



Proposed Residential Development, Hollins Paper Mill, Darwen

Transport Assessment

July 2017

PROPOSED RESIDENTIAL DEVELOPMENT
HOLLINS PAPER MILL
DARWEN

GLEESONS REGNERATION AND HOMES

TRANSPORT ASSESSMENT

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1.0 INTRODUCTION AND BACKGROUND INFORMATION

- 1.1 This Transport Assessment (TA) has been prepared by Bryan G Hall to support a planning application by Gleeson Regeneration and Homes for residential development at the former Hollins Paper Mill site off Hollins Grove Street, Darwen.
- 1.2 The site is bounded by Hollins Grove Street to the south and east and industrial land to the north and west. The buildings associated with the former Hollins Paper Mill have been demolished. A site location plan is attached at **Appendix BGH1**.
- 1.3 The development proposals are for 151 residential dwellings, however the analysis in this TA assumes a development of 153 dwellings. Access to the development will be provided via the existing priority junction with Hollins Grove Street, which will be amended. Frontage access will be provided to a small number of properties to the southern extents of the site. A copy of the proposed site layout plan is attached at **Appendix BGH2**, which shows 151 dwellings on the site.
- 1.4 This TA has been prepared with reference to the Department for Transport web-based resource 'Planning Practice Guidance' (March 2015) and local guidance contained within the Blackburn with Darwen Borough Local Plan and the Blackburn with Darwen Borough Council Local Transport Plan 3 (2011-2021). It provides information on the access arrangements for the site and determines the impact of the development on the surrounding transport network.
- 1.5 This TA considers the current usage of the local network and assesses its suitability to accommodate the traffic that is likely to be generated by development of the site. The report also considers the historic road safety record of the highway network. It further considers the sustainability and accessibility of the site, including its proximity to local public transport services and the availability of facilities/services within acceptable travelling distances by a variety of transport modes.
- 1.6 A Framework Travel Plan (FTP) has also been prepared by Westgate Consulting Limited, which will accompany this TA. The FTP sets out a number of measures to encourage travel by more sustainable modes to that of the private car, particularly single occupancy car trips.

1.7

Following this introduction, the TA is split into the following sections:

- Section 2** sets out the relevant transport-related planning policies and guidance;
- Section 3** provides a description of the setting of the site and the highway network in the vicinity of the proposed development. This section also considers the current traffic use and road safety characteristics of the local highway network;
- Section 4** describes the accessibility of the site in terms of sustainable modes of transport;
- Section 5** describes the development proposals and proposes the means of access;
- Section 6** sets out the trips by all modes likely to be generated by the development proposals;
- Section 7** provides details of the base operating conditions and the impact of the traffic generated by the proposed development on the local highway network in the vicinity of the site; and
- Section 8** provides a summary and draws conclusions as to the results of the study.

2.0 TRANSPORT POLICY CONSIDERATIONS

National Planning Policy Framework, March 2012

- 2.1 The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how they are expected to be applied. At the heart of the NPPF is a presumption in favour of sustainable development, which the document indicates should be seen as a 'golden thread' running through the decision making process (NPPF para 14).
- 2.2 Within the overarching roles that the planning system ought to play, the NPPF indicates that there are a set of core land use planning principles which should underpin the decision making process (NPPF para 17). Specifically in relation to transport these principles include:
- Actively managing patterns of growth to make the fullest possible use of public transport, walking and cycling, in addition to focussing significant development in locations which are or can be made sustainable.
- 2.3 The NPPF indicates that all developments that generate significant amounts of movement should be supported by a Transport Assessment and the decision making process should take account of whether:
- The opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;
 - Safe and suitable access to the site can be achieved for all people; and
 - Improvements can be undertaken within the transport network that, cost effectively, limit the significant impacts of the development, which should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe (NPPF para 32).
- 2.4 The guidance states that the decision making process should ensure that developments which generate significant movements are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised (NPPF para 34).
- 2.5 It is recommended that development should protect and exploit opportunities for the use of sustainable transport modes for the movement of goods or people. Therefore, developments should be located and designed where practical to, inter alia:

- Give priority to pedestrian/cycle movements and have access to high quality public transport facilities;
- Create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians, avoiding street clutter and where appropriate establishing home zones; and
- Consider the needs of people with disabilities by all modes of transport (NPPF para 35).

2.6 The NPPF indicates that a key tool to facilitate this will be a Travel Plan. All developments which generate significant amounts of movement should be required to provide a Travel Plan (NPPF para 36). A planning condition will be agreed for this site that will stipulate the requirement for a Travel Plan.

2.7 The guidance states that planning policies should aim for a balance of land uses within their area so that people can be encouraged to minimise journey lengths for employment, shopping, leisure, education and other activities (NPPF para 37).

2.8 It is advised that where practical, particularly within large scale developments, key facilities such as local shops should be located within walking distance of most properties (NPPF para 38) and, as will be demonstrated later on in this TA, the proposed development will be within convenient walking distance of a number of local facilities such as food stores, schools, a Health Centre, opticians, dental surgeries and pharmacies among other typical town centre facilities.

Blackburn with Darwen Borough Local Plan (Parts 1 and 2)

2.9 Part 1 of the Blackburn with Darwen Borough Local Plan (the Plan) is the Core Strategy, which was adopted in January 2011. The purpose of the Plan is to express the Council's intentions for development and use of land within the Borough. The document sets out the overall vision for development in the borough, which aims to improve the economy, accessibility and the environment. The following is a quote from the vision:

“A much higher proportion of this skilled workforce will live within the towns of Blackburn and Darwen than is currently the case. High quality new housing will have been developed to meet their needs, much of it close to major public transport routes. Growing numbers of people will choose to live in the inner urban areas of Blackburn and Darwen, which will have seen a greater level of high quality private housing development than has been the case previously.”

2.10 The Core Strategy sets out a number of Policies which the Council are to take into account when considering proposed new development, to ensure that the vision is achieved. Policy CS22: Accessibility Strategy is applicable to this TA, and sets out that:

“1. New development will be located so as to minimise the need to travel, and so as to easily be accessed by non-car means including public transport, walking and cycling. Key accessible locations are those shown on the Access to Jobs and Services diagram, namely:

i. The Borough’s five main transport “Hubs”: Blackburn and Darwen Town Centres; Ewood; Royal Blackburn Hospital / Shadsworth; and Whitebirk

ii. Accessibility Corridors: The A678 and Furthergate / Burnley Road (part of the Pennine Reach public transport route); the A679 Accrington Road; the A674 Preston Old Road; and the A666 through Darwen (also part of the Pennine Reach route).

Development which is poorly accessible by non-car means will only be permitted in exceptional circumstances.

2. Where development is permitted in a less accessible location due to other considerations, or where it is likely to generate significant numbers of car journeys, the Council will expect the development to be accompanied by measures to improve accessibility by non-car means. This will normally be implemented through an in-kind or financial contribution from the developer, and may be supplemented through the Council’s own investment programme.

3. Major development proposals of all types must be accompanied by proposals to limit or reduce the number of car journeys generated. Development will only (be) permitted where it does not generate unacceptable levels.”

2.11 Part 2 of the Plan was adopted in December 2015, and builds on Part 1 by setting out Site Allocations and Development Management Policies. Policy 10 Accessibility and Transport sets out the approach for managing the transport implications of a proposed development.

“1. Development for uses that are likely to generate large numbers of trips, other than developments specifically allowed for by other policies, will only be permitted in locations which are conveniently accessible by existing or proposed public transport services.

2. *With an application for development which would attract large numbers of people on a regular basis and create a significant negative impact on the transport network, or where severe problems already exist on the network, the Council will work with the developer to formulate, implement and monitor a Travel Plan setting out the measures that the developer, either alone or in conjunction with neighbouring uses, shall adopt to reduce reliance on the use of the private car for journeys to and from the site.*

3. *Development will be permitted provided it has been demonstrated that:*

i) road safety and the safe, efficient and convenient movement of all highway users (including bus passengers, refuse collection vehicles, the emergency services, cyclists and pedestrians) is not prejudiced;

ii) appropriate provision is made for vehicular access, off-street servicing and parking in accordance with the Council's adopted standards;

iii) access by public transport is catered for either by providing for bus access into the site where appropriate, or by ensuring that safe and convenient access exists to the nearest public facility;

iv) measures are included to encourage access on foot and by bicycle;

v) the development does not directly affect any public right of way, unless the right of way is maintained or the proposal provides for its replacement by an equally attractive, safe and convenient route; and

vi) the needs of disabled people are fully provided for, including those reliant on community transport services.

4. *New developments with the potential to affect the transport network significantly will be required to be supported by Transport Assessments, showing the effects of the proposals on existing transport systems. Where necessary, developers or operators will provide or contribute to such enhancements of the transport network as are necessary to accommodate these effects.*

5. *Where the above requirements can only be satisfied through the undertaking of off-site works or the provision of particular services, the cost of these shall be borne by the developer and the development shall not be brought into use until such time as they have been completed, or in the case of service provision, appropriate funding provided."*

Blackburn with Darwen Borough Council Local Transport Plan 3 2011-2021

- 2.12 Blackburn with Darwen Borough Council's third Local Transport Plan (LTP3) is a long term strategic document covering the period 2011-2021. The LTP3 is the key mechanism for delivering transport policy at a local level.
- 2.13 The main transport goals, objectives and priorities are:
- Goal 1 – Support the economy;
 - Goal 2 – Tackle climate change;
 - Goal 3 – Increase safety and security;
 - Goal 4 – Promote equality and opportunity; and,
 - Goal 5 – Promote/improve quality of life, health and the natural environment.

3.0 THE LOCAL HIGHWAY NETWORK AND ITS CURRENT USAGE

The Application Site

- 3.1 The proposed development site is the site of the former Hollins Paper Mill, located off Hollins Grove Street, Darwen, which has been demolished. The site comprises a parcel of land with an area of approximately 6 hectares, located 2.0 kilometres north of Darwen and 6.0 kilometres south of Blackburn, as shown on the location plan at **Appendix BGH1**. The Local Planning Authority for the area is Blackburn with Darwen Borough Council and the Local Highway Authority is Lancashire County Council.

Local Highway Network

- 3.2 Hollins Grove Street is a single carriageway two-way road, approximately 6 metres in width. There is an existing site access junction with Hollins Grove Street at its eastern end. In the vicinity of the existing site access junction, Hollins Grove Street has a 30 mph speed limit, street lighting and a 2 metre wide footway is provided on the south eastern side of the carriageway. A footway approximately 1.8 metres in width is provided on the north western side of the carriageway from the east of the existing site access junction towards Lower Eccleshill Road.
- 3.3 Directly opposite the existing site access junction, Hollins Grove Street also provides access for Network Rail to the railway and to an allocated employment development site as set out in the Blackburn with Darwen Borough Local Plan Part 2 (Site 13/11). The allocated Site 13/11 is currently vacant. Hollins Grove Street also provides frontage access to residential properties and access onto other residential streets.
- 3.4 Approximately 70 metres to the north east of the existing site access junction, Hollins Grove Street meets Lower Eccleshill Road and Goose House Lane, forming a priority T-junction. Lower Eccleshill Road/Goose House Lane is a single carriageway two-way road, is street lit and subject to a 30 mph speed limit. It has a carriageway width typically 6.5 metres wide with footways on both sides of the carriageway in the vicinity of the junction with Hollins Grove Street. After approximately 50 metres to the north and 100 metres to the south east, the footway on the eastern side of the carriageway terminates, and the footway on the western side of the carriageway continues. There are two secondary site accesses from Lower Eccleshill Road approximately 50 metres and 100 metres to the north of Hollins Grove Street, which are both currently gated.

- 3.5 Approximately 900 metres to the north of the Hollins Grove Street/Lower Eccleshill Road/Goose House Lane junction, Lower Eccleshill Road meets Paul Rink Way and Greenbank Terrace to form a four arm roundabout junction, which has segregated off road pedestrian/cycle facilities. The fourth arm of the roundabout is an unused access stub. To the south of the roundabout, Lower Eccleshill Road provides access to a number of industrial and commercial properties on its eastern side. To the north, Greenbank Terrace is subject to a speed limit of 30 mph and is street lit, providing access to residential properties in Lower Darwen and further north towards Blackburn. Paul Rink Way has a speed limit of 40 mph and is street lit, providing access to the west towards the M65 Junction 4. The segregated off road footway/cycleway continues from the roundabout junction to the west along the northern side of Paul Rink Way.
- 3.6 Returning to the existing site access junction, Hollins Grove Street continues south west towards Darwen. The 2 metre wide footway to the south eastern side of the carriageway also continues to the south west, with a footway commencing on the north western side of the carriageway after the junction with Greenway Street, approximately 360 metres to the south west of the site access. Approximately 560m to the south west of the site access, Hollins Grove Street meets the A666 Blackburn Road where it forms a staggered signalised junction with Earnsdale Road also.
- 3.7 The A666 Blackburn Road provides access to residential properties and the centre of Darwen to the south of the site, and to the north towards Blackburn. It has a typical carriageway width of around 8 metres, a speed limit of 30 mph and is street lit. It provides frontage access to residential properties and local facilities, and also provides access to adjacent residential areas via a number of junctions with residential access roads. Earnsdale Road provides access to residential properties to the south west of the signalised junction with Hollins Grove Street and the A666 Blackburn Road.
- 3.8 Approximately 1 kilometre to the north of the A666 Blackburn Road/Hollins Grove Street/Earnsdale Road junction, the A666 Blackburn Road meets Earcroft Way by way of a signalised junction. Earcroft Way is a dual carriageway route providing access to the M65 junction 4. It has a typical carriageway width of approximately 16 metres with a kerbed central reserve, a speed limit of 40 mph and it is street lit. To the north of the signalised junction with Earcroft Way, the A666 Blackburn Road continues under the M65 towards Ewood and on towards the centre of Blackburn.

- 3.9 Returning to the site, Hollins Road currently runs through the site from the A666 Blackburn Road to Hollins Grove Street, however it mainly provides restricted access to the industrial area to the north east of the site and is therefore not a through route.

Usage of the Local Highway Network

- 3.10 Traffic surveys of the usage of the local highway network were undertaken by Road Data Services on Tuesday 15th November 2016 at the following junctions, as shown on the plan at **Appendix BGH3**:
- Hollins Grove Street/Lower Eccleshill Road/Goose House Lane priority T-junction;
 - Lower Eccleshill Road/Paul Rink Way/Greenbank Terrace roundabout junction;
 - A666 Blackburn Road/Earcroft Way signalised junction; and
 - A666 Blackburn Road/Hollins Grove Street/Earnsdale Road signalised junction.
- 3.11 The survey results are attached at **Appendix BGH4** and show the peak usage of the network occurred between 07:45 – 08:45 and between 16:15 - 17:15. Diagrams showing the flows on the network during these morning and evening peak periods are attached at **Appendix BGH5**. It should be noted that the figures shown on these diagrams are total vehicle flows and total HGV flows.
- 3.12 Operational assessments of the peak hour performance of the above junctions have been undertaken using the computer programs Junction 8 and Linsig version 3 where applicable, and the results are attached at **Appendix BGH6** and summarised in the tables below. It should be noted that the capacity of the A666 Blackburn Road/Earcroft Way signalised junction has not been assessed, as following the traffic distribution exercise, it has been estimated that the proposed development will generate minimal additional traffic at this junction. Details of the traffic distribution and trip generation exercises are included within sections 6 and 7 of this TA.

Table 3.1 – Hollins Grove St/Lower Eccleshill Rd/Goose House Ln

Movement	2016 Existing Morning Peak		2016 Existing Evening Peak	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Hollins Grove Street right and left out	0.35	1	0.33	0
Lower Eccleshill Road right in	0.14	0	0.29	1

Table 3.2 – Lower Eccleshill Road/Paul Rink Way/Greenbank Terrace

Arm	2016 Existing Morning Peak		2016 Existing Evening Peak	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Lower Eccleshill Road	0.36	1	0.26	0
Paul Rink Way	0.26	0	0.39	1
Greenbank Terrace	0.32	0	0.27	0

Table 3.3 – A666 Blackburn Rd/Hollins Grove St/Earnsdale Rd

Arm	2016 Existing Morning Peak		2016 Existing Evening Peak	
	DoS	MMQ (PCU)	DoS	MMQ (PCU)
A666 Blackburn Road (South)	76.5%	28	73.5%	26
Earnsdale Road	76.4%	10	72.7%	7
A666 Blackburn Road (North)	71.9%	26	76.7%	28
Hollins Grove Street	74.2%	7	76.1%	10
PRC	17.6%		17.3%	

- 3.13 The analyses show that all 3 modelled junctions within the study area currently operate within capacity in both the morning and evening peak periods.

Existing Traffic Generation

- 3.14 As the site has been cleared it is not currently generating any vehicular traffic.

Accident Data

- 3.15 The record of personal injury accidents that have occurred within the study area during the period from 1st November 2011 to 31st October 2016 has been obtained from Lancashire Constabulary. The study area includes all four junctions within the scope of the TA, the relevant road links in between and the exit/entry slip roads at the M65 Junction 4. The data shows that during the five year period some 85 personal injury accidents were recorded, 78 of which were classified as slight and 7 classified as serious. A plot of the accident locations and the accident report is attached at **Appendix BGH7**, and the records can be summarised as follows. Accidents have been grouped into general areas, such as links or junctions.
- 3.16 Along the A666 Blackburn Road (1.0 kilometre), excluding the traffic signal junctions being assessed as part of this TA, 39 personal injury accidents were recorded within the last 5 years, 6 of which were classified as serious. Of these serious incidents, 2 involved vulnerable road users. One was caused by the mirror of a HGV colliding with the back of a pedestrian walking along the footway and the second by a vehicle failing to stop at a zebra crossing and colliding with a child using the crossing.
- 3.17 Of the remaining accidents along the A666 Blackburn Road, a large number were caused by vehicles pulling out in front of oncoming traffic from a minor arm or turning across oncoming traffic to the minor arm. Eight of the collisions on the A666 Blackburn Road were rear end shunt type collisions, caused by vehicles failing to stop behind queuing traffic.
- 3.18 There were 12 reported personal injury accidents on the M65 slip roads, all of which were classified as slight in severity. The main type of accident to occur on the M65 slip roads were rear end shunt type collisions by vehicles failing to stop behind queuing traffic at the roundabout. One accident on the slip roads involved a pedestrian walking along the hard shoulder at night and being struck by a slow moving HGV.
- 3.19 On Hollins Grove Street (0.6 kilometre), there were 5 personal injury accidents during the study period, all of which were classified as slight in severity. Two of

these accidents were rear end shunt type collisions caused by vehicles failing to stop for vehicles waiting to turn off Hollins Grove Street. Two accidents involved a vehicle pulling out in front of oncoming traffic, one of which occurred in the vicinity of the existing site access junction. One accident involved a child on a push scooter failing to stop at junction with main road and falling off the scooter.

- 3.20 At the Hollins Grove Street/Lower Eccleshill Road/Goose House Lane junction, one slight accident occurred which was a rear end shunt type collision.
- 3.21 At the A666 Blackburn Road/Earcroft Way signalised junction, there were 12 reported personal injury accidents during the study period, all of which were classified as slight in severity. Of these accidents, five were reported as being rear end shunt type collisions, caused by a vehicle failing to stop behind queuing traffic. Two incidents at this junction involved vulnerable road users, including one involving a vehicle colliding with a cyclist and another involving a vehicle colliding with a pedestrian on a crossing on the pedestrian phase.
- 3.22 On Paul Rink Way and its junction with the M65 motorway there have been 8 reported personal injury accidents during the study period, one of which was classified as serious in severity and the remaining 7 as slight. Two of these incidents involved rear end shunt collisions on the approach to the roundabout junction. The remaining accidents all involved a vehicle losing control, including the serious accident which involved a motorcycle losing control.
- 3.23 Two personal injury accidents occurred at the Lower Eccleshill Road/Paul Rink Way/Greenbank Terrace roundabout junction during the study period, which were both classified as slight in severity. One of these accidents involved a car pulling out in front of a pedal cyclist.
- 3.24 On Earcroft Way at the junction with the M65 motorway, there have been five personal injury accidents during the study period, all of which were classified as slight in severity. One of these accidents involved a rear end shunt type collision, three accidents involved vehicles losing control when negotiating the roundabout, and the final accident involved a vehicle on the slip road pulling out in front of a vehicle on the circulatory carriageway.
- 3.25 Two personal injury accidents occurred within the study period at the A666 Blackburn Road/Hollins Grove Street/Earnsdale Road signalised junction, both of which were classified as slight in severity. One of these accidents involved a pedal cycle riding from the pavement onto the carriageway into the path of a vehicle.

- 3.26 Following a review of the personal injury accident data, no significant trends have been identified. A number of the personal injury accidents to occur within the last 5 years involved vehicles losing control and vulnerable road users, however these accidents can be attributed to driver error. It is therefore concluded that there are no road safety issues on the highway network within the defined study area.

4.0 ACCESS TO THE DEVELOPMENT SITE BY SUSTAINABLE FORMS OF TRANSPORT AND LOCAL FACILITIES

4.1 The Government’s objectives set out in the NPPF are to ensure that new developments are provided in sustainable locations, where the need to travel is minimised and the use of sustainable modes can be maximised.

Pedestrian Accessibility

4.2 With regard to walking to local facilities, the Institution of Highways and Transportation (IHT) Guidelines for Providing for Journeys on Foot sets out the following suggested acceptable walking distance to and from the development for commuting and other journeys.

Table 4.1 – IHT Recommended Walking Distances

	Trip Purpose	
	Commuting/School	Other Journeys
Desirable Maximum Distance	500 metres	400 metres
Acceptable Maximum Distance	1,000 metres	800 metres
Preferred Maximum Distance	2,000 metres	1,200 metres

4.3 The proposed development will provide a convenient pedestrian link via footways to both sides of the proposed vehicular access junction with Hollins Grove Street, which will link to the existing footway provision on Hollins Grove Street and the surrounding area that will encourage walking trips. The plan at **Appendix BGH8** shows the 2 kilometre walking catchment area from the centre of the application site, within which there are a number of local facilities.

4.4 It is considered that the pedestrian provision within the vicinity of the site is of a good quality and provides a range of opportunities for residents to access nearby facilities on foot. However, as part of the development proposals, and to increase pedestrian accessibility and safety on the surrounding highway network, it is proposed to provide a pedestrian crossing facility on Hollins Grove Street to the south of the site access. This will involve the construction of a footway on the

north western side of Hollins Grove Street, for a distance of approximately 100m, and a crossing facility provided to the existing footway on the south eastern side of the carriageway.

Cycle Accessibility

- 4.5 Cycling has clear potential to substitute for short car trips, particularly those under 5 kilometres and up to 8 kilometres and to form part of a longer journey by public transport. The plan at **Appendix BGH9** shows that all of Darwen to the south of the site and a large area of Blackburn to the north of the site lie within a 5 kilometre cycle catchment. The plan also shows that the majority of Blackburn is accessible within an 8 kilometre cycle catchment. Within these areas, there are a number of facilities and employment opportunities which residents of the site may choose to cycle to.
- 4.6 There are no designated cycle routes within the immediate vicinity of the development, however the nature of the roads in the vicinity of the development provides opportunity for residents to access nearby facilities by cycle. Paul Rink Way to the north of the site has off road segregated pedestrian/cyclist facilities, and the A666 Blackburn Road to the west of the site has some on road cyclist provision. There is also an off road cycle route to the north of the site which is accessible from Lower Darwen, and provides an off road section along part of the route for cyclists heading towards Blackburn.

Public Transport Accessibility

- 4.7 The proposed development is well located in terms of its proximity to public transport services, including the existing bus services which run along Lower Eccleshill Road. Details of the existing provision are set out below.

Bus

- 4.8 Bus stops are located on Lower Eccleshill Road, approximately 150 metres from the main vehicular entrance to the site and within the maximum recommended walking distance of 400 metres from the centre of the site. These bus stops are served by the 33 and 962 services. Details of these services are shown in Table 4.2 below.

Table 4.2 – Local Bus Services

Bus	Route	Frequency		
		Mon-Fri	Sat	Sun
33	Blackburn – Lower Darwen – Darwen	120 minutes	-	-
962	Ewood – Lower Darwen – Darwen – Runshaw College	School Service	-	-

4.9 Other destinations can be reached via connecting services in the centres of Blackburn and Darwen. Additional bus services also run along the A666 Blackburn Road to the west of the site, which are available to those who are willing to walk more than the recommended 400 metre walking distance to a bus stop.

Rail

4.10 The nearest train station to the site is Darwen, located around 1.3 kilometres to the south of the proposed development as the crow flies. The station is within an approximate 2 kilometre walking distance from the centre of the site, and will also be accessible to residents by cycle or via the local bus network. The station is managed by Northern Rail which operates hourly services to and from Blackburn and Manchester as well as a number of local stations. The service frequency increases to half hourly during the weekday peaks hours.

Local Facilities

4.11 The surrounding area has a wide range of services and facilities which can be accessed by future residents of the site. These are summarised as follows:

- Employment – there are a range of employment areas within Darwen and the surrounding area, within a walking distance of around 2 kilometres of the development site. Blackburn is also located around 5 kilometres to the north, providing further employment opportunities.
- Education – The nearest primary school, Avondale Primary School, is located on Durham Road within an approximate walking distance of 1.3 kilometres from the centre of the site to the south west. Darwen Vale High School is located on the A666 Blackburn Road, within an approximate walking distance of 1.9 kilometres to the north west of the site. There are therefore schools within the preferred maximum walking distance of 2 kilometres from the centre of the site.

- Health Facilities – Hollins Grove (Doctor’s) Surgery is located within an approximate 800 metre walking distance from the centre of the site, near to the junction of the A666 Blackburn Road and Hollins Grove Street. Alternatively, Darwen Health Centre is located in the centre of Darwen. There are also pharmacies, dental surgeries and opticians located within walking distance of the site.
- Retail – Food retail units, including a convenience food store and other typical town centre retail facilities are located near to the junction of the A666 Blackburn Road and Hollins Grove Street. A more extensive range of retail opportunities are available in the centre of Darwen further to the south of the site, many of which are within a 2 kilometre walking catchment.

Summary

- 4.12 Overall, it is therefore concluded that there is a range of sustainable transport infrastructure within the vicinity of the proposed development site and that the site can be considered to be accessible by a range of modes.
- 4.13 It is also concluded that a range of key facilities and services, including employment, retail, health and education uses, are readily accessible from the application site and therefore it is considered that the site is in a sustainable location, consistent with national and local policy objectives.

5.0 THE PROPOSED DEVELOPMENT

- 5.1 The planning application by Gleeson Homes and Regeneration seeks to build 151 residential units on the site of the former Hollins Paper Mill, Hollins Grove Street, Darwen, however the analysis in this TA assumes a development of 153 dwellings. A copy of the proposed site layout plan is attached at **Appendix BGH2**, which shows 151 dwellings on the site. The proposed development will comprise 54 two bed dwellings, 89 three bed dwellings and 8 four bed dwellings.
- 5.2 Access to the site is proposed by way of improvement of the existing site access junction with Hollins Grove Street, located to the south west of the junction with Lower Eccleshill Road and Goose House Lane. The proposed site access arrangements are shown on the drawing attached at **Appendix BGH10**, which also shows that visibility splays of 2.4 metres x 43 metres are achievable in both directions in accordance with guidance contained in Manual for Streets for a 30 mph road.
- 5.3 Frontage access is proposed to a small number of properties to the southern extents of the site. Footways will be provided on both sides of the main improved site access to facilitate pedestrian access and will tie in with the existing provision on Hollins Grove Street. The existing gated access junctions with Lower Eccleshill Road to the eastern site boundary will be closed to vehicular traffic. There will be no access to the site via Hollins Road to the north west of the site.
- 5.4 Within the site, a residential access road is proposed with a 5.5m wide carriageway, with 2m wide footways on either side. It will provide direct frontage access to properties on both sides and to a hierarchy of roads, including shared surface roads and private drives. The carriageway width of the access road is consistent with the Local Highway Authority's design guide entitled 'Creating Civilised Streets' (revised June 2010), which notes dwellings can be served from a single point of access by a road with a 4.5m to 5.5m wide carriageway with parking and footways catered for through additional width.
- 5.5 The internal layout has been designed to achieve low vehicle speeds within the site, incorporating appropriate changes in the road alignment which assist in providing a safe environment for pedestrians and cyclists within the site. The site layout proposals include a network of footways and footpaths across the site. The proposals have also taken into account the needs of refuse vehicles.

- 5.6 Blackburn with Darwen Borough Council parking standards are set out in the document entitled “*Blackburn with Darwen Borough Council Parking Standards*” (Adopted April 2014). The standards set out the following requirements for car parking:
- 2-3 bedrooms – 2 car spaces and 2 secure cycle spaces per dwelling
 - 4+ dwellings – 3 car spaces and 2 secure cycle spaces per dwelling
- 5.7 The proposed level of car parking provision will be in line with the Blackburn with Darwen Borough Council parking standards.
- 5.8 The planning application also includes a Framework Travel Plan which reflects national and local transport policy and sets out a package of measures aimed at promoting sustainable travel for residents of the site.

6.0 TRIP GENERATION AND MODAL SPLIT

Trip Generation

- 6.1 The Trip Rate Information Computer System (TRICS) has been used to assess the total person trip generation for the proposed development. Under the 'Houses Privately Owned' category, all the multimodal sites, excluding 'Ireland' and 'Central London' have been interrogated to establish 'Person Trip Rates' for a residential development, and these are summarised in Table 6.1 below with the full TRICS output attached at **Appendix BGH11**.

Table 6.1 Residential Average Person Trip Rate

Land Use	Morning Peak Hour			Evening Peak Hour		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Residential	0.204	0.582	0.786	0.478	0.290	0.768

Modal Split

- 6.2 Method of travel to work statistics have been obtained from the 2011 Census for Blackburn with Darwen 014, the middle super output area where the site is located, and these are summarised in Table 6.2 with the full output at **Appendix BGH12**. Combining the two tables provides predicted peak hour trips by transport mode for 153 dwellings on the development site, as shown in Table 6.3.

Table 6.2 Residential Modal Splits

Mode of Travel	Modal Splits
Train	1%
Bus	7%
Motorcycle	1%
Car Driver	66%
Car Passenger	9%
Bicycle	1%
On Foot	15%
Total	100%

Table 6.3 Residential Trip Generation for 153 Dwellings

Land Use	Morning Peak Hour			Evening Peak Hour		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Train	0	1	1	1	0	1
Bus	2	7	9	5	3	8
Motorcycle	0	1	1	1	0	1
Car Driver	21	59	80	48	30	78
Car Passenger	3	8	11	7	4	11
Bicycle	0	1	1	1	0	1
On Foot	5	13	18	11	7	18
Total	31	89	120	73	45	118

7.0 TRAFFIC IMPACT

Distribution

- 7.1 In order to establish the likely distribution pattern of traffic generated by the development site, local travel patterns from the 2011 census journey to work data, have been reviewed. From this data, an assessment has been made of the likely distribution of the peak hour traffic for the development, assuming that the travel to work patterns will be broadly similar to those documented within the 2011 Census. A summary of the census data is provided at **Appendix BGH13**. Based upon these distributions, the diagrams at **Appendix BGH14** show the likely additional vehicle turning movements that the development will generate at the surveyed junctions.
- 7.2 It is likely that the development will commence in 2017 and take some 5 years to complete. The traffic impact of the development will be assessed 5 years post completion i.e. at 2027. The diagrams at **Appendix BGH15** show base peak hour flows at 2027 which have been derived by applying NTM factors (which have been adjusted using Tempro local growth factors) to the existing peak hour flows at **Appendix BGH5**.
- 7.3 It is understood that Lancashire County Council do not currently provide pre-application advice, including advice on what committed development traffic should be included within a TA. Following research conducted online using the council's planning application search facility, no significant committed developments have been identified in the area to include within this TA.
- 7.4 The generated peak hour development traffic shown on the diagrams at **Appendix BGH14** have been added to the base flows shown at **Appendix BGH15** to give predicted traffic flows on the network as a result of the proposed development and these are shown on the diagrams at **Appendix BGH16**.
- 7.5 Analyses of both the base and predicted 2027 peak hour performance of the surveyed junctions have been undertaken. As stated previously in this TA, the capacity of the A666 Blackburn Road/Earcroft Way signalised junction has not been assessed. This is because the proposed development is only predicted to generate an additional 12 two-way trips in the morning peak and an additional 13 two-way trips in the evening peak at the junction, which is not considered to have a material impact on the operation of the junction. The results of the operational assessment of the other 3 surveyed junctions, along with the site access junction in the predicted scenario are included at **Appendix BGH17** (Base) and **Appendix BGH18** (Predicted) and are summarised in the following tables.

Table 7.1 – Hollins Grove St/Lower Eccleshill Rd/Goose House Ln

Movement	2027 Base Morning Peak		2027 Base Evening Peak	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Hollins Grove Street right and left out	0.41	1	0.38	1
Lower Eccleshill Road right in	0.16	0	0.34	1

Table 7.2 – Hollins Grove St/Lower Eccleshill Rd/Goose House Ln

Movement	2027 Predicted Morning Peak		Predicted Base Evening Peak	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Hollins Grove Street right and left out	0.49	1	0.43	1
Lower Eccleshill Road right in	0.18	0	0.40	1

Table 7.3 – Lower Eccleshill Road/Paul Rink Way/Greenbank Terrace

Arm	2027 Base Morning Peak		2027 Base Evening Peak	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Lower Eccleshill Road	0.41	1	0.30	0
Paul Rink Way	0.30	0	0.45	1
Greenbank Terrace	0.37	1	0.32	0

Table 7.4 – Lower Eccleshill Road/Paul Rink Way/Greenbank Terrace

Arm	2027 Predicted Morning Peak		2027 Predicted Evening Peak	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Lower Eccleshill Road	0.45	1	0.31	0
Paul Rink Way	0.31	0	0.47	1
Greenbank Terrace	0.38	1	0.33	0

Table 7.5 – A666 Blackburn Rd/Hollins Grove St/Earnsdale Rd

Arm	2027 Base Morning Peak		2027 Base Evening Peak	
	DoS	Queue (PCU)	DoS	Queue (PCU)
A666 Blackburn Road (South)	90.3%	41	83.8%	35
Earnsdale Road	90.6%	14	82.5%	9
A666 Blackburn Road (North)	80.8%	33	91.8%	43
Hollins Grove Street	90.0%	10	86.6%	13
PRC		-0.7%		-2.0%

Table 7.6 – A666 Blackburn Rd/Hollins Grove St/Earnsdale Rd

Arm	2027 Predicted Morning Peak		2027 Predicted Evening Peak	
	DoS	Queue (PCU)	DoS	Queue (PCU)
A666 Blackburn Road (South)	94.5%	46	86.1%	37
Earnsdale Road	94.7%	15	82.5%	9
A666 Blackburn Road (North)	81.0%	33	93.0%	44
Hollins Grove Street	94.8%	12	86.0%	13
PRC	-5.4%		-3.3%	

Table 7.7 – Site Access/Hollins Grove Street

Movement	2027 Predicted Morning Peak		2027 Predicted Evening Peak	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Site Access left out	0.08	0	0.04	0
Site Access right out	0.05	0	0.03	0
Hollins Grove Street right in	0.03	0	0.07	0

7.6 The analyses show that the Hollins Grove Street/Lower Eccleshill Road/Goose House Lane priority junction and the Lower Eccleshill Road/Paul Rink Way/Greenbank Terrace roundabout junction are predicted to continue operating within capacity at a future year of 2027, both with and without the addition of development generated traffic, with each junction predicted to operate below a value of 1.0 RFC.

7.7 The analyses also show that the A666 Blackburn Road/Hollins Grove Street/Earnsdale Road signalised junction is predicted to operate with degree of saturation (DoS) values marginally over 90.0% on some arms. The addition of development generated traffic results in only a slight increase in DoS values and

mean max queue (MMQ), and it is therefore considered that the development generated traffic does not have a material impact on the operation of the junction.

- 7.8 The proposed site access is predicted to operate well below capacity with no queuing during both the morning and evening peak periods.

8.0 SUMMARY AND CONCLUSIONS

- 8.1 This TA forms part of a planning application submitted by Gleeson Homes and Regeneration to build some 151 residential units on land at the former Hollins Paper Mill, Darwen, however the analysis in this TA assumes a development of 153 dwellings. The Local Planning Authority for the area is Blackburn with Darwen Borough Council and the Local Highway Authority is Lancashire County Council.
- 8.2 This TA considers the transport implications of the proposals to achieve a sustainable development. In particular, based upon national guidance and trip data from the TRICS database, it has considered the access arrangements and likely transport impact on the surrounding highway network.
- 8.3 Access to the development site is proposed by way of improvement of the existing site access junction with Hollins Grove Street, located to the south west of the junction with Lower Eccleshill Road and Goose House Lane. At the junction, visibility splays of 2.4m x 43m will be provided, consistent with the prevailing speed limit in the surrounding area. Pedestrian and cycle access will be provided via this access also. Two existing gated access junctions with Lower Eccleshill Road will be closed. There will also be no access to the site via Hollins Road to the north-west.
- 8.4 The proposed development will consist of 151 residential units comprising 54 two bed dwellings, 89 three bed dwellings and 8 four bed dwellings.
- 8.5 Within the site, a the residential access road will have a 5.5m wide carriageway with 2m wide footways on either side, providing direct frontage access to properties on both sides and to a hierarchy of roads branching off it, including shared surface roads and private drives. This carriageway width of the access road is consistent with recommendations contained in the LHA's design guide.
- 8.6 The internal highway layout has been designed to achieve low vehicle speeds within the site, incorporating appropriate changes in the road alignment which assist in providing a safe environment for pedestrians and cyclist within the site. The site layout proposals include a network of footways and footpaths across the site. The proposals have also taken into account the needs of refuse vehicles.
- 8.7 A review of the record personal injury accidents have occurred locally has concluded that there are no trends which would give rise to any highway safety concerns in the study area.

- 8.8 It has been demonstrated that the site can be satisfactorily accessed and the traffic likely to be generated by the development proposals can be safely and satisfactorily accommodated on the local highway network. It has also been demonstrated that the site is well located to encourage trips by more environmentally friendly modes of travel rather than the private car.
- 8.9 A separate Framework Travel Plan has been produced in conjunction with this TA, both of which demonstrate that the development will accord with Local and National advice.
- 8.10 This TA is concluded that there are no highways or transportation reasons which would prevent the proposed development being granted planning consent.

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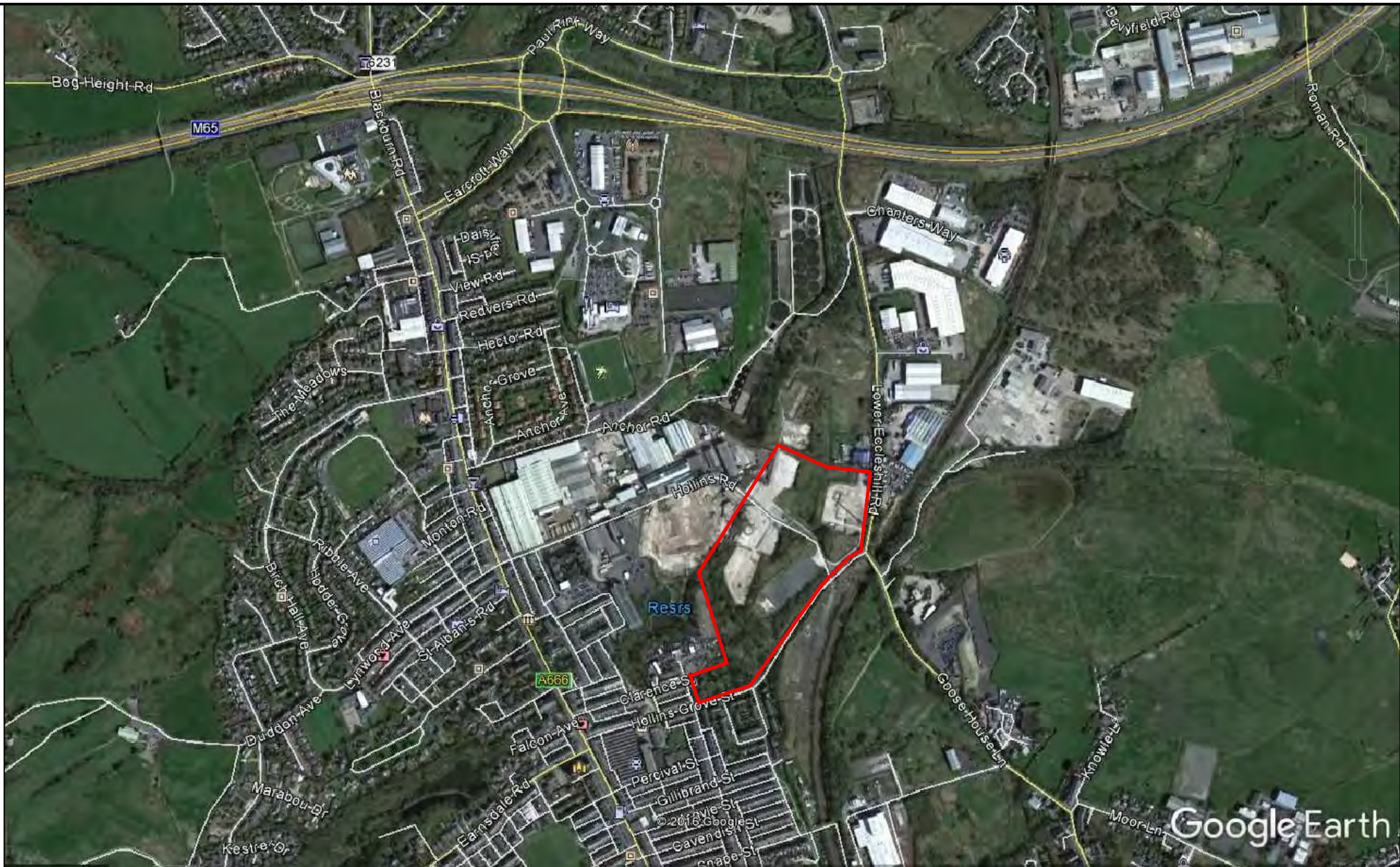
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APPENDIX BGH 1



Rev:	Amendment:	DRN:	CHK:	Date:

Project: **HOLLINS PAPER MILL, DARWEN**

Title: **SITE LOCATION PLAN**

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Job No: 16-423 Drawn: JT Checked: MC Date: 30.11.2016
 Scale: N.T.S. Drawing No: 16/423/LOC/007 Revision:

Client:

A4 - 297 x 210

APPENDIX BGH 2

Housetype	No. of Beds	Type	No. of Units	Percentage
201	2 Bedrooms	Semi-detached	30	19.87
202	2 Bedrooms	Semi-detached	18	11.92
212	2 Bedrooms	Semi-detached	6	3.97
301	3 Bedrooms	Semi-detached	14	9.27
311	3 Bedrooms	Semi-detached	7	4.64
309	3 Bedrooms	Semi-detached	10	6.62
313	3 Bedrooms	Semi-detached	5	3.31
304	3 Bedrooms	Detached	23	15.23
307	3 Bedrooms	Detached	15	9.93
310	3 Bedrooms	Detached	11	7.28
314	3 Bedrooms	Detached	4	2.65
401	4 Bedrooms	Detached	4	2.65
403	4 Bedrooms	Detached	4	2.65
Totals			151	100.00

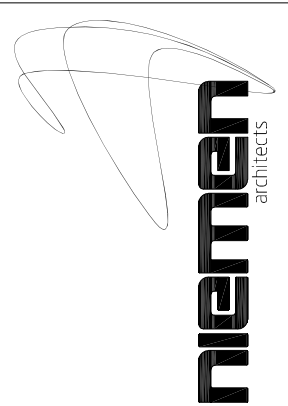


LEGEND

- 1.8M (H) TIMBER FENCE
- POST & WIRE FENCE
- 3M (H) ACOUSTIC FENCE
- DRIVE DETAIL
- PROPOSED TREES
- EXISTING TREES TO BE REMOVED/PRUNED
- EXISTING TREES TO BE RETAINED
- ⊠ DENOTES FUTURE GARAGE

revision	date	content	initials
H	24.07.17	LAYOUT UPDATED FOLLOWING CLIENTS COMMENTS. SCHEDULE OF ACCOMMODATION UPDATED.	LD
G	06.06.17	RED LINE EXTENDED TO INCLUDE ACOUSTIC FEATURE TO NORTH OF SITE.	RB
F	31.05.17	ACOUSTIC BUND & FENCE EXTENDED AND PUBLIC FOOTPATH RE-ROUTED.	JB
E	30.05.17	ACOUSTIC BUND & FENCE ADDED TO NORTH EAST BOUNDARY.	JB
D	26.05.17	STREET SCENE INDICATORS ADDED. PLOTS 13, 14, 31 & 32 HANDED.	JB
C	18.05.17	PLOTS 21, 22, 23, 24, 27, 28, 92, 93, 94, 108 & 109 AMENDED. SCHEDULE OF ACCOMMODATION UPDATED.	JB
B	12.05.17	SITE LAYOUT RE-DRAWN. SCHEDULE OF ACCOMMODATION UPDATED.	JB
A	14.12.16	VEHICLE TRACKING AND VISIBILITY SPLAYS ADDED.	JB

project	PROPOSED RESIDENTIAL HOLLINS PAPER MILL HOLLINS GROVE STREET, DARWEN		
client	GLEESON HOMES		
title	PROPOSED SITE LAYOUT		
date	28.11.16	scale	1:1000 @ A1
drawing number	2895-0-001	drawn	JB
checked	H	checked	



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SKETCH
 subject to structural review
 subject to accurate measured survey

APPENDIX BGH 3



Rev:	Amendment:	DRN:	CHK:	Date:
Client:				

Project: **HOLLINS PAPER MILL, DARWEN**

Title: **TRAFFIC SURVEY LOCATION PLAN**

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Job No: 16-423 Drawn: RD Checked: MC Date: 08-11-2016

Scale: N.T.S. Drawing No: 16/423/LOC/001 Revision:

A4 - 297 x 210

APPENDIX BGH 4

Darwen - Manual Traffic Survey, Tuesday 15th November 2016

Produced by Road Data Services Ltd.

