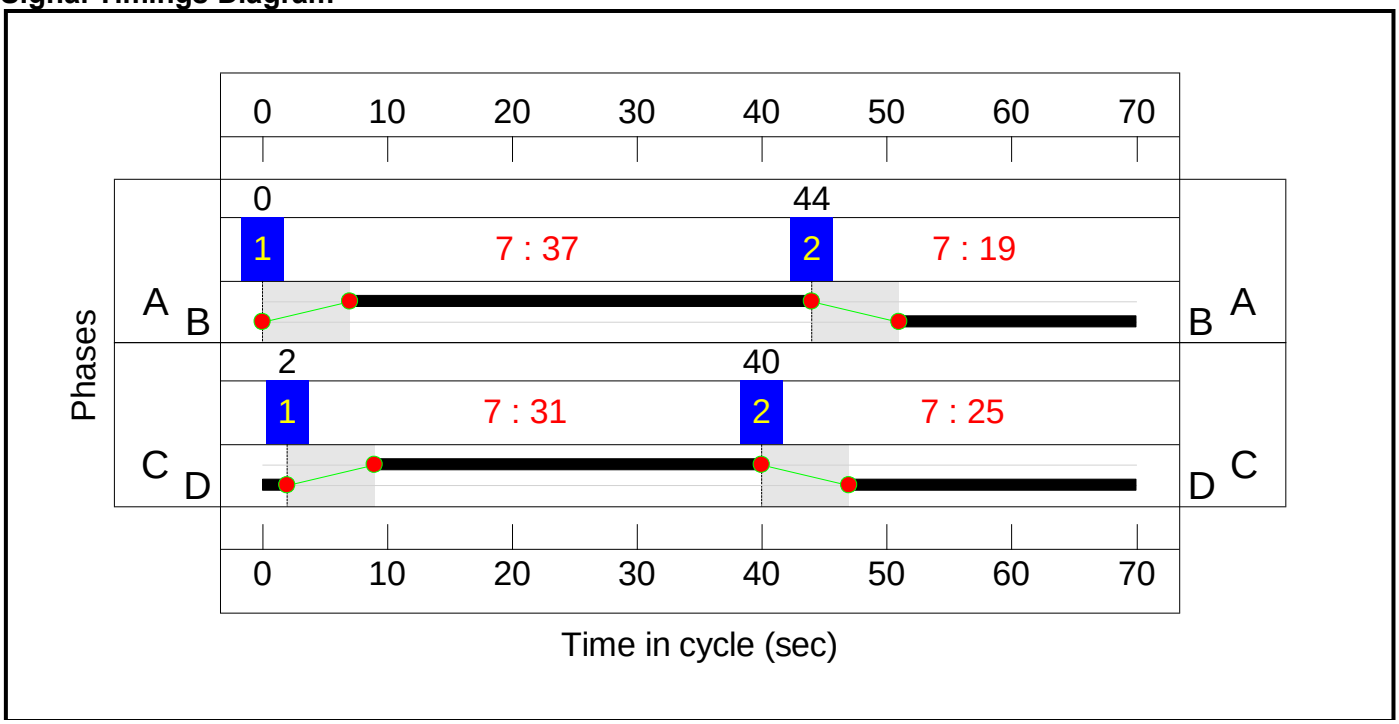
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 37 | 19 |
| Change Point | 0 | 44 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 31 | 25 |
| Change Point | 2 | 40 |

## Signal Timings Diagram

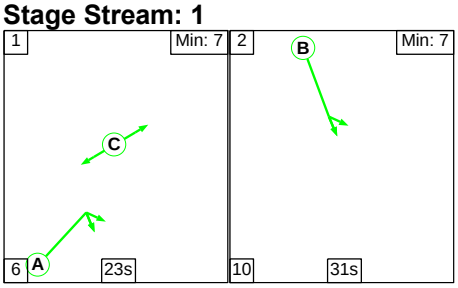


Full Input Data And Results

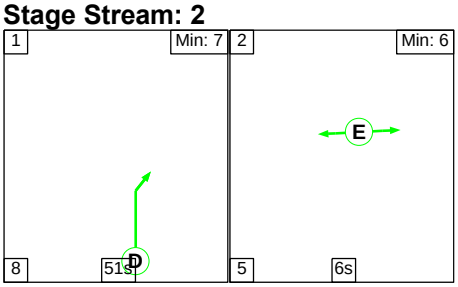
## C3 - Birdwell North

## Stage Sequence Diagram

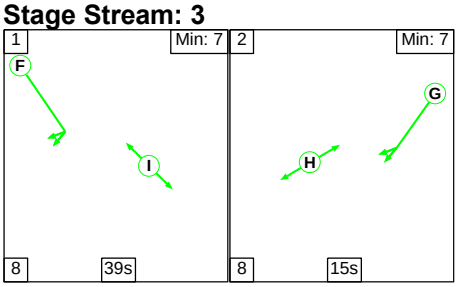
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 23 | 31 |
| Change Point | 65 | 24 |

### Stage Stream: 2

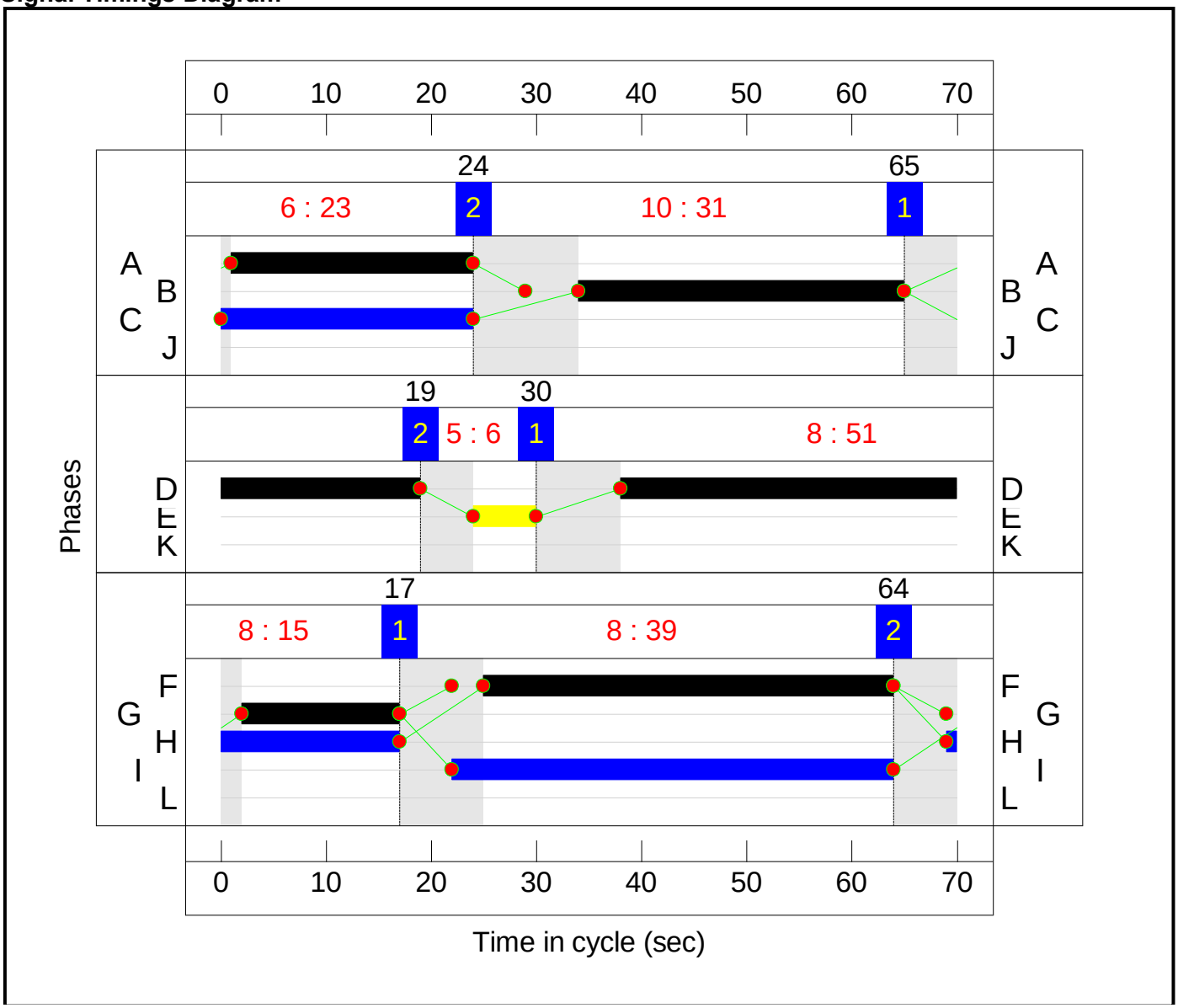
| Stage | 1 | 2 |
|---|---|---|
| Duration | 51 | 6 |
| Change Point | 30 | 19 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 39 | 15 |
| Change Point | 17 | 64 |

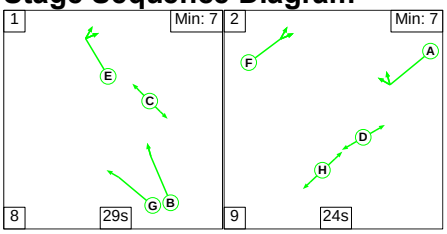
Full Input Data And Results

## Signal Timings Diagram




## C4 - Birdwell South

### Stage Sequence Diagram

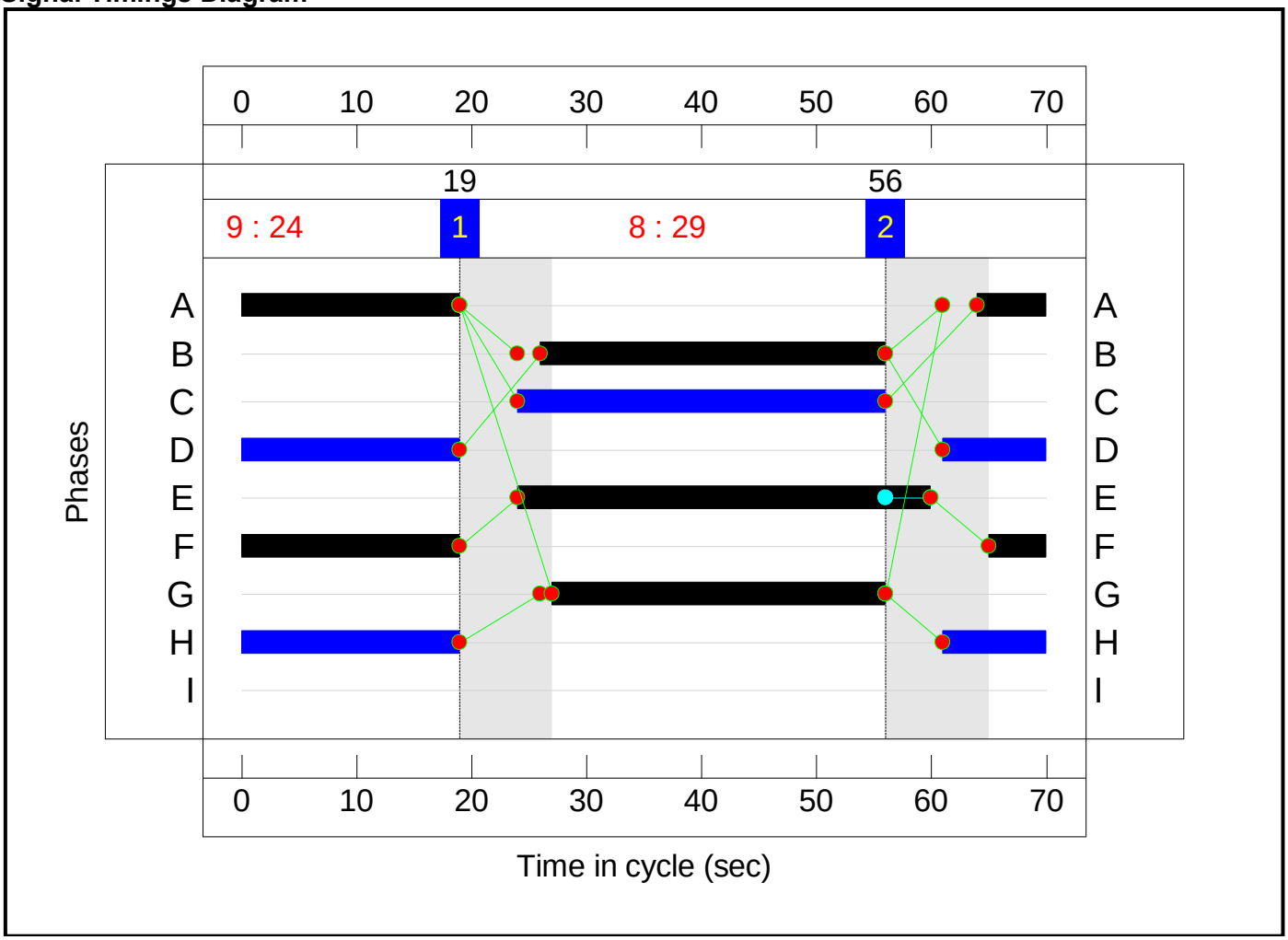



### Stage Timings

| Stage | 1 | 2 |
|---|---|---|
| Duration | 29 | 24 |
| Change Point | 19 | 56 |

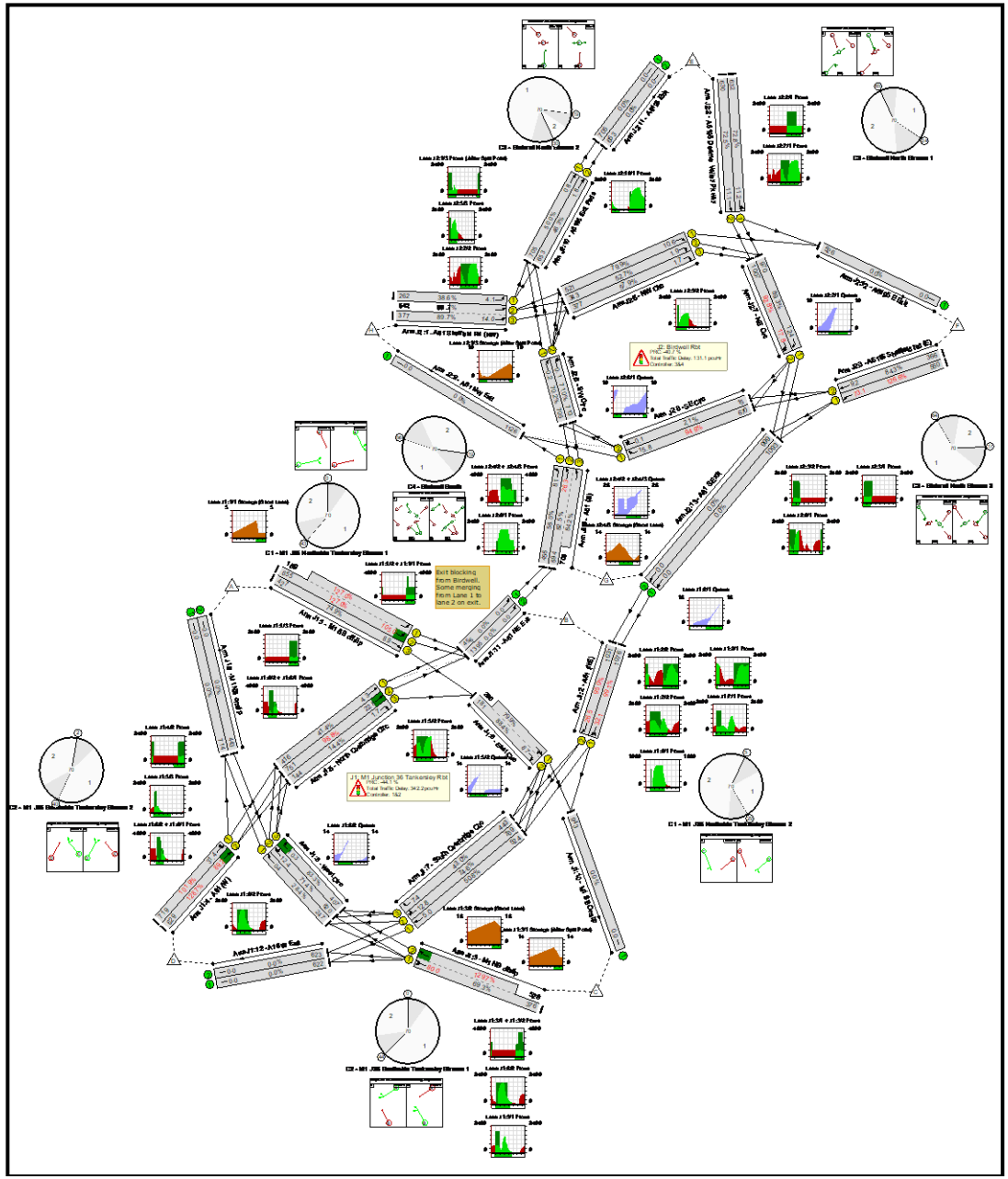
Full Input Data And Results

**Signal Timings Diagram**



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

## Network Results

Full Input Data And 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **129.7%** |
| **J1: M1 Junction 36 Tankersley Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **129.7%** |
| 1/2+1/1 | M1 SB offslip Left | U | 1:1 | N/A | C1:B | | 1 | 20 | - | 824 | 1900:1900 | 516+133 | 127.0 : 127.0% |
| 1/3 | M1 SB offslip Ahead | U | 1:1 | N/A | C1:B | | 1 | 20 | - | 427 | 1900 | 570 | 74.9% |
| 2/1 | A61 (NE) Ahead Ahead2 | U | 1:2 | N/A | C1:D | | 1 | 39 | - | 1108 | 1900 | 1086 | 99.1% |
| 2/2 | A61 (NE) Ahead | U | 1:2 | N/A | C1:D | | 1 | 39 | - | 1117 | 1900 | 1086 | 95.0% |
| 3/1+3/2 | M1 NB offslip Ahead Ahead2 | U | 2:1 | N/A | C2:B | | 1 | 19 | - | 904 | 1900:1900 | 543+407 | 69.3 : 129.7% |
| 4/1 | A61 (W) Ahead Left | U | 2:2 | N/A | C2:D | | 1 | 25 | - | 719 | 1900 | 706 | 101.9% |
| 4/2 | A61 (W) Ahead | U | 2:2 | N/A | C2:D | | 1 | 25 | - | 629 | 1900 | 489 | 128.7% |
| 5/1 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 36 | - | 420 | 1900 | 1004 | 41.4% |
| 5/2 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 36 | - | 971 | 1900 | 760 | 98.8% |
| 5/3 | North Overbridge Circ Right | U | 1:1 | N/A | C1:A | | 1 | 36 | - | 186 | 1900 | 1004 | 14.4% |
| 6/2+6/1 | East Circ Right Ahead | U | 1:2 | N/A | C1:C | | 1 | 17 | - | 613 | 1900:1900 | 205+489 | 88.4 : 79.9% |
| 7/1 | South Overbridge Circ Ahead | U | 2:1 | N/A | C2:A | | 1 | 37 | - | 532 | 1900 | 1031 | 50.8% |
| 7/2 | South Overbridge Circ Right Ahead | U | 2:1 | N/A | C2:A | | 1 | 37 | - | 818 | 1900 | 1031 | 74.6% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7/3 | South Overbridge Circ Right | U | 2:1 | N/A | C2:A | | 1 | 37 | - | 480 | 1900 | 1031 | 43.0% |
| 8/1 | West Circ Ahead | U | 2:2 | N/A | C2:C | | 1 | 31 | - | 267 | 1900 | 869 | 28.4% |
| 8/2 | West Circ Right Ahead | U | 2:2 | N/A | C2:C | | 1 | 31 | - | 657 | 1900 | 869 | 71.4% |
| 8/3 | West Circ Right | U | 2:2 | N/A | C2:C | | 1 | 31 | - | 528 | 1900 | 489 | 83.3% |
| 9/1 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 743 | Inf | Inf | 0.0% |
| 9/2 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 480 | Inf | Inf | 0.0% |
| 10/1 | M1 SB Onslip | U | N/A | N/A | - | | - | - | - | 1008 | Inf | Inf | 0.0% |
| 11/1 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 459 | Inf | Inf | 0.0% |
| 11/2 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 1756 | Inf | Inf | 0.0% |
| 12/1 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 630 | Inf | Inf | 0.0% |
| 12/2 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 652 | Inf | Inf | 0.0% |
| **J2: Birdwell Rbt** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **126.6%** |
| 1/1 | A61 Sheffield Rd (NW) Left | U | N/A | N/A | C4:F | | 1 | 24 | - | 262 | 1900 | 679 | 38.6% |
| 1/3+1/2 | A61 Sheffield Rd (NW) Ahead | U | N/A | N/A | C4:F | | 1 | 24 | - | 919 | 1900:1900 | 420+604 | 89.7 : 89.7% |
| 2/1 | A6195 Dearne Valley Pkway Ahead Left | U | 3:1 | N/A | C3:B | | 1 | 31 | - | 632 | 1900 | 869 | 72.8% |
| 2/2 | A6195 Dearne Valley Pkway Ahead | U | 3:1 | N/A | C3:B | | 1 | 31 | - | 630 | 1900 | 869 | 72.5% |
| 3/1 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 15 | - | 550 | 1900 | 434 | 126.6% |
| 3/2 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 15 | - | 366 | 1900 | 434 | 84.3% |
| 4/1 | A61 (S) Left | U | N/A | N/A | C4:G | | 1 | 29 | - | 459 | 1900 | 814 | 56.0% |
| 4/2+4/3 | A61 (S) Ahead | U | N/A | N/A | C4:B | | 1 | 30 | - | 1766 | 1900:1900 | 841+841 | 82.5 : 84.2% |
| 5/1 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 23 | - | 604 | 1900 | 651 | 79.9% |
| 5/2 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 23 | - | 343 | 1900 | 651 | 52.7% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/3 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 23 | - | 377 | 1900 | 651 | 57.9% |
| 6/1 | SW Circ Right | U | N/A | N/A | C4:E | | 1 | 36 | - | 885 | 1900 | 1004 | 70.2% |
| 6/2 | SW Circ Right Right2 | U | N/A | N/A | C4:E | | 1 | 36 | - | 896 | 1900 | 1004 | 71.0% |
| 7/1 | NE Circ Right | U | 3:3 | N/A | C3:F | | 1 | 39 | - | 970 | 1900 | 1086 | 89.3% |
| 7/2 | NE Circ Right Right2 | U | 3:3 | N/A | C3:F | | 1 | 39 | - | 1007 | 1900 | 1086 | 92.8% |
| 8/1 | SE Circ Right | U | N/A | N/A | C4:A | | 1 | 25 | - | 670 | 1900 | 706 | 94.9% |
| 8/2 | SE Circ Right Right2 | U | N/A | N/A | C4:A | | 1 | 25 | - | 15 | 1900 | 706 | 2.1% |
| 9/1 | A61 NW Exit | U | N/A | N/A | - | | - | - | - | 1129 | Inf | Inf | 0.0% |
| 10/1 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 885 | 1900 | 1411 | 50.0% |
| 10/2 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 753 | 1900 | 1411 | 46.3% |
| 11/1 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 885 | Inf | Inf | 0.0% |
| 11/2 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 753 | Inf | Inf | 0.0% |
| 12/1 | A6195 E Exit | U | N/A | N/A | - | | - | - | - | 609 | Inf | Inf | 0.0% |
| 13/1 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 1126 | Inf | Inf | 0.0% |
| 13/2 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 1082 | Inf | Inf | 0.0% |

Full Input Data And Results

| 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **91.8** | **381.5** | **0.0** | **473.3** | **-** | **-** | **-** | **-** |
| **J1: M1 Junction 36 Tankersley Rbt** | **-** | **-** | **0** | **0** | **0** | **51.4** | **290.8** | **0.0** | **342.2** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 824 | 685 | - | - | - | 8.7 | 89.9 | - | 98.6 (79.2+19.3) | 430.6 (435.5:411.6) | 15.1 | 89.9 | 105.0 |
| 1/3 | 427 | 427 | - | - | - | 2.6 | 1.5 | - | 4.1 | 34.5 | 7.5 | 1.5 | 8.9 |
| 2/1 | 1076 | 1076 | - | - | - | 1.9 | 14.1 | - | 15.9 | 53.3 | 18.0 | 14.1 | 32.1 |
| 2/2 | 1031 | 1031 | - | - | - | 2.7 | 7.5 | - | 10.2 | 35.6 | 19.0 | 7.5 | 26.5 |
| 3/1+3/2 | 904 | 783 | - | - | - | 8.9 | 67.9 | - | 76.7 (5.4+71.3) | 305.6 (51.8:486.3) | 12.2 | 67.9 | 80.0 |
| 4/1 | 719 | 706 | - | - | - | 4.9 | 17.1 | - | 22.1 | 110.5 | 14.2 | 17.1 | 31.4 |
| 4/2 | 629 | 489 | - | - | - | 10.2 | 72.4 | - | 82.6 | 472.6 | 16.8 | 72.4 | 89.2 |
| 5/1 | 416 | 416 | - | - | - | 0.5 | 0.4 | - | 0.8 | 7.2 | 4.0 | 0.4 | 4.3 |
| 5/2 | 751 | 751 | - | - | - | 1.9 | 11.7 | - | 13.6 | 65.3 | 11.1 | 11.7 | 22.8 |
| 5/3 | 144 | 144 | - | - | - | 0.1 | 0.1 | - | 0.2 | 4.6 | 1.6 | 0.1 | 1.7 |
| 6/2+6/1 | 571 | 571 | - | - | - | 1.9 | 2.3 | - | 4.2 (1.3+2.9) | 26.5 (26.8:26.4) | 6.5 | 2.3 | 8.7 |
| 7/1 | 524 | 524 | - | - | - | 0.9 | 0.5 | - | 1.4 | 9.8 | 4.5 | 0.5 | 5.0 |
| 7/2 | 769 | 769 | - | - | - | 2.0 | 1.5 | - | 3.5 | 16.2 | 11.3 | 1.5 | 12.8 |
| 7/3 | 443 | 443 | - | - | - | 1.0 | 0.4 | - | 1.4 | 11.3 | 7.1 | 0.4 | 7.4 |
| 8/1 | 247 | 247 | - | - | - | 0.1 | 0.2 | - | 0.3 | 3.8 | 0.2 | 0.2 | 0.4 |
| 8/2 | 620 | 620 | - | - | - | 1.2 | 1.2 | - | 2.4 | 14.0 | 11.1 | 1.2 | 12.4 |
| 8/3 | 407 | 407 | - | - | - | 1.8 | 2.4 | - | 4.2 | 37.1 | 7.9 | 2.4 | 10.3 |
| 9/1 | 714 | 714 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 443 | 443 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 943 | 943 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/1 | 456 | 456 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 1395 | 1395 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 622 | 622 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/2 | 623 | 623 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **J2: Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **40.4** | **90.7** | **0.0** | **131.1** | **-** | **-** | **-** | **-** |
| 1/1 | 262 | 262 | - | - | - | 1.2 | 0.3 | - | 1.5 | 21.1 | 3.8 | 0.3 | 4.1 |
| 1/3+1/2 | 919 | 919 | - | - | - | 4.9 | 4.0 | - | 9.0 (3.6+5.4) | 35.2 (33.9:36.1) | 9.9 | 4.0 | 14.0 |
| 2/1 | 632 | 632 | - | - | - | 2.7 | 1.3 | - | 4.0 | 23.0 | 9.8 | 1.3 | 11.2 |
| 2/2 | 630 | 630 | - | - | - | 2.7 | 1.3 | - | 4.0 | 22.9 | 9.8 | 1.3 | 11.1 |
| 3/1 | 550 | 434 | - | - | - | 8.3 | 60.1 | - | 68.4 | 447.7 | 12.9 | 60.1 | 73.1 |
| 3/2 | 366 | 366 | - | - | - | 2.6 | 2.5 | - | 5.1 | 50.4 | 6.7 | 2.5 | 9.2 |
| 4/1 | 456 | 456 | - | - | - | 1.9 | 0.6 | - | 2.5 | 19.7 | 7.4 | 0.6 | 8.1 |
| 4/2+4/3 | 1403 | 1403 | - | - | - | 4.7 | 0.0 | - | 4.7 (2.3+2.4) | 12.1 (12.0:12.2) | 26.3 | 0.0 | 26.3 |
| 5/1 | 521 | 521 | - | - | - | 2.6 | 1.9 | - | 4.5 | 31.2 | 8.7 | 1.9 | 10.6 |
| 5/2 | 343 | 343 | - | - | - | 0.8 | 0.6 | - | 1.3 | 14.1 | 1.3 | 0.6 | 1.9 |
| 5/3 | 377 | 377 | - | - | - | 0.6 | 0.7 | - | 1.3 | 12.6 | 1.1 | 0.7 | 1.7 |
| 6/1 | 705 | 705 | - | - | - | 0.1 | 0.0 | - | 0.1 | 0.3 | 0.2 | 0.0 | 0.2 |
| 6/2 | 713 | 713 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.2 | 0.1 | 0.0 | 0.1 |
| 7/1 | 970 | 970 | - | - | - | 1.9 | 3.9 | - | 5.8 | 21.5 | 8.5 | 3.9 | 12.4 |
| 7/2 | 1007 | 1007 | - | - | - | 2.2 | 5.6 | - | 7.8 | 27.8 | 12.2 | 5.6 | 17.8 |
| 8/1 | 670 | 670 | - | - | - | 3.0 | 6.8 | - | 9.8 | 52.4 | 9.0 | 6.8 | 15.8 |
| 8/2 | 15 | 15 | - | - | - | 0.1 | 0.0 | - | 0.1 | 16.0 | 0.1 | 0.0 | 0.1 |
| 9/1 | 1126 | 1126 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 705 | 705 | - | - | - | 0.0 | 0.5 | - | 0.5 | 2.6 | 0.3 | 0.5 | 0.8 |
| 10/2 | 653 | 653 | - | - | - | 0.2 | 0.4 | - | 0.6 | 3.4 | 1.3 | 0.4 | 1.8 |
| 11/1 | 705 | 705 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 653 | 653 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 526 | 526 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13/1 | 1093 | 1093 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

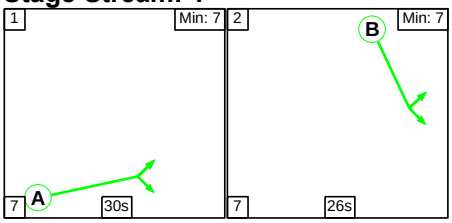
| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13/2 | 999 | 999 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| C1 - M1 J36 Northside Tankersley | Stream: 1 | PRC for Signalled Lanes (%): | -41.1 | Total Delay for Signalled Lanes (pcuHr): | 117.31 | Cycle Time (s): | 70 |
| C1 - M1 J36 Northside Tankersley | Stream: 2 | PRC for Signalled Lanes (%): | -10.1 | Total Delay for Signalled Lanes (pcuHr): | 30.34 | Cycle Time (s): | 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 1 | PRC for Signalled Lanes (%): | -44.1 | Total Delay for Signalled Lanes (pcuHr): | 83.02 | Cycle Time (s): | 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 2 | PRC for Signalled Lanes (%): | -43.0 | Total Delay for Signalled Lanes (pcuHr): | 111.51 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 1 | PRC for Signalled Lanes (%): | 12.6 | Total Delay for Signalled Lanes (pcuHr): | 15.22 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 2 | PRC for Signalled Lanes (%): | 80.1 | Total Delay for Signalled Lanes (pcuHr): | 1.13 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 3 | PRC for Signalled Lanes (%): | -40.7 | Total Delay for Signalled Lanes (pcuHr): | 87.08 | Cycle Time (s): | 70 |
| C4 - Birdwell South | | PRC for Signalled Lanes (%): | -5.5 | Total Delay for Signalled Lanes (pcuHr): | 27.65 | Cycle Time (s): | 70 |
| | | PRC Over All Lanes (%): | -44.1 | Total Delay Over All Lanes(pcuHr): | 473.26 | | |

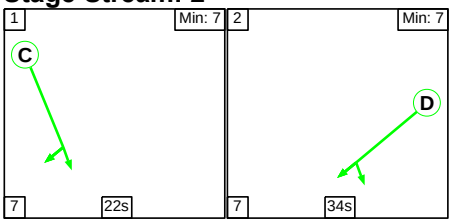
Full Input Data And Results
**Scenario 4: '4'** (FG4: '2029 PM Do Minimum', Plan 1: 'Network Control Plan 1')
**C1 - M1 J36 Northside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

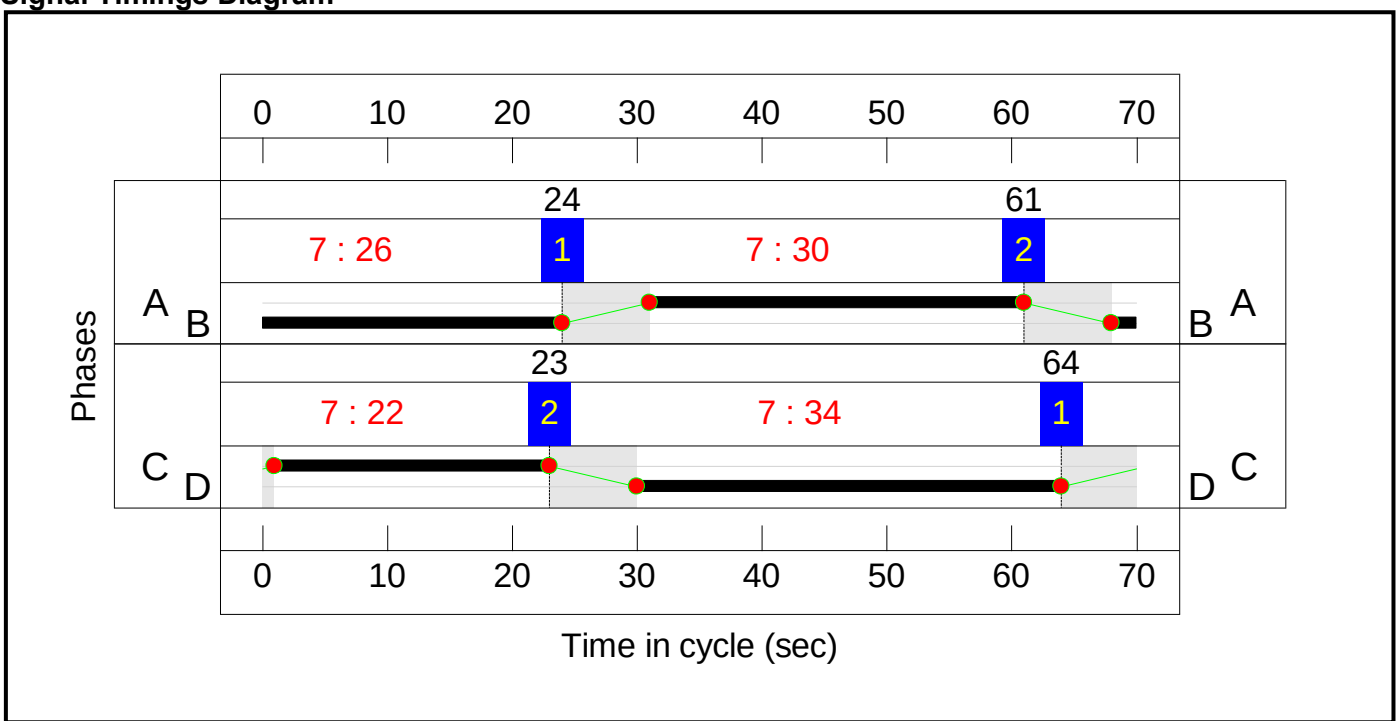
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 30 | 26 |
| Change Point | 24 | 61 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 22 | 34 |
| Change Point | 64 | 23 |

