CITY AIRPORT DEVELOPMENT PROGRAMME (CADP)

CADP: TRANSPORT ASSESSMENT

VOLUME 2

London City Airport
Get closer.

APPENDIX A

Transport Scoping Report and TfL Response

London City Airport

Eastern Stand Development Project

Transport Scoping Report

December 2012

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1 INTRODUCTION AND BACKGROUND

1.1 Vectos has been retained by London City Airport (LCY) to provide traffic and transportation advice in relation to their proposal for new and upgraded aircraft stands, an extension to the taxi-lane running adjacent to the runway, a new arrivals building, reconfigured forecourt area, hotel (in outline) and related infrastructure works.

1.2 This planning application, known as the Eastern Stand Development (ESD) project, forms part of planned on-going improvements at the Airport that will enhance operational efficiency, passenger service and capacity in accordance with current and future customer, airline and regulatory requirements. Such improvements are broadly consistent with the long term plans which were described in London City Airport's 2006 Master Plan.

1.3 Since 2007, there has been continued growth in the size of aircraft using the Airport. The aircraft are both physically larger and carry marginally more passengers, which has resulted in changes in the demand for airport infrastructure in the critical morning and early evening peak periods.

1.4 The new aircraft stands are required to accommodate new aircraft types, including the Bombardier C-Series which Swiss has advised it wishes to operate at LCY by 2015/16.

1.5 LCY is an international Airport primarily serving the business community of London. After many years of growth at the Airport, the recession contributed to a decline in passenger numbers between 2008 and 2010. Annual passenger numbers are now increasing again and in 2011 approximately 2.99 million passengers per annum (mppa) used the Airport, compared to 2.78 mppa in 2010, an increase of 7.6%.

1.6 In August 2011, the Department for Transport (DfT) published its latest Aviation Forecasts. In respect of London City Airport, the DfT anticipate it reaching 120,000 air transport movements by 2021 and handling approximately 7 mppa.

1.7 The ESD project would enable the Airport to accommodate 5.95 mppa on 107,008 scheduled movements by 2023, compared to 4.49 mppa on 87,602 scheduled movements without this planning application.

1.8 It is important to note that no increase in the permitted number of aircraft movements is being sought and the Airport will continue to be permitted to operate up to a maximum limit of 120,000 (noise factored) movements per annum, as approved by LBN in July 2009.

1.9 This scoping report sets out the background of the ESD project from a transport perspective, provides justification for the proposals, and sets out the further work that will be undertaken as part of the planning application submission.

1.10 The remainder of this scoping report is set out as follows:

Section 2 – sets out a description of the existing conditions;

Section 3 – describes the existing passenger and staff travel patterns;

Section 4 - describes the proposals in detail;

Section 5 - describes the relevant transport policy;

Section 6 - considers the assessment on sustainable modes including the DLR;

Section 7 – considers the assessment of the highway network;

Section 8 – provides a summary.

2 EXISTING CONDITIONS

2.1 This section describes the existing conditions and transport characteristics at the Airport.

Site Location

2.2 **Figure 1** shows the London City Airport site in relation to the surrounding area and transport system. London City Airport is located between the Royal Albert Dock and the King George V Dock, adjacent to the Woolwich Reach and Gallions Reach of the River Thames.

2.3 The permitted and existing use of the site is as an International Airport. There are two elements to the Airport; the main Airport building with ancillary services and the Jet Centre that serves corporate clients.

Surrounding Area

2.4 The existing land uses in the vicinity of the site are varied and of mixed use. There are residential areas; industrial areas and commercial areas. There is a significant amount of planned development and regeneration in the vicinity of the Airport.

2.5 The Airport provides international links to cities in Europe and has excellent links to local public transport facilities that connect the Airport to London and its suburbs. The Airport also has an excellent domestic route network that is of value in terms of regeneration to the surrounding area.

2.6 The location of the Airport site is adjacent to a designated Air Quality Management Area (AQMA). The impact of the increase in flights on both air and noise is considered in the Environmental Statement.

2.7 There are no continuous movements of abnormal loads to and from the Airport by surface transport. However if they should be required, they will be considered within any application to the local highway authority should the need arise.

Local Road Network

2.8 The main trunk roads providing access to the Airport from the north are the east-west A13 and the A406 North Circular that connects with the M11 and M25 motorways. The Airport is just a mile from the A13 (Prince Regent's Lane junction), three miles from the A406 and 15 miles from the M25. In recent years, large sections of the A13 have been substantially upgraded and expanded. In particular the 10 mile stretch between Canning Town in Newham and Wennington near the junction with the M25 has been widened to three lanes in each direction. Grade separation at junctions with key north-south routes has relieved congestion at those junctions.

2.9 The A102(M) trunk road crosses the Thames north-south via the Blackwall Tunnel approximately three miles from LCY. Used intensively at peak periods, this is the nearest road river crossing point to the Airport.

2.10 The highway network in the vicinity of the Airport encompass a number of different routes. The highway runs eastwards from Tower Hill to Canary Wharf via the Limehouse Link. Aspen Way and the Lower Lea Crossing link the Blackwall Tunnel and the Isle of Dogs with the Royals. From the Lower Lea Crossing the Airport is accessed from the west via a four-lane single carriageway (Silvertown Way and North Woolwich Road).

2.11 The Royal Albert Way is a two-lane dual carriageway that links the Airport, via the Connaught Bridge to the A1020 and the A406/A13 intersection, just three miles north-east of the Airport. Albert Road links the Airport with Woolwich and the Woolwich Ferry river crossing. The Airport is connected to Connaught Bridge via Connaught Road and the Airport's own access road, Hartmann Road.

2.12 The junction of Hartmann Road with the A112 Connaught Road is signal controlled. There are no access constraints on the local highway network for any mode of movement to and from the Airport.

Car Parking

2.13 There are two main car parking areas within the Airport, shared between passengers and staff. The short stay car park is located closest to the terminal building; and the main stay car park adjacent to this. Staff parking is available within both the short and main stay car parks. Staff are required to apply for and display a parking permit.

2.14 Both short stay and main stay car parks are pay on exit and barrier controlled, with the access from Hartmann Road. The current fee schedule for the two car parks for passengers is shown in **Table 2.1**.

Table 2.1: December 2011 Parking Charges at LCY

Short Stay Car Park		Main Car Park	
Hours	**Price**	**Hours**	**Price**
0 - 0.5	£5.50	0 – 4	£16.00
0.5 - 1	£10.00	4 – 8	£18.00
1 – 2	£14.00	8 – 12	£22.00
2 – 4	£18.00	12 – 24	£40.00
4 – 8	£22.00	24 – 36	£60.00
8 – 12	£30.00	36 – 48	£80.00
12 – 24	£45.00	Additional 24 hours	£40.00
24 – 36	£75.00		
36 – 48	£90.00		
Additional 24 hours	£45.00		

2.15 The short-stay car park has 148 spaces whilst the long-stay car park has 644 spaces. In addition to this, there are 120 parking spaces allocated to car hire companies. These are located adjacent to Hartmann Road.

Accident Analysis

2.16 An analysis will be undertaken of Personal Injury Accident (PIA) data for the most recent 5 year period. The extent of the personal injury accident (PIA) investigation area is Connaught Bridge, the roundabout junction with Hartmann Road, the full length of Hartmann Road, Connaught Road up to its junction with Kennard Street and Woolwich Manor Way between Barge House Road and Fishguard Way. This is shown on **Figure 2**.

Accessibility by Non-Car Modes

2.17 A key factor in determining the suitability of a location is its accessibility by non-car modes of transport. This helps to reduce the reliance on the use of the private car as well as promoting the aims of sustainable travel choices.

2.18 The following section considers the accessibility of the Airport by walking, cycling and public transport.

Walking

2.19 London City Airport is very accessible on foot from the surrounding residential and commercial areas. The footways on the surrounding highways are lit, well maintained, are of sufficient width for their purpose and free of surplus street furniture. There are clear defined routes for pedestrians to use in and around the airport. There are controlled pedestrian facilities at the traffic signal controlled junction of Connaught Road and Hartmann Road.

2.20 Because of these facilities local residents and visitors to the area can walk to the Airport in order to catch bus services and the DLR.

2.21 Being a predominantly business orientated Airport the likelihood of many passengers walking to the Airport is limited, however a number of staff working within the Airport do live locally and walk to work. The most recent sample staff survey undertaken in September 2011 showed that 7% of the staff walk to work, a significant increase in the 2% of staff who walked to work in 2009. This illustrates the potential importance of walking as a mode of travel to the Airport, particularly for staff.

2.22 During the traffic surveys undertaken in 2010 / 2012, most pedestrian activity at the Airport was observed to be, to and from the car parks and the offices at City Aviation House.

Cycling

2.23 There are covered cycling parking stands located beneath the DLR adjacent to the motorcycle parking. These stands are opposite the main entrance to the Airport Terminal and can be utilised free of charge. Cycle stands are most likely to be used by staff, however there is still a significant number of unoccupied cycle stands available throughout the day.

Taxi

2.24 The current arrangement for taxi services is that on arrival at the airport with passengers, the taxi will drop passengers at the front of the terminal building. Once the passenger has paid the taxi fare, the vehicle departs from the drop off/pick up area and either turns right away from the Airport or turns left and joins the back of the taxi rank that extends towards the Airport parking areas.

2.25 The use of taxis helps to reduce the demand for parking spaces and the use of private motor vehicles. Taxis are often considered a more convenient form of transport for people with special mobility needs.

2.26 Taxis perform an important role as a public transport provider by reducing the passenger's reliance on the private car. They are particularly useful for passengers using the airport from Central London because they are not restricted to a time table or constrained by fixed routes. Taxis also fulfil a demand that cannot be met by bus, train or tube, especially early in the morning or late at night.

2.27 There is a large taxi rank at the entrance to the airport main terminal and therefore passengers arriving on a flight at the airport benefit from the close proximity of waiting black cabs.

2.28 On a typical busy day in 2012 there were 12,001 passengers using the airport. Travel surveys undertaken between 2009-2012 show that on average 14.7% of passengers used Black cabs and 16.8% used Minicabs to arrive at the airport; this is the equivalent of 3,780 passengers using taxis on a typical busy day in 2012.

Buses

2.29 There are bus stops adjacent to the 'ready' hire car parking area outside the terminal building on Hartmann Road and adjacent to the Jet Centre (used by staff, crew and passengers). All buses that visit the site perform a 'U' turn around the pick up/drop off area so only single stops are required ensuring that passengers do not have to cross Hartmann Road to get to the stops.

2.30 The Airport is served by two Transport for London Bus Services, the 473 and the 474.

2.31 The 473 service provides a bus that travels from Stratford – Plaistow – LCY - North Woolwich, departing about every 9-13 minutes from the terminal forecourt in both directions. The service commences from Stratford at 05:04 (06:11 Sunday) with the last bus at 01:14. The first bus from North Woolwich departs at 04:30 (05:39 Sunday) with the last bus at 00: 16.

2.32 The 474 bus runs along the route connecting Canning Town – LCY - North Woolwich – Beckton – East Ham – Manor Park, departing about every 10-13 minutes in both directions from the terminal forecourt. The service operates over a 24 hour period, 7 days a week. .

2.33 Passenger travel surveys show that between 2009-2012 approximately 0.3% of passengers use buses to arrive at the airport; this is the equivalent to an average of 36 passengers on a typical busy day in 2012.

2.34 It is noted that bus usage is greater amongst staff, with around 9-10% of the mode share.

Docklands Light Railway (DLR)

2.35 The DLR opened in 1987 to serve the first developments in Docklands, with eleven trains and fifteen stations. Since then, a number of extensions have been seen; the DLR has progressively been extended to Bank, Beckton, Lewisham, Stratford International and Woolwich Arsenal via London City Airport. The DLR London City Airport extension, opened in December 2005 with the extension onwards to Woolwich Arsenal completed in 2009. The section between Canning Town and London City Airport is known as 'the Airport route.'

2.36 The DLR is extensive and currently comprises a 34 km railway with 40 stations and more than 100 trains. According to Transport for London (TfL), DLR carries almost 70 million passengers, with this expected to rise to more than 100 million in 2012. DLR is a fully accessible and fully integrated railway - it connects with more than 100 bus routes, five mainline railways, eight Underground lines and coach, taxi and river services.

2.37 DLR operates between 05:30 – 00:30 on Monday to Saturdays and between 07:00 – 23:30 on Sundays.

2.38 In January 2012 DLR confirmed that trains on the Bank → Woolwich Arsenal service have been increased from two to three-carriage trains, to help accommodate increasing DLR passenger numbers using the service from Woolwich Arsenal. The new three-carriage trains will provide extra capacity and enhanced comfort for passengers.

2.39 Travel surveys undertaken between 2009-2012 show that the DLR mode share has fluctuated between 46-56%, with an average of 51.5%. During a typical busy day during 2012, this equated to an average of 6,181 passengers per day.

3 EXISTING TRAVEL PATTERNS

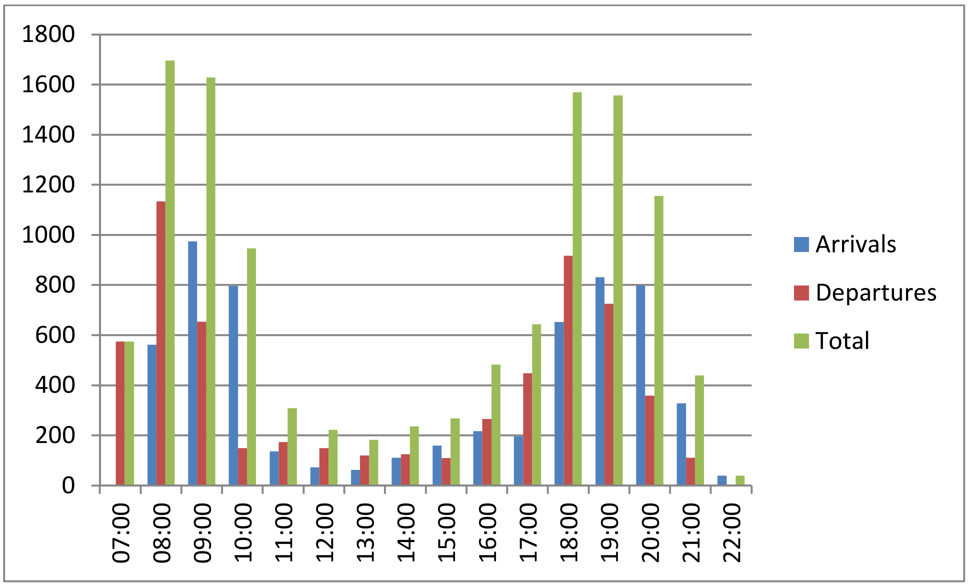
Passenger Profile

3.1 In the calendar year 2011 there were 2,992,847 passengers passing through the airport, including passengers travelling on flights at the Jet Centre. Overall this is an increase of 7.1% on 2010, when there were 2,780,582 passengers passing through the airport.

3.2 At the same time the total number of aircraft movements at the Airport increased marginally from 67,871 in 2010, to 68,100 in 2011.

3.3 **Chart 3.1** shows the daily passenger profile of passengers accessing the airport during 2012. This takes into account that on average, passengers arrive 1 hour and 15 minutes prior to their flight departing from the airport if travelling on a scheduled flight, and 15 minutes if flying from the Jet Centre. When a flight arrives at the airport it takes on average 15 minutes for passengers to depart from the airport from both the scheduled flights and Jet Centre.

Chart 3.1: 2012 Daily Passenger Profile



3.4 Chart 3.2 shows that the busiest hours of the day for accessing the Airport are during 08:00 – 09:00 and 18:00 – 19:00. There is a noticeable dip in passengers at the Airport between 10:00 and 16:00 and after 20:00 in the evenings.

3.5 In terms of the types of passengers using London City Airport, a survey undertaken in 2010 indicates that 63% of passengers are travelling for business purposes, which is substantially higher than the average for the other London airports. Around 32% of passengers using London City Airport for business travel were foreign resident, compared with around 17% using Heathrow.

Staff Numbers

3.6 Baseline employment data shows that in 2010 shows that there were an estimated 2,264 FTE employees dependent on the Airport; broken down between 1,955 direct employees (principally on-site), 197 indirect employees and 112 induced employees located in the surrounding areas.

3.7 The greatest proportion of employees are employed in Airline / Passenger Handling with 30% of the total, followed by 27% employed by the Airport Operator.

3.8 The latest staff travel survey reveals that 74% of staff employed at the Airport work shifts, as opposed to regular office hours. This is demonstrated by the fact that 44% of staff regularly start work between 05:00 – 06:00 and 56% of staff regularly finish work between 21:00 – 24:00. This reduces the proportion of staff travel during peak hours, but limits the choice of modes available for travel to work.

Mode Split

Passengers

3.9 LCY, as part of its on-going monitoring programme, undertakes regular passenger surveys. As part of this survey it asks passengers their last mode of transport to the Airport. The latest survey for which information is available was undertaken in June 2012. The results of this and other surveys undertaken over the past six years are summarised in **Table 3.1**.

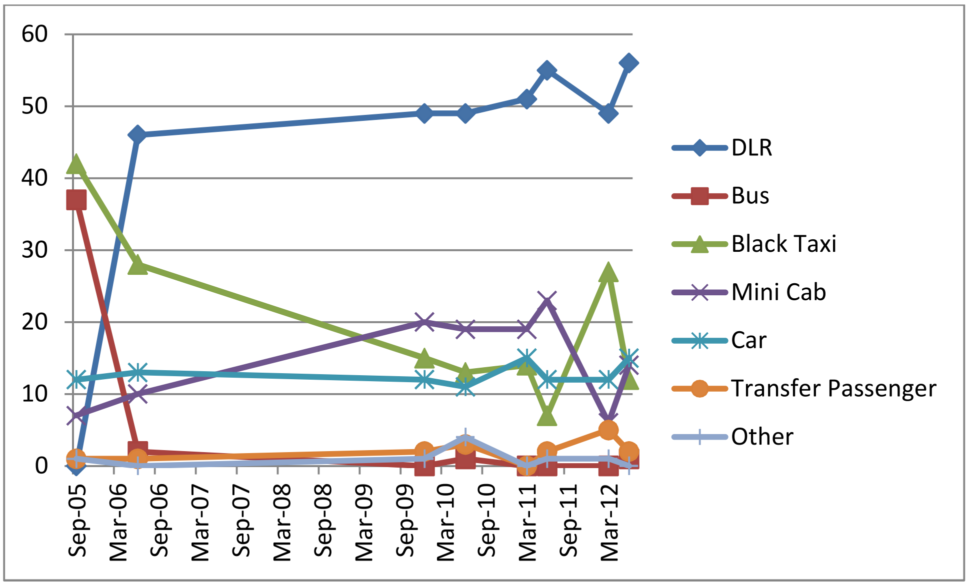
Table 3.2: Change in Mode Split over time - ALL Passengers

	DLR	Black Cab	Minicab	Car	Bus	Transfer	Other	Total
Sept 2005	0%	42%	7%	12%	37%	1%	1%	100%
June 2006	46%	28%	10%	13%	2%	1%	0%	100%
Dec 2009	49%	15%	20%	12%	0%	2%	1%	100%
June 2010	49%	13%	19%	11%	1%	3%	4%	100%
Mar 2011	51%	14%	19%	15%	0%	1%	0%	100%

Jun 2011	55%	7%	23%	12%	0%	1%	0%	100%
Mar 2012	49%	27%	6%	12%	0%	5%	1%	100%
June 2012	56%	12%	14%	15%	1%	2%	0%	100%
Av. 2009 - 2012	**51.6%**	**14.7%**	**16.9%**	**12.9%**	**0.3%**	**2.4%**	**1.2%**	**100.0%**

3.10 **Chart 3.2** illustrates the change in mode split over time between 2005 and 2012.

Chart 3.2: Change in Mode Split over time 2005 - 2012



3.11 Table 3.1 and Chart 3.2 reveals that the mode split has fluctuated since the introduction of the DLR in December 2005. Between 2009 and 2012, DLR mode share varies between 49% and 56%, with an average of 51.6% using the DLR. The average for Black Cabs / Minicabs and Private Car is similar, between 14.7% - 16.9% respectively. Bus usage is low at between 0% and 1% whilst transfer passengers (those who arrive on one flight and depart on another without leaving the Airport) comprise an average of 2.4%.

3.12 Since LCY has such a high proportion of passengers using public transport to access the Airport, it can be regarded as one of the most sustainable transport developments within London.

3.13 The use of the mode split figures from LCY's passenger surveys has previously been agreed with DLR, since DLR do not collect this data themselves.

Staff

3.14 London City Airport is committed to monitoring staff travel patterns through its Travel Plan. The latest staff travel survey was undertaken during September 2011. A total of 514 staff completed the questionnaire and provided information on their last mode of transport to work. The results of this survey, as compared to the previous survey in 2009, are included in **Table 3.3**.

Table 3.3: Change in Mode Split over time - Staff

	DLR	M'cab	Car	Bus	Walk	Cycle	M'bike	Other	Total
Sept 2009	19%	1%	66%	9%	2%	1%	1%	0%	100%
Sept 2011	22%	3%	53%	10%	7%	2%	2%	1%	100%

3.15 Table 3.3 illustrates that the greatest proportion of employees travel by car with 53% of the total in 2011. This is followed by DLR with 22% and bus with 10%. Compared to the 2009 survey, the proportion of car travel has decreased, with walking seeing the greatest increase in mode share from 2% to 7%.

4 DEVELOPMENT PROPOSALS

Scheme Elements

4.1 The Eastern Stand Development Project will allow the Airport to accommodate a new generation of aircraft as well as improving the facilities for passengers.

4.2 The application proposals specifically comprise the following elements:

- Seven new aircraft stands and reconfiguration of existing stands 21-24
- New entry/exit links to the runway and an extension of the taxilane running adjacent to the runway
- New arrivals building and terminal forecourt
- New hotel (in outline)
- New Multi-Storey Car Park

4.3 A copy of the Architect's Scheme Layout is shown in **Appendix A**.

Phasing

4.4 The indicative phasing for the construction of the proposals is as follows:

- Phase 1 (2016): 5 additional stands and extension to the taxi-lane; first phase of new arrivals building and forecourt
- Phase 2 (2019): 2 additional stands; second phase of construction of arrivals building and forecourt.
- Phase 3 (2021): Completion of construction for the ESD project.

Vehicle Access

4.5 Vehicle access will continue to be provided from the junction of Hartmann Road / A1011 Connaught Road.

4.6 In addition, it is proposed to create a further permanent access and vehicle link to the Airport from the junction with the A117 Woolwich Manor Way / Fishguard Way. The link already exists and has previously provided access to the Airport for staff and most recently has provided temporary access during the Olympics. The link is within LCY's ownership and it provides a direct connection between the eastern end of Hartmann Road and the signalised junction with the A117 Woolwich Manor Way / Fishguard Way. The link is shown on **Figure 3**.

4.7 Provision of the additional access improves the Airport's resilience, as well as shortening the distance travelled on the local highway network for journeys to / from the east. In particular, it will reduce the number of LCY related vehicles using the A1020 Royal Albert Way.

Airport Forecourt

4.8 The Airport Forecourt is being relocated and redesigned to provide sufficient capacity to accommodate the predicted increase in passengers of up to 6 mppa. A copy of the Forecourt Layout is provided at **Appendix B**.

4.9 The forecourt has been relocated eastwards from its current location to enable the construction of the new arrivals building and for a 30m exclusion zone prohibiting vehicular activity near the arrivals building.

4.10 The forecourt has been redesigned to provide additional capacity in accordance with the predicted increase in demand for each mode utilising the forecourt. The key features of the design are as follows:

- Black taxi drop-off and pick-up located adjacent to the footway fronting the terminal
- Black taxi pick-up queue located in two lanes within the forecourt with a further taxi feeder park located on land towards Kind George V
- Two bus stops located in laybys on Hartmann Road
- Car pick-up and drop-off lanes provided with wide footways and pedestrian crossings linking to the terminal
- Blue badge pick-up / drop-off facility located nearest to the terminal
- A new roundabout to facilitate the efficient movement of vehicles between the forecourt and Hartmann Road

Car Parking

4.11 Passengers and staff currently share the short stay and main stay car parks. It is proposed to provide separate passenger and staff car parks with passenger parking to be provided in a new multi-storey car park whilst staff parking will be provided in a new surface level car park near to King George V Dock. This enables staff and passenger parking to be managed and monitored separately.

4.12 The existing and proposed car parking provision is set out in **Table 4.1**.

Table 4.1: Car Parking Provision

	Existing	Proposed
Short Stay	148	200
Main Stay	644	550
Staff	Within short and main stay	*300**
Car Hire	120	150
Total	912	1,200

** subject to confirmation of future staff numbers*

4.13 Table 4.1 shows that it is proposed to increase the parking provision from 912 spaces to 1,200 spaces. This increase is not pro rata to the increase in passengers and staff that will be associated with the proposals, demonstrating the Airport's commitment to encourage travel by sustainable modes.

4.14 However, it is necessary to ensure that an appropriate parking provision is provided in order to minimise the potential for overspill parking on surrounding residential roads which do not have parking controls. Hence the passenger car park has been designed in order that it operates at capacity at peak times and assuming that a realistic mode shift to other modes has been achieved (as set out in Tables 4.6 and 4.7). Similarly, the staff parking provision seeks to encourage a high mode share by sustainable modes, whilst recognising that many staff frequently work shift patterns with anti-social hours when public transport options are limited. Staff parking provision will be finalised once the future staff numbers have been confirmed.

Passenger Numbers

4.15 The 2009 planning consent allows the annual number of permitted aircraft movements at LCY to grow to 120,000 'noise-factored' movements. The forecasts made in 2006 (and used to inform the 2007 ES which accompanied the planning application), predicted that the 120,000 movement limit would be reached in 2010, of which 25,000 movements were predicted to derive from the Jet Centre, with the number of passengers carried reaching 3.9 million per annum. The projected increase in movements failed to materialise, due primarily to the global recession.

4.16 However, the effect of the recession has seen airlines introduce larger more fuel efficient aircraft, with lower seat mile costs. The recession has also driven to the demand for peak period flights higher, with less peak spreading than anticipated at the time of forecasts prepared pre-recession. Hence, revised aircraft and passenger forecasts for the period between 2011 and 2023 have been prepared by York Aviation LLP.

4.17 A comparison of the aircraft size and capacity of the current and future fleet mix is provided in **Table 4.2**.

Table 4.2: Aircraft Size and Capacity

Aircraft	Seats	Wingspan (m)	Length (m)	Height (m)
Existing				
BAE 146 / RJ 100	82-112	26.21	30.99	8.61
Bombardier Dash 8 / Q400	70-78	28.42	32.84	8.36
Dornier Do328	33-39	20.98	21.22	7.24
Embraer 170	76	26.00	29.90	9.67
Embraer 190	98-112	28.72	36.24	10.28
Fokker F50	50	29.00	25.25	8.32
ATR-42	46-50	24.57	22.67	7.59
ATR-72	68-74	27.10	27.20	7.65
Saab 2000	50	24.76	27.28	7.73
Future				
A318	32 - 107	34.09	31.45	12.56
Embraer 170	76	26.00	29.90	9.67
Embraer 190	98-112	28.72	36.24	10.28
Bombardier CS 100	110	35.05	34.9	11.5
Bombardier Q400	78	28.42	32.84	8.36
ATR-42	46-50	24.57	22.67	7.59

ATR-72	68-74	27.10	27.20	7.65
Saab 2000	50	24.76	27.28	7.73

4.18 Table 4.2 shows that whilst the future fleet are physically larger in terms of wingspan, length and height, there is only a marginal difference in seating capacity.

Annual Passenger Numbers

4.19 The annual aircraft movements / passenger numbers both With and Without Development are set out in **Table 4.3**.

Table 4.3: Annual Passenger Numbers

	2010	2021		2023	
	Existing	With Dev.	Without Dev.	With Dev.	Without Dev.
Scheduled Movements	59,752	104,790	87,602	107,008	87,602
Passengers	2,780,582	5,564,134	4,443,308	5,948,078	4,490,523

Source: York Aviation

4.20 This shows that passenger numbers are predicted to increase incrementally from 2.78 mppa in 2010 to 5.95 mppa in 2023 With Development compared to 4.49 mppa Without Development. The difference in passenger numbers With and Without Development occurs as a result of the difference in scheduled movements.

Peak Hour Passenger Numbers

4.21 Growth in scheduled movements and passenger numbers is driven by the Airport's primary role in supporting the business travel needs associated with the Docklands Financial Services cluster, resulting in a greater dependence on peak period travel compared to other airports which have a broader mix of passenger types, allowing a greater spread of services.

4.22 The ESD project facilitates a change to the daily profile of passengers arriving / departing the Airport, compared to the Without Development scenario. The proportions in the peak periods are similar, but there will be a higher demand in the off peak period in the With Development scenario.

4.23 A Load Factor is the proportion of passenger seating capacity occupied on a plane. Load factors are predicted to vary throughout the day, with higher load factors at peak times which is driven by higher demand. The peak period load factors both With and Without Development are shown in **Table 4.4**.

Table 4.4: Peak Period Load Factors

	2021		2023	
	With Dev.	Without Dev.	With Dev.	Without Dev.
Peak Periods	85%	90%	85%	90%

4.24 As can be seen from **Table 4.4**, peak period load factors are predicted to be 85% With Development and 90% Without Development. Load factors are higher Without Development because of the shortage of peak period flights whilst demand remains the same both With and Without Development. In other words, the With Development scenario enables demand to be spread across a greater number of flights.

4.25 Peak hour load factors will never reach 100% because airlines need to maintain a proportion of free seats on all flights, particularly during peak times, in order to accommodate those passengers with flexible tickets who require a seat on their desired flight. In the With Development scenario, it is anticipated that the airlines will be able to operate more off-peak services to match their growth in peak operations, and this further explains the difference in peak load factors between scenarios, as a greater proportion of peak services may be booked but unused, as passengers switch to a more convenient flight through the day.

4.26 The change in passenger numbers accessing the Airport has been calculated for the network peak hours for the weekday AM peak hour of 08:00 – 09:00 and for the weekday PM peak hour of 17:00 – 18:00. This takes into account that on average, passengers arrive 1 hour and 15 minutes prior to their flight departing from the airport if travelling on a scheduled flight, and when a flight arrives at the airport it takes on average 15 minutes for passengers to depart from the airport

4.27 The resultant peak hour passenger numbers accessing the Airport in 2021 and 2023 are shown in **Tables 4.5** and **4.6**.

Table 4.5: 2021 Peak Hour Passenger Numbers

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)		
	Arr's	Dep's	Total	Arr's	Dep's	Total
Without Development	761	1,528	2,290	315	670	985
With Development	677	1,717	2,394	379	711	1,089
Change	-85	189	104	63	41	105

Table 4.5: 2023 Peak Hour Passenger Numbers

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)		
	Arr's	Dep's	Total	Arr's	Dep's	Total
Without Development	761	1,508	2,270	315	670	985
With Development	695	1,785	2,480	465	748	1,213
Change	-66	277	211	150	78	228

4.28 This shows that during the AM peak hour there would be a 211 increase in passengers compared to the Without Development scenario, whilst during the PM peak hour there would be a 228 increase in passengers compared to the Without Development scenario.

4.29 The impact of this variation in passenger numbers will be considered on the main transport modes used to access the Airport, especially in the weekday peak hours.

Staff Numbers

4.30 The ESD project will increase the number of staff employed at the Airport. The change in staff numbers is currently being calculated by York Aviation and will be assessed within the Transport Assessment.

Mode Split

Passengers

4.31 The mode split assumptions for passengers is set out in **Table 4.6**.

Table 4.6: Mode Split - Passengers

Mode	**Existing**	**2021 / 2023**
Private car parked at Airport	2.3 %	2.0 %
Dropped off by car	5.3 %	4.8 %

Rented car	1.4 %	0.8 %
Chauffeur driven car	3.8 %	3.5 %
Minicab	16.9 %	13.0 %
Black Taxi	14.7 %	12.0 %
DLR	51.6 %	60.0 %
Bus	0.3 %	0.3 %
Transfer	2.4 %	2.3 %
Other	1.2 %	1.2 %
TOTAL	100 %	100 %

4.32 The existing mode split is the average between 2009 – 2012, as set out in Section 3. The future year mode split is considered to represent the maximum mode share for the DLR, taking into the fact that DLR mode share has not increased substantially since the Airport branch opened, and also the Airport's aspiration to maximise the use of public transport as a means of surface access. Notwithstanding this, it is still considered that it may be difficult to achieve a 60% mode share for the DLR.