Junction: (1) Blackburn Road / Hollins Grove Street / Earnsdale Road

Approach: Blackburn Road (North)

TIME	Left to Hollins Grove Street								Ahead to Blackburn Road (South)								Right to Earnsdale Road							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0730 - 0745	0	0	12	1	0	0	0	13	0	0	155	25	1	4	2	187	0	0	8	1	0	0	0	9
0745 - 0800	0	0	14	0	0	0	0	14	0	0	170	27	0	10	4	211	0	0	11	0	0	0	0	11
Hourly Total	0	0	26	1	0	0	0	27	0	0	325	52	1	14	6	398	0	0	19	1	0	0	0	20
0800 - 0815	0	0	14	0	0	0	0	14	0	0	158	22	1	6	3	190	0	0	10	0	0	0	0	10
0815 - 0830	0	0	9	0	0	0	0	9	0	0	138	23	0	11	1	173	0	0	7	0	0	0	0	7
0830 - 0845	0	0	11	0	0	0	0	11	0	1	142	17	2	10	3	175	0	0	7	0	0	0	0	7
0845 - 0900	0	0	11	0	0	0	0	11	0	0	101	16	1	13	2	133	0	0	8	0	0	0	0	8
Hourly Total	0	0	45	0	0	0	0	45	0	1	539	78	4	40	9	671	0	0	32	0	0	0	0	32
0900 - 0915	0	0	10	2	0	0	0	12	0	0	116	19	0	12	2	149	0	0	6	0	0	0	0	6
0915 - 0930	0	0	9	1	0	0	0	10	0	0	108	18	2	10	1	139	0	0	4	0	0	0	0	4
Hourly Total	0	0	19	3	0	0	0	22	0	0	224	37	2	22	3	288	0	0	10	0	0	0	0	10
Session Total	0	0	90	4	0	0	0	94	0	1	1088	167	7	76	18	1357	0	0	61	1	0	0	0	62
1600 - 1615	0	0	15	1	0	0	0	16	0	1	141	23	2	3	2	172	0	0	17	2	0	0	0	19
1615 - 1630	0	0	20	0	0	0	0	20	0	0	147	20	0	2	3	172	0	0	16	3	0	0	0	19
1630 - 1645	0	0	18	0	0	0	0	18	0	0	164	21	1	5	2	193	0	0	15	4	0	0	0	19
1645 - 1700	0	0	17	1	0	0	0	18	0	0	141	28	0	1	1	171	0	0	13	0	0	0	0	13
Hourly Total	0	0	70	2	0	0	0	72	0	1	593	92	3	11	8	708	0	0	61	9	0	0	0	70
1700 - 1715	0	0	14	2	0	0	0	16	0	0	160	28	0	4	0	192	0	0	17	0	0	0	0	17
1715 - 1730	0	0	12	1	0	0	0	13	0	0	179	25	0	3	0	207	0	0	19	1	0	0	0	20
1730 - 1745	0	0	18	3	0	0	0	21	0	0	174	24	1	2	1	202	0	0	23	1	0	0	0	24
1745 - 1800	0	0	10	2	0	0	0	12	0	0	147	14	1	2	0	164	0	0	16	0	0	0	0	16
Hourly Total	0	0	54	8	0	0	0	62	0	0	660	91	2	11	1	765	0	0	75	2	0	0	0	77
Session Total	0	0	124	10	0	0	0	134	0	1	1253	183	5	22	9	1473	0	0	136	11	0	0	0	147

Darwen - Manual Traffic Survey, Tuesday 15th November 2016

Produced by Road Data Services Ltd.

Junction: (1) Blackburn Road / Hollins Grove Street / Earnsdale Road

Approach: Hollins Grove Street

TIME	Left to Blackburn Road (South)								Ahead to Earnsdale Road								Right to Blackburn Road (North)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0730 - 0745	0	0	10	4	0	0	0	14	0	0	1	1	1	0	0	3	0	0	14	1	0	0	0	15
0745 - 0800	0	0	9	4	0	0	0	13	0	0	0	1	0	0	0	1	0	0	15	0	0	0	0	15
Hourly Total	0	0	19	8	0	0	0	27	0	0	1	2	1	0	0	4	0	0	29	1	0	0	0	30
0800 - 0815	0	0	11	3	0	1	0	15	0	0	2	2	0	0	0	4	0	0	14	0	0	0	0	14
0815 - 0830	0	0	13	3	0	0	0	16	0	0	2	1	0	0	0	3	0	0	16	1	0	0	0	17
0830 - 0845	0	0	18	2	0	0	0	20	0	0	4	1	0	0	0	5	0	0	15	2	0	0	0	17
0845 - 0900	0	0	18	1	0	0	0	19	0	0	2	0	0	0	0	2	0	0	14	2	0	0	0	16
Hourly Total	0	0	60	9	0	1	0	70	0	0	10	4	0	0	0	14	0	0	59	5	0	0	0	64
0900 - 0915	0	0	17	1	0	0	0	18	0	0	1	0	0	0	0	1	0	0	20	3	0	0	0	23
0915 - 0930	0	0	11	2	0	0	0	13	0	0	2	1	0	0	0	3	0	0	14	2	0	0	0	16
Hourly Total	0	0	28	3	0	0	0	31	0	0	3	1	0	0	0	4	0	0	34	5	0	0	0	39
Session Total	0	0	107	20	0	1	0	128	0	0	14	7	1	0	0	22	0	0	122	11	0	0	0	133
1600 - 1615	0	1	13	1	0	0	0	15	0	0	8	0	0	0	0	8	0	0	15	3	0	0	0	18
1615 - 1630	0	0	20	2	0	0	0	22	0	0	12	0	0	0	0	12	0	0	11	2	0	0	0	13
1630 - 1645	0	0	24	4	0	0	0	28	0	0	12	2	0	0	0	14	0	0	13	1	0	0	0	14
1645 - 1700	0	0	21	2	0	0	0	23	0	0	13	1	0	0	0	14	0	0	21	2	0	0	0	23
Hourly Total	0	1	78	9	0	0	0	88	0	0	45	3	0	0	0	48	0	0	60	8	0	0	0	68
1700 - 1715	0	0	18	1	0	0	0	19	0	0	13	1	0	0	0	14	0	0	19	2	0	0	0	21
1715 - 1730	0	0	22	2	0	0	0	24	0	0	14	0	0	0	0	14	0	0	16	2	0	0	0	18
1730 - 1745	0	0	19	1	0	0	0	20	0	0	10	0	0	0	0	10	0	0	16	1	0	0	0	17
1745 - 1800	0	0	23	1	0	0	0	24	0	0	10	2	0	0	0	12	0	0	9	3	0	0	0	12
Hourly Total	0	0	82	5	0	0	0	87	0	0	47	3	0	0	0	50	0	0	60	8	0	0	0	68
Session Total	0	1	160	14	0	0	0	175	0	0	92	6	0	0	0	98	0	0	120	16	0	0	0	136

Darwen - Manual Traffic Survey, Tuesday 15th November 2016

Produced by Road Data Services Ltd.

Junction: (1) Blackburn Road / Hollins Grove Street / Earnsdale Road

Approach: Blackburn Road (South)

TIME	Left to Earnsdale Road								Ahead to Blackburn Road (North)								Right to Hollins Grove Street							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0730 - 0745	0	0	2	0	0	0	0	2	0	0	159	16	0	7	2	184	0	0	12	0	0	0	0	12
0745 - 0800	0	0	1	1	0	0	0	2	0	0	162	31	1	7	6	207	0	0	10	0	0	0	0	10
Hourly Total	0	0	3	1	0	0	0	4	0	0	321	47	1	14	8	391	0	0	22	0	0	0	0	22
0800 - 0815	0	0	5	0	0	0	0	5	0	0	142	29	0	4	4	179	0	0	17	1	0	0	0	18
0815 - 0830	0	0	5	2	0	0	0	7	0	0	134	31	0	4	6	175	0	0	17	0	0	0	0	17
0830 - 0845	0	0	7	1	0	0	0	8	0	0	168	20	1	6	3	198	0	0	19	0	0	0	0	19
0845 - 0900	0	0	4	0	0	0	0	4	0	0	134	15	1	3	3	156	0	0	16	1	0	0	0	17
Hourly Total	0	0	21	3	0	0	0	24	0	0	578	95	2	17	16	708	0	0	69	2	0	0	0	71
0900 - 0915	0	0	5	1	0	0	0	6	0	0	121	18	0	4	2	145	0	0	15	0	0	0	0	15
0915 - 0930	0	0	4	1	0	0	0	5	0	0	117	20	2	2	1	142	0	0	15	1	0	0	0	16
Hourly Total	0	0	9	2	0	0	0	11	0	0	238	38	2	6	3	287	0	0	30	1	0	0	0	31
Session Total	0	0	33	6	0	0	0	39	0	0	1137	180	5	37	27	1386	0	0	121	3	0	0	0	124
1600 - 1615	0	0	11	1	0	0	0	12	0	0	129	23	0	2	2	156	0	0	10	1	0	0	0	11
1615 - 1630	0	0	7	1	0	0	0	8	0	0	179	22	0	9	1	211	0	0	10	1	0	0	0	11
1630 - 1645	0	0	7	2	0	0	0	9	0	0	163	25	1	5	3	197	0	0	13	2	0	0	0	15
1645 - 1700	0	0	9	0	0	0	0	9	0	0	125	20	1	1	2	149	0	0	10	1	0	0	0	11
Hourly Total	0	0	34	4	0	0	0	38	0	0	596	90	2	17	8	713	0	0	43	5	0	0	0	48
1700 - 1715	0	0	9	3	0	0	0	12	0	1	147	18	1	4	2	173	0	0	12	1	0	0	0	13
1715 - 1730	0	0	11	1	0	0	0	12	0	0	160	19	0	5	1	185	0	0	8	2	0	0	0	10
1730 - 1745	0	0	10	2	0	0	0	12	0	0	142	18	1	2	2	165	0	0	8	0	0	0	0	8
1745 - 1800	0	0	9	1	0	0	0	10	0	0	162	18	1	0	1	182	0	0	7	1	0	0	0	8
Hourly Total	0	0	39	7	0	0	0	46	0	1	611	73	3	11	6	705	0	0	35	4	0	0	0	39
Session Total	0	0	73	11	0	0	0	84	0	1	1207	163	5	28	14	1418	0	0	78	9	0	0	0	87

Darwen - Manual Traffic Survey, Tuesday 15th November 2016

Produced by Road Data Services Ltd.

Junction: (1) Blackburn Road / Hollins Grove Street / Earnsdale Road

Approach: Earnsdale Road

TIME	Left to Blackburn Road (North)								Ahead to Hollins Grove Street								Right to Blackburn Road (South)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0730 - 0745	0	1	15	5	0	0	1	22	0	0	13	1	0	0	0	14	0	0	8	1	0	0	0	9
0745 - 0800	0	0	16	6	0	0	2	24	0	0	14	4	0	0	0	18	0	0	12	1	0	0	0	13
Hourly Total	0	1	31	11	0	0	3	46	0	0	27	5	0	0	0	32	0	0	20	2	0	0	0	22
0800 - 0815	0	0	22	3	0	0	1	26	0	0	13	4	0	0	0	17	0	0	14	2	0	0	0	16
0815 - 0830	0	0	17	3	0	0	0	20	0	0	16	4	0	0	0	20	0	0	9	1	0	0	0	10
0830 - 0845	0	0	17	3	0	0	1	21	0	0	16	1	0	0	0	17	0	0	6	1	0	0	0	7
0845 - 0900	0	0	21	2	1	0	0	24	0	0	14	2	0	0	0	16	0	0	4	2	0	0	0	6
Hourly Total	0	0	77	11	1	0	2	91	0	0	59	11	0	0	0	70	0	0	33	6	0	0	0	39
0900 - 0915	0	1	19	3	0	0	0	23	1	0	12	1	0	0	0	14	0	0	3	0	0	0	0	3
0915 - 0930	0	0	16	3	0	0	0	19	0	0	12	2	0	0	0	14	0	0	5	1	0	0	0	6
Hourly Total	0	1	35	6	0	0	0	42	1	0	24	3	0	0	0	28	0	0	8	1	0	0	0	9
Session Total	0	2	143	28	1	0	5	179	1	0	110	19	0	0	0	130	0	0	61	9	0	0	0	70
1600 - 1615	0	0	17	3	0	0	1	21	0	0	6	1	0	0	0	7	0	0	4	1	0	0	0	5
1615 - 1630	0	0	19	1	0	0	0	20	0	0	8	1	0	0	0	9	0	0	1	0	0	0	0	1
1630 - 1645	0	1	17	2	0	0	0	20	0	0	4	2	0	0	0	6	0	0	5	0	0	0	0	5
1645 - 1700	0	0	25	3	0	0	0	28	0	0	7	0	0	0	0	7	0	0	2	0	0	0	0	2
Hourly Total	0	1	78	9	0	0	1	89	0	0	25	4	0	0	0	29	0	0	12	1	0	0	0	13
1700 - 1715	0	0	26	3	0	0	1	30	0	0	7	0	0	0	0	7	0	0	3	2	0	0	0	5
1715 - 1730	0	0	25	2	0	0	0	27	0	0	6	0	0	0	0	6	0	0	2	0	0	0	0	2
1730 - 1745	0	0	23	2	0	1	1	27	0	0	3	0	0	0	0	3	0	0	4	0	0	0	0	4
1745 - 1800	0	0	22	1	0	0	0	23	0	0	2	0	0	0	0	2	0	0	5	1	0	0	0	6
Hourly Total	0	0	96	8	0	1	2	107	0	0	18	0	0	0	0	18	0	0	14	3	0	0	0	17
Session Total	0	1	174	17	0	1	3	196	0	0	43	4	0	0	0	47	0	0	26	4	0	0	0	30

Darwen - Manual Traffic Survey, Tuesday 15th November 2016

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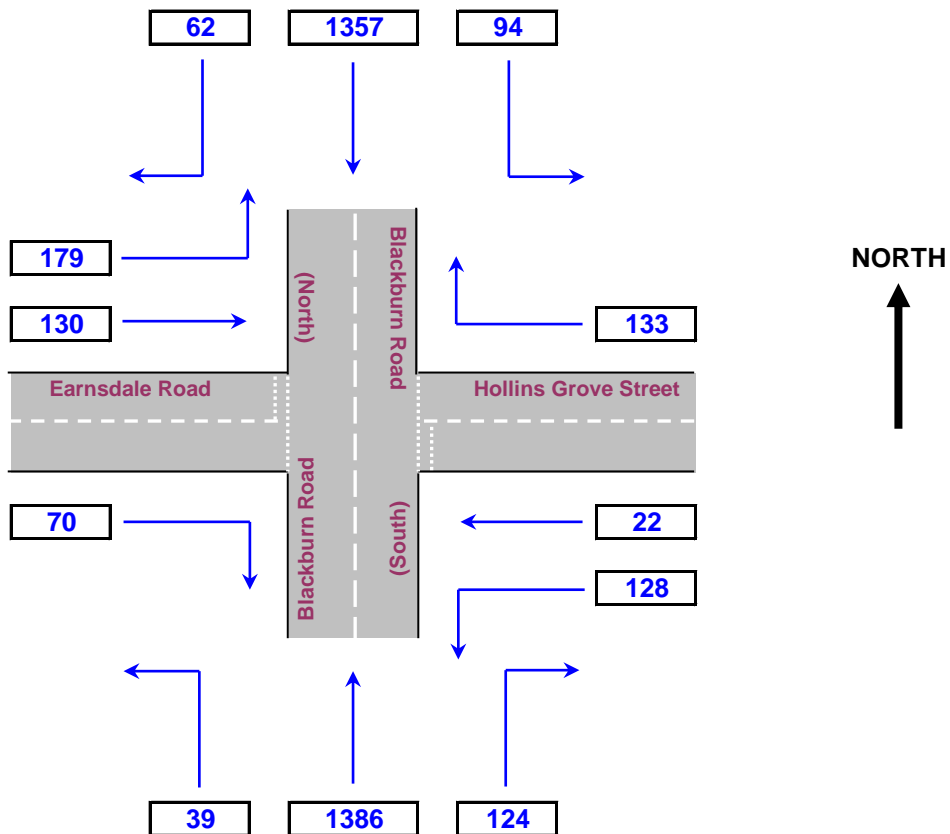
Junction: (1) Blackburn Road / Hollins Grove Street / Earnsdale Road

Vehicle Class: ALL CLASSES

Start Time: 1) 0730

End Time: 1) 0930

Peak Hour



Note: The above diagram represents the Junction surveyed, although may not be the exact layout of the actual location.

Important This spreadsheet & Interactive Vehicle Flow Diagram was produced based on specific parameters. Consequently, alteration to the spreadsheet format or it's properties may result in malfunction.

Darwen - Manual Traffic Survey, Tuesday 15th November 2016

Produced by Road Data Services Ltd.

Junction: (2) Greenbank Terrace / Eastern Arm / Lower Eccleshill Road / Paul Rink Way

Approach: Greenbank Terrace

TIME	Left to Eastern Arm								Ahead to Lower Eccleshill Road								Right to Paul Rink Way							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0730 - 0745	0	0	0	0	0	0	0	0	0	2	26	3	0	0	0	31	0	0	50	11	0	1	0	62
0745 - 0800	0	0	0	0	0	0	0	0	0	0	27	2	0	0	1	30	0	0	48	12	0	0	0	60
Hourly Total	0	0	0	0	0	0	0	0	0	2	53	5	0	0	1	61	0	0	98	23	0	1	0	122
0800 - 0815	0	0	0	0	0	0	0	0	1	0	22	5	0	0	0	28	0	0	54	12	0	0	0	66
0815 - 0830	0	0	0	0	0	0	0	0	0	0	19	1	0	0	0	20	0	0	36	8	0	0	0	44
0830 - 0845	0	0	0	0	0	0	0	0	0	1	23	2	0	0	0	26	0	0	42	6	0	0	0	48
0845 - 0900	0	0	0	0	0	0	0	0	0	0	20	2	0	0	0	22	0	0	38	2	1	0	0	41
Hourly Total	0	0	0	0	0	0	0	0	1	1	84	10	0	0	0	96	0	0	170	28	1	0	0	199
0900 - 0915	0	0	0	0	0	0	0	0	0	0	19	1	0	0	0	20	0	0	35	3	0	2	0	40
0915 - 0930	0	0	0	0	0	0	0	0	0	1	16	2	0	0	0	19	0	0	34	1	0	1	0	36
Hourly Total	0	0	0	0	0	0	0	0	0	1	35	3	0	0	0	39	0	0	69	4	0	3	0	76
Session Total	0	0	0	0	0	0	0	0	1	4	172	18	0	0	1	196	0	0	337	55	1	4	0	397
1600 - 1615	0	0	0	0	0	0	0	0	0	0	25	2	0	0	0	27	0	0	33	1	0	0	0	34
1615 - 1630	0	0	0	0	0	0	0	0	0	0	33	5	0	0	1	39	0	0	31	0	0	0	0	31
1630 - 1645	0	0	0	0	0	0	0	0	0	1	27	2	0	0	0	30	0	0	26	2	0	0	0	28
1645 - 1700	0	0	0	0	0	0	0	0	1	0	32	2	0	0	0	35	0	0	31	2	1	0	0	34
Hourly Total	0	0	0	0	0	0	0	0	1	1	117	11	0	0	1	131	0	0	121	5	1	0	0	127
1700 - 1715	0	0	0	0	0	0	0	0	0	0	22	5	0	0	1	28	0	0	32	4	0	0	0	36
1715 - 1730	0	0	0	0	0	0	0	0	0	2	24	8	0	0	0	34	0	0	29	1	0	0	0	30
1730 - 1745	0	0	0	0	0	0	0	0	2	0	31	2	0	0	1	36	0	0	35	3	0	0	0	38
1745 - 1800	0	0	0	0	0	0	0	0	0	0	32	1	0	0	0	33	0	0	27	2	0	0	0	29
Hourly Total	0	0	0	0	0	0	0	0	2	2	109	16	0	0	2	131	0	0	123	10	0	0	0	133
Session Total	0	0	0	0	0	0	0	0	3	3	226	27	0	0	3	262	0	0	244	15	1	0	0	260

Darwen - Manual Traffic Survey, Tuesday 15th November 2016

Produced by Road Data Services Ltd.

Junction: (2) Greenbank Terrace / Eastern Arm / Lower Eccleshill Road / Paul Rink Way

Approach: Paul Rink Way

TIME	Left to Greenbank Terrace								Ahead to Eastern Arm								Right to Lower Eccleshill Road							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0730 - 0745	0	0	33	2	0	0	0	35	0	0	0	0	0	0	0	0	0	0	26	4	0	2	0	32
0745 - 0800	0	0	32	0	0	0	0	32	0	0	0	0	0	0	0	0	0	0	38	8	0	1	0	47
Hourly Total	0	0	65	2	0	0	0	67	0	0	0	0	0	0	0	0	0	0	64	12	0	3	0	79
0800 - 0815	0	0	34	3	0	1	0	38	0	0	0	0	0	0	0	0	0	0	37	8	0	1	0	46
0815 - 0830	0	0	32	5	0	2	0	39	0	0	0	0	0	0	0	0	0	0	24	8	1	0	0	33
0830 - 0845	0	0	34	5	0	1	0	40	0	0	0	0	0	0	0	0	0	0	29	7	0	1	0	37
0845 - 0900	0	0	36	6	0	0	0	42	0	0	0	0	0	0	0	0	0	0	31	7	1	0	0	39
Hourly Total	0	0	136	19	0	4	0	159	0	0	0	0	0	0	0	0	0	0	121	30	2	2	0	155
0900 - 0915	0	0	26	1	0	0	0	27	0	0	0	0	0	0	0	0	0	0	22	2	0	2	0	26
0915 - 0930	0	0	28	4	0	0	0	32	0	0	0	0	0	0	0	0	0	0	21	5	1	1	0	28
Hourly Total	0	0	54	5	0	0	0	59	0	0	0	0	0	0	0	0	0	0	43	7	1	3	0	54
Session Total	0	0	255	26	0	4	0	285	0	0	0	0	0	0	0	0	0	0	228	49	3	8	0	288
1600 - 1615	0	0	46	5	0	0	0	51	0	0	0	0	0	0	0	0	0	0	30	5	0	2	0	37
1615 - 1630	0	0	63	5	0	0	0	68	0	0	0	0	0	0	0	0	0	0	54	7	1	1	0	63
1630 - 1645	0	0	56	11	0	0	0	67	0	0	0	0	0	0	0	0	0	0	48	3	0	0	0	51
1645 - 1700	0	0	61	7	0	0	0	68	0	0	0	0	0	0	0	0	0	0	52	4	0	1	0	57
Hourly Total	0	0	226	28	0	0	0	254	0	0	0	0	0	0	0	0	0	0	184	19	1	4	0	208
1700 - 1715	0	1	42	8	0	0	0	51	0	0	0	0	0	0	0	0	0	0	45	3	1	2	0	51
1715 - 1730	0	0	39	2	0	0	0	41	0	0	0	0	0	0	0	0	0	0	46	2	0	1	0	49
1730 - 1745	0	0	48	6	0	0	0	54	0	0	0	0	0	0	0	0	0	0	42	4	0	3	0	49
1745 - 1800	0	0	47	9	0	0	0	56	0	0	0	0	0	0	0	0	0	0	34	5	0	1	0	40
Hourly Total	0	1	176	25	0	0	0	202	0	0	0	0	0	0	0	0	0	0	167	14	1	7	0	189
Session Total	0	1	402	53	0	0	0	456	0	0	0	0	0	0	0	0	0	0	351	33	2	11	0	397

Darwen - Manual Traffic Survey, Tuesday 15th November 2016

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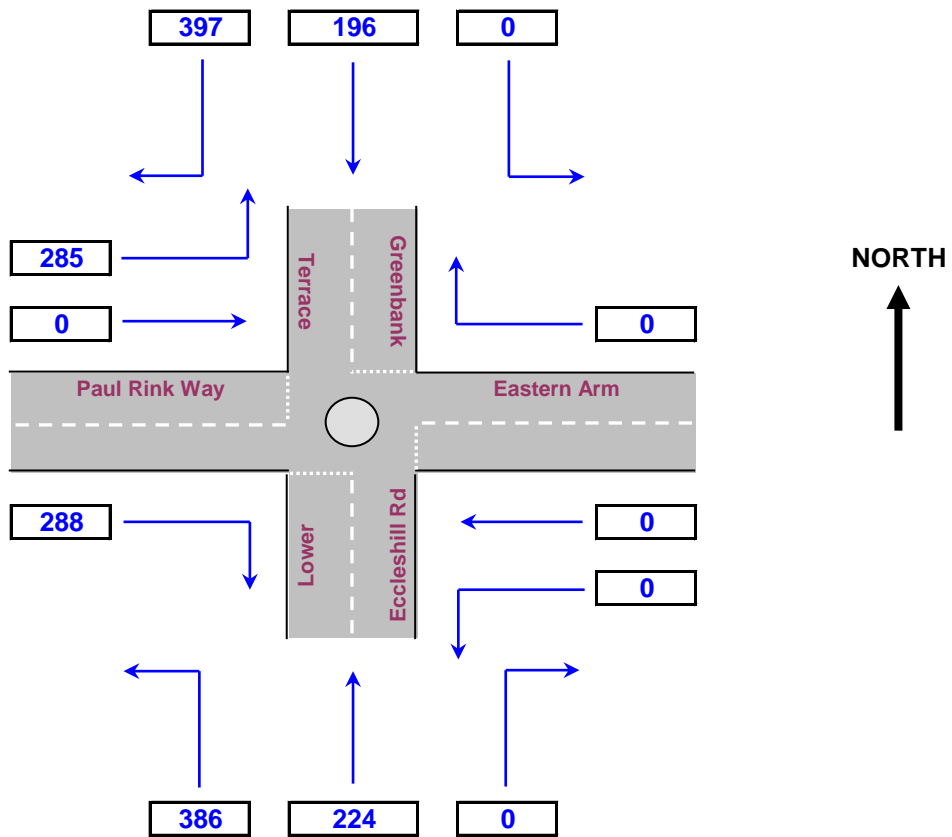
Junction: (2) Greenbank Terrace / Eastern Arm / Lower Eccleshill Road / Paul Rink Way

Vehicle Class: ALL CLASSES

Start Time: 1) 0730

End Time: 1) 0930

Peak Hour



Note: The above diagram represents the Junction surveyed, although may not be the exact layout of the actual location.

Important This spreadsheet & Interactive Vehicle Flow Diagram was produced based on specific Note: parameters. Consequently, alteration to the spreadsheet format or it's properties may result in malfunction.

Darwen - Manual Traffic Survey, Tuesday 15th November 2016

Produced by Road Data Services Ltd.

Junction: (3) Blackburn Road / Earcroft Way

Approach: Blackburn Road (North)

TIME	Left to Earcroft Way								Ahead to Blackburn Road (South)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0730 - 0745	0	1	85	8	1	2	0	97	0	0	57	13	1	2	0	73
0745 - 0800	0	0	82	19	0	3	0	104	1	1	66	15	0	2	0	85
Hourly Total	0	1	167	27	1	5	0	201	1	1	123	28	1	4	0	158
0800 - 0815	0	0	67	15	3	5	0	90	0	0	59	16	2	1	0	78
0815 - 0830	0	2	68	9	1	5	0	85	0	0	77	17	0	3	3	100
0830 - 0845	0	2	85	9	2	8	0	106	0	0	74	14	1	4	2	95
0845 - 0900	0	0	88	17	0	8	1	114	0	1	69	18	1	2	1	92
Hourly Total	0	4	308	50	6	26	1	395	0	1	279	65	4	10	6	365
0900 - 0915	0	0	70	10	1	8	0	89	0	2	75	18	0	1	1	97
0915 - 0930	0	0	75	10	2	4	0	91	0	1	71	10	0	2	3	87
Hourly Total	0	0	145	20	3	12	0	180	0	3	146	28	0	3	4	184

Session Total	0	5	620	97	10	43	1	776	1	5	548	121	5	17	10	707
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1600 - 1615	0	0	82	8	1	1	0	92	0	0	42	9	2	0	0	53
1615 - 1630	0	1	75	12	0	2	0	90	0	3	58	12	1	1	1	76
1630 - 1645	0	0	72	19	0	2	0	93	0	1	63	13	0	1	2	80
1645 - 1700	0	0	73	17	0	4	0	94	0	1	67	13	1	2	2	86
Hourly Total	0	1	302	56	1	9	0	369	0	5	230	47	4	4	5	295
1700 - 1715	0	0	75	13	1	9	0	98	0	0	53	11	0	2	1	67
1715 - 1730	0	1	58	12	1	7	0	79	0	0	61	15	1	1	2	80
1730 - 1745	0	0	53	7	2	7	0	69	0	0	52	16	0	1	1	70
1745 - 1800	0	1	59	8	0	3	0	71	0	1	68	11	0	1	0	81
Hourly Total	0	2	245	40	4	26	0	317	0	1	234	53	1	5	4	298

Session Total	0	3	547	96	5	35	0	686	0	6	464	100	5	9	9	593
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Darwen - Manual Traffic Survey, Tuesday 15th November 2016

Produced by Road Data Services Ltd.

Junction: (3) Blackburn Road / Earcroft Way

Approach: Earcroft Way

TIME	Left to Blackburn Road (South)								Right to Blackburn Road (North)							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0730 - 0745	0	0	89	10	2	2	0	103	0	0	57	11	0	5	0	73
0745 - 0800	0	1	93	19	0	2	0	115	0	0	69	16	2	2	0	89
Hourly Total	0	1	182	29	2	4	0	218	0	0	126	27	2	7	0	162
0800 - 0815	0	0	85	13	4	3	0	105	0	0	71	15	0	3	0	89
0815 - 0830	0	1	91	12	1	4	1	110	0	0	75	14	1	6	0	96
0830 - 0845	0	0	80	13	0	2	0	95	0	0	48	12	1	8	0	69
0845 - 0900	0	0	106	13	1	2	0	122	0	0	54	10	0	4	0	68
Hourly Total	0	1	362	51	6	11	1	432	0	0	248	51	2	21	0	322
0900 - 0915	0	0	105	13	4	3	0	125	0	0	45	10	1	3	0	59
0915 - 0930	0	0	80	10	1	4	0	95	0	0	52	9	0	2	0	63
Hourly Total	0	0	185	23	5	7	0	220	0	0	97	19	1	5	0	122
Session Total	0	2	729	103	13	22	1	870	0	0	471	97	5	33	0	606
1600 - 1615	0	0	52	10	2	2	0	66	0	0	81	12	0	3	0	96
1615 - 1630	0	0	62	10	1	1	0	74	0	1	83	18	1	5	0	108
1630 - 1645	0	0	63	8	1	4	0	76	0	0	93	15	1	1	0	110
1645 - 1700	0	1	74	8	3	1	0	87	0	2	77	14	0	6	0	99
Hourly Total	0	1	251	36	7	8	0	303	0	3	334	59	2	15	0	413
1700 - 1715	0	0	83	8	1	2	0	94	0	0	77	12	0	2	0	91
1715 - 1730	0	0	68	12	2	2	2	86	0	1	79	16	2	3	0	101
1730 - 1745	0	0	64	12	0	3	1	80	0	0	82	11	1	2	0	96
1745 - 1800	0	0	71	15	1	1	0	88	0	2	62	8	0	1	0	73
Hourly Total	0	0	286	47	4	8	3	348	0	3	300	47	3	8	0	361
Session Total	0	1	537	83	11	16	3	651	0	6	634	106	5	23	0	774

Darwen - Manual Traffic Survey, Tuesday 15th November 2016

Produced by Road Data Services Ltd.

Junction: (3) Blackburn Road / Earcroft Way

Approach: Blackburn Road (South)

TIME	Ahead to Blackburn Road (North)								Right to Earcroft Way							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0730 - 0745	0	0	53	7	3	0	3	66	0	2	72	10	2	5	0	91
0745 - 0800	0	1	68	10	1	2	1	83	0	0	80	16	0	7	1	104
Hourly Total	0	1	121	17	4	2	4	149	0	2	152	26	2	12	1	195
0800 - 0815	0	0	73	12	2	3	1	91	0	1	98	17	0	11	0	127
0815 - 0830	1	0	66	16	1	2	3	89	0	2	98	10	1	3	0	114
0830 - 0845	0	0	51	15	0	1	5	72	0	0	68	8	1	2	0	79
0845 - 0900	0	0	57	9	1	1	3	71	0	0	65	19	0	3	0	87
Hourly Total	1	0	247	52	4	7	12	323	0	3	329	54	2	19	0	407
0900 - 0915	0	0	51	11	2	0	2	66	0	0	60	15	2	3	0	80
0915 - 0930	0	1	53	11	1	2	2	70	0	1	54	12	0	6	0	73
Hourly Total	0	1	104	22	3	2	4	136	0	1	114	27	2	9	0	153

Session Total	1	2	472	91	11	11	20	608	0	6	595	107	6	40	1	755
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1600 - 1615	0	0	56	24	0	0	2	82	0	0	54	20	2	3	0	79
1615 - 1630	0	0	76	23	1	1	4	105	0	0	87	18	2	4	0	111
1630 - 1645	0	0	65	14	1	0	0	80	0	0	98	14	1	1	1	115
1645 - 1700	0	2	62	16	0	2	1	83	0	0	96	15	0	2	2	115
Hourly Total	0	2	259	77	2	3	7	350	0	0	335	67	5	10	3	420
1700 - 1715	0	0	88	16	2	1	2	109	0	1	93	14	2	2	0	112
1715 - 1730	0	1	82	12	1	1	3	100	0	2	83	18	1	2	0	106
1730 - 1745	0	0	84	10	1	1	2	98	0	0	92	14	0	2	0	108
1745 - 1800	0	0	71	13	0	2	1	87	0	0	70	10	0	1	0	81
Hourly Total	0	1	325	51	4	5	8	394	0	3	338	56	3	7	0	407

Session Total	0	3	584	128	6	8	15	744	0	3	673	123	8	17	3	827
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Darwen - Manual Traffic Survey, Tuesday 15th November 2016

Produced by Road Data Services Ltd.

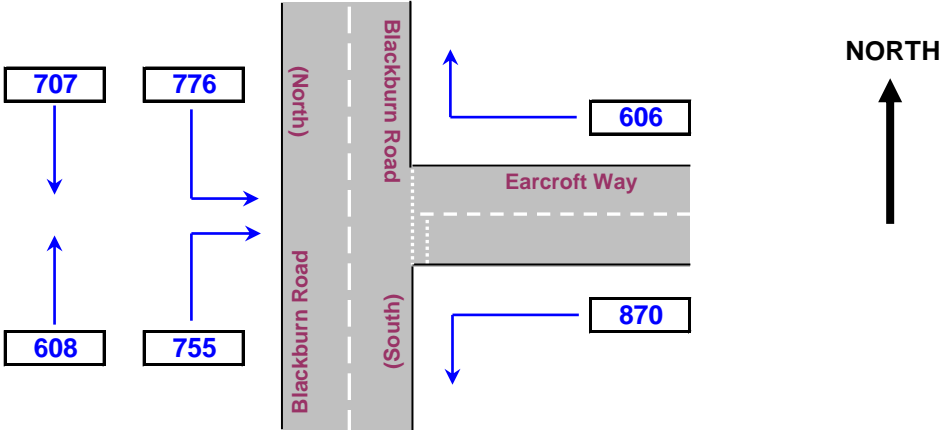
Junction: (3) Blackburn Road / Earcroft Way

Vehicle Class:

Start Time:

End Time:

Peak Hour



Note: The above diagram represents the Junction surveyed, although may not be the exact layout of the actual location.

Important This spreadsheet & Interactive Vehicle Flow Diagram was produced based on specific parameters. Consequently, alteration to the spreadsheet format or it's properties may result in malfunction.

Darwen - Manual Traffic Survey, Tuesday 15th November 2016

Produced by Road Data Services Ltd.

Junction: (4) Lower Eccleshill Road / Goose House Lane / Hollins Grove Street

Approach: Lower Eccleshill Road

TIME	Left to Goose House Lane								Ahead to Hollins Grove Street							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0730 - 0745	0	0	18	2	0	0	0	20	0	0	11	1	0	0	0	12
0745 - 0800	0	0	23	4	0	0	1	28	0	0	11	0	0	0	0	11
Hourly Total	0	0	41	6	0	0	1	48	0	0	22	1	0	0	0	23
0800 - 0815	0	0	24	3	0	0	0	27	0	0	19	0	0	0	0	19
0815 - 0830	0	0	27	2	0	0	0	29	0	0	17	3	0	0	0	20
0830 - 0845	0	0	27	0	0	0	0	27	0	0	15	1	0	0	0	16
0845 - 0900	0	1	30	1	0	0	0	32	0	0	19	1	0	0	0	20
Hourly Total	0	1	108	6	0	0	0	115	0	0	70	5	0	0	0	75
0900 - 0915	0	0	21	2	0	0	0	23	0	0	17	1	0	0	0	18
0915 - 0930	0	0	27	2	0	0	0	29	0	0	14	2	0	0	0	16
Hourly Total	0	0	48	4	0	0	0	52	0	0	31	3	0	0	0	34

Session Total	0	1	197	16	0	0	1	215	0	0	123	9	0	0	0	132
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1600 - 1615	0	0	26	1	0	0	0	27	0	0	37	2	0	0	0	39
1615 - 1630	0	0	39	2	0	0	1	42	0	0	33	1	0	0	0	34
1630 - 1645	0	0	36	5	0	0	0	41	0	0	31	3	0	0	0	34
1645 - 1700	0	0	40	2	0	0	0	42	0	0	33	2	0	0	0	35
Hourly Total	0	0	141	10	0	0	1	152	0	0	134	8	0	0	0	142
1700 - 1715	0	0	36	0	0	0	0	36	0	0	32	4	0	0	0	36
1715 - 1730	0	0	37	4	0	0	0	41	2	0	38	3	0	0	0	43
1730 - 1745	0	0	28	1	0	0	0	29	0	0	27	4	0	0	0	31
1745 - 1800	0	0	30	1	0	0	0	31	0	0	25	3	0	0	0	28
Hourly Total	0	0	131	6	0	0	0	137	2	0	122	14	0	0	0	138

Session Total	0	0	272	16	0	0	1	289	2	0	256	22	0	0	0	280
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Darwen - Manual Traffic Survey, Tuesday 15th November 2016

Produced by Road Data Services Ltd.

Junction: (4) Lower Eccleshill Road / Goose House Lane / Hollins Grove Street

Approach: Goose House Lane

TIME	Left to Hollins Grove Street								Right to Lower Eccleshill Road							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0730 - 0745	0	0	7	1	0	0	0	8	0	0	36	2	0	0	0	38
0745 - 0800	0	0	9	1	0	0	0	10	0	1	32	5	0	0	0	38
Hourly Total	0	0	16	2	0	0	0	18	0	1	68	7	0	0	0	76
0800 - 0815	0	0	10	3	0	0	0	13	0	0	29	3	0	0	0	32
0815 - 0830	0	0	10	3	0	0	0	13	0	0	36	4	0	0	1	41
0830 - 0845	0	0	11	1	0	0	0	12	0	0	50	5	0	0	0	55
0845 - 0900	0	1	12	2	0	0	0	15	0	0	48	2	0	0	0	50
Hourly Total	0	1	43	9	0	0	0	53	0	0	163	14	0	0	1	178
0900 - 0915	0	0	17	4	0	0	0	21	0	0	37	2	0	0	0	39
0915 - 0930	0	0	16	2	0	0	0	18	0	0	23	3	0	0	0	26
Hourly Total	0	0	33	6	0	0	0	39	0	0	60	5	0	0	0	65

Session Total	0	1	92	17	0	0	0	110	0	1	291	26	0	0	1	319
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1600 - 1615	0	0	8	2	0	0	0	10	0	0	27	2	0	0	0	29
1615 - 1630	0	0	12	3	0	0	0	15	0	0	26	3	0	0	1	30
1630 - 1645	0	0	9	2	0	0	0	11	0	0	33	3	0	0	0	36
1645 - 1700	0	0	16	1	0	0	0	17	0	0	31	3	0	0	0	34
Hourly Total	0	0	45	8	0	0	0	53	0	0	117	11	0	0	1	129
1700 - 1715	0	0	16	0	0	0	0	16	0	0	22	3	0	0	0	25
1715 - 1730	0	0	16	0	0	0	0	16	0	0	22	1	0	0	0	23
1730 - 1745	0	0	13	0	0	0	0	13	0	0	22	1	0	0	0	23
1745 - 1800	0	0	14	0	0	0	0	14	0	0	26	2	0	0	0	28
Hourly Total	0	0	59	0	0	0	0	59	0	0	92	7	0	0	0	99

Session Total	0	0	104	8	0	0	0	112	0	0	209	18	0	0	1	228
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Darwen - Manual Traffic Survey, Tuesday 15th November 2016

Produced by Road Data Services Ltd.