## Signal Timings Diagram

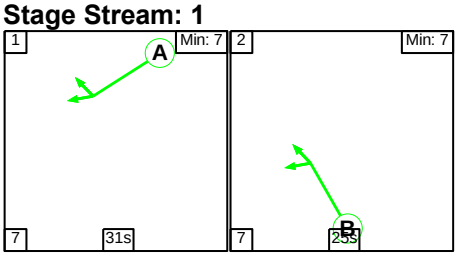


Full Input Data And Results

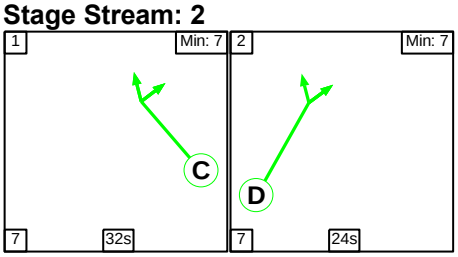
**C2 - M1 J36 Southside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

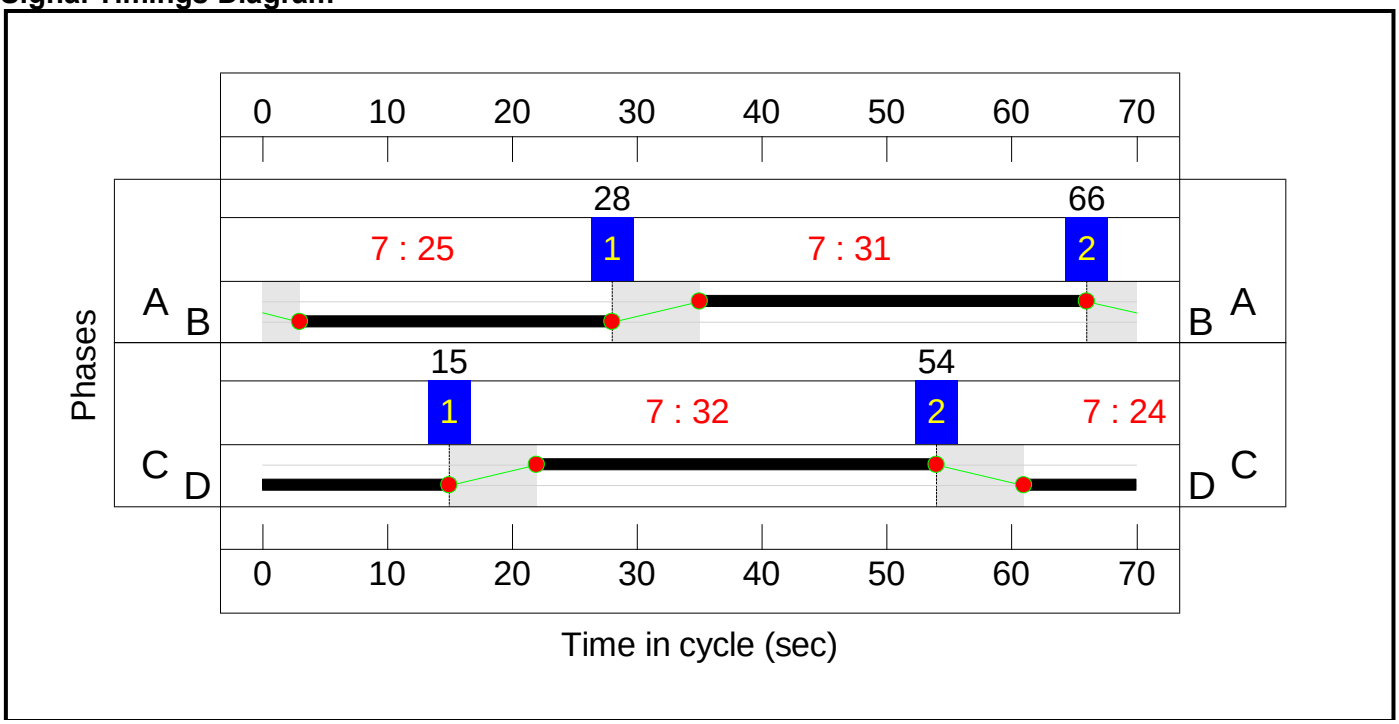
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 31 | 25 |
| Change Point | 28 | 66 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 32 | 24 |
| Change Point | 15 | 54 |

## Signal Timings Diagram

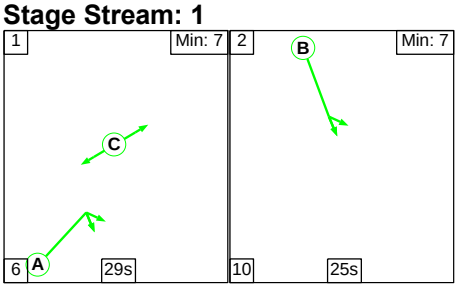


Full Input Data And Results

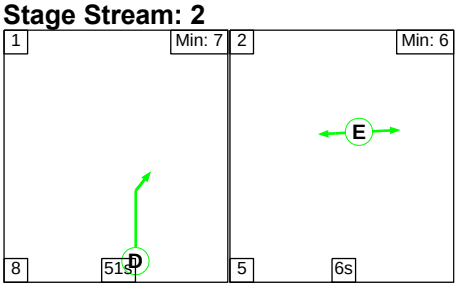
## C3 - Birdwell North

## Stage Sequence Diagram

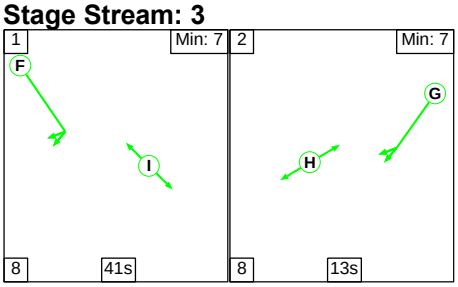
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 29 | 25 |
| Change Point | 63 | 28 |

### Stage Stream: 2

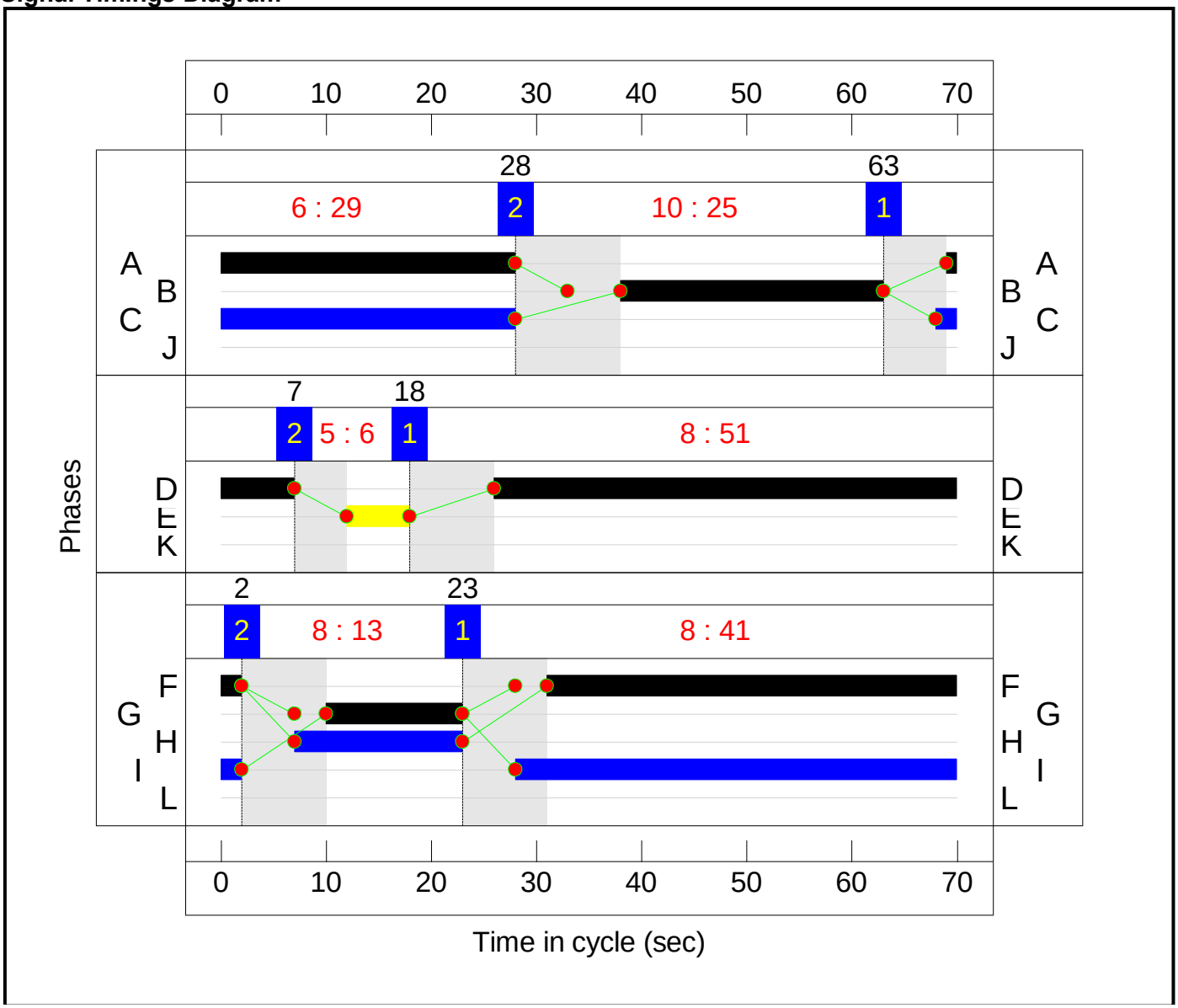
| Stage | 1 | 2 |
|---|---|---|
| Duration | 51 | 6 |
| Change Point | 18 | 7 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 41 | 13 |
| Change Point | 23 | 2 |

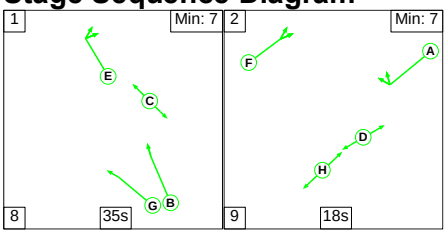
Full Input Data And Results

## Signal Timings Diagram




## C4 - Birdwell South

### Stage Sequence Diagram

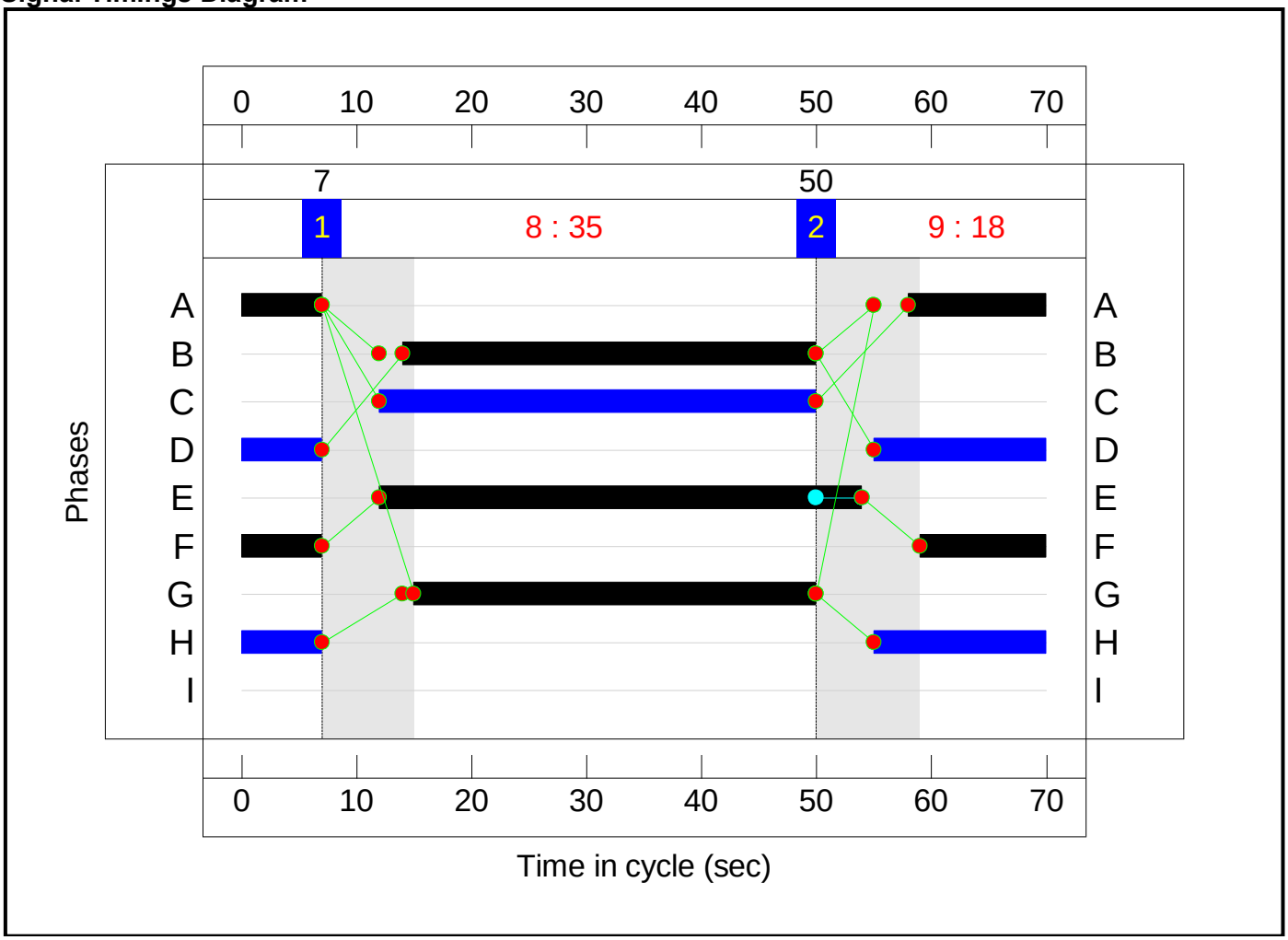



### Stage Timings

| Stage | 1 | 2 |
|---|---|---|
| Duration | 35 | 18 |
| Change Point | 7 | 50 |

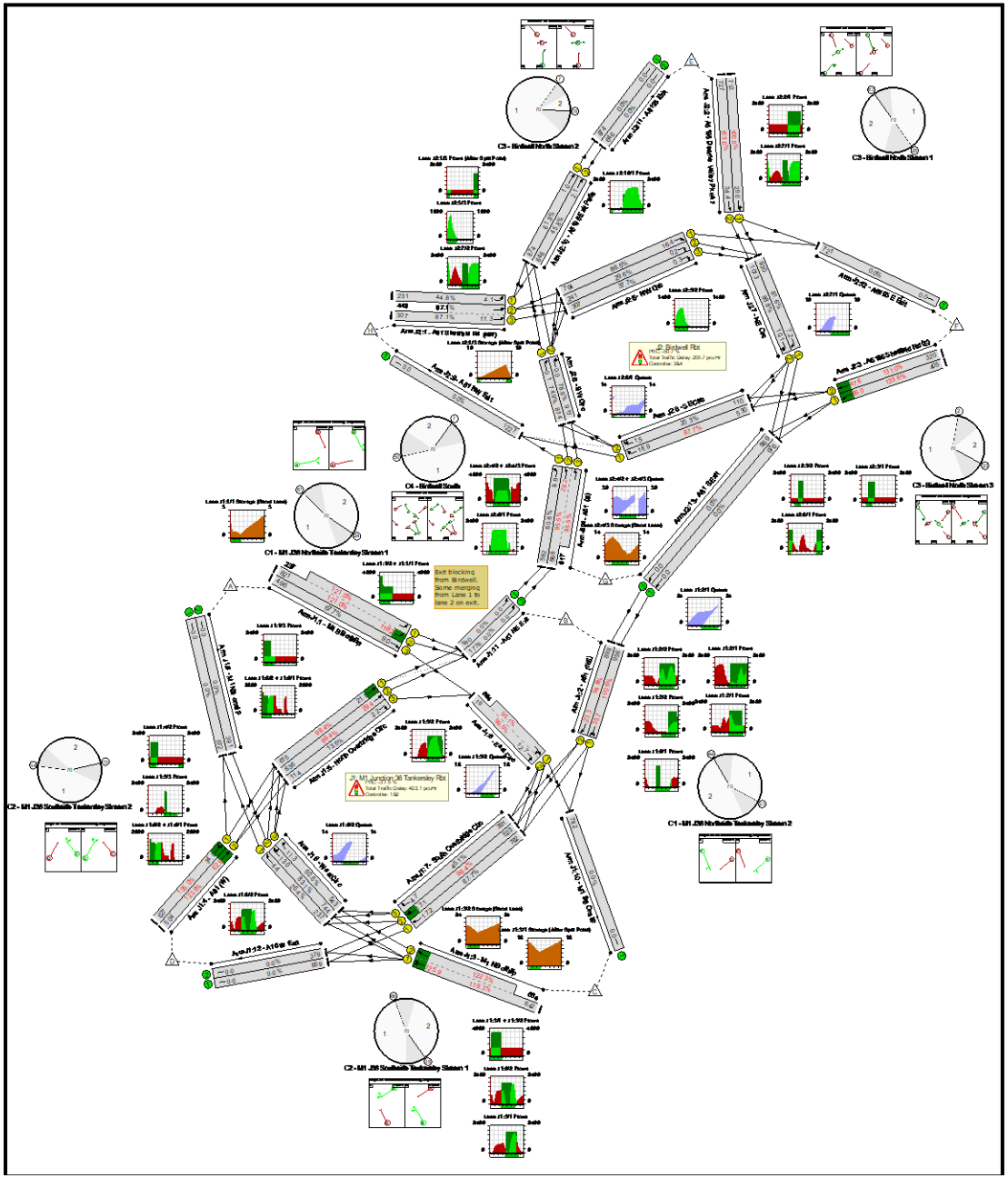
Full Input Data And Results

**Signal Timings Diagram**



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

## Network Results

Full Input Data And 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **135.6%** |
| **J1: M1 Junction 36 Tankersley Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **123.8%** |
| 1/2+1/1 | M1 SB offslip Left | U | 1:1 | N/A | C1:B | | 1 | 26 | - | 1058 | 1900:1900 | 679+196 | 121.0 : 121.0% |
| 1/3 | M1 SB offslip Ahead | U | 1:1 | N/A | C1:B | | 1 | 26 | - | 496 | 1900 | 733 | 67.7% |
| 2/1 | A61 (NE) Ahead Ahead2 | U | 1:2 | N/A | C1:D | | 1 | 34 | - | 978 | 1900 | 950 | 100.6% |
| 2/2 | A61 (NE) Ahead | U | 1:2 | N/A | C1:D | | 1 | 34 | - | 1001 | 1900 | 950 | 94.6% |
| 3/1+3/2 | M1 NB offslip Ahead Ahead2 | U | 2:1 | N/A | C2:B | | 1 | 25 | - | 1306 | 1900:1900 | 543+543 | 118.3 : 122.3% |
| 4/1 | A61 (W) Ahead Left | U | 2:2 | N/A | C2:D | | 1 | 24 | - | 627 | 1900 | 597 | 105.0% |
| 4/2 | A61 (W) Ahead | U | 2:2 | N/A | C2:D | | 1 | 24 | - | 504 | 1900 | 407 | 123.8% |
| 5/1 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 30 | - | 692 | 1900 | 624 | 98.4% |
| 5/2 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 30 | - | 1027 | 1900 | 841 | 99.4% |
| 5/3 | North Overbridge Circ Right | U | 1:1 | N/A | C1:A | | 1 | 30 | - | 141 | 1900 | 841 | 13.5% |
| 6/2+6/1 | East Circ Right Ahead | U | 1:2 | N/A | C1:C | | 1 | 22 | - | 637 | 1900:1900 | 16+624 | 99.5 : 95.1% |
| 7/1 | South Overbridge Circ Ahead | U | 2:1 | N/A | C2:A | | 1 | 31 | - | 770 | 1900 | 869 | 87.7% |
| 7/2 | South Overbridge Circ Right Ahead | U | 2:1 | N/A | C2:A | | 1 | 31 | - | 581 | 1900 | 543 | 96.4% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7/3 | South Overbridge Circ Right | U | 2:1 | N/A | C2:A | | 1 | 31 | - | 436 | 1900 | 869 | 45.1% |
| 8/1 | West Circ Ahead | U | 2:2 | N/A | C2:C | | 1 | 32 | - | 264 | 1900 | 896 | 26.4% |
| 8/2 | West Circ Right Ahead | U | 2:2 | N/A | C2:C | | 1 | 32 | - | 853 | 1900 | 896 | 83.1% |
| 8/3 | West Circ Right | U | 2:2 | N/A | C2:C | | 1 | 32 | - | 664 | 1900 | 896 | 60.6% |
| 9/1 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 616 | Inf | Inf | 0.0% |
| 9/2 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 436 | Inf | Inf | 0.0% |
| 10/1 | M1 SB Onslip | U | N/A | N/A | - | | - | - | - | 829 | Inf | Inf | 0.0% |
| 11/1 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 624 | Inf | Inf | 0.0% |
| 11/2 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 2153 | Inf | Inf | 0.0% |
| 12/1 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 885 | Inf | Inf | 0.0% |
| 12/2 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 427 | Inf | Inf | 0.0% |
| **J2: Birdwell Rbt** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **135.6%** |
| 1/1 | A61 Sheffield Rd (NW) Left | U | N/A | N/A | C4:F | | 1 | 18 | - | 231 | 1900 | 516 | 44.8% |
| 1/3+1/2 | A61 Sheffield Rd (NW) Ahead | U | N/A | N/A | C4:F | | 1 | 18 | - | 750 | 1900:1900 | 352+508 | 87.1 : 87.1% |
| 2/1 | A6195 Dearne Valley Pkway Ahead Left | U | 3:1 | N/A | C3:B | | 1 | 25 | - | 712 | 1900 | 706 | 100.9% |
| 2/2 | A6195 Dearne Valley Pkway Ahead | U | 3:1 | N/A | C3:B | | 1 | 25 | - | 727 | 1900 | 706 | 103.0% |
| 3/1 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 13 | - | 405 | 1900 | 299 | 135.6% |
| 3/2 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 13 | - | 320 | 1900 | 244 | 131.0% |
| 4/1 | A61 (S) Left | U | N/A | N/A | C4:G | | 1 | 35 | - | 626 | 1900 | 977 | 60.6% |
| 4/2+4/3 | A61 (S) Ahead | U | N/A | N/A | C4:B | | 1 | 36 | - | 2164 | 1900:1900 | 909+961 | 95.5 : 95.5% |
| 5/1 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 29 | - | 811 | 1900 | 814 | 86.5% |
| 5/2 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 29 | - | 241 | 1900 | 814 | 29.6% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/3 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 29 | - | 307 | 1900 | 814 | 37.7% |
| 6/1 | SW Circ Right | U | N/A | N/A | C4:E | | 1 | 42 | - | 1060 | 1900 | 1167 | 74.9% |
| 6/2 | SW Circ Right Right2 | U | N/A | N/A | C4:E | | 1 | 42 | - | 1112 | 1900 | 1167 | 78.6% |
| 7/1 | NE Circ Right | U | 3:3 | N/A | C3:F | | 1 | 41 | - | 936 | 1900 | 1140 | 81.6% |
| 7/2 | NE Circ Right Right2 | U | 3:3 | N/A | C3:F | | 1 | 41 | - | 1034 | 1900 | 1140 | 88.8% |
| 8/1 | SE Circ Right | U | N/A | N/A | C4:A | | 1 | 19 | - | 600 | 1900 | 543 | 97.7% |
| 8/2 | SE Circ Right Right2 | U | N/A | N/A | C4:A | | 1 | 19 | - | 128 | 1900 | 543 | 20.3% |
| 9/1 | A61 NW Exit | U | N/A | N/A | - | | - | - | - | 1346 | Inf | Inf | 0.0% |
| 10/1 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 1060 | 1900 | 1411 | 61.9% |
| 10/2 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 734 | 1900 | 1411 | 45.8% |
| 11/1 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 1060 | Inf | Inf | 0.0% |
| 11/2 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 734 | Inf | Inf | 0.0% |
| 12/1 | A6195 E Exit | U | N/A | N/A | - | | - | - | - | 828 | Inf | Inf | 0.0% |
| 13/1 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 999 | Inf | Inf | 0.0% |
| 13/2 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 968 | Inf | Inf | 0.0% |

Full Input Data And Results

| 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **123.7** | **504.1** | **0.0** | **627.8** | **-** | **-** | **-** | **-** |
| **J1: M1 Junction 36 Tankersley Rbt** | **-** | **-** | **0** | **0** | **0** | **71.7** | **350.4** | **0.0** | **422.1** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 1058 | 916 | - | - | - | 11.1 | 94.6 | - | 105.7 (83.5+22.2) | 359.6 (366.1:336.9) | 23.6 | 94.6 | 118.2 |
| 1/3 | 496 | 496 | - | - | - | 2.5 | 1.0 | - | 3.5 | 25.4 | 8.0 | 1.0 | 9.0 |
| 2/1 | 956 | 950 | - | - | - | 6.3 | 17.0 | - | 23.3 | 87.6 | 18.7 | 17.0 | 35.7 |
| 2/2 | 898 | 898 | - | - | - | 3.1 | 6.9 | - | 10.0 | 40.0 | 16.4 | 6.9 | 23.3 |
| 3/1+3/2 | 1306 | 1086 | - | - | - | 12.5 | 113.0 | - | 125.5 (57.0+68.5) | 345.9 (319.5:371.5) | 12.9 | 113.0 | 125.9 |
| 4/1 | 627 | 597 | - | - | - | 5.3 | 22.0 | - | 27.3 | 156.9 | 12.8 | 22.0 | 34.8 |
| 4/2 | 504 | 407 | - | - | - | 7.3 | 50.9 | - | 58.3 | 416.1 | 11.7 | 50.9 | 62.6 |
| 5/1 | 615 | 615 | - | - | - | 2.2 | 10.2 | - | 12.4 | 72.6 | 11.6 | 10.2 | 21.8 |
| 5/2 | 836 | 836 | - | - | - | 2.1 | 13.2 | - | 15.2 | 65.7 | 16.2 | 13.2 | 29.4 |
| 5/3 | 114 | 114 | - | - | - | 0.3 | 0.1 | - | 0.4 | 12.4 | 2.1 | 0.1 | 2.2 |
| 6/2+6/1 | 610 | 610 | - | - | - | 3.4 | 6.9 | - | 10.3 (0.3+10.0) | 60.5 (56.7:60.6) | 5.8 | 6.9 | 12.7 |
| 7/1 | 762 | 762 | - | - | - | 3.4 | 3.3 | - | 6.7 | 31.8 | 13.8 | 3.3 | 17.2 |
| 7/2 | 523 | 523 | - | - | - | 3.9 | 7.5 | - | 11.4 | 78.4 | 9.6 | 7.5 | 17.1 |
| 7/3 | 391 | 391 | - | - | - | 1.9 | 0.4 | - | 2.3 | 21.6 | 4.3 | 0.4 | 4.7 |
| 8/1 | 237 | 237 | - | - | - | 1.9 | 0.2 | - | 2.0 | 31.1 | 4.2 | 0.2 | 4.4 |
| 8/2 | 744 | 744 | - | - | - | 2.8 | 2.4 | - | 5.2 | 25.2 | 10.6 | 2.4 | 13.0 |
| 8/3 | 543 | 543 | - | - | - | 1.8 | 0.8 | - | 2.6 | 17.3 | 10.6 | 0.8 | 11.3 |
| 9/1 | 572 | 572 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 391 | 391 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 782 | 782 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/1 | 590 | 590 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 1776 | 1776 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 859 | 859 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/2 | 379 | 379 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **J2: Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **52.0** | **153.7** | **0.0** | **205.7** | **-** | **-** | **-** | **-** |
| 1/1 | 231 | 231 | - | - | - | 1.4 | 0.4 | - | 1.8 | 27.5 | 3.7 | 0.4 | 4.1 |
| 1/3+1/2 | 750 | 750 | - | - | - | 4.9 | 3.2 | - | 8.1 (3.2+4.9) | 38.8 (37.5:39.6) | 8.1 | 3.2 | 11.3 |
| 2/1 | 712 | 706 | - | - | - | 4.5 | 15.0 | - | 19.5 | 98.6 | 14.0 | 15.0 | 29.0 |
| 2/2 | 727 | 706 | - | - | - | 5.0 | 19.8 | - | 24.8 | 122.7 | 14.5 | 19.8 | 34.4 |
| 3/1 | 405 | 299 | - | - | - | 6.9 | 55.1 | - | 61.9 | 550.4 | 9.9 | 55.1 | 65.0 |
| 3/2 | 320 | 244 | - | - | - | 5.2 | 39.9 | - | 45.1 | 507.1 | 7.7 | 39.9 | 47.6 |
| 4/1 | 592 | 592 | - | - | - | 2.8 | 0.8 | - | 3.6 | 21.8 | 9.0 | 0.8 | 9.8 |
| 4/2+4/3 | 1785 | 1785 | - | - | - | 9.7 | 0.0 | - | 9.7 (4.6+5.1) | 19.7 (19.2:20.1) | 28.2 | 0.0 | 28.2 |
| 5/1 | 704 | 704 | - | - | - | 4.7 | 3.0 | - | 7.8 | 39.6 | 13.4 | 3.0 | 16.4 |
| 5/2 | 241 | 241 | - | - | - | 0.0 | 0.2 | - | 0.2 | 3.4 | 0.0 | 0.2 | 0.2 |
| 5/3 | 307 | 307 | - | - | - | 0.0 | 0.3 | - | 0.3 | 3.7 | 0.0 | 0.3 | 0.3 |
| 6/1 | 874 | 874 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.2 | 0.1 | 0.0 | 0.1 |
| 6/2 | 917 | 917 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 930 | 930 | - | - | - | 1.3 | 2.2 | - | 3.5 | 13.4 | 5.0 | 2.2 | 7.2 |
| 7/2 | 1013 | 1013 | - | - | - | 1.9 | 3.8 | - | 5.6 | 20.1 | 6.3 | 3.8 | 10.1 |
| 8/1 | 530 | 530 | - | - | - | 2.9 | 8.8 | - | 11.6 | 79.0 | 10.1 | 8.8 | 18.9 |
| 8/2 | 110 | 110 | - | - | - | 0.5 | 0.1 | - | 0.7 | 21.9 | 1.4 | 0.1 | 1.5 |
| 9/1 | 1227 | 1227 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 874 | 874 | - | - | - | 0.0 | 0.8 | - | 0.8 | 3.4 | 0.2 | 0.8 | 1.0 |
| 10/2 | 646 | 646 | - | - | - | 0.3 | 0.4 | - | 0.7 | 3.9 | 1.7 | 0.4 | 2.1 |
| 11/1 | 874 | 874 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 646 | 646 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 721 | 721 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13/1 | 976 | 976 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

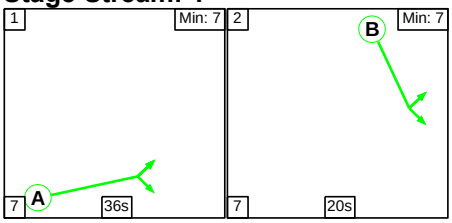
| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13/2 | 869 | 869 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 - M1 J36 Northside Tankersley | Stream: 1 PRC for Signalled Lanes (%): | -34.4 | Total Delay for Signalled Lanes (pcuHr): | 137.21 | Cycle Time (s): | 70 |
| C1 - M1 J36 Northside Tankersley | Stream: 2 PRC for Signalled Lanes (%): | -11.8 | Total Delay for Signalled Lanes (pcuHr): | 43.50 | Cycle Time (s): | 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 1 PRC for Signalled Lanes (%): | -35.9 | Total Delay for Signalled Lanes (pcuHr): | 145.97 | Cycle Time (s): | 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 2 PRC for Signalled Lanes (%): | -37.5 | Total Delay for Signalled Lanes (pcuHr): | 95.43 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 1 PRC for Signalled Lanes (%): | -14.5 | Total Delay for Signalled Lanes (pcuHr): | 52.58 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 2 PRC for Signalled Lanes (%): | 45.4 | Total Delay for Signalled Lanes (pcuHr): | 1.51 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 3 PRC for Signalled Lanes (%): | -50.7 | Total Delay for Signalled Lanes (pcuHr): | 116.11 | Cycle Time (s): | 70 |
| C4 - Birdwell South | PRC for Signalled Lanes (%): | -8.5 | Total Delay for Signalled Lanes (pcuHr): | 35.52 | Cycle Time (s): | 70 |
| | PRC Over All Lanes (%): | -50.7 | Total Delay Over All Lanes(pcuHr): | 627.83 | | |

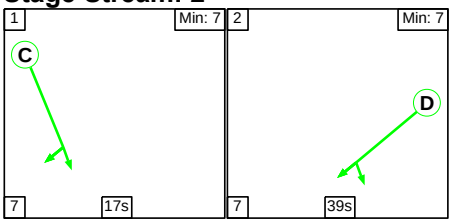
Full Input Data And Results
**Scenario 5: '5'** (FG5: '2029 AM Do Something', Plan 1: 'Network Control Plan 1')
**C1 - M1 J36 Northside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

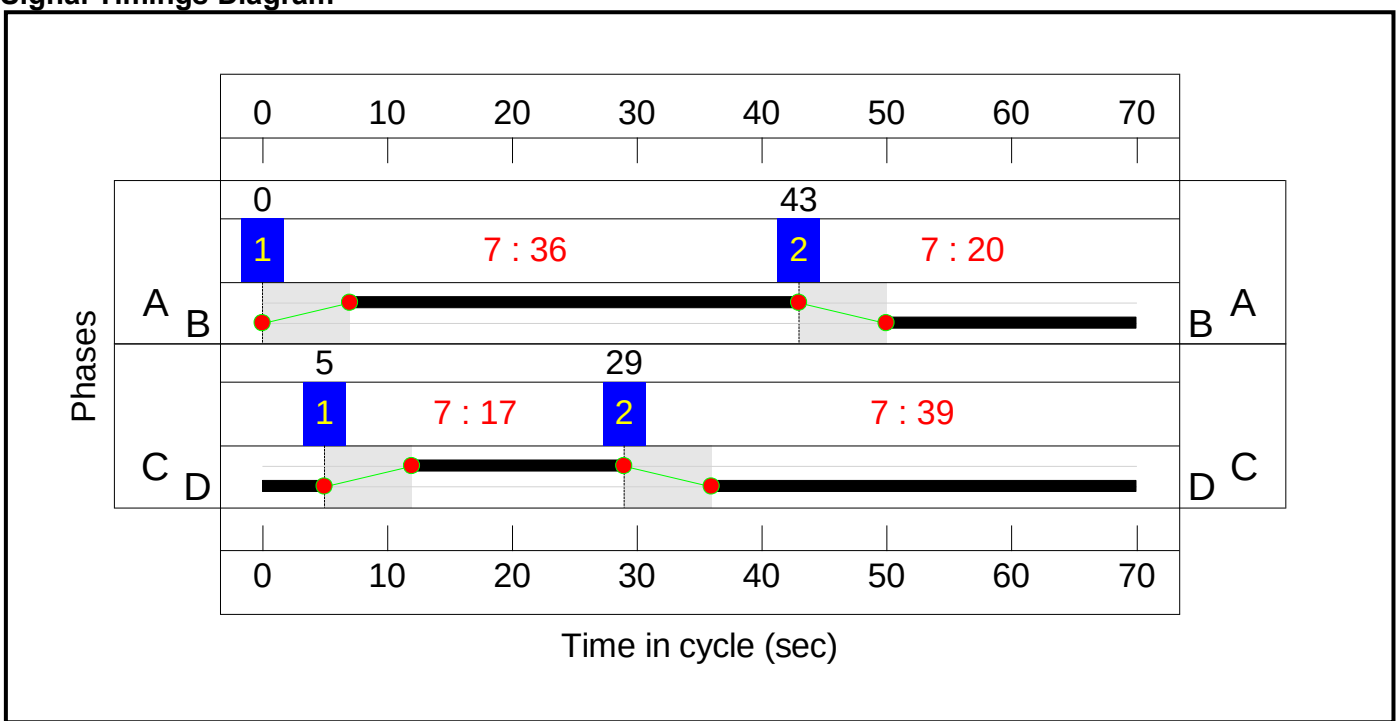
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 36 | 20 |
| Change Point | 0 | 43 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 17 | 39 |
| Change Point | 5 | 29 |