Staff

4.33 The starting point for estimating the mode split for staff will be the existing mode split as collected through the staff travel surveys. However, it is anticipated that the proportion of staff travelling by sustainable modes will increase with the continued implementation of the Airport's Travel Plan.

Travel Plan

4.34 The Airport has implemented a Travel Plan. This will be reviewed and updated in the context of the ESD Project. In particular, it is proposed to revise the restriction on maintaining the existing level of staff car parking, since this will not be possible to achieve with the significant increase in staff that will arise from the ESD project and that many staff frequently work shift patterns with anti-social hours when public transport options are limited.

Construction

4.35 The construction arrangements will be set out as part of the ESD project planning submission. This will include consideration of the transportation of construction materials to / from the Airport. Options for moving materials and plant by barge (in preference to HGV's) are currently being examined.

5 POLICY CONTEXT

5.1 This section of the report considers the current and emerging planning policy guidance at National, Regional and Local level.

National Policy

The Future of Air Transport White Paper (2003) (ATWP) and Progress Report (2006)

5.2 The Executive summary of the ATWP states that “There is scope for other existing South East Airports, including London City, Norwich, Southampton and some smaller airports, to help meet local demand, and their further development is supported in principle, subject to relevant environmental considerations”.

5.3 The Air Transport White Paper, in the context of planned growth of airports, seeks to reduce or minimise the impacts of airports on those who live nearby and on the natural environment. Paragraphs 4.55-4.58 state:

“Ensuring easy and reliable access for passengers, which minimises environmental, congestion and other local impacts, is a key factor in considering any proposal for new airport capacity. All such proposals must be accompanied by clear proposals on surface access which meets these criteria.

Increasing the proportion of passengers who get to airports by public transport can help to reduce road congestion and air pollution. We expect airport operators to share this objective, and to demonstrate how they will achieve it in putting forward their proposals for developing new capacity.

Airports are part of our national transport infrastructure, and need to be planned and developed in that context. The Strategic Rail Authority and (for strategic roads within England) the Highways Agency will take full account of likely future airport development, and regional and local transport strategies should do the same.

The Government expects developers to pay the costs of up-grading or enhancing road, rail or other transport networks or services where these are needed to cope with additional passengers travelling to and from expanded or growing airports. Where the scheme has a *wider range of beneficiaries, the Government, along with the devolved administrations, the Strategic Rail Authority, the Highways Agency and local authorities, will consider the need for additional public funding through their investment programmes on a case-by-case basis. …".*

5.4 In paragraphs 11.9 of the ATWP it is made clear that it supports the development of smaller South East Airports subject to relevant environmental considerations.

5.5 The ATWP, in the context of planned growth of airports, seeks to reduce or minimise the impacts of airports on those who live nearby and on the natural environment.

5.6 With regards surface access, the Progress Report notes that:

"We continue to encourage airport operators to increase the use of public transport to help reduce road congestion and air pollution."

5.7 The Progress Report further notes that:

"The airport continues to be an important factor in local regeneration, business development, transport and tourism infrastructure."

National Planning Policy Framework (NPPF)

5.8 The National Planning Policy Framework sets out the Government's planning policies for England and how these are expected to be applied.

5.9 One of the 12 core land-use principles within the NPPF includes:

"[to] actively manage patterns of growth to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable."

5.10 Section 4 of the NPPF deals with 'Promoting sustainable transport.' Paragraph 29 states that:

"the transport systems needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel."

5.11 Paragraph 32 sets out the transport issues which should be addressed within Development Plans and decisions. These are:

- *"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. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe."*

Draft Aviation Policy Framework (July 2012)

5.12 Paragraph 2.80 of the Draft Aviation Policy Framework states that:

"High quality, efficient and reliable road and rail access to airports contributes greatly to the experience of passengers, freight operators and people working at the airport."

5.13 Paragraph 6.9 states that:

"All proposals for airport development must be accompanied by clear surface access proposals which demonstrate how the airport will ensure easy and reliable access for passengers, increase the use of public transport by passengers to access the airport, and minimise congestion and other local impacts."

Regional Policy

Mayor's Transport Strategy (May 2010)

5.14 One of the key objectives of the Mayor's Transport Strategy (MTS) is that:

'London's transport system should excel among those of world cities, providing access to opportunities for all its people and enterprises, achieving the highest environmental standards and leading the world in its approach to tackling urban transport challenges of the 21st century.'

5.15 The MTS further recognises that:

"As the economy of east London has changed, developments such as Canary Wharf, ExCel and The O2 have increased the demand for travel across the river significantly. Many of the large new economic drivers for London are located in east London, with the majority of these

lying north of the river, such as the Olympic Park and adjacent Stratford City development, Canary Wharf, ExCel and City airport."

5.16 With regards Airport Policy, paragraph 435 states that:

"The Mayor recognises that adequate airport capacity is critical to the continued competitiveness of London's economy. For this reason, the Mayor will consider whether optimum use is being made of existing airport infrastructure."

5.17 On surface access to airports, the MTS states the following:

"TfL has worked with airport operators through their airport transport forums to help improve surface access to airports. Continued close engagement with airport operators and local boroughs will be essential to serve the increasing numbers of air passengers and encourage a shift from private car to reduce congestion and improve surrounding air quality."

London Plan (July 2011)

5.18 Policy 6.6 of the London Plan deals with Aviation. Part B of the policy states that The Mayor:

"supports improvements of the facilities for passengers and other London airports in ways other than increasing the number of aircraft movements, particularly to optimise efficiency and sustainability, enhance the user experience and to ensure the availability of viable and attractive public transport options to access them."

5.19 It continues to state that:

"Development proposals affecting airport operations or patterns of air traffic should:

Provide access to airports by travellers and staff by sustainable means, particularly by public transport."

Local Policy

London Borough of Newham Core Strategy (January 2012)

5.20 London Borough Newham's Core Strategy was adopted in January 2012. It sets out to ensure that *"new development will achieve the Council's objective to make Newham a place where people will choose to live, work and stay".*

5.21 Policy INF 2 on Sustainable Transport within the draft Core Strategy states that:

"Major development proposals that generate or attract large numbers of trips, including higher density residential and commercial development, should be located in areas with good public transport accessibility and demonstrate the existence of, or propose new safe, attractive walking and cycling routes to public transport nodes."

5.22 It continues to state that:

"Development proposals will not be supported where they would have an unacceptable adverse impact on the capacity or environment of the highway network. Where applicable proposals must be accompanied by Transport Assessments which show the likely impacts of trip generation, and which include acceptable robust, monitored proposals to counter or minimise the potential impacts; these include 'smarter travel' plans and measures to facilitate and encourage more widespread walking, cycling and public transport use."

Summary

5.23 London City Airport is recognised as a large economic driver in east London. There is general support for its development on the grounds of encouraging economic growth in the most efficient manner. Airport operators are also encouraged to engage stakeholders to improve access to airports by sustainable modes, reducing the proportion of trips by private car. The current development proposals accord with national, regional and local transport policies. London City Airport is accessible by public transport via black taxi, DLR and bus services providing connections locally within Newham by bus and via DLR to central London and Canary Wharf.

6 IMPACT ON SUSTAINABLE MODES

DLR

Study Area

6.1 It is proposed that the impact of the planning application will be considered on 'the Airport route' of the DLR network. This comprises the section between Canning Town and London City Airport. It is estimated that 90% of Airport-related DLR passengers arrive / depart using this section of the DLR.

DLR Loadings

6.2 DLR have agreed to provide passenger loadings for the Airport route for the weekday AM peak hour of 08:00 – 09:00. This is the busiest hour of the day on the DLR network.

6.3 For the future years this includes the predicted increase in DLR passengers associated with planned developments in the vicinity of the Airport route.

Assessment Years

6.4 An assessment of the capacity of the DLR Airport route will be conducted for the With / Without Development Scenarios:

- 2011: Baseline Year;
- 2021: Movement Limit Year for the completed Development; and
- 2023: Optimisation of the ESD Development and other associated improvements at the Airport.

6.5 The DLR loadings will be adjusted to take account of the anticipated Airport-related passengers in the With and Without Development Scenarios in the above assessment years.

6.6 It is noted that construction works will be completed in 2019, but this year will not be assessed in terms of surface access because passenger numbers are higher in both 2021 and 2023.

Crowding Factors

6.7 DLR apply crowding factors as a measure of capacity on the DLR network. Crowding factors are calculated on the number of standing passengers per sqm of standing space (ppm^2). Factors are categorised according to the following scale:

Crowding level key

ppm²	
0	No crowding (all passengers seated)
0-1	Slight crowding (some standing)
1-2	Medium crowding
2-3	Heavy crowding
3-4	Severe crowding
4-4.6	Maximal crowding (very close to capacity)
>4.6	Overcrowding* (beyond stated crush loads)

* NB that overcrowding would more likely result in queuing on platforms instead

6.8 DLR consider that 'planning capacity' is reached at 3 ppm^2, after which there is potential for passengers to be left behind at stations. However, the actual capacity of a train is reached at 4.6 ppm^2. DLR reduce the amount of available standing space on the Airport route by 15% to take account passengers with luggage.

6.9 A crowding factor is calculated for each link in both directions on the Airport route.

Crossrail

6.10 The Airport anticipates that Crossrail will have a broadly neutral impact on future passenger numbers, as whilst Crossrail will improve the accessibility of Heathrow, it will also improve the accessibility of the Airport from Westminster.

6.11 Similarly, it is not anticipated that Crossrail will have an impact on the mode split of passenger and staff travel to the Airport. This is because there will not be a direct link to Crossrail from LCY. The nearest Crossrail station will be at Custom House.

Buses

6.12 The proportion of passengers travelling to the airport by bus is between just 0-1%. Thus, the projected increase in passengers travelling to and from the airport during the AM and PM peak hours is low in 2021 and 2023. A greater proportion of staff travel to / from the Airport by bus, with the mode share varying between 9%-10%.

6.13 As there are in the order of 11 buses per hour calling at the airport during peak periods, it is not considered that the marginal increase in bus passengers in the peak hour arising from this planning application will have any impact upon the operation of these services. It is likely that this increase will be well within daily fluctuations that would occur in any event.

6.14 It is, therefore, not proposed to undertake any further assessment of bus capacity.

Taxis

6.15 The Transport Assessment will set out the difference in number of taxi passenger using both black cabs and minicabs.

6.16 Taxi occupancy rates have been obtained from a survey undertaken in November 2010. These are 1.32 passengers per black cabs and 1.34 for minicabs.

6.17 The impact of additional taxis will be considered as part of the impact on the road network.

Walking and Cycling

6.18 No changes are proposed to the walking and cycling facilities in the vicinity of the Airport. It is anticipated that the existing infrastructure is sufficient to accommodate the change in demand.

7 IMPACT ON THE ROAD NETWORK

Methodology

7.1 This section of the scoping report summarises the methodology that will be used to assess the impact on the highway network.

Traffic Assignment

7.2 Data showing the distribution of car journeys collected as part of the regular LCY passenger surveys will be used to determine the assignment of Airport-related traffic, once the additional access to the A1011 Woolwich Manor Way has been implemented.

Study Area

7.3 The change in daily traffic flows will be considered for the study area. The scope of the study area is shown on **Figure 4**.

7.4 For the purposes of further assessment of the traffic impact during peak hours, the study area for the Transport Assessment includes the following junctions:

- Hartmann Road / Connaught Road;
- Connaught Road / Connaught Bridge Road; and
- Proposed Access / A1011 Woolwich Manor Way / Fishguard Way

7.5 Detailed capacity analyses will be undertaken at the above junctions.

Data Collection

7.6 In order to understand existing traffic movements on the highway network surrounding the Airport, the following set of surveys were commissioned:

- Automatic Traffic Counters undertaken between Monday 15th November and Sunday 21st November 2010 or Tuesday 13th November and Monday 20th November 2012;
- Weekday AM and PM peak period manual classified turning movements at the junctions of Hartmann Road / Connaught Road and the access / egress to the

Airport forecourt on 16th November and 14th December 2010 and at Connaught Bridge / Connaught Road on 15th November 2012; and

- On 16th November and 14th December 2010, a Drop off/Pick up zone outside of the Airport to collect data on the number of passengers using cars and taxis to arrive at and depart from the Airport.

7.7 The scope of the study area is identical to that used to assess the impact of the 'Interim Application' which was granted consent in July 2009.

Assessment Years and Periods

7.8 The assessment years and scenarios to be assessed are proposed to be as follows:

- 2011: Baseline Year;
- 2021: Movement Limit Year for the completed Development; and
- 2023: Optimisation of the ESD Development and other associated improvements at the Airport.

7.9 From the traffic surveys it has been determined that the network peak hours are as follows:

- **Weekday AM Peak** – 08:00 – 09:00
- **Weekday PM Peak** – 17:00 – 18:00

Committed Developments

7.10 The assessment considers the predicted trip generation of committed developments in the vicinity of the Airport, which will have a traffic impact in the study area. Committed developments are those which have been granted planning permission but which have not yet been constructed. It comprises the following:

- Silvertown Quays;
- Landmark Site / Siemens;
- Royals Business Park;
- IVAX Quays;
- Barrier Park East;

- Minoco Wharf; and
- Thames Road Industrial Estate (Unex Site).

Traffic Growth

7.11 Due to the congested nature of the transport network in London during peak hours, it is generally accepted that a traffic growth factor should not be applied to future year assessments. However, it is recognised that a significant amount of development is planned in the Docks areas in proximity to the Airport, which has not yet been granted planning permission. Therefore, medium rate traffic growth factors have been applied to the future year assessments of 2021 and 2023. The growth factors were calculated by adjusting a National Transport Model (NTEM) factor by a local TEMPRO factor for the London Borough of Newham. The resultant growth factors are shown in **Table 7.1**.

Table 7.1: Peak Hour Traffic Growth Factors*

	AM Peak	PM Peak
2010 - 2021	1.1570	1.1540
2010 - 2023	1.2012	1.1987
2012 - 2021	1.1455	1.1434
2012 - 2023	1.1892	1.1877

** adjusted to take account of committed developments*

7.12 A traffic growth factor will not be applied separately to peak hour traffic on Hartmann Road since it is almost exclusively used by Airport traffic.

Junction Assessment

7.13 It is proposed to undertake stand-alone junction and signalised network assessments with the appropriate modelling software (e.g. ARCADY 7 and LinSig 3.1 as necessary) for the junctions outlined above.

8 SUMMARY

8.1 This Pre-Application Transport Scoping Report sets out the proposed approach to the Transport Assessment which will accompany the planning application for the ESD project at London City Airport.

8.2 Further discussions will be required with London Borough of Newham, Transport for London and DLR to further develop the proposals and demonstrate the impacts associated with the ESD project. However, this scoping report seeks specific approval for the following elements of the proposals:

- The principle of the increase in passengers from 5.95 mppa on 107,008 scheduled movements by 2023, compared to 4.49 mppa on 87,602 scheduled movements without the ESD project.
- The proposed design for the forecourt with regards the arrangements for buses / taxis / cars / non-motorised modes.
- The proposed passenger and staff car parking provision increasing from 912 to 1,200 spaces.
- The additional permanent vehicle access to be provided from the junction of the A1011 Woolwich Manor Way / Fishguard Way.
- The renegotiation of the Airport's Travel Plan in the context of the ESD project proposals
- The proposed scope and methodology of the assessment of the DLR network as set out in Section 6
- The proposed scope and methodology of the assessment of the highway network as set out in Section 7

Transport for London

Our ref: 12/2379

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Emma Grayson
Vectos
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17 January 2013

Dear Emma

London City Airport, Eastern Stand Development - TfL's pre-application advice

Please note that these comments represent the views of Transport for London officers and are made entirely on a "without prejudice" basis. They should not be taken to represent an indication of any subsequent Mayoral decision in relation to a planning application based on the proposed scheme. These comments also do not necessarily represent the views of the Greater London Authority.

Firstly, I would take this opportunity to thank you for taking advantage of the TfL pre-application service, the aim of which is to ensure that development is successful in transport terms and in accordance with relevant London Plan policies. This letter follows the recent pre-application meeting held to discuss the development proposals

A site visit was undertaken by Melvyn Dresner on the 16 January 2013 and on 21 December 2012 the pre-planning application meeting was held with TfL and borough officers regarding the development proposals.

The meeting was attended by the following:

-	Anne Crane	TfL - Borough Planning
-	Melvyn Dresner	TfL - Borough Planning
-	Liam Henderson	TfL – Docklands Light Railway
-	Ian Hyde	LB Newham
	Emma Grayson	Vectos
	Robert Roughan	Vectos
	Charis Taylor	London City Airport
	Nick Hollands	London City Airport
	Nicole Harris	TfL Taxis and Private Hire
	Jane Commons	TfL London River Services
	Andy Meloy	TfL Bus Operations
	Peter Orchard	TfL Bus Operations

General
The Transport Assessment (TA) report to be produced by the applicant as part of the submission should be in line with TfL's 'Transport Assessment Best Practice Guidance' document (2010):

http://www.tfl.gov.uk/assets/downloads/businessandpartners/transport-assessment-best-practice-guidance.pdf

Should this application be granted planning permission, the developer and its representatives are reminded that this does not discharge the requirements under the Traffic Management Act 2004. Formal notifications and approval may be needed for both the permanent highway scheme and any temporary highway works required during the construction phase of the development.

The current access to the airport is via Connaught Bridge and Hartman Road. Connaught Bridge forms part of the A1020 and the Strategic Road Network (SRN) for which TfL has oversight with London Borough of Newham as highway authority. In addition to continued use of this access it is proposed to reopen the access onto Woolwich Manor Way, which forms part of the Transport for London Road Network (TLRN), which TfL is the highway authority. The re-opening of the access onto the TLRN is likely to require both permanent and temporary works. These works to the TLRN would be subject to an agreement under Section 278 of the Highways Act 1980 with TfL. It is envisaged that buses will continue to operate as currently via Connaught Bridge and Hartman Road rather than use the new access albeit that the design of the reopened access should take account of the future possible use of the Woolwich Manor Way access by buses.

Overview of development proposals

The Transport Scoping Note (12 December 2012) states the Eastern Stand Development (ESD) project forms part of planned on-going improvements at the Airport that will enhance operational efficiency, passenger service and capacity in accordance with current and future customer, airline and regulatory requirements. Such improvements aim to be broadly consistent with the long term plans, which were described in London City Airport's 2006 Master Plan, which provides an indication of London City Airport's long term plans, without planning policy status.

The current proposal includes new and upgraded aircraft stands (7 new stands and 2 upgraded ones), an extension to the taxi-lane running adjacent to the runway, a new arrivals building, reconfigured forecourt area, hotel (in outline) and related infrastructure works including re-opening of the old dock access road onto A117 Woolwich Manor Way, a new multi-storey car park.

The consultants review of facilities provided at the forecourt are as follows (with additional data on bus stands and stops added by TfL):

Facility	Existing forecourt	Proposed forecourt
Number of private car drop-off / pick-up spaces	8	48
Number of taxi pick-up spaces	1	7
Number of taxi queuing spaces in forecourt	11	13
Number of taxi queue spaces out of forecourt	143	400
Number of taxi drop-off spaces	8	10
Number of bus stops	3	2
Number of bus stands	1	1

There are three bus stops (for routes 473, 474) and a bus stand within the forecourt area. This includes a bus lay by on Hartman Road for alighting passengers and two bus stops for boarding passengers. The boarding stops provide points for common destinations. One of the boarding stops has bus cage markings whilst the other doesn't, which can cause enforcement and operational problems. The bus stand is marked as a bus stop. There are other bus stops on Newlands Road and Hartman

Road that should be assessed as they maybe use by staff at the airport. The TA should include a plan that provides the detail measurements of the existing and proposed forecourt facilities. There is a need for a bus shelter for all new or relocated stops. The stops should be designed in accord with TfL Bus Stop Accessibility Guidance, which recommends a minimum bus stop length of 37 metres, further information can be found here:
http://www.tfl.gov.uk/businessandpartners/busoperators/1236.aspx

Surface Transport implications
This is TfL's understanding of the transport implications are set below. In this case, when we refer to surface transport this includes Docklands Light Railway, bus, river, highway access including private car, taxi, private hire, coach etc. There will be increase in passenger and staff numbers at the airport within the existing cap set for annual movement of aircraft. On the basis of the data submitted for the pre application meeting there were 60,000 aircraft movements (in 2010) and this anticipated to increase to 88,000 in 2023 without the proposals and with the proposals this is set to increase to 107,000. Over the same period annual passenger numbers are expected to increase from 2.28 million per annum to 4.4 million per annum without development, whilst with development this would increase to 5.9 million passengers per annum. **Therefore, compared to the 2010 base, passenger numbers will be increase by 62% without development and 114% with the proposed East Stand Development.**

It also understood that due to the business nature of the airport that the proposed changes will allow more flights per hour than currently and larger aircraft. The TA will need to confirm these numbers and explain and justify to what extent TfL can rely upon these projections in planning the development of surface transport connections to the airport in the future with and without the impact of the development proposals.

The development will have implications for the Docklands Light Railway (DLR), bus and taxi operations and there will be a need to provide coach provision for the hotel as well as for the airport itself. The TA will need to demonstrate how public transport use will be encouraged and provide information with justification on future patronage arising from the development proposal.

The proposal may also increase road traffic and this has implications for the operation of the TLRN and SRN. It is proposed that this is assessed within the TA. TfL has developed a strategic model for East London and local models for the Royal Docks area. It may be necessary that the implications of these proposals are tested within local network and strategic highway models. The TA should provide information on the wider strategic impact. The applicant should be aware of the East London River Crossings and the proposals to relocate Woolwich Ferry to Gallions Reach and the provision of the Silvertown Link will have implications for local traffic levels, more details below.

The Scoping Note indicates there will be increased passengers compared to current usage with and without the proposed changes. For TfL to assess demand for additional capacity and impact we need to assess the impact with and without development against a base year for DLR, buses and the highway assessments. There is a judgement to be made and justified with evidence to assess how much predicted passenger could be accommodated without the proposed improvements to the airport and the surface transport network that serves the airport i.e. there is a risk of overestimating trend growth and underestimating growth due to Eastern Stand measures.

TfL note that the airport is busier during the week than weekends and that average day variation can be considerable. The peak assessment may need to vary per mode and should be the new peak once development trips are added to base data that is assessed. The exception would be for highway assessment when the current highway peak should be used for ease of analysis and consistency with other assessments in the area.

DLR

You propose that the impact of the development to be put forward in the planning application will be considered on 'the Airport route' of the DLR network. This comprises the section between Canning Town and London City Airport You have stated that an assessment of the capacity of the DLR Airport route will be conducted for the 'with and without' Development Scenarios:

- 2011: Baseline Year;
- 2021: Movement Limit Year for the completed Development; and
- 2023: Optimisation of the ESD Development and other associated improvements at the Airport.

TfL accepts these assessment scenarios are reasonable. However, this should also include the DLR from London City Airport to Woolwich.

TfL is concerned that the full impact on each mode is assessed based on realistic assessment of planned capacity rather than upon commercial assumptions of predicted patronage. Furthermore it should be based on the policy objective of encouraging increased public transport use. For DLR to provide additional capacity would require significant capital investment and a target of 60% (for passengers) is envisaged for assessment purposes. Therefore, if the assumed demand is lower than the implied proposed capacity then TfL would seek a cap on hourly passenger movements to enable DLR to minimise the risk of capacity problems on the DLR.

TfL were given forecasts in 2006 for airport usage and patronage that were significantly different than now being predicted. Forecasting is not an exact science and it is important to assess likely impact and the variance around that impact for public transport patronage. TfL would expect to see a high and low figure for overall passenger numbers and likely mode split for DLR passengers based on positive assumption. TfL can supply data to assist with this assessment.

There are two other sets of assumptions that TfL would challenge, unless some proof is actually provided to back them up:

- The airline policy of limiting flights to 85% capacity; and
- the assumptions that only some airlines will buy larger aeroplanes.

These are both commercial predictions rather than observations and there is no guarantee that an airline will not sell out its flights in future. Evidence from other similar airports or other sources would be useful.

With regard to the road access at Woolwich Manor Way, TfL would highlight again that King George V DLR station does not have a step-free entrance onto the Airport's land so if this station was to be included in the TA a commitment would be expected from the Airport to install a lift at this location to allow step-free access in the future from here.

Regarding the proposed mode splits; we recognise that since most staff work shifts the DLR operating hours may not support their working pattern so a low DLR mode share for staff would be expected though measures to encourage staff to use DLR would be welcome. However, for passengers (as discussed in the meeting) it is only the very first few flights of the day that cannot be reached by rail and all arrivals can be served by DLR; therefore, the mode splits shown in Table 4.6 for 2021 are not particularly hopeful of any mode shift to rail. Rather than state in paragraph 4.32 that it will be difficult to achieve a 60% DLR mode share, the Airport should implement policies to promote the use of rail and set a more challenging target in accordance with sustainable transport policies.

Forecast passenger numbers are being estimated by York Aviation outside the TA. This work should be supplied to TfL for scrutiny and comments from TfL before this is confirmed as a reasonable assessment of likely person trips. TfL will expect the assumptions about overall passenger numbers should be supported by evidence and observations. Similarly the arrival and departure patterns of passengers should be supported by evidence and be based on appropriate statistical analysis e.g. mode average rather mean average for passenger arrival time maybe appropriate.

Bus operations

TfL will seek to retain the two existing and separate bus stops that serve the Airport with at least the same kerb length. TfL would also like to retain the ability to re-use the existing bus stand, which is likely to be needed for future operational and network needs. As of writing, it is not in regular use though it is used occasionally and forms part of the current resilience planning for the bus network. TfL expect that the nature of the bus network will change due to demand elsewhere on the network with the Airport development playing a role to help facilitate improved bus links locally and provide local employment and regeneration.

TfL will expect the applicant to demonstrate that any changes to stops meets with TfL Bus Stop Accessibility Guidance and specific technical advice TfL may provide when consulted on a specific design proposal. We expect that public transport use in general and bus use in particular will be promoted by the Airport to both staff and passengers. We expect that bus use will be increasingly important for staff travel and this may require changes to the bus network. TfL will form a view once we have bus passenger forecast over a typical day related to shift patterns including hourly demand. TfL would also like information on the travel-to-work area covered by the Airport. TfL expect the TA to investigate increased use of buses.

To encourage bus use TfL expect the TA will consider three elements:

1. active promotion through the Travel Plan to both passengers and staff and recruiting staff within the local area and along PT routes;
2. provision of bus shelters at both bus stops and other supporting infrastructure/ accessibility measures; and
3. changes to local bus services and frequencies.

Point 1 is primary in the control of the applicant and TfL would expect to this be developed further in the submission. Points 2 and 3 will be influenced by factors on the wider network including committed development and the Crossrail station at Custom House requiring changes to local bus services as well as changes arising from the development proposal. At this stage, it is unlikely that TfL would seek to extend bus services beyond the forecourt area or runs route onto Woolwich Manor Way. However, pedestrian links to the forecourt area from other parts of the site such as the hotel need to be considered as well as links to the existing residential area to the south. In addition TfL will seek a design for the reopened Woolwich Manor Way access to be suitable for future use by buses as this maybe desirable in the longer term

TfL have a specific interest in how the forecourt area will be managed in the future and its legibility from a drivers' perspective. The mechanism to keep bus stops and bus routes free of obstruction should be clearly set out in the TA and would likely require a legal agreement with TfL. Bus drivers may need access to facilities in the future, particularly if TfL decide to stand buses at the airport for network or operational reasons to enable better meeting of the demand from passengers and staff. The TA should provide sufficient information to allow TfL to assess the layout of the forecourt from driver's viewpoint. Bus stops in the wider area need to be assessed including pedestrian routes to them.

Finally, as part of the offsite highway modelling the impact on bus journey times should be assessed, particularly with regards to committed development.

Taxis/ Private Hire

Taxis and Private Hire Vehicles (PHV's) provide a vital service at London City Airport and we would support improvements to taxi and private hire facilities and extension of the current capacity of the taxi rank. We provide more detailed advice in a note appended to this letter (more details on the other modes can be provided on request. The key points are as follows:

- TfL welcomes the proposed increase in space for taxi operations. However, the TA will need to demonstrate that these are practicable (double ranking, remote feeder park, multiple loading). This will require contingency planning. The increase should not be at the cost of making appropriate provision for other modes – especially bus and DLR, cycling and walking.
- The demand for taxi space should be assessed including how this may vary over a typical day and over shorter periods of time to help understand the dynamics of the proposed taxi facilities and amount of space being suggested.
- There needs to be clear visibility of the taxi rank for arriving passengers exiting the terminal including a walking route that allows access to the nearside of the site by wheelchair users and those with visual impairments.
- The location of the taxi rank needs to be considered carefully from a passenger's point of view as do the queuing arrangements.
- There needs to a clear distinction between the area for taxi pick up and private hire.
- The Taxi rank needs to be operation during Airport operational hours and beyond. The rank should include a shelter. TfL can provide the shelter if the Airport makes a financial contribution through the s106 agreement. However, details will need to be agreed with the Taxi trade.
- A Taxi management plan will need to be developed and this may include provision for taxi marshals including how these marshals could be funded.

The detailed design of the taxi rank will need to be worked out in consultation with the taxi trade associations and local trade representatives and there will therefore need to be a close collaboration between TfL Taxi and Private Hire and the consultants to ensure that the final design is sufficient for operational purposes.

River services

Currently, river buses services do operate on this part of the Thames but do not serve the area near City Airport. The nearest option for river services in the future would be at the proposed Minoco Wharf pier or if the Woolwich Ferry relocates to Gallions Reach, river services could stop at the existing pier. The local operator is as follows:

Sean Collins, Managing Director
Thames Clippers
Phone: 0207 001 2200
Email: sean.collins@thamesclippers.com

It is suggested that options are discussed with the operator. You would also need to consider in the TA how passengers would transfer from river services to the Airport from the nearest pier.

TfL would support the promotion of river access to the site. The development of passenger services within the docks could also considered in the TA. However, it is recognised that a service along the river and/or through the docks may not be feasible.

However, during construction use of the by water should be more viable especially for the movement of bulk material and abnormal loads.

Highway Impact

The data collection that is set out in the scoping note is broadly acceptable. TfL has supplied additional data from our VISSIM model for this area. TfL does not require at this stage that the proposed re-opened junction or other junctions be assessed in this model. However, it is available to be used if TfL identifies any wider network concerns due to this development proposal and TfL may ask for this work to be completed. We would want a comparison of link flows (and performance) between the local models and TfL area models, which include committed development listed in the scoping note plus several other sites. It should be also used to assess relative impact on each approach to Gallions Roundabout or compare to your more recent data. The VISSIM model update was most recently updated in 2012 for a residential scheme on Royal Albert Basin site and before that in 2010 in relation to Silvertown Quays. This data has been forwarded to you already.

Though TfL is asking for checks between your proposed junction models and TfL's existing VISSIM model, you need to demonstrate base validation is in line with TfL Modelling Guidelines for your stand alone junction models or local network models. For the Woolwich Manor Road junction a standalone assessment is acceptable. For junctions on Hartman Road, Connaught Road, and Connaught Bridge the interaction between junctions should be considered and modelling methodology agreed with the Borough.

The factors that influence peak vehicle generation are the following:

- the amount of car parking – TfL encourages restraint;
- mode split for taxi and private hire/ other private car use – TfL encourages public transport, cycling and walking – and would suggest interventions to aid these modes.

- annual/ daily and hourly pattern of arrivals and departures – TfL will review the evidence supplied with the TA; and
- route choice to the airport – this should be aided by the proposed re-opening of the Woolwich Manor Way access.

It is suggested that if the reopened access to the airport is included in the application that a review of highway signage is undertaken and a way finding strategy is proposed within the TA. This will be primarily focussed on vehicle routing and construction traffic. Pedestrians and cyclists may use the new access and may also be aided by new signage.

The scoping note states that provision of the reopened access improves the Airport's resilience, as well as shortening the distance travelled on the local highway network for journeys to / from the east. In particular, it will reduce the number of LCY related vehicles using the A1020 Royal Albert Way. TfL agrees this is a reasonable assumption though we will consider the impact of these proposals once an assignment of traffic to the airport has been provide with supporting evidence.

TfL suggest the accident analysis includes the link south of Gallions Roundabout to Pier Road. TfL has provided the following information for reference only.