Junction: (4) Lower Eccleshill Road / Goose House Lane / Hollins Grove Street

Approach: Hollins Grove Street

TIME	Ahead to Lower Eccleshill Road								Right to Goose House Lane							
	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	P/CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0730 - 0745	0	0	39	2	0	0	0	41	0	0	5	0	0	0	0	5
0745 - 0800	0	0	35	5	0	0	0	40	0	0	6	1	0	0	0	7
Hourly Total	0	0	74	7	0	0	0	81	0	0	11	1	0	0	0	12
0800 - 0815	0	0	38	2	0	0	0	40	0	0	7	2	0	0	0	9
0815 - 0830	0	0	32	5	0	0	0	37	0	0	7	0	0	0	0	7
0830 - 0845	0	0	28	2	0	0	0	30	0	0	11	1	0	0	0	12
0845 - 0900	0	1	28	1	0	1	0	31	0	0	10	2	0	0	0	12
Hourly Total	0	1	126	10	0	1	0	138	0	0	35	5	0	0	0	40
0900 - 0915	0	0	25	1	0	0	0	26	0	0	9	2	0	0	0	11
0915 - 0930	0	0	29	3	0	0	0	32	0	0	4	2	0	0	0	6
Hourly Total	0	0	54	4	0	0	0	58	0	0	13	4	0	0	0	17
Session Total	0	1	254	21	0	1	0	277	0	0	59	10	0	0	0	69
1600 - 1615	0	0	25	2	0	0	0	27	0	0	15	1	0	0	0	16
1615 - 1630	0	0	21	1	0	0	0	22	0	0	15	2	0	0	0	17
1630 - 1645	0	0	29	1	0	0	0	30	0	0	10	1	0	0	0	11
1645 - 1700	0	0	25	1	0	0	0	26	0	0	12	1	0	0	0	13
Hourly Total	0	0	100	5	0	0	0	105	0	0	52	5	0	0	0	57
1700 - 1715	0	0	21	4	0	0	0	25	0	0	12	2	0	0	0	14
1715 - 1730	0	0	23	1	0	0	0	24	0	0	9	1	0	0	0	10
1730 - 1745	0	0	19	2	0	0	0	21	0	0	8	0	0	0	0	8
1745 - 1800	0	0	22	4	0	0	0	26	0	0	7	0	0	0	0	7
Hourly Total	0	0	85	11	0	0	0	96	0	0	36	3	0	0	0	39
Session Total	0	0	185	16	0	0	0	201	0	0	88	8	0	0	0	96

Darwen - Manual Traffic Survey, Tuesday 15th November 2016

Produced by Road Data Services Ltd.

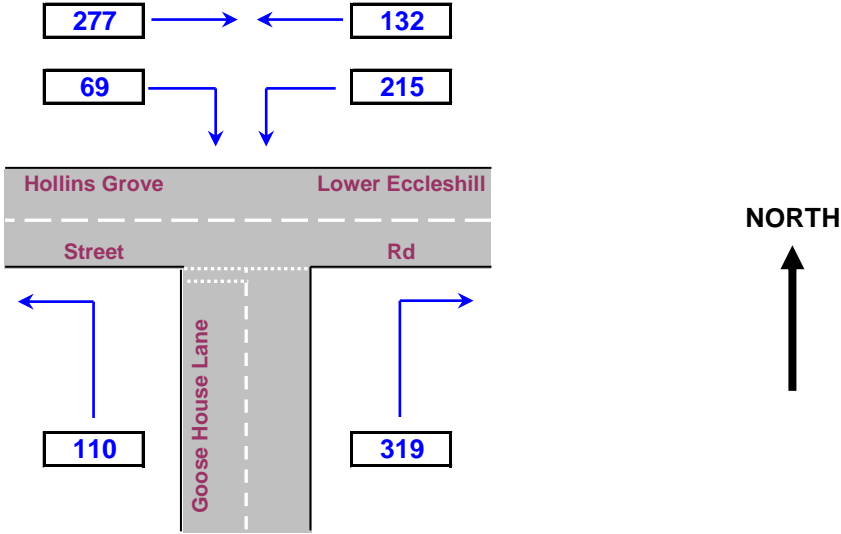
Junction: (4) Lower Eccleshill Road / Goose House Lane / Hollins Grove Street

Vehicle Class:

Start Time:

End Time:

Peak Hour



Note: The above diagram represents the Junction surveyed, although may not be the exact layout of the actual location.

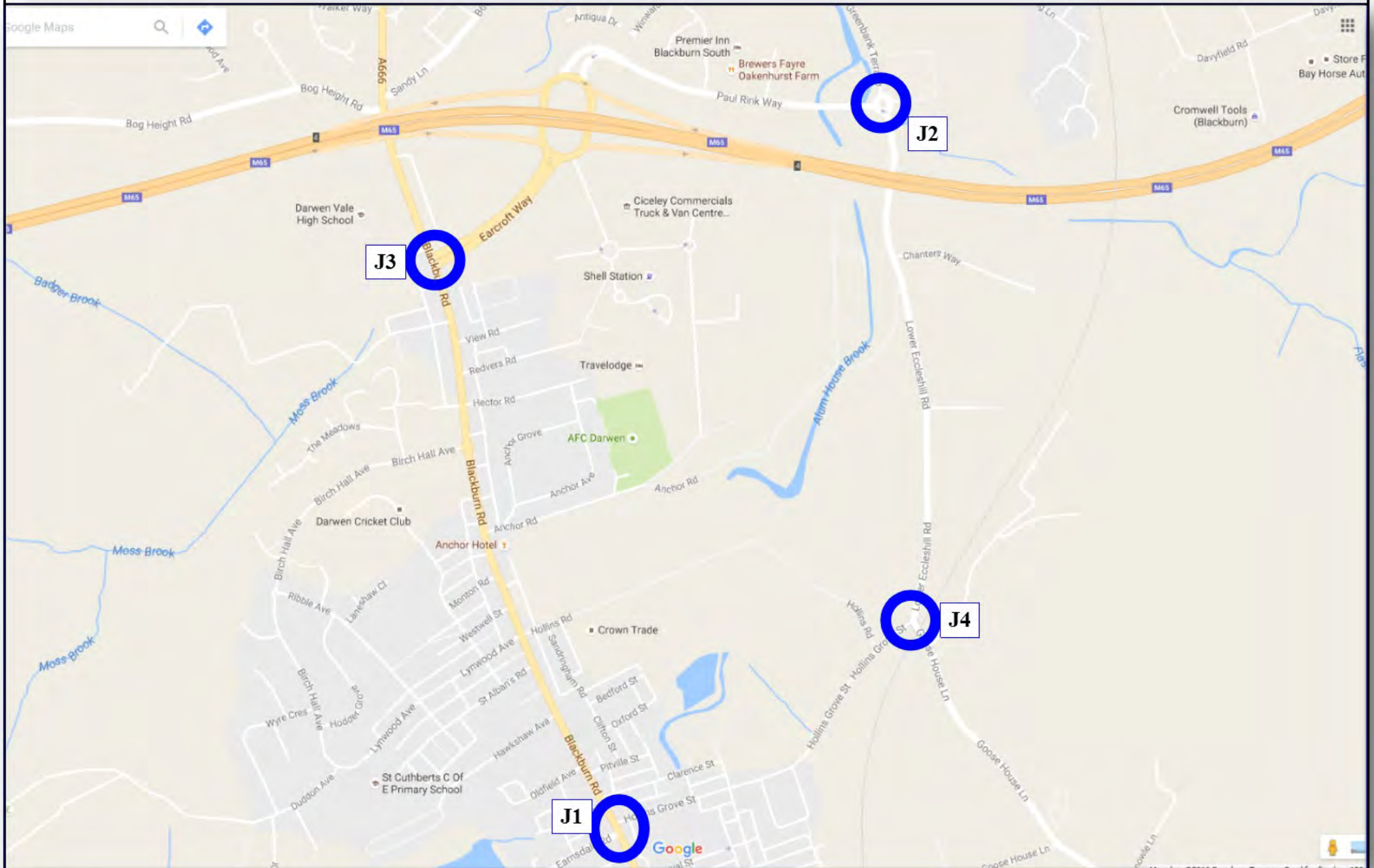
Important This spreadsheet & Interactive Vehicle Flow Diagram was produced based on specific Note: parameters. Consequently, alteration to the spreadsheet format or it's properties may result in malfunction.

ROAD DATA SERVICES Map Sheet

Road Data Services Ltd

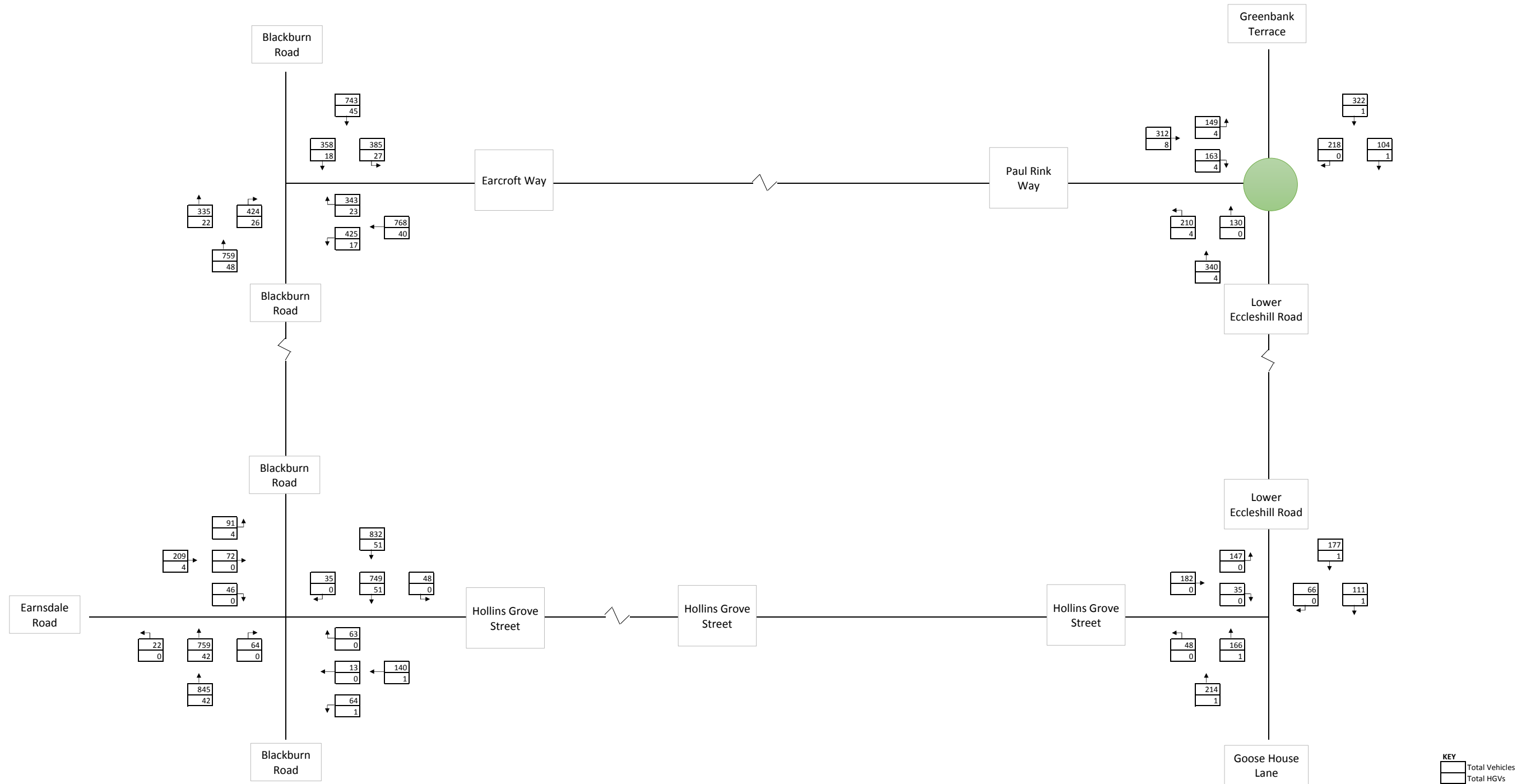
Project: Darwen

Date: November 2016

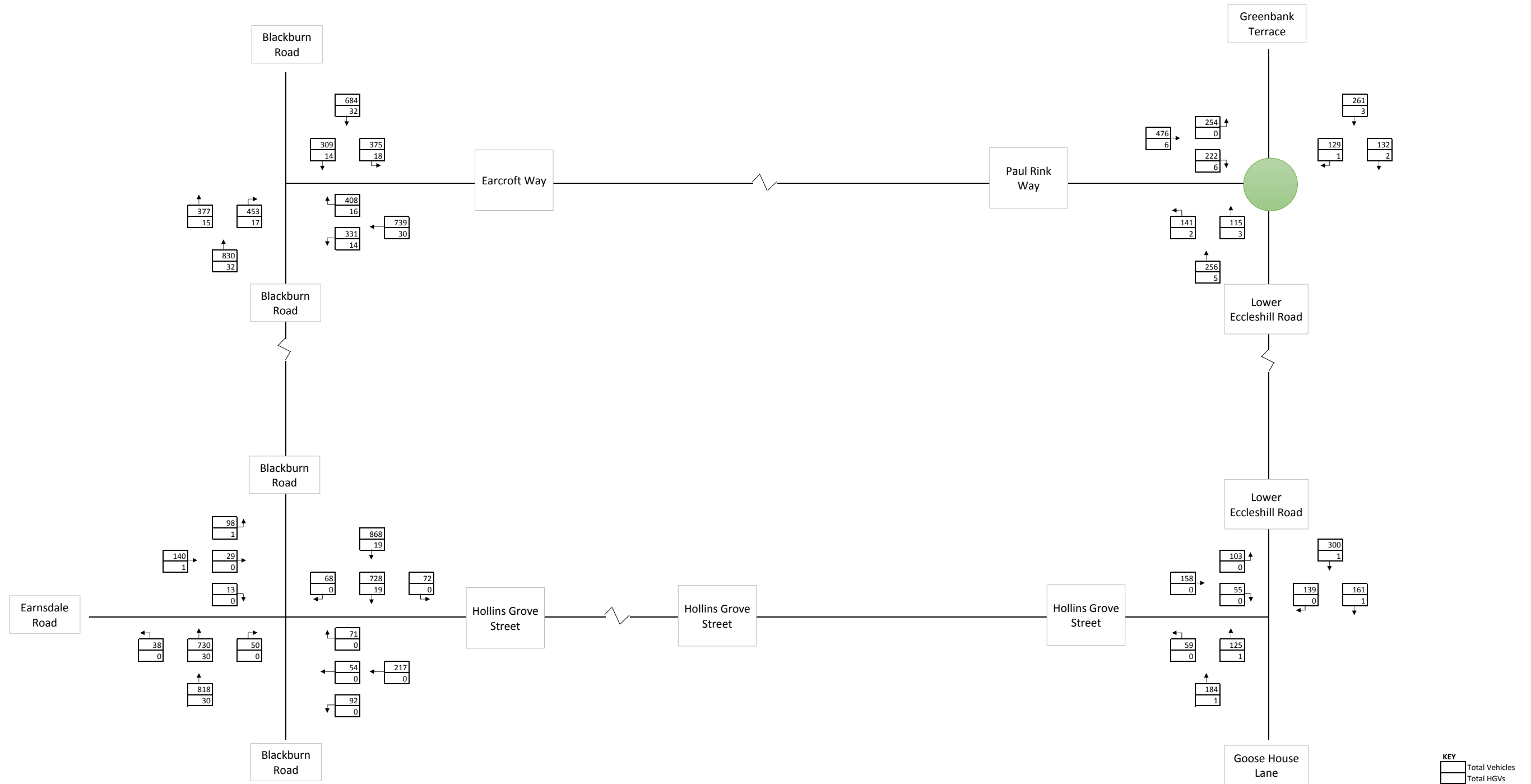


APPENDIX BGH 5

2016 EXISTING VEHICULAR FLOWS
HOLLINS PAPER MILL, DARWEN
TUESDAY 15TH NOVEMBER 2016
7:45 am - 8:45 am
AM PEAK



2016 EXISTING VEHICULAR FLOWS
HOLLINS PAPER MILL, DARWEN
TUESDAY 15TH NOVEMBER 2016
4:15 pm - 5:15 pm
PM PEAK



APPENDIX BGH 6

<h1>Junctions 8</h1>
<h2>PICADY 8 - Priority Intersection Module</h2>
Version: 8.0.5.523 [19102,19/06/2015] © Copyright TRL Limited, 2017
For sales and distribution information, program advice and maintenance, contact TRL: Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Hollins Grove St-Lower Eccleshill Rd-Goose House Ln.arc8
Path: Y:\2016\16-401 to 16-425\16-423 Hollins Paper Mill, Darwen\Technical\Junction Models\PICADY
Report generation date: 03/03/2017 11:00:45

- « Existing Layout - 2016 Existing, AM Peak
- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

Summary of junction performance

	AM Peak			
	Queue (PCU)	Delay (s)	RFC	LOS
Existing Layout - 2016 Existing				
Stream B-AC	0.54	9.81	0.35	A
Stream C-AB	0.19	6.37	0.14	A
Stream C-A	-	-	-	-
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

- "D1 - 2016 Existing, AM Peak " model duration: 07:30 - 09:00
- "D2 - 2016 Existing, PM Peak" model duration: 16:00 - 17:30
- "D3 - 2027 Base, AM Peak" model duration: 07:30 - 09:00
- "D4 - 2027 Base, PM Peak" model duration: 16:00 - 17:30
- "D5 - 2027 Predicted, AM Peak" model duration: 07:30 - 09:00
- "D6 - 2027 Predicted, PM Peak" model duration: 16:00 - 17:30

Run using Junctions 8.0.5.523 at 03/03/2017 11:00:45

File summary

Title	Hollins Grove Street/Lower Eccleshill Road/Goose House Lane Priority T- Junction
Location	Darwen, Lancashire
Site Number	
Date	02/12/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	16-423
Enumerator	rdonaldson
Description	

Analysis Options

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

Units

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

Existing Layout - 2016 Existing, AM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2016 Existing, AM Peak	2016 Existing	AM Peak		ONE HOUR	07:30	09:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Hollins Grove Street/Lower Eccleshill Road/Goose House Lane	T-Junction	Two-way	A,B,C	8.77	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Goose House Lane	A	Goose House Lane		Major
Hollins Grove Street	B	Hollins Grove Street		Minor
Lower Eccleshill Road	C	Lower Eccleshill Road		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Lower Eccleshill Road	7.00		0.00		2.20	90.00	✓	0.00

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Hollins Grove Street	One lane	3.40										34	23

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	519.921	0.091	0.229	0.144	0.327
1	B-C	663.982	0.097	0.246	-	-
1	C-B	626.083	0.232	0.232	-	-

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

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Goose House Lane	ONE HOUR	✓	215.00	100.000
Hollins Grove Street	ONE HOUR	✓	182.00	100.000
Lower Eccleshill Road	ONE HOUR	✓	178.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.000	48.000	167.000
	Hollins Grove Street	35.000	0.000	147.000
	Lower Eccleshill Road	112.000	66.000	0.000

Turning Proportions (PCU) - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.00	0.22	0.78
	Hollins Grove Street	0.19	0.00	0.81
	Lower Eccleshill Road	0.63	0.37	0.00

Vehicle Mix

Average PCU Per Vehicle - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	1.000	1.000	1.000
	Hollins Grove Street	1.000	1.000	1.000
	Lower Eccleshill Road	1.000	1.000	1.000

Heavy Vehicle Percentages - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.0	0.0	0.0
	Hollins Grove Street	0.0	0.0	0.0
	Lower Eccleshill Road	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.35	9.81	0.54	A
C-AB	0.14	6.37	0.19	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (07:30-07:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	137.02	135.82	0.00	587.70	0.233	0.30	7.947	A
C-AB	57.02	56.57	0.00	645.16	0.088	0.11	6.113	A
C-A	76.99	76.99	0.00	-	-	-	-	-
A-B	36.14	36.14	0.00	-	-	-	-	-
A-C	125.73	125.73	0.00	-	-	-	-	-

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	163.61	163.26	0.00	579.23	0.282	0.39	8.648	A
C-AB	70.05	69.93	0.00	649.25	0.108	0.14	6.214	A
C-A	89.97	89.97	0.00	-	-	-	-	-
A-B	43.15	43.15	0.00	-	-	-	-	-
A-C	150.13	150.13	0.00	-	-	-	-	-

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	200.39	199.79	0.00	567.48	0.353	0.54	9.775	A
C-AB	89.15	88.96	0.00	655.04	0.136	0.19	6.360	A
C-A	106.83	106.83	0.00	-	-	-	-	-
A-B	52.85	52.85	0.00	-	-	-	-	-
A-C	183.87	183.87	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	200.39	200.37	0.00	567.46	0.353	0.54	9.806	A
C-AB	89.18	89.18	0.00	655.07	0.136	0.19	6.366	A
C-A	106.80	106.80	0.00	-	-	-	-	-
A-B	52.85	52.85	0.00	-	-	-	-	-
A-C	183.87	183.87	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	163.61	164.18	0.00	579.20	0.282	0.40	8.686	A
C-AB	70.09	70.28	0.00	649.31	0.108	0.15	6.220	A
C-A	89.93	89.93	0.00	-	-	-	-	-
A-B	43.15	43.15	0.00	-	-	-	-	-
A-C	150.13	150.13	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	137.02	137.38	0.00	587.64	0.233	0.31	8.003	A
C-AB	57.09	57.22	0.00	645.22	0.088	0.12	6.126	A
C-A	76.91	76.91	0.00	-	-	-	-	-
A-B	36.14	36.14	0.00	-	-	-	-	-
A-C	125.73	125.73	0.00	-	-	-	-	-

Junctions 8
PICADY 8 - Priority Intersection Module
Version: 8.0.5.523 [19102,19/06/2015] © Copyright TRL Limited, 2017
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Filename: Hollins Grove St-Lower Eccleshill Rd-Goose House Ln.arc8
Path: Y:\2016\16-401 to 16-425\16-423 Hollins Paper Mill, Darwen\Technical\Junction Models\PICADY
Report generation date: 03/03/2017 11:01:10

- « Existing Layout - 2016 Existing, PM Peak
- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

Summary of junction performance

	PM Peak			
	Queue (PCU)	Delay (s)	RFC	LOS
Existing Layout - 2016 Existing				
Stream B-AC	0.49	10.24	0.33	B
Stream C-AB	0.52	7.29	0.29	A
Stream C-A	-	-	-	-
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

- "D1 - 2016 Existing, AM Peak" model duration: 07:30 - 09:00
- "D2 - 2016 Existing, PM Peak " model duration: 16:00 - 17:30
- "D3 - 2027 Base, AM Peak" model duration: 07:30 - 09:00
- "D4 - 2027 Base, PM Peak" model duration: 16:00 - 17:30
- "D5 - 2027 Predicted, AM Peak" model duration: 07:30 - 09:00
- "D6 - 2027 Predicted, PM Peak" model duration: 16:00 - 17:30

Run using Junctions 8.0.5.523 at 03/03/2017 11:01:10

File summary

Title	Hollins Grove Street/Lower Eccleshill Road/Goose House Lane Priority T- Junction
Location	Darwen, Lancashire
Site Number	
Date	02/12/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	16-423
Enumerator	rdonaldson
Description	

Analysis Options

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

Units

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

Existing Layout - 2016 Existing, PM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2016 Existing, PM Peak	2016 Existing	PM Peak		ONE HOUR	16:00	17:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Hollins Grove Street/Lower Eccleshill Road/Goose House Lane	T-Junction	Two-way	A,B,C	8.68	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Goose House Lane	A	Goose House Lane		Major
Hollins Grove Street	B	Hollins Grove Street		Minor
Lower Eccleshill Road	C	Lower Eccleshill Road		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Lower Eccleshill Road	7.00		0.00		2.20	90.00	✓	0.00

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Hollins Grove Street	One lane	3.40										34	23

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	519.921	0.091	0.229	0.144	0.327
1	B-C	663.982	0.097	0.246	-	-
1	C-B	626.083	0.232	0.232	-	-

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

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Goose House Lane	ONE HOUR	✓	185.00	100.000
Hollins Grove Street	ONE HOUR	✓	158.00	100.000
Lower Eccleshill Road	ONE HOUR	✓	301.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.000	59.000	126.000
	Hollins Grove Street	55.000	0.000	103.000
	Lower Eccleshill Road	162.000	139.000	0.000

Turning Proportions (PCU) - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.00	0.32	0.68
	Hollins Grove Street	0.35	0.00	0.65
	Lower Eccleshill Road	0.54	0.46	0.00

Vehicle Mix

Average PCU Per Vehicle - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	1.000	1.000	1.000
	Hollins Grove Street	1.000	1.000	1.000
	Lower Eccleshill Road	1.000	1.000	1.000

Heavy Vehicle Percentages - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.0	0.0	0.0
	Hollins Grove Street	0.0	0.0	0.0
	Lower Eccleshill Road	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.33	10.24	0.49	B
C-AB	0.29	7.29	0.52	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (16:00-16:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	118.95	117.86	0.00	552.07	0.215	0.27	8.270	A
C-AB	127.66	126.56	0.00	675.47	0.189	0.28	6.550	A
C-A	98.95	98.95	0.00	-	-	-	-	-
A-B	44.42	44.42	0.00	-	-	-	-	-
A-C	94.86	94.86	0.00	-	-	-	-	-

Main results: (16:15-16:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	142.04	141.72	0.00	541.01	0.263	0.35	9.008	A
C-AB	158.81	158.46	0.00	685.68	0.232	0.36	6.831	A
C-A	111.78	111.78	0.00	-	-	-	-	-
A-B	53.04	53.04	0.00	-	-	-	-	-
A-C	113.27	113.27	0.00	-	-	-	-	-

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	173.96	173.42	0.00	525.58	0.331	0.49	10.205	B
C-AB	205.56	204.96	0.00	699.93	0.294	0.51	7.275	A
C-A	125.85	125.85	0.00	-	-	-	-	-
A-B	64.96	64.96	0.00	-	-	-	-	-
A-C	138.73	138.73	0.00	-	-	-	-	-

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	173.96	173.95	0.00	525.49	0.331	0.49	10.240	B
C-AB	205.69	205.68	0.00	700.08	0.294	0.52	7.294	A
C-A	125.71	125.71	0.00	-	-	-	-	-
A-B	64.96	64.96	0.00	-	-	-	-	-
A-C	138.73	138.73	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	142.04	142.56	0.00	540.87	0.263	0.36	9.051	A
C-AB	158.99	159.56	0.00	685.90	0.232	0.37	6.855	A
C-A	111.60	111.60	0.00	-	-	-	-	-
A-B	53.04	53.04	0.00	-	-	-	-	-
A-C	113.27	113.27	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	118.95	119.28	0.00	551.84	0.216	0.28	8.330	A
C-AB	127.92	128.28	0.00	675.69	0.189	0.28	6.587	A
C-A	98.69	98.69	0.00	-	-	-	-	-
A-B	44.42	44.42	0.00	-	-	-	-	-
A-C	94.86	94.86	0.00	-	-	-	-	-

<h1>Junctions 8</h1>
<h2>ARCADY 8 - Roundabout Module</h2>
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Filename: Lower Eccleshill Rd-Paul Rink Way-Greenbank Terrace Roundabout.arc8
Path: Y:\2016\16-401 to 16-425\16-423 Hollins Paper Mill, Darwen\Technical\Junction Models\ARCADY
Report generation date: 03/03/2017 10:56:21

- « Existing Layout - 2016 Existing, AM Peak
- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

Summary of junction performance

	AM Peak			
	Queue (PCU)	Delay (s)	RFC	LOS
	Existing Layout - 2016 Existing			
Unused Access Stub	0.00	0.00	0.00	A
Lower Eccleshill Road	0.55	5.28	0.36	A
Paul Rink Way	0.36	3.64	0.26	A
Greenbank Terrace	0.48	4.84	0.32	A

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

- "D1 - 2016 Existing, AM Peak" model duration: 07:30 - 09:00
- "D2 - 2016 Existing, PM Peak" model duration: 16:00 - 17:30
- "D3 - 2027 Base, AM Peak" model duration: 07:30 - 09:00
- "D4 - 2027 Base, PM Peak" model duration: 16:00 - 17:30
- "D5 - 2027 Predicted, AM Peak" model duration: 07:30 - 09:00
- "D6 - 2027 Predicted, PM Peak" model duration: 16:00 - 17:30

Run using Junctions 8.0.5.523 at 03/03/2017 10:56:21

File summary

Title	Lower Eccleshill Road/Paul Rink Way/Greenbank Terrace Roundabout Junction
Location	Darwen, Lancashire
Site Number	
Date	30/11/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	16-423
Enumerator	rdonaldson
Description	

Analysis Options

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

Units

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

Existing Layout - 2016 Existing, AM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2016 Existing, AM Peak	2016 Existing	AM Peak		ONE HOUR	07:30	09:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4			4.60	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Unused Access Stub	1	Unused Access Stub	
Lower Eccleshill Road	2	Lower Eccleshill Road	
Paul Rink Way	3	Paul Rink Way	
Greenbank Terrace	4	Greenbank Terrace	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Unused Access Stub	0.00	99999.00
Lower Eccleshill Road	0.00	99999.00
Paul Rink Way	0.00	99999.00
Greenbank Terrace	0.00	99999.00

Roundabout Geometry

Name	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
Unused Access Stub	3.60	5.30	2.70	21.40	36.00	33.00	
Lower Eccleshill Road	2.90	6.10	4.30	25.30	36.00	26.00	
Paul Rink Way	3.80	5.90	4.20	29.30	36.00	28.00	
Greenbank Terrace	3.20	5.60	3.00	21.90	36.00	24.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Unused Access Stub		(calculated)	(calculated)	0.557	1252.559
Lower Eccleshill Road		(calculated)	(calculated)	0.555	1193.561
Paul Rink Way		(calculated)	(calculated)	0.602	1427.489
Greenbank Terrace		(calculated)	(calculated)	0.556	1201.253

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Unused Access Stub	ONE HOUR	✓	0.00	100.000
Lower Eccleshill Road	ONE HOUR	✓	344.00	100.000
Paul Rink Way	ONE HOUR	✓	320.00	100.000
Greenbank Terrace	ONE HOUR	✓	323.00	100.000

Turning Proportions

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.000	0.000	0.000	0.000
	Lower Eccleshill Road	0.000	0.000	214.000	130.000
	Paul Rink Way	0.000	167.000	0.000	153.000
	Greenbank Terrace	0.000	105.000	218.000	0.000

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.25	0.25	0.25	0.25
	Lower Eccleshill Road	0.00	0.00	0.62	0.38
	Paul Rink Way	0.00	0.52	0.00	0.48
	Greenbank Terrace	0.00	0.33	0.67	0.00

Vehicle Mix

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	1.000	1.000	1.000	1.000
	Lower Eccleshill Road	1.000	1.000	1.000	1.000
	Paul Rink Way	1.000	1.000	1.000	1.000
	Greenbank Terrace	1.000	1.000	1.000	1.000

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.0	0.0	0.0	0.0
	Lower Eccleshill Road	0.0	0.0	0.0	0.0
	Paul Rink Way	0.0	0.0	0.0	0.0
	Greenbank Terrace	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
Unused Access Stub	0.00	0.00	0.00	A
Lower Eccleshill Road	0.36	5.28	0.55	A
Paul Rink Way	0.26	3.64	0.36	A
Greenbank Terrace	0.32	4.84	0.48	A

Main Results for each time segment

Main results: (07:30-07:45)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	367.37	0.00	1047.84	0.000	0.00	0.000	A
Lower Eccleshill Road	258.98	257.76	163.39	0.00	1102.89	0.235	0.31	4.253	A
Paul Rink Way	240.91	240.06	97.41	0.00	1368.88	0.176	0.21	3.188	A
Greenbank Terrace	243.17	242.08	125.28	0.00	1131.56	0.215	0.27	4.042	A

Main results: (07:45-08:00)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	440.08	0.00	1007.32	0.000	0.00	0.000	A
Lower Eccleshill Road	309.25	308.89	195.77	0.00	1084.92	0.285	0.40	4.637	A
Paul Rink Way	287.67	287.45	116.73	0.00	1357.25	0.212	0.27	3.365	A
Greenbank Terrace	290.37	290.06	150.01	0.00	1117.81	0.260	0.35	4.348	A

Main results: (08:00-08:15)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	538.82	0.00	952.29	0.000	0.00	0.000	A
Lower Eccleshill Road	378.75	378.13	239.68	0.00	1060.55	0.357	0.55	5.271	A
Paul Rink Way	352.33	351.98	142.90	0.00	1341.50	0.263	0.35	3.638	A
Greenbank Terrace	355.63	355.13	183.69	0.00	1099.08	0.324	0.47	4.836	A

Main results: (08:15-08:30)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	539.49	0.00	951.92	0.000	0.00	0.000	A
Lower Eccleshill Road	378.75	378.74	240.02	0.00	1060.37	0.357	0.55	5.281	A
Paul Rink Way	352.33	352.32	143.13	0.00	1341.37	0.263	0.36	3.638	A
Greenbank Terrace	355.63	355.62	183.87	0.00	1098.98	0.324	0.48	4.842	A

Main results: (08:30-08:45)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	441.17	0.00	1006.71	0.000	0.00	0.000	A
Lower Eccleshill Road	309.25	309.85	196.31	0.00	1084.62	0.285	0.40	4.649	A
Paul Rink Way	287.67	288.01	117.10	0.00	1357.03	0.212	0.27	3.370	A
Greenbank Terrace	290.37	290.86	150.31	0.00	1117.64	0.260	0.35	4.358	A

Main results: (08:45-09:00)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	369.33	0.00	1046.74	0.000	0.00	0.000	A
Lower Eccleshill Road	258.98	259.35	164.33	0.00	1102.37	0.235	0.31	4.273	A
Paul Rink Way	240.91	241.14	98.01	0.00	1368.51	0.176	0.21	3.193	A
Greenbank Terrace	243.17	243.48	125.84	0.00	1131.25	0.215	0.28	4.057	A

Junctions 8
ARCADY 8 - Roundabout Module
Version: 8.0.5.523 [19102,19/06/2015] © Copyright TRL Limited, 2017
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Filename: Lower Eccleshill Rd-Paul Rink Way-Greenbank Terrace Roundabout.arc8
Path: Y:\2016\16-401 to 16-425\16-423 Hollins Paper Mill, Darwen\Technical\Junction Models\ARCADY
Report generation date: 03/03/2017 10:56:50

- « Existing Layout - 2016 Existing, PM Peak
- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

Summary of junction performance

	PM Peak			
	Queue (PCU)	Delay (s)	RFC	LOS
	Existing Layout - 2016 Existing			
Unused Access Stub	0.00	0.00	0.00	A
Lower Eccleshill Road	0.35	4.35	0.26	A
Paul Rink Way	0.65	4.40	0.39	A
Greenbank Terrace	0.38	4.67	0.27	A

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

- "D1 - 2016 Existing, AM Peak" model duration: 07:30 - 09:00
- "D2 - 2016 Existing, PM Peak " model duration: 16:00 - 17:30
- "D3 - 2027 Base, AM Peak" model duration: 07:30 - 09:00
- "D4 - 2027 Base, PM Peak" model duration: 16:00 - 17:30
- "D5 - 2027 Predicted, AM Peak" model duration: 07:30 - 09:00
- "D6 - 2027 Predicted, PM Peak" model duration: 16:00 - 17:30

Run using Junctions 8.0.5.523 at 03/03/2017 10:56:50

File summary

Title	Lower Eccleshill Road/Paul Rink Way/Greenbank Terrace Roundabout Junction
Location	Darwen, Lancashire
Site Number	
Date	30/11/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	16-423
Enumerator	rdonaldson
Description	

Analysis Options

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

Units

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

Existing Layout - 2016 Existing, PM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2016 Existing, PM Peak	2016 Existing	PM Peak		ONE HOUR	16:00	17:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4			4.46	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Unused Access Stub	1	Unused Access Stub	
Lower Eccleshill Road	2	Lower Eccleshill Road	
Paul Rink Way	3	Paul Rink Way	
Greenbank Terrace	4	Greenbank Terrace	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Unused Access Stub	0.00	99999.00
Lower Eccleshill Road	0.00	99999.00
Paul Rink Way	0.00	99999.00
Greenbank Terrace	0.00	99999.00

Roundabout Geometry

Name	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
Unused Access Stub	3.60	5.30	2.70	21.40	36.00	33.00	
Lower Eccleshill Road	2.90	6.10	4.30	25.30	36.00	26.00	
Paul Rink Way	3.80	5.90	4.20	29.30	36.00	28.00	
Greenbank Terrace	3.20	5.60	3.00	21.90	36.00	24.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Unused Access Stub		(calculated)	(calculated)	0.557	1252.559
Lower Eccleshill Road		(calculated)	(calculated)	0.555	1193.561
Paul Rink Way		(calculated)	(calculated)	0.602	1427.489
Greenbank Terrace		(calculated)	(calculated)	0.556	1201.253

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Unused Access Stub	ONE HOUR	✓	0.00	100.000
Lower Eccleshill Road	ONE HOUR	✓	261.00	100.000
Paul Rink Way	ONE HOUR	✓	482.00	100.000
Greenbank Terrace	ONE HOUR	✓	264.00	100.000

Turning Proportions

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.000	0.000	0.000	0.000
	Lower Eccleshill Road	0.000	0.000	143.000	118.000
	Paul Rink Way	0.000	228.000	0.000	254.000
	Greenbank Terrace	0.000	134.000	130.000	0.000

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.25	0.25	0.25	0.25
	Lower Eccleshill Road	0.00	0.00	0.55	0.45
	Paul Rink Way	0.00	0.47	0.00	0.53
	Greenbank Terrace	0.00	0.51	0.49	0.00

Vehicle Mix

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	1.000	1.000	1.000	1.000
	Lower Eccleshill Road	1.000	1.000	1.000	1.000
	Paul Rink Way	1.000	1.000	1.000	1.000
	Greenbank Terrace	1.000	1.000	1.000	1.000

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.0	0.0	0.0	0.0
	Lower Eccleshill Road	0.0	0.0	0.0	0.0
	Paul Rink Way	0.0	0.0	0.0	0.0
	Greenbank Terrace	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
Unused Access Stub	0.00	0.00	0.00	A
Lower Eccleshill Road	0.26	4.35	0.35	A
Paul Rink Way	0.39	4.40	0.65	A
Greenbank Terrace	0.27	4.67	0.38	A

Main Results for each time segment

Main results: (16:00-16:15)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	368.86	0.00	1047.01	0.000	0.00	0.000	A
Lower Eccleshill Road	196.49	195.67	97.44	0.00	1139.49	0.172	0.21	3.810	A
Paul Rink Way	362.87	361.45	88.46	0.00	1374.26	0.264	0.36	3.550	A
Greenbank Terrace	198.75	197.88	170.98	0.00	1106.15	0.180	0.22	3.960	A

Main results: (16:15-16:30)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	441.86	0.00	1006.32	0.000	0.00	0.000	A
Lower Eccleshill Road	234.63	234.42	116.75	0.00	1128.77	0.208	0.26	4.024	A
Paul Rink Way	433.31	432.88	105.98	0.00	1363.72	0.318	0.46	3.865	A
Greenbank Terrace	237.33	237.09	204.77	0.00	1087.35	0.218	0.28	4.233	A

Main results: (16:30-16:45)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	540.97	0.00	951.09	0.000	0.00	0.000	A
Lower Eccleshill Road	287.37	287.03	142.94	0.00	1114.24	0.258	0.35	4.350	A
Paul Rink Way	530.69	529.97	129.77	0.00	1349.41	0.393	0.64	4.389	A
Greenbank Terrace	290.67	290.28	250.69	0.00	1061.81	0.274	0.37	4.664	A

Main results: (16:45-17:00)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	541.69	0.00	950.69	0.000	0.00	0.000	A
Lower Eccleshill Road	287.37	287.36	143.13	0.00	1114.13	0.258	0.35	4.353	A
Paul Rink Way	530.69	530.68	129.92	0.00	1349.32	0.393	0.65	4.397	A
Greenbank Terrace	290.67	290.66	251.03	0.00	1061.62	0.274	0.38	4.669	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	443.01	0.00	1005.68	0.000	0.00	0.000	A
Lower Eccleshill Road	234.63	234.96	117.05	0.00	1128.60	0.208	0.26	4.031	A
Paul Rink Way	433.31	434.02	106.23	0.00	1363.57	0.318	0.47	3.875	A
Greenbank Terrace	237.33	237.71	205.30	0.00	1087.05	0.218	0.28	4.240	A

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

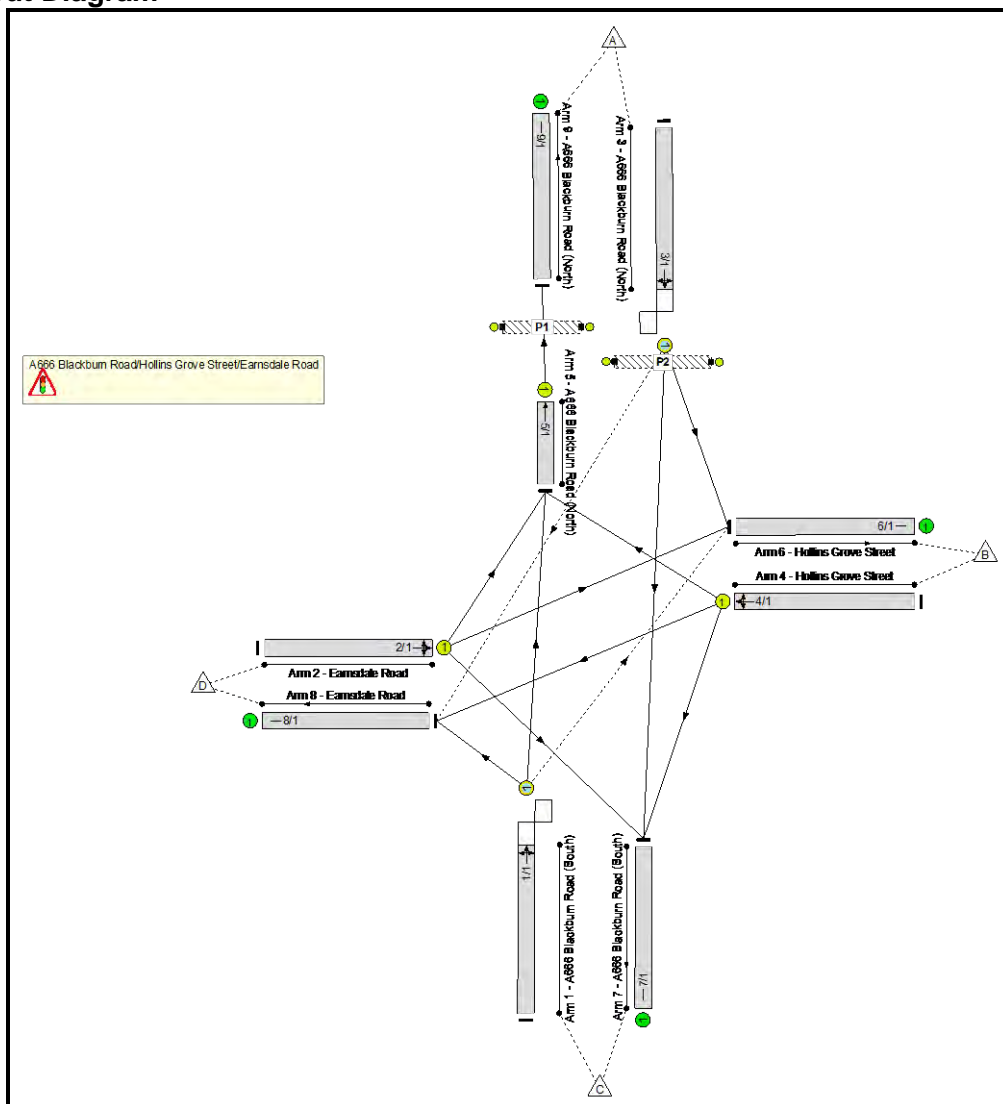
Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	370.85	0.00	1045.89	0.000	0.00	0.000	A
Lower Eccleshill Road	196.49	196.71	97.99	0.00	1139.18	0.172	0.21	3.822	A
Paul Rink Way	362.87	363.31	88.94	0.00	1373.98	0.264	0.36	3.565	A
Greenbank Terrace	198.75	199.00	171.85	0.00	1105.66	0.180	0.22	3.972	A