## Signal Timings Diagram

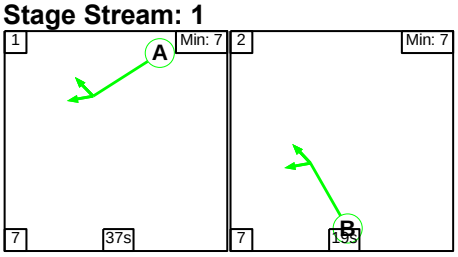


Full Input Data And Results

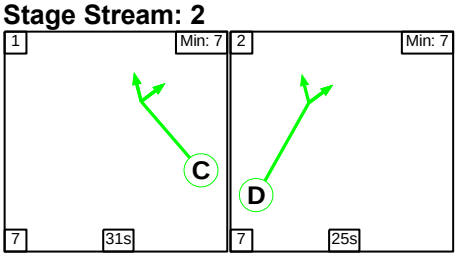
**C2 - M1 J36 Southside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

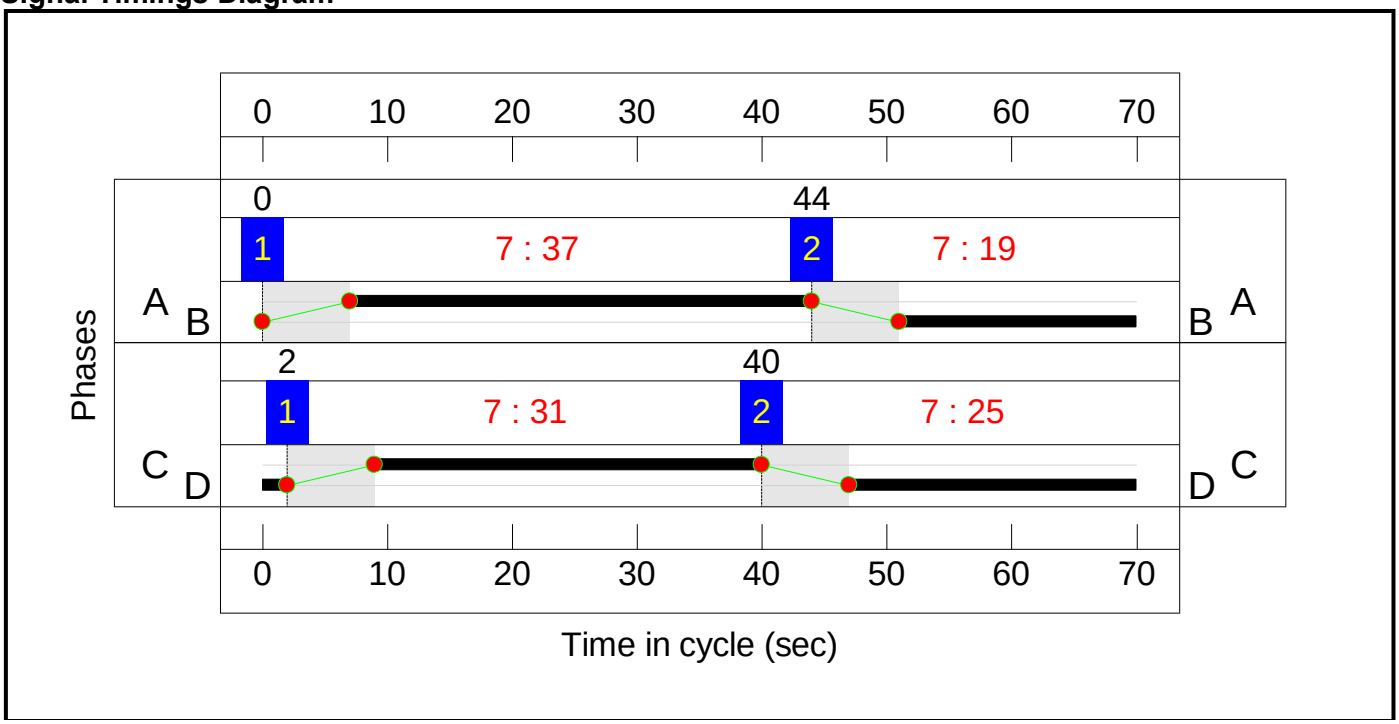
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 37 | 19 |
| Change Point | 0 | 44 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 31 | 25 |
| Change Point | 2 | 40 |

## Signal Timings Diagram

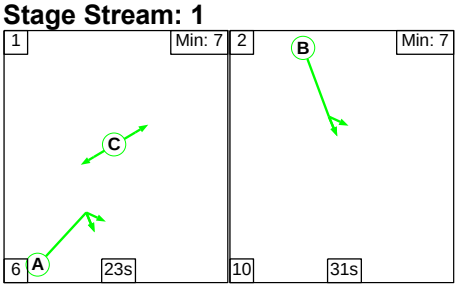


Full Input Data And Results

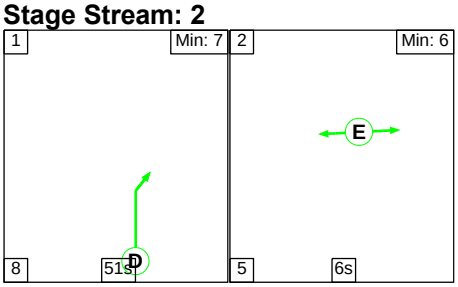
## C3 - Birdwell North

## Stage Sequence Diagram

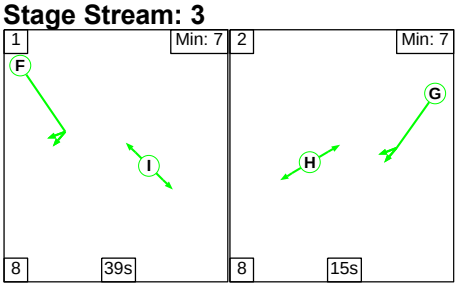
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 23 | 31 |
| Change Point | 65 | 24 |

### Stage Stream: 2

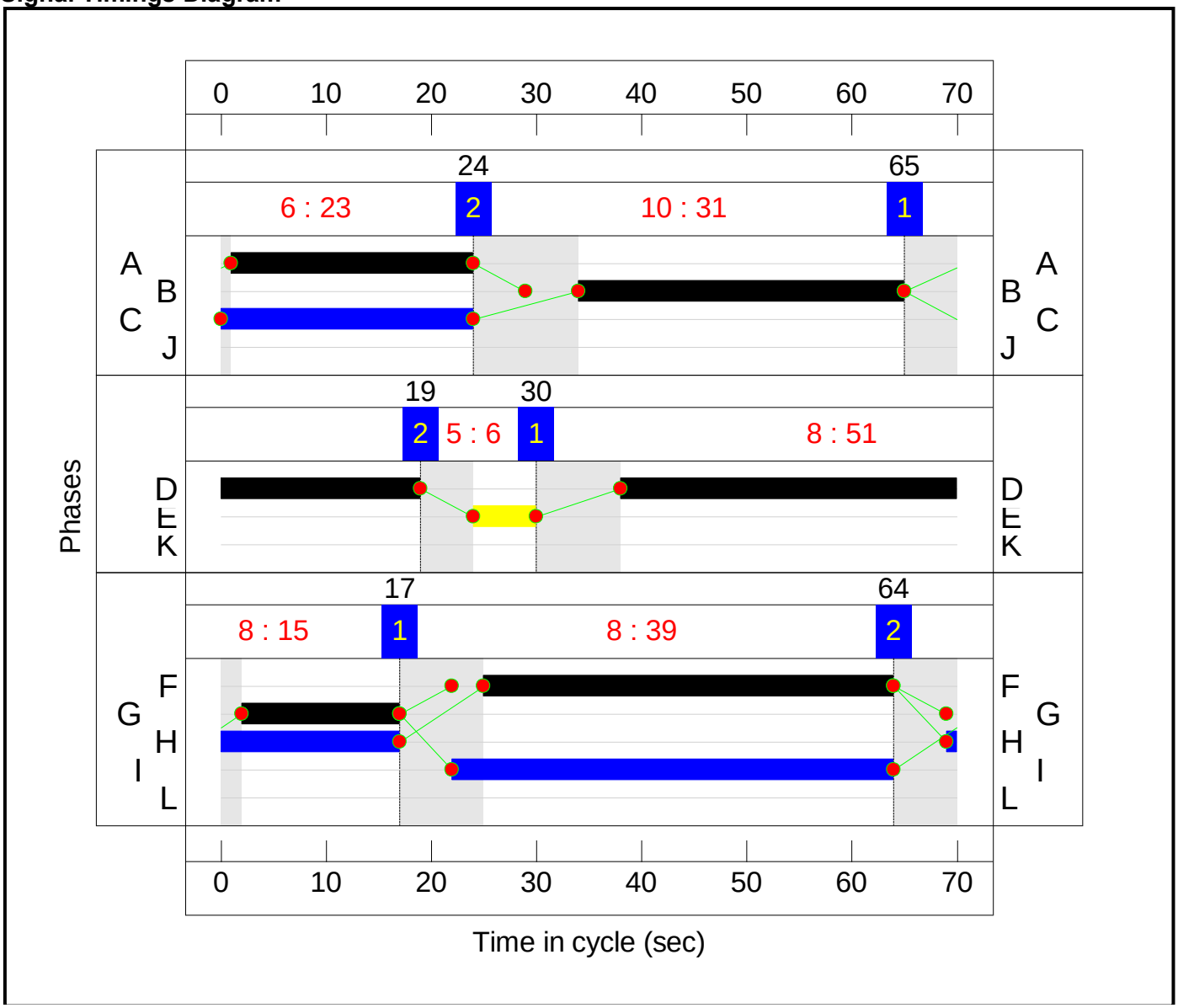
| Stage | 1 | 2 |
|---|---|---|
| Duration | 51 | 6 |
| Change Point | 30 | 19 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 39 | 15 |
| Change Point | 17 | 64 |

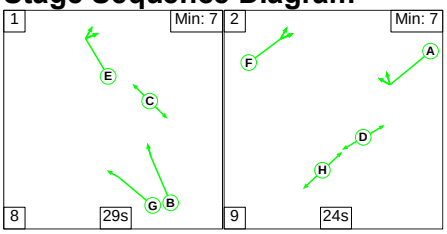
Full Input Data And Results

## Signal Timings Diagram




## C4 - Birdwell South

### Stage Sequence Diagram

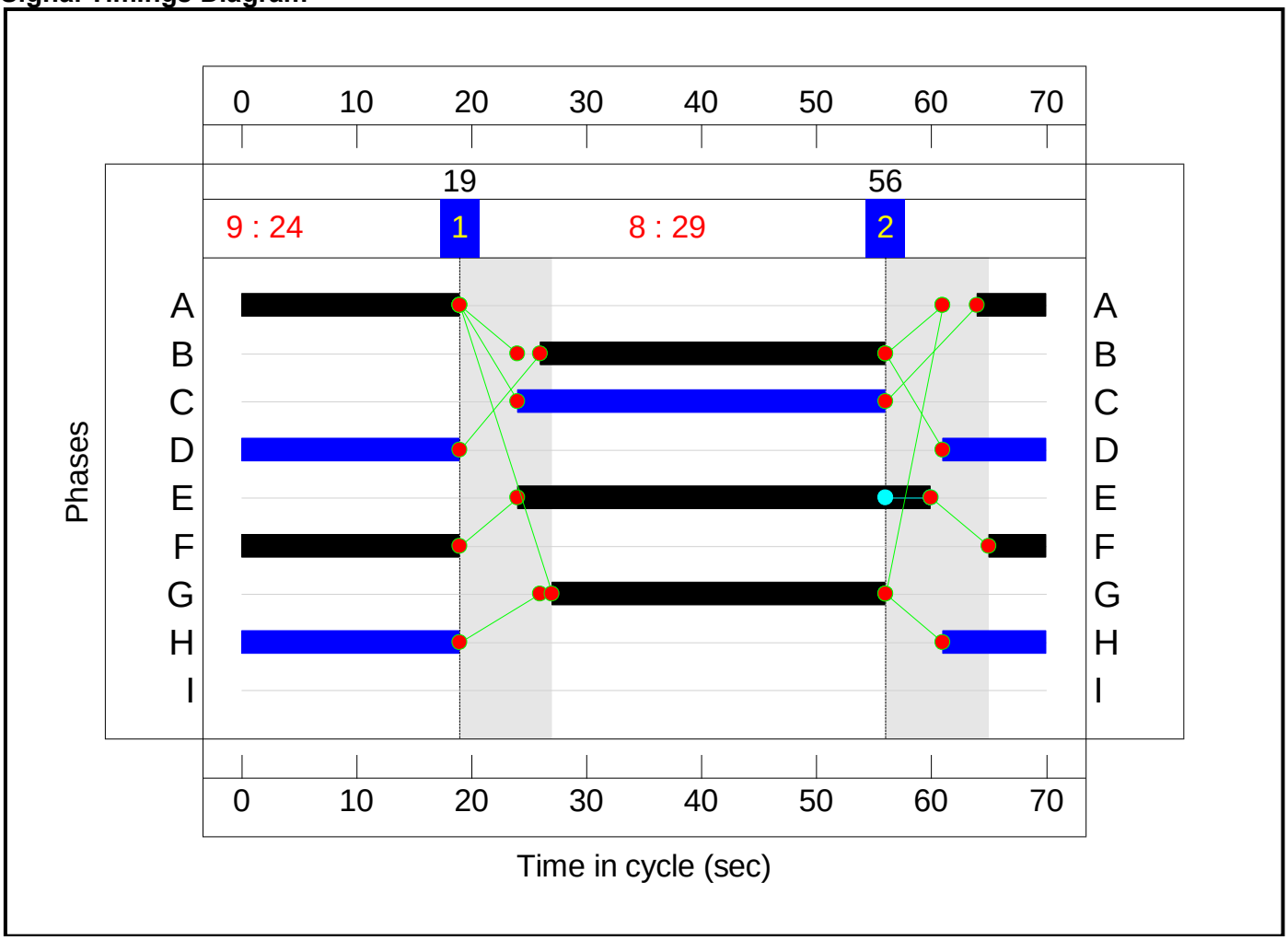



### Stage Timings

| Stage | 1 | 2 |
|---|---|---|
| Duration | 29 | 24 |
| Change Point | 19 | 56 |

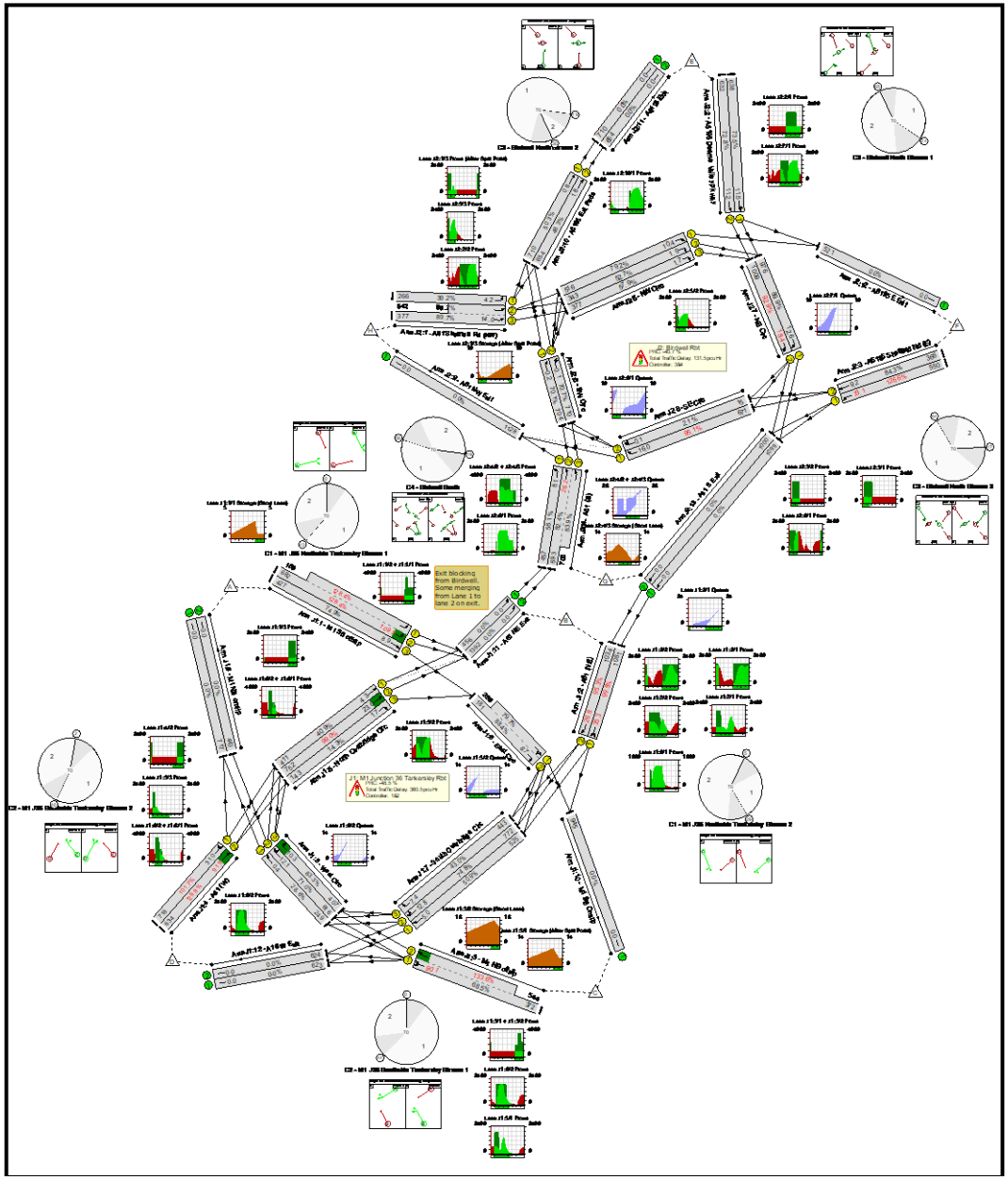
Full Input Data And Results

**Signal Timings Diagram**



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

## Network Results

Full Input Data And 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **133.6%** |
| **J1: M1 Junction 36 Tankersley Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **133.6%** |
| 1/2+1/1 | M1 SB offslip Left | U | 1:1 | N/A | C1:B | | 1 | 20 | - | 831 | 1900:1900 | 516+132 | 128.4 : 128.4% |
| 1/3 | M1 SB offslip Ahead | U | 1:1 | N/A | C1:B | | 1 | 20 | - | 427 | 1900 | 570 | 74.9% |
| 2/1 | A61 (NE) Ahead Ahead2 | U | 1:2 | N/A | C1:D | | 1 | 39 | - | 1113 | 1900 | 1086 | 99.5% |
| 2/2 | A61 (NE) Ahead | U | 1:2 | N/A | C1:D | | 1 | 39 | - | 1120 | 1900 | 1086 | 95.3% |
| 3/1+3/2 | M1 NB offslip Ahead Ahead2 | U | 2:1 | N/A | C2:B | | 1 | 19 | - | 916 | 1900:1900 | 543+407 | 68.5 : 133.6% |
| 4/1 | A61 (W) Ahead Left | U | 2:2 | N/A | C2:D | | 1 | 25 | - | 718 | 1900 | 706 | 101.7% |
| 4/2 | A61 (W) Ahead | U | 2:2 | N/A | C2:D | | 1 | 25 | - | 634 | 1900 | 489 | 129.8% |
| 5/1 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 36 | - | 415 | 1900 | 1004 | 40.9% |
| 5/2 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 36 | - | 992 | 1900 | 760 | 99.0% |
| 5/3 | North Overbridge Circ Right | U | 1:1 | N/A | C1:A | | 1 | 36 | - | 186 | 1900 | 1004 | 14.3% |
| 6/2+6/1 | East Circ Right Ahead | U | 1:2 | N/A | C1:C | | 1 | 17 | - | 613 | 1900:1900 | 205+489 | 88.4 : 79.7% |
| 7/1 | South Overbridge Circ Ahead | U | 2:1 | N/A | C2:A | | 1 | 37 | - | 533 | 1900 | 1031 | 50.9% |
| 7/2 | South Overbridge Circ Right Ahead | U | 2:1 | N/A | C2:A | | 1 | 37 | - | 821 | 1900 | 1031 | 74.8% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7/3 | South Overbridge Circ Right | U | 2:1 | N/A | C2:A | | 1 | 37 | - | 480 | 1900 | 1031 | 43.0% |
| 8/1 | West Circ Ahead | U | 2:2 | N/A | C2:C | | 1 | 31 | - | 269 | 1900 | 869 | 28.6% |
| 8/2 | West Circ Right Ahead | U | 2:2 | N/A | C2:C | | 1 | 31 | - | 653 | 1900 | 869 | 71.0% |
| 8/3 | West Circ Right | U | 2:2 | N/A | C2:C | | 1 | 31 | - | 544 | 1900 | 489 | 83.3% |
| 9/1 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 745 | Inf | Inf | 0.0% |
| 9/2 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 480 | Inf | Inf | 0.0% |
| 10/1 | M1 SB Onslip | U | N/A | N/A | - | | - | - | - | 1012 | Inf | Inf | 0.0% |
| 11/1 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 458 | Inf | Inf | 0.0% |
| 11/2 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 1780 | Inf | Inf | 0.0% |
| 12/1 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 631 | Inf | Inf | 0.0% |
| 12/2 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 653 | Inf | Inf | 0.0% |
| **J2: Birdwell Rbt** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **126.6%** |
| 1/1 | A61 Sheffield Rd (NW) Left | U | N/A | N/A | C4:F | | 1 | 24 | - | 266 | 1900 | 679 | 39.2% |
| 1/3+1/2 | A61 Sheffield Rd (NW) Ahead | U | N/A | N/A | C4:F | | 1 | 24 | - | 919 | 1900:1900 | 420+604 | 89.7 : 89.7% |
| 2/1 | A6195 Dearne Valley Pkway Ahead Left | U | 3:1 | N/A | C3:B | | 1 | 31 | - | 638 | 1900 | 869 | 73.5% |
| 2/2 | A6195 Dearne Valley Pkway Ahead | U | 3:1 | N/A | C3:B | | 1 | 31 | - | 632 | 1900 | 869 | 72.8% |
| 3/1 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 15 | - | 550 | 1900 | 434 | 126.6% |
| 3/2 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 15 | - | 366 | 1900 | 434 | 84.3% |
| 4/1 | A61 (S) Left | U | N/A | N/A | C4:G | | 1 | 29 | - | 459 | 1900 | 814 | 56.1% |
| 4/2+4/3 | A61 (S) Ahead | U | N/A | N/A | C4:B | | 1 | 30 | - | 1789 | 1900:1900 | 841+841 | 82.4 : 83.9% |
| 5/1 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 23 | - | 604 | 1900 | 651 | 79.2% |
| 5/2 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 23 | - | 343 | 1900 | 651 | 52.7% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/3 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 23 | - | 377 | 1900 | 651 | 57.9% |
| 6/1 | SW Circ Right | U | N/A | N/A | C4:E | | 1 | 36 | - | 897 | 1900 | 1004 | 70.1% |
| 6/2 | SW Circ Right Right2 | U | N/A | N/A | C4:E | | 1 | 36 | - | 907 | 1900 | 1004 | 70.7% |
| 7/1 | NE Circ Right | U | 3:3 | N/A | C3:F | | 1 | 39 | - | 976 | 1900 | 1086 | 89.9% |
| 7/2 | NE Circ Right Right2 | U | 3:3 | N/A | C3:F | | 1 | 39 | - | 1009 | 1900 | 1086 | 92.9% |
| 8/1 | SE Circ Right | U | N/A | N/A | C4:A | | 1 | 25 | - | 671 | 1900 | 706 | 95.1% |
| 8/2 | SE Circ Right Right2 | U | N/A | N/A | C4:A | | 1 | 25 | - | 15 | 1900 | 706 | 2.1% |
| 9/1 | A61 NW Exit | U | N/A | N/A | - | | - | - | - | 1130 | Inf | Inf | 0.0% |
| 10/1 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 903 | 1900 | 1411 | 50.3% |
| 10/2 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 762 | 1900 | 1411 | 46.3% |
| 11/1 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 903 | Inf | Inf | 0.0% |
| 11/2 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 762 | Inf | Inf | 0.0% |
| 12/1 | A6195 E Exit | U | N/A | N/A | - | | - | - | - | 609 | Inf | Inf | 0.0% |
| 13/1 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 1132 | Inf | Inf | 0.0% |
| 13/2 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 1083 | Inf | Inf | 0.0% |

Full Input Data And Results

| 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **92.7** | **399.3** | **0.0** | **492.0** | **-** | **-** | **-** | **-** |
| **J1: M1 Junction 36 Tankersley Rbt** | **-** | **-** | **0** | **0** | **0** | **52.3** | **308.1** | **0.0** | **360.5** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 831 | 685 | - | - | - | 9.0 | 94.0 | - | 103.0 (83.0+20.0) | 446.2 (451.3:426.2) | 15.4 | 94.0 | 109.5 |
| 1/3 | 427 | 427 | - | - | - | 2.6 | 1.5 | - | 4.1 | 34.5 | 7.5 | 1.5 | 8.9 |
| 2/1 | 1081 | 1081 | - | - | - | 1.9 | 15.2 | - | 17.2 | 57.1 | 20.1 | 15.2 | 35.3 |
| 2/2 | 1034 | 1034 | - | - | - | 2.8 | 7.7 | - | 10.5 | 36.5 | 19.1 | 7.7 | 26.8 |
| 3/1+3/2 | 916 | 779 | - | - | - | 9.3 | 77.3 | - | 86.6 (5.9+80.7) | 340.3 (57.0:534.0) | 12.8 | 77.3 | 90.1 |
| 4/1 | 718 | 706 | - | - | - | 4.9 | 16.8 | - | 21.7 | 108.9 | 14.2 | 16.8 | 31.0 |
| 4/2 | 634 | 489 | - | - | - | 10.4 | 74.8 | - | 85.2 | 484.1 | 17.1 | 74.8 | 91.9 |
| 5/1 | 411 | 411 | - | - | - | 0.5 | 0.3 | - | 0.8 | 7.2 | 4.0 | 0.3 | 4.3 |
| 5/2 | 752 | 752 | - | - | - | 2.0 | 11.9 | - | 13.9 | 66.5 | 11.6 | 11.9 | 23.6 |
| 5/3 | 143 | 143 | - | - | - | 0.1 | 0.1 | - | 0.2 | 4.6 | 1.6 | 0.1 | 1.7 |
| 6/2+6/1 | 570 | 570 | - | - | - | 1.9 | 2.2 | - | 4.2 (1.3+2.8) | 26.4 (26.7:26.3) | 6.5 | 2.2 | 8.7 |
| 7/1 | 525 | 525 | - | - | - | 0.9 | 0.5 | - | 1.4 | 9.8 | 4.5 | 0.5 | 5.0 |
| 7/2 | 772 | 772 | - | - | - | 2.0 | 1.5 | - | 3.5 | 16.3 | 11.4 | 1.5 | 12.8 |
| 7/3 | 443 | 443 | - | - | - | 1.0 | 0.4 | - | 1.4 | 11.2 | 7.1 | 0.4 | 7.4 |
| 8/1 | 249 | 249 | - | - | - | 0.1 | 0.2 | - | 0.3 | 3.8 | 0.2 | 0.2 | 0.4 |
| 8/2 | 616 | 616 | - | - | - | 1.1 | 1.2 | - | 2.3 | 13.7 | 10.9 | 1.2 | 12.1 |
| 8/3 | 407 | 407 | - | - | - | 1.8 | 2.4 | - | 4.2 | 37.1 | 7.9 | 2.4 | 10.3 |
| 9/1 | 717 | 717 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 443 | 443 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 945 | 945 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/1 | 456 | 456 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 1392 | 1392 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 623 | 623 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/2 | 624 | 624 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **J2: Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **40.4** | **91.1** | **0.0** | **131.5** | **-** | **-** | **-** | **-** |
| 1/1 | 266 | 266 | - | - | - | 1.2 | 0.3 | - | 1.6 | 21.2 | 3.8 | 0.3 | 4.2 |
| 1/3+1/2 | 919 | 919 | - | - | - | 4.9 | 4.0 | - | 9.0 (3.6+5.4) | 35.2 (33.9:36.1) | 9.9 | 4.0 | 14.0 |
| 2/1 | 638 | 638 | - | - | - | 2.8 | 1.4 | - | 4.1 | 23.2 | 10.1 | 1.4 | 11.5 |
| 2/2 | 632 | 632 | - | - | - | 2.7 | 1.3 | - | 4.0 | 23.0 | 9.8 | 1.3 | 11.2 |
| 3/1 | 550 | 434 | - | - | - | 8.3 | 60.1 | - | 68.4 | 447.7 | 12.9 | 60.1 | 73.1 |
| 3/2 | 366 | 366 | - | - | - | 2.6 | 2.5 | - | 5.1 | 50.4 | 6.7 | 2.5 | 9.2 |
| 4/1 | 457 | 457 | - | - | - | 1.9 | 0.6 | - | 2.5 | 19.8 | 7.4 | 0.6 | 8.1 |
| 4/2+4/3 | 1399 | 1399 | - | - | - | 4.6 | 0.0 | - | 4.6 (2.3+2.4) | 11.9 (11.9:12.0) | 26.2 | 0.0 | 26.2 |
| 5/1 | 516 | 516 | - | - | - | 2.5 | 1.9 | - | 4.4 | 30.6 | 8.6 | 1.9 | 10.4 |
| 5/2 | 343 | 343 | - | - | - | 0.8 | 0.6 | - | 1.3 | 14.1 | 1.3 | 0.6 | 1.9 |
| 5/3 | 377 | 377 | - | - | - | 0.6 | 0.7 | - | 1.3 | 12.6 | 1.1 | 0.7 | 1.7 |
| 6/1 | 704 | 704 | - | - | - | 0.1 | 0.0 | - | 0.1 | 0.3 | 0.2 | 0.0 | 0.2 |
| 6/2 | 710 | 710 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.2 | 0.1 | 0.0 | 0.1 |
| 7/1 | 976 | 976 | - | - | - | 1.9 | 4.1 | - | 6.0 | 22.2 | 8.5 | 4.1 | 12.6 |
| 7/2 | 1009 | 1009 | - | - | - | 2.2 | 5.7 | - | 7.9 | 28.2 | 12.7 | 5.7 | 18.4 |
| 8/1 | 671 | 671 | - | - | - | 3.0 | 6.9 | - | 9.9 | 53.0 | 9.0 | 6.9 | 16.0 |
| 8/2 | 15 | 15 | - | - | - | 0.1 | 0.0 | - | 0.1 | 16.0 | 0.1 | 0.0 | 0.1 |
| 9/1 | 1128 | 1128 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 710 | 710 | - | - | - | 0.0 | 0.5 | - | 0.5 | 2.6 | 0.3 | 0.5 | 0.8 |
| 10/2 | 654 | 654 | - | - | - | 0.2 | 0.4 | - | 0.6 | 3.4 | 1.3 | 0.4 | 1.8 |
| 11/1 | 710 | 710 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 654 | 654 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 521 | 521 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13/1 | 1099 | 1099 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

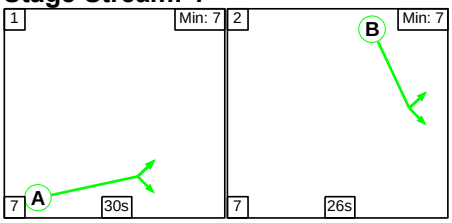
| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13/2 | 1000 | 1000 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 - M1 J36 Northside Tankersley | Stream: 1 PRC for Signalled Lanes (%): | -42.6 | Total Delay for Signalled Lanes (pcuHr): | 121.99 | Cycle Time (s): | 70 |
| C1 - M1 J36 Northside Tankersley | Stream: 2 PRC for Signalled Lanes (%): | -10.6 | Total Delay for Signalled Lanes (pcuHr): | 31.83 | Cycle Time (s): | 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 1 PRC for Signalled Lanes (%): | -48.5 | Total Delay for Signalled Lanes (pcuHr): | 92.90 | Cycle Time (s): | 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 2 PRC for Signalled Lanes (%): | -44.2 | Total Delay for Signalled Lanes (pcuHr): | 113.77 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 1 PRC for Signalled Lanes (%): | 13.7 | Total Delay for Signalled Lanes (pcuHr): | 15.21 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 2 PRC for Signalled Lanes (%): | 78.9 | Total Delay for Signalled Lanes (pcuHr): | 1.14 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 3 PRC for Signalled Lanes (%): | -40.7 | Total Delay for Signalled Lanes (pcuHr): | 87.44 | Cycle Time (s): | 70 |
| C4 - Birdwell South | PRC for Signalled Lanes (%): | -5.6 | Total Delay for Signalled Lanes (pcuHr): | 27.74 | Cycle Time (s): | 70 |
| | PRC Over All Lanes (%): | -48.5 | Total Delay Over All Lanes(pcuHr): | 492.01 | | |

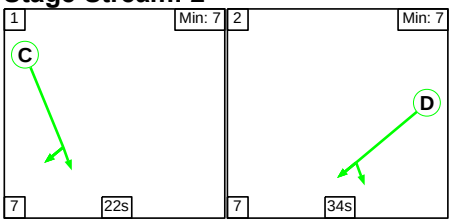
Full Input Data And Results
**Scenario 6: '6'** (FG6: '2029 PM Do Something', Plan 1: 'Network Control Plan 1')
**C1 - M1 J36 Northside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

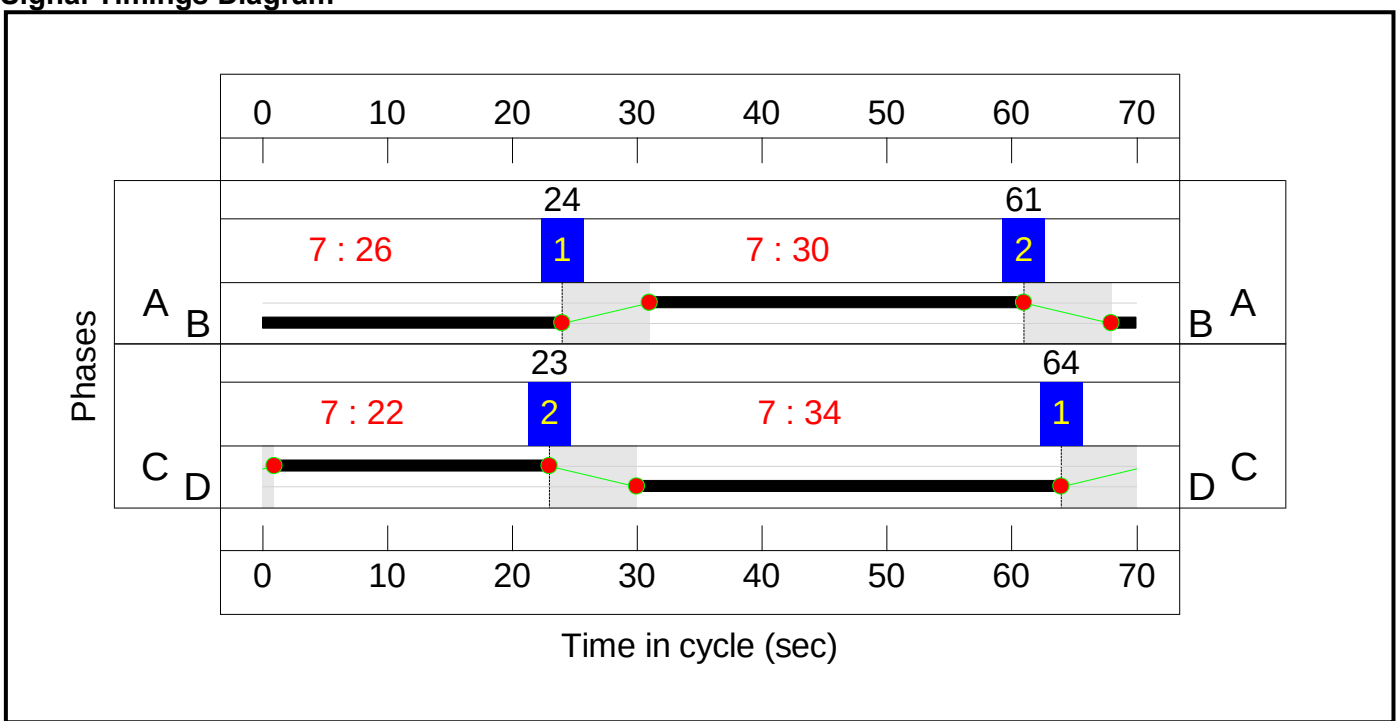
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 30 | 26 |
| Change Point | 24 | 61 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 22 | 34 |
| Change Point | 64 | 23 |