- Silvertown Quays (SQ) Transport Assessment (2010) prepared by Halcrow including Local Cycle Review and PERS audit
- VISSIM models prepared by AECOM to take account of SQ as well as supporting review
- GEQ TA (2012), Trip Assessment and VISSIM models prepared by JMP – I don't have the updated GEQ VISSIM models themselves. If you need access to these models please let me know, though it may be better if you got their changes direct from JMP.
-

The proposal for East London River Crossings (Gallions Ferry and Silvertown Link) will change local traffic patterns in time scales relevant to the TA. TfL may be able to supply data to help you assess this aspect or review your assessment against TfL modelling conclusions.

A new potential ferry service is proposed between Gallions Reach and Thamesmead, which could open in 2017 and replace the existing ferry service at Woolwich. One potential effect of moving the ferry service to Gallions Reach is a possible reduction in traffic flows on the roads to the south of Gallions Roundabout, including Woolwich Manor Way. However, further analysis is currently being undertaken by TfL to understand the full range of traffic implications associated with a new ferry service at Gallions Reach, including the likely impact on Gallions roundabout itself and on the wider highway network in east London. Specific data and results will be made available following the completion of this work, details of the public consultation can be found here: https://consultations.tfl.gov.uk/rivercrossings/consultation.

Cycling/ walking

The nearest part of the Cycle SuperHighway is along the A13. The Thames Path and the Capital Ring are the nearest part of the Strategic Walking Network. The Capital Ring passes through your proposed reopened junction and along Woolwich Manor Way and along the edge of Royal Albert Dock.

It is noted that for staff that walking and cycling to airport has increased over the last few years, which is a trend TfL supports. TfL has asked for developers in the area to undertake Pedestrian Environmental and Review System (PERS) audits of pedestrian routes in this area; TfL has supplied the Silvertown Quays PERS and suggests reviewing the Minoco Wharf TA with regards local junction works, cycle and walking measures and audits. It recommended that as part of the TA these audits are reviewed and potentially extended.

TfL recommends that pedestrian and cycle routes between the airport forecourt and the surrounding Strategic Road Network and residential areas are reviewed. The aim is to identify barriers to staff and others accessing the airport by cycle and foot. This work could be enhanced by interviewing staff to identify barriers to walking and cycling in this area. It would be most useful to interview those who currently walk or cycle to the airport and/or those who live within less than 1 kilometre for walkers (and 5 kilometres for cyclists) who choose to drive.

TfL is developing proposals to improve cycle facilities on Woolwich Manor Way within the vicinity of the re-opened access. TfL may request a contribution to aid delivery of these measures. It is also noted that LB Newham wishes to encourage cycling in the local area which includes improvements along North Woolwich Road and improved pedestrian wayfinding whether these measures are relevant to employees, passengers and others accessing the airport should be assessed in the TA.
TfL would expect the TA to include a draft Delivery and Servicing Plan for the airport. The TA should provide detail about current delivery and servicing arrangements, proposed changes and how this accords with best practice published by TfL and others, please see this link:
http://www.tfl.gov.uk/microsites/freight/delivery_servicing_plans.aspx
and here: http://www.fors-online.org.uk/

Travel Plan
TfL would expect an updated Travel Plan to be provided. This should set measures to encourage mode shift from car use to other modes. The TA should set out targets and measures. There should be baseline mode of travel assessment as well as targets for 1 year, 3 years and 5 years. There need to be measures to discourage car use as well as positive measures to encourage public transport use, walking and cycling.

TfL guidance on Travel Plan can be found here: http://www.lscp.org.uk/newwaytoplan/

Phasing and construction
A Construction Logistics Plan (CLP) will be required, and while this should be secured by condition or S106, the TA should still contain some information on how construction impacts are intended to be dealt with, in order to minimise the potential impact on the surrounding highway network. A CLP should include the cumulative impacts of construction traffic, likely construction trips generated, and mitigation proposed such as use of water especially to move bulky and abnormal loads. Details should include; site access arrangements, booking systems, construction phasing, vehicular routes and scope for load consolidation or modal shift to water use in order to reduce the total number of road trips generated.

Specific TfL advice can be found here:
http://www.tfl.gov.uk/microsites/freight/construction_logistics_plans.aspx

S106 Contributions and Community Infrastructure Levy (CIL)
TfL would seek provisions within a S.106 agreement to both support projected demand for DLR and bus use arising

Once the Transport Assessment has been further advanced and has assessed the likely impacts of the proposals on the transport network, other detailed mitigation measures can then be further discussed and subsequently agreed with TfL and LB Newham.

In accordance with Policy 8.3 of the London Plan, the Mayor of London has introduced a London-wide Community Infrastructure Levy (CIL) that is paid by most new development in Greater London. Three charging bands with variable rates based on the per square metre net increase of floor space apply, in LB Newham the charge is £20 per square metre of development (indexed). More details are available via the GLA website www.london.gov.uk.

We would expect a clear statement, in the form of 'heads of terms', showing the transport related s106 expected to be paid and for what, to be included in the application material.

Yours sincerely

Alex Williams
Director of Borough Planning
Email: Alexwilliams@tfl.gov.uk
Direct Line: 020 7126 4284

Appendix A - Taxis/ Private Hire

Taxis and Private Hire Vehicles (PHVs) provide a vital service at London City Airport and we would support improvements to taxi and private hire facilities and extension of the current spaces of the taxi rank.

The taxi rank that is currently at London City Airport works relatively well and has a capacity for approximately 140 taxis. The improvements planned for the airport would lead to an increase in taxi passengers and we therefore welcome the extension of the taxi rank to 400 spaces. However, this would be provided through a feeder park located to the east on Hartman Road. We would need to see the detailed design for this taxi feeder and the route from the feeder park to the main rank to be able to assess it. We would also need to see detailed proposals of how the taxis will feed from the feeder rank to the main rank. It looks like there will be no direct sight line from the feeder rank to the main rank and therefore some sort of call up feeder system such as monitors will be required. We would need more details about how this would work and who would be maintaining the system. We have call up systems elsewhere which can break down from time to time and therefore an emergency plan would be needed in case this happens as the rank will not be operational if it breaks down and there is no contingency in place. We would also need confirmation of what other facilities would be at the feeder rank such as toilets for the drivers and if these are provided, who will be maintaining them.

All taxis are fitted with wheelchair ramps and other accessibility features which can only be deployed on the nearside so the taxi rank will need to be situated on the near side as it is currently to allow for wheelchair access. There also needs to be a clear walking route from the exit of the airport to the taxi rank for disabled customers, customers with heavy luggage, etc.

The plans show the proposed taxi rank using double ranking of taxis. This can work and works at other locations, but we would need to see more detailed designs to be able to assess this. There seems to be an area for car hire very close to the taxi rank and if the taxi rank gets busy this would likely be difficult to access for people hiring a car and there may also be issues with them being able to get out of this area, so this would not be advisable.

The taxi rank would need to operate during airport and beyond as it currently does and would need to have a shelter and a taxi pole to protect the customers waiting for a taxi. The design of the taxi shelter should be discussed directly with Taxi and Private Hire to ensure that it is adequate.

There is no detailed design of the queuing system for passengers waiting at the proposed taxi rank and we would need to see a more detailed design of the queuing system to be able to assess it. There are 7 spaces proposed that can be used for pick up on the station forecourt and the design would need to allow multiple loading at these 7 spaces. There would also need to be a clear exit point at the side for drivers to move away once they have picked up their passengers to avoid possible hold ups by taxis in front of them taking longer to load. The 7 bays would need to be clearly marked out with numbers both on the floor and on poles next to the rank and suitable signs to customers informing them to move to the first available taxi. During peak hours elsewhere stations, we have taxi marshals directing customers to their taxis and directing drivers to move forward. This ensures that the flow of both passengers and drivers at busy times is maintained and passengers board quickly and the rank maintains a steady flow of available taxis. We would not have the funding for this but further discussions could be had with the airport on whether funding for a marshal at peak times would be available.

The current taxi rank is situated at the exit of the airports arrivals terminal and this is an ideal location for the taxi rank as it needs to be located in a prominent position for passengers to see as they exit the building. The proposed taxi rank is located slightly further afield to the current taxi rank and my concern is that this would be too far from the exit and there would not be a clear sight line to the head of the rank as customers exit the station. We would therefore need to see a clear pedestrian route from the arrivals to the taxi rank in order to be able to properly assess if this would be acceptable as judging from the current plans it does not look like the taxi rank would be immediately apparent for customers leaving the airport. It also looks like it may be over shadowed slightly by the other pick up/drop off points and the taxi rank needs to be one of the first things that customers see upon exiting the terminal. The drop off point for taxis looks as though it has a much clearer sight line for passengers exiting the arrivals concourse, although it is slightly further back from the doors than the current one. This was discussed as being necessary from an anti terrorist perspective but if it could be moved further forward to the doors then this would be preferable. It may be that we would need to tweak the design so that some taxis are able to rank in this drop off area as the sight lines are better from the exit of the building.

The area where taxis currently drop off caters for all vehicles including private hire vehicles (PHV), taxis and private vehicles. The suggestion on the plans is that the new drop off area is provided for taxis only. This may be difficult to enforce It is essential to ensure that PHVs do not use the area to ‘illegally rank up’ outside the airport arrivals terminal as PHVs are not allowed to use taxi ranks and must be pre booked. A taxi management plan in terms of how this and the taxi rank will be managed would be useful so that we can ensure that we are confident of the plans that will be put in place. Additionally, this is proposed to be for 10 taxis. Could the consultants confirm how they arrived at this figure to ensure it will provide enough capacity? The dropping off area for taxis will also need to be located on the nearside for wheelchair access and with a clear walking route from the drop off area to the departures terminal.

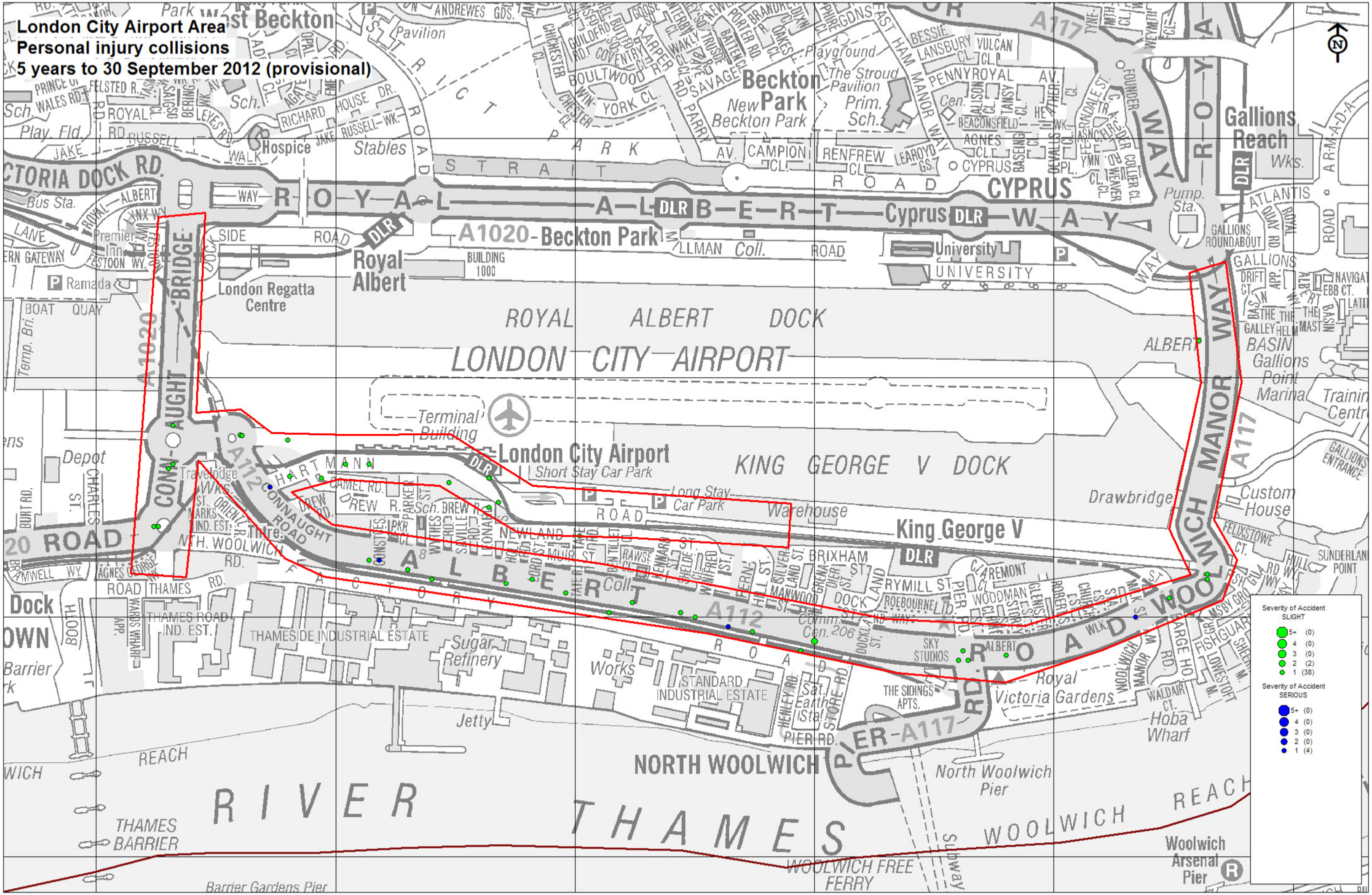
The proposed hotel itself may require a standalone taxi rank and PHV facilities and this would need to be discussed further with TfL Taxi and Private Hire.

PHVs also provide a vital service but due to their licensing conditions they have different needs to taxis. The area for PHV drop off and pick up also needs to include a clear, short and easy pedestrian route for disabled passengers and passengers with luggage, etc. PHVs are not allowed to pick up passengers from a taxi rank and must be pre-booked. The area for picking up and setting down for PHVs must therefore be clearly distinguishable from the taxi rank so that waiting cars do not give the impression to passengers less familiar with these laws that the PHVs are ‘ranking up’ and can accept a hiring without being pre booked. This will help to guard against illegal touting which takes place at various locations in London.

The detailed design of the taxi rank and will need to be worked out in consultation with the taxi trade associations and local trade representatives and there will therefore need to be a close collaboration between TfL Taxi and Private Hire and the consultants to ensure that the final design is sufficient for operational purposes.

APPENDIX B

Personal Injury Accident Data



Scale : 1:5000

Created: 22-JAN-2013

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

Summary of Accidents Selected

Site Reference and Description (zero accident counts shown in bold)	Date Period	Accidents
SC01 GIS AREA London City Airport Area (P)	60 MTS TO SEP-2012	44

The description of how the accident occurred and the contributory factors are the reporting officer's opinion at the time of reporting and may not be the result of extensive investigation

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) — 60 MTS TO SEP-2012 SORTED BY DATE

	1	2	3	4	5	6	7	8	9	10
Accident Reference	0107KF68059	0107KF68055	0107KF68581	0107KF68658	0108KF69651	0108KF69912	0108KF74127	0108KF73049	0108KF73473	0108KF73080
Day	SATURDAY	TUESDAY	TUESDAY	THURSDAY	FRIDAY	FRIDAY	MONDAY	WEDNESDAY	THURSDAY	MONDAY
Date	17/11/2007	27/11/2007	04/12/2007	27/12/2007	08/02/2008	08/02/2008	26/05/2008	04/06/2008	12/06/2008	16/06/2008
Time	09:30	19:09	19:36	14:50	21:25	22:02	15:00	21:00	15:18	22:49
Light Conditions	LIGHT	DARK	DARK	LIGHT	DARK	LIGHT	LIGHT	LIGHT	LIGHT	DARK
Road Surface	WET	WET	DRY	DRY	DRY	DRY	DRY	DRY	WET	DRY
Severity	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT
Conflict										
Pedestrian Location								0	0	
Contributory Factors (* denotes pre 2005)	405 V001 B 408 V002 B	503 V001 A 605 V001 A	109 V001 B	602 V001 A 308 V002 A 604 V002 A 603 V002 A	405 V002 A 406 V002 A 602 V002 B	405 V002 B	405 V002 A 406 V002 A 308 V002 A	601 V001 A	805 C001 A 802 C001 A 405 V001 A	501 V001 A 602 V001 A
Easting/Northing	542720 180010	541660 180320	541660 180400	541800 180380	542620 180030	543000 179950	543400 179920	542970 179930	542150 180100	542750 180000

Pedestrian	10	23 %
Wet	9	20 %
Dark	13	30 %

Site Diagram

N

Severity / Months To	12 09/2008	12 09/2009	12 09/2010	12 09/2011	12 09/2012	Total	Pct
Fatal	0	0	0	0	0	**0**	**0.0 %**
Serious	1	0	1	2	0	**4**	**9.1 %**
Slight	13	6	8	10	3	**40**	**90.9 %**
Total	**14**	**6**	**9**	**12**	**3**	**44**	
Pct	**31.8 %**	**13.6 %**	**20.5 %**	**27.3 %**	**6.8 %**		

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) — 60 MTS TO SEP-2012 SORTED BY DATE

	11	12	13	14	15	16	17	18	19	20
Accident Reference	0108KF74166	0108KF74727	0108KF74783	0108KF75155	0108KF75853	0108KF75830	0109KF60074	0109KF60328	0109KF60404	0109KF60511
Day	SUNDAY	THURSDAY	FRIDAY	SUNDAY	TUESDAY	WEDNESDAY	SUNDAY	FRIDAY	SUNDAY	MONDAY
Date	03/08/2008	11/09/2008	19/09/2008	28/09/2008	04/11/2008	19/11/2008	08/03/2009	19/06/2009	19/07/2009	07/09/2009
Time	17:44	07:15	18:19	18:27	15:30	06:21	17:01	14:10	17:15	06:45
Light Conditions	LIGHT	LIGHT	LIGHT	LIGHT	LIGHT	DARK	LIGHT	LIGHT	LIGHT	LIGHT
Road Surface	WET	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
Severity	SLIGHT	SLIGHT	SLIGHT	SERIOUS	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT
Conflict										
Pedestrian Location				0						
Contributory Factors (* denotes pre 2005)	307 V002 B 408 V001 B 308 V002 B 406 V002 B	602 V002 B 408 V001 A 308 V002 B 607 V001 A	405 V001 B 302 V001 B	605 V001 B 802 C001 A	405 V001 A 406 V001 A	405 V002 A	405 V003 A 406 V003 A 602 V003 B 409 V002 A	302 V001 A 405 V001 A 406 V001 A 307 V002 B	602 V001 A 607 V001 A	307 V002 A 410 V002 A 602 V002 A
Easting/Northing	543000 179950	543803 180576	542340 180240	542090 180120	542570 180010	542200 180080	542320 180230	541900 180370	542070 180320	541620 180190

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) — 60 MTS TO SEP-2012 SORTED BY DATE

	21	22	23	24	25	26	27	28	29	30
Accident Reference	0109KF60727	0110KF60132	0110KF60144	0110KF60262	0110KF60321	0110TB00199	0110KF60346	0110KF60367	0110KF60399	0110KF60655
Day	SUNDAY	WEDNESDAY	MONDAY	SATURDAY	TUESDAY	TUESDAY	SUNDAY	THURSDAY	WEDNESDAY	MONDAY
Date	13/12/2009	03/03/2010	08/03/2010	08/05/2010	18/05/2010	18/05/2010	13/06/2010	24/06/2010	30/06/2010	18/10/2010
Time	00:30	11:46	16:10	16:48	18:35	15:38	15:45	10:50	18:30	13:18
Light Conditions	DARK	LIGHT	LIGHT	LIGHT	LIGHT	LIGHT	LIGHT	LIGHT	LIGHT	LIGHT
Road Surface	DRY	DRY	DRY	WET	DRY	DRY	DRY	DRY	DRY	DRY
Severity	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SERIOUS	SLIGHT	SLIGHT	SLIGHT	SERIOUS
Conflict										
Pedestrian Location	0	0								
Contributory Factors (* denotes pre 2005)	806 C001 A 803 C001 A 407 V001 B	405 V001 A 602 V001 A 710 V001 B 802 C001 B	308 V001 A	405 V002 A 406 V002 A 602 V002 B 404 V001 B	108 V001 A 108 V002 A 701 V001 A 701 V002 A	410 V001 A	407 V002 A 403 V002 A	999 C001 A	308 V002 A 406 V002 A 405 V002 A	410 V001 A 505 V001 A
Easting/Northing	543310 179930	542510 180170	541804 180379	543740 180040	541970 180290	541863 180272	542410 180080	541904 180294	543320 179910	542820 179980

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) — 60 MTS TO SEP-2012 SORTED BY DATE

	31	32	33	34	35	36	37	38	39	40
Accident Reference	0110KF60748	0110KF60798	0110KF60829	0110KF60830	0111KF60051	0111KF60077	0111KF60131	0111KF60288	0111KF60440	0111KF60503
Day	WEDNESDAY	MONDAY	WEDNESDAY	TUESDAY	THURSDAY	SATURDAY	THURSDAY	THURSDAY	WEDNESDAY	WEDNESDAY
Date	17/11/2010	29/11/2010	15/12/2010	28/12/2010	17/02/2011	05/03/2011	17/03/2011	09/06/2011	13/07/2011	07/09/2011
Time	06:55	06:50	00:50	15:24	20:20	16:30	21:14	15:03	18:33	05:30
Light Conditions	LIGHT	DARK	DARK	LIGHT	DARK	DARK	DARK	LIGHT	LIGHT	DARK
Road Surface	WET	DRY	WET	WET	DRY	DRY	DRY	DRY	DRY	DRY
Severity	SLIGHT	SLIGHT	SLIGHT	SERIOUS	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT
Conflict										
Pedestrian Location	X				0			0	0	
Contributory Factors (* denotes pre 2005)	801 C001 A 802 C001 A 808 C001 A 701 V001 A 405 V001 A	405 V002 A 602 V002 A 407 V002 A	405 V002 A 602 V002 A 307 V002 A 601 V002 B	405 V001 A 602 V001 A 302 V001 B	410 V001 A 602 V001 A	405 V002 A 602 V002 A	405 V002 A 602 V002 A 407 V002 A	407 V001 A 405 V001 A 802 C001 A	802 C001 A 808 C001 A	405 V001 A 302 V001 A 602 V001 A
Easting/Northing	542070 180120	541630 180190	542480 180050	543670 180000	542870 179970	543820 180090	543820 180080	543300 179910	542020 180320	542236 180281

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) — 60 MTS TO SEP-2012 SORTED BY DATE

	41	42	43	44
Accident Reference	0111KF60513	0112KF60371	0112KF60360	0112KF60558
Day	SATURDAY	TUESDAY	FRIDAY	SATURDAY
Date	24/09/2011	03/07/2012	06/07/2012	29/09/2012
Time	12:55	12:10	09:48	03:15
Light Conditions	LIGHT	LIGHT	LIGHT	DARK
Road Surface	DRY	DRY	WET	DRY
Severity	SLIGHT	SLIGHT	SLIGHT	SLIGHT
Conflict				
Pedestrian Location	0			
Contributory Factors (* denotes pre 2005)	405 V001 A 602 V001 A 802 C001 A 808 C001 A	406 V002 B 408 V001 A	405 V002 B 406 V002 B 410 V002 B	602 V001 B 603 V001 B
Easting/Northing	542356 180070	542320 180290	543670 180000	541650 180310

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

Summary of Accidents Selected

Site Reference and Description (zero accident counts shown in bold)	Date Period	Accidents
SC01 GIS AREA London City Airport Area (P)	60 MTS TO SEP-2012	44

The description of how the accident occurred and the contributory factors are the reporting officer's opinion at the time of reporting and may not be the result of extensive investigation

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) — 60 MTS TO SEP-2012 SORTED BY DATE

1 0107KF68059 SAT 17/11/07 09:30 LIGHT ALBERT ROAD 43M W J/W WINIFRED AVENUE 17 LINK 7-12 542720 / 180010
POLICE - AT SCENE ROAD-WET WEATHER-UNKNOWN SINGLE CWY NO JUN IN 20M NO XING FACILITY IN 50M
V1 BEGAN PULL AWAY FROM THE VERGE AND PROCEEDED TO CARRY OUT A U TURN. DUE TO PARKED CARS AND THE WET SUREFACE OF THE ROAD FROM THE RAIN V2 WAS UNABLE TO STOP IN TIME.

CASUALTY 001 (001) (55 Yrs - F E162) SLIGHT DRIVER/RIDER
CASUALTY 002 (002) (21 Yrs - M E161) SLIGHT DRIVER/RIDER

VEHICLE 001 (000) CAR (55 Yrs - F E162) GOING AHEAD OTHER W TO E
BT - NOT REQUESTED O/S HIT FIRST

VEHICLE 002 (001) CAR (21 Yrs - M E161) GOING AHEAD OTHER W TO E
BT - NEGATIVE SKIDDED FRONT HIT FIRST

V001 B 405 (FAILED TO LOOK PROPERLY) V002 B 408 (SUDDEN BRAKING)

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2 0107KF68055 TUE 27/11/07 19:09 DARK CONNAUGHT BRIDGE 65M S J/W HART ROAD 17 LINK 3-6 541660 / 180320
POLICE - AT SCENE ROAD-WET WEATHER-FINE DUAL CWY NO JUN IN 20M NO XING FACILITY IN 50M
DRIVER OF VEHICLE 1 FELL ASLEEP AT THE WHEEL AND LOST CONTROL, VEHICLE 1 SWANG INTO N/S LANE AND COLLIDED WITH VEHICLE 2.

CASUALTY 001 (001) (27 Yrs - F E162) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) CAR (27 Yrs - F E162) GOING AHEAD OTHER N TO S
BT - NEGATIVE N/S HIT FIRST

VEHICLE 002 (000) BUS/COACH (42 Yrs - M RM53) GOING AHEAD OTHER N TO S JNY PART OF WORK
BT - NEGATIVE O/S HIT FIRST

V001 A 503 (FATIGUE) V001 A 605 (INEXPERIENCED OR LEARNER DRIVER/RIDER)

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3 0107KF68581 TUE 04/12/07 19:36 DARK CONNAUGHT BRIDGE J/W AIRPORT ROUNDABOUT 17 NODE 6 541660 / 180400
POLICE - AT SCENE ROAD-DRY WEATHER-UNKNOWN SINGLE CWY ROUNDABOUT GIVE WAY/UNCONT NO XING FACILITY IN 50M
OTHER OBJECT IN CWY
VEHICLE HIT AN OBJECT ON THE ROAD CAUSING THE VEHICLE TO LOSE CONTROL, HE THEN SLID ALONG THE ROAD.

CASUALTY 001 (001) (29 Yrs - M E162) SLIGHT DRIVER/RIDER

VEHICLE 001 (000) M/C > 500CC (29 Yrs - M E162) GOING AHEAD OTHER N TO S
BT - NOT REQUESTED SKIDDED DID NOT IMPACT
HIT OTH OBJECT

V001 B 109 (ANIMAL OR OBJECT IN CARRIAGEWAY)

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) 60 MTS TO SEP-2012 SORTED BY DATE

4 0107KF68658 THU 27/12/07 14:50 LIGHT CONNAUGHT ROAD J/W HARTMANN ROAD 17 NODE 678 541800 / 180380
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY T/STAG JUN AUTO SIG PEDN PHASE AT ATS
DRIVER 2 WAS TRAVELLING SLOWLY AND MAY HAVE MISTAKEN HER ATS AS RED, EITHER SHE STOPPED OR SLOWED DOWN AND THE RESULT WAS THAT V1 HIT V2 FROM BEHIND.