Full Input Data And Results
Full Input Data And Results

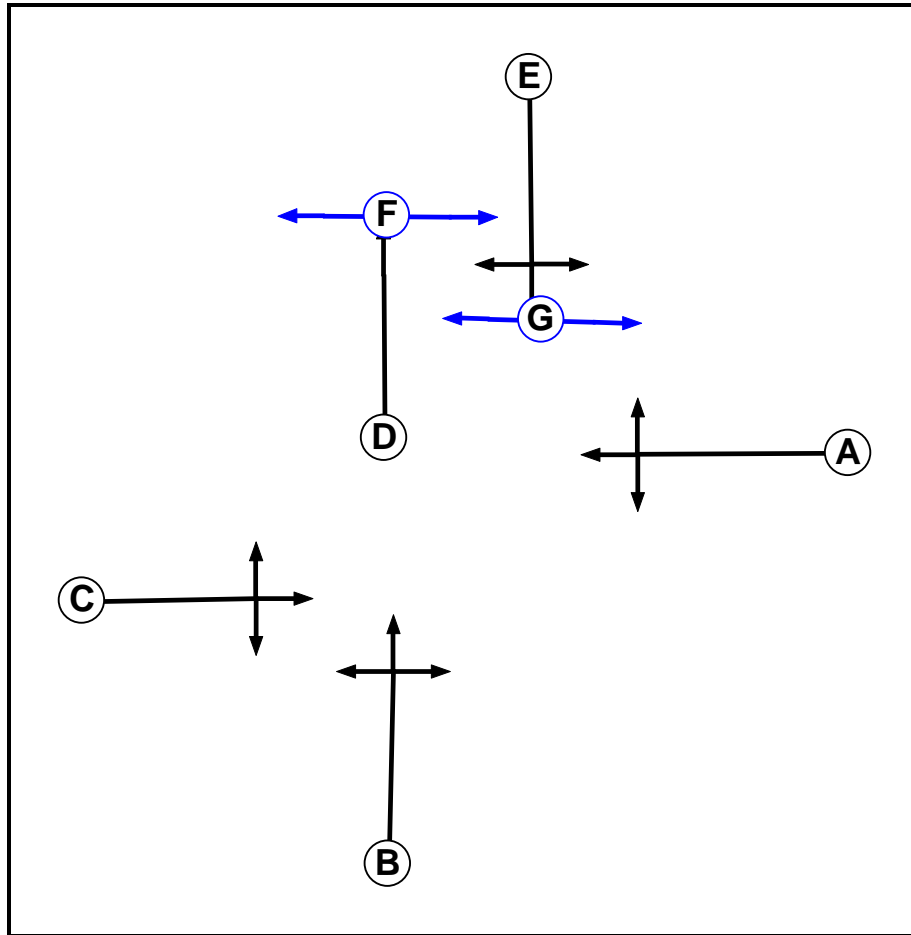
User and Project Details

Project:	A666 Blackburn Road/Hollins Grove Street/Earnsdale Road Signalised Junction
Title:	
Location:	Darwen, Lancashire
File name:	Blackburn Rd-Hollins Grove St-Earnsdale Rd.lsg3x
Author:	RD
Company:	Bryan G Hall
Address:	
Notes:	

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Pedestrian		7	7
G	Pedestrian		7	7

Full Input Data And Results

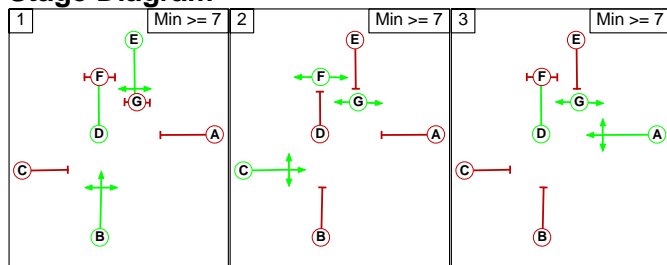
Phase Intergrens Matrix

		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		8	7	-	5	10	-
	B	5		5	-	-	11	-
	C	5	5		-	6	-	-
	D	-	-	-		-	5	-
	E	5	-	7	-		-	5
	F	6	6	-	6	-		-
	G	-	-	-	-	6	-	

Phases in Stage

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

Stage Diagram



Phase Delays

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

Prohibited Stage Change

		To Stage		
		1	2	3
From Stage	1		11	5
	2	6		6
	3	8	10	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/1 (A666 Blackburn Road (South))	6/1 (Right)	1439	0	3/1	1.09	To 6/1 (Left) To 7/1 (Ahead)	4.00	2.00	0.50	4	2.00
3/1 (A666 Blackburn Road (North))	8/1 (Right)	1439	0	1/1	1.09	To 5/1 (Ahead) To 8/1 (Left)	4.00	2.00	0.50	4	2.00

Full Input Data And Results

Lane Input Data

Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A666 Blackburn Road (South))	O	B	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Right	10.00
											Arm 8 Left	10.00
											Arm 5 Left	10.00
2/1 (Earnsdale Road)	U	C	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Ahead	Inf
											Arm 7 Right	10.00
3/1 (A666 Blackburn Road (North))	O	E	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 6 Left	10.00
											Arm 7 Ahead	Inf
											Arm 8 Right	10.00
4/1 (Hollins Grove Street)	U	A	2	3	60.0	Geom	-	2.90	0.00	Y	Arm 5 Right	10.00
											Arm 7 Left	10.00
											Arm 8 Ahead	Inf
5/1 (A666 Blackburn Road (North))	U	D	2	3	2.8	Geom	-	4.00	0.00	Y	Arm 9 Ahead	Inf
6/1 (Hollins Grove Street)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (A666 Blackburn Road (South))	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Earnsdale Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1 (A666 Blackburn Road (North))	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2016 Existing AM Peak'	07:45	08:45	01:00	
2: '2016 Existing PM Peak'	16:15	17:15	01:00	

Full Input Data And Results

Scenario 1: '2016 Existing AM' (FG1: '2016 Existing AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	48	800	35	883
	B	63	0	65	13	141
	C	801	64	0	22	887
	D	95	72	46	0	213
	Tot.	959	184	911	70	2124

Traffic Lane Flows

Lane	Scenario 1: 2016 Existing AM
Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road	
1/1	887
2/1	213
3/1	883
4/1	141
5/1	959
6/1	184
7/1	911
8/1	70
9/1	959

Full Input Data And Results

Lane Saturation Flows

Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A666 Blackburn Road (South))	3.80	0.00	Y	Arm 5 Ahead	Inf	90.3 %	1966	1966
				Arm 6 Right	10.00	7.2 %		
				Arm 8 Left	10.00	2.5 %		
2/1 (Earnsdale Road)	3.00	0.00	Y	Arm 5 Left	10.00	44.6 %	1742	1742
				Arm 6 Ahead	Inf	33.8 %		
				Arm 7 Right	10.00	21.6 %		
3/1 (A666 Blackburn Road (North))	4.00	0.00	Y	Arm 6 Left	10.00	5.4 %	1987	1987
				Arm 7 Ahead	Inf	90.6 %		
				Arm 8 Right	10.00	4.0 %		
4/1 (Hollins Grove Street)	2.90	0.00	Y	Arm 5 Right	10.00	44.7 %	1677	1677
				Arm 7 Left	10.00	46.1 %		
				Arm 8 Ahead	Inf	9.2 %		
5/1 (A666 Blackburn Road (North))	4.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	2015	2015
6/1 (Hollins Grove Street Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (A666 Blackburn Road (South) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Earnsdale Road Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A666 Blackburn Road (North) Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2016 Existing PM' (FG2: '2016 Existing PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	72	747	68	887
	B	71	0	92	54	217
	C	760	50	0	38	848
	D	99	29	13	0	141
	Tot.	930	151	852	160	2093

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2016 Existing PM
Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road	
1/1	848
2/1	141
3/1	887
4/1	217
5/1	930
6/1	151
7/1	852
8/1	160
9/1	930

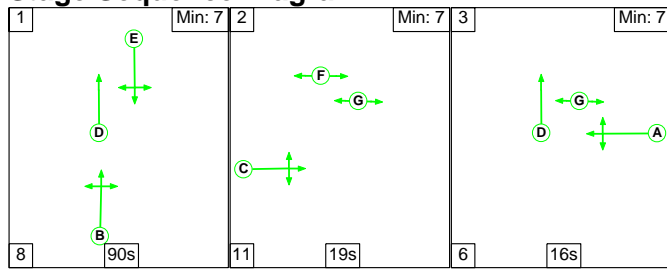
Lane Saturation Flows

Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A666 Blackburn Road (South))	3.80	0.00	Y	Arm 5 Ahead Arm 6 Right Arm 8 Left	Inf 10.00 10.00	89.6 % 5.9 % 4.5 %	1964	1964
2/1 (Earnsdale Road)	3.00	0.00	Y	Arm 5 Left Arm 6 Ahead Arm 7 Right Arm 6 Left	10.00 Inf 10.00 10.00	70.2 % 20.6 % 9.2 % 8.1 %	1711	1711
3/1 (A666 Blackburn Road (North))	4.00	0.00	Y	Arm 7 Ahead Arm 8 Right	Inf 10.00	84.2 % 7.7 %	1968	1968
4/1 (Hollins Grove Street)	2.90	0.00	Y	Arm 5 Right Arm 7 Left Arm 8 Ahead	10.00 10.00 Inf	32.7 % 42.4 % 24.9 %	1712	1712
5/1 (A666 Blackburn Road (North))	4.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	2015	2015
6/1 (Hollins Grove Street Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (A666 Blackburn Road (South) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Earnsdale Road Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A666 Blackburn Road (North) Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 1: '2016 Existing AM' (FG1: '2016 Existing AM Peak', Plan 1: 'Network Control Plan 1')

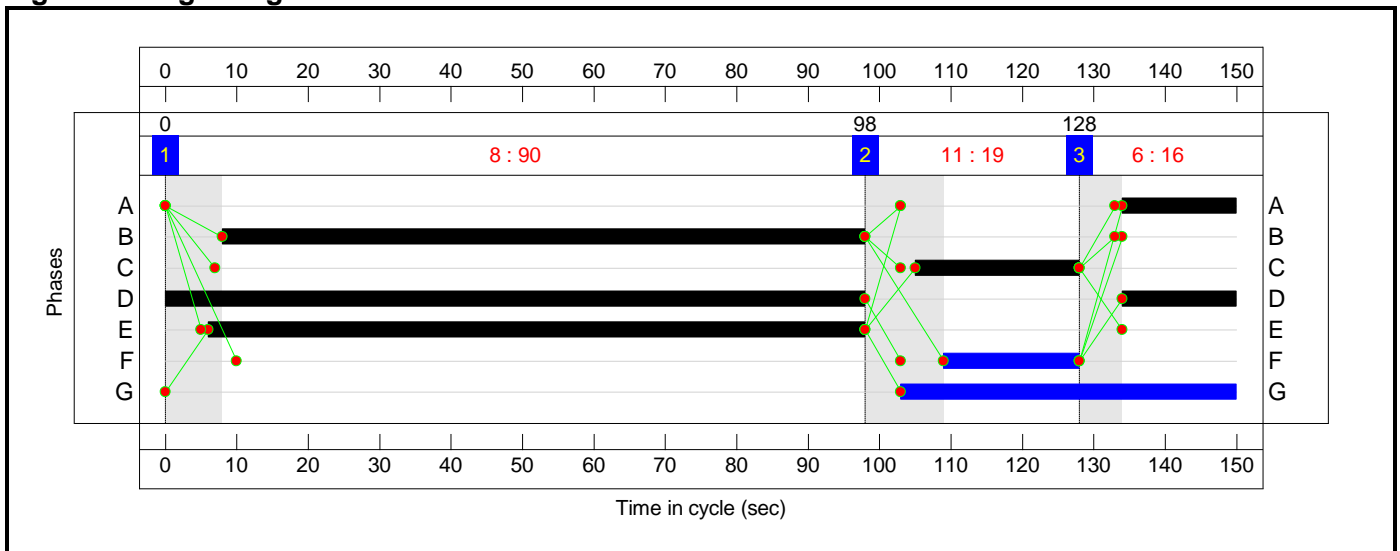
Stage Sequence Diagram



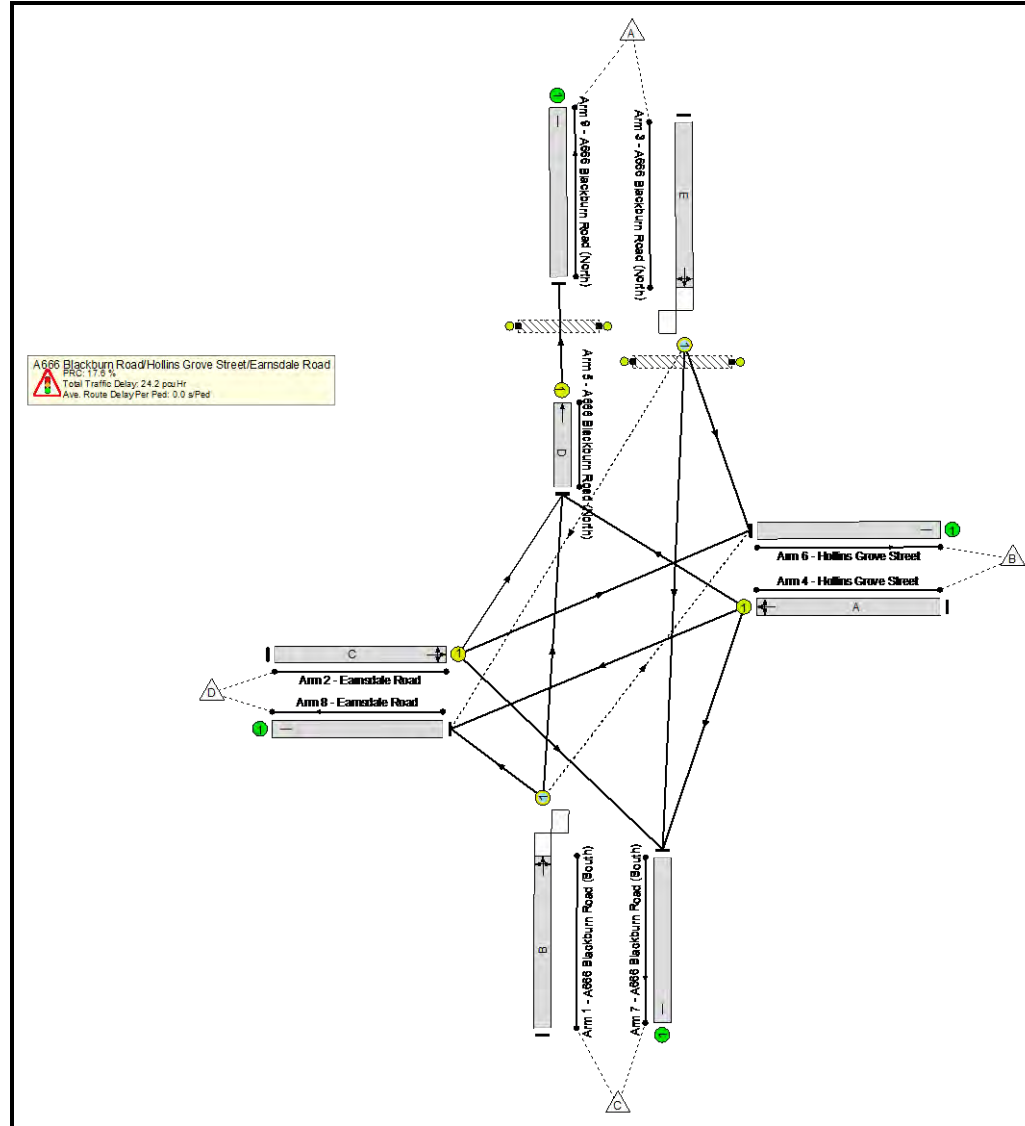
Stage Timings

Stage	1	2	3
Duration	90	19	16
Change Point	0	98	128

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram



Full Input Data And Results

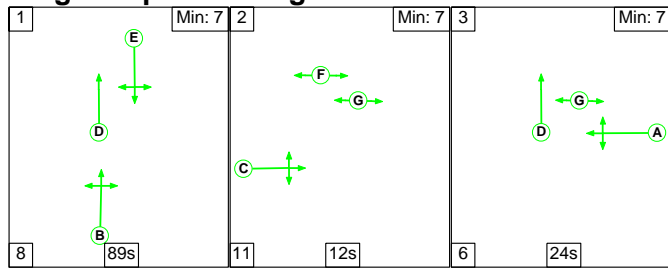
Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	76.5%
A666 Blackburn Road/Hollins Grove Street/Earnsdale Road	-	-	N/A	-	-		-	-	-	-	-	-	76.5%
1/1	A666 Blackburn Road (South) Ahead Right Left	O	N/A	N/A	B		1	90	-	887	1966	1159	76.5%
2/1	Earnsdale Road Left Ahead Right	U	N/A	N/A	C		1	23	-	213	1742	279	76.4%
3/1	A666 Blackburn Road (North) Left Ahead Right	O	N/A	N/A	E		1	92	-	883	1987	1228	71.9%
4/1	Hollins Grove Street Right Left Ahead	U	N/A	N/A	A		1	16	-	141	1677	190	74.2%
5/1	A666 Blackburn Road (North) Ahead	U	N/A	N/A	D		1	114	-	959	2015	1545	62.1%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	F		1	19	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	G		1	47	-	0	-	0	0.0%

Full Input Data And Results

Scenario 2: '2016 Existing PM' (FG2: '2016 Existing PM Peak', Plan 1: 'Network Control Plan 1')

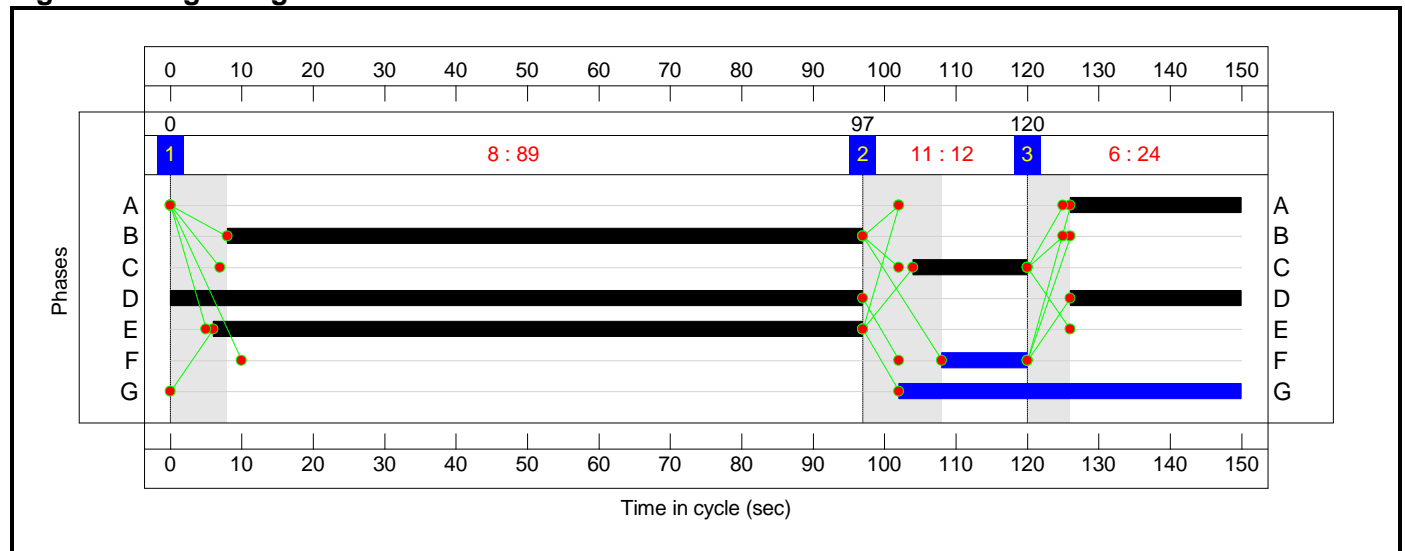
Stage Sequence Diagram



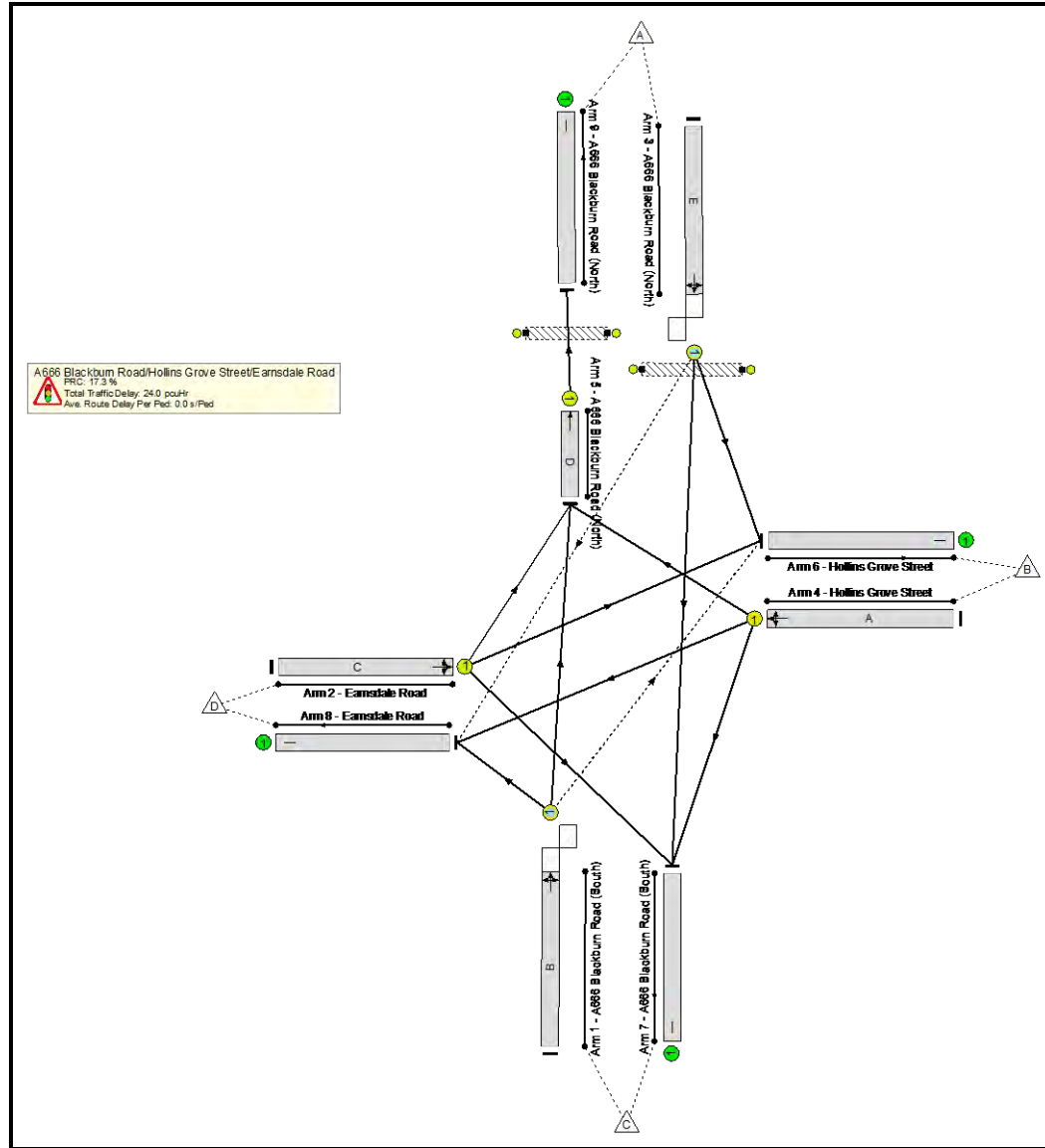
Stage Timings

Stage	1	2	3
Duration	89	12	24
Change Point	0	97	120

Signal Timings Diagram



Full Input Data And Results Network Layout Diagram



Full Input Data And Results

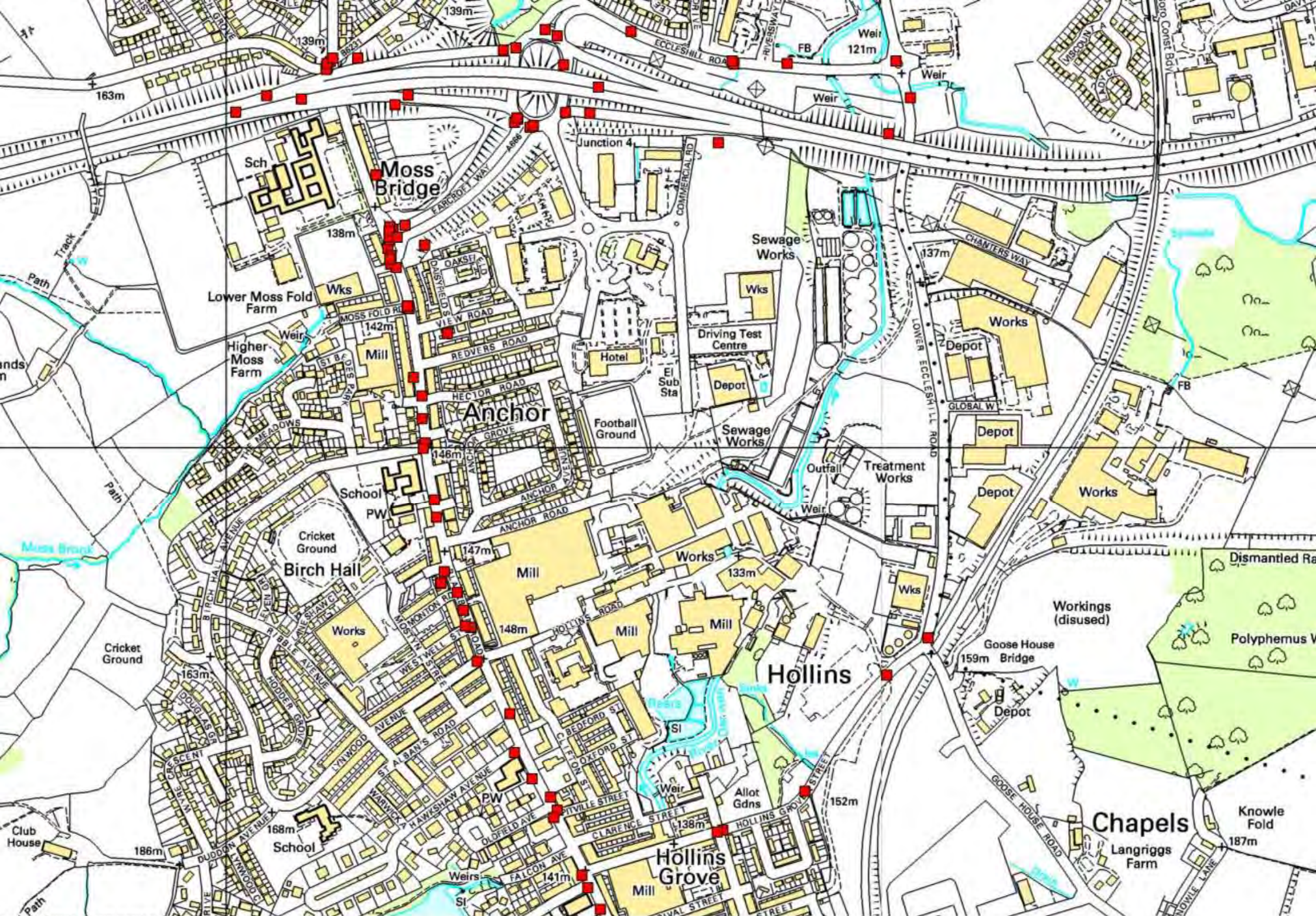
Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	76.7%
A666 Blackburn Road/Hollins Grove Street/Earnsdale Road	-	-	N/A	-	-		-	-	-	-	-	-	76.7%
1/1	A666 Blackburn Road (South) Ahead Right Left	O	N/A	N/A	B		1	89	-	848	1964	1154	73.5%
2/1	Earnsdale Road Left Ahead Right	U	N/A	N/A	C		1	16	-	141	1711	194	72.7%
3/1	A666 Blackburn Road (North) Left Ahead Right	O	N/A	N/A	E		1	91	-	887	1968	1156	76.7%
4/1	Hollins Grove Street Right Left Ahead	U	N/A	N/A	A		1	24	-	217	1712	285	76.1%
5/1	A666 Blackburn Road (North) Ahead	U	N/A	N/A	D		1	121	-	930	2015	1639	56.7%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	F		1	12	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	G		1	48	-	0	-	0	0.0%

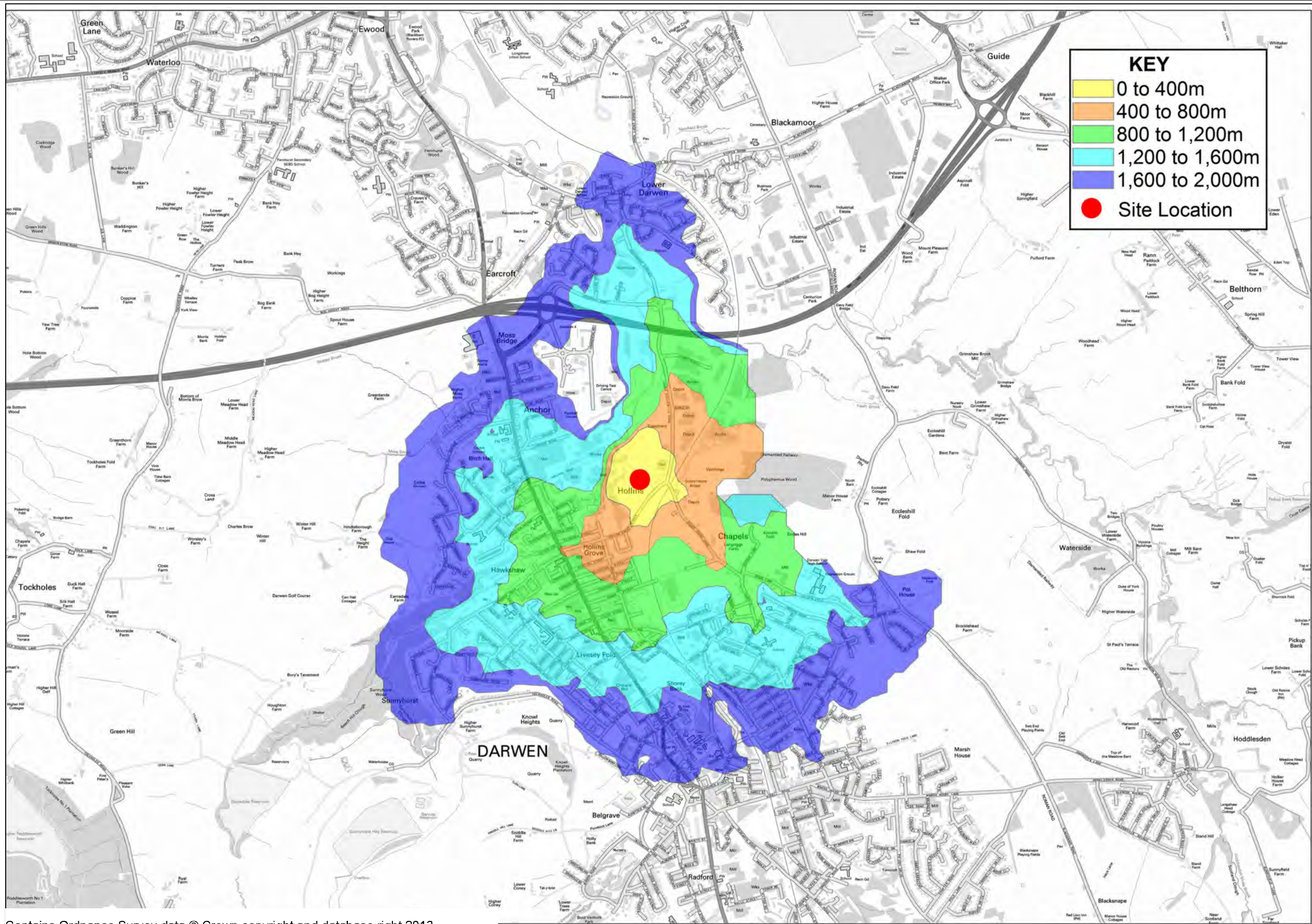
Full Input Data And Results

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	-	-	116	0	2	16.9	6.4	0.7	24.0	-	-	-	-
A666 Blackburn Road/Hollins Grove Street/Earnsdale Road	-	-	116	0	2	16.9	6.4	0.7	24.0	-	-	-	-
1/1	848	848	49	0	1	5.0	1.4	0.3	6.7	28.2	24.7	1.4	26.1
2/1	141	141	-	-	-	2.5	1.3	-	3.8	96.7	5.6	1.3	6.9
3/1	887	887	67	0	1	5.0	1.6	0.4	7.0	28.6	25.9	1.6	27.5
4/1	217	217	-	-	-	3.6	1.5	-	5.1	84.9	8.6	1.5	10.1
5/1	930	930	-	-	-	0.7	0.7	-	1.4	5.4	6.7	0.7	7.4
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		17.3	Total Delay for Signalled Lanes (pcuHr):		24.00	Cycle Time (s):		150			
		PRC Over All Lanes (%):		17.3	Total Delay Over All Lanes(pcuHr):		24.00						

APPENDIX BGH 7



APPENDIX BGH 8



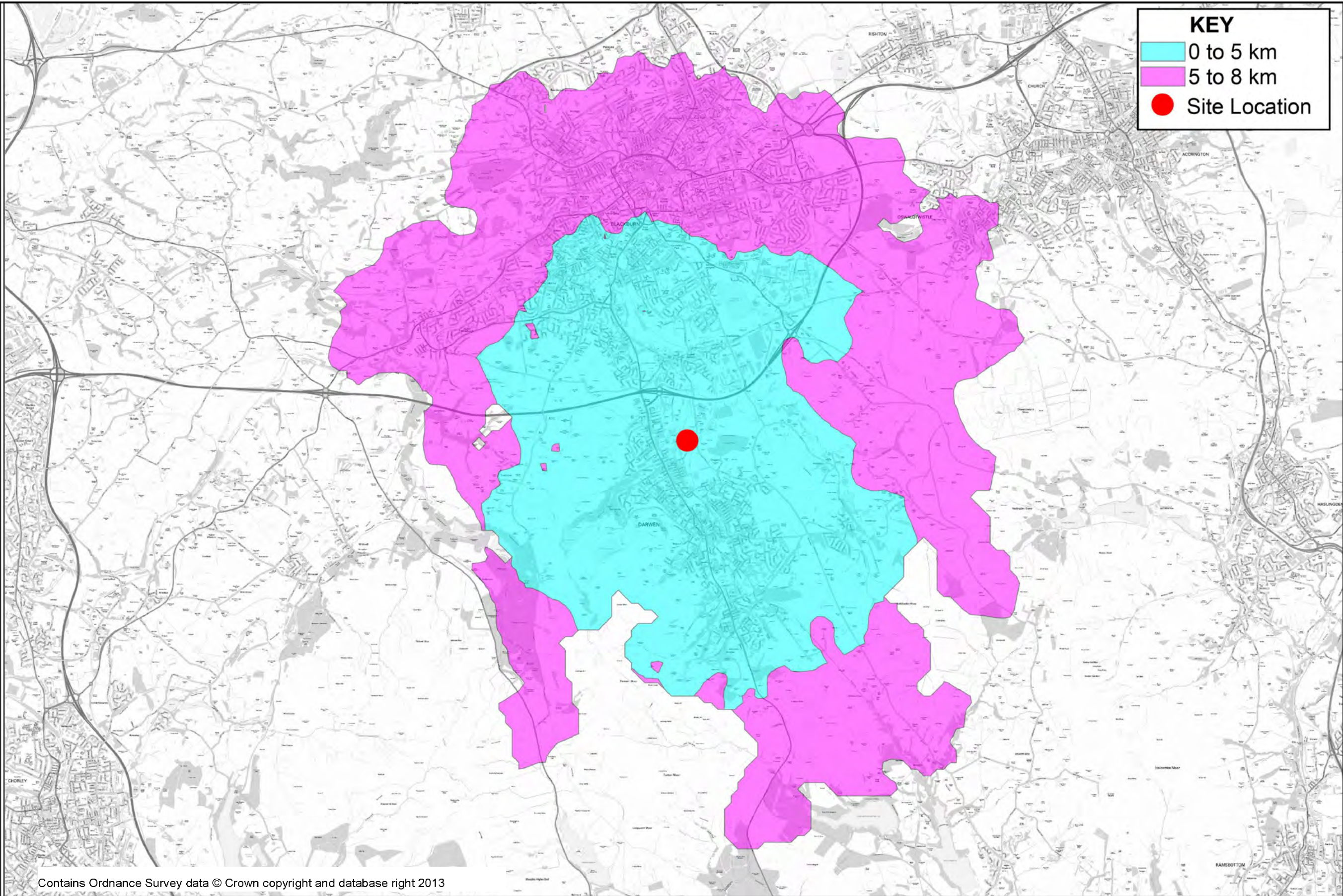
KEY

- 0 to 400m
- 400 to 800m
- 800 to 1,200m
- 1,200 to 1,600m
- 1,600 to 2,000m
- Site Location

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<p>Client: GLEESON HOMES AND REGENERATION</p>	<p>Project: PROPOSED RESIDENTIAL DEVELOPMENT, HOLLINS PAPER MILL, DARWEN</p>																								
<p>BRYAN G HALL CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS Copyright Reserved Bryan G Hall Ltd.</p> <p>highways@bryanhall.co.uk Suite E15 Josephs Well Hanover Walk LEEDS LS3 1AB T 0113 246 1555 F 0113 234 2201</p>	<p>www.bryanhall.co.uk Lighterman House 26/36 Wharfedale Road LONDON N1 9RY T 0203 553 2336</p>	<p>Title: WALKING ACCESSIBILITY PLAN, 2KM</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Rev:</td> <td>Amendment:</td> <td>Drn:</td> <td>Chk:</td> <td>Date:</td> </tr> <tr> <td>Job No:</td> <td>16-423</td> <td>Drawn:</td> <td>JT</td> <td>Checked:</td> </tr> <tr> <td>Scale:</td> <td>Not to Scale</td> <td>Drawing No:</td> <td>MC</td> <td>Date:</td> </tr> <tr> <td></td> <td>A3 - 420 x 297</td> <td>16-423-LOC-003</td> <td></td> <td>28.11.2016</td> </tr> </table>	Rev:	Amendment:	Drn:	Chk:	Date:	Job No:	16-423	Drawn:	JT	Checked:	Scale:	Not to Scale	Drawing No:	MC	Date:		A3 - 420 x 297	16-423-LOC-003		28.11.2016	<p>Revision:</p>	<p>Date:</p>
Rev:	Amendment:	Drn:	Chk:	Date:																					
Job No:	16-423	Drawn:	JT	Checked:																					
Scale:	Not to Scale	Drawing No:	MC	Date:																					
	A3 - 420 x 297	16-423-LOC-003		28.11.2016																					

APPENDIX BGH 9



KEY

- 0 to 5 km
- 5 to 8 km
- Site Location

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Client: **GLEESON HOMES AND REGENERATION**

Project: **PROPOSED RESIDENTIAL DEVELOPMENT,
HOLLINS PAPER MILL, DARWEN**

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T 0203 553 2336

Title: **CYCLE ACCESSIBILITY PLAN, 8KM**

Rev:	Amendment:	Drn:	Chk:	Date:	
Job No:	16-423	Drawn:	JT	Checked:	MC
Scale:	Not to Scale	Drawing No:	16-423-LOC-004		Revision:
				Date: 28.11.2016	

APPENDIX BGH 10



Client: GLEESON REGENERATION AND HOMES

Project: HOLLINS PAPER MILL, DARWEN

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Title: PROPOSED SITE ACCESS

Rev:	Amendment:	Drn:	Chk:	Date:
Job No:	16-423	Drawn:	RD	Checked: MC
Scale:	1:500	Drawing No:	16/423/TR/001	Date: 31-07-2017
A3 - 420 x 297		Revision:		

APPENDIX BGH 11

Calculation Reference: AUDIT-604801-161118-1133

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED
 MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOUTH EAST WS WEST SUSSEX	1 days
03	SOUTH WEST DV DEVON	1 days
04	EAST ANGLIA NF NORFOLK	1 days
06	WEST MIDLANDS SH SHROPSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE NY NORTH YORKSHIRE	1 days
08	NORTH WEST CH CHESHIRE	1 days
09	NORTH CB CUMBRIA	1 days
11	SCOTLAND FA FALKIRK	1 days

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

Filtering Stage 2 selection:

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

Parameter: Number of dwellings
 Actual Range: 82 to 161 (units:)
 Range Selected by User: 75 to 225 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/08 to 25/09/15

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

Selected survey days:

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

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

Selected survey types:

Manual count	8 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	6
Edge of Town	2

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

Selected Location Sub Categories:

Residential Zone	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.

Filtering Stage 3 selection:

Use Class:

C3 8 days

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

Population within 1 mile:

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

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

Population within 5 miles:

5,001 to 25,000	2 days
25,001 to 50,000	1 days
75,001 to 100,000	2 days
100,001 to 125,000	2 days
125,001 to 250,000	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	2 days
1.1 to 1.5	6 days

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

Travel Plan:

Yes	1 days
No	7 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.