## Signal Timings Diagram

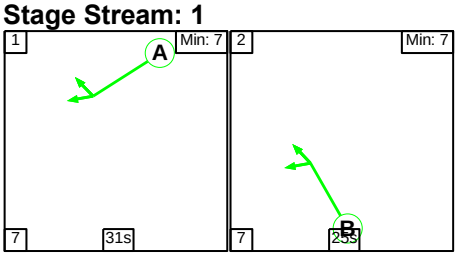


Full Input Data And Results

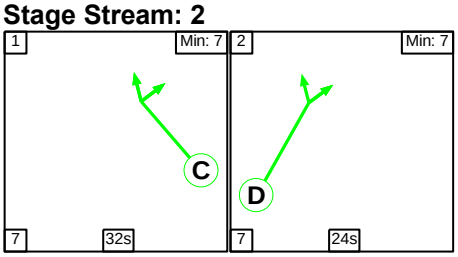
**C2 - M1 J36 Southside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

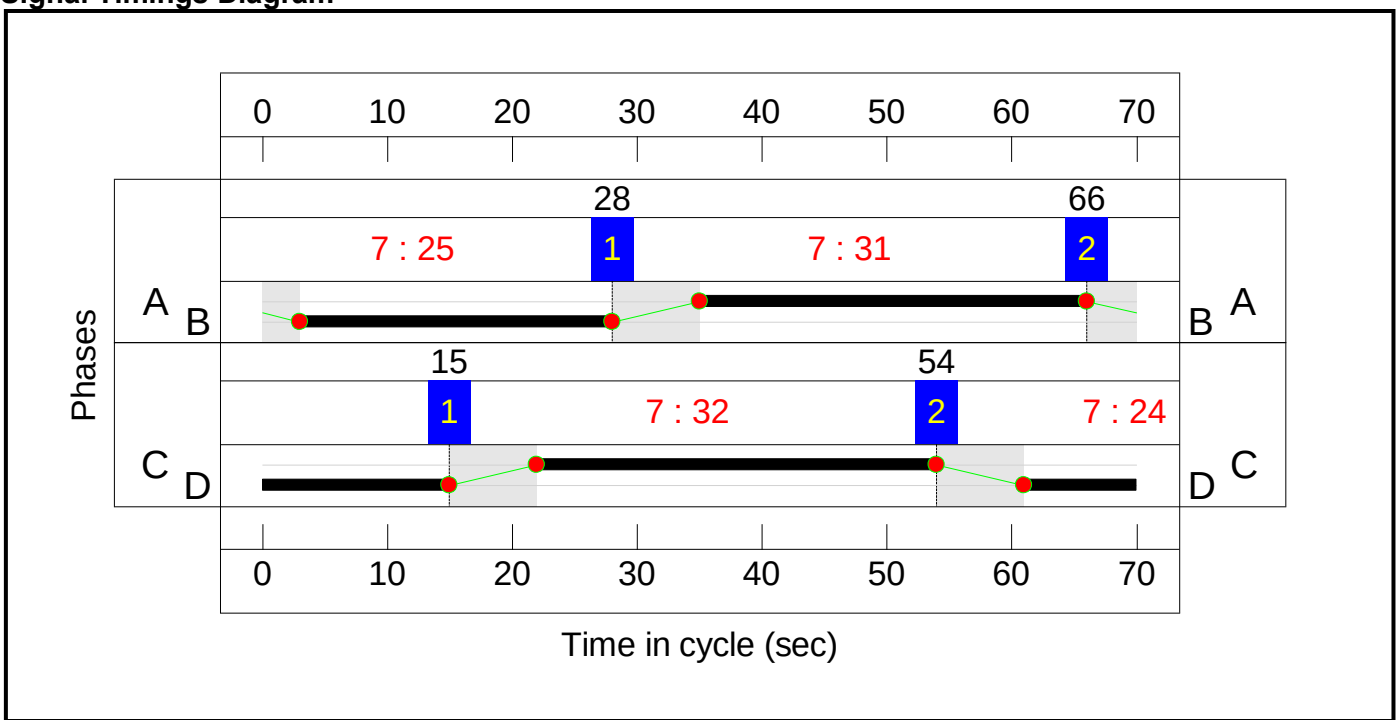
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 31 | 25 |
| Change Point | 28 | 66 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 32 | 24 |
| Change Point | 15 | 54 |

## Signal Timings Diagram

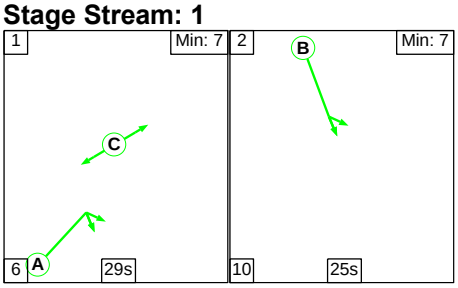


Full Input Data And Results

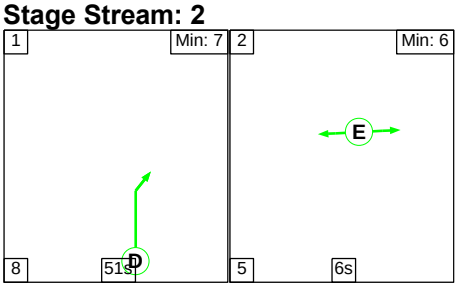
## C3 - Birdwell North

## Stage Sequence Diagram

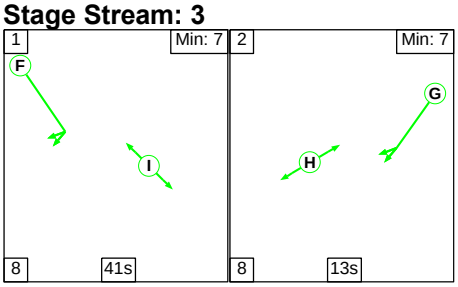
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 29 | 25 |
| Change Point | 63 | 28 |

### Stage Stream: 2

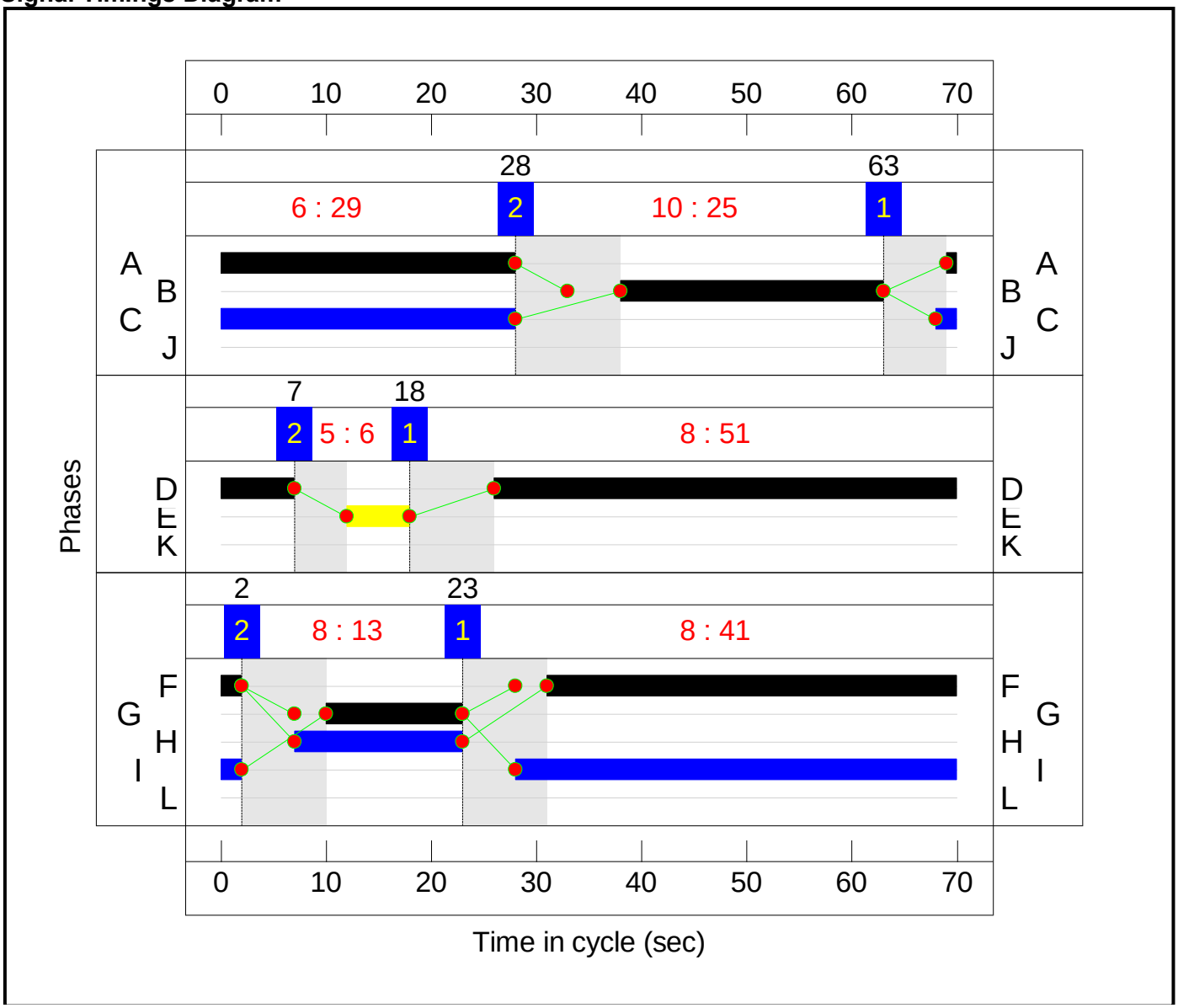
| Stage | 1 | 2 |
|---|---|---|
| Duration | 51 | 6 |
| Change Point | 18 | 7 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 41 | 13 |
| Change Point | 23 | 2 |

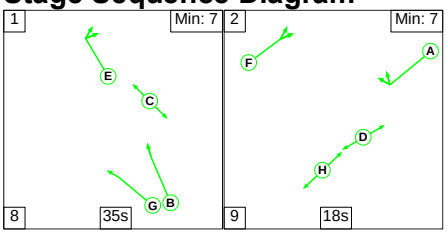
Full Input Data And Results

## Signal Timings Diagram




## C4 - Birdwell South

### Stage Sequence Diagram

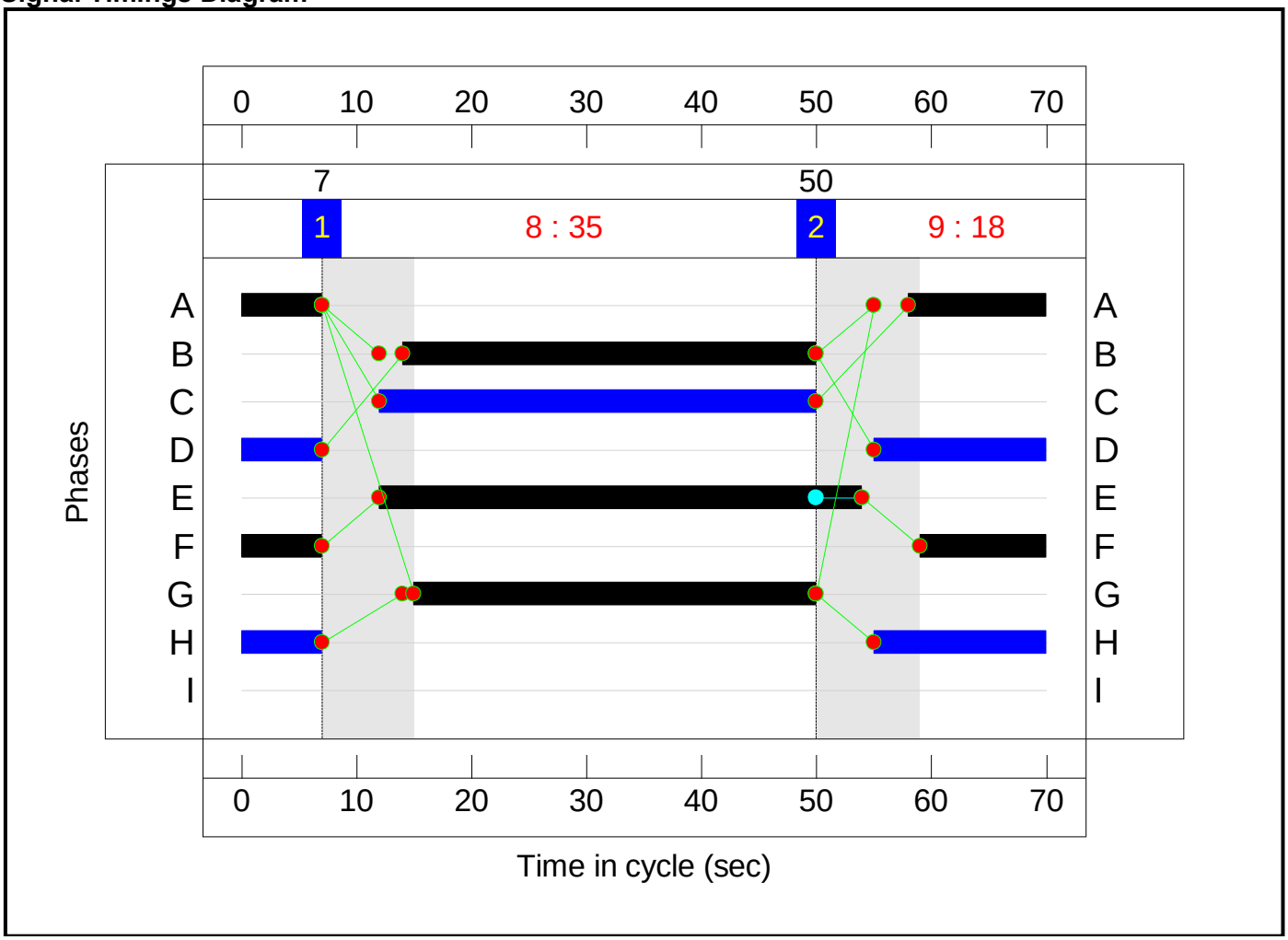



### Stage Timings

| Stage | 1 | 2 |
|---|---|---|
| Duration | 35 | 18 |
| Change Point | 7 | 50 |

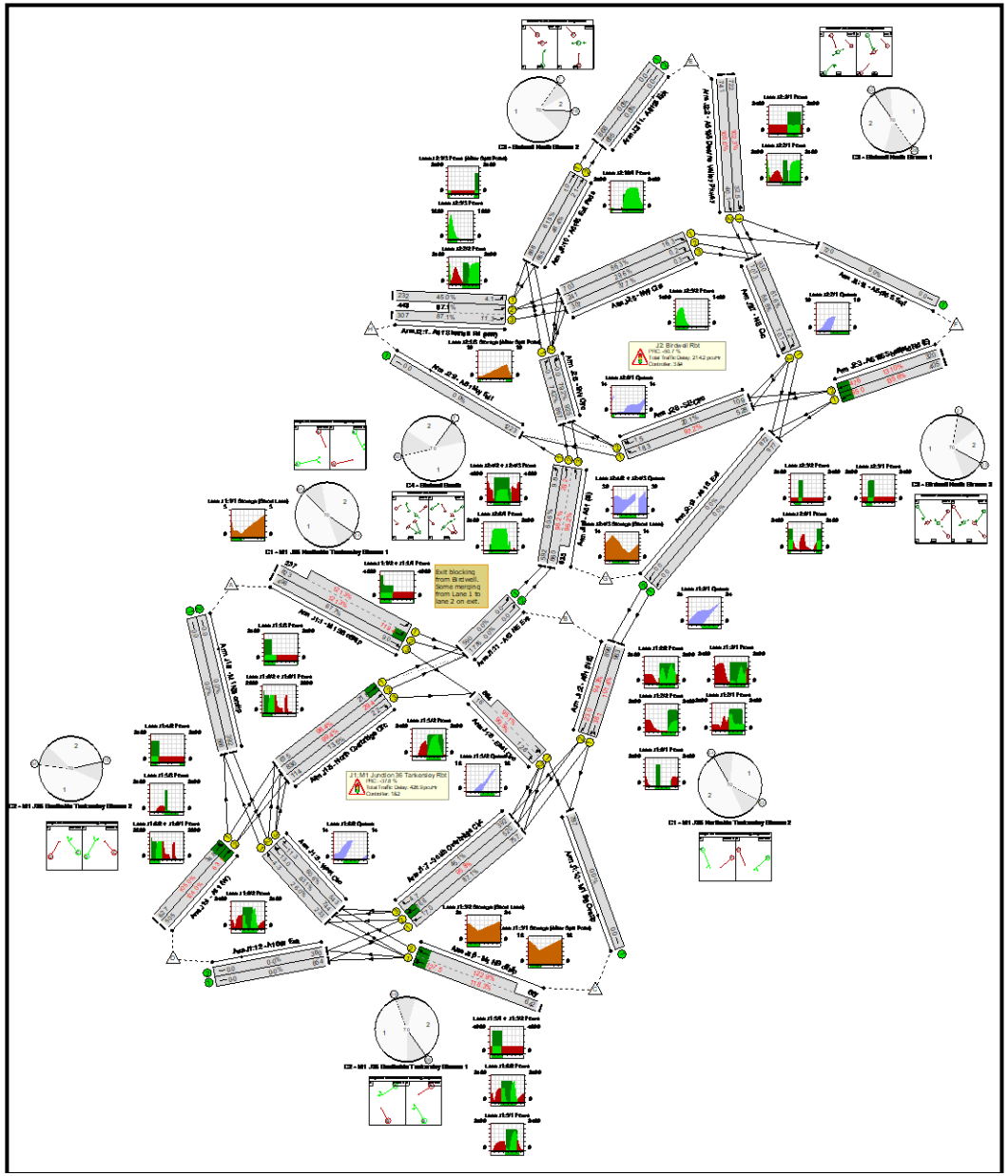
Full Input Data And Results

**Signal Timings Diagram**



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

## Network Results

Full Input Data And 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **135.6%** |
| **J1: M1 Junction 36 Tankersley Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **124.0%** |
| 1/2+1/1 | M1 SB offslip Left | U | 1:1 | N/A | C1:B | | 1 | 26 | - | 1060 | 1900:1900 | 679+195 | 121.3 : 121.3% |
| 1/3 | M1 SB offslip Ahead | U | 1:1 | N/A | C1:B | | 1 | 26 | - | 496 | 1900 | 733 | 67.7% |
| 2/1 | A61 (NE) Ahead Ahead2 | U | 1:2 | N/A | C1:D | | 1 | 34 | - | 995 | 1900 | 950 | 101.4% |
| 2/2 | A61 (NE) Ahead | U | 1:2 | N/A | C1:D | | 1 | 34 | - | 1004 | 1900 | 950 | 94.3% |
| 3/1+3/2 | M1 NB offslip Ahead Ahead2 | U | 2:1 | N/A | C2:B | | 1 | 25 | - | 1309 | 1900:1900 | 543+543 | 118.3 : 122.9% |
| 4/1 | A61 (W) Ahead Left | U | 2:2 | N/A | C2:D | | 1 | 24 | - | 627 | 1900 | 597 | 105.0% |
| 4/2 | A61 (W) Ahead | U | 2:2 | N/A | C2:D | | 1 | 24 | - | 505 | 1900 | 407 | 124.0% |
| 5/1 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 30 | - | 692 | 1900 | 624 | 98.4% |
| 5/2 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 30 | - | 1031 | 1900 | 841 | 99.4% |
| 5/3 | North Overbridge Circ Right | U | 1:1 | N/A | C1:A | | 1 | 30 | - | 141 | 1900 | 841 | 13.5% |
| 6/2+6/1 | East Circ Right Ahead | U | 1:2 | N/A | C1:C | | 1 | 22 | - | 637 | 1900:1900 | 16+624 | 99.5 : 95.1% |
| 7/1 | South Overbridge Circ Ahead | U | 2:1 | N/A | C2:A | | 1 | 31 | - | 770 | 1900 | 869 | 87.1% |
| 7/2 | South Overbridge Circ Right Ahead | U | 2:1 | N/A | C2:A | | 1 | 31 | - | 581 | 1900 | 543 | 95.8% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7/3 | South Overbridge Circ Right | U | 2:1 | N/A | C2:A | | 1 | 31 | - | 439 | 1900 | 869 | 45.1% |
| 8/1 | West Circ Ahead | U | 2:2 | N/A | C2:C | | 1 | 32 | - | 261 | 1900 | 896 | 26.0% |
| 8/2 | West Circ Right Ahead | U | 2:2 | N/A | C2:C | | 1 | 32 | - | 856 | 1900 | 896 | 83.1% |
| 8/3 | West Circ Right | U | 2:2 | N/A | C2:C | | 1 | 32 | - | 667 | 1900 | 896 | 60.6% |
| 9/1 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 613 | Inf | Inf | 0.0% |
| 9/2 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 439 | Inf | Inf | 0.0% |
| 10/1 | M1 SB Onslip | U | N/A | N/A | - | | - | - | - | 846 | Inf | Inf | 0.0% |
| 11/1 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 624 | Inf | Inf | 0.0% |
| 11/2 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 2159 | Inf | Inf | 0.0% |
| 12/1 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 885 | Inf | Inf | 0.0% |
| 12/2 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 430 | Inf | Inf | 0.0% |
| **J2: Birdwell Rbt** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **135.6%** |
| 1/1 | A61 Sheffield Rd (NW) Left | U | N/A | N/A | C4:F | | 1 | 18 | - | 232 | 1900 | 516 | 45.0% |
| 1/3+1/2 | A61 Sheffield Rd (NW) Ahead | U | N/A | N/A | C4:F | | 1 | 18 | - | 750 | 1900:1900 | 352+508 | 87.1 : 87.1% |
| 2/1 | A6195 Dearne Valley Pkway Ahead Left | U | 3:1 | N/A | C3:B | | 1 | 25 | - | 722 | 1900 | 706 | 102.3% |
| 2/2 | A6195 Dearne Valley Pkway Ahead | U | 3:1 | N/A | C3:B | | 1 | 25 | - | 741 | 1900 | 706 | 105.0% |
| 3/1 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 13 | - | 405 | 1900 | 299 | 135.6% |
| 3/2 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 13 | - | 320 | 1900 | 244 | 131.0% |
| 4/1 | A61 (S) Left | U | N/A | N/A | C4:G | | 1 | 35 | - | 626 | 1900 | 977 | 60.6% |
| 4/2+4/3 | A61 (S) Ahead | U | N/A | N/A | C4:B | | 1 | 36 | - | 2170 | 1900:1900 | 895+962 | 96.2 : 96.2% |
| 5/1 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 29 | - | 811 | 1900 | 814 | 86.3% |
| 5/2 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 29 | - | 241 | 1900 | 814 | 29.6% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/3 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 29 | - | 307 | 1900 | 814 | 37.7% |
| 6/1 | SW Circ Right | U | N/A | N/A | C4:E | | 1 | 42 | - | 1054 | 1900 | 1167 | 74.2% |
| 6/2 | SW Circ Right Right2 | U | N/A | N/A | C4:E | | 1 | 42 | - | 1124 | 1900 | 1167 | 79.2% |
| 7/1 | NE Circ Right | U | 3:3 | N/A | C3:F | | 1 | 41 | - | 946 | 1900 | 1140 | 81.6% |
| 7/2 | NE Circ Right Right2 | U | 3:3 | N/A | C3:F | | 1 | 41 | - | 1048 | 1900 | 1140 | 88.8% |
| 8/1 | SE Circ Right | U | N/A | N/A | C4:A | | 1 | 19 | - | 604 | 1900 | 543 | 97.2% |
| 8/2 | SE Circ Right Right2 | U | N/A | N/A | C4:A | | 1 | 19 | - | 128 | 1900 | 543 | 20.1% |
| 9/1 | A61 NW Exit | U | N/A | N/A | - | | - | - | - | 1350 | Inf | Inf | 0.0% |
| 10/1 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 1055 | 1900 | 1411 | 61.5% |
| 10/2 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 746 | 1900 | 1411 | 46.4% |
| 11/1 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 1055 | Inf | Inf | 0.0% |
| 11/2 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 746 | Inf | Inf | 0.0% |
| 12/1 | A6195 E Exit | U | N/A | N/A | - | | - | - | - | 828 | Inf | Inf | 0.0% |
| 13/1 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 1009 | Inf | Inf | 0.0% |
| 13/2 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 978 | Inf | Inf | 0.0% |

Full Input Data And Results

| 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **124.8** | **516.3** | **0.0** | **641.1** | **-** | **-** | **-** | **-** |
| **J1: M1 Junction 36 Tankersley Rbt** | **-** | **-** | **0** | **0** | **0** | **72.1** | **354.8** | **0.0** | **426.9** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 1060 | 916 | - | - | - | 11.2 | 95.8 | - | 107.0 (84.6+22.4) | 363.3 (369.9:340.4) | 23.6 | 95.8 | 119.4 |
| 1/3 | 496 | 496 | - | - | - | 2.5 | 1.0 | - | 3.5 | 25.4 | 8.0 | 1.0 | 9.0 |
| 2/1 | 963 | 950 | - | - | - | 6.5 | 19.1 | - | 25.6 | 95.8 | 19.0 | 19.1 | 38.1 |
| 2/2 | 896 | 896 | - | - | - | 3.1 | 6.6 | - | 9.7 | 39.1 | 16.4 | 6.6 | 23.0 |
| 3/1+3/2 | 1309 | 1086 | - | - | - | 12.5 | 114.5 | - | 127.0 (57.0+70.1) | 349.4 (319.4:378.2) | 13.0 | 114.5 | 127.5 |
| 4/1 | 627 | 597 | - | - | - | 5.3 | 22.0 | - | 27.3 | 156.9 | 12.8 | 22.0 | 34.8 |
| 4/2 | 505 | 407 | - | - | - | 7.4 | 51.4 | - | 58.8 | 419.0 | 11.7 | 51.4 | 63.1 |
| 5/1 | 615 | 615 | - | - | - | 2.2 | 10.2 | - | 12.4 | 72.6 | 11.6 | 10.2 | 21.8 |
| 5/2 | 836 | 836 | - | - | - | 2.1 | 13.2 | - | 15.3 | 65.9 | 16.2 | 13.2 | 29.4 |
| 5/3 | 114 | 114 | - | - | - | 0.3 | 0.1 | - | 0.4 | 12.4 | 2.1 | 0.1 | 2.2 |
| 6/2+6/1 | 610 | 610 | - | - | - | 3.4 | 6.9 | - | 10.2 (0.3+10.0) | 60.4 (56.5:60.5) | 5.8 | 6.9 | 12.6 |
| 7/1 | 757 | 757 | - | - | - | 3.3 | 3.2 | - | 6.5 | 31.1 | 13.8 | 3.2 | 17.0 |
| 7/2 | 520 | 520 | - | - | - | 3.8 | 7.0 | - | 10.9 | 75.3 | 9.5 | 7.0 | 16.6 |
| 7/3 | 392 | 392 | - | - | - | 1.9 | 0.4 | - | 2.3 | 21.5 | 4.3 | 0.4 | 4.7 |
| 8/1 | 233 | 233 | - | - | - | 1.8 | 0.2 | - | 2.0 | 31.0 | 4.1 | 0.2 | 4.3 |
| 8/2 | 744 | 744 | - | - | - | 2.8 | 2.4 | - | 5.2 | 25.2 | 10.6 | 2.4 | 13.0 |
| 8/3 | 543 | 543 | - | - | - | 1.8 | 0.8 | - | 2.6 | 17.3 | 10.6 | 0.8 | 11.3 |
| 9/1 | 568 | 568 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 392 | 392 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 787 | 787 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/1 | 590 | 590 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 1776 | 1776 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 854 | 854 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/2 | 380 | 380 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **J2: Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **52.7** | **161.5** | **0.0** | **214.2** | **-** | **-** | **-** | **-** |
| 1/1 | 232 | 232 | - | - | - | 1.4 | 0.4 | - | 1.8 | 27.5 | 3.7 | 0.4 | 4.1 |
| 1/3+1/2 | 750 | 750 | - | - | - | 4.9 | 3.2 | - | 8.1 (3.2+4.9) | 38.8 (37.5:39.6) | 8.1 | 3.2 | 11.3 |
| 2/1 | 722 | 706 | - | - | - | 4.8 | 18.1 | - | 22.9 | 114.3 | 14.4 | 18.1 | 32.5 |
| 2/2 | 741 | 706 | - | - | - | 5.4 | 25.0 | - | 30.4 | 147.8 | 15.1 | 25.0 | 40.1 |
| 3/1 | 405 | 299 | - | - | - | 6.9 | 55.1 | - | 61.9 | 550.4 | 9.9 | 55.1 | 65.0 |
| 3/2 | 320 | 244 | - | - | - | 5.2 | 39.9 | - | 45.1 | 507.1 | 7.7 | 39.9 | 47.6 |
| 4/1 | 592 | 592 | - | - | - | 2.8 | 0.8 | - | 3.6 | 21.8 | 9.0 | 0.8 | 9.8 |
| 4/2+4/3 | 1785 | 1785 | - | - | - | 9.8 | 0.0 | - | 9.8 (4.6+5.2) | 19.7 (19.1:20.2) | 28.2 | 0.0 | 28.2 |
| 5/1 | 703 | 703 | - | - | - | 4.7 | 3.0 | - | 7.7 | 39.3 | 13.3 | 3.0 | 16.3 |
| 5/2 | 241 | 241 | - | - | - | 0.0 | 0.2 | - | 0.2 | 3.4 | 0.0 | 0.2 | 0.2 |
| 5/3 | 307 | 307 | - | - | - | 0.0 | 0.3 | - | 0.3 | 3.7 | 0.0 | 0.3 | 0.3 |
| 6/1 | 867 | 867 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.2 | 0.1 | 0.0 | 0.1 |
| 6/2 | 925 | 925 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 930 | 930 | - | - | - | 1.3 | 2.2 | - | 3.5 | 13.4 | 5.0 | 2.2 | 7.2 |
| 7/2 | 1013 | 1013 | - | - | - | 1.9 | 3.8 | - | 5.6 | 20.1 | 6.3 | 3.8 | 10.1 |
| 8/1 | 528 | 528 | - | - | - | 2.8 | 8.3 | - | 11.1 | 76.0 | 10.0 | 8.3 | 18.3 |
| 8/2 | 109 | 109 | - | - | - | 0.5 | 0.1 | - | 0.7 | 22.0 | 1.4 | 0.1 | 1.5 |
| 9/1 | 1223 | 1223 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 868 | 868 | - | - | - | 0.0 | 0.8 | - | 0.8 | 3.3 | 0.2 | 0.8 | 1.0 |
| 10/2 | 655 | 655 | - | - | - | 0.3 | 0.4 | - | 0.7 | 3.9 | 1.7 | 0.4 | 2.1 |
| 11/1 | 868 | 868 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 655 | 655 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 720 | 720 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13/1 | 977 | 977 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

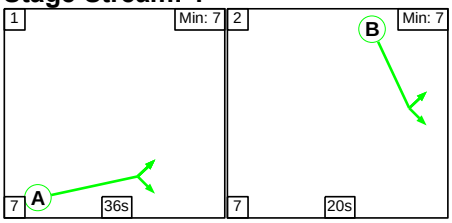
| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13/2 | 872 | 872 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 - M1 J36 Northside Tankersley | Stream: 1 PRC for Signalled Lanes (%): | -34.8 | Total Delay for Signalled Lanes (pcuHr): | 138.56 | Cycle Time (s): | 70 |
| C1 - M1 J36 Northside Tankersley | Stream: 2 PRC for Signalled Lanes (%): | -12.6 | Total Delay for Signalled Lanes (pcuHr): | 45.57 | Cycle Time (s): | 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 1 PRC for Signalled Lanes (%): | -36.5 | Total Delay for Signalled Lanes (pcuHr): | 146.80 | Cycle Time (s): | 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 2 PRC for Signalled Lanes (%): | -37.8 | Total Delay for Signalled Lanes (pcuHr): | 95.93 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 1 PRC for Signalled Lanes (%): | -16.7 | Total Delay for Signalled Lanes (pcuHr): | 61.57 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 2 PRC for Signalled Lanes (%): | 46.4 | Total Delay for Signalled Lanes (pcuHr): | 1.51 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 3 PRC for Signalled Lanes (%): | -50.7 | Total Delay for Signalled Lanes (pcuHr): | 116.11 | Cycle Time (s): | 70 |
| C4 - Birdwell South | PRC for Signalled Lanes (%): | -8.0 | Total Delay for Signalled Lanes (pcuHr): | 35.04 | Cycle Time (s): | 70 |
| | PRC Over All Lanes (%): | -50.7 | Total Delay Over All Lanes(pcuHr): | 641.10 | | |

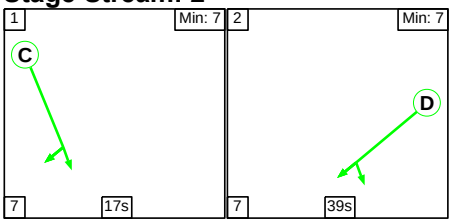
Full Input Data And Results
**Scenario 7: '7'** (FG7: '2024 AM Do Minimum', Plan 1: 'Network Control Plan 1')
**C1 - M1 J36 Northside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

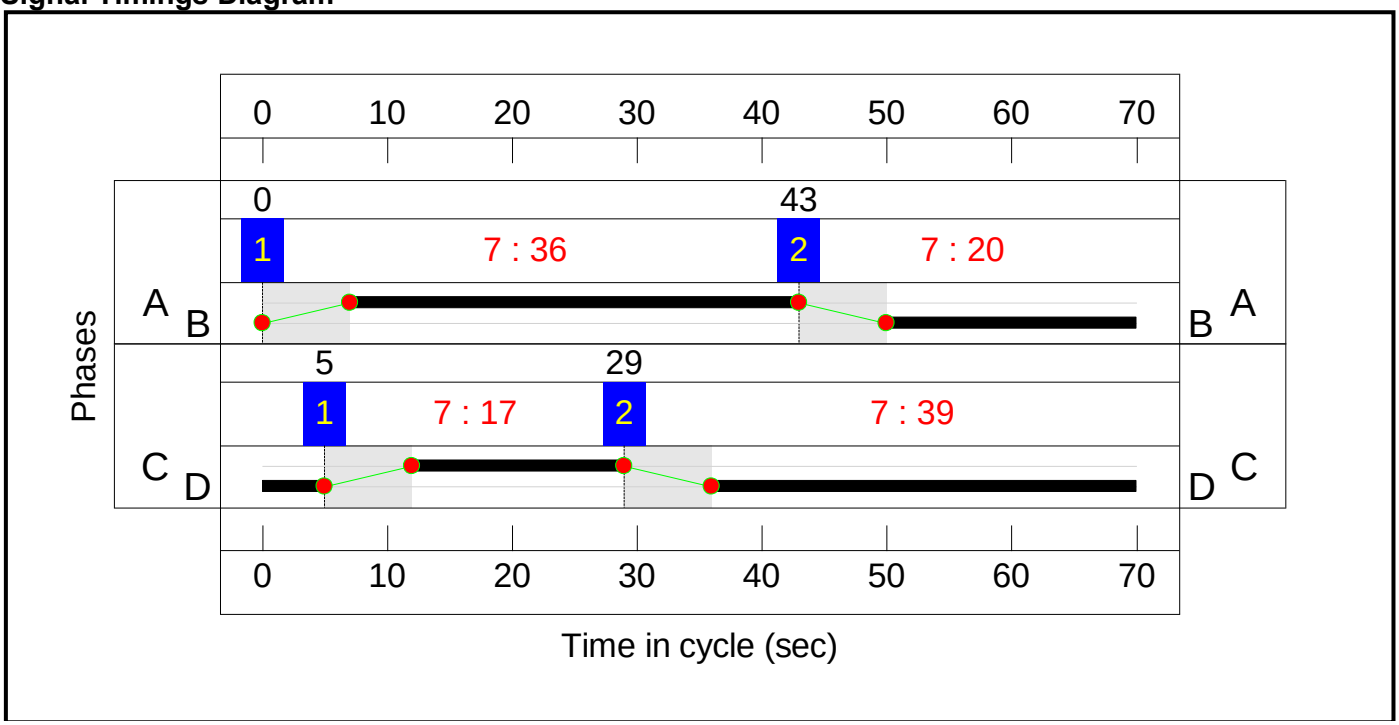
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 36 | 20 |
| Change Point | 0 | 43 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 17 | 39 |
| Change Point | 5 | 29 |