CASUALTY 001 (002) (35 Yrs - F SE26) SLIGHT DRIVER/RIDER
CASUALTY 002 (001) (10 Yrs - M SE12) SLIGHT PASSENGER BACK SEAT

VEHICLE 001 (002) TAXI (58 Yrs - M CM22) GOING AHEAD RIGHT BEND E TO N JNY PART OF WORK ENTERING MAIN RD
BT - NEGATIVE FRONT HIT FIRST

VEHICLE 002 (000) CAR (35 Yrs - F SE26) GOING AHEAD RIGHT BEND E TO N ENTERING MAIN RD
BT - NEGATIVE BACK HIT FIRST

V001 A 602 (CARELESS/RECKLESS/IN A HURRY)
V002 A 604 (DRIVING TOO SLOW FOR CONDITIONS OR SLOW VEH (EG TRACTOR))
V002 A 308 (FOLLOWING TOO CLOSE)
V002 A 603 (NERVOUS/UNCERTAIN/ PANIC)

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5 0108KF69651 FRI 08/02/08 21:25 DARK ALBERT ROAD J/W KENNARD STREET 17 LINK 7-12 542620 / 180030
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY T/STAG JUN GIVE WAY/UNCONT NO XING FACILITY IN 50M
CARB - INJURY - RTA - 2 VEHICLES - V1 TRAVELLING WEST HIT IN REAR FARSIDE BY V2 DRIVER FTS

CASUALTY 001 (001) (53 Yrs - M IG11) SLIGHT DRIVER/RIDER
CASUALTY 002 (001) (50 Yrs - F IG11) SLIGHT PASSENGER FRONT SEAT

VEHICLE 001 (000) CAR (53 Yrs - M IG11) GOING AHEAD OTHER E TO W JCT MID
BT - NOT REQUESTED BACK HIT FIRST

VEHICLE 002 (001) OTH MOT VEH (? Yrs - U) GOING AHEAD OTHER E TO W JCT MID
BT - DRV NOT CONTACTED FRONT HIT FIRST

V002 A 405 (FAILED TO LOOK PROPERLY)
V002 B 602 (CARELESS/RECKLESS/IN A HURRY)
V002 A 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) 60 MTS TO SEP-2012 SORTED BY DATE

6 0108KF69912 FRI 08/02/08 22:02 LIGHT ALBERT ROAD E16 141M E J/W FERNHILL STREET 17 LINK 7-12 543000 / 179950
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY NO JUN IN 20M NO XING FACILITY IN 50M
V1 HIT HEAD ON BY V2 WHICH THEN FTS

CASUALTY 001 (001) (22 Yrs - M E66W) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) CAR (22 Yrs - M E66W) GOING AHEAD OTHER W TO E
BT - NEGATIVE FRONT HIT FIRST

VEHICLE 002 (001) CAR (? Yrs - U E163) GOING AHEAD OTHER E TO W
BT - DRV NOT CONTACTED FRONT HIT FIRST

V002 B 405 (FAILED TO LOOK PROPERLY)

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7 0108KF74127 MON 26/05/08 15:00 LIGHT ALBERT ROAD, LONDON 75M E J/W PIER ROAD 17 LINK 12-27 543400 / 179920
POLICE - OVER COU ROAD-DRY WEATHER-UNKNOWN SINGLE CWY NO JUN IN 20M NO XING FACILITY IN 50M
VEH1 WAS SLOWING DUE TO TRAFFIC AND WAS HIT FROM BEHIND BY VEH2

CASUALTY 001 (001) (22 Yrs - M E162) SLIGHT DRIVER/RIDER
CASUALTY 002 (001) (? Yrs - M) SLIGHT PASSENGER FRONT SEAT

VEHICLE 001 (002) CAR (22 Yrs - M E162) SLOWING OR STOPPING W TO E
BT - DRV NOT CONTACTED BACK HIT FIRST

VEHICLE 002 (001) CAR (? Yrs - M BR34) GOING AHEAD OTHER W TO E
BT - DRV NOT CONTACTED FRONT HIT FIRST

V002 A 405 (FAILED TO LOOK PROPERLY) V002 A 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)
V002 A 308 (FOLLOWING TOO CLOSE)

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8 0108KF73049 WED 04/06/08 21:00 LIGHT FACTORY ROAD E16 J/W HENELEY ROAD E16 17 CELL 542500/179500 542970 / 179930
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY T/STAG JUN GIVE WAY/UNCONT NO XING FACILITY IN 50M
V1 ENTERED CLOSE, DROVE DELIBERALTY AT PED, THEN FTS

CASUALTY 001 (001) (34 Yrs - M DA11) SLIGHT PEDESTRIAN IN ROAD - NOT CROSSING STANDING

VEHICLE 001 (000) CAR (? Yrs - M) GOING AHEAD OTHER E TO W JCT APP
BT - DRV NOT CONTACTED FRONT HIT FIRST

V001 A 601 (AGGRESSIVE DRIVING)

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) 60 MTS TO SEP-2012 SORTED BY DATE

9 0108KF73473 THU 12/06/08 15:18 LIGHT ALBERT ROAD E16 J/W FERNHILL STREET E16 17 LINK 7-12 542150 / 180100
POLICE - AT SCENE ROAD-WET WEATHER-FINE SINGLE CWY T/STAG JUN GIVE WAY/UNCONT ZEBRA
CHILD RAN IN AND OUT OF TRAFFIC, VEHICLE DIDN'T ACTUALLY HIT CHILD, CHILD FELL OVER WHILST RUNNING
CASUALTY 001 (001) (4 Yrs - M E162) SLIGHT PEDESTRIAN IN CENTRE OF CARRIAGEWAY UNKNOWN IN RD NOT CROSSING MSK
VEHICLE 001 (000) CAR (22 Yrs - F HA30) GOING AHEAD OTHER W TO E JCT APP
BT - NEGATIVE SKIDDED DID NOT IMPACT

C001 A 805 (DANGEROUS ACTION IN CARRIAGEWAY (EG PLAYING)) C001 A 802 (FAILED TO LOOK PROPERLY)
V001 A 405 (FAILED TO LOOK PROPERLY)

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10 0108KF73080 MON 16/06/08 22:49 DARK WINIFRED STREET J/W ALBERT ROAD 17 LINK 7-12 542750 / 180000
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY T/STAG JUN GIVE WAY/UNCONT NO XING FACILITY IN 50M
VEH1 APPARENTLY HAD A TYRE BLOW OUT AND STRUCK A PARKED VEHICLE. DRIVER 1 WAS ARRESTED FOR DRINK DRIVING
CASUALTY 001 (001) (50 Yrs - M DY10) SLIGHT DRIVER/RIDER
VEHICLE 001 (002) CAR (50 Yrs - M DY10) GOING AHEAD OTHER W TO E JCT APP
BT - POSITIVE FRONT HIT FIRST
LEFT CWY NEARSIDE HIT PARKED VEH HIT OTH OBJECT
VEHICLE 002 (000) CAR (32 Yrs - M E162) PARKED P TO P JCT APP
BT - NOT REQUESTED FRONT HIT FIRST

V001 A 501 (IMPAIRED BY ALCOHOL) V001 A 602 (CARELESS/RECKLESS/IN A HURRY)

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11 0108KF74166 SUN 03/08/08 17:44 LIGHT ALBERT ROAD E16 132M E J/W FERNHILL STREET 17 LINK 7-12 543000 / 179950
POLICE - OVER COU ROAD-WET RAINING SINGLE CWY NO JUN IN 20M NO XING FACILITY IN 50M
SELF REPORT - RTA - INJURY - 2 VEHICLES - ONE CAR STOPED TO TURN INTO CHURCH AND ANOTHER CAR HIT BEHIND HIT REAR OF CAR.
CASUALTY 001 (001) (42 Yrs - M E161) SLIGHT DRIVER/RIDER
CASUALTY 002 (001) (? Yrs - M E161) SLIGHT PASSENGER FRONT SEAT
VEHICLE 001 (000) CAR (42 Yrs - M E161) TURNING RIGHT E TO N
BT - NOT REQUESTED BACK HIT FIRST

VEHICLE 002 (001) CAR (? Yrs - M E162) GOING AHEAD OTHER E TO W
BT - NOT REQUESTED FRONT HIT FIRST

V002 B 307 (TRAVELLING TOO FAST FOR CONDITIONS) V001 B 408 (SUDDEN BRAKING)
V002 B 308 (FOLLOWING TOO CLOSE) V002 B 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) 60 MTS TO SEP-2012 SORTED BY DATE

12 0108KF74727 THU 11/09/08 07:15 LIGHT WOOLWICH MANOR WAY E16 297M S J/W ALBERT WAY 17 LINK 12-27 543803 / 180576
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY NO JUN IN 20M NO XING FACILITY IN 50M
V1 BORROWED AND DRIVER UNFAMILIAR WITH CAR,V2 HIT V1 AT BEHIND AS EITHER TO CLOSE OR SPEEDING

CASUALTY 001 (002) (39 Yrs - M E162) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) CAR (45 Yrs - F E162) SLOWING OR STOPPING S TO N
BT - NEGATIVE BACK HIT FIRST

VEHICLE 002 (001) CAR (39 Yrs - M E162) GOING AHEAD OTHER S TO N JNY PART OF WORK
BT - NOT PROVD (MEDCL REASONS) FRONT HIT FIRST

V002 B 602 (CARELESS/RECKLESS/IN A HURRY)
V002 B 308 (FOLLOWING TOO CLOSE)
V001 A 408 (SUDDEN BRAKING)
V001 A 607 (UNFAMILIAR WITH MODEL OF VEHICLE)

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13 0108KF74783 FRI 19/09/08 18:19 LIGHT HARTMAN ROAD E16 J/W 17 CELL 542000/180000 542340 / 180240
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY T/STAG JUN STOP SIGN NO XING FACILITY IN 50M
CARB - RTA- C AR LEAVING DROP OFF ZONE O/S MAIN TERMINAL LONDON CITY AIRPORT AT JUNCTION JUST PAST ZEBRA CROSSING COLLIDES INTO A TAXI.

CASUALTY 001 (002) (? Yrs - M RM11) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) TAXI (35 Yrs - M SW11) GOING AHEAD OTHER N TO W JCT APP
BT - NEGATIVE N/S HIT FIRST

VEHICLE 002 (001) CAR (? Yrs - M RM11) GOING AHEAD OTHER W TO E JCT MID
BT - NOT PROVD (MEDCL REASONS) FRONT HIT FIRST

V001 B 405 (FAILED TO LOOK PROPERLY)
V001 B 302 (DISOBEYED GIVE WAY OR STOP SIGN OR MARKINGS)

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14 0108KF75155 SUN 28/09/08 18:27 LIGHT CONSTANCE STREET E16 J/W CONNAUGHT ROAD E16 17 LINK 7-12 542090 / 180120
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY T/STAG JUN GIVE WAY/UNCONT NO XING FACILITY IN 50M
V1 HEADING SOUTH,PED RAN OUT FROM BETWEEN CARS & HIT V1,DRIVER GOT OUT HELPED PED THEN FTS

CASUALTY 001 (001) (7 Yrs - M E162) SERIOUS PEDESTRIAN CROSSING ROAD (NOT ON XING) W BOUND FROM DRIVERS N/SIDE MSK

VEHICLE 001 (000) CAR (18 Yrs - M NR14) GOING AHEAD OTHER N TO S JCT APP
BT - DRV NOT CONTACTED FRONT HIT FIRST

V001 B 605 (INEXPERIENCED OR LEARNER DRIVER/RIDER)
C001 A 802 (FAILED TO LOOK PROPERLY)

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) 60 MTS TO SEP-2012 SORTED BY DATE

15 0108KF75853 TUE 04/11/08 15:30 LIGHT FACTORY ROAD 406M W J/W HENLEY ROAD 17 CELL 542500/180000 542570 / 180010
POLICE - OVER COU ROAD-DRY WEATHER-FINE SINGLE CWY NO JUN IN 20M NO XING FACILITY IN 50M
V1 PULLED OUT OF AN UNMARKED EXIT OF INDUSTRIAL ESTATE AND COLLIDED WITH A PASSING BUS.

CASUALTY 001 (002) (43 Yrs - M RM16) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) GDS =< 3.5T (? Yrs - M IG11) TURNING RIGHT S TO W JNY PART OF WORK
BT - DRV NOT CONTACTED FRONT HIT FIRST

VEHICLE 002 (001) CAR (43 Yrs - M RM16) WAITING TO TURN LEFT E TO NE COMM TO/FROM WORK
BT - NOT PROVD (MEDCL REASONS) FRONT HIT FIRST

V001 A 405 (FAILED TO LOOK PROPERLY) V001 A 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)

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16 0108KF75830 WED 19/11/08 06:21 DARK FACTORY ROAD E16 787M W J/W HENLEY ROAD 17 CELL 542000/180000 542200 / 180080
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY NO JUN IN 20M NO XING FACILITY IN 50M
VEHICLE 2 APPROACHED SLOWLY APPROACHED THE ENTRANCE APPARENTLY INDICATED RIGHT. VEHICLE 2 HE TURNED RIGHT IN THE PATH OF VEHICLE 1 CAUSING THE COLLISION.

CASUALTY 001 (001) (27 Yrs - M DA17) SLIGHT DRIVER/RIDER

VEHICLE 001 (000) M/C 125-500CC (27 Yrs - M DA17) GOING AHEAD OTHER E TO W
BT - NEGATIVE FRONT HIT FIRST

VEHICLE 002 (001) CAR (60 Yrs - M DA14) TURNING RIGHT W TO E
BT - NEGATIVE N/S HIT FIRST

V002 A 405 (FAILED TO LOOK PROPERLY)

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) 60 MTS TO SEP-2012 SORTED BY DATE

17 0109KF60074 SUN 08/03/09 17:01 LIGHT NFL - HARTMANN ROAD 540M. EAST OF J/W CONNAUGHT ROAD. 17 CELL 542000/180000 542320 / 180230
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY PRIV DRIVE GIVE WAY/UNCONT NO XING FACILITY IN 50M
V3 EXITS PRIV. DRIVE & COLLIDES WITH V2 APPROACHING FROM RIGHT. V2 CROSSES CARRIAGEWAY & COLLIDES WITH ONCOMING V1.

CASUALTY 001 (001) (39 Yrs - M E7) SLIGHT DRIVER/RIDER
CASUALTY 002 (002) (64 Yrs - M TW5) SLIGHT DRIVER/RIDER
CASUALTY 003 (002) (44 Yrs - F SW5) SLIGHT PASSENGER BACK SEAT

VEHICLE 001 (002) CAR (39 Yrs - M E7) GOING AHEAD RIGHT BEND SE TO N JCT MID
BT - NEGATIVE FRONT HIT FIRST

VEHICLE 002 (003) TAXI (64 Yrs - M TW5) GOING AHEAD LEFT BEND N TO SE JNY PART OF WORK JCT MID
BT - NEGATIVE N/S HIT FIRST

VEHICLE 003 (002) CAR (37 Yrs - F NW14) TURNING RIGHT E TO N JCT MID
BT - NOT REQUESTED FRONT HIT FIRST

V003 A 405 (FAILED TO LOOK PROPERLY)
V003 A 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)
V003 B 602 (CARELESS/RECKLESS/IN A HURRY)
V002 A 409 (SWERVED)

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18 0109KF60328 FRI 19/06/09 14:10 LIGHT HARTMANN ROAD 100M. EAST OF J/W CONNAUGHT ROAD. 17 LINK 677-678 541900 / 180370
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY PRIV DRIVE STOP SIGN NO XING FACILITY IN 50M
V1 FAILS TO STOP AT JUNCTION AND COLLIDES WITH TAXI V2 APPROACHING FROM RIGHT.

CASUALTY 001 (001) (45 Yrs - M SW11) SLIGHT DRIVER/RIDER
CASUALTY 002 (002) (50 Yrs - M E14) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) CAR (45 Yrs - M SW11) TURNING RIGHT N TO W JCT MID
BT - NEGATIVE N/S HIT FIRST

VEHICLE 002 (001) TAXI (50 Yrs - M E14) GOING AHEAD OTHER W TO E JNY PART OF WORK JCT MID
BT - NEGATIVE N/S HIT FIRST

V001 A 302 (DISOBEYED GIVE WAY OR STOP SIGN OR MARKINGS)
V001 A 405 (FAILED TO LOOK PROPERLY)
V001 A 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)
V002 B 307 (TRAVELLING TOO FAST FOR CONDITIONS)

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) 60 MTS TO SEP-2012 SORTED BY DATE

19 0109KF60404 SUN 19/07/09 17:15 LIGHT NFL - HARTMANN ROAD 275M. EAST OF J/W CONNAUGHT ROAD. 17 CELL 542000/180000 542070 / 180320
POLICE - AT SCENE ROAD-DRY FINE/HIGH WINDS SINGLE CWY PRIV DRIVE GIVE WAY/UNCONT NO XING FACILITY IN 50M
V1 FAILS TO APPLY HAND BRAKE, ROLLS INTO CARRIGEWAY AND COLLIDES WITH STATIONARY TAXI V2.

CASUALTY 001 (002) (46 Yrs - F EN4) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) CAR (27 Yrs - M X-UK) REVERSING S TO N JCT MID
BT - DRV NOT CONTACTED BACK HIT FIRST

VEHICLE 002 (001) TAXI (46 Yrs - F EN4) GOING AHEAD HELD UP W TO E JNY PART OF WORK JCT MID
BT - NOT PROVD (MEDCL REASONS) O/S HIT FIRST

V001 A 602 (CARELESS/RECKLESS/IN A HURRY) V001 A 607 (UNFAMILIAR WITH MODEL OF VEHICLE)

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20 0109KF60511 MON 07/09/09 06:45 LIGHT NORTH WOOLWICH ROAD J/W CONNAUGHT BRIDGE. 17 NODE 3 541620 / 180190
POLICE - AT SCENE ROAD-DRY WEATHER-FINE ROUNDABOUT ROUNDABOUT GIVE WAY/UNCONT NO XING FACILITY IN 50M
V2 LOSES CONTROL APPROACHING R/A, COLLIDES WITH LAMP POST AND REBOUNDS INTO LORRY V1.

CASUALTY 001 (002) (27 Yrs - M E11) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) GDS => 7.5T (33 Yrs - M RM7) ARTIC TURNING RIGHT E TO N JNY PART OF WORK JCT MID
BT - NOT REQUESTED N/S HIT FIRST

VEHICLE 002 (001) CAR (27 Yrs - M E11) GOING AHEAD OTHER W TO E JCT MID
BT - NOT REQUESTED SKIDDED FRONT HIT FIRST
LEFT CWY NEARSIDE HIT KERB HIT LAMP POST

V002 A 307 (TRAVELLING TOO FAST FOR CONDITIONS) V002 A 410 (LOSS OF CONTROL)
V002 A 602 (CARELESS/RECKLESS/IN A HURRY)

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21 0109KF60727 SUN 13/12/09 00:30 DARK PIER ROAD J/W ALBERT ROAD. 17 NODE 12 543310 / 179930
POLICE - OVER COU ROAD-DRY WEATHER-FINE SINGLE CWY CROSSROADS GIVE WAY/UNCONT ZEBRA
INTOXICATED PED. SIGNALS TO APPROACHING BUS V1 AND IS HIT BY V1. V1 FTS.

CASUALTY 001 (001) (51 Yrs - M E16) SLIGHT PEDESTRIAN ON FOOTPATH - VERGE STANDING

VEHICLE 001 (000) BUS/COACH (? Yrs - U UNKN) GOING AHEAD OTHER S TO N JNY PART OF WORK JCT CLEARED
BT - DRV NOT CONTACTED N/S HIT FIRST

C001 A 806 (IMPAIRED BY ALCOHOL) C001 A 803 (FAILED TO JUDGE VEHICLE'S PATH OR SPEED)
V001 B 407 (PASSING TOO CLOSE TO CYCLIST, HORSE RIDER OR PEDESTRIAN)

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) 60 MTS TO SEP-2012 SORTED BY DATE

22 0110KF60132 WED 03/03/10 11:46 LIGHT NFL- HARTMANN ROAD 740M E OF J/W CONNAUGHT ROAD 17 CELL 542500/180000 542510 / 180170
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY NO JUN IN 20M NO XING FACILITY IN 50M
V1 REVERSED AND COLLIDED WITH PED IN ROAD

CASUALTY 001 (001) (46 Yrs - M E13) SLIGHT PEDESTRIAN CROSSING ROAD (NOT ON XING) S BOUND

VEHICLE 001 (000) TAXI (49 Yrs - M RM12) REVERSING W TO E JNY PART OF WORK
BT - NOT REQUESTED BACK HIT FIRST

V001 A 405 (FAILED TO LOOK PROPERLY) V001 A 602 (CARELESS/RECKLESS/IN A HURRY)
V001 B 710 (VISION AFFECTED - VEHICLE BLIND SPOT) C001 B 802 (FAILED TO LOOK PROPERLY)

23 0110KF60144 MON 08/03/10 16:10 LIGHT CONNAUGHT RD J/W HARTMANN RD 17 NODE 678 541804 / 180379
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY ROUNDABOUT GIVE WAY/UNCONT NO XING FACILITY IN 50M
V1 HIT THE REAR OF V2

CASUALTY 001 (002) (30 Yrs - M E16) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) CAR (26 Yrs - M UNKN) MOVING OFF E TO W JCT APP
BT - NOT REQUESTED FRONT HIT FIRST

VEHICLE 002 (001) M/C 50-125CC (30 Yrs - M E16) MOVING OFF E TO W JCT APP
BT - NOT REQUESTED BACK HIT FIRST

V001 A 308 (FOLLOWING TOO CLOSE)

24 0110KF60262 SAT 08/05/10 16:48 LIGHT ALBERT ROAD J/W BARGE HOUSE ROAD. 17 LINK 12-27 543740 / 180040
POLICE - AT SCENE ROAD-WET RAINING SINGLE CWY CROSSROADS GIVE WAY/UNCONT NO XING FACILITY IN 50M
V1 TURNING RIGHT IS HIT BY M/C V2 OVERTAKING V1.

CASUALTY 001 (002) (52 Yrs - M IG2) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) CAR (44 Yrs - M CM2) TURNING RIGHT SW TO S JNY PART OF WORK JCT MID
BT - NOT REQUESTED O/S HIT FIRST

VEHICLE 002 (001) M/C > 500CC (52 Yrs - M IG2) OVERTAKE MOVE VEH O/S SW TO NE COMM TO/FROM WORK JCT MID
BT - NOT REQUESTED SKIDDED N/S HIT FIRST

V002 A 405 (FAILED TO LOOK PROPERLY) V002 A 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)
V002 B 602 (CARELESS/RECKLESS/IN A HURRY) V001 B 404 (FAILED TO SIGNAL/ MISLEADING SIGNAL)

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) 60 MTS TO SEP-2012 SORTED BY DATE

25 0110KF60321 TUE 18/05/10 18:35 LIGHT CAMEL RD 116M E OF CONNAUGHT RD 17 CELL 541500/180000 541970 / 180290
POLICE - OVER COU ROAD-DRY WEATHER-FINE SINGLE CWY NO JUN IN 20M NO XING FACILITY IN 50M
V1 AND V2 COLLIEDE HEAD ON ON NARROW RD

CASUALTY 001 (002) (24 Yrs - M E14) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) CAR (31 Yrs - M E16) GOING AHEAD LEFT BEND S TO W
BT - NEGATIVE FRONT HIT FIRST

VEHICLE 002 (001) PEDAL CYCLE (24 Yrs - M E14) GOING AHEAD RIGHT BEND W TO S
BT - NOT APPLICABLE FRONT HIT FIRST

V001 A 108 (ROAD LAYOUT (EG BEND, HILL, NARROW CARRIAGEWAY)) V002 A 108 (ROAD LAYOUT (EG BEND, HILL, NARROW CARRIAGEWAY))
V001 A 701 (VISION AFFECTED - STATIONARY OR PARKED VEHICLE(S)) V002 A 701 (VISION AFFECTED - STATIONARY OR PARKED VEHICLE(S))

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26 0110TB00199 TUE 18/05/10 15:38 LIGHT CONNAUGHT ROAD J/W HARTMANN ROAD 17 LINK 7-678 541863 / 180272
POLICE - AT SCENE ROAD-DRY WEATHER-FINE ROUNDABOUT ROUNDABOUT GIVE WAY/UNCONT NO XING FACILITY IN 50M
FOR UNKNOWN REASONS V1 LOST CONTROL AND COLLIDED WITH FENCE.

CASUALTY 001 (001) (? Yrs - M UNKN) SERIOUS DRIVER/RIDER

VEHICLE 001 (000) CAR (? Yrs - M UNKN) GOING AHEAD RIGHT BEND SE TO N JCT MID
BT - DRV NOT CONTACTED SKIDDED FRONT HIT FIRST
LEFT CWY OFFSIDE HIT KERB HIT OTH OBJECT

V001 A 410 (LOSS OF CONTROL)

---

27 0110KF60346 SUN 13/06/10 15:45 LIGHT LORD ST J/W ALBERT RD 17 LINK 7-12 542410 / 180080
POLICE - OVER COU ROAD-DRY WEATHER-FINE SINGLE CWY T/STAG JUN GIVE WAY/UNCONT NO XING FACILITY IN 50M
V2 OVERTOOK AND HIT V1

CASUALTY 001 (001) (41 Yrs - F E16) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) PEDAL CYCLE (41 Yrs - F E16) GOING AHEAD OTHER S TO N JCT CLEARED
BT - NOT APPLICABLE BACK HIT FIRST

VEHICLE 002 (001) CAR (? Yrs - U UNKN) OVERTAKE MOVE VEH O/S S TO N JCT CLEARED
BT - DRV NOT CONTACTED FRONT HIT FIRST

V002 A 407 (PASSING TOO CLOSE TO CYCLIST, HORSE RIDER OR PEDESTRIAN) V002 A 403 (POOR TURN OR MANOEUVRE)

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) 60 MTS TO SEP-2012 SORTED BY DATE

28 0110KF60367 THU 24/06/10 10:50 LIGHT HARTMANN ROAD 44M E OF J/W CONNAUGHT ROAD 17 CELL 541500/180000 541904 / 180294
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY NO JUN IN 20M NO XING FACILITY IN 50M
PASSANGER C1 WAS BOARDING V1 AND HIT SHIN ON METAL PART OF STEP - [LOST FOOTING (C001)]

CASUALTY 001 (001) (84 Yrs - F E16) SLIGHT PASSENGER BOARDING PSV

VEHICLE 001 (000) BUS/COACH (60 Yrs - M NW7) GOING AHEAD HELD UP E TO W JNY PART OF WORK
BT - NOT REQUESTED DID NOT IMPACT

C001 A 999 (OTHER FACTOR)

---

29 0110KF60399 WED 30/06/10 18:30 LIGHT PIER RD J/W ALBERT RD 17 NODE 12 543320 / 179910
POLICE - OVER COU ROAD-DRY WEATHER-FINE SINGLE CWY CROSSROADS GIVE WAY/UNCONT ZEBRA
V2 HIT THE REAR OF V1 AND FTS

CASUALTY 001 (001) (59 Yrs - M RM15) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) CAR (59 Yrs - M RM15) MOVING OFF S TO N JCT MID
BT - DRV NOT CONTACTED BACK HIT FIRST

VEHICLE 002 (001) CAR (? Yrs - U UNKN) MOVING OFF S TO N JCT MID
BT - DRV NOT CONTACTED FRONT HIT FIRST

V002 A 308 (FOLLOWING TOO CLOSE) V002 A 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)
V002 A 405 (FAILED TO LOOK PROPERLY)

---

30 0110KF60655 MON 18/10/10 13:18 LIGHT ALBERT ROAD 65M E OF J/W WINFRED STREET 17 LINK 7-12 542820 / 179980
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY NO JUN IN 20M NO XING FACILITY IN 50M
V1 UNWELL LOST CONTROL

CASUALTY 001 (001) (32 Yrs - F E16) SERIOUS DRIVER/RIDER

VEHICLE 001 (000) CAR (32 Yrs - F E16) GOING AHEAD OTHER W TO E
BT - NOT REQUESTED FRONT HIT FIRST

V001 A 410 (LOSS OF CONTROL) V001 A 505 (ILLNESS OR DISABILITY, MENTAL OR PHYSICAL)

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) 60 MTS TO SEP-2012 SORTED BY DATE

31 0110KF60748 WED 17/11/10 06:55 LIGHT NFL- CONNAUGHT ROAD J/W CONSTANCE STREET 17 LINK 7-12 542070 / 180120
POLICE - AT SCENE ROAD-WET WEATHER-FINE SINGLE CWY T/STAG JUN GIVE WAY/UNCONT ZEBRA
PED RUNNING FOR TRAIN CROSSED INTO PATH OF A VAN THEN INTO PATH OF V1

CASUALTY 001 (001) (30 Yrs - F E16) SLIGHT PEDESTRIAN CROSSING ROAD ON PED XING S BOUND FROM DRIVERS O/SIDE MSK

VEHICLE 001 (000) CAR (31 Yrs - M SS6) GOING AHEAD OTHER SE TO NW JCT CLEARED
BT - NOT REQUESTED FRONT HIT FIRST

C001 A 801 (CROSSED ROAD MASKED BY STATIONARY OR PARKED VEHICLE)
C001 A 802 (FAILED TO LOOK PROPERLY)
C001 A 808 (CARELESS/RECKLESS/IN A HURRY)
V001 A 701 (VISION AFFECTED - STATIONARY OR PARKED VEHICLE(S))
V001 A 405 (FAILED TO LOOK PROPERLY)

---

32 0110KF60798 MON 29/11/10 06:50 DARK NORTH WOOLWICH ROAD J/W CONNAUGHT BRIDGE 17 NODE 3 541630 / 180190
POLICE - AT SCENE ROAD-DRY WEATHER-FINE ROUNDABOUT ROUNDABOUT GIVE WAY/UNCONT NO XING FACILITY IN 50M
CYCLSITS ON ROUNDABOUT WAS HIT BY V2 CUTTING ACROSS IT'S PATH

CASUALTY 001 (001) (29 Yrs - F E16) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) PEDAL CYCLE (29 Yrs - F E16) GOING AHEAD OTHER W TO E COMM TO/FROM WORK JCT MID
BT - NOT APPLICABLE O/S HIT FIRST

VEHICLE 002 (001) CAR (? Yrs - M UNKN) GOING AHEAD OTHER S TO N JCT MID
BT - DRV NOT CONTACTED N/S HIT FIRST

V002 A 405 (FAILED TO LOOK PROPERLY)
V002 A 602 (CARELESS/RECKLESS/IN A HURRY)
V002 A 407 (PASSING TOO CLOSE TO CYCLIST, HORSE RIDER OR PEDESTRIAN)

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) 60 MTS TO SEP-2012 SORTED BY DATE

33 0110KF60829 WED 15/12/10 00:50 DARK NFL- ALBERT ROAD J/W TATE ROAD 17 LINK 7-12 542480 / 180050
POLICE - AT SCENE ROAD-WET RAINING SINGLE CWY T/STAG JUN GIVE WAY/UNCONT NO XING FACILITY IN 50M
V2 OVERTAKING CARS COLLIDED HEAD ON INTO ONCOMING V1

CASUALTY 001 (001) (55 Yrs - M E17) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) BUS/COACH (55 Yrs - M E17) GOING AHEAD OTHER W TO E JNY PART OF WORK JCT CLEARED
BT - NOT PROVD (MEDCL REASONS) FRONT HIT FIRST

VEHICLE 002 (001) CAR (? Yrs - M UNKN) GOING AHEAD OTHER E TO W JCT APP
BT - DRV NOT CONTACTED FRONT HIT FIRST

V002 A 405 (FAILED TO LOOK PROPERLY)
V002 A 307 (TRAVELLING TOO FAST FOR CONDITIONS)
V002 A 602 (CARELESS/RECKLESS/IN A HURRY)
V002 B 601 (AGGRESSIVE DRIVING)

---

34 0110KF60830 TUE 28/12/10 15:24 LIGHT ALBERT ROAD J/W MILK STREET 17 LINK 12-27 543670 / 180000
POLICE - AT SCENE ROAD-WET RAINING SINGLE CWY T/STAG JUN GIVE WAY/UNCONT NO XING FACILITY IN 50M
V1 TURNED RIGHT AND WAS HIT BY SOLO

CASUALTY 001 (002) (43 Yrs - M E16) SERIOUS DRIVER/RIDER

VEHICLE 001 (002) CAR (66 Yrs - M OX3) TURNING RIGHT NE TO N LEAVING MAIN RD
BT - NEGATIVE O/S HIT FIRST

VEHICLE 002 (001) M/C > 500CC (43 Yrs - M E16) GOING AHEAD OTHER NE TO SW JCT APP
BT - NOT REQUESTED FRONT HIT FIRST

V001 A 405 (FAILED TO LOOK PROPERLY)
V001 B 302 (DISOBEYED GIVE WAY OR STOP SIGN OR MARKINGS)
V001 A 602 (CARELESS/RECKLESS/IN A HURRY)

---

35 0111KF60051 THU 17/02/11 20:20 DARK ALBERT ROAD J/W FERNHILL STREET 17 LINK 7-12 542870 / 179970
POLICE - OVER COU ROAD-DRY WEATHER-FINE SINGLE CWY T/STAG JUN GIVE WAY/UNCONT ZEBRA
SOLO LOST CONTROL UNKNOWN WHY AND FELL OF HIS BIKE HITTING A PED

CASUALTY 001 (001) (15 Yrs - F RM8) SLIGHT PEDESTRIAN STANDING

VEHICLE 001 (000) M/C 50-125CC (23 Yrs - M E14) GOING AHEAD OTHER W TO E JNY PART OF WORK JCT CLEARED
BT - DRV NOT CONTACTED FRONT HIT FIRST
LEFT CWY NEARSIDE HIT KERB

V001 A 410 (LOSS OF CONTROL)
V001 A 602 (CARELESS/RECKLESS/IN A HURRY)

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) 60 MTS TO SEP-2012 SORTED BY DATE

36 0111KF60077 SAT 05/03/11 16:30 DARK ALBERT ROAD J/W FISHGUARD WAY 17 LINK 12-27 543820 / 180090
POLICE - OVER COU ROAD-DRY WEATHER-FINE SINGLE CWY T/STAG JUN GIVE WAY/UNCONT NO XING FACILITY IN 50M
V1 WAITING TO TURN RIGHT AND WAS HIT IN REAR BY V2

CASUALTY 001 (001) (26 Yrs - M CM13) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) CAR (26 Yrs - M CM13) WAITING TO TURN RIGHT SW TO SE COMM TO/FROM WORK LEAVING MAIN RD
BT - DRV NOT CONTACTED BACK HIT FIRST

VEHICLE 002 (001) CAR (? Yrs - M E16) GOING AHEAD OTHER SW TO NE JCT APP
BT - DRV NOT CONTACTED FRONT HIT FIRST

V002 A 405 (FAILED TO LOOK PROPERLY) V002 A 602 (CARELESS/RECKLESS/IN A HURRY)

---

37 0111KF60131 THU 17/03/11 21:14 DARK ALBERT ROAD J/W WOOLWICH MANOR WAY 17 LINK 12-27 543820 / 180080
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY T/STAG JUN GIVE WAY/UNCONT NO XING FACILITY IN 50M
SOLO OVERTOOK V1 AND COLLIDED WITH OFFSIDE OF V1

CASUALTY 001 (002) (29 Yrs - M SE28) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) CAR (38 Yrs - M RM9) GOING AHEAD LEFT BEND SW TO N JCT APP
BT - NEGATIVE O/S HIT FIRST

VEHICLE 002 (001) M/C > 500CC (29 Yrs - M SE28) OVERTAKE MOVE VEH O/S SW TO N JCT APP
BT - NOT REQUESTED N/S HIT FIRST

V002 A 405 (FAILED TO LOOK PROPERLY) V002 A 602 (CARELESS/RECKLESS/IN A HURRY)
V002 A 407 (PASSING TOO CLOSE TO CYCLIST, HORSE RIDER OR PEDESTRIAN)

---

38 0111KF60288 THU 09/06/11 15:03 LIGHT ALBERT ROAD J/W PIER ROAD 17 NODE 12 543300 / 179910
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY CROSSROADS GIVE WAY/UNCONT ZEBRA
ROADWORKS

PED WALKED ON THE KERB DUE TO ROAD WORKS ON PAVEMENT AND WAS CLIPPED BY PASSING V1(BUS)

CASUALTY 001 (001) (32 Yrs - M E16) SLIGHT PEDESTRIAN ON FOOTPATH - VERGE E BOUND

VEHICLE 001 (000) BUS/COACH (35 Yrs - M E13) GOING AHEAD OTHER W TO E JNY PART OF WORK JCT APP
BT - NEGATIVE N/S HIT FIRST

V001 A 407 (PASSING TOO CLOSE TO CYCLIST, HORSE RIDER OR PEDESTRIAN) V001 A 405 (FAILED TO LOOK PROPERLY)
C001 A 802 (FAILED TO LOOK PROPERLY)

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) 60 MTS TO SEP-2012 SORTED BY DATE