LIST OF SITES relevant to selection parameters

1	CB-03-A-04	SEMI DETACHED		CUMBRIA
	MOORCLOSE ROAD			
	SALTERBACK			
	WORKINGTON			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		82	
	Survey date: FRIDAY		24/04/09	Survey Type: MANUAL
2	CH-03-A-06	SEMI-DET./BUNGALOWS		CHESHIRE
	CREWE ROAD			
	CREWE			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of dwellings:		129	
	Survey date: TUESDAY		14/10/08	Survey Type: MANUAL
3	DV-03-A-02	HOUSES & BUNGALOWS		DEVON
	MILLHEAD ROAD			
	HONITON			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		116	
	Survey date: FRIDAY		25/09/15	Survey Type: MANUAL
4	FA-03-A-02	MIXED HOUSES		FALKIRK
	ROSEBANK AVENUE & SPRINGFIELD DRIVE			
	FALKIRK			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		161	
	Survey date: WEDNESDAY		29/05/13	Survey Type: MANUAL
5	NF-03-A-02	HOUSES & FLATS		NORFOLK
	DEREHAM ROAD			
	NORWICH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		98	
	Survey date: MONDAY		22/10/12	Survey Type: MANUAL
6	NY-03-A-06	BUNGALOWS & SEMI DET.		NORTH YORKSHIRE
	HORSEFAIR			
	BOROUGHBRIDGE			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		115	
	Survey date: FRIDAY		14/10/11	Survey Type: MANUAL
7	SH-03-A-04	TERRACED		SHROPSHIRE
	ST MICHAEL'S STREET			
	SHREWSBURY			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of dwellings:		108	
	Survey date: THURSDAY		11/06/09	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	WS-03-A-04	MIXED HOUSES	WEST SUSSEX
	HILLS FARM LANE		
	BROADBRIDGE HEATH		
	HORSHAM		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	151	
	Survey date: THURSDAY	11/12/14	Survey Type: MANUAL

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 MULTI-MODAL VEHICLES
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	8	120	0.060	8	120	0.237	8	120	0.297
08:00 - 09:00	8	120	0.139	8	120	0.318	8	120	0.457
09:00 - 10:00	8	120	0.148	8	120	0.171	8	120	0.319
10:00 - 11:00	8	120	0.146	8	120	0.181	8	120	0.327
11:00 - 12:00	8	120	0.147	8	120	0.166	8	120	0.313
12:00 - 13:00	8	120	0.175	8	120	0.157	8	120	0.332
13:00 - 14:00	8	120	0.176	8	120	0.161	8	120	0.337
14:00 - 15:00	8	120	0.141	8	120	0.159	8	120	0.300
15:00 - 16:00	8	120	0.231	8	120	0.177	8	120	0.408
16:00 - 17:00	8	120	0.256	8	120	0.161	8	120	0.417
17:00 - 18:00	8	120	0.299	8	120	0.190	8	120	0.489
18:00 - 19:00	8	120	0.180	8	120	0.154	8	120	0.334
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.098			2.232			4.330

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.

Parameter summary

Trip rate parameter range selected: 82 - 161 (units:)
 Survey date date range: 01/01/08 - 25/09/15
 Number of weekdays (Monday-Friday): 8
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 MULTI-MODAL TAXIS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	8	120	0.001	8	120	0.001	8	120	0.002
08:00 - 09:00	8	120	0.002	8	120	0.003	8	120	0.005
09:00 - 10:00	8	120	0.005	8	120	0.004	8	120	0.009
10:00 - 11:00	8	120	0.003	8	120	0.002	8	120	0.005
11:00 - 12:00	8	120	0.001	8	120	0.001	8	120	0.002
12:00 - 13:00	8	120	0.003	8	120	0.003	8	120	0.006
13:00 - 14:00	8	120	0.002	8	120	0.002	8	120	0.004
14:00 - 15:00	8	120	0.002	8	120	0.001	8	120	0.003
15:00 - 16:00	8	120	0.010	8	120	0.009	8	120	0.019
16:00 - 17:00	8	120	0.003	8	120	0.006	8	120	0.009
17:00 - 18:00	8	120	0.003	8	120	0.002	8	120	0.005
18:00 - 19:00	8	120	0.001	8	120	0.002	8	120	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.036			0.036			0.072

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: 82 - 161 (units:)
 Survey date date range: 01/01/08 - 25/09/15
 Number of weekdays (Monday-Friday): 8
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 MULTI-MODAL OGVS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	8	120	0.000	8	120	0.000	8	120	0.000
08:00 - 09:00	8	120	0.003	8	120	0.002	8	120	0.005
09:00 - 10:00	8	120	0.003	8	120	0.001	8	120	0.004
10:00 - 11:00	8	120	0.003	8	120	0.003	8	120	0.006
11:00 - 12:00	8	120	0.003	8	120	0.003	8	120	0.006
12:00 - 13:00	8	120	0.004	8	120	0.002	8	120	0.006
13:00 - 14:00	8	120	0.003	8	120	0.005	8	120	0.008
14:00 - 15:00	8	120	0.001	8	120	0.004	8	120	0.005
15:00 - 16:00	8	120	0.001	8	120	0.001	8	120	0.002
16:00 - 17:00	8	120	0.000	8	120	0.000	8	120	0.000
17:00 - 18:00	8	120	0.001	8	120	0.001	8	120	0.002
18:00 - 19:00	8	120	0.001	8	120	0.001	8	120	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.023			0.023			0.046

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: 82 - 161 (units:)
 Survey date date range: 01/01/08 - 25/09/15
 Number of weekdays (Monday-Friday): 8
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 MULTI-MODAL PSVS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	8	120	0.000	8	120	0.000	8	120	0.000
08:00 - 09:00	8	120	0.001	8	120	0.001	8	120	0.002
09:00 - 10:00	8	120	0.000	8	120	0.000	8	120	0.000
10:00 - 11:00	8	120	0.000	8	120	0.000	8	120	0.000
11:00 - 12:00	8	120	0.001	8	120	0.001	8	120	0.002
12:00 - 13:00	8	120	0.000	8	120	0.000	8	120	0.000
13:00 - 14:00	8	120	0.000	8	120	0.000	8	120	0.000
14:00 - 15:00	8	120	0.000	8	120	0.000	8	120	0.000
15:00 - 16:00	8	120	0.000	8	120	0.000	8	120	0.000
16:00 - 17:00	8	120	0.000	8	120	0.000	8	120	0.000
17:00 - 18:00	8	120	0.000	8	120	0.000	8	120	0.000
18:00 - 19:00	8	120	0.000	8	120	0.000	8	120	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.002			0.002			0.004

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

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

Parameter summary

Trip rate parameter range selected: 82 - 161 (units:)
 Survey date date range: 01/01/08 - 25/09/15
 Number of weekdays (Monday-Friday): 8
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 MULTI-MODAL CYCLISTS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	8	120	0.005	8	120	0.008	8	120	0.013
08:00 - 09:00	8	120	0.002	8	120	0.011	8	120	0.013
09:00 - 10:00	8	120	0.001	8	120	0.005	8	120	0.006
10:00 - 11:00	8	120	0.003	8	120	0.005	8	120	0.008
11:00 - 12:00	8	120	0.004	8	120	0.001	8	120	0.005
12:00 - 13:00	8	120	0.005	8	120	0.005	8	120	0.010
13:00 - 14:00	8	120	0.001	8	120	0.002	8	120	0.003
14:00 - 15:00	8	120	0.003	8	120	0.004	8	120	0.007
15:00 - 16:00	8	120	0.011	8	120	0.004	8	120	0.015
16:00 - 17:00	8	120	0.006	8	120	0.004	8	120	0.010
17:00 - 18:00	8	120	0.015	8	120	0.009	8	120	0.024
18:00 - 19:00	8	120	0.007	8	120	0.002	8	120	0.009
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.063			0.060			0.123

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: 82 - 161 (units:)
 Survey date date range: 01/01/08 - 25/09/15
 Number of weekdays (Monday-Friday): 8
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 MULTI-MODAL VEHICLE OCCUPANTS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	8	120	0.069	8	120	0.271	8	120	0.340
08:00 - 09:00	8	120	0.159	8	120	0.438	8	120	0.597
09:00 - 10:00	8	120	0.173	8	120	0.217	8	120	0.390
10:00 - 11:00	8	120	0.180	8	120	0.235	8	120	0.415
11:00 - 12:00	8	120	0.184	8	120	0.219	8	120	0.403
12:00 - 13:00	8	120	0.220	8	120	0.188	8	120	0.408
13:00 - 14:00	8	120	0.230	8	120	0.209	8	120	0.439
14:00 - 15:00	8	120	0.174	8	120	0.207	8	120	0.381
15:00 - 16:00	8	120	0.326	8	120	0.208	8	120	0.534
16:00 - 17:00	8	120	0.332	8	120	0.215	8	120	0.547
17:00 - 18:00	8	120	0.385	8	120	0.245	8	120	0.630
18:00 - 19:00	8	120	0.233	8	120	0.210	8	120	0.443
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.665			2.862			5.527

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: 82 - 161 (units:)
 Survey date date range: 01/01/08 - 25/09/15
 Number of weekdays (Monday-Friday): 8
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 MULTI-MODAL PEDESTRIANS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	8	120	0.034	8	120	0.045	8	120	0.079
08:00 - 09:00	8	120	0.039	8	120	0.120	8	120	0.159
09:00 - 10:00	8	120	0.046	8	120	0.060	8	120	0.106
10:00 - 11:00	8	120	0.064	8	120	0.057	8	120	0.121
11:00 - 12:00	8	120	0.026	8	120	0.039	8	120	0.065
12:00 - 13:00	8	120	0.045	8	120	0.034	8	120	0.079
13:00 - 14:00	8	120	0.025	8	120	0.039	8	120	0.064
14:00 - 15:00	8	120	0.046	8	120	0.057	8	120	0.103
15:00 - 16:00	8	120	0.101	8	120	0.064	8	120	0.165
16:00 - 17:00	8	120	0.079	8	120	0.056	8	120	0.135
17:00 - 18:00	8	120	0.064	8	120	0.032	8	120	0.096
18:00 - 19:00	8	120	0.056	8	120	0.046	8	120	0.102
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.625			0.649			1.274

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: 82 - 161 (units:)
 Survey date date range: 01/01/08 - 25/09/15
 Number of weekdays (Monday-Friday): 8
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 MULTI-MODAL BUS/TRAM PASSENGERS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	8	120	0.001	8	120	0.004	8	120	0.005
08:00 - 09:00	8	120	0.003	8	120	0.007	8	120	0.010
09:00 - 10:00	8	120	0.000	8	120	0.003	8	120	0.003
10:00 - 11:00	8	120	0.004	8	120	0.004	8	120	0.008
11:00 - 12:00	8	120	0.002	8	120	0.007	8	120	0.009
12:00 - 13:00	8	120	0.002	8	120	0.007	8	120	0.009
13:00 - 14:00	8	120	0.002	8	120	0.000	8	120	0.002
14:00 - 15:00	8	120	0.003	8	120	0.004	8	120	0.007
15:00 - 16:00	8	120	0.003	8	120	0.004	8	120	0.007
16:00 - 17:00	8	120	0.001	8	120	0.005	8	120	0.006
17:00 - 18:00	8	120	0.011	8	120	0.003	8	120	0.014
18:00 - 19:00	8	120	0.007	8	120	0.000	8	120	0.007
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.039			0.048			0.087

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: 82 - 161 (units:)
 Survey date date range: 01/01/08 - 25/09/15
 Number of weekdays (Monday-Friday): 8
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 MULTI-MODAL TOTAL RAIL PASSENGERS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	8	120	0.000	8	120	0.002	8	120	0.002
08:00 - 09:00	8	120	0.000	8	120	0.002	8	120	0.002
09:00 - 10:00	8	120	0.000	8	120	0.002	8	120	0.002
10:00 - 11:00	8	120	0.000	8	120	0.001	8	120	0.001
11:00 - 12:00	8	120	0.000	8	120	0.000	8	120	0.000
12:00 - 13:00	8	120	0.000	8	120	0.000	8	120	0.000
13:00 - 14:00	8	120	0.000	8	120	0.000	8	120	0.000
14:00 - 15:00	8	120	0.000	8	120	0.000	8	120	0.000
15:00 - 16:00	8	120	0.001	8	120	0.003	8	120	0.004
16:00 - 17:00	8	120	0.000	8	120	0.000	8	120	0.000
17:00 - 18:00	8	120	0.003	8	120	0.000	8	120	0.003
18:00 - 19:00	8	120	0.003	8	120	0.000	8	120	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.007			0.010			0.017

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: 82 - 161 (units:)
 Survey date date range: 01/01/08 - 25/09/15
 Number of weekdays (Monday-Friday): 8
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 MULTI-MODAL COACH PASSENGERS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	8	120	0.000	8	120	0.000	8	120	0.000
08:00 - 09:00	8	120	0.001	8	120	0.004	8	120	0.005
09:00 - 10:00	8	120	0.000	8	120	0.000	8	120	0.000
10:00 - 11:00	8	120	0.000	8	120	0.000	8	120	0.000
11:00 - 12:00	8	120	0.004	8	120	0.001	8	120	0.005
12:00 - 13:00	8	120	0.000	8	120	0.000	8	120	0.000
13:00 - 14:00	8	120	0.000	8	120	0.000	8	120	0.000
14:00 - 15:00	8	120	0.000	8	120	0.000	8	120	0.000
15:00 - 16:00	8	120	0.000	8	120	0.000	8	120	0.000
16:00 - 17:00	8	120	0.000	8	120	0.000	8	120	0.000
17:00 - 18:00	8	120	0.000	8	120	0.000	8	120	0.000
18:00 - 19:00	8	120	0.000	8	120	0.000	8	120	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.005			0.005			0.010

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: 82 - 161 (units:)
 Survey date date range: 01/01/08 - 25/09/15
 Number of weekdays (Monday-Friday): 8
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 MULTI-MODAL PUBLIC TRANSPORT USERS
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	8	120	0.001	8	120	0.006	8	120	0.007
08:00 - 09:00	8	120	0.004	8	120	0.014	8	120	0.018
09:00 - 10:00	8	120	0.000	8	120	0.005	8	120	0.005
10:00 - 11:00	8	120	0.004	8	120	0.005	8	120	0.009
11:00 - 12:00	8	120	0.006	8	120	0.008	8	120	0.014
12:00 - 13:00	8	120	0.002	8	120	0.007	8	120	0.009
13:00 - 14:00	8	120	0.002	8	120	0.000	8	120	0.002
14:00 - 15:00	8	120	0.003	8	120	0.004	8	120	0.007
15:00 - 16:00	8	120	0.004	8	120	0.007	8	120	0.011
16:00 - 17:00	8	120	0.001	8	120	0.005	8	120	0.006
17:00 - 18:00	8	120	0.015	8	120	0.003	8	120	0.018
18:00 - 19:00	8	120	0.010	8	120	0.000	8	120	0.010
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.052			0.064			0.116

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: 82 - 161 (units:)
 Survey date date range: 01/01/08 - 25/09/15
 Number of weekdays (Monday-Friday): 8
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 MULTI-MODAL TOTAL PEOPLE
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	8	120	0.109	8	120	0.330	8	120	0.439
08:00 - 09:00	8	120	0.204	8	120	0.582	8	120	0.786
09:00 - 10:00	8	120	0.220	8	120	0.287	8	120	0.507
10:00 - 11:00	8	120	0.251	8	120	0.303	8	120	0.554
11:00 - 12:00	8	120	0.221	8	120	0.267	8	120	0.488
12:00 - 13:00	8	120	0.272	8	120	0.234	8	120	0.506
13:00 - 14:00	8	120	0.258	8	120	0.250	8	120	0.508
14:00 - 15:00	8	120	0.226	8	120	0.273	8	120	0.499
15:00 - 16:00	8	120	0.443	8	120	0.283	8	120	0.726
16:00 - 17:00	8	120	0.419	8	120	0.280	8	120	0.699
17:00 - 18:00	8	120	0.478	8	120	0.290	8	120	0.768
18:00 - 19:00	8	120	0.307	8	120	0.258	8	120	0.565
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.408			3.637			7.045

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: 82 - 161 (units:)
 Survey date date range: 01/01/08 - 25/09/15
 Number of weekdays (Monday-Friday): 8
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

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

APPENDIX BGH 12

Traffic Generation for 153 dwellings - Darwen

Residential

Proposed Residential Development 153 Dwellings

Total Person Trip Rates

	In	Out	Total
Weekday Morning Peak 08:00 - 09:00	0.204	0.582	0.786
Weekday Evening Peak 17:00 - 18:00	0.478	0.290	0.768

Modal Split

Train	1%
Bus	7%
Motorcycle	1%
Car Driver	66%
Car Passenger	9%
Bicycle	1%
On Foot	15%
Total	100%

Total Person Trip Generation based on 153 Dwellings

	In	Out	Total
Weekday Morning Peak 08:00 - 09:00	31	89	120
Weekday Evening Peak 17:00 - 18:00	73	44	117

Multi Modal Trip Generation based on 153 Dwellings

Mode of Travel	Morning Peak Hour			Evening Peak Hour		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Train	0	1	1	1	0	1
Bus	2	7	9	5	3	8
Motorcycle	0	1	1	1	0	1
Car Driver	21	59	80	48	30	78
Car Passenger	3	8	11	7	4	11
Bicycle	0	1	1	1	0	1
On Foot	5	13	18	11	7	18
Total	31	89	120	73	45	118

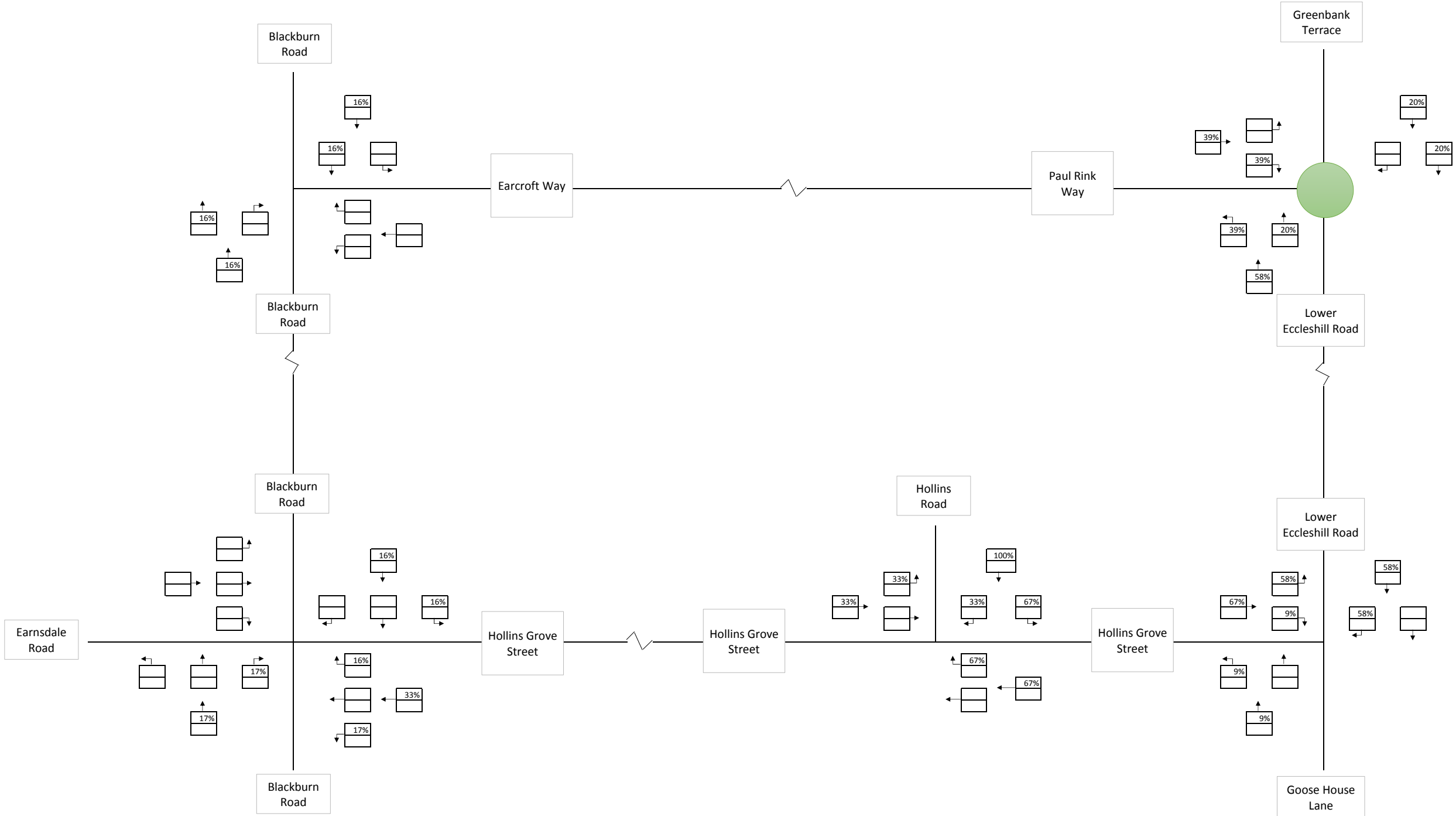
APPENDIX BGH 13

MSOA of Work	Total Working in MSOA	%age Working in MSOA	A	B	C	D	E	F	G	H	TOTAL
Column Total	1559										
E02002620 : Blackburn with Darwen 006	182	11.67%	50%					50%			100%
E02002630 : Blackburn with Darwen 016	179	11.48%							50%	50%	100%
E02002625 : Blackburn with Darwen 011	143	9.17%						100%			100%
E02002628 : Blackburn with Darwen 014	83	5.32%	50%							50%	100%
E02002621 : Blackburn with Darwen 007	55	3.53%	50%					50%			100%
E02002622 : Blackburn with Darwen 008	46	2.95%				50%		50%			100%
E02002627 : Blackburn with Darwen 013	45	2.89%	100%								100%
E02002631 : Blackburn with Darwen 017	45	2.89%								100%	100%
E02005213 : Hyndburn 002	43	2.76%				100%					100%
E02002615 : Blackburn with Darwen 001	41	2.63%				100%					100%
E02002617 : Blackburn with Darwen 003	30	1.92%				100%					100%
E02002623 : Blackburn with Darwen 009	28	1.80%	100%								100%
E02002632 : Blackburn with Darwen 018	28	1.80%								100%	100%
E02002629 : Blackburn with Darwen 015	24	1.54%							100%		100%
E02005214 : Hyndburn 003	22	1.41%				100%					100%
E02005269 : Preston 017	20	1.28%					100%				100%
E02005256 : Preston 004	19	1.22%					100%				100%
E02005219 : Hyndburn 008	18	1.15%				100%					100%
E02005279 : Rossendale 002	16	1.03%				50%			50%		100%
E02005298 : South Ribble 012	16	1.03%					100%				100%
E02005178 : Burnley 003	15	0.96%				100%					100%
E02005277 : Ribble Valley 008	15	0.96%				100%					100%
E02005294 : South Ribble 008	15	0.96%					100%				100%
E02002619 : Blackburn with Darwen 005	14	0.90%						100%			100%
E02005271 : Ribble Valley 002	14	0.90%				100%					100%
E02002624 : Blackburn with Darwen 010	13	0.83%	100%								100%
E02000999 : Bolton 016	13	0.83%								100%	100%
E02005215 : Hyndburn 004	12	0.77%				100%					100%
E02005217 : Hyndburn 006	12	0.77%				100%					100%
E02005264 : Preston 012	12	0.77%					100%				100%
E02005177 : Burnley 002	11	0.71%				100%					100%
E02005209 : Fylde 007	11	0.71%					100%				100%
E02001005 : Bolton 022	10	0.64%								100%	100%
E02005218 : Hyndburn 007	10	0.64%				100%					100%
E02005276 : Ribble Valley 007	10	0.64%				100%					100%
E02005179 : Burnley 004	8	0.51%				100%					100%
E02005194 : Chorley 006	8	0.51%					100%				100%
E02005198 : Chorley 010	8	0.51%					100%				100%
E02005212 : Hyndburn 001	8	0.51%				100%					100%
E02002618 : Blackburn with Darwen 004	7	0.45%						100%			100%
E02000997 : Bolton 014	7	0.45%								100%	100%
E02001012 : Bolton 029	7	0.45%								100%	100%
E02001026 : Bury 008	7	0.45%							100%		100%
E02005220 : Hyndburn 009	7	0.45%					100%				100%
E02005284 : Rossendale 007	7	0.45%				100%					100%
E02005285 : Rossendale 008	7	0.45%				100%					100%
E02002626 : Blackburn with Darwen 012	6	0.38%	50%					50%			100%
E02002598 : Warrington 009	6	0.38%					100%				100%
E02001031 : Bury 013	6	0.38%							100%		100%
E02001260 : Trafford 002	6	0.38%					100%				100%
E02005196 : Chorley 008	6	0.38%					100%				100%
E02005293 : South Ribble 007	6	0.38%					100%				100%
E02000998 : Bolton 015	5	0.32%								100%	100%
E02005216 : Hyndburn 005	5	0.32%					100%				100%
E02005246 : Pendle 007	5	0.32%				100%					100%
E02005248 : Pendle 009	5	0.32%				100%					100%
E02005254 : Preston 002	5	0.32%					100%				100%
E02005261 : Preston 009	5	0.32%					100%				100%
E02005288 : South Ribble 002	5	0.32%					100%				100%
E02005302 : South Ribble 016	5	0.32%					100%				100%
E02001000 : Bolton 017	4	0.26%								100%	100%
E02001264 : Trafford 006	4	0.26%					100%				100%
E02005176 : Burnley 001	4	0.26%				100%					100%
E02005186 : Burnley 011	4	0.26%				100%					100%
E02005192 : Chorley 004	4	0.26%					100%				100%
E02005252 : Pendle 013	4	0.26%				100%					100%
E02005270 : Ribble Valley 001	4	0.26%				100%					100%
E02005274 : Ribble Valley 005	4	0.26%				100%					100%
E02005281 : Rossendale 004	4	0.26%				100%					100%
E02005295 : South Ribble 009	4	0.26%					100%				100%
E02005299 : South Ribble 013	4	0.26%					100%				100%
E02001029 : Bury 011	3	0.19%							100%		100%
E02001097 : Manchester 053	3	0.19%					100%				100%
E02001141 : Rochdale 010	3	0.19%				50%			50%		100%
E02005195 : Chorley 007	3	0.19%					100%				100%
E02005262 : Preston 010	3	0.19%					100%				100%
E02005263 : Preston 011	3	0.19%					100%				100%
E02002616 : Blackburn with Darwen 002	2	0.13%						100%			100%
E02002607 : Warrington 018	2	0.13%					100%				100%
E02000988 : Bolton 005	2	0.13%								100%	100%
E02000990 : Bolton 007	2	0.13%								100%	100%
E02001002 : Bolton 019	2	0.13%								100%	100%
E02001016 : Bolton 033	2	0.13%								100%	100%
E02001019 : Bury 001	2	0.13%							100%		100%
E02001050 : Manchester 006	2	0.13%					100%				100%

MSOA of Work	Total Working in MSOA	Age		A	B	C	D	E	F	G	H	TOTAL
		Working in MSOA	%									
E02001059 : Manchester 015	2	0.13%						100%				100%
E02001062 : Manchester 018	2	0.13%						100%				100%
E02006902 : Manchester 054	2	0.13%						100%				100%
E02006912 : Manchester 055	2	0.13%						100%				100%
E02001165 : Salford 009	2	0.13%						100%				100%
E02001168 : Salford 012	2	0.13%						100%				100%
E02001184 : Salford 028	2	0.13%						100%				100%
E02001294 : Wigan 008	2	0.13%						100%				100%
E02005180 : Burnley 005	2	0.13%					100%					100%
E02005189 : Chorley 001	2	0.13%						100%				100%
E02005197 : Chorley 009	2	0.13%						100%				100%
E02005203 : Fylde 001	2	0.13%						100%				100%
E02005206 : Fylde 004	2	0.13%						100%				100%
E02005230 : Lancaster 010	2	0.13%						100%				100%
E02005235 : Lancaster 015	2	0.13%						100%				100%
E02005242 : Pendle 003	2	0.13%					100%					100%
E02005249 : Pendle 010	2	0.13%					100%					100%
E02005250 : Pendle 011	2	0.13%					100%					100%
E02005266 : Preston 014	2	0.13%						100%				100%
E02005268 : Preston 016	2	0.13%						100%				100%
E02005275 : Ribble Valley 006	2	0.13%					100%					100%
E02005280 : Rossendale 003	2	0.13%					100%					100%
E02005290 : South Ribble 004	2	0.13%						100%				100%
E02005301 : South Ribble 015	2	0.13%						100%				100%
E02005321 : Wyre 003	2	0.13%						100%				100%
E02005326 : Wyre 008	2	0.13%						100%				100%
E02001410 : St. Helens 005	2	0.13%						100%				100%

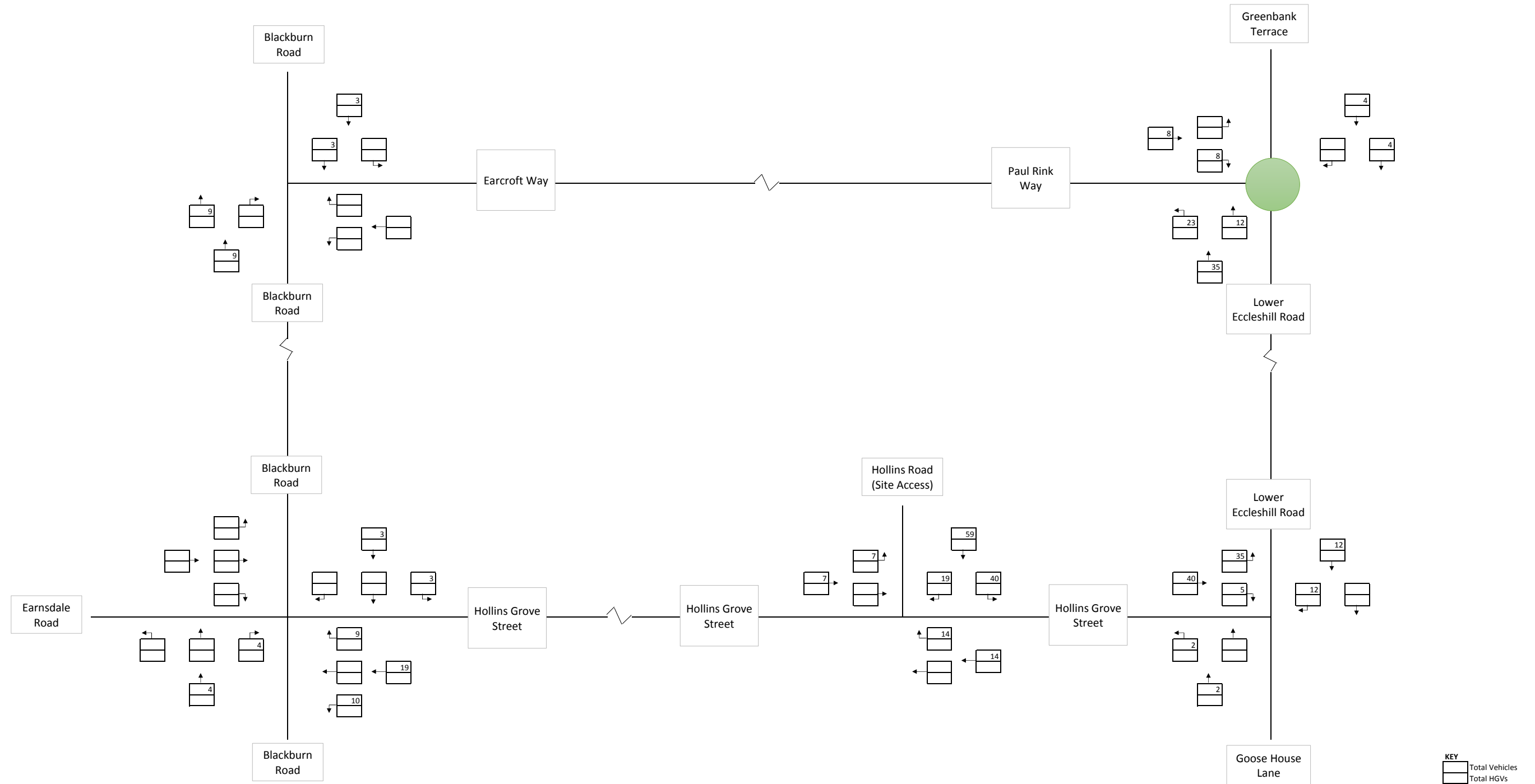
Junction	Route	%Age Assigned
A	Blackburn Road North	16%
B	Eastbound M65 via Earcroft Way	0%
C	Westbound M65 via Earcroft Way	0%
D	Eastbound M65 via Paul Rink Way	23%
E	Westbound M65 via Paul Rink Way	15%
F	Greenbank Terrace	20%
G	Goose House Lane	9%
H	Blackburn Road South	17%

TRIP DISTRIBUTION
HOLLINS PAPER MILL, DARWEN

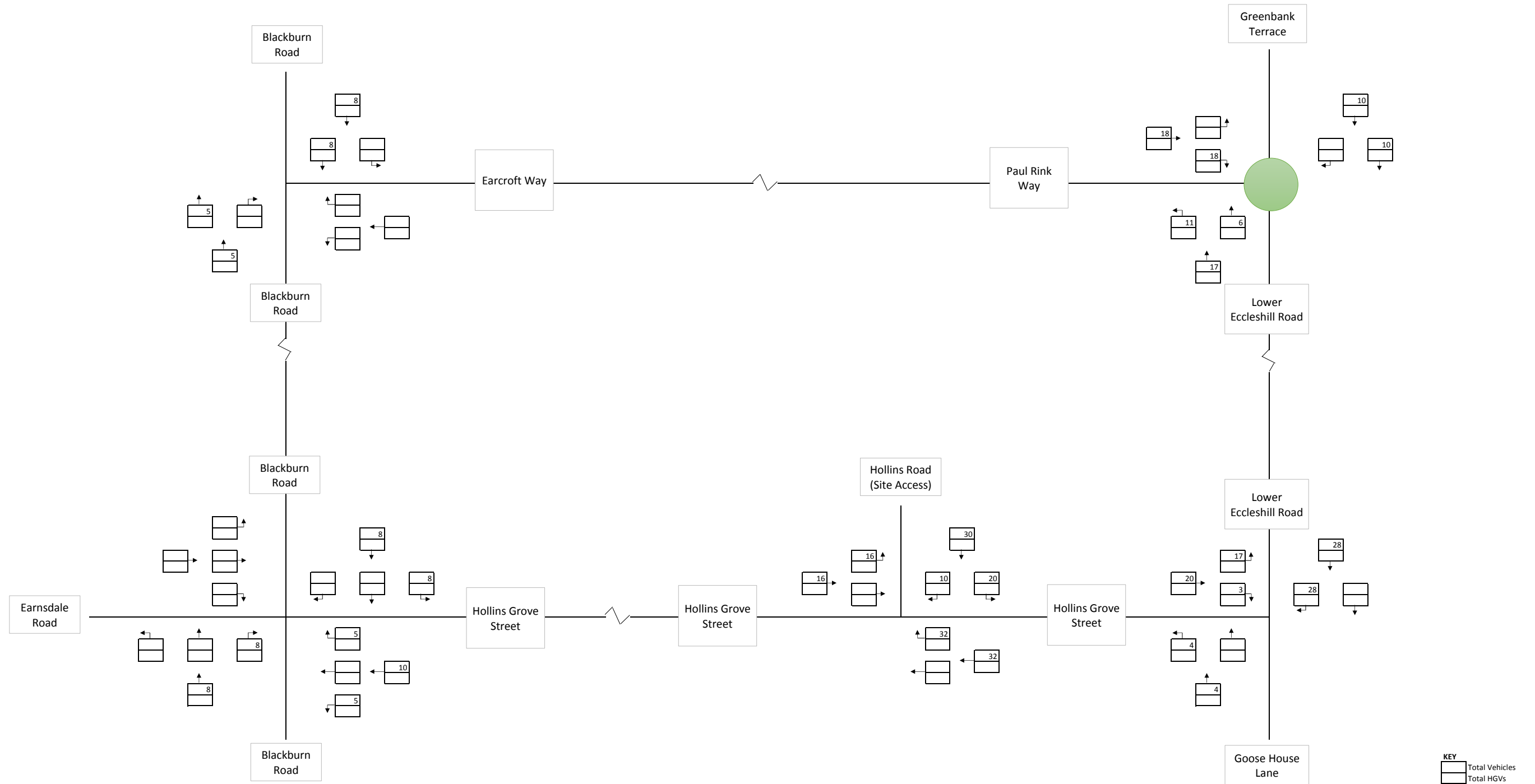


APPENDIX BGH 14

DEVELOPMENT GENERATED VEHICULAR FLOWS
HOLLINS PAPER MILL, DARWEN
7:45 am - 8:45 am
AM PEAK



DEVELOPMENT GENERATED VEHICULAR FLOWS
HOLLINS PAPER MILL, DARWEN
4:15 pm - 5:15 pm
PM PEAK



APPENDIX BGH 15

Growth Factors

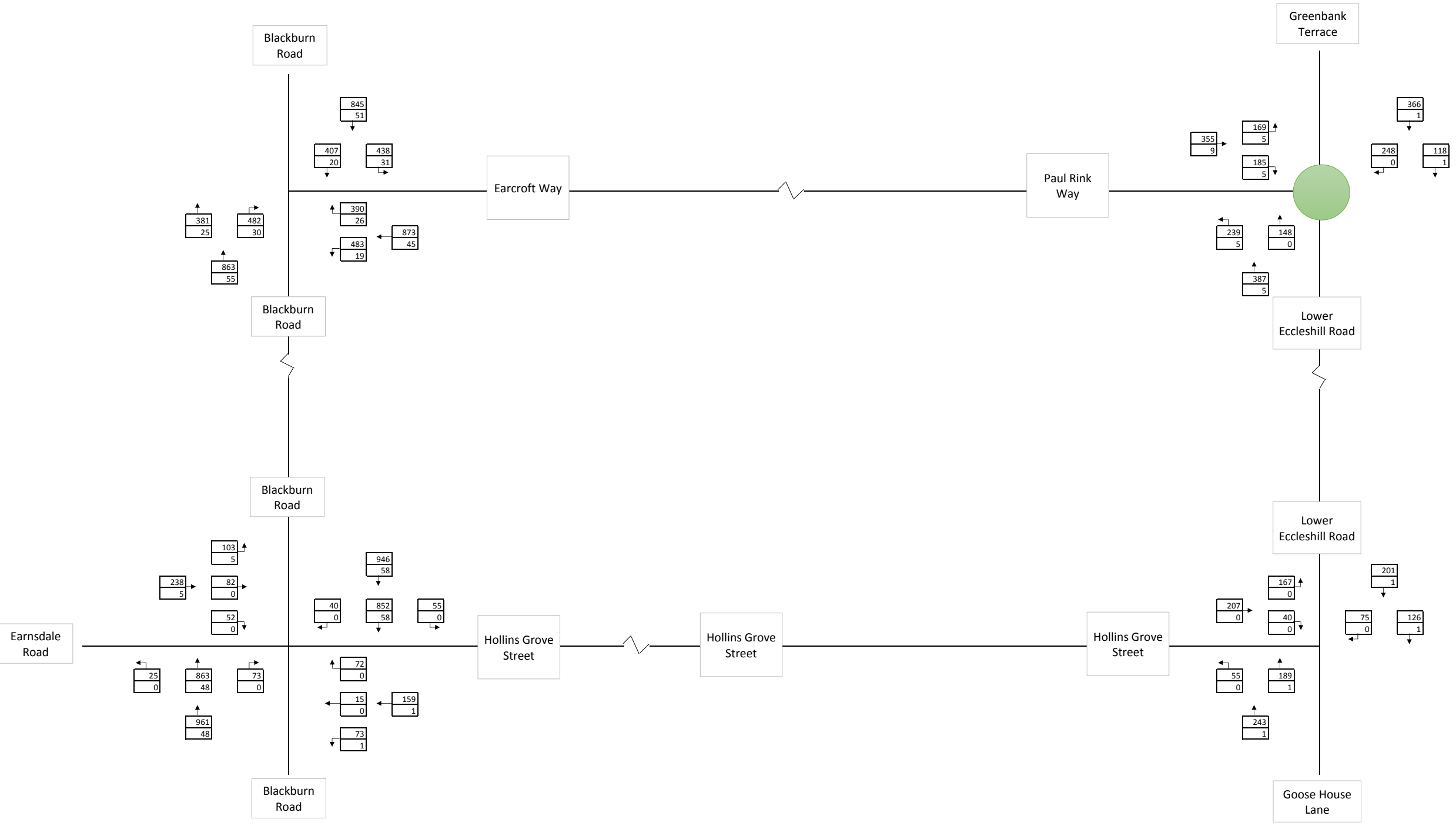
Weekday AM Peak 2016 - 2027

Level	Area	Local Growth Figure
E02002628	Blackburn with Darwen 014	1.137244463

Weekday PM Peak 2016 - 2027

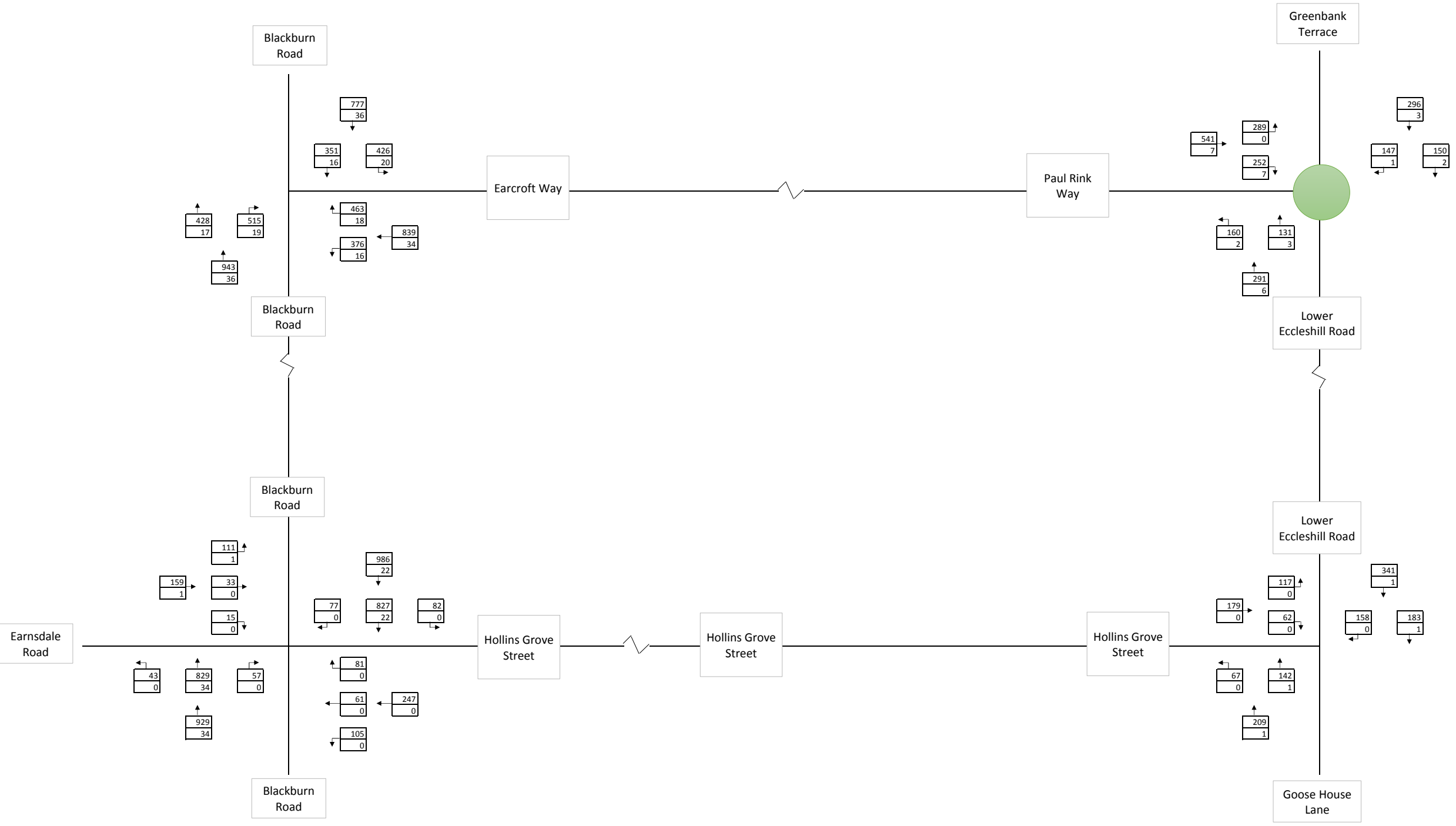
Level	Area	Local Growth Figure
E02002628	Blackburn with Darwen 014	1.135990726