## Signal Timings Diagram

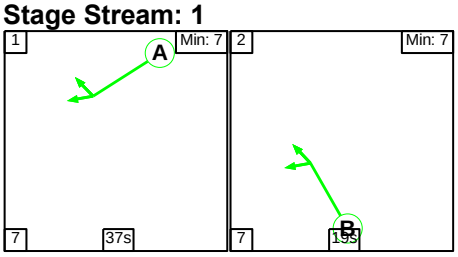


Full Input Data And Results

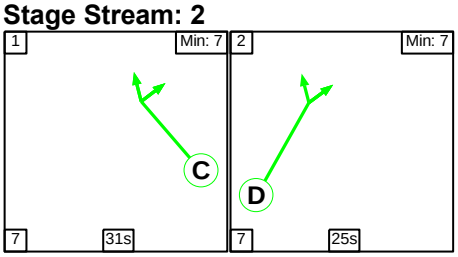
**C2 - M1 J36 Southside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

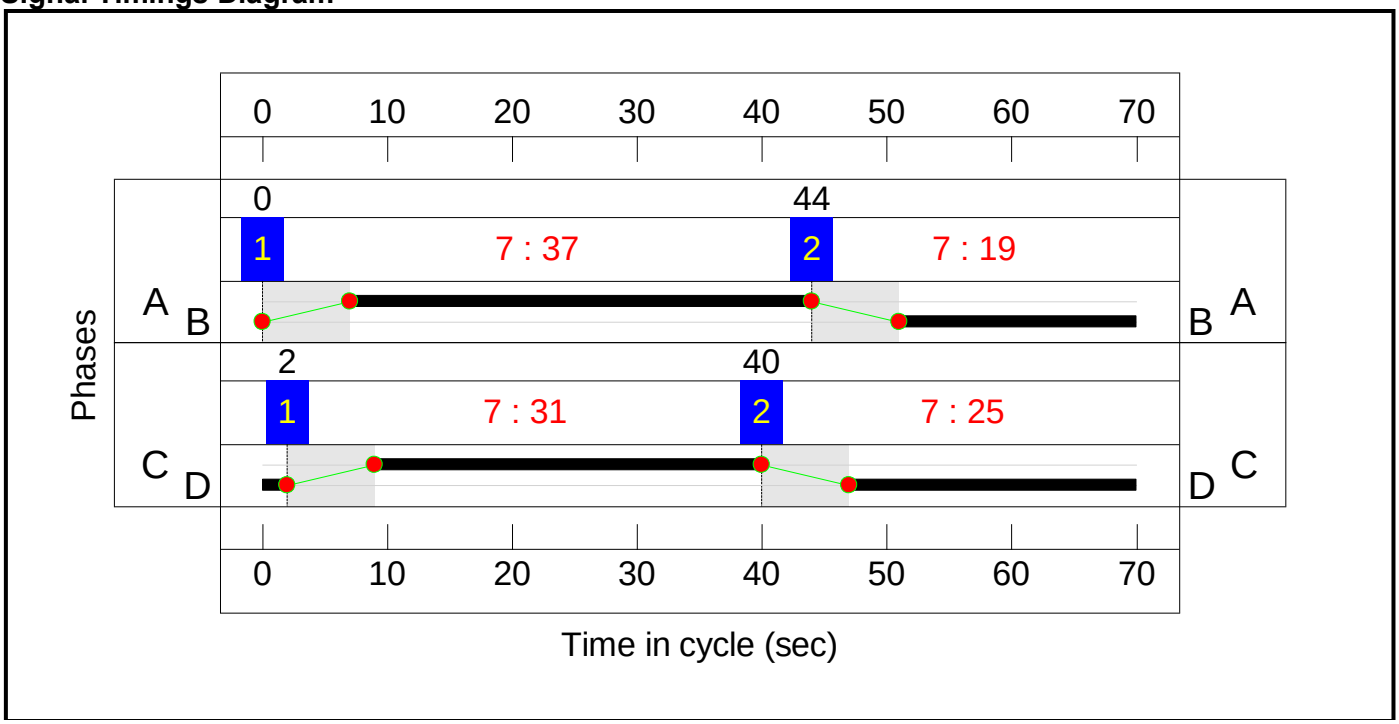
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 37 | 19 |
| Change Point | 0 | 44 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 31 | 25 |
| Change Point | 2 | 40 |

## Signal Timings Diagram

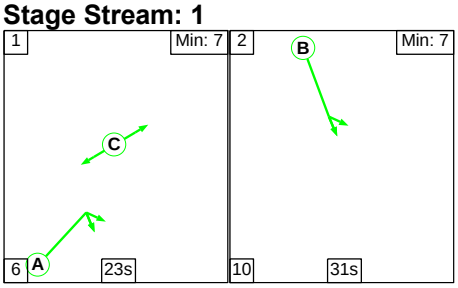


Full Input Data And Results

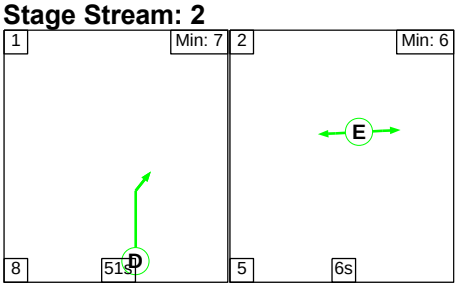
## C3 - Birdwell North

## Stage Sequence Diagram

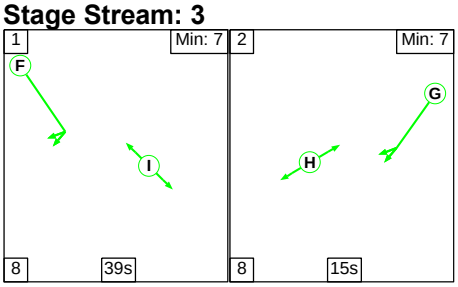
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 23 | 31 |
| Change Point | 65 | 24 |

### Stage Stream: 2

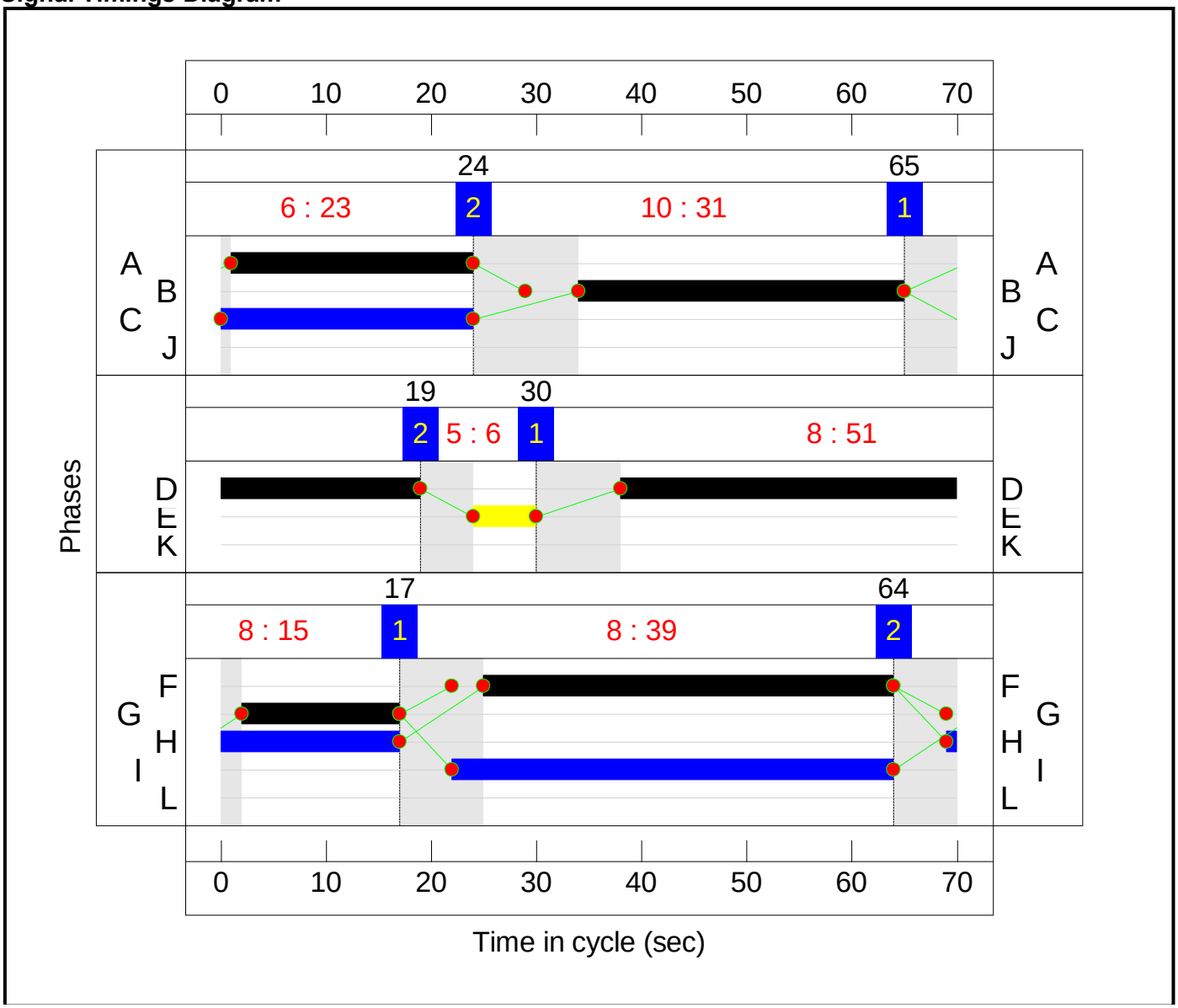
| Stage | 1 | 2 |
|---|---|---|
| Duration | 51 | 6 |
| Change Point | 30 | 19 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 39 | 15 |
| Change Point | 17 | 64 |

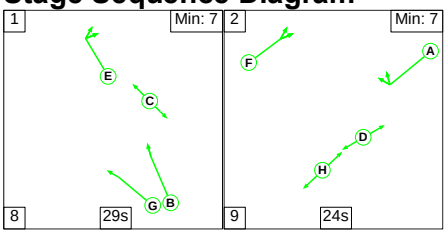
Full Input Data And Results

## Signal Timings Diagram




## C4 - Birdwell South

### Stage Sequence Diagram

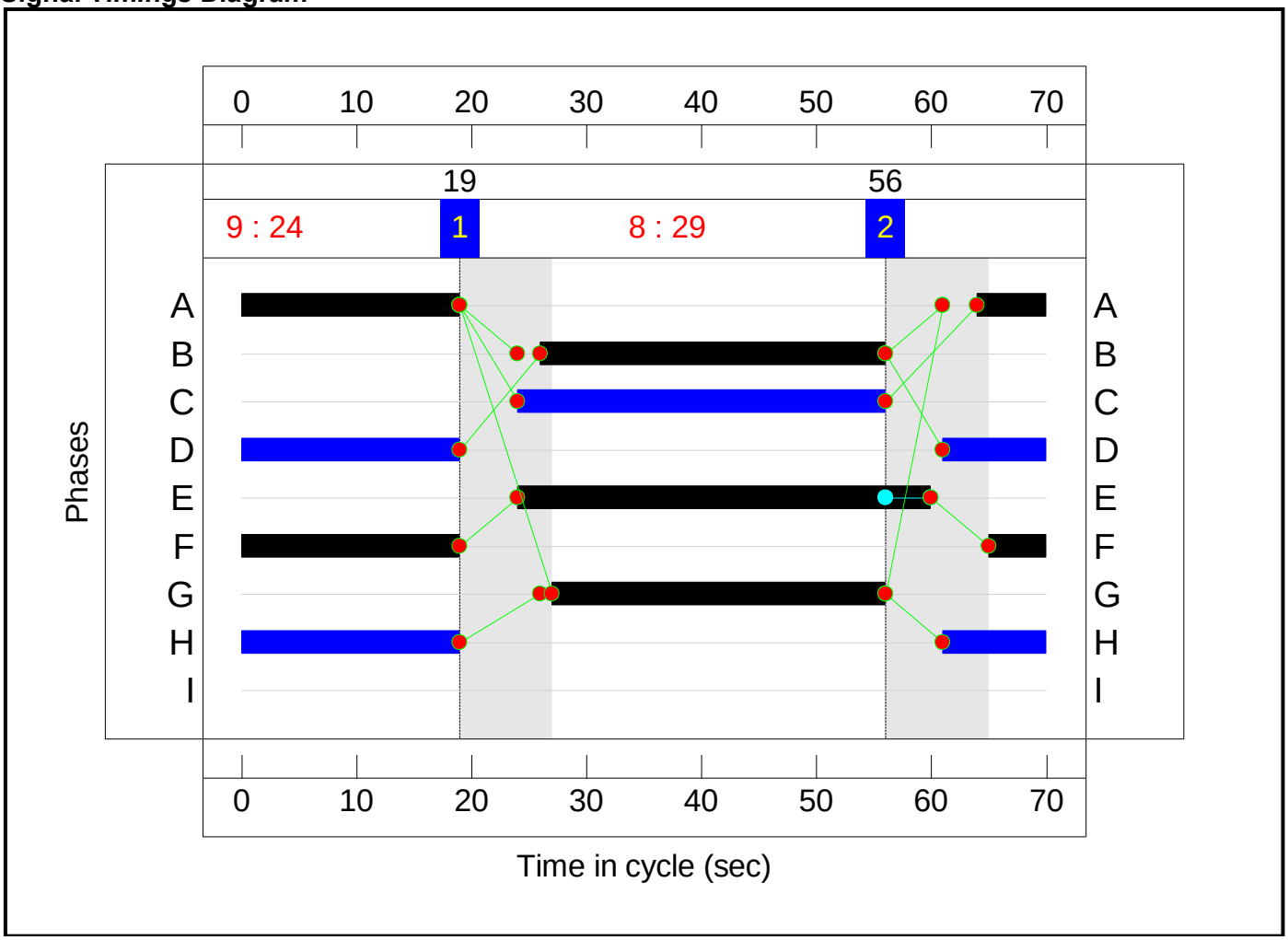



### Stage Timings

| Stage | 1 | 2 |
|---|---|---|
| Duration | 29 | 24 |
| Change Point | 19 | 56 |

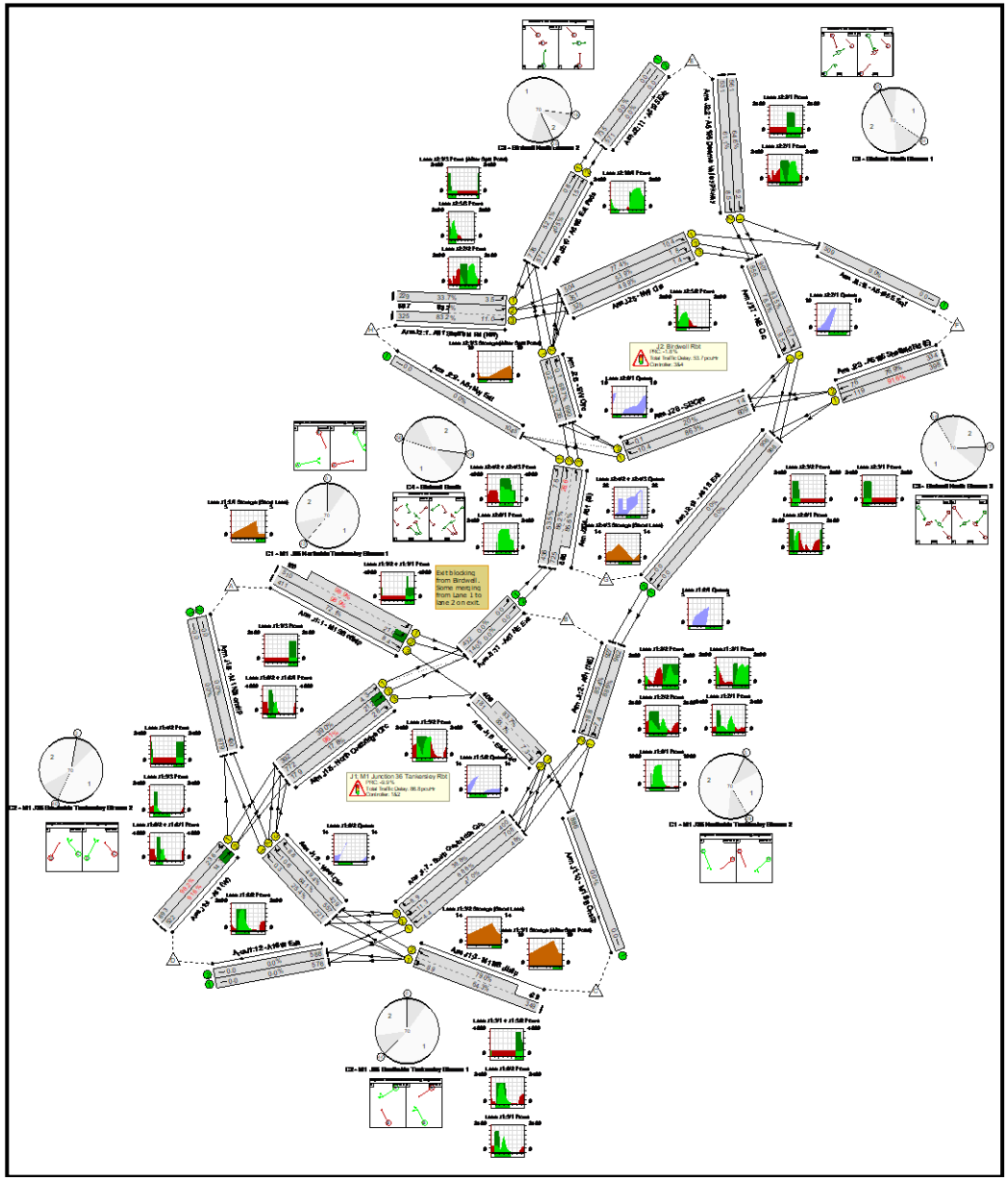
Full Input Data And Results

**Signal Timings Diagram**



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

## Network Results

Full Input Data And 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **98.9%** |
| **J1: M1 Junction 36 Tankersley Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **98.9%** |
| 1/2+1/1 | M1 SB offslip Left | U | 1:1 | N/A | C1:B | | 1 | 20 | - | 673 | 1900:1900 | 516+165 | 98.9 : 98.9% |
| 1/3 | M1 SB offslip Ahead | U | 1:1 | N/A | C1:B | | 1 | 20 | - | 411 | 1900 | 570 | 72.1% |
| 2/1 | A61 (NE) Ahead Ahead2 | U | 1:2 | N/A | C1:D | | 1 | 39 | - | 962 | 1900 | 1086 | 88.6% |
| 2/2 | A61 (NE) Ahead | U | 1:2 | N/A | C1:D | | 1 | 39 | - | 927 | 1900 | 1086 | 85.4% |
| 3/1+3/2 | M1 NB offslip Ahead Ahead2 | U | 2:1 | N/A | C2:B | | 1 | 19 | - | 778 | 1900:1900 | 543+543 | 64.3 : 79.0% |
| 4/1 | A61 (W) Ahead Left | U | 2:2 | N/A | C2:D | | 1 | 25 | - | 693 | 1900 | 706 | 98.2% |
| 4/2 | A61 (W) Ahead | U | 2:2 | N/A | C2:D | | 1 | 25 | - | 522 | 1900 | 570 | 91.6% |
| 5/1 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 36 | - | 392 | 1900 | 1004 | 39.0% |
| 5/2 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 36 | - | 772 | 1900 | 787 | 98.1% |
| 5/3 | North Overbridge Circ Right | U | 1:1 | N/A | C1:A | | 1 | 36 | - | 179 | 1900 | 1004 | 17.8% |
| 6/2+6/1 | East Circ Right Ahead | U | 1:2 | N/A | C1:C | | 1 | 17 | - | 590 | 1900:1900 | 216+489 | 83.7 : 83.7% |
| 7/1 | South Overbridge Circ Ahead | U | 2:1 | N/A | C2:A | | 1 | 37 | - | 485 | 1900 | 1031 | 47.0% |
| 7/2 | South Overbridge Circ Right Ahead | U | 2:1 | N/A | C2:A | | 1 | 37 | - | 708 | 1900 | 1031 | 68.6% |
| 7/3 | South Overbridge Circ Right | U | 2:1 | N/A | C2:A | | 1 | 37 | - | 400 | 1900 | 1031 | 38.8% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8/1 | West Circ Ahead | U | 2:2 | N/A | C2:C | | 1 | 31 | - | 221 | 1900 | 869 | 25.4% |
| 8/2 | West Circ Right Ahead | U | 2:2 | N/A | C2:C | | 1 | 31 | - | 557 | 1900 | 869 | 64.1% |
| 8/3 | West Circ Right | U | 2:2 | N/A | C2:C | | 1 | 31 | - | 429 | 1900 | 869 | 49.4% |
| 9/1 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 679 | Inf | Inf | 0.0% |
| 9/2 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 400 | Inf | Inf | 0.0% |
| 10/1 | M1 SB Onslip | U | N/A | N/A | - | | - | - | - | 886 | Inf | Inf | 0.0% |
| 11/1 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 432 | Inf | Inf | 0.0% |
| 11/2 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 1405 | Inf | Inf | 0.0% |
| 12/1 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 576 | Inf | Inf | 0.0% |
| 12/2 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 588 | Inf | Inf | 0.0% |
| **J2: Birdwell Rbt** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **91.6%** |
| 1/1 | A61 Sheffield Rd (NW) Left | U | N/A | N/A | C4:F | | 1 | 24 | - | 229 | 1900 | 679 | 33.7% |
| 1/3+1/2 | A61 Sheffield Rd (NW) Ahead | U | N/A | N/A | C4:F | | 1 | 24 | - | 832 | 1900:1900 | 390+609 | 83.2 : 83.2% |
| 2/1 | A6195 Dearne Valley Pkway Ahead Left | U | 3:1 | N/A | C3:B | | 1 | 31 | - | 561 | 1900 | 869 | 64.6% |
| 2/2 | A6195 Dearne Valley Pkway Ahead | U | 3:1 | N/A | C3:B | | 1 | 31 | - | 531 | 1900 | 869 | 61.1% |
| 3/1 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 15 | - | 398 | 1900 | 434 | 91.6% |
| 3/2 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 15 | - | 334 | 1900 | 434 | 76.9% |
| 4/1 | A61 (S) Left | U | N/A | N/A | C4:G | | 1 | 29 | - | 436 | 1900 | 814 | 53.5% |
| 4/2+4/3 | A61 (S) Ahead | U | N/A | N/A | C4:B | | 1 | 30 | - | 1411 | 1900:1900 | 841+801 | 86.2 : 85.6% |
| 5/1 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 23 | - | 504 | 1900 | 651 | 77.4% |
| 5/2 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 23 | - | 351 | 1900 | 651 | 53.9% |
| 5/3 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 23 | - | 325 | 1900 | 651 | 49.9% |
| 6/1 | SW Circ Right | U | N/A | N/A | C4:E | | 1 | 36 | - | 735 | 1900 | 1004 | 73.2% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/2 | SW Circ Right Right2 | U | N/A | N/A | C4:E | | 1 | 36 | - | 690 | 1900 | 1004 | 68.7% |
| 7/1 | NE Circ Right | U | 3:3 | N/A | C3:F | | 1 | 39 | - | 907 | 1900 | 1086 | 83.5% |
| 7/2 | NE Circ Right Right2 | U | 3:3 | N/A | C3:F | | 1 | 39 | - | 856 | 1900 | 1086 | 78.8% |
| 8/1 | SE Circ Right | U | N/A | N/A | C4:A | | 1 | 25 | - | 609 | 1900 | 706 | 86.3% |
| 8/2 | SE Circ Right Right2 | U | N/A | N/A | C4:A | | 1 | 25 | - | 14 | 1900 | 706 | 2.0% |
| 9/1 | A61 NW Exit | U | N/A | N/A | - | | - | - | - | 1045 | Inf | Inf | 0.0% |
| 10/1 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 735 | 1900 | 1411 | 52.1% |
| 10/2 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 571 | 1900 | 1411 | 40.5% |
| 11/1 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 735 | Inf | Inf | 0.0% |
| 11/2 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 571 | Inf | Inf | 0.0% |
| 12/1 | A6195 E Exit | U | N/A | N/A | - | | - | - | - | 509 | Inf | Inf | 0.0% |
| 13/1 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 966 | Inf | Inf | 0.0% |
| 13/2 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 906 | Inf | Inf | 0.0% |

Full Input Data And Results

| 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **66.5** | **73.9** | **0.0** | **140.4** | **-** | **-** | **-** | **-** |
| **J1: M1 Junction 36 Tankersley Rbt** | **-** | **-** | **0** | **0** | **0** | **34.7** | **52.1** | **0.0** | **86.8** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 673 | 673 | - | - | - | 4.4 | 11.2 | - | 15.7 (12.1+3.6) | 83.8 (85.4:78.8) | 9.8 | 11.2 | 21.0 |
| 1/3 | 411 | 411 | - | - | - | 2.5 | 1.3 | - | 3.8 | 33.0 | 7.1 | 1.3 | 8.4 |
| 2/1 | 962 | 962 | - | - | - | 1.0 | 3.7 | - | 4.7 | 17.5 | 3.7 | 3.7 | 7.4 |
| 2/2 | 927 | 927 | - | - | - | 2.4 | 2.8 | - | 5.3 | 20.4 | 16.0 | 2.8 | 18.8 |
| 3/1+3/2 | 778 | 778 | - | - | - | 4.9 | 1.3 | - | 6.1 (2.7+3.4) | 28.3 (27.7:28.9) | 7.6 | 1.3 | 8.9 |
| 4/1 | 693 | 693 | - | - | - | 4.2 | 10.4 | - | 14.6 | 75.6 | 13.3 | 10.4 | 23.6 |
| 4/2 | 522 | 522 | - | - | - | 3.4 | 4.6 | - | 8.0 | 55.2 | 9.7 | 4.6 | 14.3 |
| 5/1 | 392 | 392 | - | - | - | 0.5 | 0.3 | - | 0.8 | 7.3 | 4.0 | 0.3 | 4.3 |
| 5/2 | 772 | 772 | - | - | - | 2.1 | 10.6 | - | 12.7 | 59.2 | 10.6 | 10.6 | 21.2 |
| 5/3 | 179 | 179 | - | - | - | 0.2 | 0.1 | - | 0.3 | 6.7 | 2.7 | 0.1 | 2.8 |
| 6/2+6/1 | 590 | 590 | - | - | - | 1.8 | 2.5 | - | 4.3 (1.4+2.9) | 26.1 (27.8:25.4) | 4.8 | 2.5 | 7.3 |
| 7/1 | 485 | 485 | - | - | - | 0.8 | 0.4 | - | 1.2 | 9.3 | 4.0 | 0.4 | 4.4 |
| 7/2 | 708 | 708 | - | - | - | 1.9 | 1.1 | - | 3.0 | 15.2 | 10.2 | 1.1 | 11.3 |
| 7/3 | 400 | 400 | - | - | - | 1.0 | 0.3 | - | 1.3 | 11.8 | 6.6 | 0.3 | 6.9 |
| 8/1 | 221 | 221 | - | - | - | 0.0 | 0.2 | - | 0.2 | 3.5 | 0.1 | 0.2 | 0.3 |
| 8/2 | 557 | 557 | - | - | - | 0.9 | 0.9 | - | 1.8 | 11.8 | 9.7 | 0.9 | 10.6 |
| 8/3 | 429 | 429 | - | - | - | 2.5 | 0.5 | - | 3.0 | 25.2 | 8.3 | 0.5 | 8.8 |
| 9/1 | 679 | 679 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 400 | 400 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 886 | 886 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/1 | 432 | 432 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/2 | 1405 | 1405 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 576 | 576 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/2 | 588 | 588 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **J2: Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **31.8** | **21.9** | **0.0** | **53.7** | **-** | **-** | **-** | **-** |
| 1/1 | 229 | 229 | - | - | - | 1.0 | 0.3 | - | 1.3 | 20.5 | 3.2 | 0.3 | 3.5 |
| 1/3+1/2 | 832 | 832 | - | - | - | 4.4 | 2.4 | - | 6.8 (2.5+4.2) | 29.3 (27.9:30.2) | 8.6 | 2.4 | 11.0 |
| 2/1 | 561 | 561 | - | - | - | 2.3 | 0.9 | - | 3.2 | 20.5 | 8.3 | 0.9 | 9.2 |
| 2/2 | 531 | 531 | - | - | - | 2.1 | 0.8 | - | 2.9 | 19.6 | 7.7 | 0.8 | 8.5 |
| 3/1 | 398 | 398 | - | - | - | 2.9 | 4.4 | - | 7.3 | 66.3 | 7.5 | 4.4 | 11.9 |
| 3/2 | 334 | 334 | - | - | - | 2.3 | 1.6 | - | 4.0 | 42.7 | 6.0 | 1.6 | 7.6 |
| 4/1 | 436 | 436 | - | - | - | 1.8 | 0.6 | - | 2.4 | 19.7 | 7.1 | 0.6 | 7.6 |
| 4/2+4/3 | 1411 | 1411 | - | - | - | 4.9 | 0.0 | - | 4.9 (2.6+2.3) | 12.5 (12.7:12.2) | 26.6 | 0.0 | 26.6 |
| 5/1 | 504 | 504 | - | - | - | 2.6 | 1.7 | - | 4.3 | 30.7 | 8.7 | 1.7 | 10.4 |
| 5/2 | 351 | 351 | - | - | - | 0.7 | 0.6 | - | 1.3 | 13.4 | 1.2 | 0.6 | 1.8 |
| 5/3 | 325 | 325 | - | - | - | 0.5 | 0.5 | - | 1.0 | 11.2 | 0.9 | 0.5 | 1.4 |
| 6/1 | 735 | 735 | - | - | - | 0.1 | 0.0 | - | 0.1 | 0.3 | 0.2 | 0.0 | 0.2 |
| 6/2 | 690 | 690 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.2 | 0.1 | 0.0 | 0.1 |
| 7/1 | 907 | 907 | - | - | - | 1.8 | 2.5 | - | 4.2 | 16.9 | 8.2 | 2.5 | 10.7 |
| 7/2 | 856 | 856 | - | - | - | 1.7 | 1.8 | - | 3.6 | 14.9 | 7.7 | 1.8 | 9.5 |
| 8/1 | 609 | 609 | - | - | - | 2.4 | 3.0 | - | 5.4 | 31.7 | 7.4 | 3.0 | 10.4 |
| 8/2 | 14 | 14 | - | - | - | 0.0 | 0.0 | - | 0.1 | 14.1 | 0.1 | 0.0 | 0.1 |
| 9/1 | 1045 | 1045 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 735 | 735 | - | - | - | 0.0 | 0.5 | - | 0.6 | 2.7 | 0.2 | 0.5 | 0.8 |
| 10/2 | 571 | 571 | - | - | - | 0.2 | 0.3 | - | 0.5 | 3.2 | 1.2 | 0.3 | 1.5 |
| 11/1 | 735 | 735 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 571 | 571 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 509 | 509 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13/1 | 966 | 966 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13/2 | 906 | 906 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

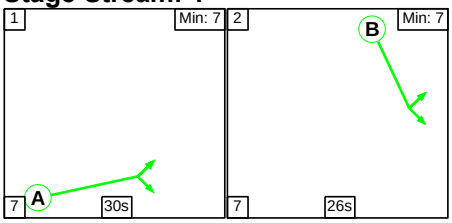
## Full Input Data And Results

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| C1 - M1 J36 Northside Tankersley | Stream: 1 | PRC for Signalled Lanes (%): | -9.9 | Total Delay for Signalled Lanes (pcuHr): | 33.26 | Cycle Time (s): | 70 |
| C1 - M1 J36 Northside Tankersley | Stream: 2 | PRC for Signalled Lanes (%): | 1.6 | Total Delay for Signalled Lanes (pcuHr): | 14.21 | Cycle Time (s): | 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 1 | PRC for Signalled Lanes (%): | 13.9 | Total Delay for Signalled Lanes (pcuHr): | 11.67 | Cycle Time (s): | 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 2 | PRC for Signalled Lanes (%): | -9.1 | Total Delay for Signalled Lanes (pcuHr): | 27.60 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 1 | PRC for Signalled Lanes (%): | 16.3 | Total Delay for Signalled Lanes (pcuHr): | 12.70 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 2 | PRC for Signalled Lanes (%): | 72.8 | Total Delay for Signalled Lanes (pcuHr): | 1.05 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 3 | PRC for Signalled Lanes (%): | -1.8 | Total Delay for Signalled Lanes (pcuHr): | 19.08 | Cycle Time (s): | 70 |
| C4 - Birdwell South | | PRC for Signalled Lanes (%): | 4.3 | Total Delay for Signalled Lanes (pcuHr): | 20.84 | Cycle Time (s): | 70 |
| | | PRC Over All Lanes (%): | -9.9 | Total Delay Over All Lanes(pcuHr): | 140.44 | | |

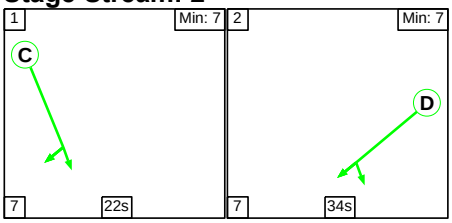
Full Input Data And Results
**Scenario 8: '8'** (FG8: '2024 PM Do Minimum', Plan 1: 'Network Control Plan 1')
**C1 - M1 J36 Northside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

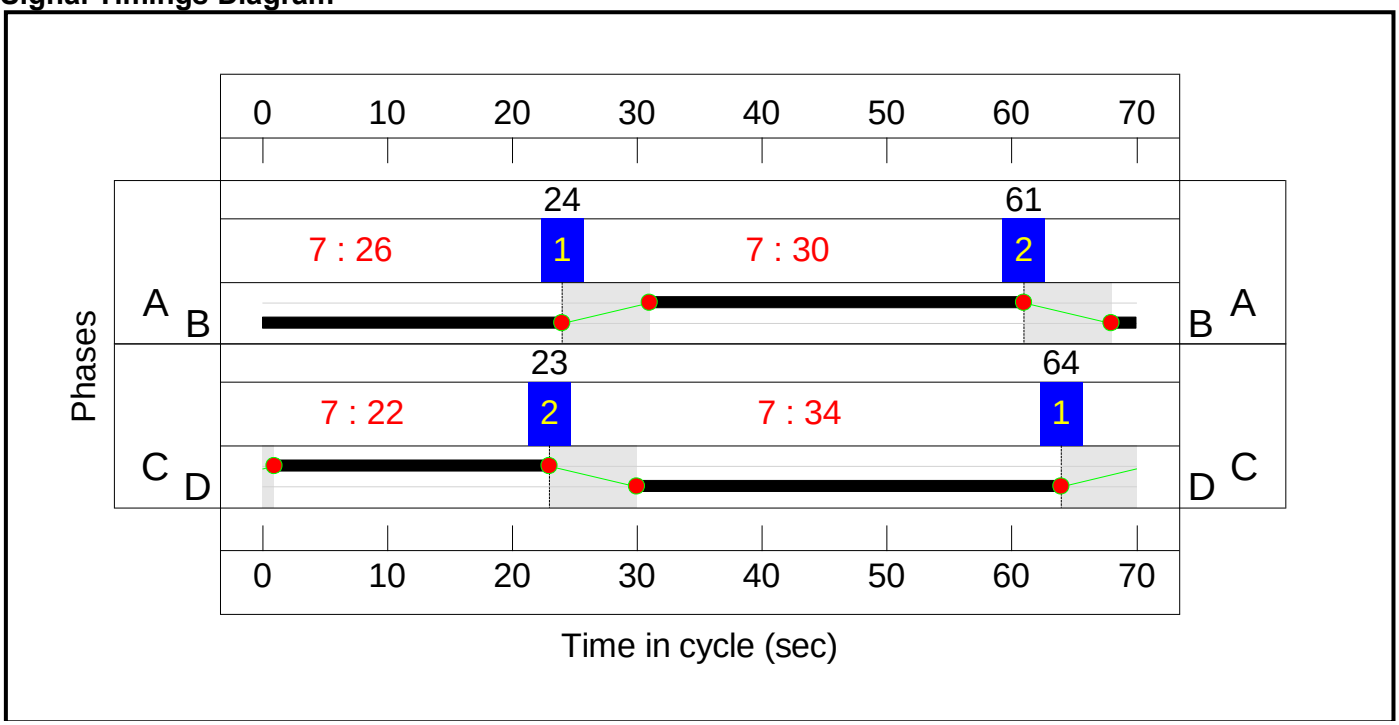
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 30 | 26 |
| Change Point | 24 | 61 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 22 | 34 |
| Change Point | 64 | 23 |