39 0111KF60440 WED 13/07/11 18:33 LIGHT NFL- HARTMANN ROAD 228M E OF J/W CONNAUGHT ROAD 17 CELL 542000/180000 542020 / 180320
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY NO JUN IN 20M NO XING FACILITY IN 50M
PED RAN OUT INTO OFFSIDE OF PASSING V1
CASUALTY 001 (001) (11 Yrs - M E16) SLIGHT PEDESTRIAN CROSSING ROAD (NOT ON XING) S BOUND FROM DRIVERS O/SIDE
VEHICLE 001 (000) CAR (44 Yrs - M SG11) GOING AHEAD OTHER E TO W
BT - NEGATIVE O/S HIT FIRST

C001 A 802 (FAILED TO LOOK PROPERLY) C001 A 808 (CARELESS/RECKLESS/IN A HURRY)

---

40 0111KF60503 WED 07/09/11 05:30 DARK HARTMAN ROAD 391M E OF J/W CANNAUGHT ROAD 17 CELL 542000/180000 542236 / 180281
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY PRIV DRIVE GIVE WAY/UNCONT NO XING FACILITY IN 50M
V1 PULLED OUT AND TURNED RIGHT ACOSS PATH OF PASSING V2
CASUALTY 001 (002) (44 Yrs - F E6) SLIGHT DRIVER/RIDER
VEHICLE 001 (002) CAR (51 Yrs - M SS13) TURNING RIGHT S TO E JNY PART OF WORK ENTERING MAIN RD
BT - NOT REQUESTED FRONT HIT FIRST

VEHICLE 002 (001) CAR (44 Yrs - F E6) GOING AHEAD OTHER E TO W JCT APP
BT - NOT REQUESTED N/S HIT FIRST

V001 A 405 (FAILED TO LOOK PROPERLY) V001 A 302 (DISOBEYED GIVE WAY OR STOP SIGN OR MARKINGS)
V001 A 602 (CARELESS/RECKLESS/IN A HURRY)

---

41 0111KF60513 SAT 24/09/11 12:55 LIGHT NFL- ALBERT ROAD J/W HOLT ROAD 17 LINK 7-12 542356 / 180070
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY T/STAG JUN GIVE WAY/UNCONT NO XING FACILITY IN 50M
PED STARTED TO CROSS FROM BEHIND REVERSING V1 CAUSING COLLISION
CASUALTY 001 (001) (63 Yrs - M E16) SLIGHT PEDESTRIAN CROSSING ROAD (NOT ON XING) S BOUND FROM DRIVERS N/SIDE
VEHICLE 001 (000) CAR (39 Yrs - F KT8) REVERSING SE TO NW JCT CLEARED
BT - NOT REQUESTED BACK HIT FIRST

V001 A 405 (FAILED TO LOOK PROPERLY) V001 A 602 (CARELESS/RECKLESS/IN A HURRY)
C001 A 802 (FAILED TO LOOK PROPERLY) C001 A 808 (CARELESS/RECKLESS/IN A HURRY)

London City Airport Area - personal injury collisions - 5 years to 30 September 2012 (provisional)

SC01 GIS AREA London City Airport Area (P) 60 MTS TO SEP-2012 SORTED BY DATE

42 0112KF60371 TUE 03/07/12 12:10 LIGHT NFL: HARTM,ANN ROAD 48M W J/W UNNAMED ROAD AIRPORT ENTRANCE 17 CELL 542000/180000 542320 / 180290
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY NO JUN IN 20M NO XING FACILITY IN 50M
V1 EAST-BD OVERTOOK V2 AND WAS THEN SHUNTED BY V2

CASUALTY 001 (001) (45 Yrs - M RM17) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) TAXI (45 Yrs - M RM17) SLOWING OR STOPPING N TO S JNY PART OF WORK
BT - NOT REQUESTED BACK HIT FIRST

VEHICLE 002 (001) TAXI (61 Yrs - M EC1V) GOING AHEAD OTHER N TO S JNY PART OF WORK
BT - NOT REQUESTED SKIDDED FRONT HIT FIRST

V002 B 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED) V001 A 408 (SUDDEN BRAKING)

---

43 0112KF60360 FRI 06/07/12 09:48 LIGHT ALBERT ROAD J/W MILK STREET 17 LINK 12-27 543670 / 180000
POLICE - AT SCENE ROAD-WET RAINING DUAL CWY T/STAG JUN GIVE WAY/UNCONT NO XING FACILITY IN 50M
V1 SW-BOUND STOPPED TO TURN RIGHT, AND WAS SHUNTED BY V2

CASUALTY 001 (001) (29 Yrs - F E6) SLIGHT DRIVER/RIDER

VEHICLE 001 (002) CAR (29 Yrs - F E6) TURNING RIGHT NE TO N JCT MID
BT - NEGATIVE BACK HIT FIRST

VEHICLE 002 (001) CAR (36 Yrs - M IG3) GOING AHEAD OTHER NE TO SW JCT MID
BT - NEGATIVE FRONT HIT FIRST

V002 B 405 (FAILED TO LOOK PROPERLY) V002 B 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)
V002 B 410 (LOSS OF CONTROL)

---

44 0112KF60558 SAT 29/09/12 03:15 DARK NFL: CONNAUGHT BRIDGE 68M S AIRPORT ROUNDABOUT 17 LINK 3-6 541650 / 180310
POLICE - OVER COU ROAD-DRY WEATHER-FINE DUAL CWY NO JUN IN 20M NO XING FACILITY IN 50M
V1 SOUTH-BD DROVE AGGRESSIVELY AND CAUSED CAS1 ON BOARD TO FALL AND BE INJURED

CASUALTY 001 (001) (28 Yrs - F SN11) SLIGHT PASSENGER BACK SEAT

VEHICLE 001 (000) TAXI (? Yrs - M UNKN) SLOWING OR STOPPING N TO S JNY PART OF WORK
BT - DRV NOT CONTACTED DID NOT IMPACT

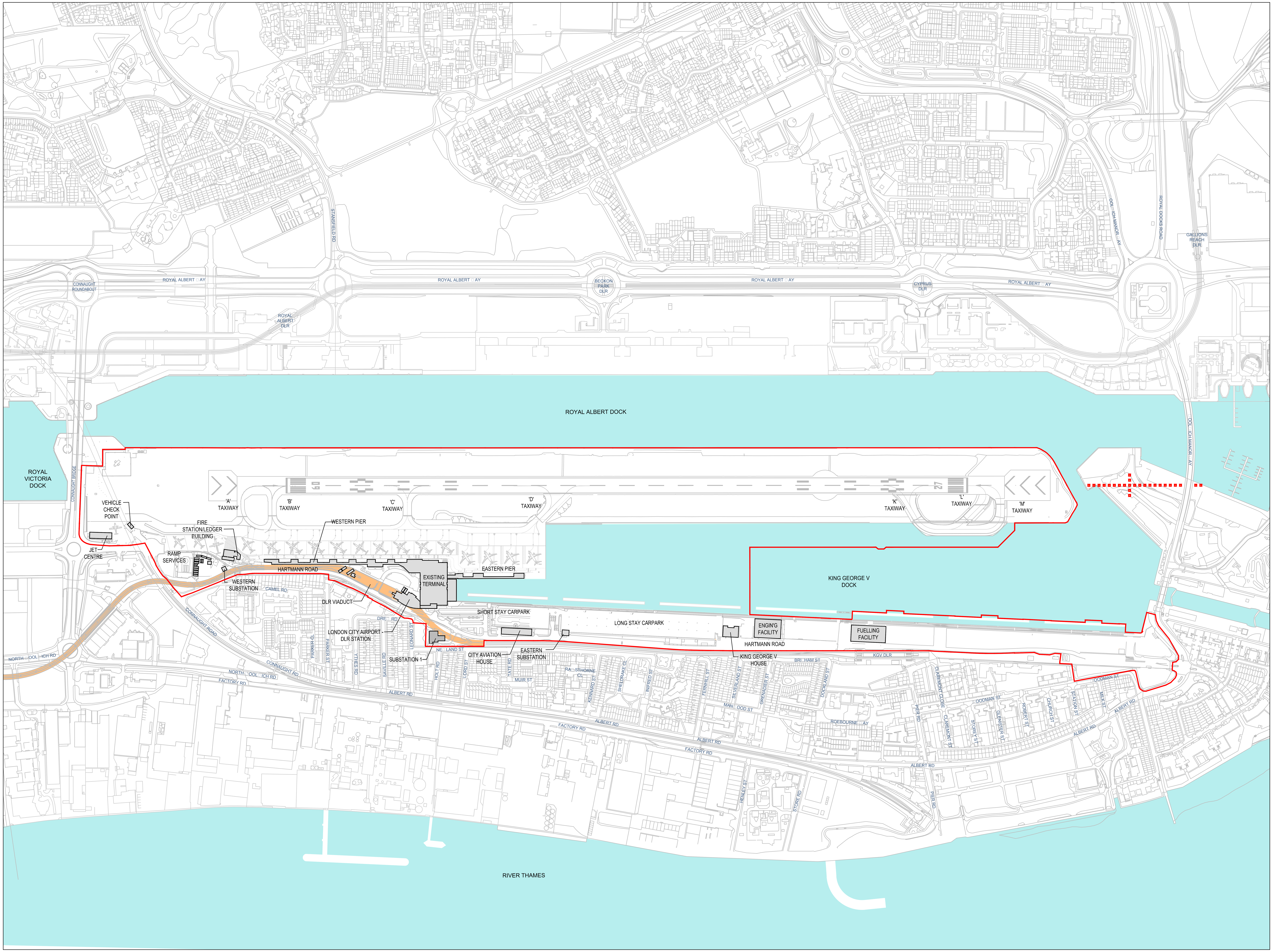
V001 B 602 (CARELESS/RECKLESS/IN A HURRY) V001 B 603 (NERVOUS/UNCERTAIN/ PANIC)

End of Accidents for SC01 GIS AREA London City Airport Area (P)

End of Report

APPENDIX C

Architect’s Scheme Layout



1 E[illegible]ISTING SITE PLAN
1:3500

N[illegible]:
[illegible] Ord[illegible] S[illegible] N[illegible]SR1515[illegible]0 [illegible]
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[illegible] A[illegible] Pr[illegible] B[illegible]
[illegible]
[illegible] LCY [illegible]d MSA

SCALE BAR
0 50m 100m 200m
N

LEGEND

- EXISTING PRINCIPAL BUILDINGS
- PROPOSED DEVELOPMENT BOUNDARY LINE
- EXISTING DLR VIADUCT

	MN	12[illegible]0[illegible]13	I[illegible]d [illegible]r P[illegible]
R[illegible]	Dr[illegible]	D[illegible]	D[illegible]

FOR APPROVAL

LondonCityAirport
London City Airport Limited City Aviation House Royal Docks London E16 2PB

PASCALL
+WATSON
5 Carlson Court 116 Putney Bridge Road London SW15 2NQ
+44 (0)20 8874 1311 www.pascalls.co.uk

C[illegible]
LONDON CITY AIRPORT

Pr[illegible] N[illegible]
CITY AIRPORT DEVELOPMENT PROGRAMME

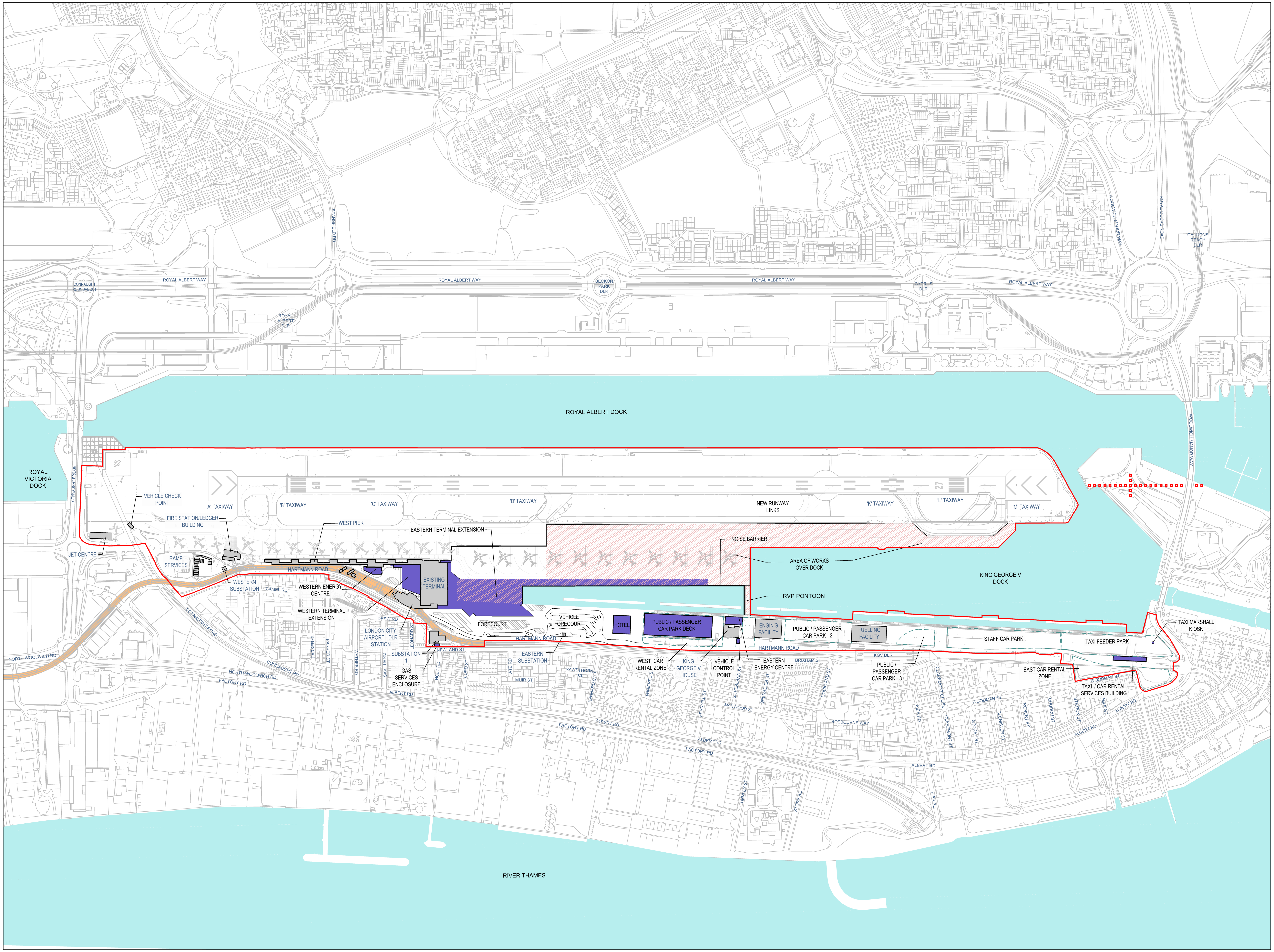
T[illegible]
1 [illegible]SITE PLAN

D[illegible]: Ar[illegible]		Pr[illegible] P[illegible]: PLANNING	
Dr[illegible] Or[illegible]: P[illegible]		Or[illegible] N[illegible]: 44[illegible]	
C[illegible]d B[illegible]: S[illegible]	C[illegible]d D[illegible]: 01[illegible]05[illegible]2013	Dr[illegible] B[illegible]: GC	Dr[illegible] D[illegible]: 11[illegible]03[illegible]2013
A[illegible]d B[illegible]: MN	A[illegible] D[illegible]: 01[illegible]05[illegible]2013	S[illegible]: 1:3500 [illegible] A1	
B[illegible] Grid R[illegible]: SITE			

C[illegible]	Or[illegible]	Pr[illegible] R[illegible]	D[illegible]	Dr[illegible] N[illegible]	R[illegible]
LCY	P[illegible]	44[illegible]	B	SI20001	[illegible]

ISO A1 L[illegible]d[illegible] S[illegible]d[illegible]

None :Model files attached.



1 PROPOSED SITE PLAN
1:3500

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- All information shown outside the Proposal Boundary is for illustrative purposes only.

- Internal layouts are for illustrative purposes only.

- Base building survey information by LCY and MSA

SCALE BAR
0 50m 100m 200m
N

LEGEND
- EXISTING BUILDINGS
- PROPOSED BUILDINGS
- AREA OF WORKS OVER DOCK
- EXISTING DLR VIADUCT
- PROPOSED CADP BOUNDARY LINE

Rev	Drn	Date	Description
-	MN	01.07.13	Issued for Planning

FOR INFORMATION

LondonCityAirport
London City Airport Limited City Aviation House Royal Docks London E16 2PB

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Client
LONDON CITY AIRPORT
Project Name
CITY AIRPORT DEVELOPMENT PROGRAMME
Title
4 - ILLUSTRATIVE SITE PLAN

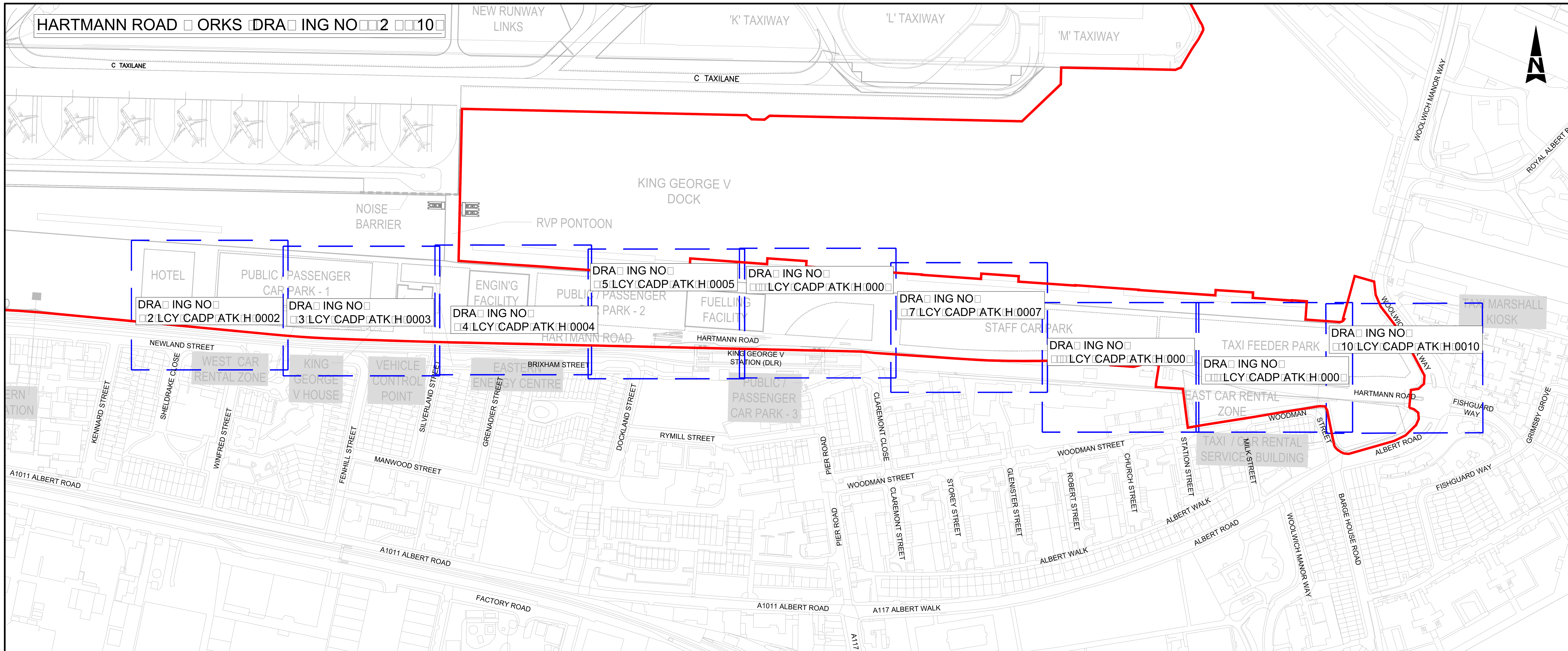
Discipline	Project Phase
Architecture	PLANNING
Drawing Originator: Pascall+Watson architects	Originator's Job No.: 4486

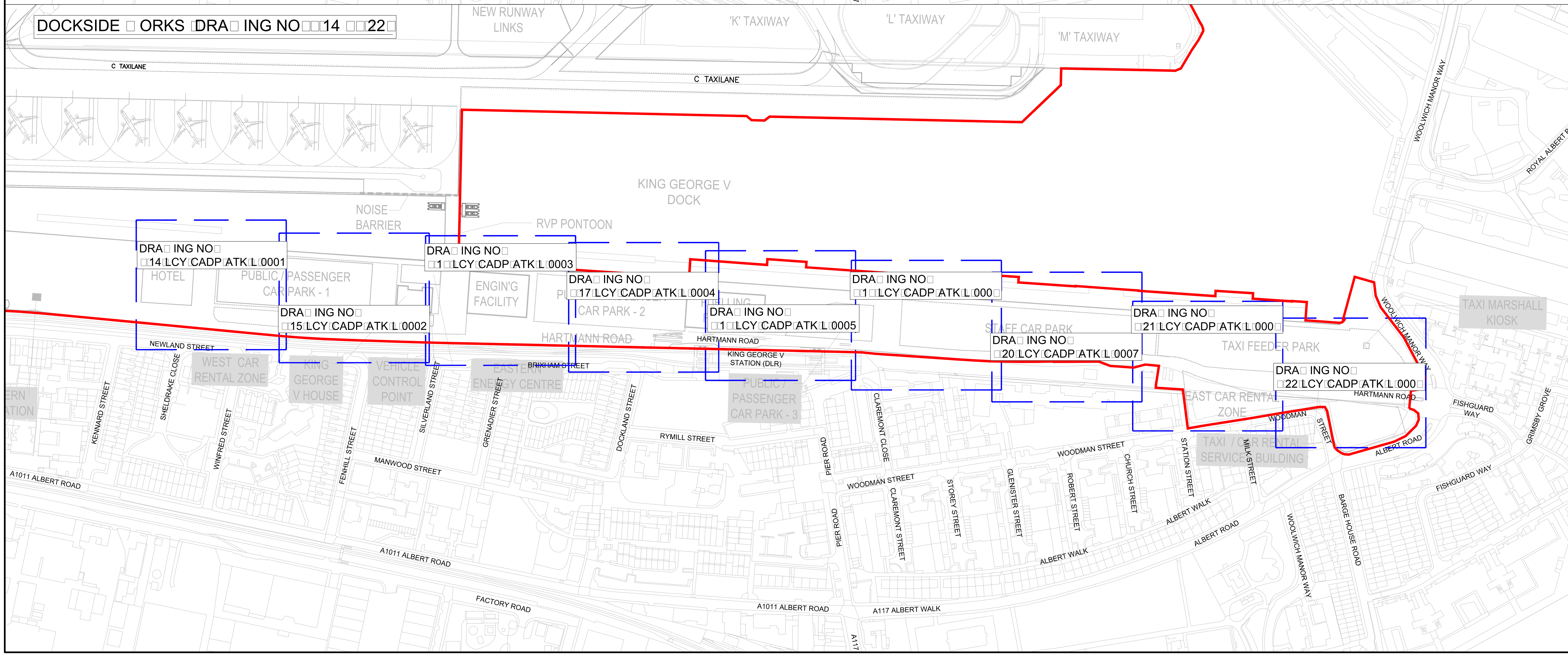
Checked By	Checked Date	Drawn By	Drawn Date
SW	01.05.2013	GC	11.03.2013
Approved By	Approval Date	Scale	
MN	01.05.2013	1:3500 @ A1	

Building Grid Reference
SITE

Client	Originator	Project Ref.	Discipline	Drawing No.	Revision
LCY	P+W	4486	B	SI20002	-

ISO A1 Landscape - Side





SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

CONSTRUCTION

MAINTENANCE/CLEANING

DECOMMISSIONING/DEMOLITION

KEY

SHEET LOCATION WITH REFERENCE NUMBER

PROPOSED DEVELOPMENT BOUNDARY LINE

FOR APPROVAL

S0

ATKINS

Tel +44 (0)20 7121 2000
Fax +44 (0)20 7121 2333

LONDON CITY AIRPORT

CITY AIRPORT DEVELOPMENT PROGRAMME (CADP)

9.1 HARTMANN ROAD DOCKSIDE KEY PLAN

Scale	Designed	Drawn	Checked	Authorised
1:2000	KF	KF	KF	PG
A1	27/06/13	27/06/13	27/06/13	27/06/13

LCY-CADP-ATK-H-0001

Revision -


ATKINS
KING GEORGE V DOCK
E ISTING DOCKSIDE PATH LEVELS TO BE RETAINED
5.550
5.530
N
PROPOSED PASSENGER CAR PARK 1 4 5 SPACES
PROPOSED EASTERN ENERGY CENTRE
E ISTING KING GEORGE V HOUSE
RAMP DO N TO HARTMANN ROAD
E ISTING SLOPE TO REMAIN
EST CAR RENTAL ONE 4 SPACES
HARTMANN ROAD
CONTINUATION D G 0001
CONTINUATION D G 0003
4.370
4.300
4.270
4.205
5.250
E ISTING DOCK ITH COPING RETAINED
ARTIFICIAL STONE FLAG PAVING
DISUSED RAIL AY LINE: RETAINED LANDSCAPE FEATURE
NE NATURAL STONE SETTS
TARMAC
BLOCK PAVING CAR PARK
E TENT OF PARKING STRUCTURE SEE D G LCY CADP ATK S 001
HARTMANN RD ORKS BOUNDARY
CCTV COLUMN REFER TO D G LCY CADP ATK H 0002 0010
LIGHTING COLUMN REFER TO LCY CADP ATK E 0001 0010
PROPOSED ATTENUATION TANK
PROPOSED LEVELS
E ISTING LEVELS
PROPOSED DEVELOPMENT BOUNDARY LINE
NOTE: ELECTRIC VEHICLE CHARGING POINTS TO BE PROVIDED
ISSUED FOR PLANNING FOR APPROVAL A PF 05.07.13
ISSUED FOR PLANNING FOR APPROVAL PF 2 0 13
PURPOSE OF ISSUE
ATKINS
T 44 0 20 7121 2000
F 44 0 20 7121 2333
N 1 3AT
CLIENT
LONDON CITY AIRPORT
London City Airport
Get closer.
PRO ECT
CITY AIRPORT DEVELOPMENT PROGRAMME CADP PRO ECT
DRA ING TITLE
15 DOCKSIDE GA SHEET 2
SCALES 1:200 A1
DRA N KA
CHECKED PF
COORD CHECK
DATE 02.07.13
DATE 02.07.13
DATE 02.07.13
SHEET A1
PLOT DATE
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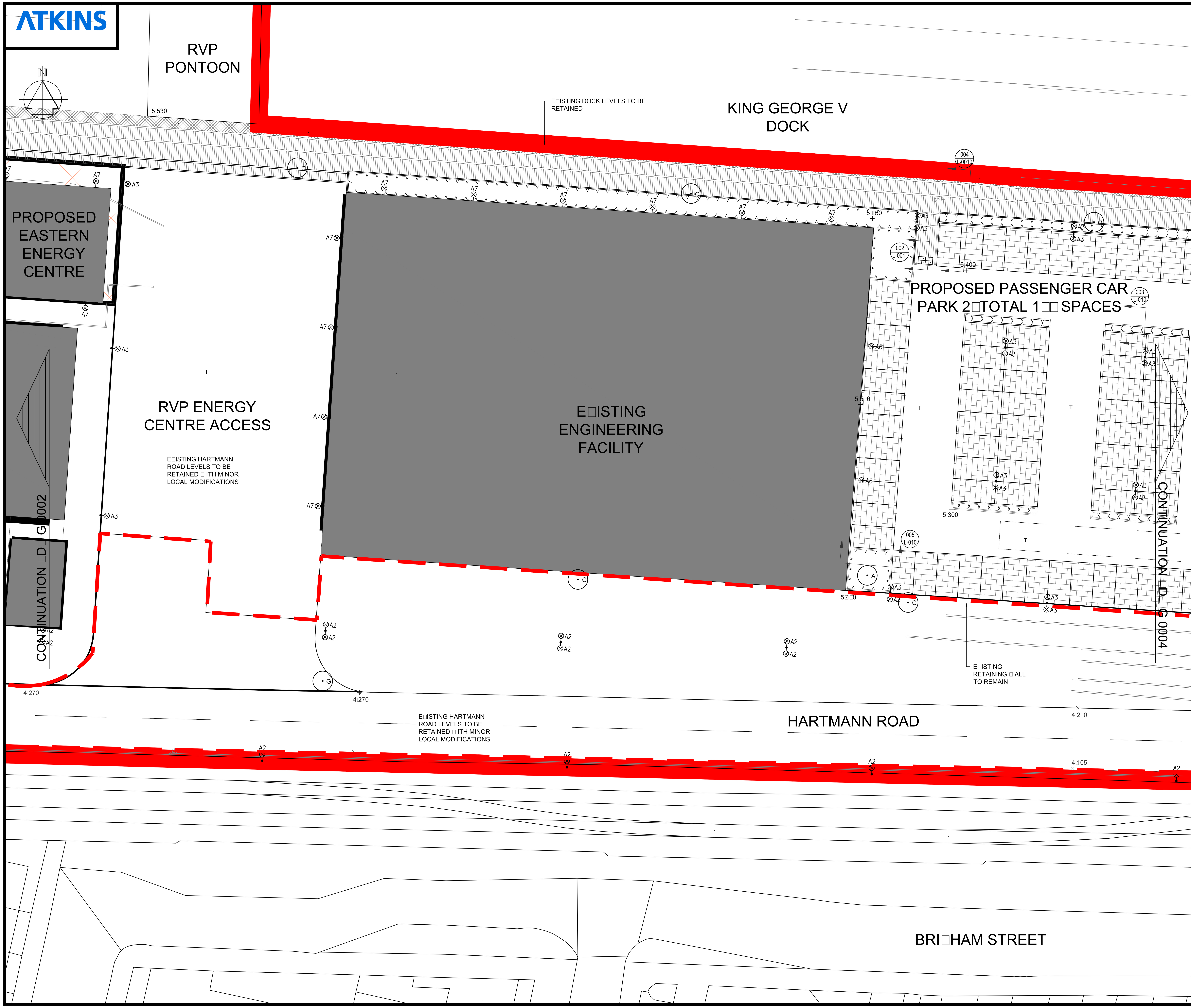

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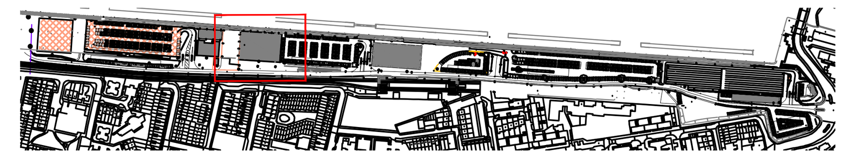

	SOFT LANDSCAPE
	E□ISTING DOCK □ ITH COPING RETAINED
	ARTIFICIAL STONE FLAG PAVING
	DISUSED RAIL□ AY LINE: RETAINED LANDSCAPE FEATURE
	NE□ NATURAL STONE SETTS
T	TARMAC
	BLOCK PAVING □CAR PARK
	HARTMANN RD □ ORKS BOUNDARY
C	CCTV COLUMN REFER TO LCY□CADP□ATK□H□0002□0010
	LIGHTING COLUMN □REFER TO LCY□CADP□ATK□E□0001□0010
	PROPOSED ATTENUATION TANK
+5.□00	PROPOSED LEVELS
×5.□00	E□ISTING LEVELS
	PROPOSED DEVELOPMENT BOUNDARY LINE

NOTE:
ELECTRIC VEHICLE CHARGING POINTS TO BE PROVIDED

PURPOSE OF ISSUE	R□□□	A□□□□□□□d □□	D□□□
ISSUED FOR PLANNING □FOR APPROVAL	A	PF	05.07.13
ISSUED FOR PLANNING □FOR APPROVAL	□	PF	02.07.13

ATKINS
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□1□ DOCKSIDE GA □SHEET 3