**2027 BASE VEHICULAR FLOWS
 HOLLINS PAPER MILL, DARWEN
 7:45 am - 8:45 am
 AM PEAK**



KEY
 Total Vehicles
 Total HGVs

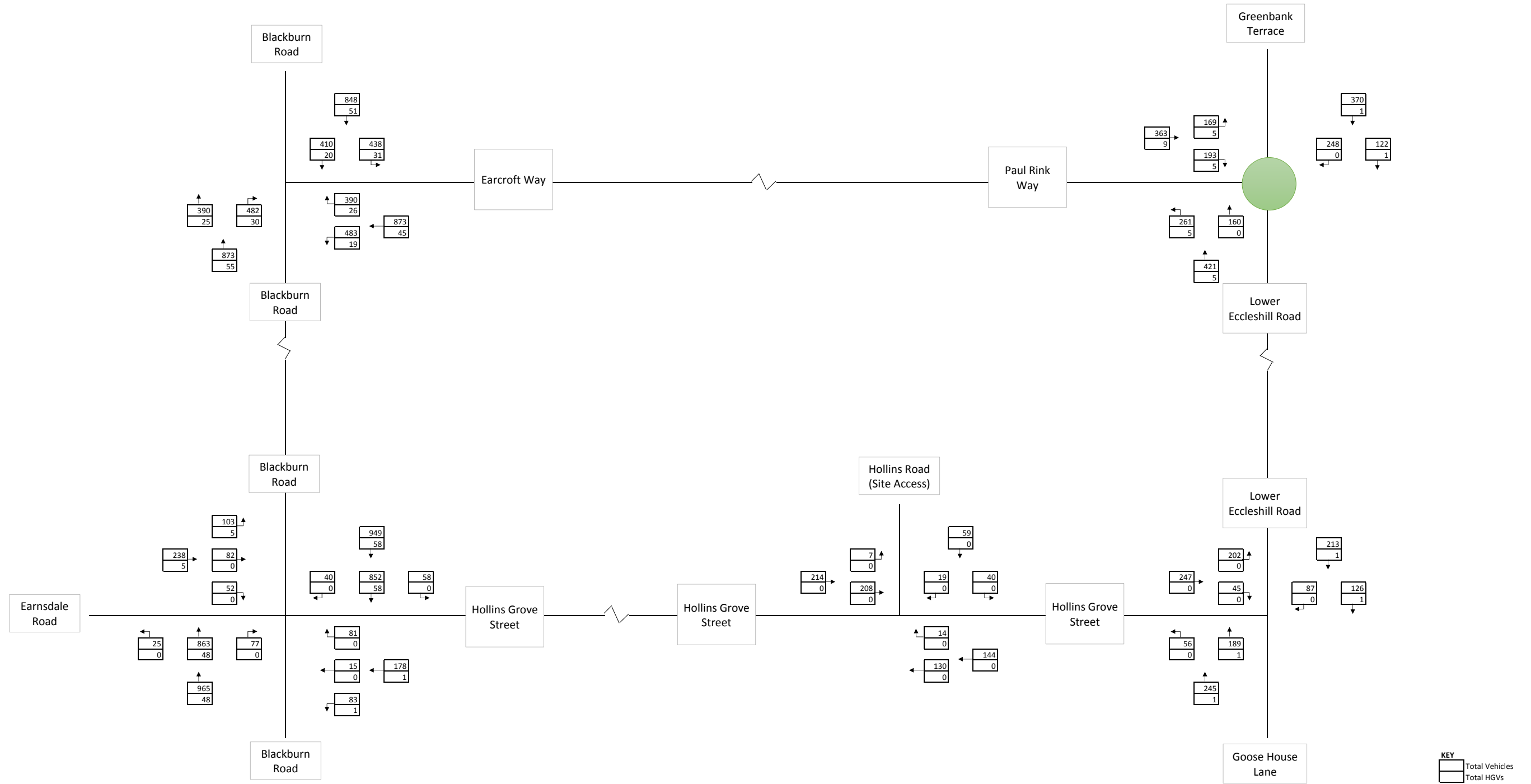
**2027 BASE VEHICULAR FLOWS
 HOLLINS PAPER MILL, DARWEN
 4:15 pm - 5:15 pm
 PM PEAK**



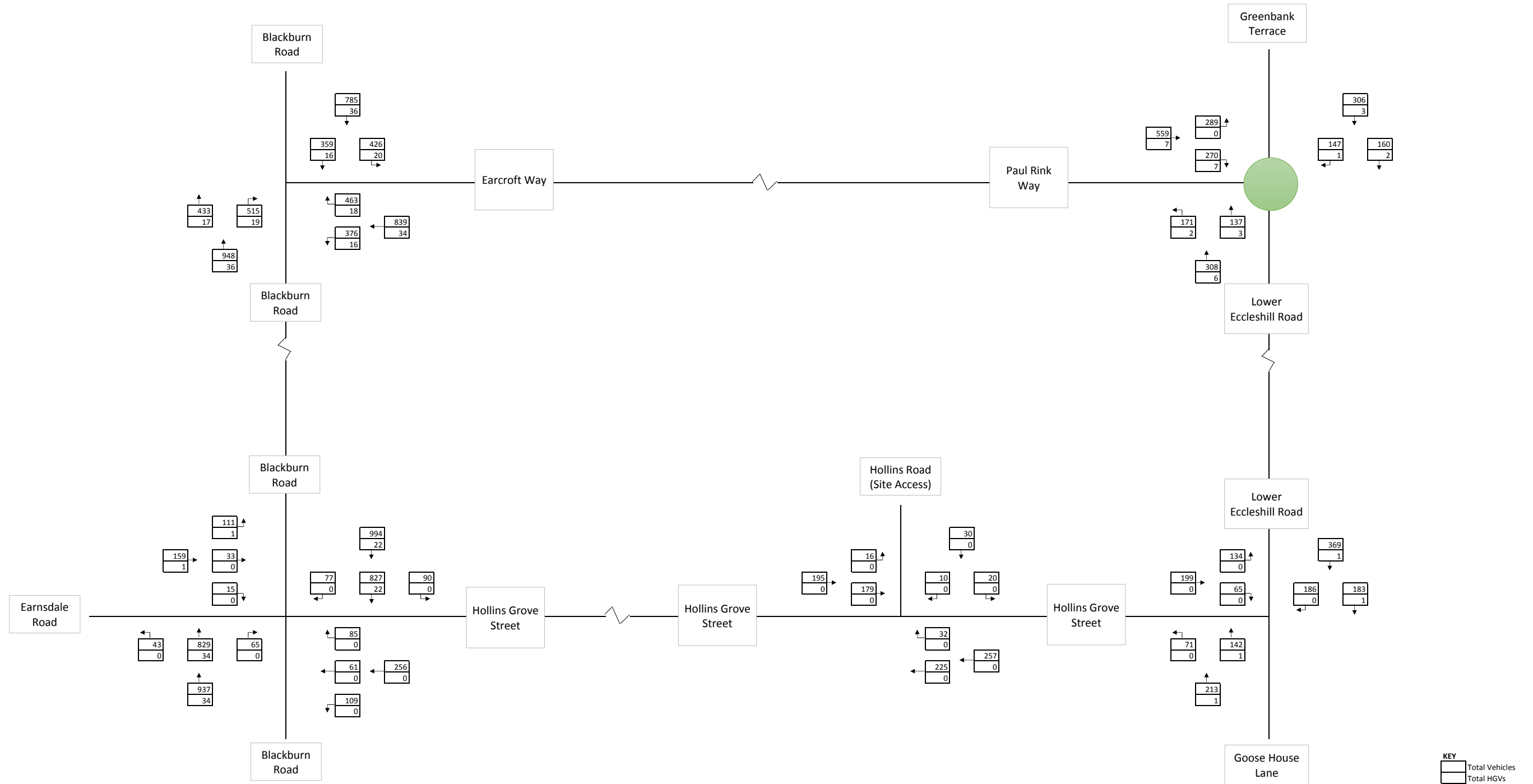
KEY
 Total Vehicles
 Total HGVs

APPENDIX BGH 16

2027 PREDICTED VEHICULAR FLOWS
HOLLINS PAPER MILL, DARWEN
7:45 am - 8:45 am
AM PEAK



2027 PREDICTED VEHICULAR FLOWS
HOLLINS PAPER MILL, DARWEN
4:15 pm - 5:15 pm
PM PEAK



APPENDIX BGH 17

Junctions 8
PICADY 8 - Priority Intersection Module
Version: 8.0.5.523 [19102,19/06/2015] © Copyright TRL Limited, 2017
For sales and distribution information, program advice and maintenance, contact TRL: Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Hollins Grove St-Lower Eccleshill Rd-Goose House Ln.arc8
Path: Y:\2016\16-401 to 16-425\16-423 Hollins Paper Mill, Darwen\Technical\Junction Models\PICADY
Report generation date: 03/03/2017 11:01:28

- « Existing Layout - 2027 Base, AM Peak
- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

Summary of junction performance

	AM Peak			
	Queue (PCU)	Delay (s)	RFC	LOS
	Existing Layout - 2027 Base			
Stream B-AC	0.68	10.89	0.41	B
Stream C-AB	0.24	6.50	0.16	A
Stream C-A	-	-	-	-
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

- "D1 - 2016 Existing, AM Peak" model duration: 07:30 - 09:00
- "D2 - 2016 Existing, PM Peak" model duration: 16:00 - 17:30
- "D3 - 2027 Base, AM Peak " model duration: 07:30 - 09:00
- "D4 - 2027 Base, PM Peak" model duration: 16:00 - 17:30
- "D5 - 2027 Predicted, AM Peak" model duration: 07:30 - 09:00
- "D6 - 2027 Predicted, PM Peak" model duration: 16:00 - 17:30

Run using Junctions 8.0.5.523 at 03/03/2017 11:01:28

File summary

Title	Hollins Grove Street/Lower Eccleshill Road/Goose House Lane Priority T- Junction
Location	Darwen, Lancashire
Site Number	
Date	02/12/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	16-423
Enumerator	rdonaldson
Description	

Analysis Options

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

Units

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

Existing Layout - 2027 Base, AM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2027 Base, AM Peak	2027 Base	AM Peak		ONE HOUR	07:30	09:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Hollins Grove Street/Lower Eccleshill Road/Goose House Lane	T-Junction	Two-way	A,B,C	9.54	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Goose House Lane	A	Goose House Lane		Major
Hollins Grove Street	B	Hollins Grove Street		Minor
Lower Eccleshill Road	C	Lower Eccleshill Road		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Lower Eccleshill Road	7.00		0.00		2.20	90.00	✓	0.00

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Hollins Grove Street	One lane	3.40										34	23

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	519.921	0.091	0.229	0.144	0.327
1	B-C	663.982	0.097	0.246	-	-
1	C-B	626.083	0.232	0.232	-	-

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

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Goose House Lane	ONE HOUR	✓	245.00	100.000
Hollins Grove Street	ONE HOUR	✓	207.00	100.000
Lower Eccleshill Road	ONE HOUR	✓	202.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.000	55.000	190.000
	Hollins Grove Street	40.000	0.000	167.000
	Lower Eccleshill Road	127.000	75.000	0.000

Turning Proportions (PCU) - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.00	0.22	0.78
	Hollins Grove Street	0.19	0.00	0.81
	Lower Eccleshill Road	0.63	0.37	0.00

Vehicle Mix

Average PCU Per Vehicle - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	1.000	1.000	1.000
	Hollins Grove Street	1.000	1.000	1.000
	Lower Eccleshill Road	1.000	1.000	1.000

Heavy Vehicle Percentages - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.0	0.0	0.0
	Hollins Grove Street	0.0	0.0	0.0
	Lower Eccleshill Road	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.41	10.89	0.68	B
C-AB	0.16	6.50	0.24	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (07:30-07:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	155.84	154.39	0.00	581.52	0.268	0.36	8.400	A
C-AB	66.03	65.50	0.00	647.74	0.102	0.13	6.180	A
C-A	86.04	86.04	0.00	-	-	-	-	-
A-B	41.41	41.41	0.00	-	-	-	-	-
A-C	143.04	143.04	0.00	-	-	-	-	-

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	186.09	185.63	0.00	571.83	0.325	0.48	9.310	A
C-AB	81.45	81.30	0.00	652.44	0.125	0.17	6.304	A
C-A	100.15	100.15	0.00	-	-	-	-	-
A-B	49.44	49.44	0.00	-	-	-	-	-
A-C	170.81	170.81	0.00	-	-	-	-	-

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	227.91	227.11	0.00	558.37	0.408	0.68	10.840	B
C-AB	104.89	104.64	0.00	659.59	0.159	0.23	6.489	A
C-A	117.51	117.51	0.00	-	-	-	-	-
A-B	60.56	60.56	0.00	-	-	-	-	-
A-C	209.19	209.19	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	227.91	227.89	0.00	558.35	0.408	0.68	10.891	B
C-AB	104.94	104.93	0.00	659.65	0.159	0.24	6.495	A
C-A	117.47	117.47	0.00	-	-	-	-	-
A-B	60.56	60.56	0.00	-	-	-	-	-
A-C	209.19	209.19	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	186.09	186.86	0.00	571.80	0.325	0.49	9.370	A
C-AB	81.51	81.75	0.00	652.52	0.125	0.18	6.314	A
C-A	100.09	100.09	0.00	-	-	-	-	-
A-B	49.44	49.44	0.00	-	-	-	-	-
A-C	170.81	170.81	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	155.84	156.32	0.00	581.46	0.268	0.37	8.478	A
C-AB	66.13	66.29	0.00	647.82	0.102	0.14	6.195	A
C-A	85.94	85.94	0.00	-	-	-	-	-
A-B	41.41	41.41	0.00	-	-	-	-	-
A-C	143.04	143.04	0.00	-	-	-	-	-

<h1>Junctions 8</h1>
<h2>PICADY 8 - Priority Intersection Module</h2>
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Filename: Hollins Grove St-Lower Eccleshill Rd-Goose House Ln.arc8
Path: Y:\2016\16-401 to 16-425\16-423 Hollins Paper Mill, Darwen\Technical\Junction Models\PICADY
Report generation date: 03/03/2017 11:01:59

- « Existing Layout - 2027 Base, PM Peak
- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

Summary of junction performance

	PM Peak			
	Queue (PCU)	Delay (s)	RFC	LOS
	Existing Layout - 2027 Base			
Stream B-AC	0.62	11.35	0.38	B
Stream C-AB	0.66	7.72	0.34	A
Stream C-A	-	-	-	-
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

"D1 - 2016 Existing, AM Peak" model duration: 07:30 - 09:00
 "D2 - 2016 Existing, PM Peak" model duration: 16:00 - 17:30
 "D3 - 2027 Base, AM Peak" model duration: 07:30 - 09:00
 "D4 - 2027 Base, PM Peak " model duration: 16:00 - 17:30
 "D5 - 2027 Predicted, AM Peak" model duration: 07:30 - 09:00
 "D6 - 2027 Predicted, PM Peak" model duration: 16:00 - 17:30

Run using Junctions 8.0.5.523 at 03/03/2017 11:01:59

File summary

Title	Hollins Grove Street/Lower Eccleshill Road/Goose House Lane Priority T- Junction
Location	Darwen, Lancashire
Site Number	
Date	02/12/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	16-423
Enumerator	rdonaldson
Description	

Analysis Options

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

Units

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

Existing Layout - 2027 Base, PM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2027 Base, PM Peak	2027 Base	PM Peak		ONE HOUR	16:00	17:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Hollins Grove Street/Lower Eccleshill Road/Goose House Lane	T-Junction	Two-way	A,B,C	9.39	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Goose House Lane	A	Goose House Lane		Major
Hollins Grove Street	B	Hollins Grove Street		Minor
Lower Eccleshill Road	C	Lower Eccleshill Road		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Lower Eccleshill Road	7.00		0.00		2.20	90.00	✓	0.00

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Hollins Grove Street	One lane	3.40										34	23

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	519.921	0.091	0.229	0.144	0.327
1	B-C	663.982	0.097	0.246	-	-
1	C-B	626.083	0.232	0.232	-	-

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

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Goose House Lane	ONE HOUR	✓	210.00	100.000
Hollins Grove Street	ONE HOUR	✓	179.00	100.000
Lower Eccleshill Road	ONE HOUR	✓	342.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.000	67.000	143.000
	Hollins Grove Street	62.000	0.000	117.000
	Lower Eccleshill Road	184.000	158.000	0.000

Turning Proportions (PCU) - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.00	0.32	0.68
	Hollins Grove Street	0.35	0.00	0.65
	Lower Eccleshill Road	0.54	0.46	0.00

Vehicle Mix

Average PCU Per Vehicle - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	1.000	1.000	1.000
	Hollins Grove Street	1.000	1.000	1.000
	Lower Eccleshill Road	1.000	1.000	1.000

Heavy Vehicle Percentages - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.0	0.0	0.0
	Hollins Grove Street	0.0	0.0	0.0
	Lower Eccleshill Road	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.38	11.35	0.62	B
C-AB	0.34	7.72	0.66	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (16:00-16:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	134.76	133.46	0.00	544.86	0.247	0.32	8.724	A
C-AB	149.16	147.82	0.00	682.53	0.219	0.33	6.722	A
C-A	108.31	108.31	0.00	-	-	-	-	-
A-B	50.44	50.44	0.00	-	-	-	-	-
A-C	107.66	107.66	0.00	-	-	-	-	-

Main results: (16:15-16:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	160.92	160.51	0.00	532.13	0.302	0.43	9.676	A
C-AB	186.65	186.19	0.00	694.29	0.269	0.45	7.087	A
C-A	120.81	120.81	0.00	-	-	-	-	-
A-B	60.23	60.23	0.00	-	-	-	-	-
A-C	128.55	128.55	0.00	-	-	-	-	-

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	197.08	196.35	0.00	514.33	0.383	0.61	11.303	B
C-AB	243.49	242.68	0.00	710.71	0.343	0.65	7.695	A
C-A	133.06	133.06	0.00	-	-	-	-	-
A-B	73.77	73.77	0.00	-	-	-	-	-
A-C	157.45	157.45	0.00	-	-	-	-	-

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	197.08	197.06	0.00	514.20	0.383	0.62	11.349	B
C-AB	243.69	243.67	0.00	710.93	0.343	0.66	7.721	A
C-A	132.85	132.85	0.00	-	-	-	-	-
A-B	73.77	73.77	0.00	-	-	-	-	-
A-C	157.45	157.45	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	160.92	161.62	0.00	531.94	0.303	0.44	9.739	A
C-AB	186.91	187.69	0.00	694.61	0.269	0.46	7.121	A
C-A	120.54	120.54	0.00	-	-	-	-	-
A-B	60.23	60.23	0.00	-	-	-	-	-
A-C	128.55	128.55	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	134.76	135.19	0.00	544.57	0.247	0.33	8.802	A
C-AB	149.53	150.00	0.00	682.82	0.219	0.34	6.767	A
C-A	107.95	107.95	0.00	-	-	-	-	-
A-B	50.44	50.44	0.00	-	-	-	-	-
A-C	107.66	107.66	0.00	-	-	-	-	-

Junctions 8
ARCADY 8 - Roundabout Module
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Filename: Lower Eccleshill Rd-Paul Rink Way-Greenbank Terrace Roundabout.arc8
Path: Y:\2016\16-401 to 16-425\16-423 Hollins Paper Mill, Darwen\Technical\Junction Models\ARCADY
Report generation date: 03/03/2017 10:57:35

- « Existing Layout - 2027 Base, AM Peak
- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

Summary of junction performance

	AM Peak			
	Queue (PCU)	Delay (s)	RFC	LOS
	Existing Layout - 2027 Base			
Unused Access Stub	0.00	0.00	0.00	A
Lower Eccleshill Road	0.70	5.90	0.41	A
Paul Rink Way	0.43	3.88	0.30	A
Greenbank Terrace	0.59	5.29	0.37	A

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

- "D1 - 2016 Existing, AM Peak" model duration: 07:30 - 09:00
- "D2 - 2016 Existing, PM Peak" model duration: 16:00 - 17:30
- "D3 - 2027 Base, AM Peak" model duration: 07:30 - 09:00
- "D4 - 2027 Base, PM Peak" model duration: 16:00 - 17:30
- "D5 - 2027 Predicted, AM Peak" model duration: 07:30 - 09:00
- "D6 - 2027 Predicted, PM Peak" model duration: 16:00 - 17:30

Run using Junctions 8.0.5.523 at 03/03/2017 10:57:34

File summary

Title	Lower Eccleshill Road/Paul Rink Way/Greenbank Terrace Roundabout Junction
Location	Darwen, Lancashire
Site Number	
Date	30/11/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	16-423
Enumerator	rdonaldson
Description	

Analysis Options

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

Units

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

Existing Layout - 2027 Base, AM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2027 Base, AM Peak	2027 Base	AM Peak		ONE HOUR	07:30	09:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4			5.04	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Unused Access Stub	1	Unused Access Stub	
Lower Eccleshill Road	2	Lower Eccleshill Road	
Paul Rink Way	3	Paul Rink Way	
Greenbank Terrace	4	Greenbank Terrace	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Unused Access Stub	0.00	99999.00
Lower Eccleshill Road	0.00	99999.00
Paul Rink Way	0.00	99999.00
Greenbank Terrace	0.00	99999.00

Roundabout Geometry

Name	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
Unused Access Stub	3.60	5.30	2.70	21.40	36.00	33.00	
Lower Eccleshill Road	2.90	6.10	4.30	25.30	36.00	26.00	
Paul Rink Way	3.80	5.90	4.20	29.30	36.00	28.00	
Greenbank Terrace	3.20	5.60	3.00	21.90	36.00	24.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Unused Access Stub		(calculated)	(calculated)	0.557	1252.559
Lower Eccleshill Road		(calculated)	(calculated)	0.555	1193.561
Paul Rink Way		(calculated)	(calculated)	0.602	1427.489
Greenbank Terrace		(calculated)	(calculated)	0.556	1201.253

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Unused Access Stub	ONE HOUR	✓	0.00	100.000
Lower Eccleshill Road	ONE HOUR	✓	392.00	100.000
Paul Rink Way	ONE HOUR	✓	364.00	100.000
Greenbank Terrace	ONE HOUR	✓	367.00	100.000

Turning Proportions

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.000	0.000	0.000	0.000
	Lower Eccleshill Road	0.000	0.000	244.000	148.000
	Paul Rink Way	0.000	190.000	0.000	174.000
	Greenbank Terrace	0.000	119.000	248.000	0.000

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.25	0.25	0.25	0.25
	Lower Eccleshill Road	0.00	0.00	0.62	0.38
	Paul Rink Way	0.00	0.52	0.00	0.48
	Greenbank Terrace	0.00	0.32	0.68	0.00

Vehicle Mix

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	1.000	1.000	1.000	1.000
	Lower Eccleshill Road	1.000	1.000	1.000	1.000
	Paul Rink Way	1.000	1.000	1.000	1.000
	Greenbank Terrace	1.000	1.000	1.000	1.000

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.0	0.0	0.0	0.0
	Lower Eccleshill Road	0.0	0.0	0.0	0.0
	Paul Rink Way	0.0	0.0	0.0	0.0
	Greenbank Terrace	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
Unused Access Stub	0.00	0.00	0.00	A
Lower Eccleshill Road	0.41	5.90	0.70	A
Paul Rink Way	0.30	3.88	0.43	A
Greenbank Terrace	0.37	5.29	0.59	A

Main Results for each time segment

Main results: (07:30-07:45)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	417.52	0.00	1019.89	0.000	0.00	0.000	A
Lower Eccleshill Road	295.12	293.64	185.83	0.00	1090.44	0.271	0.37	4.510	A
Paul Rink Way	274.04	273.03	110.87	0.00	1360.78	0.201	0.25	3.306	A
Greenbank Terrace	276.30	275.00	142.52	0.00	1121.98	0.246	0.32	4.244	A

Main results: (07:45-08:00)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	500.20	0.00	973.81	0.000	0.00	0.000	A
Lower Eccleshill Road	352.40	351.93	222.68	0.00	1069.98	0.329	0.49	5.010	A
Paul Rink Way	327.23	326.96	132.87	0.00	1347.54	0.243	0.32	3.527	A
Greenbank Terrace	329.93	329.54	170.66	0.00	1106.32	0.298	0.42	4.632	A

Main results: (08:00-08:15)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	612.37	0.00	911.30	0.000	0.00	0.000	A
Lower Eccleshill Road	431.60	430.75	272.60	0.00	1042.28	0.414	0.70	5.878	A
Paul Rink Way	400.77	400.33	162.63	0.00	1329.63	0.301	0.43	3.872	A
Greenbank Terrace	404.07	403.41	208.96	0.00	1085.02	0.372	0.59	5.275	A

Main results: (08:15-08:30)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	613.25	0.00	910.81	0.000	0.00	0.000	A
Lower Eccleshill Road	431.60	431.58	273.05	0.00	1042.04	0.414	0.70	5.896	A
Paul Rink Way	400.77	400.77	162.95	0.00	1329.44	0.301	0.43	3.876	A
Greenbank Terrace	404.07	404.06	209.19	0.00	1084.89	0.372	0.59	5.287	A

Main results: (08:30-08:45)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	501.61	0.00	973.03	0.000	0.00	0.000	A
Lower Eccleshill Road	352.40	353.23	223.39	0.00	1069.59	0.329	0.50	5.030	A
Paul Rink Way	327.23	327.66	133.36	0.00	1347.24	0.243	0.32	3.531	A
Greenbank Terrace	329.93	330.58	171.03	0.00	1106.12	0.298	0.43	4.647	A

Main results: (08:45-09:00)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	419.88	0.00	1018.57	0.000	0.00	0.000	A
Lower Eccleshill Road	295.12	295.60	186.98	0.00	1089.80	0.271	0.37	4.537	A
Paul Rink Way	274.04	274.31	111.61	0.00	1360.33	0.201	0.25	3.314	A
Greenbank Terrace	276.30	276.69	143.19	0.00	1121.61	0.246	0.33	4.262	A

<h1>Junctions 8</h1>
<h2>ARCADY 8 - Roundabout Module</h2>
Version: 8.0.5.523 [19102,19/06/2015] © Copyright TRL Limited, 2017
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Filename: Lower Eccleshill Rd-Paul Rink Way-Greenbank Terrace Roundabout.arc8
Path: Y:\2016\16-401 to 16-425\16-423 Hollins Paper Mill, Darwen\Technical\Junction Models\ARCADY
Report generation date: 03/03/2017 10:58:02

- « Existing Layout - 2027 Base, PM Peak
- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

Summary of junction performance

	PM Peak			
	Queue (PCU)	Delay (s)	RFC	LOS
	Existing Layout - 2027 Base			
Unused Access Stub	0.00	0.00	0.00	A
Lower Eccleshill Road	0.42	4.63	0.30	A
Paul Rink Way	0.82	4.89	0.45	A
Greenbank Terrace	0.46	5.05	0.32	A

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

"D1 - 2016 Existing, AM Peak" model duration: 07:30 - 09:00
 "D2 - 2016 Existing, PM Peak" model duration: 16:00 - 17:30
 "D3 - 2027 Base, AM Peak" model duration: 07:30 - 09:00
 "D4 - 2027 Base, PM Peak " model duration: 16:00 - 17:30
 "D5 - 2027 Predicted, AM Peak" model duration: 07:30 - 09:00
 "D6 - 2027 Predicted, PM Peak" model duration: 16:00 - 17:30

Run using Junctions 8.0.5.523 at 03/03/2017 10:58:01

File summary

Title	Lower Eccleshill Road/Paul Rink Way/Greenbank Terrace Roundabout Junction
Location	Darwen, Lancashire
Site Number	
Date	30/11/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	16-423
Enumerator	rdonaldson
Description	

Analysis Options

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

Units

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

Existing Layout - 2027 Base, PM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2027 Base, PM Peak	2027 Base	PM Peak		ONE HOUR	16:00	17:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4			4.87	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Unused Access Stub	1	Unused Access Stub	
Lower Eccleshill Road	2	Lower Eccleshill Road	
Paul Rink Way	3	Paul Rink Way	
Greenbank Terrace	4	Greenbank Terrace	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Unused Access Stub	0.00	99999.00
Lower Eccleshill Road	0.00	99999.00
Paul Rink Way	0.00	99999.00
Greenbank Terrace	0.00	99999.00

Roundabout Geometry

Name	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
Unused Access Stub	3.60	5.30	2.70	21.40	36.00	33.00	
Lower Eccleshill Road	2.90	6.10	4.30	25.30	36.00	26.00	
Paul Rink Way	3.80	5.90	4.20	29.30	36.00	28.00	
Greenbank Terrace	3.20	5.60	3.00	21.90	36.00	24.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Unused Access Stub		(calculated)	(calculated)	0.557	1252.559
Lower Eccleshill Road		(calculated)	(calculated)	0.555	1193.561
Paul Rink Way		(calculated)	(calculated)	0.602	1427.489
Greenbank Terrace		(calculated)	(calculated)	0.556	1201.253

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Unused Access Stub	ONE HOUR	✓	0.00	100.000
Lower Eccleshill Road	ONE HOUR	✓	296.00	100.000
Paul Rink Way	ONE HOUR	✓	548.00	100.000
Greenbank Terrace	ONE HOUR	✓	300.00	100.000

Turning Proportions

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.000	0.000	0.000	0.000
	Lower Eccleshill Road	0.000	0.000	162.000	134.000
	Paul Rink Way	0.000	259.000	0.000	289.000
	Greenbank Terrace	0.000	152.000	148.000	0.000

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.25	0.25	0.25	0.25
	Lower Eccleshill Road	0.00	0.00	0.55	0.45
	Paul Rink Way	0.00	0.47	0.00	0.53
	Greenbank Terrace	0.00	0.51	0.49	0.00

Vehicle Mix

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	1.000	1.000	1.000	1.000
	Lower Eccleshill Road	1.000	1.000	1.000	1.000
	Paul Rink Way	1.000	1.000	1.000	1.000
	Greenbank Terrace	1.000	1.000	1.000	1.000

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.0	0.0	0.0	0.0
	Lower Eccleshill Road	0.0	0.0	0.0	0.0
	Paul Rink Way	0.0	0.0	0.0	0.0
	Greenbank Terrace	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
Unused Access Stub	0.00	0.00	0.00	A
Lower Eccleshill Road	0.30	4.63	0.42	A
Paul Rink Way	0.45	4.89	0.82	A
Greenbank Terrace	0.32	5.05	0.46	A

Main Results for each time segment

Main results: (16:00-16:15)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	419.00	0.00	1019.06	0.000	0.00	0.000	A
Lower Eccleshill Road	222.84	221.87	110.91	0.00	1132.01	0.197	0.24	3.951	A
Paul Rink Way	412.56	410.84	100.44	0.00	1367.05	0.302	0.43	3.758	A
Greenbank Terrace	225.86	224.82	194.18	0.00	1093.24	0.207	0.26	4.140	A

Main results: (16:15-16:30)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	501.97	0.00	972.83	0.000	0.00	0.000	A
Lower Eccleshill Road	266.10	265.83	132.90	0.00	1119.81	0.238	0.31	4.214	A
Paul Rink Way	492.64	492.09	120.34	0.00	1355.08	0.364	0.57	4.169	A
Greenbank Terrace	269.69	269.39	232.58	0.00	1071.88	0.252	0.33	4.485	A

Main results: (16:30-16:45)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	614.50	0.00	910.11	0.000	0.00	0.000	A
Lower Eccleshill Road	325.90	325.48	162.70	0.00	1103.27	0.295	0.42	4.626	A
Paul Rink Way	603.36	602.38	147.34	0.00	1338.83	0.451	0.81	4.882	A
Greenbank Terrace	330.31	329.80	284.70	0.00	1042.89	0.317	0.46	5.045	A

Main results: (16:45-17:00)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	615.46	0.00	909.58	0.000	0.00	0.000	A
Lower Eccleshill Road	325.90	325.90	162.95	0.00	1103.13	0.295	0.42	4.631	A
Paul Rink Way	603.36	603.34	147.53	0.00	1338.72	0.451	0.82	4.895	A
Greenbank Terrace	330.31	330.30	285.16	0.00	1042.63	0.317	0.46	5.053	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	503.48	0.00	971.99	0.000	0.00	0.000	A
Lower Eccleshill Road	266.10	266.51	133.29	0.00	1119.59	0.238	0.31	4.221	A
Paul Rink Way	492.64	493.60	120.65	0.00	1354.89	0.364	0.58	4.184	A
Greenbank Terrace	269.69	270.19	233.29	0.00	1071.48	0.252	0.34	4.496	A

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

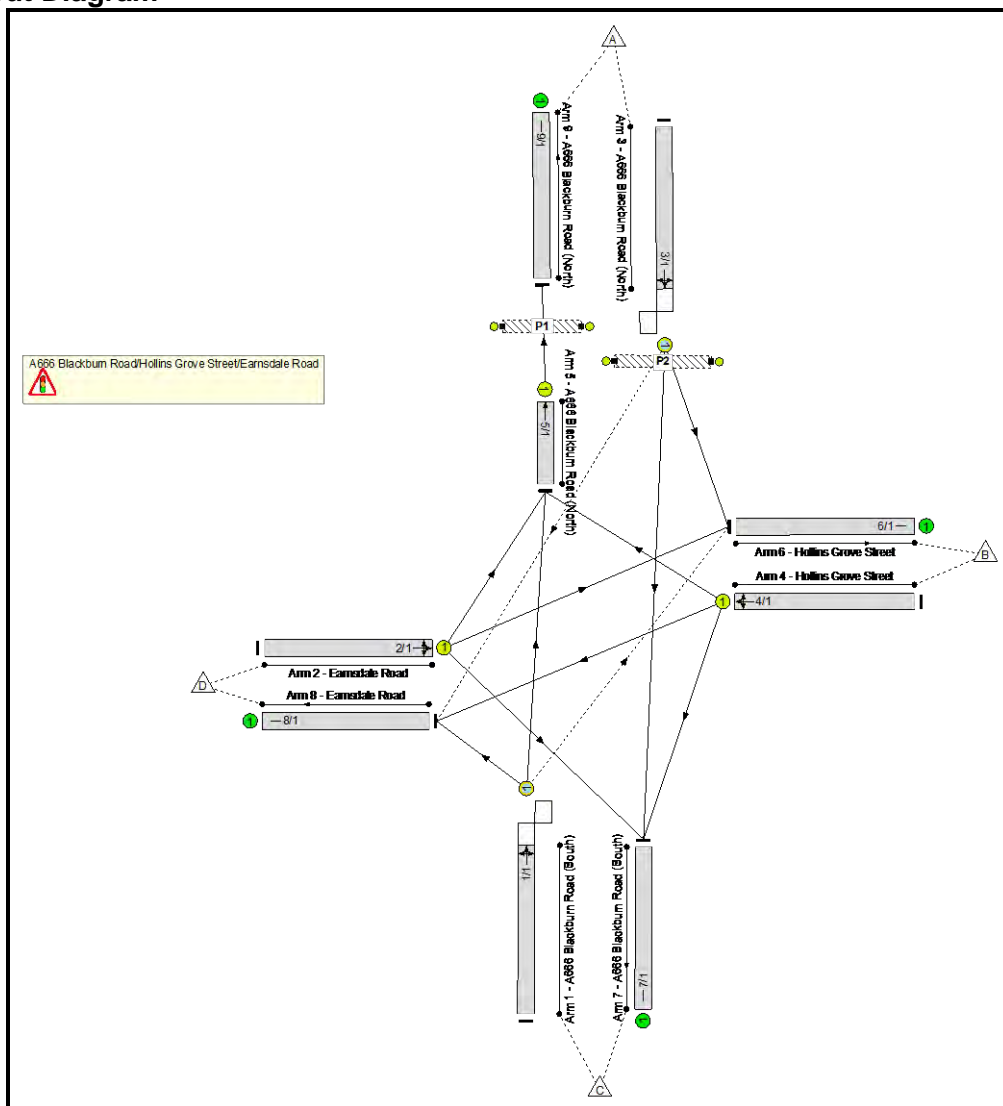
Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	421.42	0.00	1017.72	0.000	0.00	0.000	A
Lower Eccleshill Road	222.84	223.11	111.57	0.00	1131.64	0.197	0.25	3.963	A
Paul Rink Way	412.56	413.13	101.00	0.00	1366.71	0.302	0.43	3.776	A
Greenbank Terrace	225.86	226.16	195.25	0.00	1092.64	0.207	0.26	4.157	A

Full Input Data And Results
Full Input Data And Results

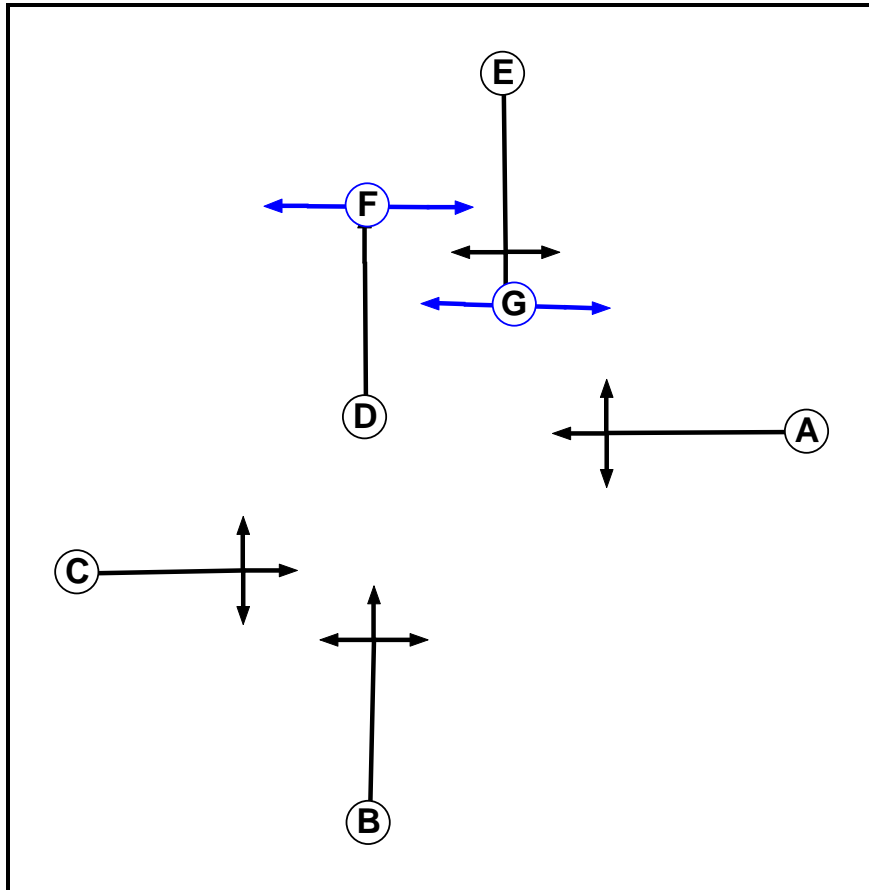
User and Project Details

Project:	A666 Blackburn Road/Hollins Grove Street/Earnsdale Road Signalised Junction
Title:	
Location:	Darwen, Lancashire
File name:	Blackburn Rd-Hollins Grove St-Earnsdale Rd.lsg3x
Author:	RD
Company:	Bryan G Hall
Address:	
Notes:	

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Pedestrian		7	7
G	Pedestrian		7	7

Full Input Data And Results

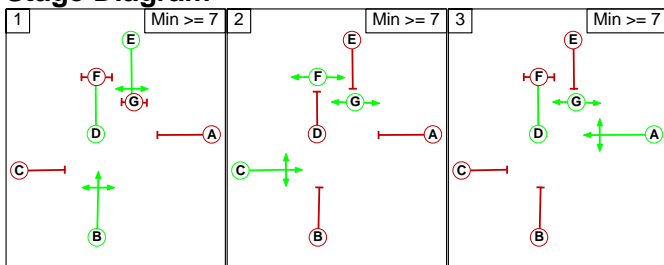
Phase Intergrens Matrix

		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		8	7	-	5	10	-
	B	5		5	-	-	11	-
	C	5	5		-	6	-	-
	D	-	-	-		-	5	-
	E	5	-	7	-		-	5
	F	6	6	-	6	-		-
	G	-	-	-	-	6	-	

Phases in Stage

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

Stage Diagram



Phase Delays

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

Prohibited Stage Change

		To Stage		
		1	2	3
From Stage	1		11	5
	2	6		6
	3	8	10	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/1 (A666 Blackburn Road South)	6/1 (Right)	1439	0	3/1	1.09	To 6/1 (Left) To 7/1 (Ahead)	4.00	2.00	0.50	4	2.00
3/1 (A666 Blackburn Road North)	8/1 (Right)	1439	0	1/1	1.09	To 5/1 (Ahead) To 8/1 (Left)	4.00	2.00	0.50	4	2.00

Full Input Data And Results

Lane Input Data

Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A666 Blackburn Road (South))	O	B	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Right	10.00
											Arm 8 Left	10.00
											Arm 5 Left	10.00
2/1 (Earnsdale Road)	U	C	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Ahead	Inf
											Arm 7 Right	10.00
3/1 (A666 Blackburn Road (North))	O	E	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 6 Left	10.00
											Arm 7 Ahead	Inf
											Arm 8 Right	10.00
4/1 (Hollins Grove Street)	U	A	2	3	60.0	Geom	-	2.90	0.00	Y	Arm 5 Right	10.00
											Arm 7 Left	10.00
											Arm 8 Ahead	Inf
5/1 (A666 Blackburn Road (North))	U	D	2	3	2.8	Geom	-	4.00	0.00	Y	Arm 9 Ahead	Inf
6/1 (Hollins Grove Street)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (A666 Blackburn Road (South))	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Earnsdale Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1 (A666 Blackburn Road (North))	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
3: '2027 Base AM Peak'	07:45	08:45	01:00	
4: '2027 Base PM Peak'	16:15	17:15	01:00	

Full Input Data And Results

Scenario 3: '2027 Base AM' (FG3: '2027 Base AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	55	910	40	1005
	B	72	0	74	15	161
	C	911	73	0	25	1009
	D	108	82	52	0	242
	Tot.	1091	210	1036	80	2417

Traffic Lane Flows

Lane	Scenario 3: 2027 Base AM
Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road	
1/1	1009
2/1	242
3/1	1005
4/1	161
5/1	1091
6/1	210
7/1	1036
8/1	80
9/1	1091

Full Input Data And Results

Lane Saturation Flows

Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A666 Blackburn Road (South))	3.80	0.00	Y	Arm 5 Ahead	Inf	90.3 %	1966	1966
				Arm 6 Right	10.00	7.2 %		
				Arm 8 Left	10.00	2.5 %		
2/1 (Earnsdale Road)	3.00	0.00	Y	Arm 5 Left	10.00	44.6 %	1742	1742
				Arm 6 Ahead	Inf	33.9 %		
				Arm 7 Right	10.00	21.5 %		
3/1 (A666 Blackburn Road (North))	4.00	0.00	Y	Arm 6 Left	10.00	5.5 %	1987	1987
				Arm 7 Ahead	Inf	90.5 %		
				Arm 8 Right	10.00	4.0 %		
4/1 (Hollins Grove Street)	2.90	0.00	Y	Arm 5 Right	10.00	44.7 %	1677	1677
				Arm 7 Left	10.00	46.0 %		
				Arm 8 Ahead	Inf	9.3 %		
5/1 (A666 Blackburn Road (North))	4.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	2015	2015
6/1 (Hollins Grove Street Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (A666 Blackburn Road (South) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Earnsdale Road Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A666 Blackburn Road (North) Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2027 Base PM' (FG4: '2027 Base PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	82	849	77	1008
	B	81	0	105	61	247
	C	863	57	0	43	963
	D	112	33	15	0	160
	Tot.	1056	172	969	181	2378