## Signal Timings Diagram

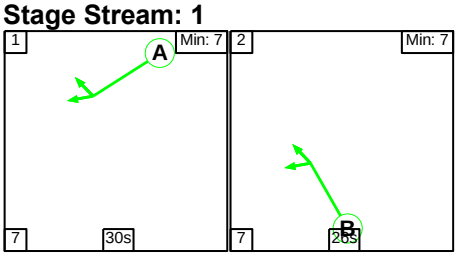


Full Input Data And Results

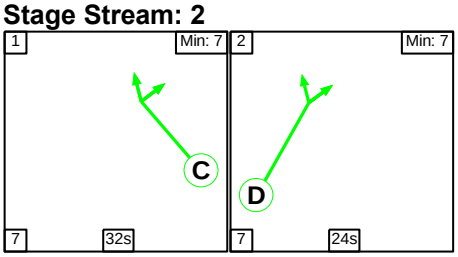
**C2 - M1 J36 Southside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

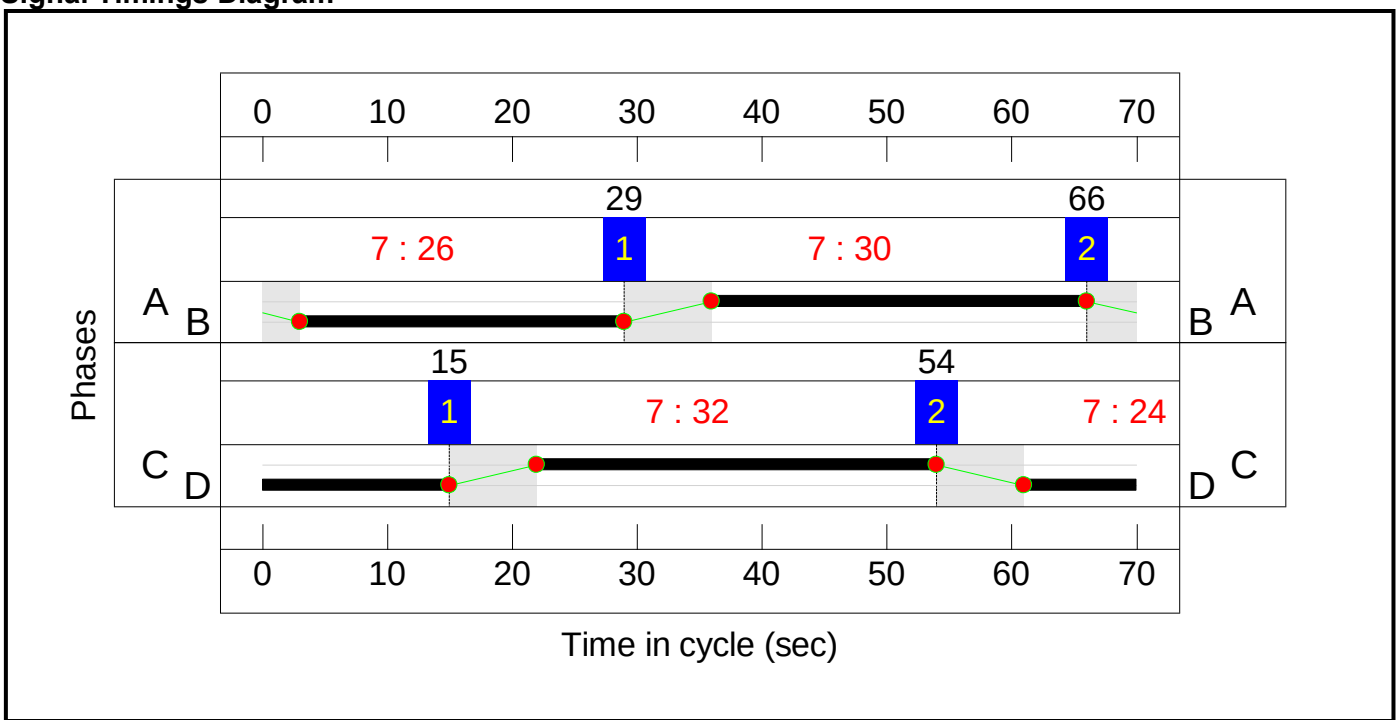
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 30 | 26 |
| Change Point | 29 | 66 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 32 | 24 |
| Change Point | 15 | 54 |

## Signal Timings Diagram

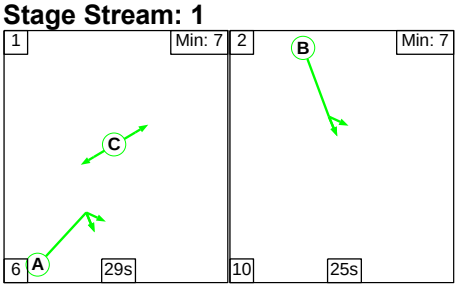


Full Input Data And Results

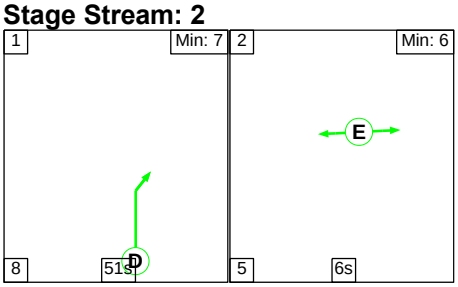
## C3 - Birdwell North

## Stage Sequence Diagram

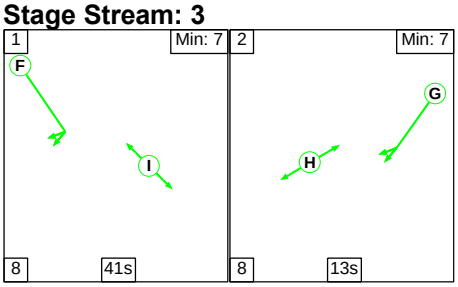
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 29 | 25 |
| Change Point | 63 | 28 |

### Stage Stream: 2

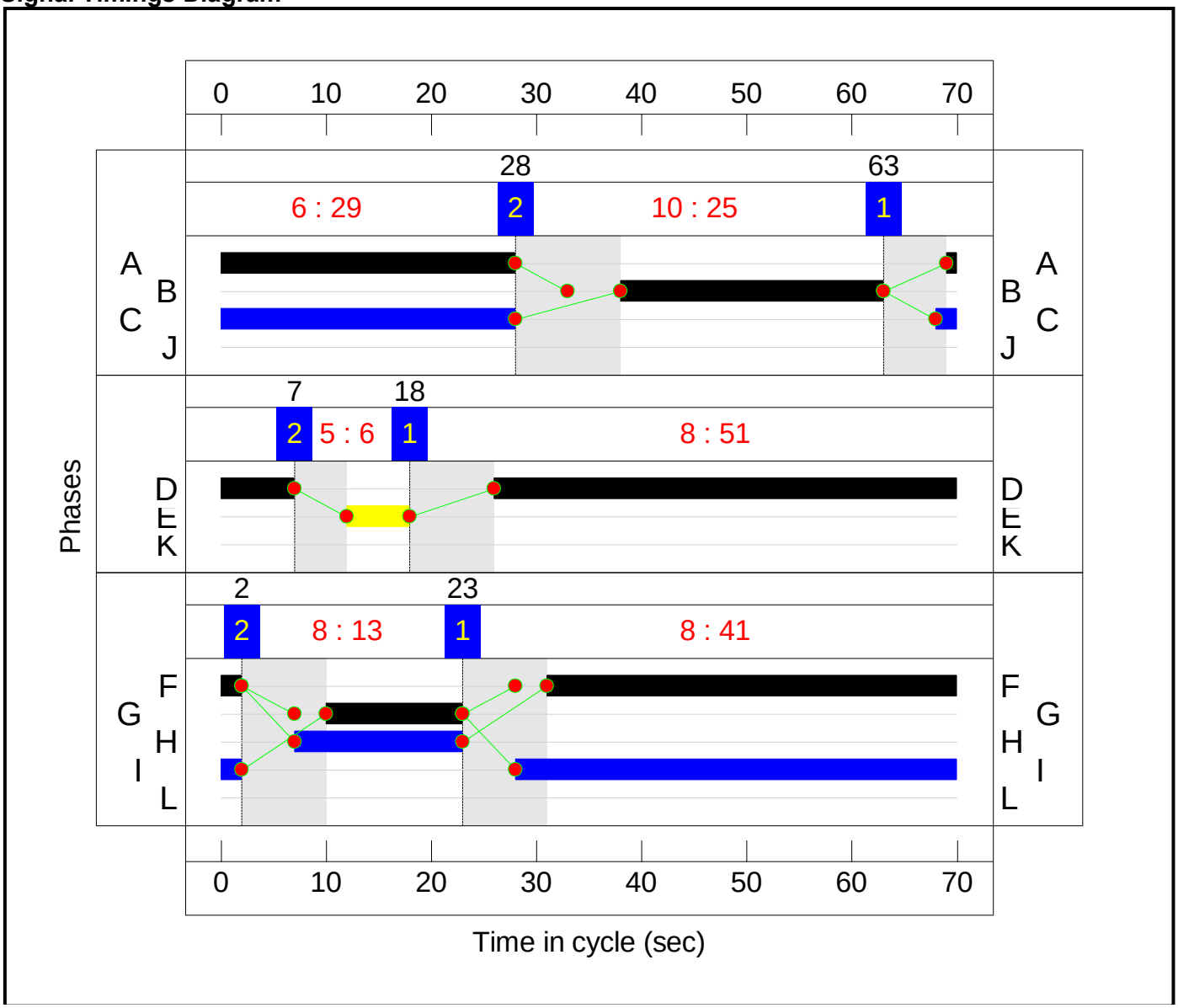
| Stage | 1 | 2 |
|---|---|---|
| Duration | 51 | 6 |
| Change Point | 18 | 7 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 41 | 13 |
| Change Point | 23 | 2 |

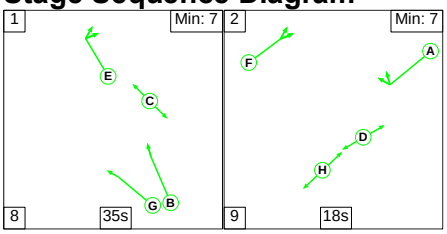
Full Input Data And Results

## Signal Timings Diagram




## C4 - Birdwell South

### Stage Sequence Diagram

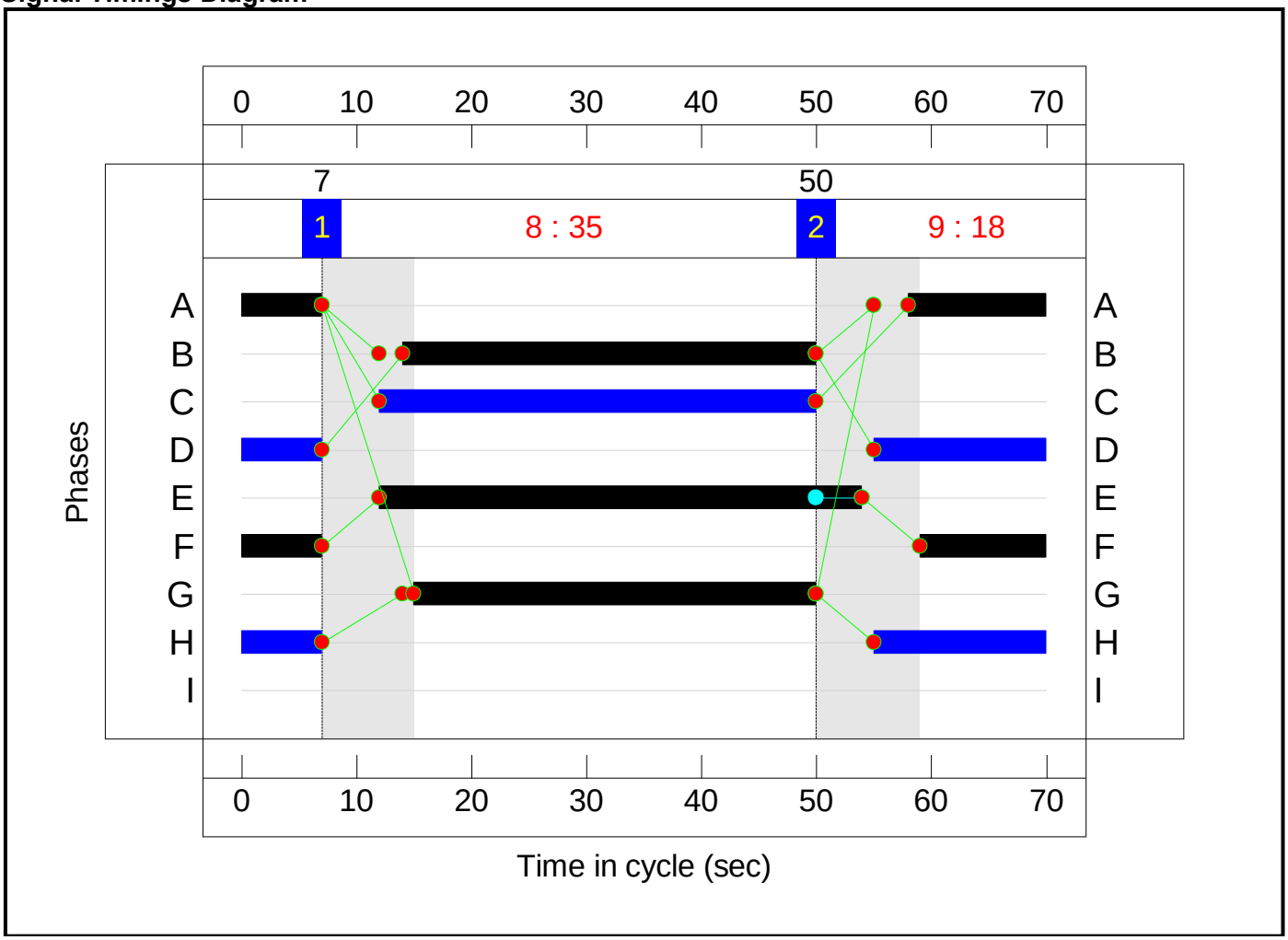



### Stage Timings

| Stage | 1 | 2 |
|---|---|---|
| Duration | 35 | 18 |
| Change Point | 7 | 50 |

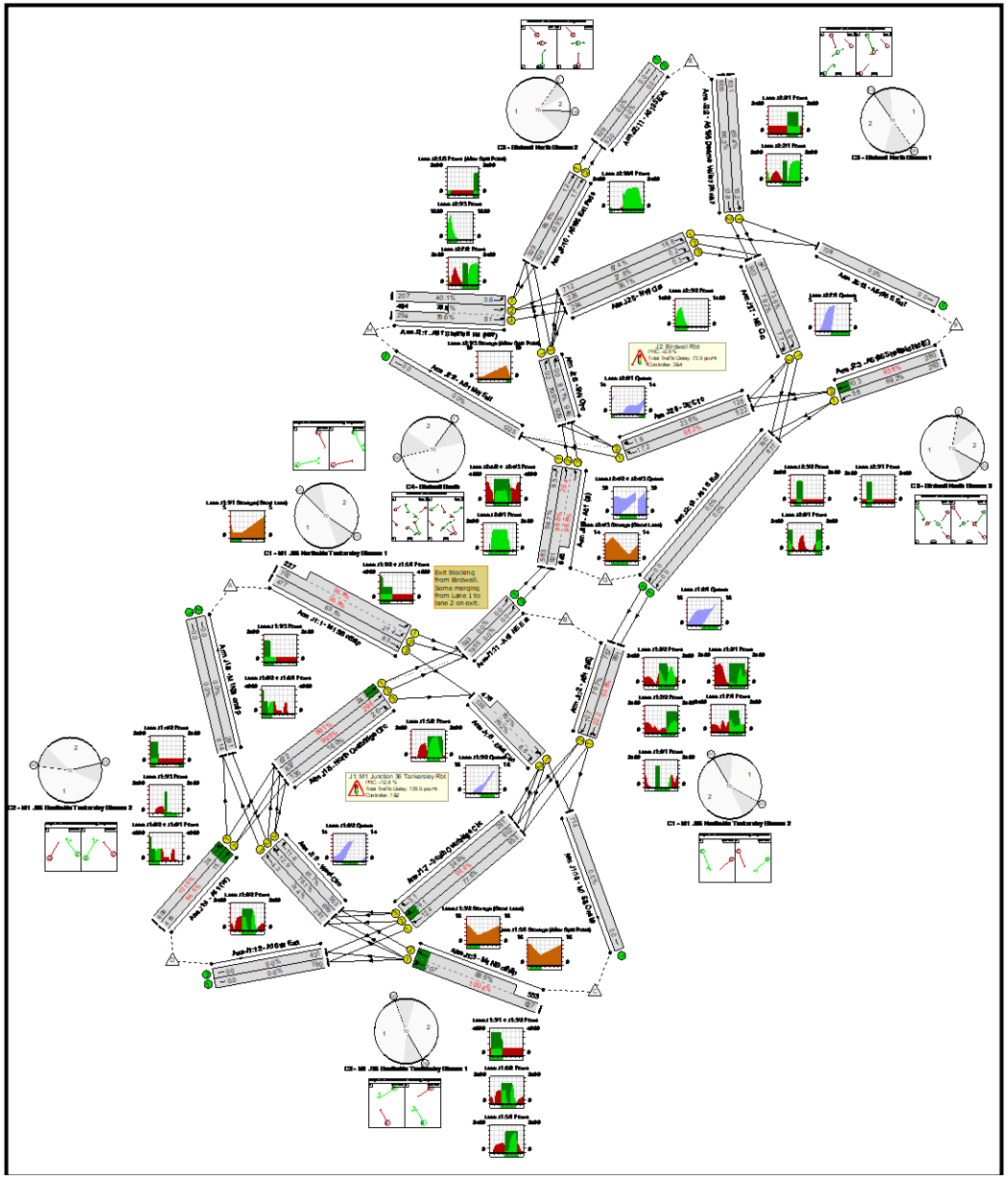
Full Input Data And Results

**Signal Timings Diagram**



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

## Network Results

Full Input Data And 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **101.5%** |
| **J1: M1 Junction 36 Tankersley Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **101.5%** |
| 1/2+1/1 | M1 SB offslip Left | U | 1:1 | N/A | C1:B | | 1 | 26 | - | 929 | 1900:1900 | 733+237 | 95.8 : 95.8% |
| 1/3 | M1 SB offslip Ahead | U | 1:1 | N/A | C1:B | | 1 | 26 | - | 477 | 1900 | 733 | 65.1% |
| 2/1 | A61 (NE) Ahead Ahead2 | U | 1:2 | N/A | C1:D | | 1 | 34 | - | 891 | 1900 | 950 | 93.8% |
| 2/2 | A61 (NE) Ahead | U | 1:2 | N/A | C1:D | | 1 | 34 | - | 757 | 1900 | 950 | 79.7% |
| 3/1+3/2 | M1 NB offslip Ahead Ahead2 | U | 2:1 | N/A | C2:B | | 1 | 26 | - | 1180 | 1900:1900 | 624+624 | 100.4 : 88.6% |
| 4/1 | A61 (W) Ahead Left | U | 2:2 | N/A | C2:D | | 1 | 24 | - | 606 | 1900 | 597 | 101.5% |
| 4/2 | A61 (W) Ahead | U | 2:2 | N/A | C2:D | | 1 | 24 | - | 419 | 1900 | 434 | 96.5% |
| 5/1 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 30 | - | 678 | 1900 | 679 | 99.1% |
| 5/2 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 30 | - | 837 | 1900 | 841 | 99.5% |
| 5/3 | North Overbridge Circ Right | U | 1:1 | N/A | C1:A | | 1 | 30 | - | 135 | 1900 | 841 | 16.0% |
| 6/2+6/1 | East Circ Right Ahead | U | 1:2 | N/A | C1:C | | 1 | 22 | - | 612 | 1900:1900 | 178+624 | 76.2 : 76.2% |
| 7/1 | South Overbridge Circ Ahead | U | 2:1 | N/A | C2:A | | 1 | 30 | - | 653 | 1900 | 841 | 77.6% |
| 7/2 | South Overbridge Circ Right Ahead | U | 2:1 | N/A | C2:A | | 1 | 30 | - | 602 | 1900 | 624 | 96.4% |
| 7/3 | South Overbridge Circ Right | U | 2:1 | N/A | C2:A | | 1 | 30 | - | 291 | 1900 | 841 | 34.6% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8/1 | West Circ Ahead | U | 2:2 | N/A | C2:C | | 1 | 32 | - | 281 | 1900 | 896 | 31.4% |
| 8/2 | West Circ Right Ahead | U | 2:2 | N/A | C2:C | | 1 | 32 | - | 701 | 1900 | 896 | 78.1% |
| 8/3 | West Circ Right | U | 2:2 | N/A | C2:C | | 1 | 32 | - | 553 | 1900 | 896 | 61.7% |
| 9/1 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 619 | Inf | Inf | 0.0% |
| 9/2 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 291 | Inf | Inf | 0.0% |
| 10/1 | M1 SB Onslip | U | N/A | N/A | - | | - | - | - | 714 | Inf | Inf | 0.0% |
| 11/1 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 587 | Inf | Inf | 0.0% |
| 11/2 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 1857 | Inf | Inf | 0.0% |
| 12/1 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 760 | Inf | Inf | 0.0% |
| 12/2 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 431 | Inf | Inf | 0.0% |
| **J2: Birdwell Rbt** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **98.8%** |
| 1/1 | A61 Sheffield Rd (NW) Left | U | N/A | N/A | C4:F | | 1 | 18 | - | 207 | 1900 | 516 | 40.1% |
| 1/3+1/2 | A61 Sheffield Rd (NW) Ahead | U | N/A | N/A | C4:F | | 1 | 18 | - | 698 | 1900:1900 | 369+507 | 79.6 : 79.6% |
| 2/1 | A6195 Dearne Valley Pkway Ahead Left | U | 3:1 | N/A | C3:B | | 1 | 25 | - | 631 | 1900 | 706 | 89.4% |
| 2/2 | A6195 Dearne Valley Pkway Ahead | U | 3:1 | N/A | C3:B | | 1 | 25 | - | 609 | 1900 | 706 | 86.3% |
| 3/1 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 13 | - | 263 | 1900 | 380 | 69.2% |
| 3/2 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 13 | - | 280 | 1900 | 299 | 93.8% |
| 4/1 | A61 (S) Left | U | N/A | N/A | C4:G | | 1 | 35 | - | 587 | 1900 | 977 | 59.7% |
| 4/2+4/3 | A61 (S) Ahead | U | N/A | N/A | C4:B | | 1 | 36 | - | 1869 | 1900:1900 | 932+958 | 98.8 : 98.8% |
| 5/1 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 29 | - | 712 | 1900 | 814 | 87.4% |
| 5/2 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 29 | - | 226 | 1900 | 814 | 27.8% |
| 5/3 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 29 | - | 294 | 1900 | 814 | 36.1% |
| 6/1 | SW Circ Right | U | N/A | N/A | C4:E | | 1 | 42 | - | 930 | 1900 | 1167 | 79.6% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/2 | SW Circ Right Right2 | U | N/A | N/A | C4:E | | 1 | 42 | - | 947 | 1900 | 1167 | 81.1% |
| 7/1 | NE Circ Right | U | 3:3 | N/A | C3:F | | 1 | 41 | - | 841 | 1900 | 1140 | 73.8% |
| 7/2 | NE Circ Right Right2 | U | 3:3 | N/A | C3:F | | 1 | 41 | - | 903 | 1900 | 1140 | 79.2% |
| 8/1 | SE Circ Right | U | N/A | N/A | C4:A | | 1 | 19 | - | 522 | 1900 | 543 | 96.2% |
| 8/2 | SE Circ Right Right2 | U | N/A | N/A | C4:A | | 1 | 19 | - | 128 | 1900 | 543 | 23.6% |
| 9/1 | A61 NW Exit | U | N/A | N/A | - | | - | - | - | 1229 | Inf | Inf | 0.0% |
| 10/1 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 930 | 1900 | 1411 | 65.8% |
| 10/2 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 620 | 1900 | 1411 | 43.9% |
| 11/1 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 930 | Inf | Inf | 0.0% |
| 11/2 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 620 | Inf | Inf | 0.0% |
| 12/1 | A6195 E Exit | U | N/A | N/A | - | | - | - | - | 728 | Inf | Inf | 0.0% |
| 13/1 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 877 | Inf | Inf | 0.0% |
| 13/2 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 760 | Inf | Inf | 0.0% |

Full Input Data And Results

| 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **94.3** | **118.4** | **0.0** | **212.7** | **-** | **-** | **-** | **-** |
| **J1: M1 Junction 36 Tankersley Rbt** | **-** | **-** | **0** | **0** | **0** | **52.1** | **86.7** | **0.0** | **138.9** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 929 | 929 | - | - | - | 5.0 | 8.1 | - | 13.2 (10.2+2.9) | 51.0 (52.5:46.5) | 13.3 | 8.1 | 21.4 |
| 1/3 | 477 | 477 | - | - | - | 2.3 | 0.9 | - | 3.3 | 24.6 | 7.6 | 0.9 | 8.5 |
| 2/1 | 891 | 891 | - | - | - | 5.6 | 6.2 | - | 11.9 | 47.9 | 16.0 | 6.2 | 22.2 |
| 2/2 | 757 | 757 | - | - | - | 2.3 | 1.9 | - | 4.2 | 20.1 | 8.8 | 1.9 | 10.7 |
| 3/1+3/2 | 1180 | 1177 | - | - | - | 7.6 | 8.5 | - | 16.0 (9.3+6.8) | 48.9 (53.3:44.0) | 12.2 | 8.5 | 20.7 |
| 4/1 | 606 | 597 | - | - | - | 4.4 | 14.7 | - | 19.1 | 113.4 | 12.0 | 14.7 | 26.7 |
| 4/2 | 419 | 419 | - | - | - | 3.1 | 7.1 | - | 10.2 | 87.8 | 8.0 | 7.1 | 15.1 |
| 5/1 | 672 | 672 | - | - | - | 2.1 | 11.5 | - | 13.6 | 72.6 | 12.8 | 11.5 | 24.3 |
| 5/2 | 837 | 837 | - | - | - | 2.1 | 13.4 | - | 15.5 | 66.5 | 16.2 | 13.4 | 29.6 |
| 5/3 | 135 | 135 | - | - | - | 0.4 | 0.1 | - | 0.5 | 13.6 | 2.5 | 0.1 | 2.6 |
| 6/2+6/1 | 612 | 612 | - | - | - | 3.2 | 1.6 | - | 4.7 (0.9+3.8) | 27.9 (24.4:28.9) | 5.0 | 1.6 | 6.6 |
| 7/1 | 653 | 653 | - | - | - | 2.9 | 1.7 | - | 4.6 | 25.1 | 10.7 | 1.7 | 12.4 |
| 7/2 | 602 | 602 | - | - | - | 3.6 | 7.9 | - | 11.5 | 69.0 | 11.2 | 7.9 | 19.1 |
| 7/3 | 291 | 291 | - | - | - | 1.3 | 0.3 | - | 1.5 | 19.0 | 2.8 | 0.3 | 3.1 |
| 8/1 | 281 | 281 | - | - | - | 1.8 | 0.2 | - | 2.0 | 25.7 | 4.1 | 0.2 | 4.3 |
| 8/2 | 699 | 699 | - | - | - | 2.7 | 1.7 | - | 4.4 | 22.7 | 11.2 | 1.7 | 12.9 |
| 8/3 | 553 | 553 | - | - | - | 1.9 | 0.8 | - | 2.7 | 17.4 | 10.8 | 0.8 | 11.6 |
| 9/1 | 614 | 614 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 291 | 291 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 714 | 714 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/1 | 583 | 583 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 1855 | 1855 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 760 | 760 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/2 | 431 | 431 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **J2: Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **42.2** | **31.7** | **0.0** | **73.9** | **-** | **-** | **-** | **-** |
| 1/1 | 207 | 207 | - | - | - | 1.2 | 0.3 | - | 1.5 | 26.7 | 3.3 | 0.3 | 3.6 |
| 1/3+1/2 | 698 | 698 | - | - | - | 4.4 | 1.9 | - | 6.4 (2.6+3.8) | 32.8 (31.9:33.5) | 7.2 | 1.9 | 9.1 |
| 2/1 | 631 | 631 | - | - | - | 3.6 | 3.8 | - | 7.5 | 42.6 | 11.4 | 3.8 | 15.2 |
| 2/2 | 609 | 609 | - | - | - | 3.4 | 3.0 | - | 6.4 | 37.9 | 10.8 | 3.0 | 13.8 |
| 3/1 | 263 | 263 | - | - | - | 1.9 | 1.1 | - | 3.0 | 41.1 | 4.7 | 1.1 | 5.8 |
| 3/2 | 280 | 280 | - | - | - | 2.3 | 4.9 | - | 7.2 | 92.5 | 5.4 | 4.9 | 10.3 |
| 4/1 | 583 | 583 | - | - | - | 2.7 | 0.7 | - | 3.5 | 21.5 | 8.8 | 0.7 | 9.5 |
| 4/2+4/3 | 1867 | 1867 | - | - | - | 10.9 | 0.0 | - | 10.9 (5.3+5.6) | 20.9 (20.7:21.2) | 28.4 | 0.0 | 28.4 |
| 5/1 | 712 | 712 | - | - | - | 5.0 | 3.3 | - | 8.2 | 41.7 | 13.5 | 3.3 | 16.8 |
| 5/2 | 226 | 226 | - | - | - | 0.0 | 0.2 | - | 0.2 | 3.3 | 0.0 | 0.2 | 0.2 |
| 5/3 | 294 | 294 | - | - | - | 0.0 | 0.3 | - | 0.3 | 3.6 | 0.0 | 0.3 | 0.3 |
| 6/1 | 929 | 929 | - | - | - | 0.1 | 0.0 | - | 0.1 | 0.2 | 0.2 | 0.0 | 0.2 |
| 6/2 | 946 | 946 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 841 | 841 | - | - | - | 1.2 | 1.4 | - | 2.5 | 10.9 | 4.5 | 1.4 | 5.9 |
| 7/2 | 903 | 903 | - | - | - | 1.7 | 1.9 | - | 3.6 | 14.3 | 5.9 | 1.9 | 7.7 |
| 8/1 | 522 | 522 | - | - | - | 2.9 | 7.3 | - | 10.2 | 70.5 | 9.9 | 7.3 | 17.2 |
| 8/2 | 128 | 128 | - | - | - | 0.7 | 0.2 | - | 0.8 | 23.3 | 1.7 | 0.2 | 1.9 |
| 9/1 | 1225 | 1225 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 929 | 929 | - | - | - | 0.0 | 1.0 | - | 1.0 | 3.8 | 0.2 | 1.0 | 1.2 |
| 10/2 | 620 | 620 | - | - | - | 0.2 | 0.4 | - | 0.6 | 3.6 | 1.3 | 0.4 | 1.7 |
| 11/1 | 929 | 929 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 620 | 620 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 728 | 728 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13/1 | 877 | 877 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

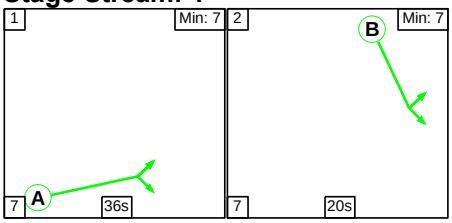
| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13/2 | 760 | 760 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 - M1 J36 Northside Tankersley | Stream: 1 | PRC for Signalled Lanes (%): | -10.5 | Total Delay for Signalled Lanes (pcuHr): | 45.97 | Cycle Time (s): 70 |
| C1 - M1 J36 Northside Tankersley | Stream: 2 | PRC for Signalled Lanes (%): | -4.2 | Total Delay for Signalled Lanes (pcuHr): | 20.82 | Cycle Time (s): 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 1 | PRC for Signalled Lanes (%): | -11.6 | Total Delay for Signalled Lanes (pcuHr): | 33.67 | Cycle Time (s): 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 2 | PRC for Signalled Lanes (%): | -12.8 | Total Delay for Signalled Lanes (pcuHr): | 38.40 | Cycle Time (s): 70 |
| C3 - Birdwell North | Stream: 1 | PRC for Signalled Lanes (%): | 0.7 | Total Delay for Signalled Lanes (pcuHr): | 22.61 | Cycle Time (s): 70 |
| C3 - Birdwell North | Stream: 2 | PRC for Signalled Lanes (%): | 36.7 | Total Delay for Signalled Lanes (pcuHr): | 1.59 | Cycle Time (s): 70 |
| C3 - Birdwell North | Stream: 3 | PRC for Signalled Lanes (%): | -4.2 | Total Delay for Signalled Lanes (pcuHr): | 16.33 | Cycle Time (s): 70 |
| C4 - Birdwell South | | PRC for Signalled Lanes (%): | -9.8 | Total Delay for Signalled Lanes (pcuHr): | 33.34 | Cycle Time (s): 70 |
| | | PRC Over All Lanes (%): | -12.8 | Total Delay Over All Lanes(pcuHr): | 212.72 | |

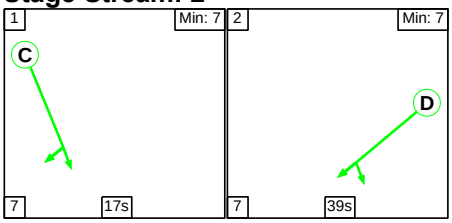
Full Input Data And Results
**Scenario 9: '9'** (FG9: '2024 AM Do Something', Plan 1: 'Network Control Plan 1')
**C1 - M1 J36 Northside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