SCALES	DRA□ N	CHECKED	CO□ORD CHECK
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	DATE 02.07.13	DATE 02.07.13	DATE 02.07.13
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DRA□ ING NO
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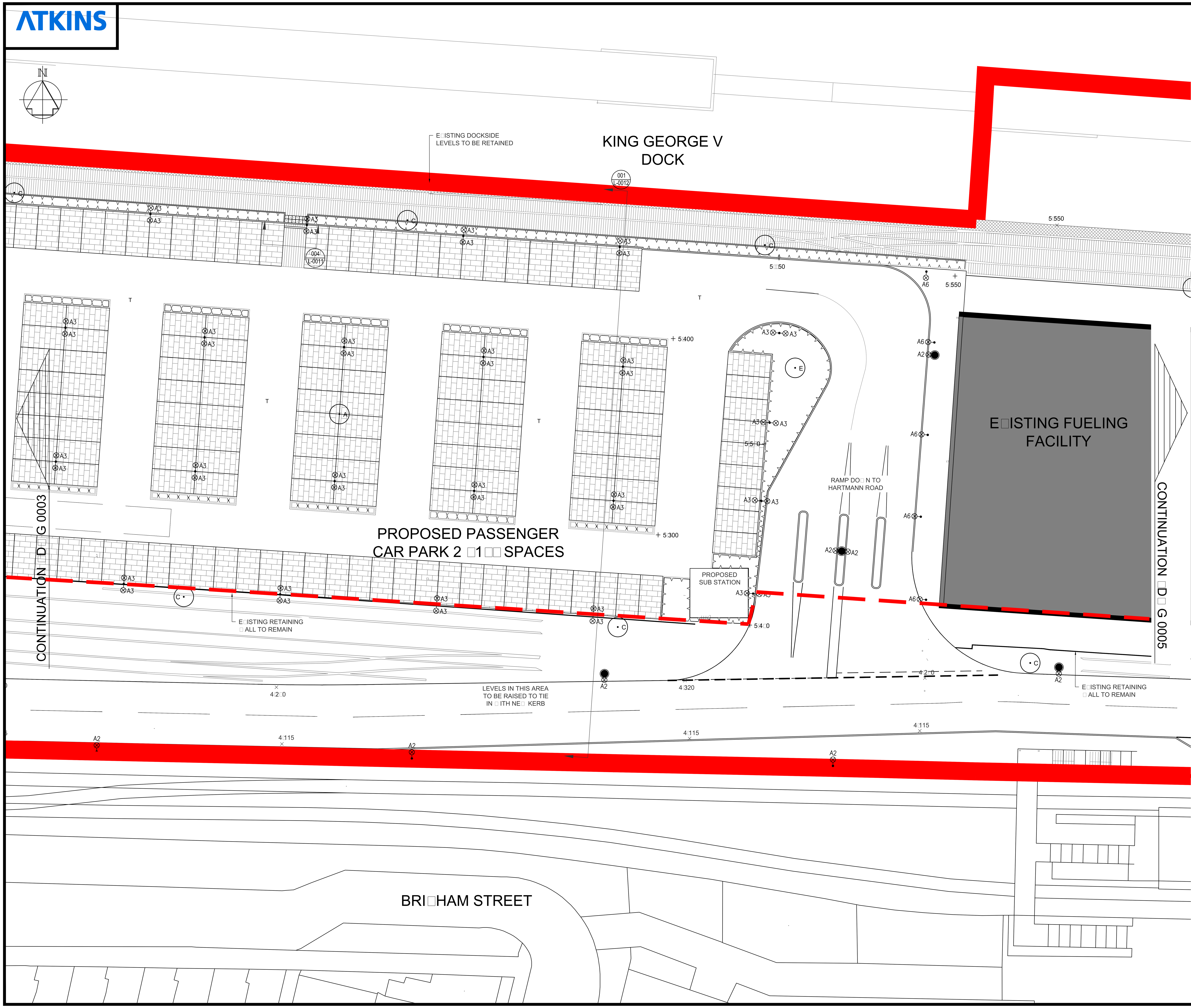

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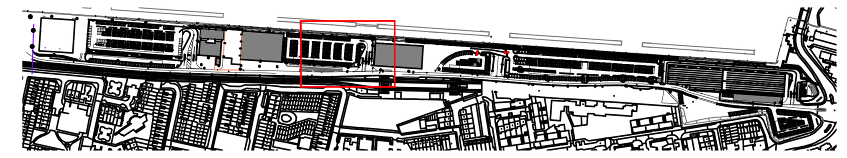

LANDSCAPE PLANTING
E□ISTING DOCK □ ITH COPING RETAINED
ARTIFICIAL STONE FLAG PAVING
DISUSED RAIL□ AY LINE: RETAINED LANDSCAPE FEATURE
NE□ NATURAL STONE SETTS
TARMAC
BLOCK PAVING □CAR PARK
HARTMANN RD □ ORKS BOUNDARY
CCTV COLUMNS □REFER TO LCY□CADP□ATK□H□0002□0010
LIGHTING COLUMNS □REFER TO LCY□CADP□ATK□E□0001□0010
PROPOSED ALLEVIATION TANKS
PROPOSED LEVELS
E□ISTING LEVELS
PROPOSED DEVELOPMENT BOUNDARY LINE

NOTE:
ELECTRIC VEHICLE CHARGING POINTS TO BE PROVIDED

PURPOSE OF ISSUE	R□□□	A□□□r□□d □r □□□□	D□□□
ISSUED FOR PLANNING □FOR APPROVAL	A	PF	0□07□13
ISSUED FOR PLANNING □FOR APPROVAL	□	PF	02□07□13

ATKINS
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DRA□ ING TITLE
□17 DOCKSIDE GA □SHEET 4

SCALES	DRA□ N	CHECKED	COORD CHECK
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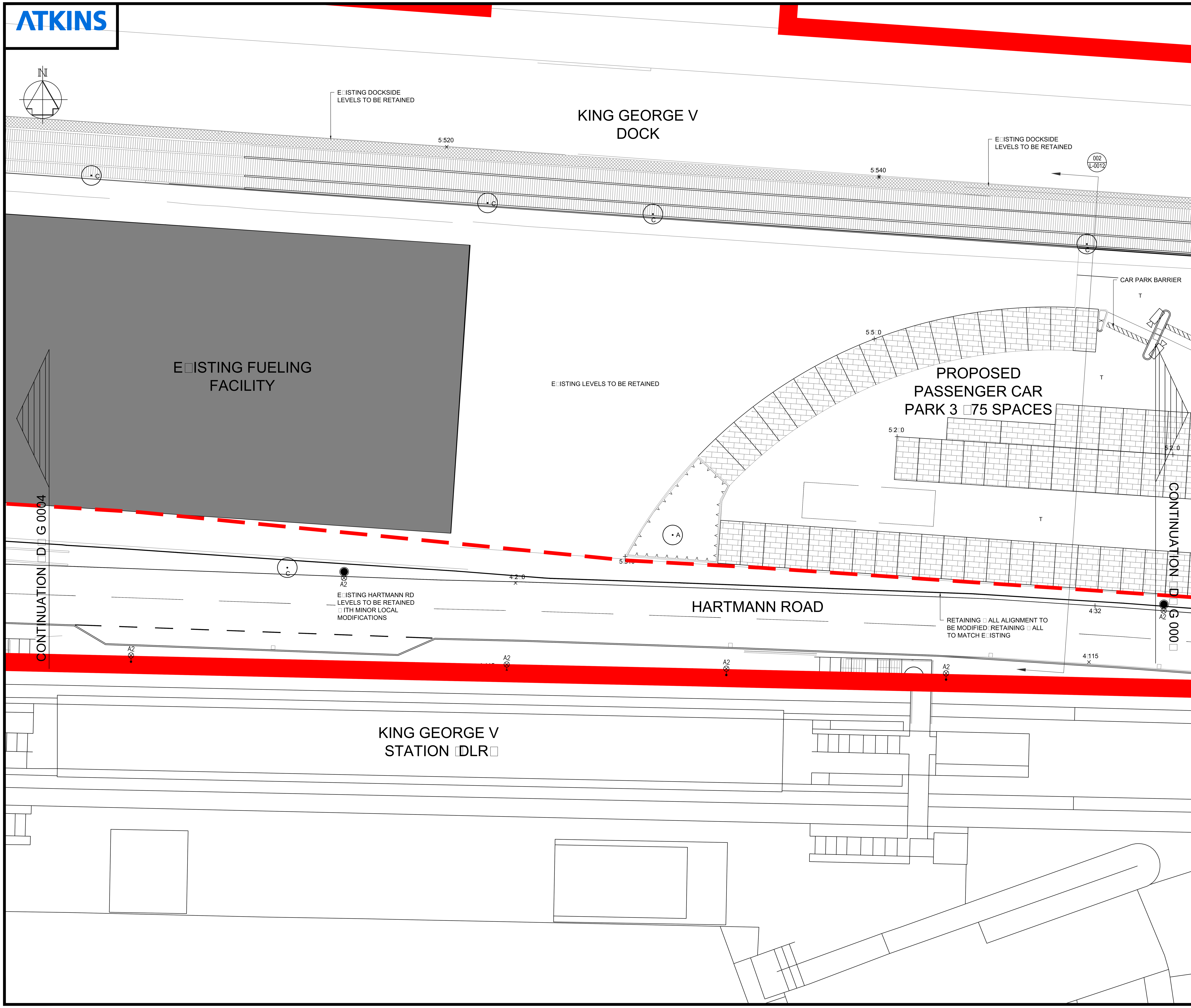

SOFT LANDSCAPE PLANTING
E□ISTING DOCK □ ITH COPING RETAINED
ARTIFICIAL STONE FLAG PAVING
DISUSED RAIL□ AY LINE: RETAINED LANDSCAPE FEATURE
NE□ NATURAL STONE SETTS
T TARMAC
BLOCK PAVING □CAR PARK
HARTMANN RD □ ORKS BOUNDARY
CCTV COLUMN □REFER TO LCY□CADP□ATK□H□0002□0011
LIGHTING COLUMN □REFER TO LCY□CADP□ATK□E□0001□0010
PROPOSED ATTENUATION TANK
+5□00 PROPOSED LEVELS
×5□00 E□ISTING LEVELS
PROPOSED DEVELOPMENT BOUNDARY LINE

NOTE:
ELECTRIC VEHICLE CHARGING POINTS TO BE PROVIDED

PURPOSE OF ISSUE	REV	APPROVED	DATE
ISSUED FOR PLANNING □FOR APPROVAL	A	PF	0□07□13
ISSUED FOR PLANNING □FOR APPROVAL	□	PF	02□07□13

ATKINS
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SCALES	DRA□ N	CHECKED	COORD CHECK
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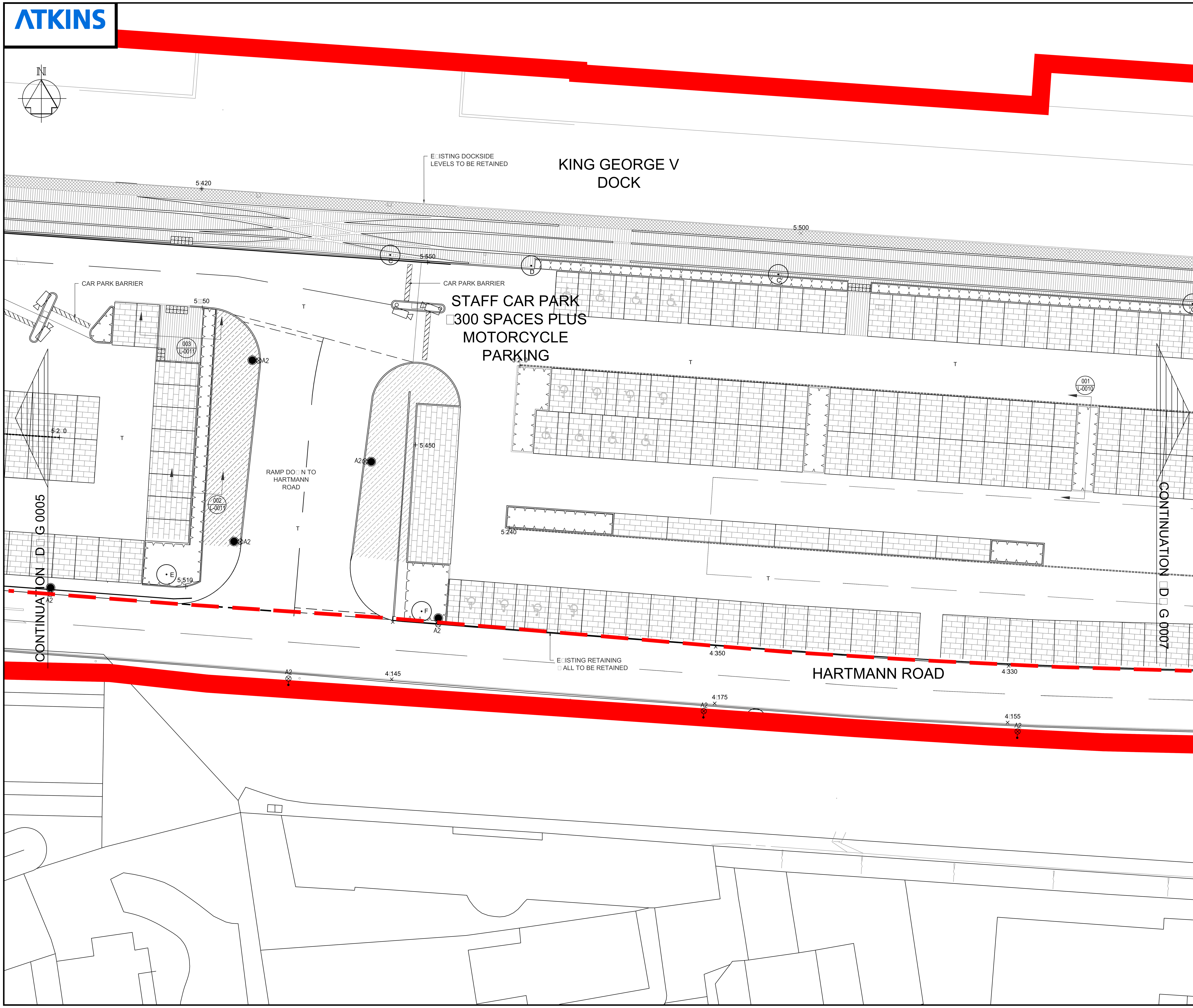
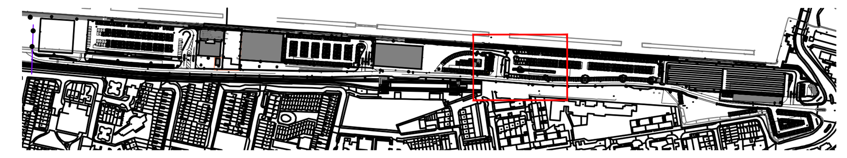
DRA□ ING NO LCY□CADP□ATK□L□0005 REV A



LOCATION PLAN



	SOFT LANDSCAPE
	E ISTING DOCK ITH COPING RETAINED
	ARTIFICIAL STONE FLAG PAVING
	DISUSED RAIL AY LINE: RETAINED LANDSCAPE FEATURE
	NE NATURAL STONE SETTS
T	TARMAC
	BLOCK PAVING CAR PARK
	HARTMANN RD ORKS BOUNDARY
C	CCTV COLUMN REFER TO LCY CADP ATK H 0002 0011
	LIGHTING COLUMN REFER TO LCY CADP ATK E 0001 0010
	PROPOSED ATTENUATION TANK
+5.00	PROPOSED LEVELS
×5.00	E ISTING LEVELS
	PROPOSED DEVELOPMENT BOUNDARY LINE

NOTE:
ELECTRIC VEHICLE CHARGING POINTS TO BE PROVIDED

PURPOSE OF ISSUE	R	A r d r	D
ISSUED FOR PLANNING FOR APPROVAL	A	PF	0 07 13
ISSUED FOR PLANNING FOR APPROVAL		PF	02 07 13

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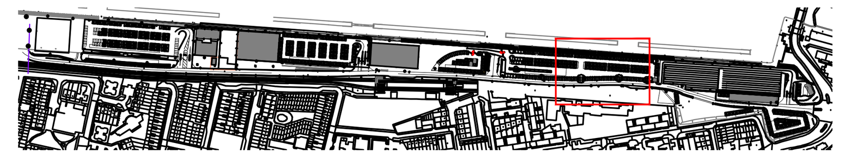
REV: A

LOCATION PLAN



- SOFT LANDSCAPE PLANTING
- E□ISTING DOCK □ITH COPING RETAINED
- ARTIFICIAL STONE FLAG PAVING
- DISUSED RAIL□AY LINE: RETAINED LANDSCAPE FEATURE
- NE□ NATURAL STONE SETTS
- T TARMAC
- BLOCK PAVING □CAR PARK
- HARTMANN RD □ORKS BOUNDARY
- CCTV COLUMN □REFER TO LCY□CADP□ATK□H□0002□0011
- LIGHTING COLUMN □REFER TO LCY□CADP□ATK□E□0001□0010
- PROPOSED ATTENUATION TANKS
- 5□□00 PROPOSED LEVELS
- 5□□00 E□ISTING LEVELS
- PROPOSED DEVELOPMENT BOUNDARY LINE

NOTE:
ELECTRIC VEHICLE CHARGING POINTS TO BE PROVIDED

PURPOSE OF ISSUE	R□□□	A□□□r□□d □r □□□□	D□□□
ISSUED FOR PLANNING □FOR APPROVAL	A	PR	0□□07□13
ISSUED FOR PLANNING □FOR APPROVAL	□	PR	02□07□13

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□20 DOCKSIDE GA □SHEET 7

SCALES	DRA□N	CHECKED	COORD CHECK
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	DATE 02□07□13	DATE 02□07□13	DATE 02□07□13
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REV: A

PURPOSE OF ISSUE	R□□	A□□□r□□d □r □□□□	D□□
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ISSUED FOR PLANNING □FOR APPROVAL	A	PF	05□07□13
ISSUED FOR PLANNING □FOR APPROVAL	□	PF	02□07□13

ATKINS

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□21 DOCKSIDE GA □SHEET □

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ATKINS
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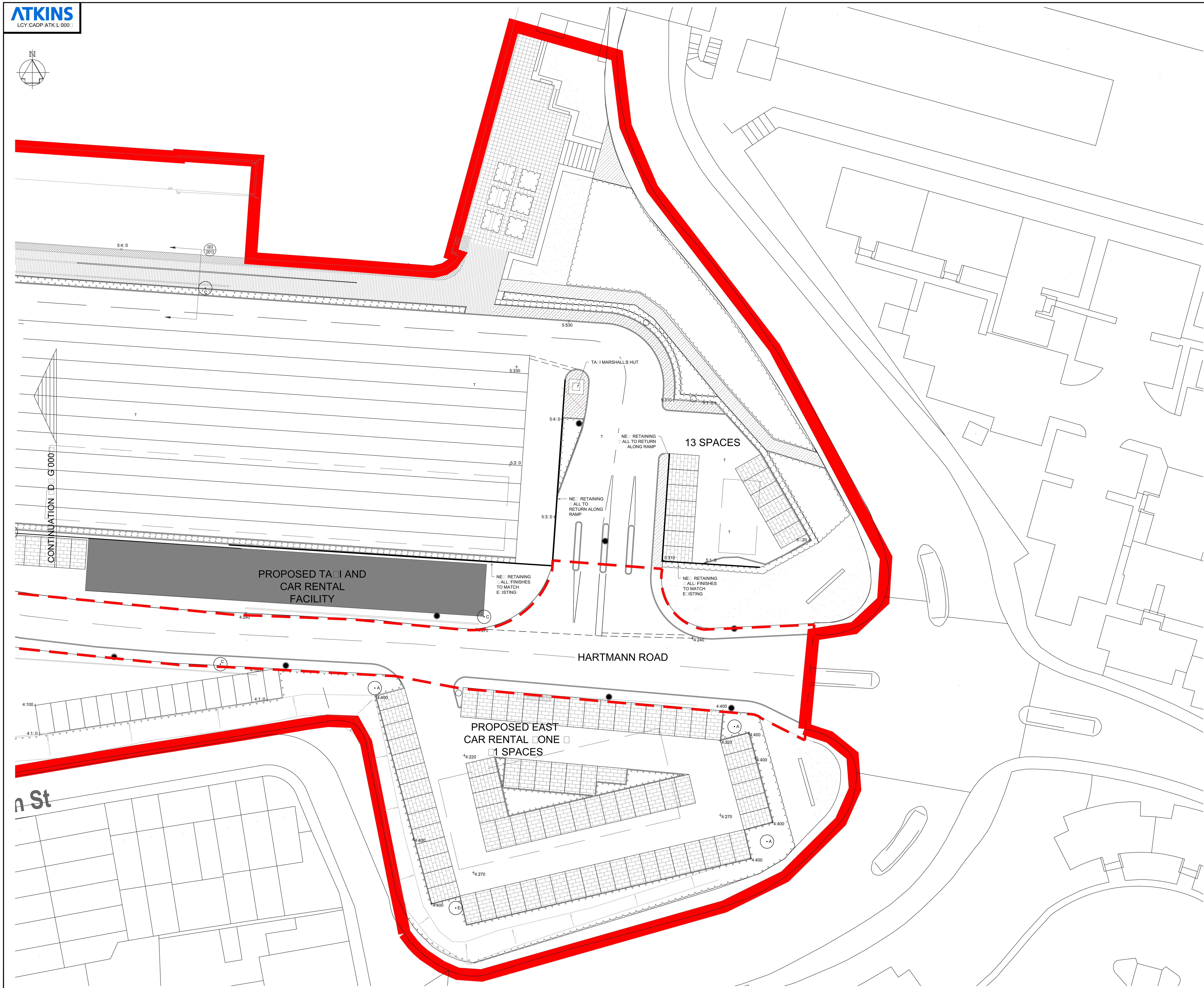

	SOFT LANDSCAPE PLANTING
	E□ISTING DOCK □ ITH COPING RETAINED
	ARTIFICIAL STONE FLAG PAVING
	DISUSED RAIL□ AY LINE: RETAINED LANDSCAPE FEATURE
	NATURAL STONE SETTS
T	TARMAC
	BLOCK PAVING □CAR PARK
	HARTMANN RD □ ORKS BOUNDARY
C	CCTV COLUMNS □REFER TO LCY□CADP□ATK□H□0002□0011
	LIGHTING COLUMNS □REFER TO LCY□CADP□ATK□E□0001□0010
	PROPOSED ATTENUATION TANKS
+5□□00	PROPOSED LEVELS
×5□□00	E□ISTING LEVELS
	PROPOSED DEVELOPMENT BOUNDARY LINE

NOTE:
ELECTRIC VEHICLE CHARGING POINTS TO BE PROVIDED

REVISIONS

PURPOSE OF ISSUE	R□□□	A□□□□r□□d □□r □□□□	D□□□
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ISSUED FOR PLANNING □FOR APPROVAL	A	PF	05□07□13
ISSUED FOR PLANNING □FOR APPROVAL	□	PF	2□□0□□13

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DRA□ ING TITLE
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SCALES	DRA□ N	CHECKED	CO0ORD CHECK
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0		SHEET A0	PLOT DATE 12/07/13

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LCY□CADP□ATK□L□000□	B

APPENDIX D

Airport Forecourt and Taxi Feeder Park Layout

DO NOT SCALE

A1

Status: P | Drawing Number: 5115752/TP/PD/001 | Rev

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CONSTRUCTION
(ENTER 'NONE' IF APPLICABLE)

MAINTENANCE/CLEANING
(ENTER 'NONE' IF APPLICABLE)

USE
(ENTER 'NONE' IF APPLICABLE)

DECOMMISSIONING/DEMOLITION
(ENTER 'NONE' IF APPLICABLE)

KEY

- BELISHA BEACON
- DETERRENT PAVING
- TACTILE STUDS
- SIGNS (SINGLE POLE)
- SIGNS (MULTIPLE POLES)
- DROP KERBS
- BOLLARDS
- CCTV
- ANPR CAMERA
- ANPR BARRIER
- ANPR THUMP
- BUS SHELTER
- NEW FOOTWAY

Stat	Purpose of Issue	Date	Auth	Rev	Description	By	Date	Chk'd	Auth
P	FOR INFORMATION	–	–	Q	AMENDED FORECOURT LAYOUT	KF	–	–	–
P	FOR INFORMATION	–	–	P	AMENDED FOLLOWING RSA	KF	–	–	–
P	FOR INFORMATION	–	–	O	AMENDED FORECOURT LAYOUT	KF	–	–	–
P	FOR INFORMATION	–	–	N	SPEED ROUNDALS & SIGNAGE	KF	–	–	–
P	FOR INFORMATION	–	–	M	AMENDED FORECOURT LAYOUT	KF	–	–	–
P	FOR INFORMATION	–	–	L	AMENDED FORECOURT LAYOUT	KF	–	–	–
P	FOR INFORMATION	–	–	K	AMENDED FORECOURT LAYOUT	KF	–	–	–
P	FOR INFORMATION	–	–	J	AMENDED FORECOURT LAYOUT	KF	–	–	–
P	FOR INFORMATION	–	–	I	AMENDED FORECOURT LAYOUT	KF	–	–	–

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Project: LONDON CITY AIRPORT

Title: PRELIMINARY DESIGN OPTION C VARIANT

Sheet Size	Original Scale	Designed/Drawn	Checked	Authorised
A1	1:500	KF, Date 0 13	-, Date	-, Date

Status	Drawing Number	Rev
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Rev A
Drawing Number 5115752/TP/PD/131
Status P

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Plotted by: BURD8397

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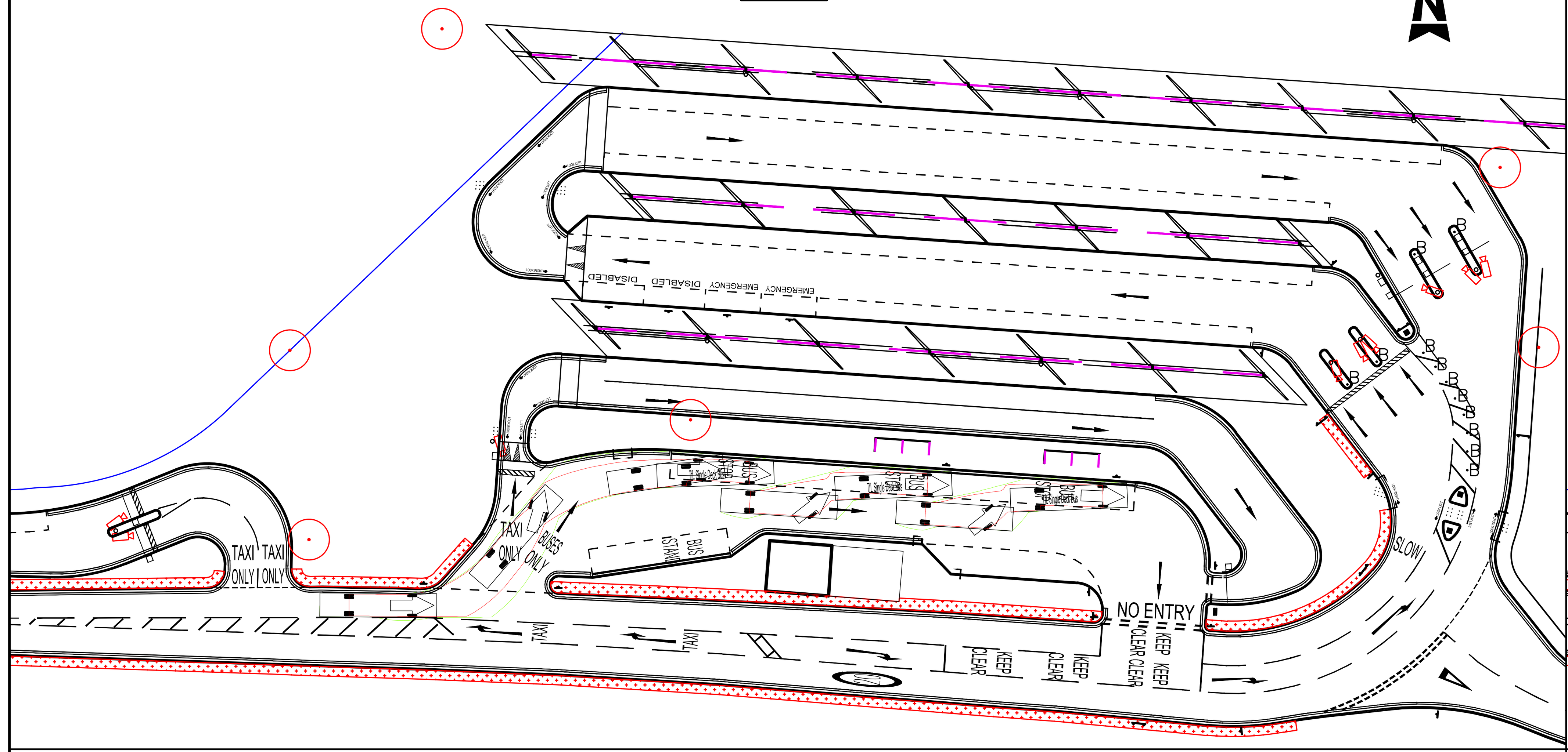

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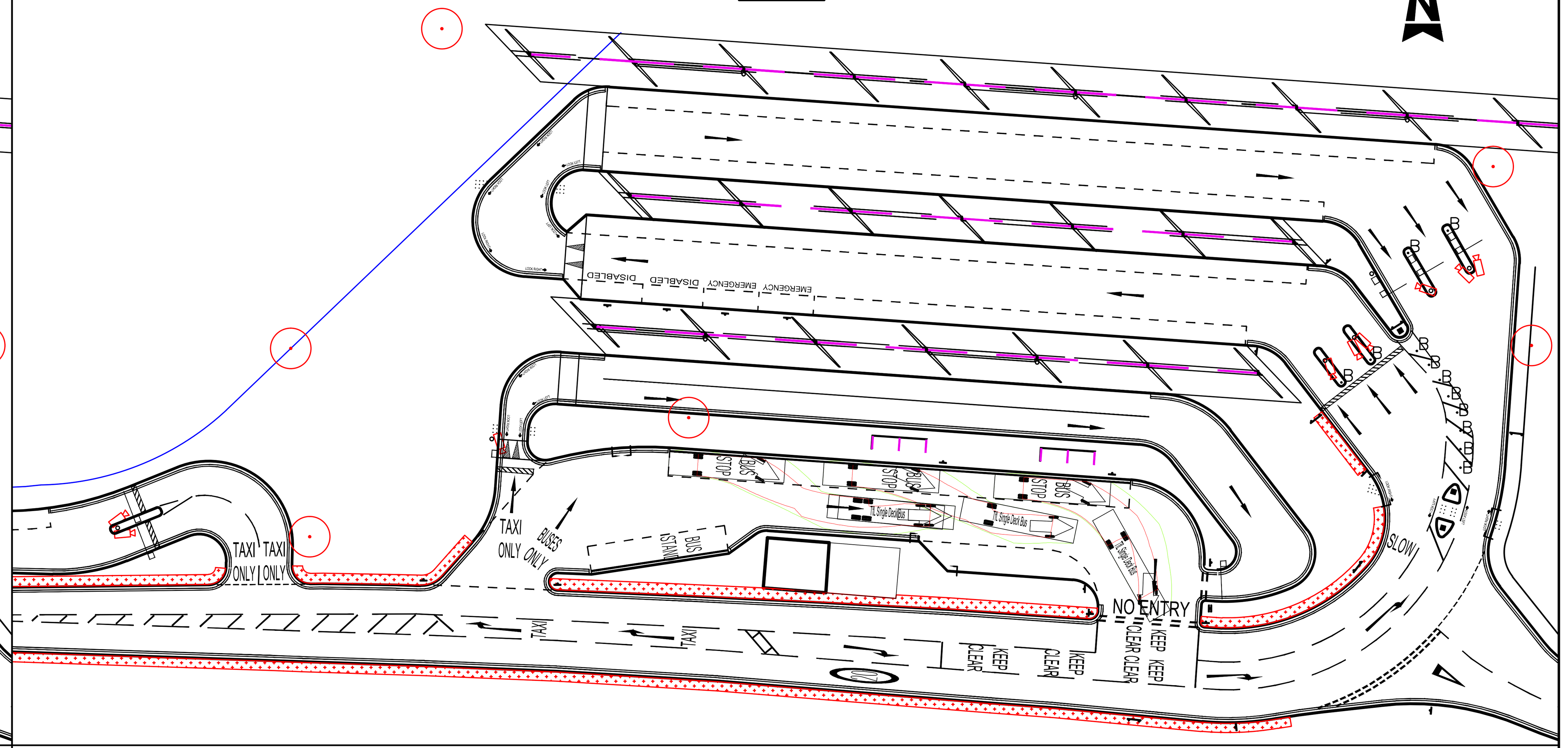