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: 2027 Base PM
Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road	
1/1	963
2/1	160
3/1	1008
4/1	247
5/1	1056
6/1	172
7/1	969
8/1	181
9/1	1056

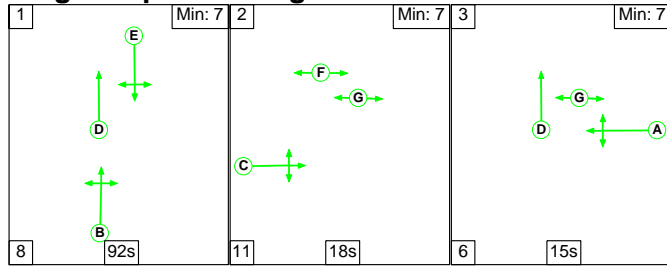
Lane Saturation Flows

Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A666 Blackburn Road (South))	3.80	0.00	Y	Arm 5 Ahead Arm 6 Right Arm 8 Left	Inf 10.00 10.00	89.6 % 5.9 % 4.5 %	1964	1964
2/1 (Earnsdale Road)	3.00	0.00	Y	Arm 5 Left Arm 6 Ahead Arm 7 Right Arm 6 Left	10.00 Inf 10.00 10.00	70.0 % 20.6 % 9.4 % 8.1 %	1711	1711
3/1 (A666 Blackburn Road (North))	4.00	0.00	Y	Arm 7 Ahead Arm 8 Right	Inf 10.00	84.2 % 7.6 %	1968	1968
4/1 (Hollins Grove Street)	2.90	0.00	Y	Arm 5 Right Arm 7 Left Arm 8 Ahead	10.00 10.00 Inf	32.8 % 42.5 % 24.7 %	1712	1712
5/1 (A666 Blackburn Road (North))	4.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	2015	2015
6/1 (Hollins Grove Street Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (A666 Blackburn Road (South) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Earnsdale Road Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A666 Blackburn Road (North) Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: '2027 Base AM' (FG3: '2027 Base AM Peak', Plan 1: 'Network Control Plan 1')

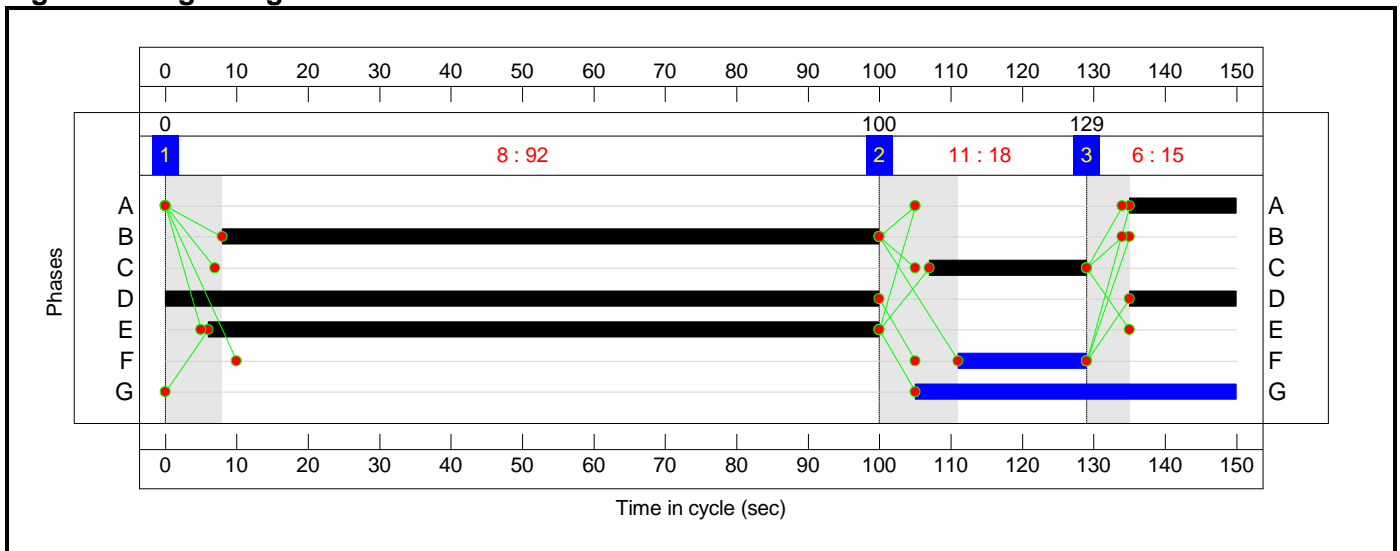
Stage Sequence Diagram



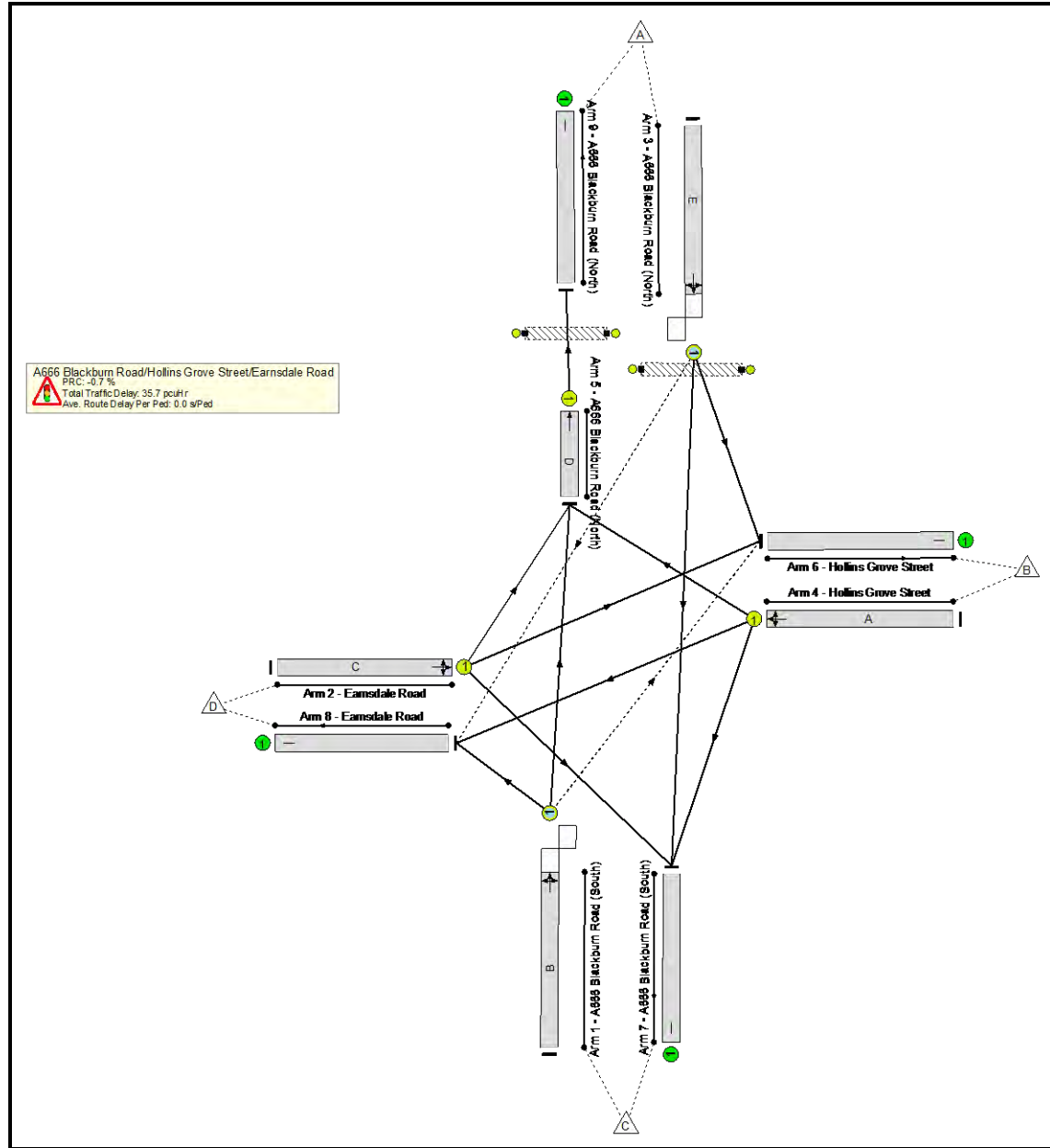
Stage Timings

Stage	1	2	3
Duration	92	18	15
Change Point	0	100	129

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	90.6%
A666 Blackburn Road/Hollins Grove Street/Earnsdale Road	-	-	N/A	-	-		-	-	-	-	-	-	90.6%
1/1	A666 Blackburn Road (South) Ahead Right Left	O	N/A	N/A	B		1	92	-	1009	1966	1118	90.3%
2/1	Earnsdale Road Left Ahead Right	U	N/A	N/A	C		1	22	-	242	1742	267	90.6%
3/1	A666 Blackburn Road (North) Left Ahead Right	O	N/A	N/A	E		1	94	-	1005	1987	1243	80.8%
4/1	Hollins Grove Street Right Left Ahead	U	N/A	N/A	A		1	15	-	161	1677	179	90.0%
5/1	A666 Blackburn Road (North) Ahead	U	N/A	N/A	D		1	115	-	1091	2015	1558	70.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	F		1	18	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	G		1	45	-	0	-	0	0.0%

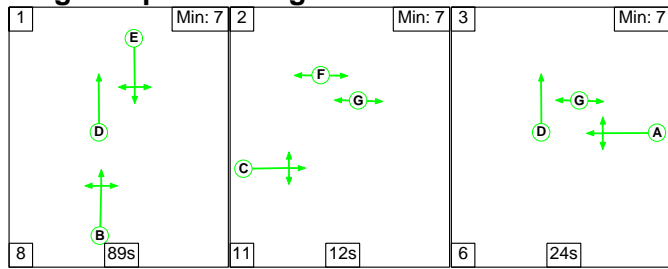
Full Input Data And Results

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	-	-	111	0	2	20.4	14.5	0.8	35.7	-	-	-	-
A666 Blackburn Road/Hollins Grove Street/Earnsdale Road	-	-	111	0	2	20.4	14.5	0.8	35.7	-	-	-	-
1/1	1009	1009	72	0	1	6.5	4.3	0.6	11.3	40.5	37.0	4.3	41.3
2/1	242	242	-	-	-	4.2	3.7	-	7.9	117.8	9.9	3.7	13.6
3/1	1005	1005	39	0	1	5.7	2.1	0.2	8.0	28.6	31.0	2.1	33.1
4/1	161	161	-	-	-	3.0	3.3	-	6.3	139.8	6.6	3.3	9.9
5/1	1091	1091	-	-	-	1.0	1.2	-	2.2	7.2	8.2	1.2	9.3
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
<p>C1 PRC for Signalled Lanes (%): -0.7 Total Delay for Signalled Lanes (pcuHr): 35.68 Cycle Time (s): 150</p> <p> PRC Over All Lanes (%): -0.7 Total Delay Over All Lanes(pcuHr): 35.68</p>													

Full Input Data And Results

Scenario 4: '2027 Base PM' (FG4: '2027 Base PM Peak', Plan 1: 'Network Control Plan 1')

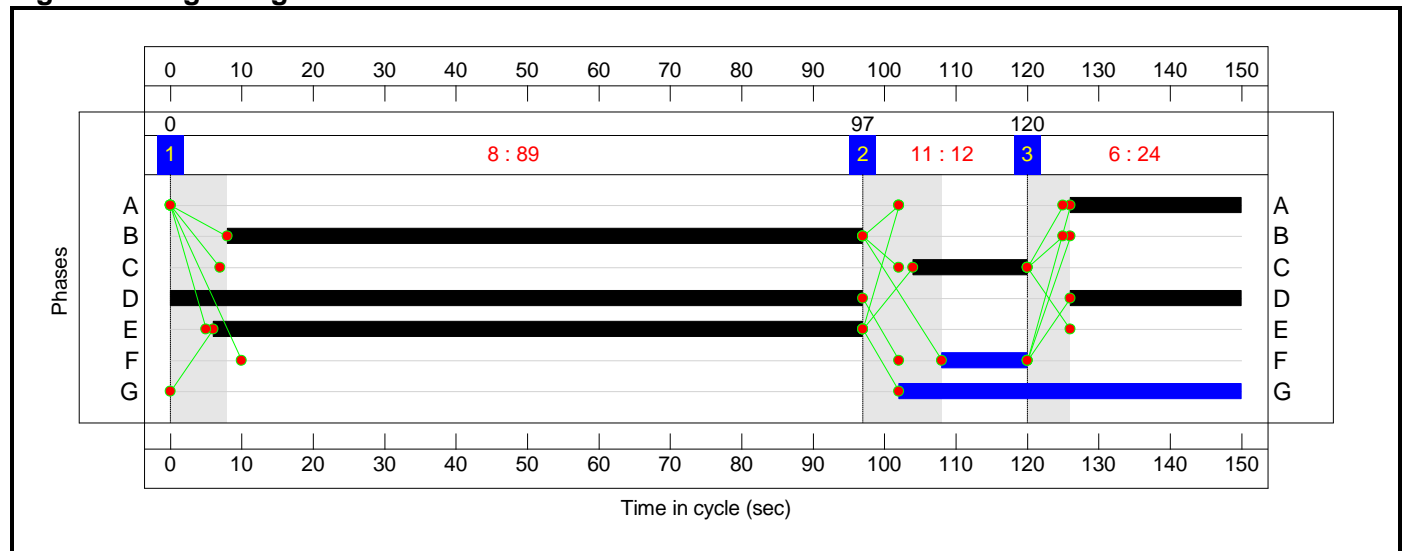
Stage Sequence Diagram



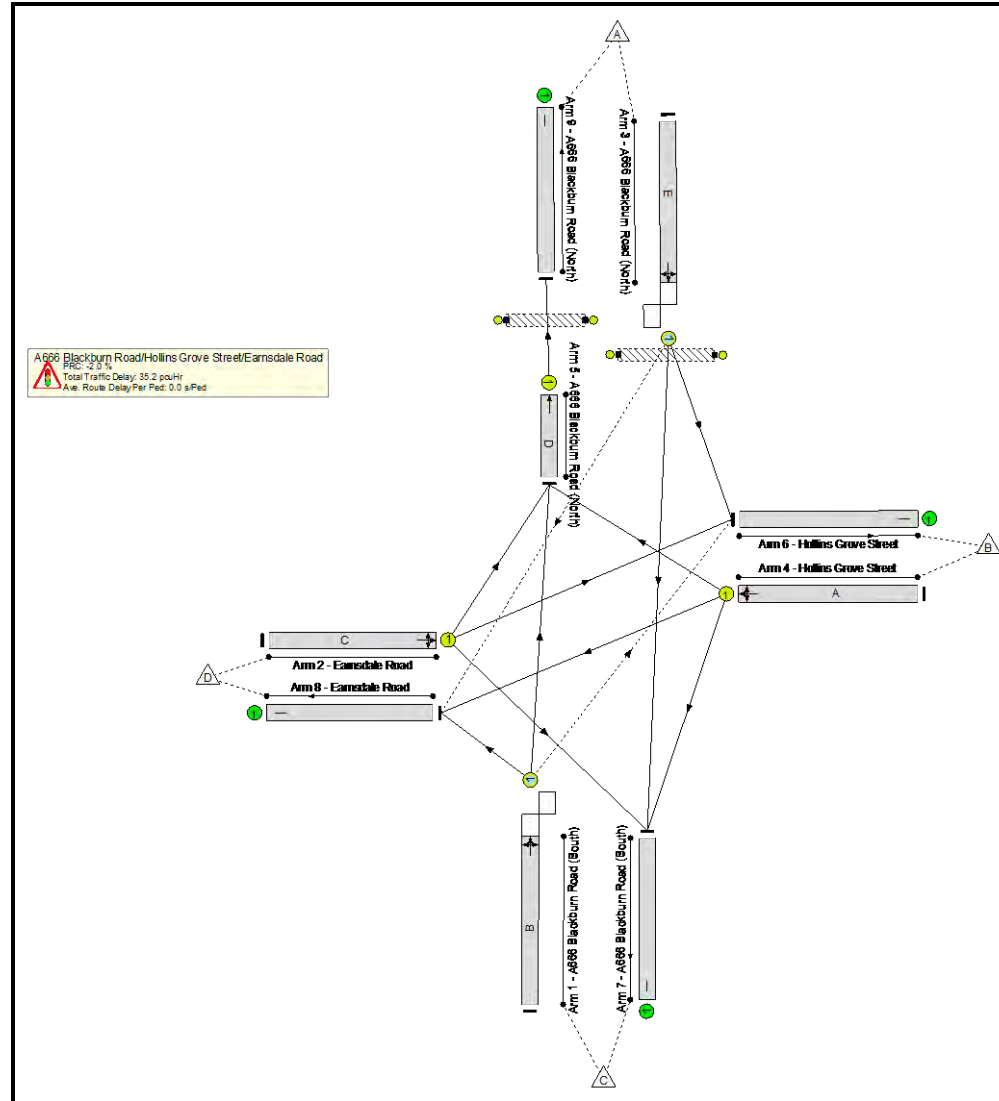
Stage Timings

Stage	1	2	3
Duration	89	12	24
Change Point	0	97	120

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	91.8%
A666 Blackburn Road/Hollins Grove Street/Earnsdale Road	-	-	N/A	-	-		-	-	-	-	-	-	91.8%
1/1	A666 Blackburn Road (South) Ahead Right Left	O	N/A	N/A	B		1	89	-	963	1964	1149	83.8%
2/1	Earnsdale Road Left Ahead Right	U	N/A	N/A	C		1	16	-	160	1711	194	82.5%
3/1	A666 Blackburn Road (North) Left Ahead Right	O	N/A	N/A	E		1	91	-	1008	1968	1098	91.8%
4/1	Hollins Grove Street Right Left Ahead	U	N/A	N/A	A		1	24	-	247	1712	285	86.6%
5/1	A666 Blackburn Road (North) Ahead	U	N/A	N/A	D		1	121	-	1056	2015	1639	64.4%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	F		1	12	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	G		1	48	-	0	-	0	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	-	-	124	0	10	20.9	13.4	0.9	35.2	-	-	-	-
A666 Blackburn Road/Hollins Grove Street/Earnsdale Road	-	-	124	0	10	20.9	13.4	0.9	35.2	-	-	-	-
1/1	963	963	48	0	9	6.3	2.5	0.3	9.2	34.3	32.6	2.5	35.1
2/1	160	160	-	-	-	2.9	2.1	-	5.0	112.3	6.5	2.1	8.6
3/1	1008	1008	76	0	1	6.6	5.0	0.6	12.3	43.8	37.8	5.0	42.8
4/1	247	247	-	-	-	4.2	2.8	-	7.0	101.8	10.0	2.8	12.8
5/1	1056	1056	-	-	-	0.9	0.9	-	1.8	6.0	7.6	0.9	8.5
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
<p>C1 PRC for Signalled Lanes (%): -2.0 Total Delay for Signalled Lanes (pcuHr): 35.17 Cycle Time (s): 150 PRC Over All Lanes (%): -2.0 Total Delay Over All Lanes(pcuHr): 35.17</p>													

APPENDIX BGH 18

Junctions 8
PICADY 8 - Priority Intersection Module
Version: 8.0.5.523 [19102,19/06/2015] © Copyright TRL Limited, 2017
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Filename: Hollins Grove St-Lower Eccleshill Rd-Goose House Ln.arc8
Path: Y:\2016\16-401 to 16-425\16-423 Hollins Paper Mill, Darwen\Technical\Junction Models\PICADY
Report generation date: 03/03/2017 11:02:17

- « Existing Layout - 2027 Predicted, AM Peak
- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

Summary of junction performance

	AM Peak			
	Queue (PCU)	Delay (s)	RFC	LOS
	Existing Layout - 2027 Predicted			
Stream B-AC	0.93	12.52	0.49	B
Stream C-AB	0.28	6.70	0.18	A
Stream C-A	-	-	-	-
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

"D1 - 2016 Existing, AM Peak" model duration: 07:30 - 09:00
 "D2 - 2016 Existing, PM Peak" model duration: 16:00 - 17:30
 "D3 - 2027 Base, AM Peak" model duration: 07:30 - 09:00
 "D4 - 2027 Base, PM Peak" model duration: 16:00 - 17:30
 "D5 - 2027 Predicted, AM Peak " model duration: 07:30 - 09:00
 "D6 - 2027 Predicted, PM Peak" model duration: 16:00 - 17:30

Run using Junctions 8.0.5.523 at 03/03/2017 11:02:17

File summary

Title	Hollins Grove Street/Lower Eccleshill Road/Goose House Lane Priority T- Junction
Location	Darwen, Lancashire
Site Number	
Date	02/12/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	16-423
Enumerator	rdonaldson
Description	

Analysis Options

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

Units

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

Existing Layout - 2027 Predicted, AM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2027 Predicted, AM Peak	2027 Predicted	AM Peak		ONE HOUR	07:30	09:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Hollins Grove Street/Lower Eccleshill Road/Goose House Lane	T-Junction	Two-way	A,B,C	10.77	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Goose House Lane	A	Goose House Lane		Major
Hollins Grove Street	B	Hollins Grove Street		Minor
Lower Eccleshill Road	C	Lower Eccleshill Road		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Lower Eccleshill Road	7.00		0.00		2.20	90.00	✓	0.00

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Hollins Grove Street	One lane	3.40										34	23

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	519.921	0.091	0.229	0.144	0.327
1	B-C	663.982	0.097	0.246	-	-
1	C-B	626.083	0.232	0.232	-	-

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

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Goose House Lane	ONE HOUR	✓	246.00	100.000
Hollins Grove Street	ONE HOUR	✓	247.00	100.000
Lower Eccleshill Road	ONE HOUR	✓	214.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.000	56.000	190.000
	Hollins Grove Street	45.000	0.000	202.000
	Lower Eccleshill Road	127.000	87.000	0.000

Turning Proportions (PCU) - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.00	0.23	0.77
	Hollins Grove Street	0.18	0.00	0.82
	Lower Eccleshill Road	0.59	0.41	0.00

Vehicle Mix

Average PCU Per Vehicle - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	1.000	1.000	1.000
	Hollins Grove Street	1.000	1.000	1.000
	Lower Eccleshill Road	1.000	1.000	1.000

Heavy Vehicle Percentages - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.0	0.0	0.0
	Hollins Grove Street	0.0	0.0	0.0
	Lower Eccleshill Road	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.49	12.52	0.93	B
C-AB	0.18	6.70	0.28	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (07:30-07:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	185.95	184.11	0.00	582.86	0.319	0.46	8.988	A
C-AB	76.60	75.97	0.00	647.58	0.118	0.16	6.294	A
C-A	84.51	84.51	0.00	-	-	-	-	-
A-B	42.16	42.16	0.00	-	-	-	-	-
A-C	143.04	143.04	0.00	-	-	-	-	-

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	222.05	221.41	0.00	573.03	0.388	0.62	10.218	B
C-AB	94.49	94.31	0.00	652.25	0.145	0.20	6.453	A
C-A	97.89	97.89	0.00	-	-	-	-	-
A-B	50.34	50.34	0.00	-	-	-	-	-
A-C	170.81	170.81	0.00	-	-	-	-	-

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	271.95	270.75	0.00	559.38	0.486	0.92	12.418	B
C-AB	121.69	121.39	0.00	659.37	0.185	0.28	6.694	A
C-A	113.93	113.93	0.00	-	-	-	-	-
A-B	61.66	61.66	0.00	-	-	-	-	-
A-C	209.19	209.19	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	271.95	271.91	0.00	559.35	0.486	0.93	12.517	B
C-AB	121.75	121.74	0.00	659.44	0.185	0.28	6.702	A
C-A	113.87	113.87	0.00	-	-	-	-	-
A-B	61.66	61.66	0.00	-	-	-	-	-
A-C	209.19	209.19	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	222.05	223.21	0.00	572.99	0.388	0.64	10.327	B
C-AB	94.56	94.85	0.00	652.35	0.145	0.21	6.465	A
C-A	97.82	97.82	0.00	-	-	-	-	-
A-B	50.34	50.34	0.00	-	-	-	-	-
A-C	170.81	170.81	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	185.95	186.63	0.00	582.78	0.319	0.48	9.104	A
C-AB	76.72	76.91	0.00	647.67	0.118	0.16	6.310	A
C-A	84.39	84.39	0.00	-	-	-	-	-
A-B	42.16	42.16	0.00	-	-	-	-	-
A-C	143.04	143.04	0.00	-	-	-	-	-

Junctions 8
PICADY 8 - Priority Intersection Module
Version: 8.0.5.523 [19102,19/06/2015] © Copyright TRL Limited, 2017
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Filename: Hollins Grove St-Lower Eccleshill Rd-Goose House Ln.arc8
Path: Y:\2016\16-401 to 16-425\16-423 Hollins Paper Mill, Darwen\Technical\Junction Models\PICADY
Report generation date: 03/03/2017 11:02:38

- « Existing Layout - 2027 Predicted, PM Peak
- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

Summary of junction performance

	PM Peak			
	Queue (PCU)	Delay (s)	RFC	LOS
	Existing Layout - 2027 Predicted			
Stream B-AC	0.74	12.26	0.43	B
Stream C-AB	0.84	8.53	0.40	A
Stream C-A	-	-	-	-
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

- "D1 - 2016 Existing, AM Peak" model duration: 07:30 - 09:00
- "D2 - 2016 Existing, PM Peak" model duration: 16:00 - 17:30
- "D3 - 2027 Base, AM Peak" model duration: 07:30 - 09:00
- "D4 - 2027 Base, PM Peak" model duration: 16:00 - 17:30
- "D5 - 2027 Predicted, AM Peak" model duration: 07:30 - 09:00
- "D6 - 2027 Predicted, PM Peak " model duration: 16:00 - 17:30

Run using Junctions 8.0.5.523 at 03/03/2017 11:02:38

File summary

Title	Hollins Grove Street/Lower Eccleshill Road/Goose House Lane Priority T- Junction
Location	Darwen, Lancashire
Site Number	
Date	02/12/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	16-423
Enumerator	rdonaldson
Description	

Analysis Options

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

Units

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

Existing Layout - 2027 Predicted, PM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2027 Predicted, PM Peak	2027 Predicted	PM Peak		ONE HOUR	16:00	17:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Hollins Grove Street/Lower Eccleshill Road/Goose House Lane	T-Junction	Two-way	A,B,C	10.19	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Goose House Lane	A	Goose House Lane		Major
Hollins Grove Street	B	Hollins Grove Street		Minor
Lower Eccleshill Road	C	Lower Eccleshill Road		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Lower Eccleshill Road	7.00		0.00		2.20	90.00	✓	0.00

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Hollins Grove Street	One lane	3.40										34	23

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	519.921	0.091	0.229	0.144	0.327
1	B-C	663.982	0.097	0.246	-	-
1	C-B	626.083	0.232	0.232	-	-

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

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Goose House Lane	ONE HOUR	✓	214.00	100.000
Hollins Grove Street	ONE HOUR	✓	199.00	100.000
Lower Eccleshill Road	ONE HOUR	✓	370.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.000	71.000	143.000
	Hollins Grove Street	65.000	0.000	134.000
	Lower Eccleshill Road	184.000	186.000	0.000

Turning Proportions (PCU) - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.00	0.33	0.67
	Hollins Grove Street	0.33	0.00	0.67
	Lower Eccleshill Road	0.50	0.50	0.00

Vehicle Mix

Average PCU Per Vehicle - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	1.000	1.000	1.000
	Hollins Grove Street	1.000	1.000	1.000
	Lower Eccleshill Road	1.000	1.000	1.000

Heavy Vehicle Percentages - Hollins Grove Street/ Lower Eccleshill Road/ Goose House Lane (for whole period)

		To		
		Goose House Lane	Hollins Grove Street	Lower Eccleshill Road
From	Goose House Lane	0.0	0.0	0.0
	Hollins Grove Street	0.0	0.0	0.0
	Lower Eccleshill Road	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.43	12.26	0.74	B
C-AB	0.40	8.53	0.84	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (16:00-16:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	149.82	148.32	0.00	545.23	0.275	0.37	9.038	A
C-AB	175.64	174.00	0.00	681.88	0.258	0.41	7.074	A
C-A	102.92	102.92	0.00	-	-	-	-	-
A-B	53.45	53.45	0.00	-	-	-	-	-
A-C	107.66	107.66	0.00	-	-	-	-	-

Main results: (16:15-16:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	178.90	178.40	0.00	531.77	0.336	0.50	10.173	B
C-AB	219.82	219.22	0.00	693.57	0.317	0.56	7.591	A
C-A	112.81	112.81	0.00	-	-	-	-	-
A-B	63.83	63.83	0.00	-	-	-	-	-
A-C	128.55	128.55	0.00	-	-	-	-	-

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	219.10	218.18	0.00	512.87	0.427	0.73	12.177	B
C-AB	286.82	285.72	0.00	709.88	0.404	0.83	8.490	A
C-A	120.55	120.55	0.00	-	-	-	-	-
A-B	78.17	78.17	0.00	-	-	-	-	-
A-C	157.45	157.45	0.00	-	-	-	-	-

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	219.10	219.07	0.00	512.71	0.427	0.74	12.255	B
C-AB	287.11	287.08	0.00	710.16	0.404	0.84	8.535	A
C-A	120.26	120.26	0.00	-	-	-	-	-
A-B	78.17	78.17	0.00	-	-	-	-	-
A-C	157.45	157.45	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	178.90	179.78	0.00	531.52	0.337	0.52	10.260	B
C-AB	220.18	221.24	0.00	694.00	0.317	0.58	7.644	A
C-A	112.45	112.45	0.00	-	-	-	-	-
A-B	63.83	63.83	0.00	-	-	-	-	-
A-C	128.55	128.55	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	149.82	150.34	0.00	544.88	0.275	0.38	9.136	A
C-AB	176.09	176.71	0.00	682.25	0.258	0.42	7.136	A
C-A	102.46	102.46	0.00	-	-	-	-	-
A-B	53.45	53.45	0.00	-	-	-	-	-
A-C	107.66	107.66	0.00	-	-	-	-	-

<h1>Junctions 8</h1>
<h2>ARCADY 8 - Roundabout Module</h2>
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Filename: Lower Eccleshill Rd-Paul Rink Way-Greenbank Terrace Roundabout.arc8
Path: Y:\2016\16-401 to 16-425\16-423 Hollins Paper Mill, Darwen\Technical\Junction Models\ARCADY
Report generation date: 03/03/2017 10:58:28

- « Existing Layout - 2027 Predicted, AM Peak
- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

Summary of junction performance

	AM Peak			
	Queue (PCU)	Delay (s)	RFC	LOS
	Existing Layout - 2027 Predicted			
Unused Access Stub	0.00	0.00	0.00	A
Lower Eccleshill Road	0.81	6.28	0.45	A
Paul Rink Way	0.45	3.95	0.31	A
Greenbank Terrace	0.61	5.36	0.38	A

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

"D1 - 2016 Existing, AM Peak" model duration: 07:30 - 09:00
 "D2 - 2016 Existing, PM Peak" model duration: 16:00 - 17:30
 "D3 - 2027 Base, AM Peak" model duration: 07:30 - 09:00
 "D4 - 2027 Base, PM Peak" model duration: 16:00 - 17:30
 "D5 - 2027 Predicted, AM Peak " model duration: 07:30 - 09:00
 "D6 - 2027 Predicted, PM Peak" model duration: 16:00 - 17:30

Run using Junctions 8.0.5.523 at 03/03/2017 10:58:27

File summary

Title	Lower Eccleshill Road/Paul Rink Way/Greenbank Terrace Roundabout Junction
Location	Darwen, Lancashire
Site Number	
Date	30/11/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	16-423
Enumerator	rdonaldson
Description	

Analysis Options

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

Units

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

Existing Layout - 2027 Predicted, AM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2027 Predicted, AM Peak	2027 Predicted	AM Peak		ONE HOUR	07:30	09:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4			5.25	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Unused Access Stub	1	Unused Access Stub	
Lower Eccleshill Road	2	Lower Eccleshill Road	
Paul Rink Way	3	Paul Rink Way	
Greenbank Terrace	4	Greenbank Terrace	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Unused Access Stub	0.00	99999.00
Lower Eccleshill Road	0.00	99999.00
Paul Rink Way	0.00	99999.00
Greenbank Terrace	0.00	99999.00

Roundabout Geometry

Name	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
Unused Access Stub	3.60	5.30	2.70	21.40	36.00	33.00	
Lower Eccleshill Road	2.90	6.10	4.30	25.30	36.00	26.00	
Paul Rink Way	3.80	5.90	4.20	29.30	36.00	28.00	
Greenbank Terrace	3.20	5.60	3.00	21.90	36.00	24.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Unused Access Stub		(calculated)	(calculated)	0.557	1252.559
Lower Eccleshill Road		(calculated)	(calculated)	0.555	1193.561
Paul Rink Way		(calculated)	(calculated)	0.602	1427.489
Greenbank Terrace		(calculated)	(calculated)	0.556	1201.253

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Unused Access Stub	ONE HOUR	✓	0.00	100.000
Lower Eccleshill Road	ONE HOUR	✓	426.00	100.000
Paul Rink Way	ONE HOUR	✓	372.00	100.000
Greenbank Terrace	ONE HOUR	✓	371.00	100.000

Turning Proportions

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.000	0.000	0.000	0.000
	Lower Eccleshill Road	0.000	0.000	266.000	160.000
	Paul Rink Way	0.000	198.000	0.000	174.000
	Greenbank Terrace	0.000	123.000	248.000	0.000

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.25	0.25	0.25	0.25
	Lower Eccleshill Road	0.00	0.00	0.62	0.38
	Paul Rink Way	0.00	0.53	0.00	0.47
	Greenbank Terrace	0.00	0.33	0.67	0.00

Vehicle Mix

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	1.000	1.000	1.000	1.000
	Lower Eccleshill Road	1.000	1.000	1.000	1.000
	Paul Rink Way	1.000	1.000	1.000	1.000
	Greenbank Terrace	1.000	1.000	1.000	1.000

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.0	0.0	0.0	0.0
	Lower Eccleshill Road	0.0	0.0	0.0	0.0
	Paul Rink Way	0.0	0.0	0.0	0.0
	Greenbank Terrace	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
Unused Access Stub	0.00	0.00	0.00	A
Lower Eccleshill Road	0.45	6.28	0.81	A
Paul Rink Way	0.31	3.95	0.45	A
Greenbank Terrace	0.38	5.36	0.61	A

Main Results for each time segment

Main results: (07:30-07:45)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	426.50	0.00	1014.88	0.000	0.00	0.000	A
Lower Eccleshill Road	320.72	319.06	185.82	0.00	1090.44	0.294	0.41	4.658	A
Paul Rink Way	280.06	279.02	119.83	0.00	1355.38	0.207	0.26	3.341	A
Greenbank Terrace	279.31	277.99	148.51	0.00	1118.64	0.250	0.33	4.282	A

Main results: (07:45-08:00)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	510.97	0.00	967.81	0.000	0.00	0.000	A
Lower Eccleshill Road	382.97	382.41	222.68	0.00	1069.99	0.358	0.55	5.231	A
Paul Rink Way	334.42	334.14	143.63	0.00	1341.07	0.249	0.33	3.575	A
Greenbank Terrace	333.52	333.12	177.85	0.00	1102.33	0.303	0.43	4.678	A

Main results: (08:00-08:15)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	625.55	0.00	903.96	0.000	0.00	0.000	A
Lower Eccleshill Road	469.03	468.01	272.59	0.00	1042.29	0.450	0.81	6.257	A
Paul Rink Way	409.58	409.12	175.78	0.00	1321.72	0.310	0.45	3.943	A
Greenbank Terrace	408.48	407.79	217.76	0.00	1080.13	0.378	0.60	5.348	A

Main results: (08:15-08:30)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	626.47	0.00	903.45	0.000	0.00	0.000	A
Lower Eccleshill Road	469.03	469.01	273.05	0.00	1042.04	0.450	0.81	6.281	A
Paul Rink Way	409.58	409.57	176.16	0.00	1321.49	0.310	0.45	3.947	A
Greenbank Terrace	408.48	408.47	218.00	0.00	1079.99	0.378	0.61	5.360	A

Main results: (08:30-08:45)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	512.43	0.00	966.99	0.000	0.00	0.000	A
Lower Eccleshill Road	382.97	383.97	223.40	0.00	1069.59	0.358	0.56	5.257	A
Paul Rink Way	334.42	334.87	144.21	0.00	1340.71	0.249	0.33	3.582	A
Greenbank Terrace	333.52	334.19	178.24	0.00	1102.11	0.303	0.44	4.691	A

Main results: (08:45-09:00)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	428.94	0.00	1013.53	0.000	0.00	0.000	A
Lower Eccleshill Road	320.72	321.29	186.98	0.00	1089.80	0.294	0.42	4.689	A
Paul Rink Way	280.06	280.35	120.67	0.00	1354.88	0.207	0.26	3.350	A
Greenbank Terrace	279.31	279.72	149.22	0.00	1118.25	0.250	0.34	4.294	A

<h1>Junctions 8</h1>
<h2>ARCADY 8 - Roundabout Module</h2>
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Filename: Lower Eccleshill Rd-Paul Rink Way-Greenbank Terrace Roundabout.arc8
Path: Y:\2016\16-401 to 16-425\16-423 Hollins Paper Mill, Darwen\Technical\Junction Models\ARCADY
Report generation date: 03/03/2017 10:59:04

- « Existing Layout - 2027 Predicted, PM Peak
- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

Summary of junction performance

	PM Peak			
	Queue (PCU)	Delay (s)	RFC	LOS
	Existing Layout - 2027 Predicted			
Unused Access Stub	0.00	0.00	0.00	A
Lower Eccleshill Road	0.45	4.75	0.31	A
Paul Rink Way	0.87	5.06	0.47	A
Greenbank Terrace	0.49	5.21	0.33	A

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

- "D1 - 2016 Existing, AM Peak" model duration: 07:30 - 09:00
- "D2 - 2016 Existing, PM Peak" model duration: 16:00 - 17:30
- "D3 - 2027 Base, AM Peak" model duration: 07:30 - 09:00
- "D4 - 2027 Base, PM Peak" model duration: 16:00 - 17:30
- "D5 - 2027 Predicted, AM Peak" model duration: 07:30 - 09:00
- "D6 - 2027 Predicted, PM Peak" model duration: 16:00 - 17:30

Run using Junctions 8.0.5.523 at 03/03/2017 10:59:03

File summary

Title	Lower Eccleshill Road/Paul Rink Way/Greenbank Terrace Roundabout Junction
Location	Darwen, Lancashire
Site Number	
Date	30/11/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	16-423
Enumerator	rdonaldson
Description	

Analysis Options

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

Units

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

Existing Layout - 2027 Predicted, PM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2027 Predicted, PM Peak	2027 Predicted	PM Peak		ONE HOUR	16:00	17:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4			5.02	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Unused Access Stub	1	Unused Access Stub	
Lower Eccleshill Road	2	Lower Eccleshill Road	
Paul Rink Way	3	Paul Rink Way	
Greenbank Terrace	4	Greenbank Terrace	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
Unused Access Stub	0.00	99999.00
Lower Eccleshill Road	0.00	99999.00
Paul Rink Way	0.00	99999.00
Greenbank Terrace	0.00	99999.00

Roundabout Geometry

Name	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
Unused Access Stub	3.60	5.30	2.70	21.40	36.00	33.00	
Lower Eccleshill Road	2.90	6.10	4.30	25.30	36.00	26.00	
Paul Rink Way	3.80	5.90	4.20	29.30	36.00	28.00	
Greenbank Terrace	3.20	5.60	3.00	21.90	36.00	24.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Unused Access Stub		(calculated)	(calculated)	0.557	1252.559
Lower Eccleshill Road		(calculated)	(calculated)	0.555	1193.561
Paul Rink Way		(calculated)	(calculated)	0.602	1427.489
Greenbank Terrace		(calculated)	(calculated)	0.556	1201.253

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Unused Access Stub	ONE HOUR	✓	0.00	100.000
Lower Eccleshill Road	ONE HOUR	✓	313.00	100.000
Paul Rink Way	ONE HOUR	✓	566.00	100.000
Greenbank Terrace	ONE HOUR	✓	310.00	100.000

Turning Proportions

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.000	0.000	0.000	0.000
	Lower Eccleshill Road	0.000	0.000	173.000	140.000
	Paul Rink Way	0.000	277.000	0.000	289.000
	Greenbank Terrace	0.000	162.000	148.000	0.000

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.25	0.25	0.25	0.25
	Lower Eccleshill Road	0.00	0.00	0.55	0.45
	Paul Rink Way	0.00	0.49	0.00	0.51
	Greenbank Terrace	0.00	0.52	0.48	0.00

Vehicle Mix

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	1.000	1.000	1.000	1.000
	Lower Eccleshill Road	1.000	1.000	1.000	1.000
	Paul Rink Way	1.000	1.000	1.000	1.000
	Greenbank Terrace	1.000	1.000	1.000	1.000

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

		To			
		Unused Access Stub	Lower Eccleshill Road	Paul Rink Way	Greenbank Terrace
From	Unused Access Stub	0.0	0.0	0.0	0.0
	Lower Eccleshill Road	0.0	0.0	0.0	0.0
	Paul Rink Way	0.0	0.0	0.0	0.0
	Greenbank Terrace	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
Unused Access Stub	0.00	0.00	0.00	A
Lower Eccleshill Road	0.31	4.75	0.45	A
Paul Rink Way	0.47	5.06	0.87	A
Greenbank Terrace	0.33	5.21	0.49	A

Main Results for each time segment

Main results: (16:00-16:15)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	439.95	0.00	1007.39	0.000	0.00	0.000	A
Lower Eccleshill Road	235.64	234.60	110.90	0.00	1132.02	0.208	0.26	4.008	A
Paul Rink Way	426.11	424.31	104.93	0.00	1364.35	0.312	0.45	3.824	A
Greenbank Terrace	233.38	232.30	207.66	0.00	1085.74	0.215	0.27	4.213	A

Main results: (16:15-16:30)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	527.09	0.00	958.83	0.000	0.00	0.000	A
Lower Eccleshill Road	281.38	281.09	132.89	0.00	1119.81	0.251	0.33	4.291	A
Paul Rink Way	508.82	508.23	125.73	0.00	1351.84	0.376	0.60	4.265	A
Greenbank Terrace	278.68	278.36	248.73	0.00	1062.90	0.262	0.35	4.586	A

Main results: (16:30-16:45)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	645.23	0.00	892.99	0.000	0.00	0.000	A
Lower Eccleshill Road	344.62	344.15	162.69	0.00	1103.28	0.312	0.45	4.739	A
Paul Rink Way	623.18	622.11	153.93	0.00	1334.86	0.467	0.87	5.044	A
Greenbank Terrace	341.32	340.77	304.46	0.00	1031.90	0.331	0.49	5.204	A