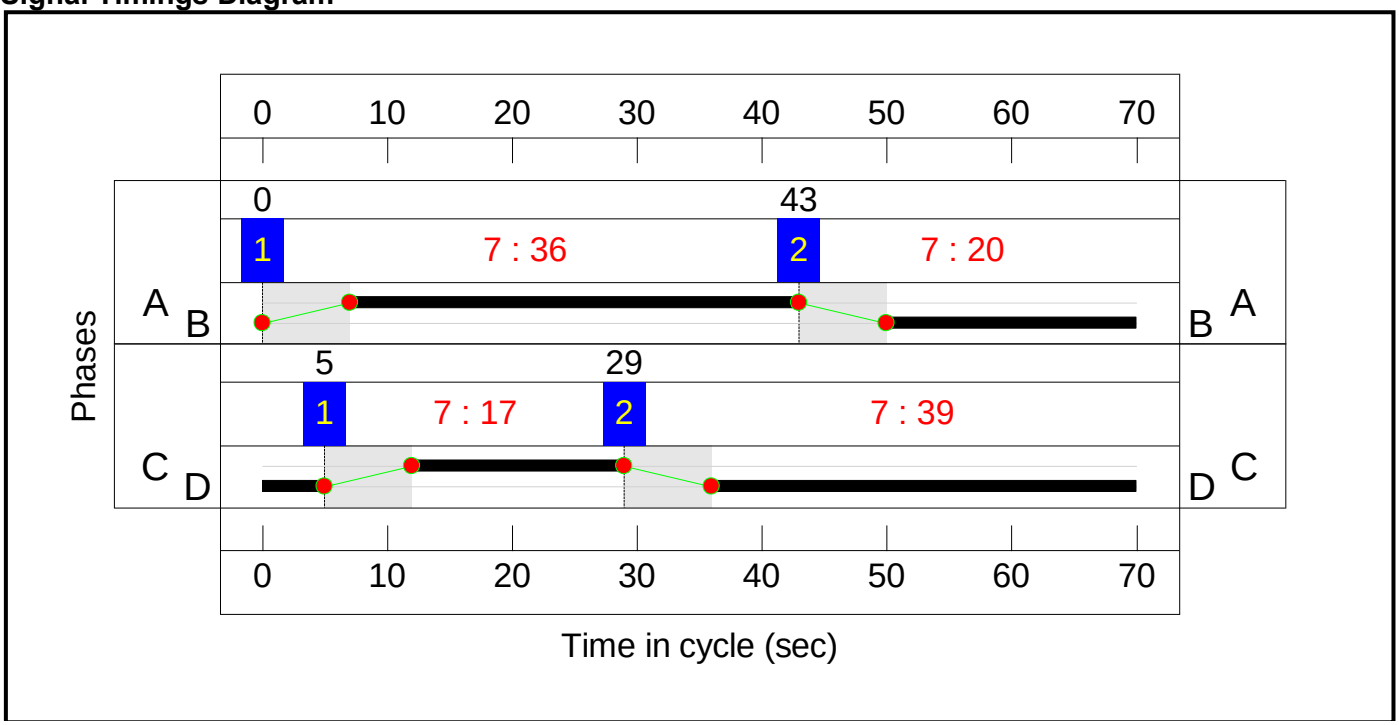
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 36 | 20 |
| Change Point | 0 | 43 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 17 | 39 |
| Change Point | 5 | 29 |

## Signal Timings Diagram

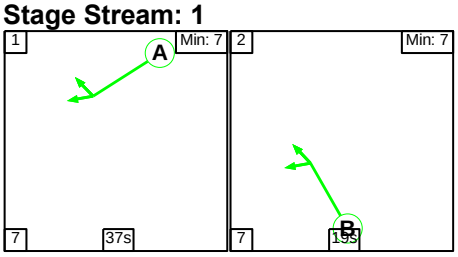


Full Input Data And Results

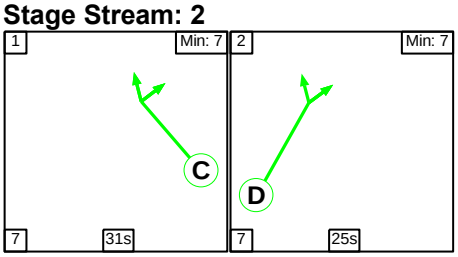
**C2 - M1 J36 Southside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

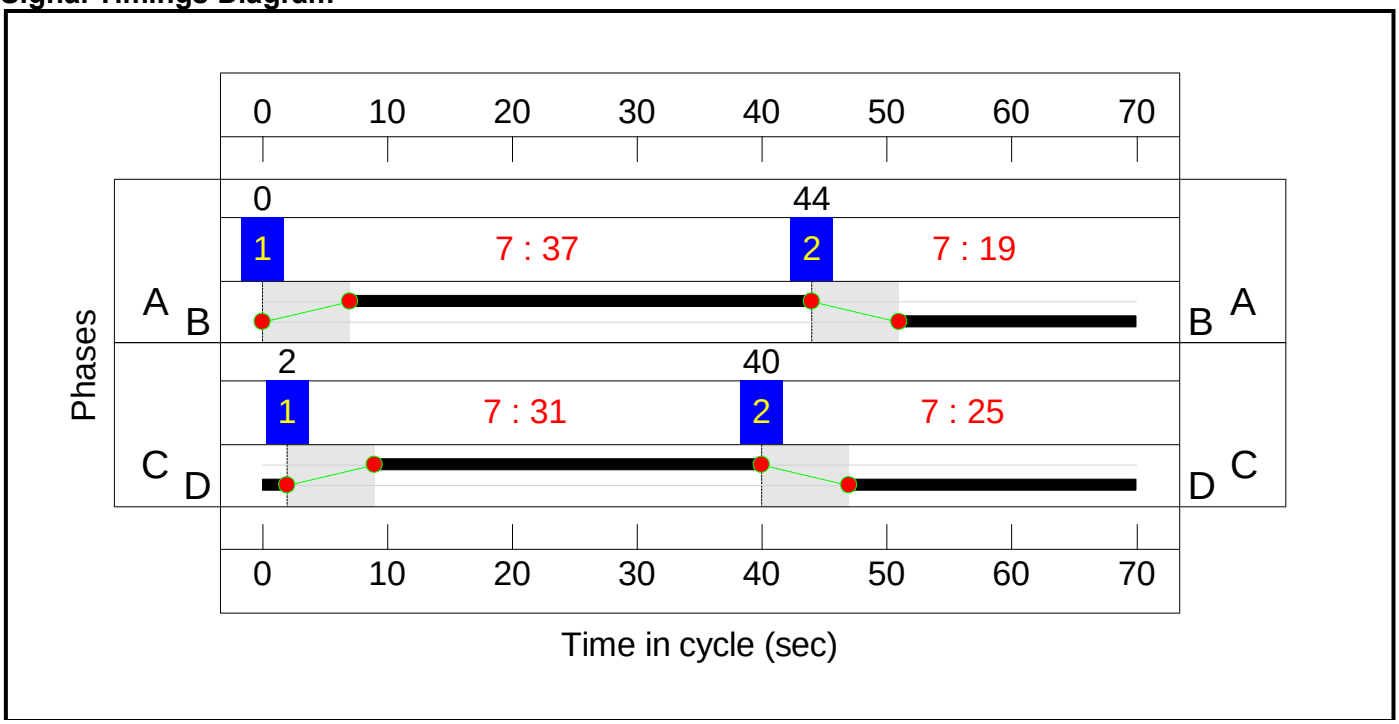
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 37 | 19 |
| Change Point | 0 | 44 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 31 | 25 |
| Change Point | 2 | 40 |

## Signal Timings Diagram

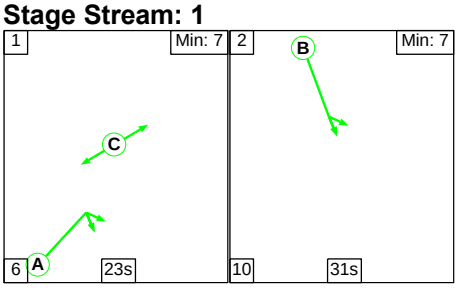


Full Input Data And Results

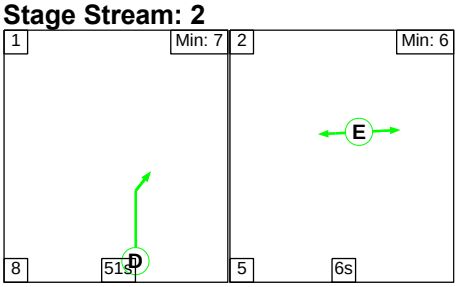
## C3 - Birdwell North

## Stage Sequence Diagram

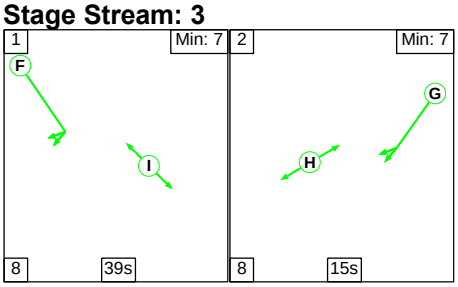
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 23 | 31 |
| Change Point | 65 | 24 |

### Stage Stream: 2

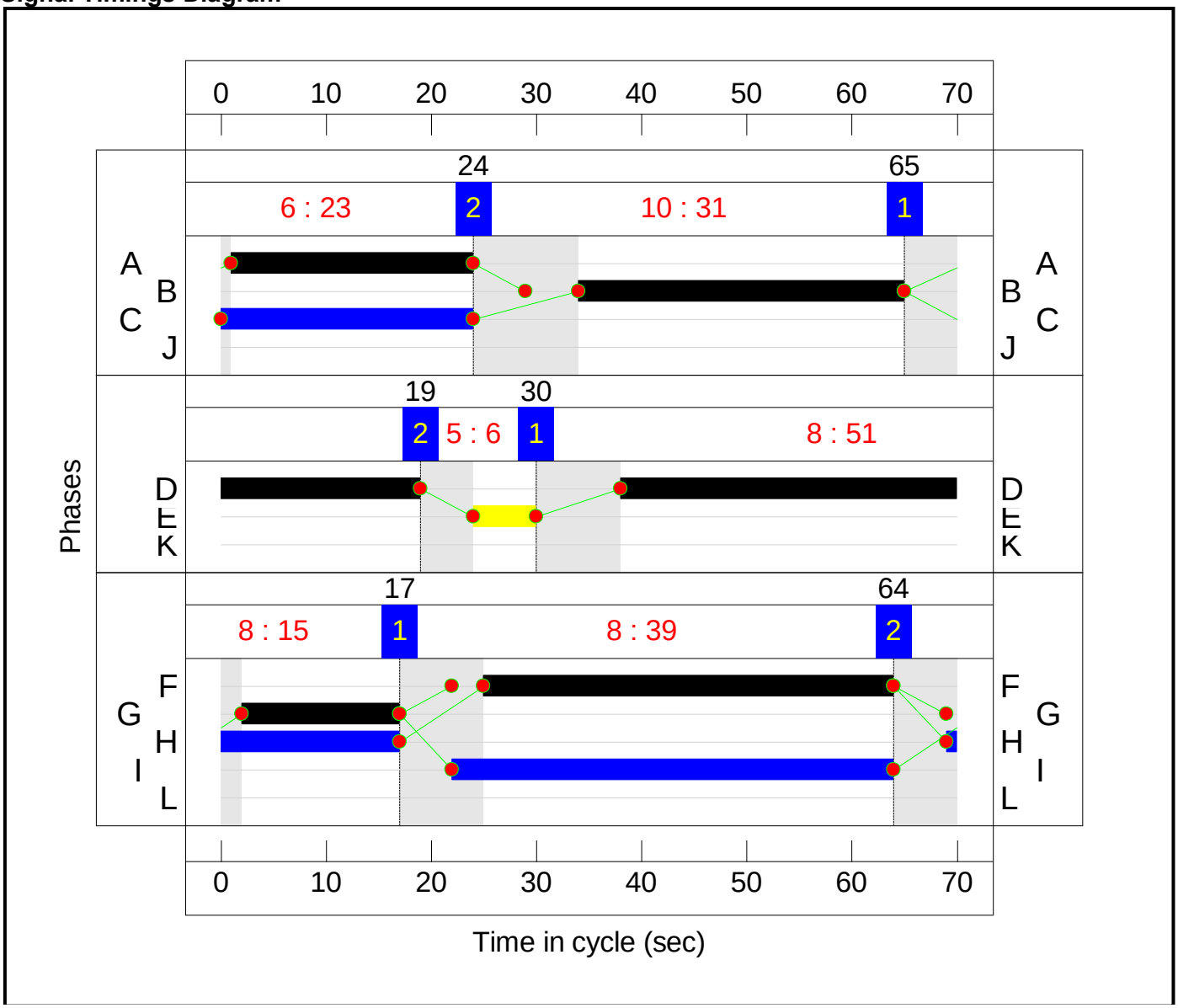
| Stage | 1 | 2 |
|---|---|---|
| Duration | 51 | 6 |
| Change Point | 30 | 19 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 39 | 15 |
| Change Point | 17 | 64 |

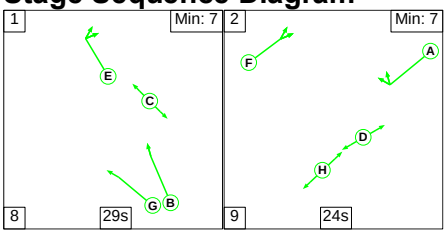
Full Input Data And Results

## Signal Timings Diagram




## C4 - Birdwell South

### Stage Sequence Diagram

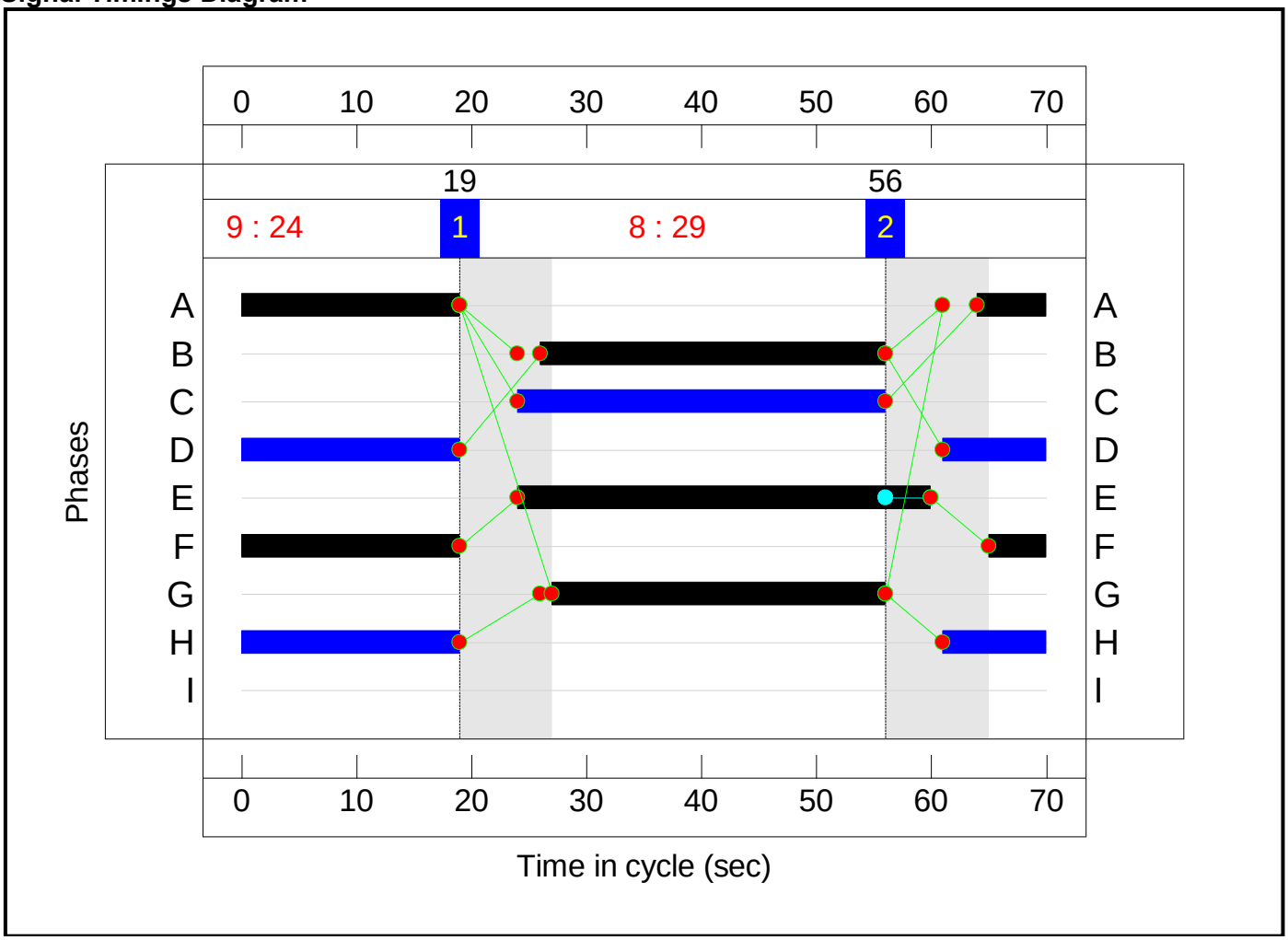



### Stage Timings

| Stage | 1 | 2 |
|---|---|---|
| Duration | 29 | 24 |
| Change Point | 19 | 56 |

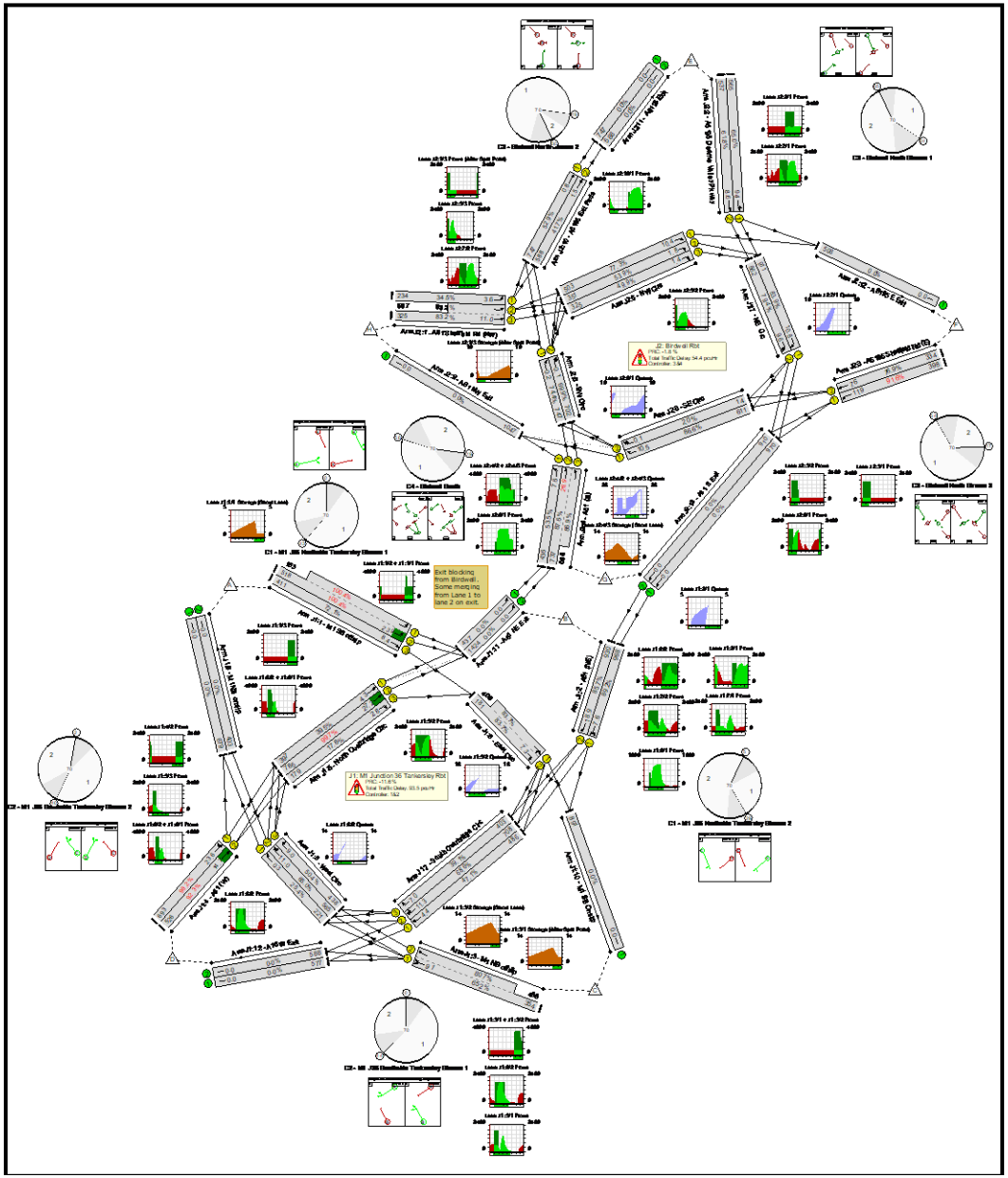
Full Input Data And Results

**Signal Timings Diagram**



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

## Network Results

Full Input Data And 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **100.4%** |
| **J1: M1 Junction 36 Tankersley Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **100.4%** |
| 1/2+1/1 | M1 SB offslip Left | U | 1:1 | N/A | C1:B | | 1 | 20 | - | 681 | 1900:1900 | 516+162 | 100.4 : 100.4% |
| 1/3 | M1 SB offslip Ahead | U | 1:1 | N/A | C1:B | | 1 | 20 | - | 411 | 1900 | 570 | 72.1% |
| 2/1 | A61 (NE) Ahead Ahead2 | U | 1:2 | N/A | C1:D | | 1 | 39 | - | 968 | 1900 | 1086 | 89.2% |
| 2/2 | A61 (NE) Ahead | U | 1:2 | N/A | C1:D | | 1 | 39 | - | 930 | 1900 | 1086 | 85.7% |
| 3/1+3/2 | M1 NB offslip Ahead Ahead2 | U | 2:1 | N/A | C2:B | | 1 | 19 | - | 792 | 1900:1900 | 543+543 | 65.2 : 80.7% |
| 4/1 | A61 (W) Ahead Left | U | 2:2 | N/A | C2:D | | 1 | 25 | - | 693 | 1900 | 706 | 98.2% |
| 4/2 | A61 (W) Ahead | U | 2:2 | N/A | C2:D | | 1 | 25 | - | 526 | 1900 | 570 | 92.3% |
| 5/1 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 36 | - | 397 | 1900 | 1004 | 39.5% |
| 5/2 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 36 | - | 785 | 1900 | 787 | 99.7% |
| 5/3 | North Overbridge Circ Right | U | 1:1 | N/A | C1:A | | 1 | 36 | - | 179 | 1900 | 1004 | 17.8% |
| 6/2+6/1 | East Circ Right Ahead | U | 1:2 | N/A | C1:C | | 1 | 17 | - | 590 | 1900:1900 | 216+489 | 83.7 : 83.7% |
| 7/1 | South Overbridge Circ Ahead | U | 2:1 | N/A | C2:A | | 1 | 37 | - | 486 | 1900 | 1031 | 47.1% |
| 7/2 | South Overbridge Circ Right Ahead | U | 2:1 | N/A | C2:A | | 1 | 37 | - | 708 | 1900 | 1031 | 68.6% |
| 7/3 | South Overbridge Circ Right | U | 2:1 | N/A | C2:A | | 1 | 37 | - | 403 | 1900 | 1031 | 39.1% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8/1 | West Circ Ahead | U | 2:2 | N/A | C2:C | | 1 | 31 | - | 221 | 1900 | 869 | 25.4% |
| 8/2 | West Circ Right Ahead | U | 2:2 | N/A | C2:C | | 1 | 31 | - | 565 | 1900 | 869 | 65.0% |
| 8/3 | West Circ Right | U | 2:2 | N/A | C2:C | | 1 | 31 | - | 438 | 1900 | 869 | 50.4% |
| 9/1 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 679 | Inf | Inf | 0.0% |
| 9/2 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 403 | Inf | Inf | 0.0% |
| 10/1 | M1 SB Onslip | U | N/A | N/A | - | | - | - | - | 891 | Inf | Inf | 0.0% |
| 11/1 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 437 | Inf | Inf | 0.0% |
| 11/2 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 1426 | Inf | Inf | 0.0% |
| 12/1 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 577 | Inf | Inf | 0.0% |
| 12/2 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 588 | Inf | Inf | 0.0% |
| **J2: Birdwell Rbt** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **91.6%** |
| 1/1 | A61 Sheffield Rd (NW) Left | U | N/A | N/A | C4:F | | 1 | 24 | - | 234 | 1900 | 679 | 34.5% |
| 1/3+1/2 | A61 Sheffield Rd (NW) Ahead | U | N/A | N/A | C4:F | | 1 | 24 | - | 832 | 1900:1900 | 390+609 | 83.2 : 83.2% |
| 2/1 | A6195 Dearne Valley Pkway Ahead Left | U | 3:1 | N/A | C3:B | | 1 | 31 | - | 565 | 1900 | 869 | 65.0% |
| 2/2 | A6195 Dearne Valley Pkway Ahead | U | 3:1 | N/A | C3:B | | 1 | 31 | - | 537 | 1900 | 869 | 61.8% |
| 3/1 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 15 | - | 398 | 1900 | 434 | 91.6% |
| 3/2 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 15 | - | 334 | 1900 | 434 | 76.9% |
| 4/1 | A61 (S) Left | U | N/A | N/A | C4:G | | 1 | 29 | - | 436 | 1900 | 814 | 53.5% |
| 4/2+4/3 | A61 (S) Ahead | U | N/A | N/A | C4:B | | 1 | 30 | - | 1437 | 1900:1900 | 841+803 | 87.6 : 86.9% |
| 5/1 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 23 | - | 504 | 1900 | 651 | 77.3% |
| 5/2 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 23 | - | 351 | 1900 | 651 | 53.9% |
| 5/3 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 23 | - | 325 | 1900 | 651 | 49.9% |
| 6/1 | SW Circ Right | U | N/A | N/A | C4:E | | 1 | 36 | - | 748 | 1900 | 1004 | 74.4% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/2 | SW Circ Right Right2 | U | N/A | N/A | C4:E | | 1 | 36 | - | 703 | 1900 | 1004 | 69.9% |
| 7/1 | NE Circ Right | U | 3:3 | N/A | C3:F | | 1 | 39 | - | 911 | 1900 | 1086 | 83.9% |
| 7/2 | NE Circ Right Right2 | U | 3:3 | N/A | C3:F | | 1 | 39 | - | 862 | 1900 | 1086 | 79.4% |
| 8/1 | SE Circ Right | U | N/A | N/A | C4:A | | 1 | 25 | - | 611 | 1900 | 706 | 86.6% |
| 8/2 | SE Circ Right Right2 | U | N/A | N/A | C4:A | | 1 | 25 | - | 14 | 1900 | 706 | 2.0% |
| 9/1 | A61 NW Exit | U | N/A | N/A | - | | - | - | - | 1047 | Inf | Inf | 0.0% |
| 10/1 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 748 | 1900 | 1411 | 52.9% |
| 10/2 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 589 | 1900 | 1411 | 41.7% |
| 11/1 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 748 | Inf | Inf | 0.0% |
| 11/2 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 589 | Inf | Inf | 0.0% |
| 12/1 | A6195 E Exit | U | N/A | N/A | - | | - | - | - | 509 | Inf | Inf | 0.0% |
| 13/1 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 970 | Inf | Inf | 0.0% |
| 13/2 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 910 | Inf | Inf | 0.0% |

Full Input Data And Results

| 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **67.5** | **80.4** | **0.0** | **147.9** | **-** | **-** | **-** | **-** |
| **J1: M1 Junction 36 Tankersley Rbt** | **-** | **-** | **0** | **0** | **0** | **35.2** | **58.3** | **0.0** | **93.5** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 681 | 679 | - | - | - | 4.6 | 13.8 | - | 18.4 (14.2+4.2) | 97.2 (98.9:91.8) | 10.1 | 13.8 | 23.9 |
| 1/3 | 411 | 411 | - | - | - | 2.5 | 1.3 | - | 3.8 | 33.0 | 7.1 | 1.3 | 8.4 |
| 2/1 | 968 | 968 | - | - | - | 1.0 | 3.9 | - | 4.9 | 18.2 | 3.8 | 3.9 | 7.6 |
| 2/2 | 930 | 930 | - | - | - | 2.5 | 2.9 | - | 5.3 | 20.6 | 16.0 | 2.9 | 18.9 |
| 3/1+3/2 | 792 | 792 | - | - | - | 5.0 | 1.3 | - | 6.3 (2.8+3.6) | 28.7 (28.0:29.3) | 7.8 | 1.3 | 9.1 |
| 4/1 | 693 | 693 | - | - | - | 4.2 | 10.4 | - | 14.6 | 75.6 | 13.3 | 10.4 | 23.6 |
| 4/2 | 526 | 526 | - | - | - | 3.5 | 4.9 | - | 8.4 | 57.2 | 9.8 | 4.9 | 14.7 |
| 5/1 | 397 | 397 | - | - | - | 0.5 | 0.3 | - | 0.8 | 7.3 | 4.0 | 0.3 | 4.3 |
| 5/2 | 785 | 785 | - | - | - | 2.2 | 13.5 | - | 15.7 | 72.0 | 13.7 | 13.5 | 27.2 |
| 5/3 | 179 | 179 | - | - | - | 0.2 | 0.1 | - | 0.3 | 6.7 | 2.7 | 0.1 | 2.8 |
| 6/2+6/1 | 590 | 590 | - | - | - | 1.8 | 2.5 | - | 4.3 (1.4+2.9) | 26.2 (27.8:25.4) | 4.9 | 2.5 | 7.3 |
| 7/1 | 486 | 486 | - | - | - | 0.8 | 0.4 | - | 1.3 | 9.3 | 4.0 | 0.4 | 4.4 |
| 7/2 | 708 | 708 | - | - | - | 1.9 | 1.1 | - | 3.0 | 15.1 | 10.2 | 1.1 | 11.3 |
| 7/3 | 403 | 403 | - | - | - | 1.0 | 0.3 | - | 1.3 | 11.8 | 6.6 | 0.3 | 7.0 |
| 8/1 | 221 | 221 | - | - | - | 0.0 | 0.2 | - | 0.2 | 3.5 | 0.1 | 0.2 | 0.3 |
| 8/2 | 565 | 565 | - | - | - | 1.0 | 0.9 | - | 1.9 | 12.2 | 10.0 | 0.9 | 11.0 |
| 8/3 | 438 | 438 | - | - | - | 2.6 | 0.5 | - | 3.1 | 25.3 | 8.5 | 0.5 | 9.0 |
| 9/1 | 679 | 679 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 403 | 403 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 891 | 891 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/1 | 437 | 437 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 1424 | 1424 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 577 | 577 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/2 | 588 | 588 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **J2: Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **32.3** | **22.1** | **0.0** | **54.4** | **-** | **-** | **-** | **-** |
| 1/1 | 234 | 234 | - | - | - | 1.1 | 0.3 | - | 1.3 | 20.6 | 3.3 | 0.3 | 3.6 |
| 1/3+1/2 | 832 | 832 | - | - | - | 4.4 | 2.4 | - | 6.8 (2.5+4.2) | 29.3 (27.9:30.2) | 8.6 | 2.4 | 11.0 |
| 2/1 | 565 | 565 | - | - | - | 2.3 | 0.9 | - | 3.2 | 20.6 | 8.5 | 0.9 | 9.4 |
| 2/2 | 537 | 537 | - | - | - | 2.1 | 0.8 | - | 3.0 | 19.8 | 7.8 | 0.8 | 8.6 |
| 3/1 | 398 | 398 | - | - | - | 2.9 | 4.4 | - | 7.3 | 66.3 | 7.5 | 4.4 | 11.9 |
| 3/2 | 334 | 334 | - | - | - | 2.3 | 1.6 | - | 4.0 | 42.7 | 6.0 | 1.6 | 7.6 |
| 4/1 | 436 | 436 | - | - | - | 1.8 | 0.6 | - | 2.4 | 19.5 | 7.0 | 0.6 | 7.6 |
| 4/2+4/3 | 1435 | 1435 | - | - | - | 5.3 | 0.0 | - | 5.3 (2.8+2.5) | 13.2 (13.4:13.0) | 26.9 | 0.0 | 26.9 |
| 5/1 | 503 | 503 | - | - | - | 2.6 | 1.7 | - | 4.3 | 30.6 | 8.7 | 1.7 | 10.4 |
| 5/2 | 351 | 351 | - | - | - | 0.7 | 0.6 | - | 1.3 | 13.4 | 1.2 | 0.6 | 1.8 |
| 5/3 | 325 | 325 | - | - | - | 0.5 | 0.5 | - | 1.0 | 11.2 | 0.9 | 0.5 | 1.4 |
| 6/1 | 747 | 747 | - | - | - | 0.1 | 0.0 | - | 0.1 | 0.3 | 0.2 | 0.0 | 0.2 |
| 6/2 | 702 | 702 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.2 | 0.1 | 0.0 | 0.1 |
| 7/1 | 911 | 911 | - | - | - | 1.8 | 2.5 | - | 4.3 | 17.1 | 8.2 | 2.5 | 10.8 |
| 7/2 | 862 | 862 | - | - | - | 1.7 | 1.9 | - | 3.6 | 15.1 | 7.7 | 1.9 | 9.6 |
| 8/1 | 611 | 611 | - | - | - | 2.4 | 3.0 | - | 5.4 | 32.0 | 7.5 | 3.0 | 10.5 |
| 8/2 | 14 | 14 | - | - | - | 0.0 | 0.0 | - | 0.1 | 14.1 | 0.1 | 0.0 | 0.1 |
| 9/1 | 1047 | 1047 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 747 | 747 | - | - | - | 0.0 | 0.6 | - | 0.6 | 2.8 | 0.2 | 0.6 | 0.8 |
| 10/2 | 588 | 588 | - | - | - | 0.2 | 0.4 | - | 0.5 | 3.2 | 1.2 | 0.4 | 1.5 |
| 11/1 | 747 | 747 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 588 | 588 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 508 | 508 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13/1 | 970 | 970 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

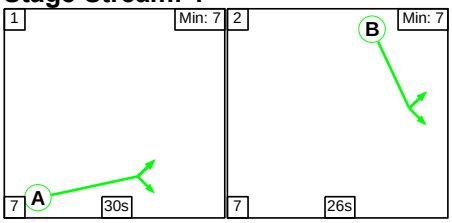
| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13/2 | 910 | 910 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 - M1 J36 Northside Tankersley | Stream: 1 PRC for Signalled Lanes (%): | -11.6 | Total Delay for Signalled Lanes (pcuHr): | 39.01 | Cycle Time (s): | 70 |
| C1 - M1 J36 Northside Tankersley | Stream: 2 PRC for Signalled Lanes (%): | 0.9 | Total Delay for Signalled Lanes (pcuHr): | 14.50 | Cycle Time (s): | 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 1 PRC for Signalled Lanes (%): | 11.5 | Total Delay for Signalled Lanes (pcuHr): | 11.88 | Cycle Time (s): | 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 2 PRC for Signalled Lanes (%): | -9.1 | Total Delay for Signalled Lanes (pcuHr): | 28.12 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 1 PRC for Signalled Lanes (%): | 16.5 | Total Delay for Signalled Lanes (pcuHr): | 12.78 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 2 PRC for Signalled Lanes (%): | 70.1 | Total Delay for Signalled Lanes (pcuHr): | 1.09 | Cycle Time (s): | 70 |
| C3 - Birdwell North | Stream: 3 PRC for Signalled Lanes (%): | -1.8 | Total Delay for Signalled Lanes (pcuHr): | 19.22 | Cycle Time (s): | 70 |
| C4 - Birdwell South | PRC for Signalled Lanes (%): | 2.8 | Total Delay for Signalled Lanes (pcuHr): | 21.30 | Cycle Time (s): | 70 |
| | PRC Over All Lanes (%): | -11.6 | Total Delay Over All Lanes(pcuHr): | 147.90 | | |

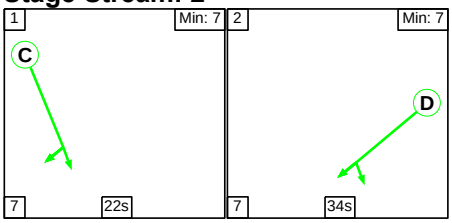
Full Input Data And Results
**Scenario 10: '10'** (FG10: '2024 PM Do Something', Plan 1: 'Network Control Plan 1')
**C1 - M1 J36 Northside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