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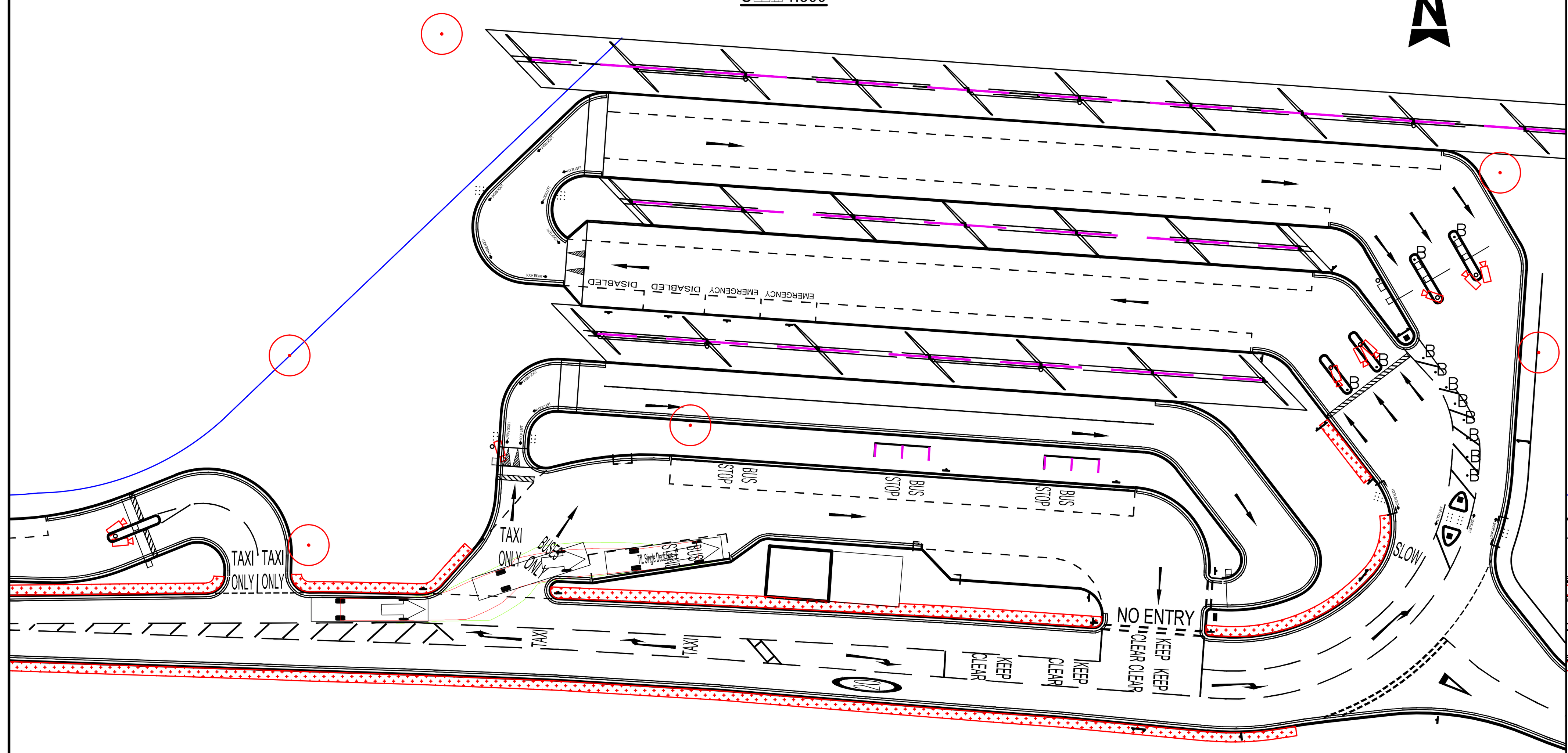

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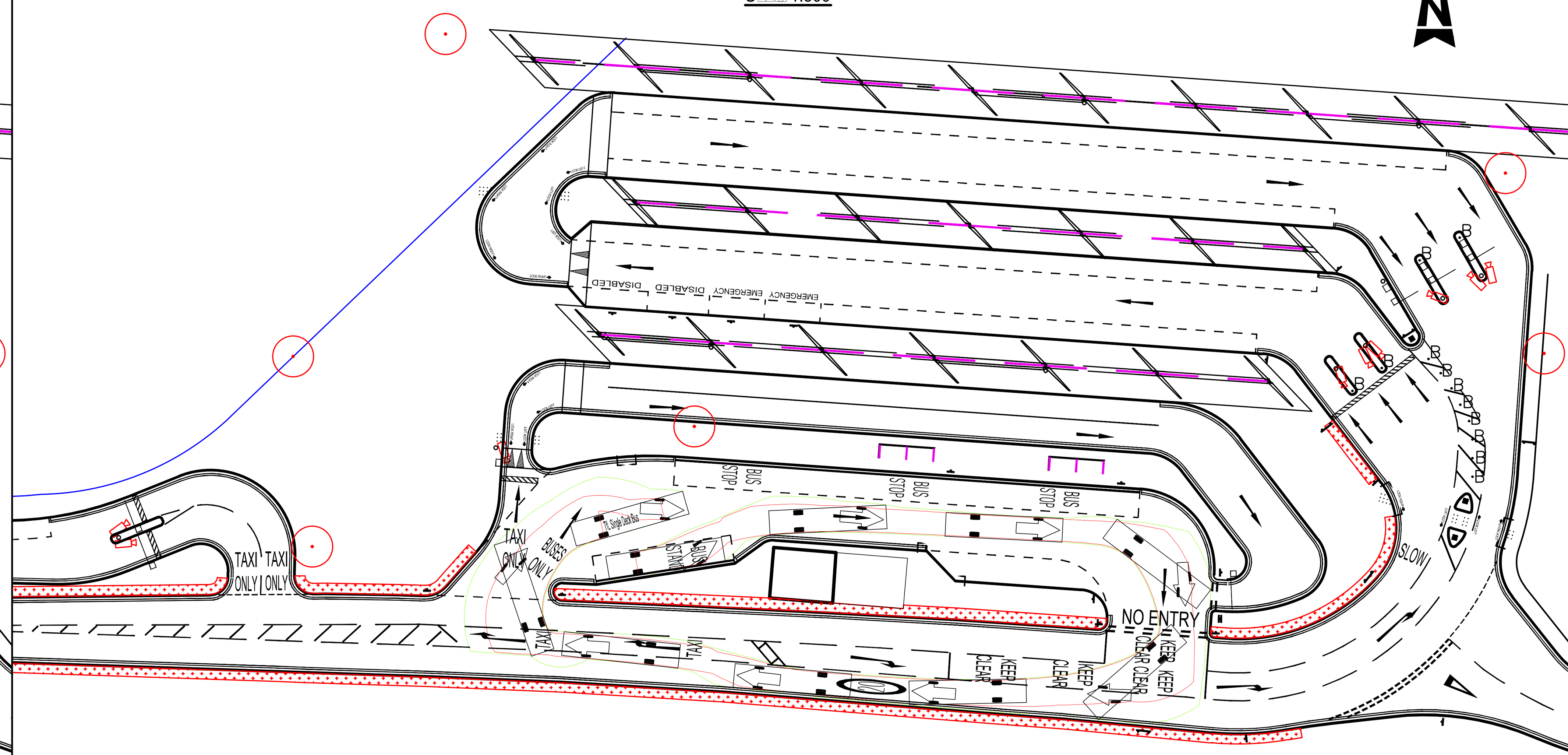

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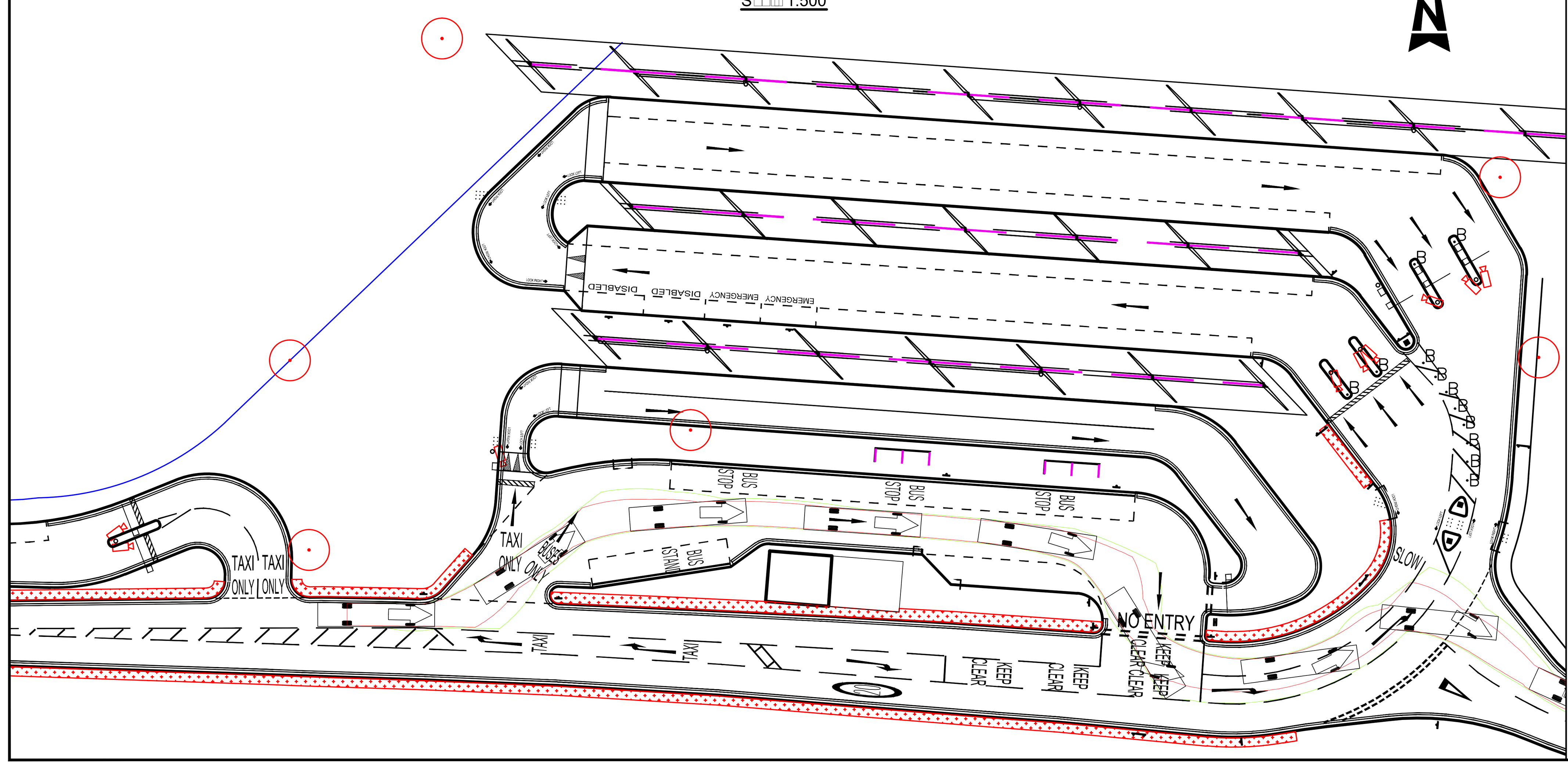

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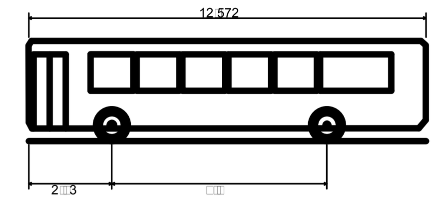

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CONSTRUCTION
NONE
MAINTENANCE/CLEANING
NONE
USE
NONE
DECOMMISSIONING/DEMOLITION
NONE

Stat	Rev	Purpose of Issue	Date	Auth

Rev	Description	By	Date	Chk'd	Auth
A	FOR ISSUE	AM	19/03/13	KF	PG

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Project
LONDON CITY AIRPORT

Title
PRELIMINARY DESIGN
BUS TURNING MOVEMENT

Sheet Size	Original Scale	Designed/Drawn	Checked	Authorised
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Status	Drawing Number	Rev
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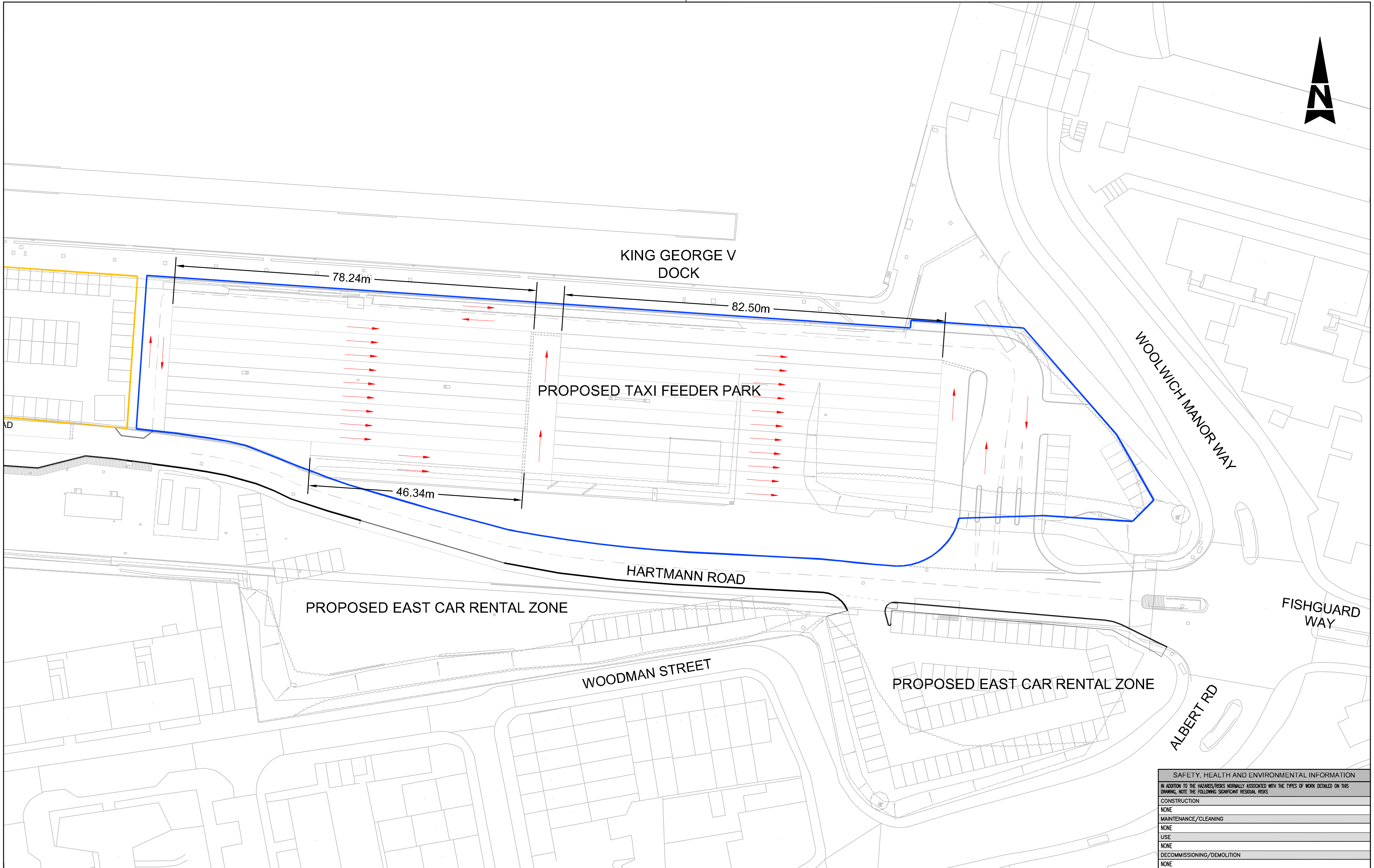
DO NOT SCALE

Status	Drawing Number	Rev
P	5115752/TP/PD/138	-



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING SIGNIFICANT RESIDUAL RISKS

CONSTRUCTION
NONE
MAINTENANCE/CLEANING
NONE
USE
NONE
DECOMMISSIONING/DEMOLITION
NONE

KEY

DIRECTION OF TRAVEL

TAXI FEEDER AREA

Stat	Rev	Purpose of Issue	Date	Auth	Rev	Description	By	Date	Chk'd	Auth
					-	FOR ISSUE	AW	03/0713	PG	GB

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Client

Project
LONDON CITY AIRPORT

Title
TAXI FEEDER PARK
WITH EXIT LANE

Sheet Size	Original Scale	Designed/Drawn	Checked	Authorised
A3	1:750	AW	PG	GB
		Date 03/07/13	Date 03/07/13	Date 03/07/13

Status	Drawing Number	Rev
P	5115752/TP/PD/138	-

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APPENDIX E

Forecourt Road Safety Audit

London City Airport

London City Forecourt

Response Report for Stage 1 Road Safety Audit

March 2013

Notice

This report was produced by Atkins Highways and Transportation for London City Airport for the specific purpose of a Stage 1 Road Safety Audit Designer's Response.

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Document History

JOB NUMBER: 5115752			DOCUMENT REF: RSA Response Report LCY			
B	For Issue	KF		GB	GB	12.04.2013
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Revision	Purpose Description	Originated	Checked	Reviewed	Authorised	Date

Plan Design Enable

Contents

1. Introduction

1.1 This report details the Client Organisation's response to the Stage 1 Road Safety Audit Report carried out on the London City Airport Forecourt and West Building Extension Service Area Design proposals by Atkins. The safety audit was carried out during March 2013 and the results were issued in report reference *London City Airport Forecourt Stage 1 Road Safety Audit*.

1.2 This report was compiled by JP Doherty, Senior Engineer, Atkins on behalf of the London City Airport

1.3 The terms of reference of this response report are as described in HD 19/03, 'Road Safety Audit' (DMRB Volume 5, Section 2).

1.4 Where a safety audit recommendation is accepted, this report details the actions proposed to comply with the recommendation or an alternative solution. Where a safety audit recommendation is rejected, this report details the justification for rejection.

2. Response to Items Raised in the Previous Stage 1 Road Safety Audit

Safety Audit (RSA 1) Location Ref A

2.1 **Location:** New Zebra crossing on Hartmann Road

2.2 **Problem:** Visibility to/from pedestrians.

2.3 **Detailed description of the problem:** The new crossing on Hartmann Road is adjacent to an existing lay-by that is marked for removal. The sightlines to approaching traffic from the northern kerb would be restricted by any obstacles at the approximate location of the lay-by or at the edge of the newly landscaped forecourt area. Restricted visibility could result in approaching motorists failing to identify a crossing pedestrian and in such pedestrians failing to notice approaching traffic. (See Figure 1)

Figure 1 - Potential for restricted visibility at new zebra crossing

Plan Design Enable

AUDIT TEAM RECOMMENDATION

2.4 Ensure that the visibility between pedestrians waiting to cross and approaching vehicles is sufficient for them to see each other clearly.

CLIENT ORGANISATION RESPONSE

Designer's Response:

2.5 Recommendation Accepted. The lay-by is to be removed and replaced with 2.5m wide footway backed by low level bollards and "no waiting" parking restrictions (to be enforced) to be placed along Hartmann Road to prevent parking, dropping off and picking up. Given the anticipated low vehicle speeds on the approach it is assumed that the visibility envelope and stopping distance will be sufficient.

Safety Audit (RSA 1) Location Ref B

2.6 **Location:** Throughout forecourt.

2.7 **Problem:** Pedestrian routing and desire lines.

2.8 **Detailed description of the problem:** The information provided does not detail how pedestrians leaving the terminal building will be directed to the new facilities or how they will be routed through the landscaped area. The new Zebra crossing is not provided at the same location as the existing facility and as such pedestrians, especially staff living locally, may continue to follow the existing route. Indeed the deterrent paving, which is currently on the corner of the access road close to the existing Zebra crossing, is being removed, which could encourage crossing at this location.

2.9 There is also the possibility the some arriving passengers may look to get access to a taxi at the first opportunity, heading straight for Hartmann Road to reach the westbound verge. Pedestrians crossing away from the Zebra crossing may be at risk of being struck by passing traffic.

AUDIT TEAM RECOMMENDATION

2.10 Ensure that the proposals have a clear strategy for routing pedestrians between the terminal and the new forecourt facilities as well as to and from the new Zebra crossing.

CLIENT ORGANISATION RESPONSE

Designer's Response:

2.11 **Recommendation accepted:** However way finding details are to be confirmed at a later stage. The Zebra crossing is being moved to a more direct route between the terminal building and new staircase and existing ramp between Hartmann Road and Newland Street. The existing zebra location will be difficult to access as deterrent paving will be installed on the north side of Hartmann Road. The passenger arrivals hall will be located next to the east terminal entrance within sight of the forecourt (taxi rank, bus stops, and private vehicle pickup point). Passengers will naturally be drawn to the forecourt to access transport modes. Stopping on Hartmann Road will be prohibited to prevent obstruction of the carriageway.

Safety Audit (RSA 1) Location Ref C

2.12 **Location:** Hartmann Road.

2.13 **Problem:** Ramped access to Newland Street

2.14 **Detailed description of the problem:** The proposals for the south side of Hartmann Road include closure of the existing lay-by. The new pedestrian area created, and connected to the forecourt by the introduction of the new Zebra crossing, is higher than Newland Street. There is an existing ramped access to Newland Street but this is more easily reached from the existing Zebra crossing. The introduction of steps at this location would reduce disabled access to the Airport from the local area, this access is likely to be important given the frequency of bus services to the airport that also provide for local people.

2.15 This area underneath the Dockland Light Railway (DLR) viaduct provides motorcycle and bike parking (see Figure 2). The dropped kerbed access to the parking would conflict with the new Zebra crossing and pedestrians could be struck by motorcyclists and cyclists gaining access.

AUDIT TEAM RECOMMENDATION

2.16 Retain ramped access between Hartmann Road and Newland Street.

2.17 Relocate the motorbike and bike parking area or sufficiently segregate the area from the pedestrian crossing.

CLIENT ORGANISATION RESPONSE

Designer's Response:

2.18 **Recommendation accepted**: The ramp access between Hartmann Road and Newlands road will be retained. The raised footway on Hartmann Road will be lowered as part of removing the lay-by. The existing ramp will tie into the new footway.

2.19 The motorcycle parking will be relocated further down the dockside. Cycle parking will remain adjacent to the top of the stairs albeit reorganised to accommodate the new stairs.

Safety Audit (RSA 1) Location Ref D

2.20 **Location:** Throughout forecourt area

2.21 **Problem:** Direction of approaching traffic

2.22 **Detailed description of the problem:** The existing forecourt area has 'look left' and 'look right' markings at all crossings (see Figure 3), as many foreign passengers arriving at the airport may not be familiar with the direction traffic approaches. The complexity of the new arrangement may also lead to confusion, even for UK residents. The lack of advisory markings could result in a pedestrian walking into the path of an approaching vehicle.

AUDIT TEAM RECOMMENDATION

2.23 Provide 'look left' and 'look right' markings at all crossing locations.

CLIENT ORGANISATION RESPONSE

Designer's Response:

2.24 **Recommendation accepted**: `Look Left/ Right` markings to be included in layout.

Safety Audit (RSA 1) Location Ref E

2.25 **Location:** Hartmann Road

2.26 **Problem:** Taxi attempt to enter via taxi drop off exit.

2.27 **Detailed description of the problem**: The advanced direction sign on the approach to the taxi drop off shows drivers the route ahead with the entrance to the drop area as the first side road to be reached. Drivers at first encounter the exit from the drop off area and a small number may attempt to make a turn into this area, especially at quiet times when there is a lack of other traffic to act as a guide. This could result in head on collisions at the lay-by exit. A similar issue exists with the exit from the bus lay-by on the westbound approach.

AUDIT TEAM RECOMMENDATION

2.28 Add the lay-by exit to the sign with a 'no-entry' plate to remove confusion. Revise the design of the sign on the westbound to account for the bus lay-by exit.

CLIENT ORGANISATION RESPONSE

Designer's Response:

2.29 **Recommendation accepted**

Safety Audit (RSA 1) Location Ref F

2.30 **Location:** Hartmann Road.

2.31 **Problem:** Taxi queue.

2.32 **Detailed description of the problem**: At the time of the site visit the Audit Team noted a large number of taxis queuing along Hartmann Road far past the terminal and hire car parking. It is understood that there may be a taxi marshalling area provided elsewhere to hold these taxis and control access to the forecourt operations but, in the absence of detail at this stage of design it is unclear what parking/waiting controls will be in place on the proposed road system. If taxis are able to by-pass any marshalling system and if waiting is not strictly controlled and enforced, it would certainly restrict the performance of the junctions, taxi and bus pickup/drop off areas and the road system itself. This could increase the risk of collisions in and around the new system.

AUDIT TEAM RECOMMENDATION

2.33 Implement a comprehensive marshalling system which will efficiently prevent injudicious entry to the system and provide appropriate parking/waiting restrictions to prevent taxis and other vehicles from causing an obstruction or other hazards.

CLIENT ORGANISATION RESPONSE

Designer's Response:

2.34 **Recommendation accepted**: A new taxi feeder park system has been designed further east of the forecourt, by Hartmann Road junction with Woolwich Manor Way as part of a further package of works along Hartmann Road to the east of the terminal building.

3. Client Organisation Statements

Client Officer's Statement

3.1 In accordance with HD 19/03, 'Road Safety Audit' (DMRB Volume 5, Section 2), I certify that I have reviewed the items raised in the Stage 2 Safety Audit Report. I have given due consideration to each issue raised and have stated my proposed course of action for each in this report. I seek the Senior Client Officer's endorsement of my proposals.

Name: **John Higgins**

Position: DIRECTOR OF ASSET MGMT & DEVELOPMENT.

Organisation: **London City Airport**

Signed:

Dated: 17/4/13

Senior Client Officer's Statement

3.2 I accept these proposals by the Client Officer.

Name:

Position:

Organisation: **London City Airport**

Signed:

Dated:

APPENDIX F

Car Park Data

SHORT-STAY

148 SPACES	148				
Hr	Entry	Exits	Total	Occupied	% Occupied
05:00	14	2	16	12	8.3%
06:00	37	7	44	43	28.9%
07:00	62	35	97	69	46.7%
08:00	60	39	99	91	61.3%
09:00	40	37	77	94	63.2%
10:00	26	19	45	101	68.0%
11:00	32	17	49	116	78.4%
12:00	28	22	50	123	83.0%
13:00	27	21	49	129	86.9%
14:00	24	22	46	131	88.7%
15:00	24	22	45	134	90.3%
16:00	29	27	57	135	91.5%
17:00	56	47	103	145	97.6%
18:00	60	71	131	133	90.2%
19:00	42	55	97	121	81.4%
20:00	27	39	66	109	73.5%
21:00	8	16	25	101	68.0%
22:00	1	2	4	100	67.4%
				MAX	97.6%

LONG-STAY NB. Assumes 214 spaces occupied overnight

644 SPACES	644				
Hr	Entry	Exits	Total	Occupied	% Occupied
05:00	90	1	90	303	47.0%
06:00	58	2	60	359	55.8%
07:00	34	6	40	388	60.2%
08:00	25	8	33	404	62.7%
09:00	12	15	27	400	62.2%
10:00	12	10	23	403	62.5%
11:00	20	13	33	410	63.6%
12:00	36	16	52	430	66.8%
13:00	43	54	97	419	65.0%
14:00	19	30	49	407	63.2%
15:00	14	16	30	404	62.7%
16:00	13	15	28	401	62.3%
17:00	9	28	37	382	59.3%
18:00	10	35	44	357	55.4%
19:00	6	41	47	321	49.9%
20:00	3	51	54	274	42.5%
21:00	2	41	43	235	36.5%
22:00	1	9	10	227	35.2%
				MAX	66.8%

SHORT-STAY

275 spaces	275				
	Entry	Exit	Total	Occupied	% Occupied
05:00	22	3	25	30	10.7%
06:00	59	11	69	78	28.3%
07:00	98	56	154	120	43.5%
08:00	96	62	157	154	56.0%
09:00	63	59	122	158	57.6%
10:00	41	30	71	170	61.7%
11:00	51	27	78	194	70.6%
12:00	45	34	79	205	74.6%
13:00	43	34	77	214	77.9%
14:00	39	35	73	218	79.4%
15:00	38	34	72	222	80.7%
16:00	47	43	90	225	81.9%
17:00	89	75	164	239	87.1%
18:00	95	112	207	222	80.7%
19:00	66	87	153	201	73.2%
20:00	43	62	105	183	66.4%
21:00	13	26	39	170	61.7%
22:00	2	3	6	168	61.2%
				MAX	87.1%

LONG-STAY

NB. 390 spaces occupied overnight

775 spaces	775				
	Entry	Exit	Total	Occupied	% Occupied
05:00	142	1	143	531	68.5%
06:00	92	3	95	620	80.1%
07:00	60	24	85	656	84.6%
08:00	49	38	87	666	86.0%
09:00	31	42	73	656	84.6%
10:00	31	49	80	638	82.3%
11:00	40	27	67	651	84.0%
12:00	71	38	109	684	88.3%
13:00	76	95	170	665	85.8%
14:00	40	66	107	639	82.4%
15:00	33	33	66	639	82.5%
16:00	36	38	74	638	82.3%
17:00	44	56	101	626	80.7%
18:00	35	75	110	585	75.5%
19:00	30	86	116	530	68.4%
20:00	25	97	121	458	59.1%
21:00	22	79	100	401	51.7%
22:00	18	21	38	398	51.4%
				MAX	88.3%

SHORT-STAY

148 spaces	148				
	Entry	Exit	Total	Occupied	% Occupied
05:00	17	2	19	15	10.0%
06:00	44	8	52	51	34.6%
07:00	74	42	116	83	56.0%
08:00	72	47	119	109	73.4%
09:00	48	44	92	112	75.8%
10:00	31	23	54	121	81.5%
11:00	39	20	59	139	94.0%
12:00	34	26	60	147	99.5%
13:00	33	26	58	154	104.2%
14:00	29	26	55	157	106.3%
15:00	29	26	54	160	108.2%
16:00	35	33	68	162	109.7%
17:00	67	56	123	173	117.1%
18:00	72	85	156	160	108.1%
19:00	50	66	116	144	97.6%
20:00	33	47	79	130	88.1%
21:00	10	20	30	121	81.5%
22:00	2	3	4	120	80.8%
				MAX	117.1%

LONG-STAY

NB. 322 spaces occupied overnight

644 spaces	644				
	Entry	Exit	Total	Occupied	% Occupied
05:00	107	1	108	428	66.5%
06:00	70	2	72	496	77.0%
07:00	41	7	48	530	82.3%
08:00	29	10	39	550	85.4%
09:00	14	19	33	545	84.7%
10:00	15	12	27	548	85.1%
11:00	24	16	40	556	86.4%
12:00	43	19	62	581	90.2%
13:00	52	65	117	567	88.1%
14:00	22	36	58	553	85.9%
15:00	16	20	36	550	85.4%
16:00	15	19	34	546	84.8%
17:00	10	34	44	523	81.2%
18:00	12	42	53	493	76.6%
19:00	7	49	56	450	70.0%
20:00	4	61	64	394	61.1%
21:00	2	49	51	347	53.9%
22:00	1	11	12	337	52.4%
				MAX	90.2%

SHORT-STAY

275 spaces	275				
	Entry	Exit	Total	Occupied	% Occupied
05:00	23	3	26	30	10.9%
06:00	60	11	71	79	28.8%
07:00	100	57	157	122	44.3%
08:00	98	63	161	157	57.1%
09:00	65	60	124	162	58.7%
10:00	42	31	73	173	62.9%
11:00	52	27	80	198	72.0%
12:00	46	35	81	209	76.0%
13:00	44	35	79	218	79.4%
14:00	40	35	75	223	81.0%
15:00	39	35	73	226	82.3%
16:00	47	44	92	230	83.5%
17:00	91	76	167	244	88.8%
18:00	97	115	211	226	82.3%
19:00	68	89	157	205	74.6%
20:00	44	63	107	186	67.7%
21:00	13	27	40	173	62.9%
22:00	2	4	6	172	62.4%
				MAX	88.8%

LONG-STAY

NB. 390 spaces occupied overnight

775 spaces	775				
	Entry	Exit	Total	Occupied	% Occupied
05:00	145	1	146	534	68.9%
06:00	94	3	97	625	80.7%
07:00	61	25	86	662	85.4%
08:00	50	39	88	672	86.8%
09:00	32	42	74	662	85.4%
10:00	31	49	80	644	83.1%
11:00	41	27	68	658	84.8%
12:00	72	38	110	691	89.2%
13:00	77	96	173	672	86.7%
14:00	41	67	108	645	83.3%
15:00	34	33	67	646	83.3%
16:00	36	38	75	644	83.1%
17:00	45	57	102	631	81.4%
18:00	35	76	111	590	76.1%
19:00	30	87	117	533	68.8%
20:00	25	98	123	460	59.3%
21:00	22	80	102	402	51.8%
22:00	18	21	39	399	51.4%
				MAX	89.2%

APPENDIX G

Travel Plan

LondonCityAirport

Travel Plan

February 2011

Summary

Travel Plans are one of the ways of potentially reducing the car dependency of sites by providing information and opportunities for alternative modes of transport.