Main results: (16:45-17:00)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	646.28	0.00	892.41	0.000	0.00	0.000	A
Lower Eccleshill Road	344.62	344.61	162.95	0.00	1103.13	0.312	0.45	4.745	A
Paul Rink Way	623.18	623.16	154.14	0.00	1334.74	0.467	0.87	5.058	A
Greenbank Terrace	341.32	341.31	304.97	0.00	1031.61	0.331	0.49	5.214	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	528.75	0.00	957.90	0.000	0.00	0.000	A
Lower Eccleshill Road	281.38	281.84	133.31	0.00	1119.58	0.251	0.34	4.300	A
Paul Rink Way	508.82	509.87	126.06	0.00	1351.64	0.376	0.61	4.283	A
Greenbank Terrace	278.68	279.22	249.53	0.00	1062.45	0.262	0.36	4.600	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused Access Stub	0.00	0.00	442.55	0.00	1005.94	0.000	0.00	0.000	A
Lower Eccleshill Road	235.64	235.94	111.58	0.00	1131.64	0.208	0.26	4.020	A
Paul Rink Way	426.11	426.72	105.53	0.00	1363.99	0.312	0.46	3.844	A
Greenbank Terrace	233.38	233.71	208.84	0.00	1085.09	0.215	0.28	4.229	A

Junctions 8
PICADY 8 - Priority Intersection Module
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Filename: Site Access-Hollins Grove Street.arc8

Path: Y:\2016\16-401 to 16-425\16-423 Hollins Paper Mill, Darwen\Technical\Junction Models\PICADY

Report generation date: 03/03/2017 11:03:36

« **Proposed Layout - 2027 Predicted, PM Peak**

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

Summary of junction performance

	PM Peak			
	Queue (PCU)	Delay (s)	RFC	LOS
	Proposed Layout - 2027		Predicted	
Stream B-C	0.04	6.30	0.04	A
Stream B-A	0.03	8.89	0.03	A
Stream C-AB	0.12	5.32	0.07	A
Stream C-A	-	-	-	-
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

"D1 - 2027 Predicted, AM Peak" model duration: 07:30 - 09:00

"D2 - 2027 Predicted, PM Peak " model duration: 16:00 - 17:30

Run using Junctions 8.0.5.523 at 03/03/2017 11:03:36

File summary

Title	Site Access/Hollins Grove Street
Location	Darwen, Lancashire
Site Number	
Date	02/12/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	16-423
Enumerator	rdonaldson
Description	

Analysis Options

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

Units

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

Proposed Layout - 2027 Predicted, PM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Site Access - Minor Arm Geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2027 Predicted, PM Peak	2027 Predicted	PM Peak		ONE HOUR	16:00	17:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Site Access/Hollins Grove Street	T-Junction	Two-way	A,B,C	6.06	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Hollins Grove Street (South West)	A	Hollins Grove Street (South West)		Major
Site Access	B	Site Access		Minor
Hollins Grove Street (North East)	C	Hollins Grove Street (North East)		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Hollins Grove Street (North East)	6.30		0.00		2.20	100.00	✓	0.00

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Site Access	One lane plus flare				8.40	2.80	2.75	2.75	2.75	✓	1.00	18	17

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	511.512	0.092	0.232	0.146	0.332
1	B-C	647.982	0.098	0.248	-	-
1	C-B	631.874	0.242	0.242	-	-

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

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Hollins Grove Street (South West)	ONE HOUR	✓	195.00	100.000
Site Access	ONE HOUR	✓	30.00	100.000
Hollins Grove Street (North East)	ONE HOUR	✓	257.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Site Access/ Hollins Grove Street (for whole period)

		To		
		Hollins Grove Street (South West)	Site Access	Hollins Grove Street (North East)
From	Hollins Grove Street (South West)	0.000	16.000	179.000
	Site Access	10.000	0.000	20.000
	Hollins Grove Street (North East)	225.000	32.000	0.000

Turning Proportions (PCU) - Site Access/ Hollins Grove Street (for whole period)

		To		
		Hollins Grove Street (South West)	Site Access	Hollins Grove Street (North East)
From	Hollins Grove Street (South West)	0.00	0.08	0.92
	Site Access	0.33	0.00	0.67
	Hollins Grove Street (North East)	0.88	0.12	0.00

Vehicle Mix

Average PCU Per Vehicle - Site Access/ Hollins Grove Street (for whole period)

		To		
		Hollins Grove Street (South West)	Site Access	Hollins Grove Street (North East)
From	Hollins Grove Street (South West)	1.000	1.000	1.000
	Site Access	1.000	1.000	1.000
	Hollins Grove Street (North East)	1.000	1.000	1.000

Heavy Vehicle Percentages - Site Access/ Hollins Grove Street (for whole period)

		To		
		Hollins Grove Street (South West)	Site Access	Hollins Grove Street (North East)
From	Hollins Grove Street (South West)	0.0	0.0	0.0
	Site Access	0.0	0.0	0.0
	Hollins Grove Street (North East)	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.04	6.30	0.04	A
B-A	0.03	8.89	0.03	A
C-AB	0.07	5.32	0.12	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (16:00-16:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	15.06	14.96	0.00	610.82	0.025	0.03	6.042	A
B-A	7.53	7.46	0.00	446.31	0.017	0.02	8.202	A
C-AB	31.32	31.07	0.00	708.76	0.044	0.06	5.311	A
C-A	162.16	162.16	0.00	-	-	-	-	-
A-B	12.05	12.05	0.00	-	-	-	-	-
A-C	134.76	134.76	0.00	-	-	-	-	-

Main results: (16:15-16:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	17.98	17.96	0.00	603.52	0.030	0.03	6.147	A
B-A	8.99	8.97	0.00	433.58	0.021	0.02	8.478	A
C-AB	39.37	39.29	0.00	724.05	0.054	0.08	5.257	A
C-A	191.66	191.66	0.00	-	-	-	-	-
A-B	14.38	14.38	0.00	-	-	-	-	-
A-C	160.92	160.92	0.00	-	-	-	-	-

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	22.02	21.99	0.00	593.42	0.037	0.04	6.299	A
B-A	11.01	10.99	0.00	416.05	0.026	0.03	8.887	A
C-AB	51.61	51.47	0.00	745.21	0.069	0.12	5.192	A
C-A	231.35	231.35	0.00	-	-	-	-	-
A-B	17.62	17.62	0.00	-	-	-	-	-
A-C	197.08	197.08	0.00	-	-	-	-	-

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	22.02	22.02	0.00	593.41	0.037	0.04	6.299	A
B-A	11.01	11.01	0.00	416.02	0.026	0.03	8.888	A
C-AB	51.65	51.64	0.00	745.25	0.069	0.12	5.194	A
C-A	231.32	231.32	0.00	-	-	-	-	-
A-B	17.62	17.62	0.00	-	-	-	-	-
A-C	197.08	197.08	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	17.98	18.01	0.00	603.51	0.030	0.03	6.148	A
B-A	8.99	9.01	0.00	433.52	0.021	0.02	8.482	A
C-AB	39.42	39.55	0.00	724.11	0.054	0.09	5.263	A
C-A	191.62	191.62	0.00	-	-	-	-	-
A-B	14.38	14.38	0.00	-	-	-	-	-
A-C	160.92	160.92	0.00	-	-	-	-	-

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

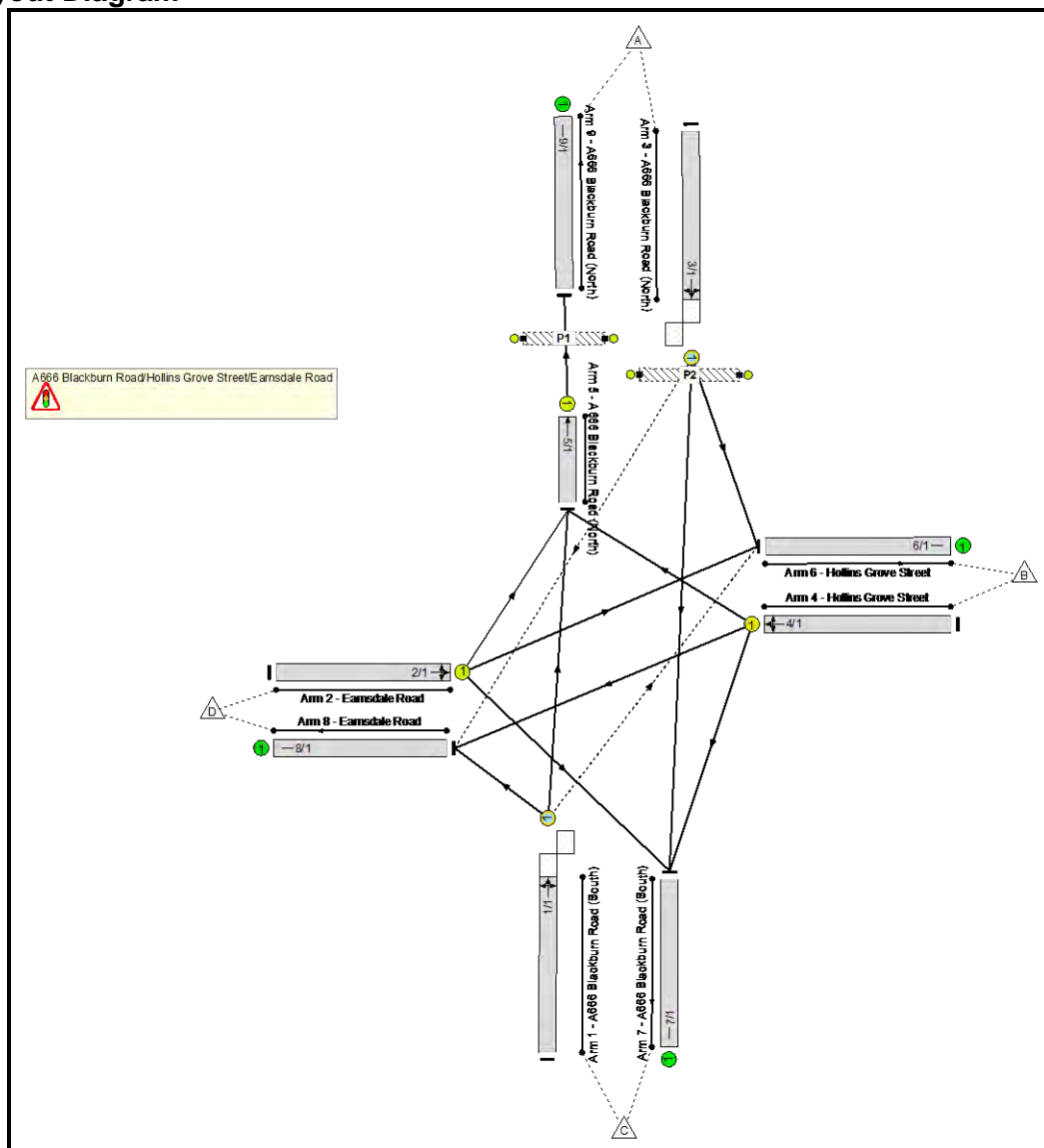
Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	15.06	15.08	0.00	610.79	0.025	0.03	6.045	A
B-A	7.53	7.54	0.00	446.21	0.017	0.02	8.206	A
C-AB	31.40	31.49	0.00	708.82	0.044	0.07	5.318	A
C-A	162.08	162.08	0.00	-	-	-	-	-
A-B	12.05	12.05	0.00	-	-	-	-	-
A-C	134.76	134.76	0.00	-	-	-	-	-

Full Input Data And Results
Full Input Data And Results

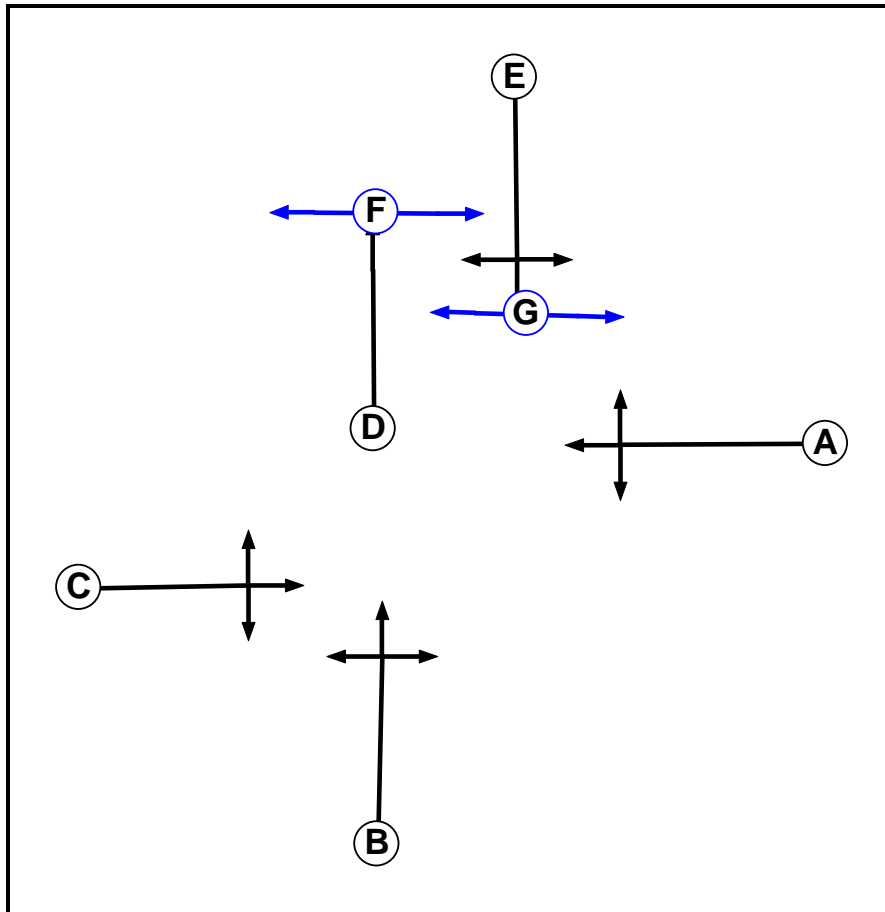
User and Project Details

Project:	A666 Blackburn Road/Hollins Grove Street/Earnsdale Road Signalised Junction
Title:	
Location:	Darwen, Lancashire
File name:	Blackburn Rd-Hollins Grove St-Earnsdale Rd.lsg3x
Author:	RD
Company:	Bryan G Hall
Address:	
Notes:	

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Pedestrian		7	7
G	Pedestrian		7	7

Full Input Data And Results

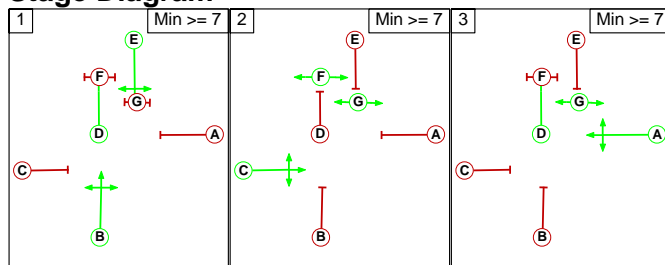
Phase Intergrens Matrix

		Starting Phase						
		A	B	C	D	E	F	G
Terminating Phase	A		8	7	-	5	10	-
	B	5		5	-	-	11	-
	C	5	5		-	6	-	-
	D	-	-	-		-	5	-
	E	5	-	7	-		-	5
	F	6	6	-	6	-		-
	G	-	-	-	-	6	-	

Phases in Stage

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

Stage Diagram



Phase Delays

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

Prohibited Stage Change

		To Stage		
		1	2	3
From Stage	1		11	5
	2	6		6
	3	8	10	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/1 (A666 Blackburn Road (South))	6/1 (Right)	1439	0	3/1	1.09	To 6/1 (Left) To 7/1 (Ahead)	4.00	2.00	0.50	4	2.00
3/1 (A666 Blackburn Road (North))	8/1 (Right)	1439	0	1/1	1.09	To 5/1 (Ahead) To 8/1 (Left)	4.00	2.00	0.50	4	2.00

Full Input Data And Results

Lane Input Data

Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A666 Blackburn Road (South))	O	B	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Right	10.00
											Arm 8 Left	10.00
											Arm 5 Left	10.00
2/1 (Earnsdale Road)	U	C	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Ahead	Inf
											Arm 7 Right	10.00
3/1 (A666 Blackburn Road (North))	O	E	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 6 Left	10.00
											Arm 7 Ahead	Inf
											Arm 8 Right	10.00
4/1 (Hollins Grove Street)	U	A	2	3	60.0	Geom	-	2.90	0.00	Y	Arm 5 Right	10.00
											Arm 7 Left	10.00
											Arm 8 Ahead	Inf
5/1 (A666 Blackburn Road (North))	U	D	2	3	2.8	Geom	-	4.00	0.00	Y	Arm 9 Ahead	Inf
6/1 (Hollins Grove Street)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (A666 Blackburn Road (South))	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Earnsdale Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1 (A666 Blackburn Road (North))	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
5: '2027 Predicted AM Peak'	07:45	08:45	01:00	
6: '2027 Predicted PM Peak'	16:15	17:15	01:00	

Full Input Data And Results

Scenario 5: '2027 Predicted AM' (FG5: '2027 Predicted AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	58	910	40	1008
	B	81	0	84	15	180
	C	911	77	0	25	1013
	D	108	82	52	0	242
	Tot.	1100	217	1046	80	2443

Traffic Lane Flows

Lane	Scenario 5: 2027 Predicted AM
Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road	
1/1	1013
2/1	242
3/1	1008
4/1	180
5/1	1100
6/1	217
7/1	1046
8/1	80
9/1	1100

Full Input Data And Results

Lane Saturation Flows

Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A666 Blackburn Road (South))	3.80	0.00	Y	Arm 5 Ahead	Inf	89.9 %	1965	1965
				Arm 6 Right	10.00	7.6 %		
				Arm 8 Left	10.00	2.5 %		
2/1 (Earnsdale Road)	3.00	0.00	Y	Arm 5 Left	10.00	44.6 %	1742	1742
				Arm 6 Ahead	Inf	33.9 %		
				Arm 7 Right	10.00	21.5 %		
3/1 (A666 Blackburn Road (North))	4.00	0.00	Y	Arm 6 Left	10.00	5.8 %	1986	1986
				Arm 7 Ahead	Inf	90.3 %		
				Arm 8 Right	10.00	4.0 %		
4/1 (Hollins Grove Street)	2.90	0.00	Y	Arm 5 Right	10.00	45.0 %	1675	1675
				Arm 7 Left	10.00	46.7 %		
				Arm 8 Ahead	Inf	8.3 %		
5/1 (A666 Blackburn Road (North))	4.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	2015	2015
6/1 (Hollins Grove Street Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (A666 Blackburn Road (South) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Earnsdale Road Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A666 Blackburn Road (North) Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2027 Predicted PM' (FG6: '2027 Predicted PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	90	849	77	1016
	B	85	0	109	61	255
	C	863	65	0	43	971
	D	112	33	15	0	160
	Tot.	1060	188	973	181	2402

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: 2027 Predicted PM
Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road	
1/1	971
2/1	160
3/1	1016
4/1	255
5/1	1060
6/1	188
7/1	973
8/1	181
9/1	1060

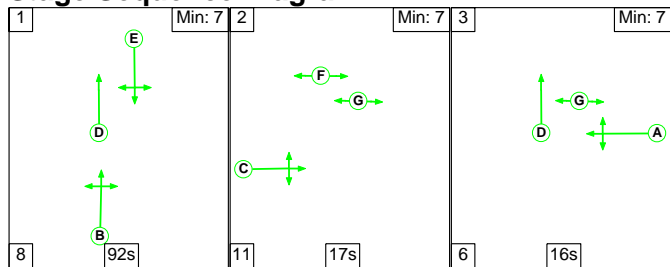
Lane Saturation Flows

Junction: A666 Blackburn Road/Hollins Grove Street/Earnsdale Road								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A666 Blackburn Road (South))	3.80	0.00	Y	Arm 5 Ahead Arm 6 Right Arm 8 Left	Inf 10.00 10.00	88.9 % 6.7 % 4.4 %	1962	1962
2/1 (Earnsdale Road)	3.00	0.00	Y	Arm 5 Left Arm 6 Ahead Arm 7 Right Arm 6 Left	10.00 Inf 10.00 10.00	70.0 % 20.6 % 9.4 % 8.9 %	1711	1711
3/1 (A666 Blackburn Road (North))	4.00	0.00	Y	Arm 7 Ahead Arm 8 Right	Inf 10.00	83.6 % 7.6 %	1967	1967
4/1 (Hollins Grove Street)	2.90	0.00	Y	Arm 5 Right Arm 7 Left Arm 8 Ahead	10.00 10.00 Inf	33.3 % 42.7 % 23.9 %	1710	1710
5/1 (A666 Blackburn Road (North))	4.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	2015	2015
6/1 (Hollins Grove Street Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (A666 Blackburn Road (South) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Earnsdale Road Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A666 Blackburn Road (North) Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 5: '2027 Predicted AM' (FG5: '2027 Predicted AM Peak', Plan 1: 'Network Control Plan 1')

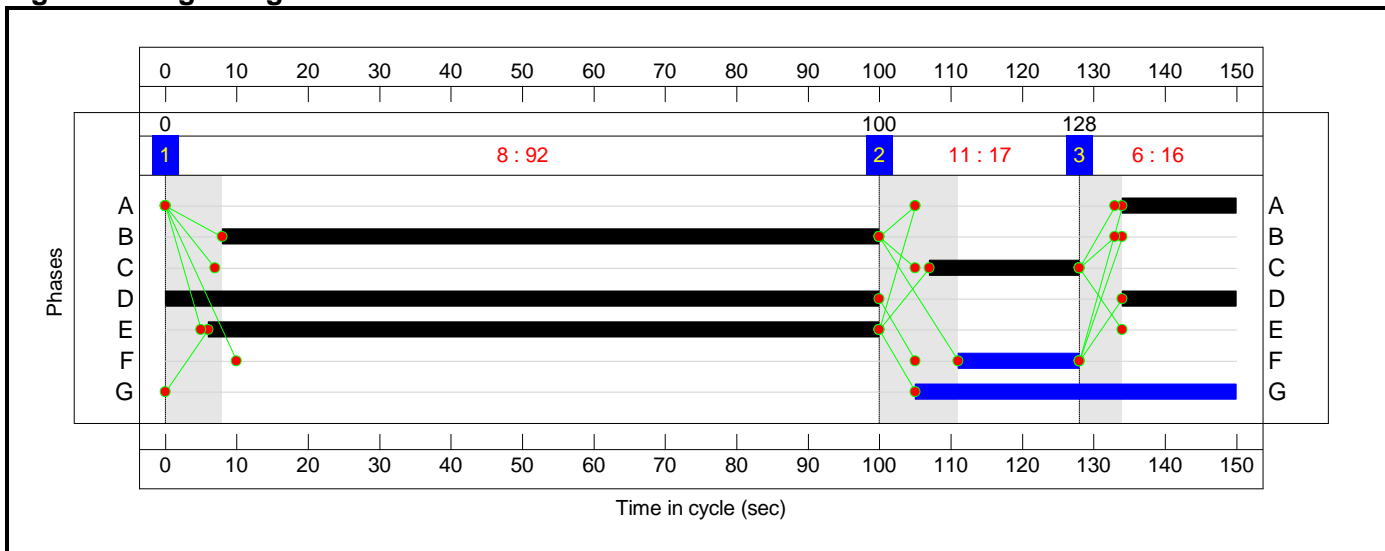
Stage Sequence Diagram



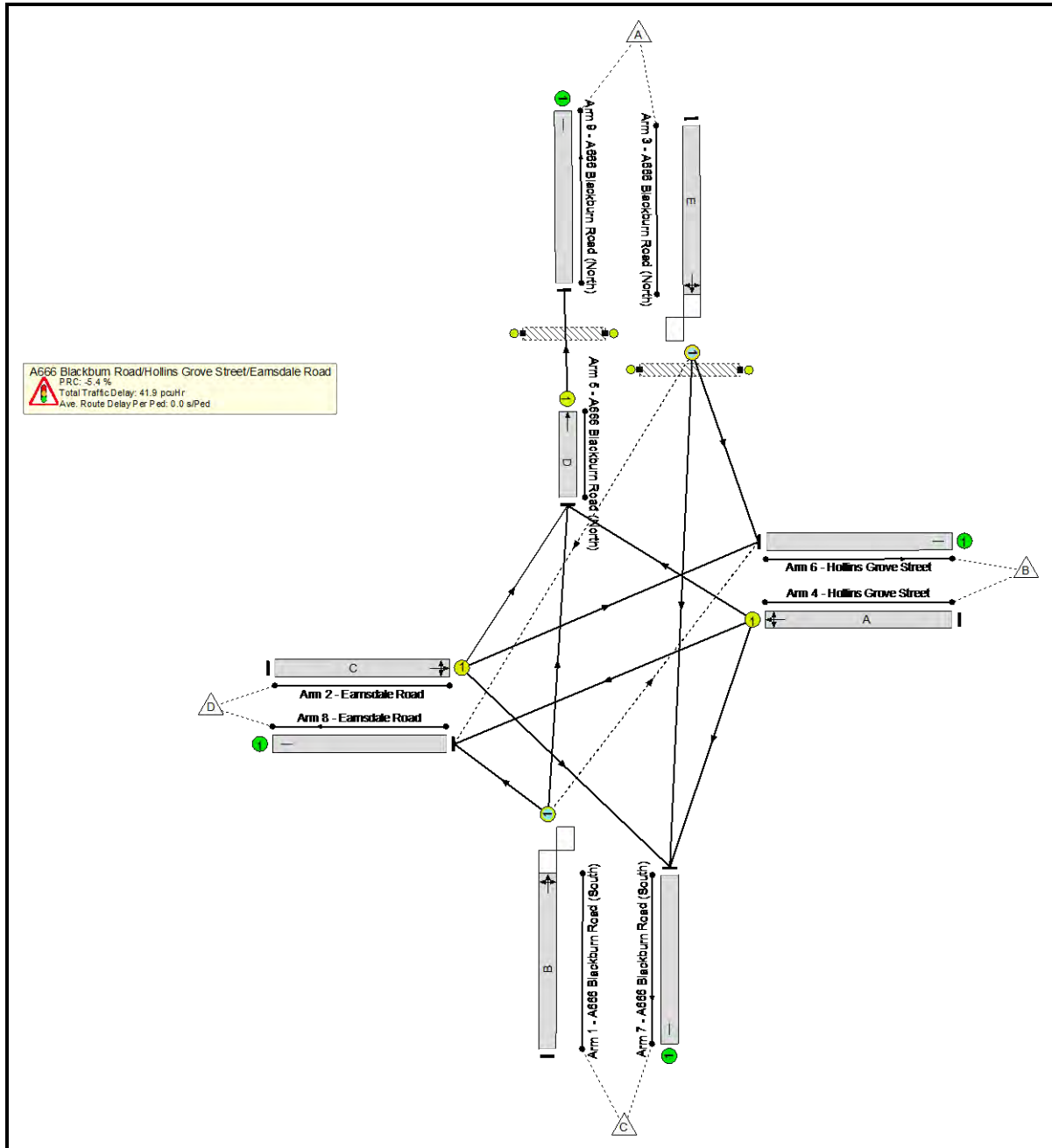
Stage Timings

Stage	1	2	3
Duration	92	17	16
Change Point	0	100	128

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	94.8%
A666 Blackburn Road/Hollins Grove Street/Earnsdale Road	-	-	N/A	-	-		-	-	-	-	-	-	94.8%
1/1	A666 Blackburn Road (South) Ahead Right Left	O	N/A	N/A	B		1	92	-	1013	1965	1072	94.5%
2/1	Earnsdale Road Left Ahead Right	U	N/A	N/A	C		1	21	-	242	1742	255	94.7%
3/1	A666 Blackburn Road (North) Left Ahead Right	O	N/A	N/A	E		1	94	-	1008	1986	1244	81.0%
4/1	Hollins Grove Street Right Left Ahead	U	N/A	N/A	A		1	16	-	180	1675	190	94.8%
5/1	A666 Blackburn Road (North) Ahead	U	N/A	N/A	D		1	116	-	1100	2015	1572	70.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	F		1	17	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	G		1	45	-	0	-	0	0.0%

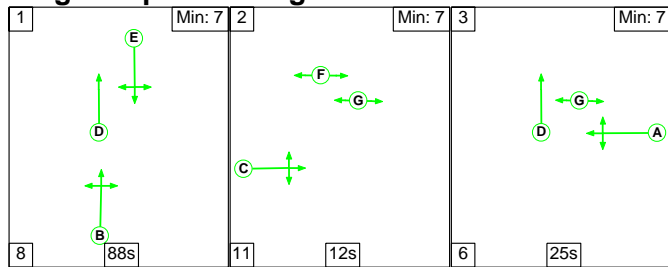
Full Input Data And Results

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	-	-	115	0	2	21.1	20.0	0.8	41.9	-	-	-	-
A666 Blackburn Road/Hollins Grove Street/Earnsdale Road	-	-	115	0	2	21.1	20.0	0.8	41.9	-	-	-	-
1/1	1013	1013	76	0	1	6.8	6.9	0.6	14.4	51.0	39.4	6.9	46.3
2/1	242	242	-	-	-	4.3	5.1	-	9.4	139.4	9.9	5.1	15.1
3/1	1008	1008	39	0	1	5.7	2.1	0.2	8.0	28.7	31.1	2.1	33.2
4/1	180	180	-	-	-	3.3	4.7	-	8.0	159.8	7.4	4.7	12.1
5/1	1100	1100	-	-	-	1.0	1.2	-	2.2	7.0	8.4	1.2	9.6
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		-5.4	Total Delay for Signalled Lanes (pcuHr):		41.90	Cycle Time (s): 150					
		PRC Over All Lanes (%):		-5.4	Total Delay Over All Lanes(pcuHr):		41.90						

Full Input Data And Results

Scenario 6: '2027 Predicted PM' (FG6: '2027 Predicted PM Peak', Plan 1: 'Network Control Plan 1')

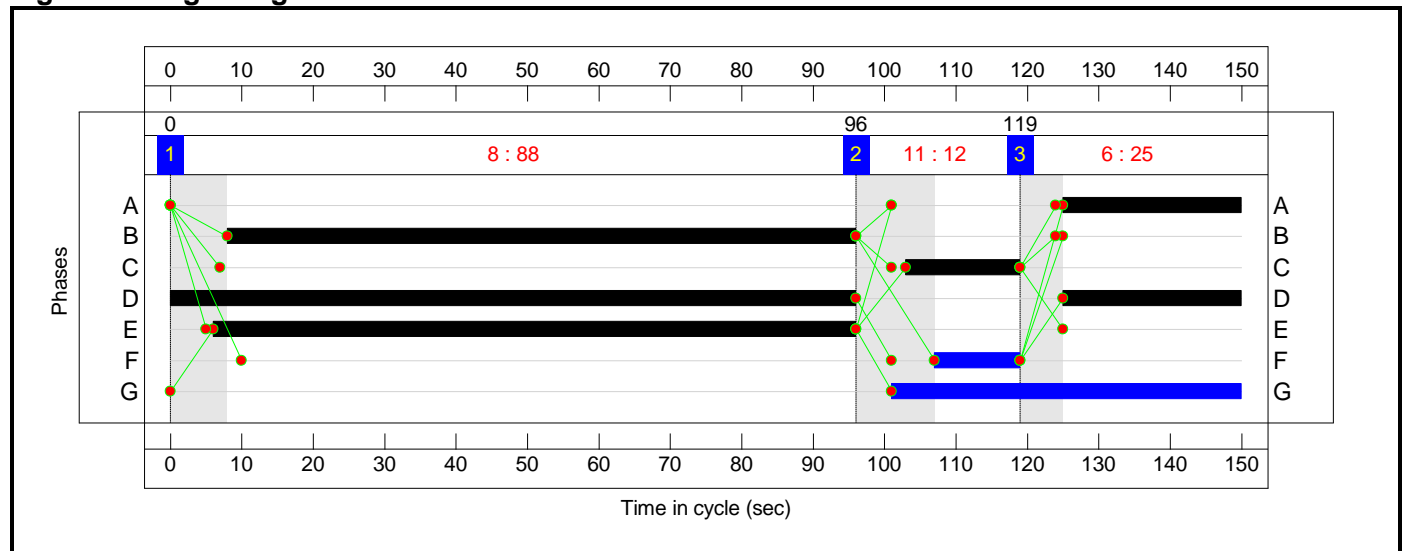
Stage Sequence Diagram



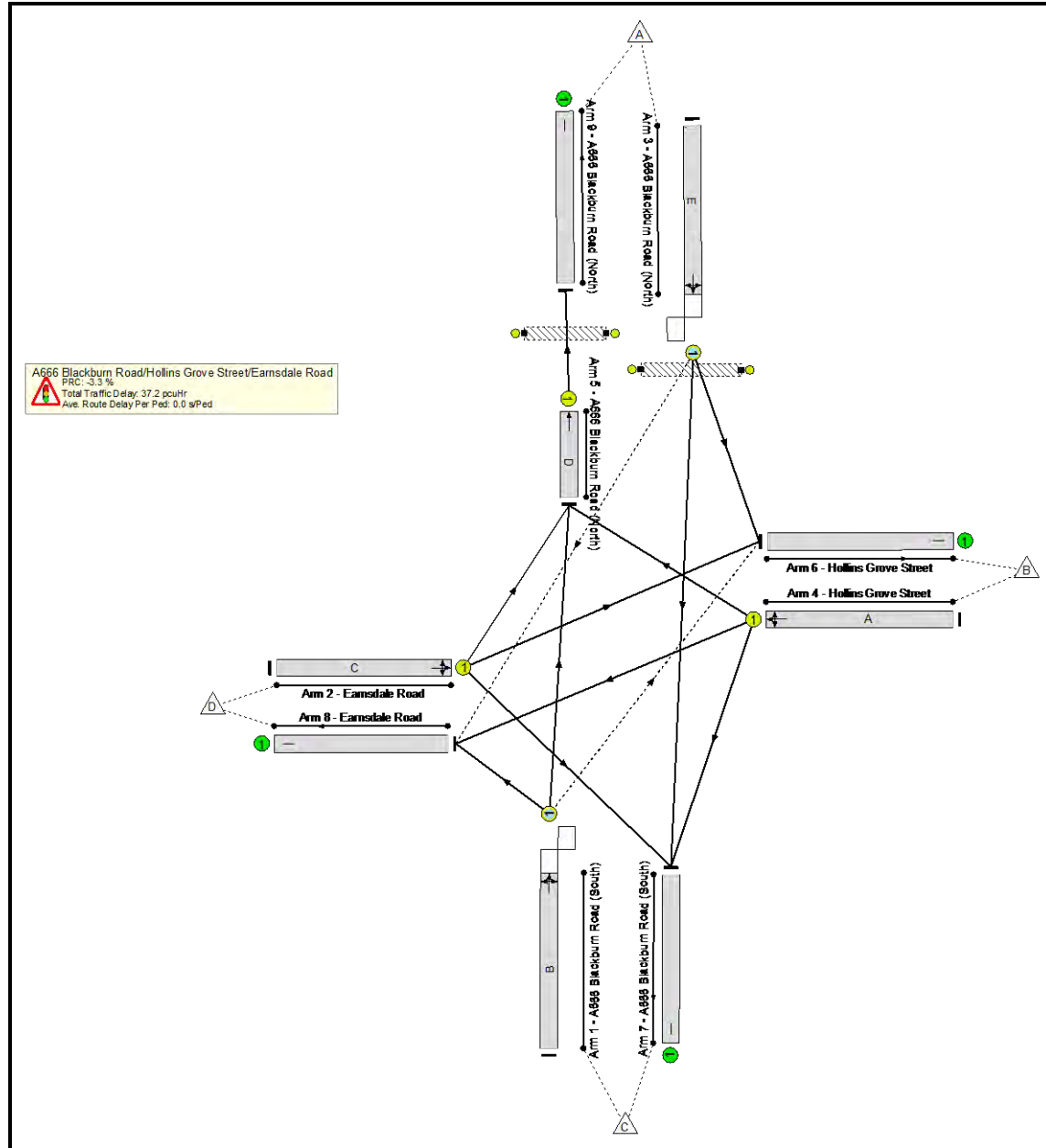
Stage Timings

Stage	1	2	3
Duration	88	12	25
Change Point	0	96	119

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	93.0%
A666 Blackburn Road/Hollins Grove Street/Earnsdale Road	-	-	N/A	-	-		-	-	-	-	-	-	93.0%
1/1	A666 Blackburn Road (South) Ahead Right Left	O	N/A	N/A	B		1	88	-	971	1962	1127	86.1%
2/1	Earnsdale Road Left Ahead Right	U	N/A	N/A	C		1	16	-	160	1711	194	82.5%
3/1	A666 Blackburn Road (North) Left Ahead Right	O	N/A	N/A	E		1	90	-	1016	1967	1093	93.0%
4/1	Hollins Grove Street Right Left Ahead	U	N/A	N/A	A		1	25	-	255	1710	296	86.0%
5/1	A666 Blackburn Road (North) Ahead	U	N/A	N/A	D		1	121	-	1060	2015	1639	64.7%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	F		1	12	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	G		1	49	-	0	-	0	0.0%

Junctions 8
PICADY 8 - Priority Intersection Module
Version: 8.0.5.523 [19102,19/06/2015] © Copyright TRL Limited, 2017
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Filename: Site Access-Hollins Grove Street.arc8

Path: Y:\2016\16-401 to 16-425\16-423 Hollins Paper Mill, Darwen\Technical\Junction Models\PICADY

Report generation date: 03/03/2017 11:03:16

« **Proposed Layout - 2027 Predicted, AM Peak**

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

Summary of junction performance

	AM Peak			
	Queue (PCU)	Delay (s)	RFC	LOS
	Proposed Layout - 2027 Predicted			
Stream B-C	0.08	6.68	0.08	A
Stream B-A	0.05	8.77	0.05	A
Stream C-AB	0.04	5.57	0.03	A
Stream C-A	-	-	-	-
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

"D1 - 2027 Predicted, AM Peak " model duration: 07:30 - 09:00

"D2 - 2027 Predicted, PM Peak" model duration: 16:00 - 17:30

Run using Junctions 8.0.5.523 at 03/03/2017 11:03:15

File summary

Title	Site Access/Hollins Grove Street
Location	Darwen, Lancashire
Site Number	
Date	02/12/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	16-423
Enumerator	rdonaldson
Description	

Analysis Options

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

Units

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

Proposed Layout - 2027 Predicted, AM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Site Access - Minor Arm Geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2027 Predicted, AM Peak	2027 Predicted	AM Peak		ONE HOUR	07:30	09:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Site Access/Hollins Grove Street	T-Junction	Two-way	A,B,C	6.95	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Hollins Grove Street (South West)	A	Hollins Grove Street (South West)		Major
Site Access	B	Site Access		Minor
Hollins Grove Street (North East)	C	Hollins Grove Street (North East)		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Hollins Grove Street (North East)	6.30		0.00		2.20	100.00	✓	0.00

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
Site Access	One lane plus flare				8.40	2.80	2.75	2.75	2.75	✓	1.00	18	17

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	511.512	0.092	0.232	0.146	0.332
1	B-C	647.982	0.098	0.248	-	-
1	C-B	631.874	0.242	0.242	-	-

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

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Hollins Grove Street (South West)	ONE HOUR	✓	215.00	100.000
Site Access	ONE HOUR	✓	59.00	100.000
Hollins Grove Street (North East)	ONE HOUR	✓	144.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Site Access/ Hollins Grove Street (for whole period)

		To		
		Hollins Grove Street (South West)	Site Access	Hollins Grove Street (North East)
From	Hollins Grove Street (South West)	0.000	7.000	208.000
	Site Access	19.000	0.000	40.000
	Hollins Grove Street (North East)	130.000	14.000	0.000

Turning Proportions (PCU) - Site Access/ Hollins Grove Street (for whole period)

		To		
		Hollins Grove Street (South West)	Site Access	Hollins Grove Street (North East)
From	Hollins Grove Street (South West)	0.00	0.03	0.97
	Site Access	0.32	0.00	0.68
	Hollins Grove Street (North East)	0.90	0.10	0.00

Vehicle Mix

Average PCU Per Vehicle - Site Access/ Hollins Grove Street (for whole period)

		To		
		Hollins Grove Street (South West)	Site Access	Hollins Grove Street (North East)
From	Hollins Grove Street (South West)	1.000	1.000	1.000
	Site Access	1.000	1.000	1.000
	Hollins Grove Street (North East)	1.000	1.000	1.000

Heavy Vehicle Percentages - Site Access/ Hollins Grove Street (for whole period)

		To		
		Hollins Grove Street (South West)	Site Access	Hollins Grove Street (North East)
From	Hollins Grove Street (South West)	0.0	0.0	0.0
	Site Access	0.0	0.0	0.0
	Hollins Grove Street (North East)	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.08	6.68	0.08	A
B-A	0.05	8.77	0.05	A
C-AB	0.03	5.57	0.04	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (07:30-07:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	30.11	29.91	0.00	603.87	0.050	0.05	6.271	A
B-A	14.30	14.18	0.00	456.77	0.031	0.03	8.132	A
C-AB	12.34	12.25	0.00	658.22	0.019	0.02	5.573	A
C-A	96.07	96.07	0.00	-	-	-	-	-
A-B	5.27	5.27	0.00	-	-	-	-	-
A-C	156.59	156.59	0.00	-	-	-	-	-

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	35.96	35.91	0.00	595.19	0.060	0.06	6.436	A
B-A	17.08	17.05	0.00	446.09	0.038	0.04	8.391	A
C-AB	15.22	15.19	0.00	663.74	0.023	0.03	5.550	A
C-A	114.24	114.24	0.00	-	-	-	-	-
A-B	6.29	6.29	0.00	-	-	-	-	-
A-C	186.99	186.99	0.00	-	-	-	-	-

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	44.04	43.97	0.00	583.17	0.076	0.08	6.676	A
B-A	20.92	20.88	0.00	431.32	0.049	0.05	8.769	A
C-AB	19.47	19.43	0.00	671.56	0.029	0.04	5.520	A
C-A	139.08	139.08	0.00	-	-	-	-	-
A-B	7.71	7.71	0.00	-	-	-	-	-
A-C	229.01	229.01	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	44.04	44.04	0.00	583.15	0.076	0.08	6.676	A
B-A	20.92	20.92	0.00	431.31	0.049	0.05	8.771	A
C-AB	19.48	19.48	0.00	671.57	0.029	0.04	5.522	A
C-A	139.07	139.07	0.00	-	-	-	-	-
A-B	7.71	7.71	0.00	-	-	-	-	-
A-C	229.01	229.01	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	35.96	36.03	0.00	595.16	0.060	0.06	6.438	A
B-A	17.08	17.12	0.00	446.07	0.038	0.04	8.393	A
C-AB	15.23	15.26	0.00	663.76	0.023	0.03	5.553	A
C-A	114.23	114.23	0.00	-	-	-	-	-
A-B	6.29	6.29	0.00	-	-	-	-	-
A-C	186.99	186.99	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	30.11	30.16	0.00	603.82	0.050	0.05	6.275	A
B-A	14.30	14.33	0.00	456.73	0.031	0.03	8.139	A
C-AB	12.36	12.38	0.00	658.23	0.019	0.02	5.573	A
C-A	96.05	96.05	0.00	-	-	-	-	-
A-B	5.27	5.27	0.00	-	-	-	-	-
A-C	156.59	156.59	0.00	-	-	-	-	-

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