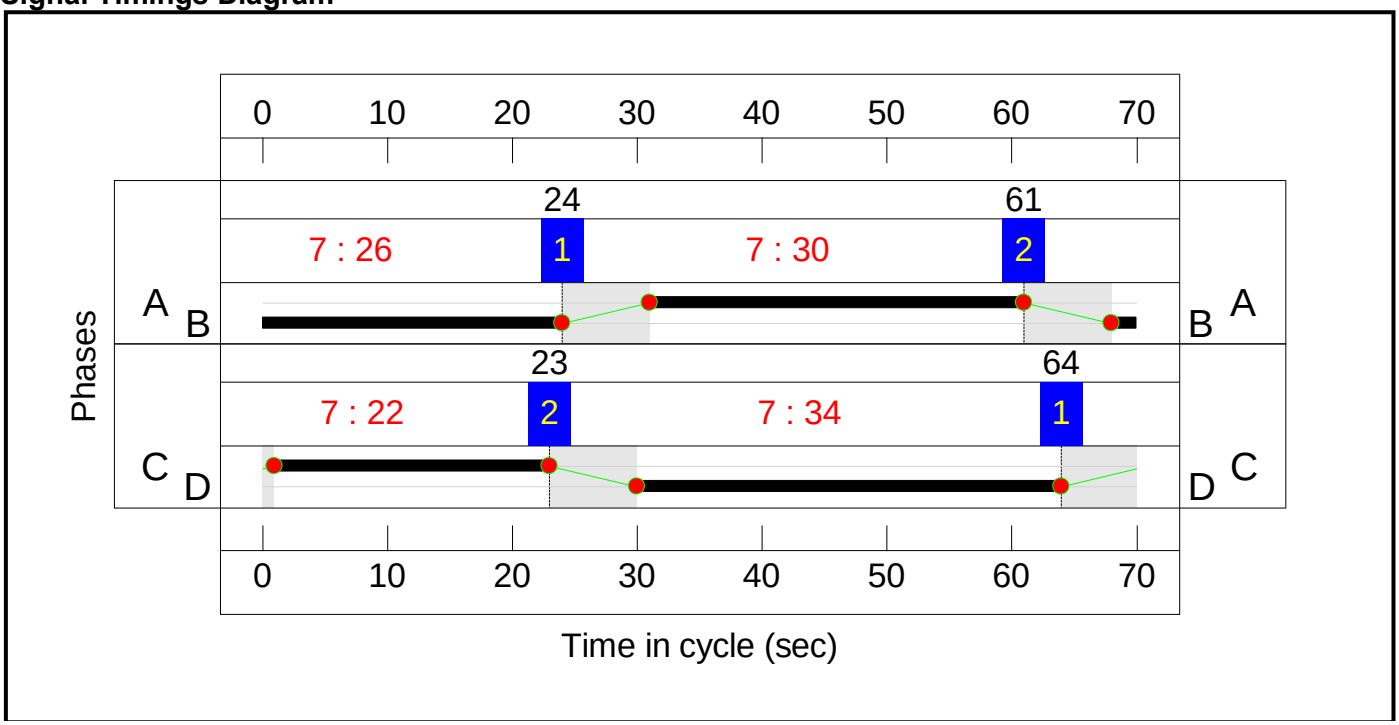
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 30 | 26 |
| Change Point | 24 | 61 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 22 | 34 |
| Change Point | 64 | 23 |

## Signal Timings Diagram

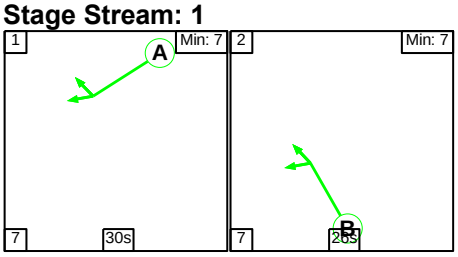


Full Input Data And Results

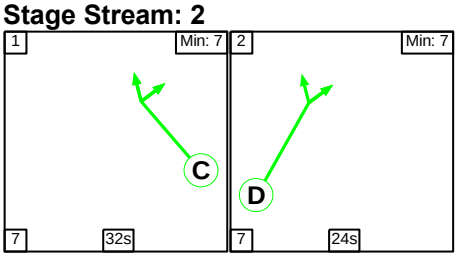
**C2 - M1 J36 Southside Tankersley**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

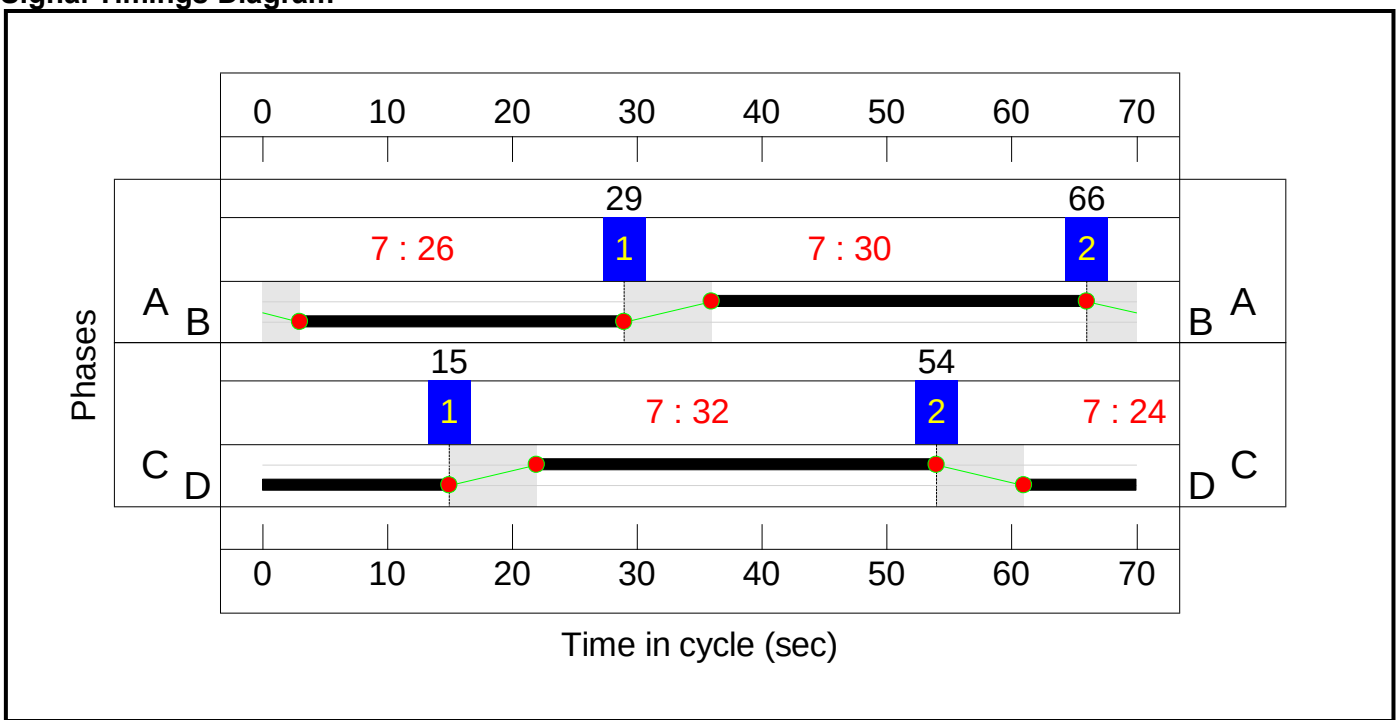
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 30 | 26 |
| Change Point | 29 | 66 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 32 | 24 |
| Change Point | 15 | 54 |

## Signal Timings Diagram

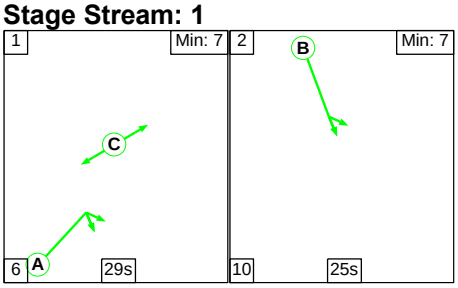


Full Input Data And Results

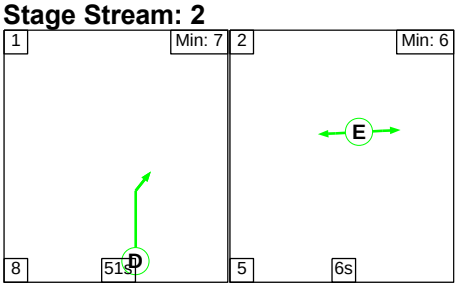
## C3 - Birdwell North

## Stage Sequence Diagram

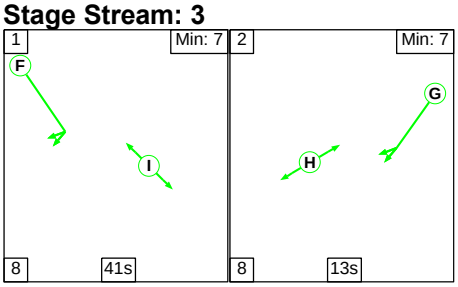
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 29 | 25 |
| Change Point | 63 | 28 |

### Stage Stream: 2

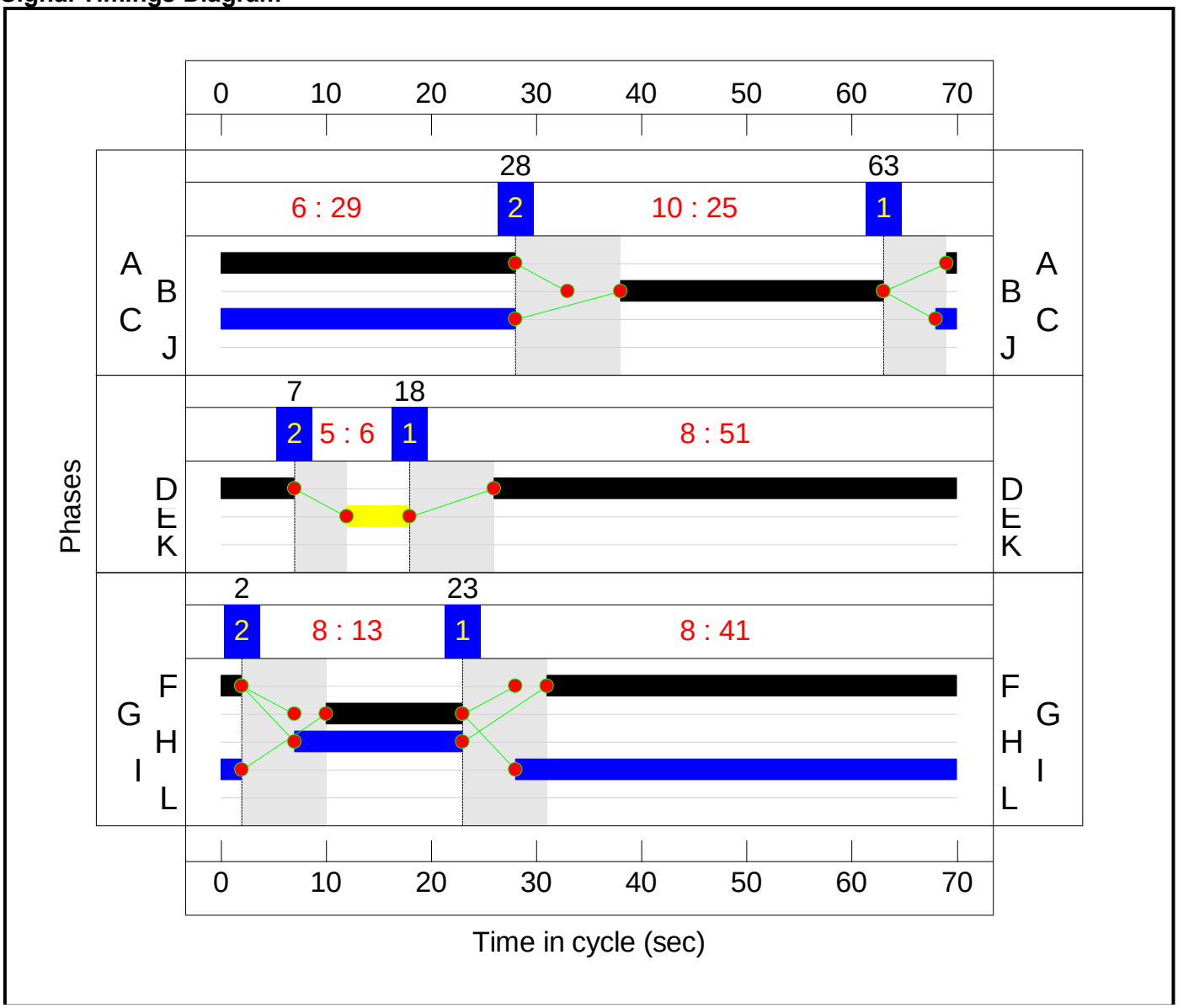
| Stage | 1 | 2 |
|---|---|---|
| Duration | 51 | 6 |
| Change Point | 18 | 7 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 41 | 13 |
| Change Point | 23 | 2 |

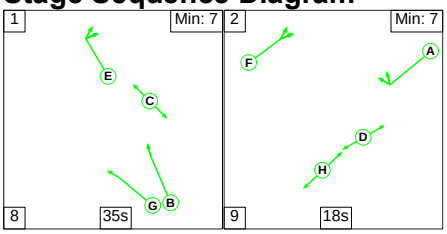
Full Input Data And Results

## Signal Timings Diagram




## C4 - Birdwell South

### Stage Sequence Diagram

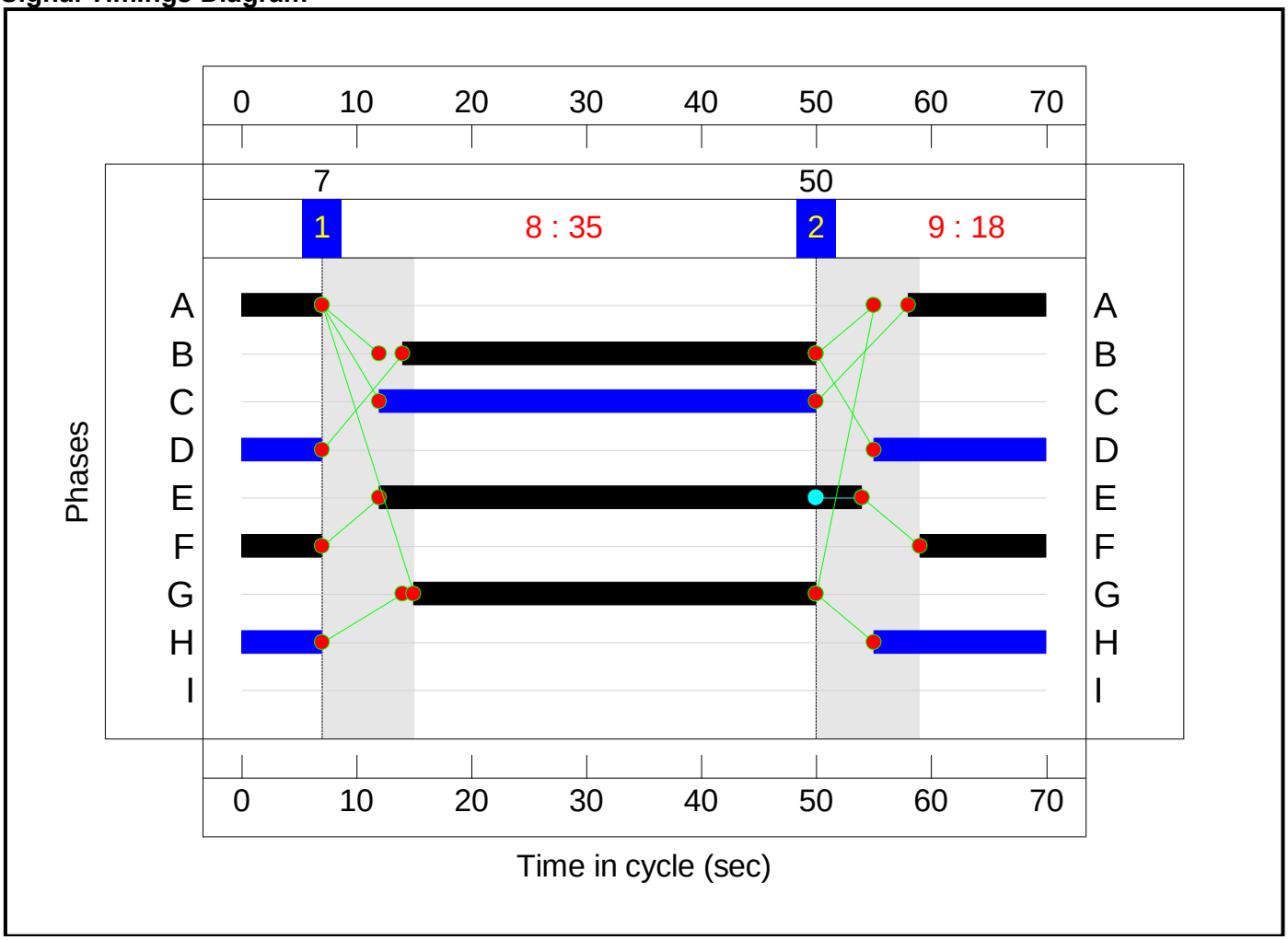



### Stage Timings

| Stage | 1 | 2 |
|---|---|---|
| Duration | 35 | 18 |
| Change Point | 7 | 50 |

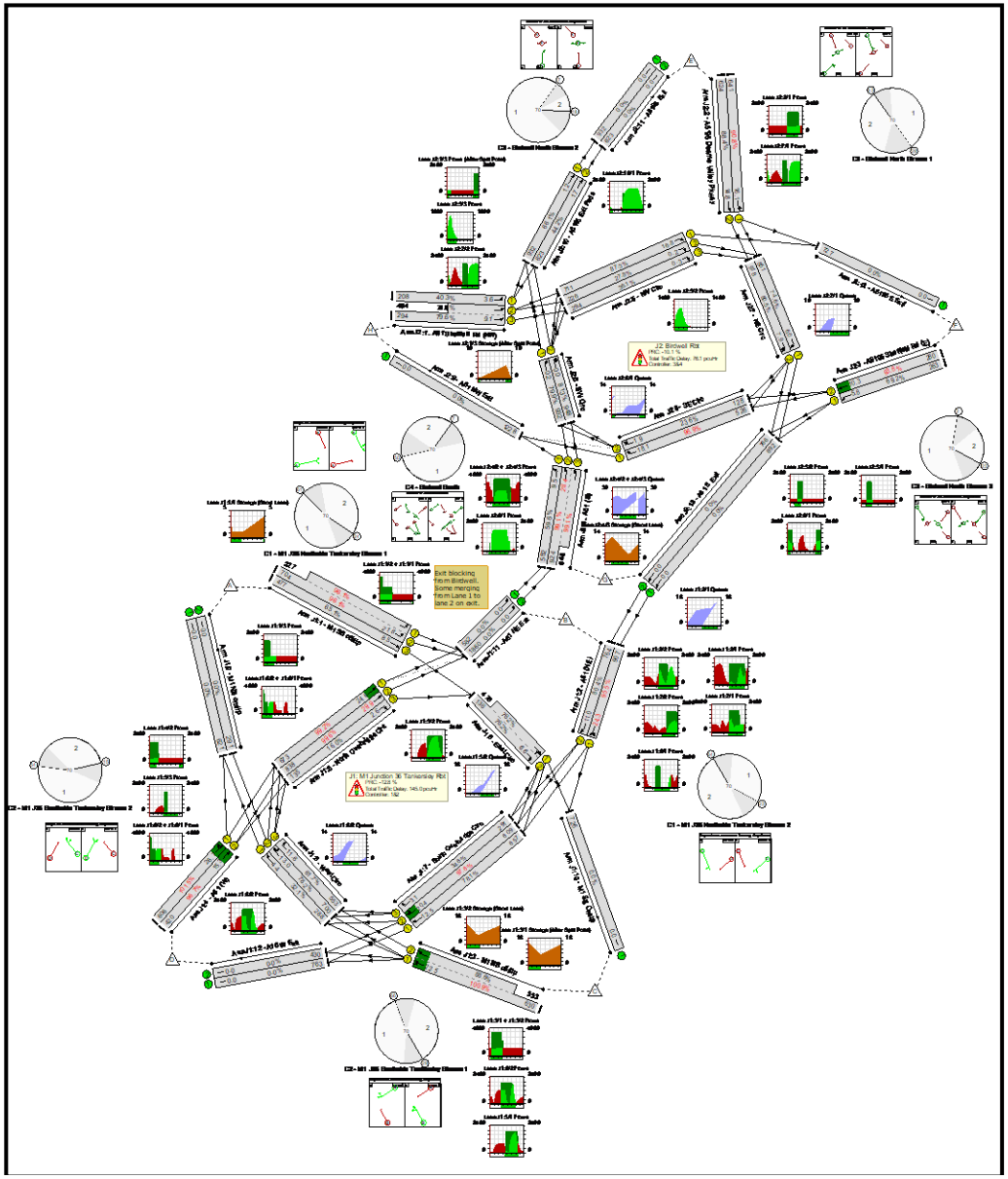
Full Input Data And Results

**Signal Timings Diagram**



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

## Network Results

Full Input Data And 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **101.5%** |
| **J1: M1 Junction 36 Tankersley Rbt** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **101.5%** |
| 1/2+1/1 | M1 SB offslip Left | U | 1:1 | N/A | C1:B | | 1 | 26 | - | 931 | 1900:1900 | 733+236 | 96.1 : 96.1% |
| 1/3 | M1 SB offslip Ahead | U | 1:1 | N/A | C1:B | | 1 | 26 | - | 477 | 1900 | 733 | 65.1% |
| 2/1 | A61 (NE) Ahead Ahead2 | U | 1:2 | N/A | C1:D | | 1 | 34 | - | 907 | 1900 | 950 | 95.5% |
| 2/2 | A61 (NE) Ahead | U | 1:2 | N/A | C1:D | | 1 | 34 | - | 764 | 1900 | 950 | 80.4% |
| 3/1+3/2 | M1 NB offslip Ahead Ahead2 | U | 2:1 | N/A | C2:B | | 1 | 26 | - | 1183 | 1900:1900 | 624+624 | 100.9 : 88.6% |
| 4/1 | A61 (W) Ahead Left | U | 2:2 | N/A | C2:D | | 1 | 24 | - | 606 | 1900 | 597 | 101.5% |
| 4/2 | A61 (W) Ahead | U | 2:2 | N/A | C2:D | | 1 | 24 | - | 420 | 1900 | 434 | 96.7% |
| 5/1 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 30 | - | 681 | 1900 | 679 | 99.2% |
| 5/2 | North Overbridge Circ Ahead | U | 1:1 | N/A | C1:A | | 1 | 30 | - | 838 | 1900 | 841 | 99.6% |
| 5/3 | North Overbridge Circ Right | U | 1:1 | N/A | C1:A | | 1 | 30 | - | 135 | 1900 | 841 | 16.0% |
| 6/2+6/1 | East Circ Right Ahead | U | 1:2 | N/A | C1:C | | 1 | 22 | - | 612 | 1900:1900 | 178+624 | 76.2 : 76.2% |
| 7/1 | South Overbridge Circ Ahead | U | 2:1 | N/A | C2:A | | 1 | 30 | - | 657 | 1900 | 841 | 78.1% |
| 7/2 | South Overbridge Circ Right Ahead | U | 2:1 | N/A | C2:A | | 1 | 30 | - | 609 | 1900 | 624 | 97.6% |
| 7/3 | South Overbridge Circ Right | U | 2:1 | N/A | C2:A | | 1 | 30 | - | 291 | 1900 | 841 | 34.6% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8/1 | West Circ Ahead | U | 2:2 | N/A | C2:C | | 1 | 32 | - | 288 | 1900 | 896 | 32.1% |
| 8/2 | West Circ Right Ahead | U | 2:2 | N/A | C2:C | | 1 | 32 | - | 704 | 1900 | 896 | 78.2% |
| 8/3 | West Circ Right | U | 2:2 | N/A | C2:C | | 1 | 32 | - | 553 | 1900 | 896 | 61.7% |
| 9/1 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 626 | Inf | Inf | 0.0% |
| 9/2 | M1 NB onslip | U | N/A | N/A | - | | - | - | - | 291 | Inf | Inf | 0.0% |
| 10/1 | M1 SB Onslip | U | N/A | N/A | - | | - | - | - | 726 | Inf | Inf | 0.0% |
| 11/1 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 587 | Inf | Inf | 0.0% |
| 11/2 | A61 NE Exit Ahead | U | N/A | N/A | - | | - | - | - | 1863 | Inf | Inf | 0.0% |
| 12/1 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 764 | Inf | Inf | 0.0% |
| 12/2 | A16 W Exit | U | N/A | N/A | - | | - | - | - | 431 | Inf | Inf | 0.0% |
| **J2: Birdwell Rbt** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **99.1%** |
| 1/1 | A61 Sheffield Rd (NW) Left | U | N/A | N/A | C4:F | | 1 | 18 | - | 208 | 1900 | 516 | 40.3% |
| 1/3+1/2 | A61 Sheffield Rd (NW) Ahead | U | N/A | N/A | C4:F | | 1 | 18 | - | 698 | 1900:1900 | 369+507 | 79.6 : 79.6% |
| 2/1 | A6195 Dearne Valley Pkway Ahead Left | U | 3:1 | N/A | C3:B | | 1 | 25 | - | 641 | 1900 | 706 | 90.8% |
| 2/2 | A6195 Dearne Valley Pkway Ahead | U | 3:1 | N/A | C3:B | | 1 | 25 | - | 624 | 1900 | 706 | 88.4% |
| 3/1 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 13 | - | 263 | 1900 | 380 | 69.2% |
| 3/2 | A6195 Sheffield Rd (E) Ahead | U | 3:3 | N/A | C3:G | | 1 | 13 | - | 280 | 1900 | 299 | 93.8% |
| 4/1 | A61 (S) Left | U | N/A | N/A | C4:G | | 1 | 35 | - | 587 | 1900 | 977 | 59.6% |
| 4/2+4/3 | A61 (S) Ahead | U | N/A | N/A | C4:B | | 1 | 36 | - | 1876 | 1900:1900 | 933+958 | 99.1 : 99.1% |
| 5/1 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 29 | - | 712 | 1900 | 814 | 87.3% |
| 5/2 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 29 | - | 226 | 1900 | 814 | 27.8% |
| 5/3 | NW Circ Right | U | 3:1 | N/A | C3:A | | 1 | 29 | - | 294 | 1900 | 814 | 36.1% |
| 6/1 | SW Circ Right | U | N/A | N/A | C4:E | | 1 | 42 | - | 934 | 1900 | 1167 | 79.9% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/2 | SW Circ Right Right2 | U | N/A | N/A | C4:E | | 1 | 42 | - | 950 | 1900 | 1167 | 81.3% |
| 7/1 | NE Circ Right | U | 3:3 | N/A | C3:F | | 1 | 41 | - | 851 | 1900 | 1140 | 74.6% |
| 7/2 | NE Circ Right Right2 | U | 3:3 | N/A | C3:F | | 1 | 41 | - | 918 | 1900 | 1140 | 80.5% |
| 8/1 | SE Circ Right | U | N/A | N/A | C4:A | | 1 | 19 | - | 526 | 1900 | 543 | 96.9% |
| 8/2 | SE Circ Right Right2 | U | N/A | N/A | C4:A | | 1 | 19 | - | 128 | 1900 | 543 | 23.6% |
| 9/1 | A61 NW Exit | U | N/A | N/A | - | | - | - | - | 1233 | Inf | Inf | 0.0% |
| 10/1 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 934 | 1900 | 1411 | 66.1% |
| 10/2 | A6195 Exit Peds Ahead | U | 3:2 | N/A | C3:D | | 1 | 51 | - | 624 | 1900 | 1411 | 44.2% |
| 11/1 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 934 | Inf | Inf | 0.0% |
| 11/2 | A6195 Exit | U | N/A | N/A | - | | - | - | - | 624 | Inf | Inf | 0.0% |
| 12/1 | A6195 E Exit | U | N/A | N/A | - | | - | - | - | 728 | Inf | Inf | 0.0% |
| 13/1 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 892 | Inf | Inf | 0.0% |
| 13/2 | A61 S Exit Ahead | U | N/A | N/A | - | | - | - | - | 766 | Inf | Inf | 0.0% |

Full Input Data And Results

| 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: M1 J36 Tankersley Rbt + Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **95.2** | **125.9** | **0.0** | **221.1** | **-** | **-** | **-** | **-** |
| **J1: M1 Junction 36 Tankersley Rbt** | **-** | **-** | **0** | **0** | **0** | **52.7** | **92.3** | **0.0** | **145.0** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 931 | 931 | - | - | - | 5.0 | 8.5 | - | 13.5 (10.5+3.0) | 52.2 (53.7:47.7) | 13.3 | 8.5 | 21.8 |
| 1/3 | 477 | 477 | - | - | - | 2.3 | 0.9 | - | 3.3 | 24.6 | 7.6 | 0.9 | 8.5 |
| 2/1 | 907 | 907 | - | - | - | 5.8 | 7.8 | - | 13.5 | 53.8 | 16.5 | 7.8 | 24.3 |
| 2/2 | 764 | 764 | - | - | - | 2.4 | 2.0 | - | 4.4 | 20.7 | 9.0 | 2.0 | 11.0 |
| 3/1+3/2 | 1183 | 1177 | - | - | - | 7.6 | 10.2 | - | 17.8 (11.0+6.9) | 54.3 (62.7:44.7) | 12.3 | 10.2 | 22.5 |
| 4/1 | 606 | 597 | - | - | - | 4.4 | 14.7 | - | 19.1 | 113.4 | 12.0 | 14.7 | 26.7 |
| 4/2 | 420 | 420 | - | - | - | 3.1 | 7.3 | - | 10.4 | 89.1 | 8.1 | 7.3 | 15.3 |
| 5/1 | 673 | 673 | - | - | - | 2.1 | 11.7 | - | 13.8 | 73.8 | 12.8 | 11.7 | 24.6 |
| 5/2 | 838 | 838 | - | - | - | 2.1 | 13.6 | - | 15.7 | 67.5 | 16.2 | 13.6 | 29.9 |
| 5/3 | 135 | 135 | - | - | - | 0.4 | 0.1 | - | 0.5 | 13.6 | 2.5 | 0.1 | 2.6 |
| 6/2+6/1 | 612 | 612 | - | - | - | 3.2 | 1.6 | - | 4.7 (0.9+3.8) | 27.9 (24.4:28.9) | 5.0 | 1.6 | 6.6 |
| 7/1 | 657 | 657 | - | - | - | 2.9 | 1.7 | - | 4.7 | 25.5 | 10.8 | 1.7 | 12.5 |
| 7/2 | 609 | 609 | - | - | - | 3.7 | 9.1 | - | 12.8 | 75.7 | 11.3 | 9.1 | 20.4 |
| 7/3 | 291 | 291 | - | - | - | 1.3 | 0.3 | - | 1.5 | 19.1 | 2.9 | 0.3 | 3.1 |
| 8/1 | 288 | 288 | - | - | - | 1.8 | 0.2 | - | 2.1 | 25.8 | 4.2 | 0.2 | 4.4 |
| 8/2 | 700 | 700 | - | - | - | 2.7 | 1.8 | - | 4.4 | 22.8 | 11.2 | 1.8 | 13.0 |
| 8/3 | 553 | 553 | - | - | - | 1.9 | 0.8 | - | 2.7 | 17.4 | 10.8 | 0.8 | 11.6 |
| 9/1 | 621 | 621 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 291 | 291 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 726 | 726 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/1 | 582 | 582 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 1860 | 1860 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 763 | 763 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/2 | 430 | 430 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **J2: Birdwell Rbt** | **-** | **-** | **0** | **0** | **0** | **42.5** | **33.6** | **0.0** | **76.1** | **-** | **-** | **-** | **-** |
| 1/1 | 208 | 208 | - | - | - | 1.2 | 0.3 | - | 1.5 | 26.7 | 3.3 | 0.3 | 3.6 |
| 1/3+1/2 | 698 | 698 | - | - | - | 4.4 | 1.9 | - | 6.4 (2.6+3.8) | 32.8 (31.9:33.5) | 7.2 | 1.9 | 9.1 |
| 2/1 | 641 | 641 | - | - | - | 3.7 | 4.4 | - | 8.1 | 45.4 | 11.8 | 4.4 | 16.1 |
| 2/2 | 624 | 624 | - | - | - | 3.6 | 3.5 | - | 7.1 | 40.9 | 11.3 | 3.5 | 14.8 |
| 3/1 | 263 | 263 | - | - | - | 1.9 | 1.1 | - | 3.0 | 41.1 | 4.7 | 1.1 | 5.8 |
| 3/2 | 280 | 280 | - | - | - | 2.3 | 4.9 | - | 7.2 | 92.5 | 5.4 | 4.9 | 10.3 |
| 4/1 | 582 | 582 | - | - | - | 2.7 | 0.7 | - | 3.5 | 21.4 | 8.8 | 0.7 | 9.5 |
| 4/2+4/3 | 1873 | 1873 | - | - | - | 10.9 | 0.0 | - | 10.9 (5.3+5.6) | 21.0 (20.8:21.2) | 28.4 | 0.0 | 28.4 |
| 5/1 | 711 | 711 | - | - | - | 5.0 | 3.2 | - | 8.2 | 41.6 | 13.5 | 3.2 | 16.8 |
| 5/2 | 226 | 226 | - | - | - | 0.0 | 0.2 | - | 0.2 | 3.3 | 0.0 | 0.2 | 0.2 |
| 5/3 | 294 | 294 | - | - | - | 0.0 | 0.3 | - | 0.3 | 3.6 | 0.0 | 0.3 | 0.3 |
| 6/1 | 932 | 932 | - | - | - | 0.1 | 0.0 | - | 0.1 | 0.2 | 0.2 | 0.0 | 0.2 |
| 6/2 | 948 | 948 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 851 | 851 | - | - | - | 1.2 | 1.5 | - | 2.6 | 11.1 | 4.6 | 1.5 | 6.0 |
| 7/2 | 918 | 918 | - | - | - | 1.7 | 2.0 | - | 3.7 | 14.7 | 5.9 | 2.0 | 7.9 |
| 8/1 | 526 | 526 | - | - | - | 2.9 | 8.0 | - | 10.9 | 74.6 | 10.1 | 8.0 | 18.1 |
| 8/2 | 128 | 128 | - | - | - | 0.7 | 0.2 | - | 0.8 | 23.4 | 1.7 | 0.2 | 1.9 |
| 9/1 | 1228 | 1228 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 932 | 932 | - | - | - | 0.0 | 1.0 | - | 1.0 | 3.8 | 0.2 | 1.0 | 1.2 |
| 10/2 | 623 | 623 | - | - | - | 0.2 | 0.4 | - | 0.6 | 3.6 | 1.3 | 0.4 | 1.7 |
| 11/1 | 932 | 932 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11/2 | 623 | 623 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12/1 | 727 | 727 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13/1 | 892 | 892 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Full Input Data And Results

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13/2 | 766 | 766 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 - M1 J36 Northside Tankersley | Stream: 1 | PRC for Signalled Lanes (%): | -10.7 | Total Delay for Signalled Lanes (pcuHr): | 46.80 | Cycle Time (s): 70 |
| C1 - M1 J36 Northside Tankersley | Stream: 2 | PRC for Signalled Lanes (%): | -6.1 | Total Delay for Signalled Lanes (pcuHr): | 22.68 | Cycle Time (s): 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 1 | PRC for Signalled Lanes (%): | -12.1 | Total Delay for Signalled Lanes (pcuHr): | 36.84 | Cycle Time (s): 70 |
| C2 - M1 J36 Southside Tankersley | Stream: 2 | PRC for Signalled Lanes (%): | -12.8 | Total Delay for Signalled Lanes (pcuHr): | 38.66 | Cycle Time (s): 70 |
| C3 - Birdwell North | Stream: 1 | PRC for Signalled Lanes (%): | -0.9 | Total Delay for Signalled Lanes (pcuHr): | 23.88 | Cycle Time (s): 70 |
| C3 - Birdwell North | Stream: 2 | PRC for Signalled Lanes (%): | 36.2 | Total Delay for Signalled Lanes (pcuHr): | 1.60 | Cycle Time (s): 70 |
| C3 - Birdwell North | Stream: 3 | PRC for Signalled Lanes (%): | -4.2 | Total Delay for Signalled Lanes (pcuHr): | 16.56 | Cycle Time (s): 70 |
| C4 - Birdwell South | | PRC for Signalled Lanes (%): | -10.1 | Total Delay for Signalled Lanes (pcuHr): | 34.08 | Cycle Time (s): 70 |
| | | PRC Over All Lanes (%): | -12.8 | Total Delay Over All Lanes(pcuHr): | 221.11 | |

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