London City Airport (LCY) is fortunate in being well connected to and easily accessible by public transport to London's extensive and multi-modal transportation network, particularly since the extension of the Docklands Light Railway in 2005 to include a station at London City Airport. The modal share for passenger travel to London City Airport is excellent, and probably one of the best of any significant commercial airport in Europe.

Nevertheless improvements can always be made in reducing the impacts of the Airport's staff and passengers on the local road network, in line with LCY's Section 106 Planning Agreement, and increasing the mode share of more sustainable modes of transport. The Travel Plan outlines the methods LCY will use to achieve this.

London City Airport has appointed a Travel Plan Coordinator to produce, manage, implement, monitor and review the Travel Plan, utilising a range of initiatives, measures and marketing strategies, covering walking; cycling; public transport; car sharing and parking.

This will result in a managed, monitored and controlled travel ethos to the benefit of staff, passengers, local communities, London and the general environment.

Contents

Figures

1

Introduction

Background

1.1 On 9th July 2009, London City Airport (LCY) was granted permission to increase the number of annual aircraft movements from c.80,000 in 2006 to 120,000 (07/01510/VAR). This planning approval forms the first step of London City Airport's Master Plan, which was published in November 2006 and sets out the Airport's growth aspirations through to 2030.

1.2 The Travel Plan is a long term strategy and action plan that will evolve and contribute towards the Airport achieving the level of growth detailed in the Master Plan. It is a plan required by the Airport's 2009 Section 106 Planning Agreement (Part 1, Sixth Schedule), and developed to encourage passengers and staff to use sustainable transport modes to access the Airport where possible. This includes making the best use of public transport, including minimising the number of trips to and from LCY by single occupancy vehicles. For ease of use, this Travel Plan makes reference and targets for both passengers and staff. July 2009, London City Airport (LCY) was granted permission to increase the number of annual aircraft movements from c.80,000 in 2006 to 120,000 (07/01510/VAR). This planning approval forms the first step of London City Airport's Master Plan, which was published in November 2006 and sets out the Airport's growth aspirations through to 2030.

Location and Existing Site

1.3 LCY is located in the Royal Docks, six miles east of the City of London, Europe's major financial district, and two miles east of Canary Wharf, London's new business centre located in the Docklands. It is just half a mile from ExCeL London, the Exhibition and International Convention Centre. Existing land uses in the vicinity of the site are varied and of mixed use: there are residential, industrial and commercial areas. Figure 1 (included at the end of this document), a site location plan, shows the airport site in relation to the surrounding area and transport system.

1.4 The permitted and existing use of the site is as an international airport. There are two elements to the Airport; the main airport building with ancillary services and the Jet Centre that serves non-scheduled corporate aviation.

1.5 Traffic at LCY is controlled by a range of both day-specific and annual limits on aircraft movements as set out in condition 8 of the planning permission.

The Airport Transport Forum and Airport Surface Access Strategy

1.6 In line with Government policy, LCY has established an Airport Transport Forum (ATF). The objectives of the Forum, which is made up of representatives of the Airport, local authorities, regional planning bodies, transport operators, infrastructure providers, local businesses and other interested bodies, are:

- To make access to the airport more sustainable;
- To draw up short term and long term targets for increasing the use of public transport by passengers and staff;
- To devise an Airport Surface Access Strategy for meeting these targets to feed into the transport plan for London prepared and revised from time to time by the Mayor of London and into the local implementation plans to be prepared by the London Boroughs;
- To monitor the implementation of the strategy.

1.7 The Travel Plan will work alongside the Airport Surface Access Strategy (available on the LCY website) with the Airport Transport Forum having a vital role in the development, implementation, monitoring and review of the Travel Plan.

1.8 The current LCY Surface Access Strategy was finalised in February 2005 and in line with Government Guidance the objectives of the strategy are to:

- Encourage the use of public transport for journeys to and from the airport (for staff and passengers);
- Offer a choice of efficient public transport;
- Ensure access for the disabled;
- Ensure access for employment;
- Contribute to regeneration.

1.9 These objectives are compatible with the objectives of this Travel Plan. The current Airport Surface Access Strategy now requires review and modification following the extension of the Docklands Light Railway (DLR) to the Airport which opened in December 2005. This together with a further extension of the DLR south of the river to Woolwich in 2009 has encouraged a significant shift in travel patterns to and from LCY.

Travel Plan Scope

1.10 A travel plan is a package of site-specific initiatives aimed at improving the availability and choice of travel modes to and from a development. It may also promote practices or policies that reduce the need for travel. Travel plans are becoming an increasingly important tool in the delivery of sustainable outcomes. They provide, together with transport assessments, a mechanism for assessing and managing access to sites. In addition, the initiatives contained within travel plans can help improve accessibility, both to and from the site, and to local amenities and services.

1.11 The Travel Plan considers journeys made by staff employed at the Airport and passengers and how they can be encouraged to travel to and from the site efficiently and using sustainable modes of transport.

1.12 This Travel Plan sets out a strategy for managing single occupancy car use for journeys to and from the Airport. This is in line with LCY's Section 106 Planning Agreement with the London Borough of Newham (LBN), which states '(the airport) shall use reasonable endeavors to agree with the council targets for managing any impacts of the airport's staff and passengers on the local road network'.

1.13 In addition to £50,000 paid by LCY towards a road capacity study of the local road network and impact the Airport has upon it, LCY has a commitment through its Section 106 Planning Agreement to a "Road Capacity Contribution". This contribution (of up to £190,000 index- linked) will be used by the relevant highway authority towards the cost of any mitigation works recommended by the study mentioned above. This contribution acts in line with "managing any impacts of the airport's staff and passengers on the local road network.'

1.14 For clarity, this plan has been structured to include the following sections;

Section 2 –	will outline the accessibility of the site and outlines the current situation.
Section 3 –	indicates objectives and targets for the site.
Section 4 –	outlines the Travel Plan strategy including how it is managed, with marketing and consultation strategies.
Section 5 –	sets out the measures that have been implemented to help achieve the objectives and targets of the Travel Plan.
Section 6 –	outlines the monitoring methodology.
Section 7 –	provides a brief summary.

1.15 Sections Two to Four have been sub-divided into points relating to 'Staff Travel' and 'Passenger Travel' to highlight the different measures and targets for each audience and address the requirements of the Section 106 Planning Agreement to devise a plan for each of these key groups.

Accessibility and Existing Travel Situation

2

Access and Egress

2.1 LCY is easily accessible by road via a signaled controlled junction on the A112 at its junction with Hartmann Road, which provides direct access to the Terminal Building and beyond to the Short and Long Stay Car Parks. The A112 runs east to west connecting with the A1020 just to the north of the Airport and with the A117 to the east, to the north of the Woolwich Ferry. LCY is approximately fifteen miles from the M25 to the north, access to which is via the A13 and A406/M11 and 16 miles from the M25 to the south, access via the A102/A2. There are no road access constraints.

Pedestrians and Cyclists

2.2 LCY is located close to a number of residential areas and there is an opportunity for staff living in these areas to walk or cycle to work. Bicycle parking is available for staff in the Short Term Car Park (14 spaces), and the Western Staff Car Park (14 spaces). Cycle parking for staff and passengers is available at at the Terminal Forecourt (30 bicycle spaces and c20 spaces for motorcycles). All of the streets in the area have footways and there are pedestrian crossings at the major junctions in the area, controlled by traffic signals.

2.3 When assessing the accessibility of a site to local facilities, including access to public transport, an average walking speed of approximately 1.4m/s can be assumed, which equates to approximately 400 metres in 5 minutes or 3 miles per hour (mph). (Source: The Institution of Highways and Transportation publication 'Guidelines for Providing for Journeys on Foot (2000)').

2.4 The Institution of Highways and Transportation publication 'Guidelines for Providing for Journeys on Foot (2000)' contains guidance on the distances it is considered acceptable and desirable to expect people to walk for journeys of differing type. The table is recreated below as Table 2.1.

Table 2.1 - Extract from IHT 'Guidelines for Providing for Journeys on Foot'

	Town Centres (m)	Commuting/School (m)	Elsewhere (m)
Desirable	200	500	400
Acceptable	400	1000	800
Maximum	800	2000	1200

2.5 Using the acceptable walking speed stated above and assuming an average cycling speed of approximately 9mph (three times faster than the walking speed), walking and cycling travel distances from the Airport Terminal Building are shown in Figure 2 (found at the end of this document).

Public Transport

2.6 London City Airport is easily accessible via public transport. The Airport Terminal is directly linked to the Docklands Light Railway London City Airport Station. This link connects the Airport quickly and easily with London's extensive public transport network, tube, train and bus.

Docklands Light Railway (DLR)

2.7 LCY was connected in December 2005 to London's public transport rail network via the Docklands Light Railway (DLR), which links directly into the Airport Terminal Building. The DLR was one of the first light rail systems in Britain, opening in 1987 to serve the first brownfield developments in Docklands. Since then, a number of extensions have taken place, extending the DLR to Bank, Beckton, Lewisham and in 2009 to Woolwich Arsenal via London City Airport. The DLR is now a significant railway which carries almost 70 million passengers per year[1].

2.8 There are a large number of potential public transport routes to LCY from across the London area, provided by various modes of transport. With the exception of the limited number of people who access the Airport by bus, the last stage of any public transport journey to LCY will necessarily use the DLR. The service frequency and first and last train times for the DLR at LCY are shown in Table 2.2.

Table 2.2 – Docklands Light Railway: Service Frequency and Hours of Operation – (Source: Transport for London as at 5 November 2010)

Departure Times from London City Airport to Woolwich Arsenal (Platform 1)			
	First Train	**Last Train**	**Frequency (Off Peak/On Peak)**
Mondays to Fridays	05:15	00:59	Every 10 minutes/ 4 minutes
Saturday	05:19	00:59	Every 10 minutes
Sunday	06:49	23:59	Every 10 minutes
Departure Times from London City Airport to Bank or Canning Town (Platform 2)			
	First Train	**Last Train**	**Frequency (Off Peak/On Peak)**
Mondays to Fridays	05:33	00:18	Every 10 minutes/ 4 minutes
Saturday	05:18	00:18	Every 10 minutes
Sunday	06:48	23:18	Every 10 minutes

2.9 The LCY website includes a link to the Transport for London DLR website and also an up to date DLR route map. There are a number of options for transport to central London locations from LCY using the DLR.

London City Airport to Central London

Option 1 – via Bank

Take the Docklands Light Railway from London City Airport direct to Bank. The journey time is approximately 22 minutes and the trains run at 4.5 minute intervals (10 minute intervals off peak). The Circle, District, Northern, Central and Waterloo and City lines, as well as London Overground are also available from Bank.

Option 2 – Liverpool Street via Stratford

Take the Docklands Light Railway from London City Airport direct to Canning Town and connect with the Jubilee line to Stratford. Take an overground train from Stratford direct to Liverpool Street. The journey time from Stratford to Liverpool Street is approximately 10 minutes and trains run at 15 minutes from Stratford.

Option 3 - West End (Bond Street) via Canning Town

Take the Docklands Light Railway from London City Airport to Canning Town to connect with the Jubilee Line. The journey time to Canning Town is approximately 7 minutes and the trains run at 4.5 minute intervals (10 minute intervals off peak). The journey time from Canning Town to Bond Street is approximately 23 minutes.

London City Airport to Canary Wharf

Option 1 – Via Canning Town

Take the Docklands Light Railway from London City Airport to Canning Town to connect with the Jubilee Line to Canary Wharf. The total journey time is approximately 14 minutes and DLR trains run at 4.5 minute intervals (10 minute intervals off peak).

Option 2 – Via Poplar

Take the Docklands Light Railway to Poplar to connect with a Docklands Light Railway service to Canary Wharf. The total journey time takes approximately 18 minutes and the trains run at 4.5 minute intervals (10 minute intervals off peak).

Overview of Connections

London Underground

2.10 The DLR connects to the London Underground at a number of stations, which provides good connections to London's public transport network for travel to central and outer London.

[1] **www.tfl.gov.uk** 18 November 2009

2.11 The DLR connects with the London Underground (tube network) at:

Canning Town (Jubilee Line) 3 stops from LCY

West Ham (District Line, Hammersmith & City Line, Jubilee Line) 4 stops from LCY on DLR and Jubilee Line

Stratford (Central Line) 5 stops from LCY via Jubilee Line

Shadwell (East London Line) 9 stops from LCY

Bow Church/Bow Road (District Line; Hammersmith & City Line) 10 stops from LCY

Bank (Central Line; Northern Line; District Line; Circle Line; Waterloo & City Line) 10 stops from LCY

Tower Gateway/Tower Hill (District Line; Circle Line;) 10 stops from LCY

Train

2.12 The DLR also connects to London's extensive London Overground railway network at a number of stations;

Woolwich Arsenal (South Eastern Line) 2 stops from LCY on the DLR

Stratford (One Railway and London Overground) 5 stops from LCY on DLR and Jubilee Line

Limehouse (c2c Line) 8 stops from LCY on the DLR

Tower Gateway/Fenchurch Street (c2c Line) 10 stops from LCY on the DLR

Greenwich (South Eastern Line) 15 stops from LCY on the DLR, or 12 stops on the DLR and Jubilee Line.

Lewisham (South Eastern Line) 18 stops from LCY on the DLR, or 15 stops on the DLR and Jubilee Line.

2.13 The London Overground provides easy connections from destinations such as Richmond, Highbury & Islington, Camden Road or West Hamstead to Stratford, with connections on the Jubilee Line and Docklands Light Railway to London City Airport.

2.14 The c2c Line runs east from Fenchurch Street Station along the north bank of the Thames serving destinations in Essex such as Barking, Tilbury, Basildon and terminating at Shoeburyness. These services can be easily accessed by interchange at Limehouse (8 stops from LCY on the DLR) and West Ham (4 stops on DLR and Jubilee Line).

2.15 The One Railway Line provides services from Liverpool Street Station, including the Stansted Express, with services to destinations such as Ilford, Romford, Brentwood Braintree, Colchester, Stratford, Southend and Harwich.

2.16 The South Eastern Metro and MainLine is accessible via Woolwich Arsenal, Lewisham or Greenwich DLR stations and runs from Charing Cross, Blackfriars, Victoria and Cannon Street Stations. The South Eastern Lines serve stations in south London and further, including:

Dartford
Gillingham
Hayes
Sevenoaks
Ashford International
Tunbridge Wells and the Kent Coast (including Dover and Folkestone).

Bus

2.17 There are two London Transport bus services available for local journeys to and from LCY.

2.18 The 473 bus serves North Woolwich, Silvertown, London City Airport, Prince Regent, Plaistow and Stratford. The service departs every 9 to 13 minutes from the terminal forecourt. Buses operate from Stratford from 05:04 (06:11 Sunday) with the last bus at 01:14 (Monday to Sunday). First bus from North Woolwich is at 04:30 (05:39 Sunday) with the last bus at 00:16 (00:18 Sunday).

2.19 The 474 bus serves Canning Town, North Woolwich, East Beckton, East Ham and Manor Park via Silvertown. The service operates 24 hours a day with a typical peak period frequency of 10 – 13 minutes.

2.20 A further 11 bus services call at Canning Town DLR station, 3 stops on the DLR from the Airport. Buses on these routes call at a wide range of destinations including Romford (No. 5), Stoke Newington (No. 276), Bethnal Green (No. 309), Stratford (No. 241), Ilford (No. 147) and Walthamstow (No. 69), Aldgate (No. 115), East Ham (No. 300), Mile End (No. 232) and Manor Park for the Woolwich Ferry (No. 474).

Taxis and Private Hire

2.21 There is a taxi rank (for black cabs licensed by the Public Carriage Office) directly outside the Terminal Building.

2.22 Private mini cabs are based off-site and passengers and staff are able to pre-book this service.

2.23 A chauffeur service is based on-site in the Airport Terminal.

2.24 Car rental companies are based onsite, outside the terminal, for passengers wishing to hire a car.

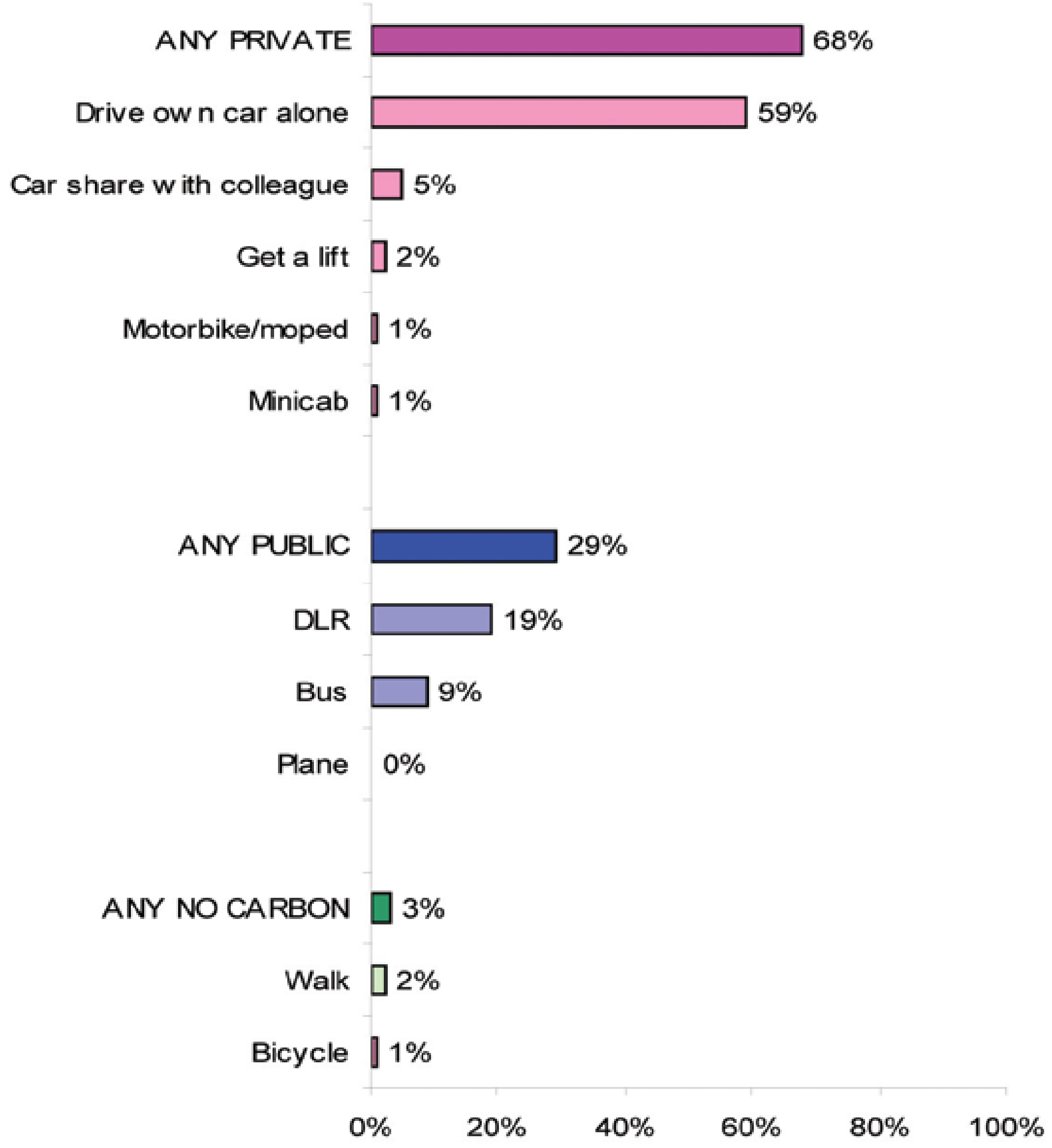
London City Airport Staff Travel Patterns

2.25 There are currently just over 2000 employees working on-site at LCY. There are a number of modes of travel available to these employees and the Airport provides facilities to support these methods.

2.26 In the development of this Travel Plan, London City Airport conducted a Staff Travel Survey in October 2009. This survey was undertaken by an independent market research company and yielded responses from approximately 40% of all staff on-site.

2.27 One of the key results of the Staff Travel Survey is the normal transport mode share for staff. These results are shown below in Chart 2.1.

Chart 2.1 – Staff Last Mode of Transport Normally Used (Source, LCY Staff Travel Survey, October 2009)



2.28 At December 2009, LCY Ltd itself directly employed 403 people of the c.2000 working on-site at LCY.

2.29 Approximately 60% of employees working on the Airport site work shifts, which generally fall between the hours of 05:00 and 22:45. Shift workers employed by LCY Ltd work in the departments of Customer Services, Airfield Operations, Aviation Security, Ramp Services, Airport Fire Service and the Jet Centre.

2.30 Most staff are unable to access LCY for early shifts by public transport due to the commencement of their shifts generally being before public transport begins operating.

Staff Travel by Car

2.31 According to the 2009 Staff Travel Survey, 59% of staff drive to work by private car alone.

2.32 LCY Ltd provides an annual car parking pass to its employees within the staff remuneration package. There are currently 281 parking spaces available to staff in the main car parks adjacent to City Aviation House, 10 in the terminal staff parking area (commonly known as "the triangle") and 52 in the western end car park. These spaces are available to the employees of all companies operating onsite at London City Airport. LCY Ltd makes a charge to other companies on site for car park passes, who then supply to their staff at the cost to their company.

2.33 There is currently no car share programme at LCY, although some staff do share lifts to work. The 2009 Staff Travel Survey indicated that 5% of staff normally car share with colleagues.

Staff Travel by Public Transport

2.34 The numerous options for staff to travel to LCY via public transport are outlined in section two.

Staff Travel by Walking and Cycling

2.35 Bicycle racks are available for staff use at the terminal forecourt under the DLR (30 spaces). During 2010, new bicycle cages were installed for staff use in the short stay and western end car parks, each with 14 cycle parking spaces. Showers and changing facilities are available in City Aviation House, Ramp Services Department (Ledger Building), Airport Fire Station and Jet Centre for use by LCY Ltd employees who cycle to work.

2.36 LCY is easily accessible by foot via Hartmann Road (from Albert Road) or via the access gate to the terminal forecourt from Newland Street in Silvertown. The location of the public access gate is shown in Figure 3 at the end of this document.

London City Airport Passenger Travel Patterns

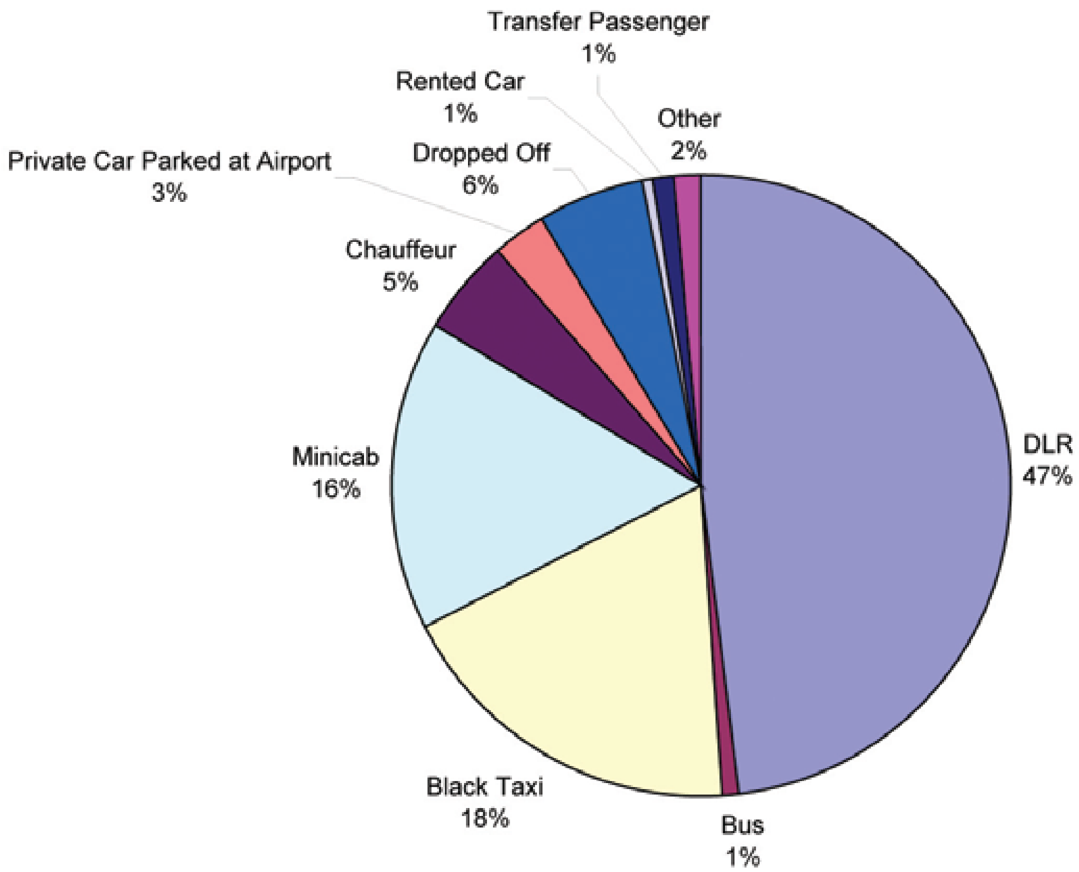
2.37 LCY undertakes passenger satisfaction research over two week period, on a quarterly basis with a minimum sample size of 250 passengers. As part of this research, passengers are asked to provide their last mode of transport to the Airport. The results of the 2009 survey are summarised in Chart 2.2.

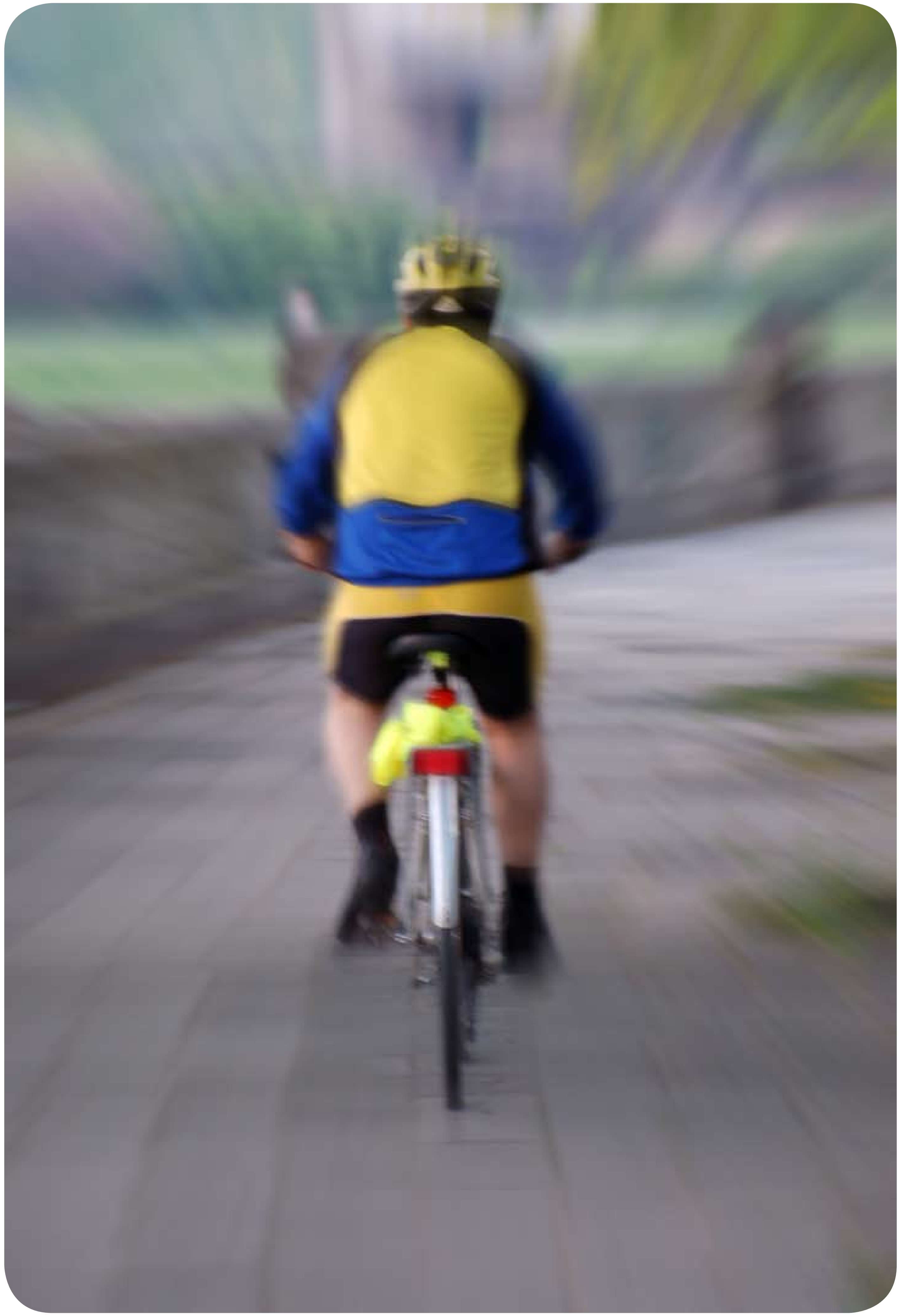
2.38 The results of this survey show that 66% of passengers currently travel to the Airport by public transport (including licenced black taxis), and that only 3% travel by private car parked at the Airport. The DLR is the most commonly used mode of transport for passengers, with 47%, followed by 18% of passengers using black taxis.

2.39 Licenced black taxis perform an important role as a public transport provider by reducing the passenger's reliance on the private car. They are particularly useful for passengers using the Airport from Central London and Canary Wharf because they are not restricted to a timetable or constrained by fixed routes. There are no direct DLR services between LCY and Canary Wharf at the time of publication of this document.

2.40 Further data regarding the use of taxis from the Airport was recorded during surveys undertaken at the pick-up zone outside of the Airport in September 2010. These surveys recorded that the average occupancy rate for taxis departing from the Airport is 1.46 passengers (excluding driver).

Chart 2.2: Passengers' Last Mode of Transport (%), 2009





Objectives And Targets

3

Objectives

3.1 This Travel Plan is primarily aimed at reducing the dependence of London City Airport employees on travel to and from work by single occupancy car, managing any impacts of LCY staff and passengers on the local road network (S.106 Sixth Schedule, Part One 3 (c)) and to continuing to promote the use of sustainable modes of transport to LCY passengers.

3.2 Therefore the main objectives of this Travel Plan are:

- To increase employee and passenger awareness of and access to sustainable modes of travel;
- To facilitate access to appropriate travel information for employees and passengers;
- To reduce the impact of the site on the local highway network;
- To reduce unnecessary or unsustainable use of the car for the journey to and from the site.

Targets

3.3 The existing travel patterns for staff and passengers are significantly different and therefore, the Travel Plan targets are different for each group. This section has been divided into targets relating to staff travel and targets aimed at passenger travel.

Staff Travel Targets

3.4 As detailed in Section 2 of this document, there are currently about 2,000 employees working at the Airport. The 2009 Staff Travel Survey shows that approximately 59% of staff drive a private car alone to work.

3.5 The target for staff travel is to restrict the number of staff driving to the site by single occupancy car to existing car borne levels. Therefore, as the number of staff working at the Airport increases, the percentage that drives to the site should reduce. On the assumption that the number of staff will grow uniformly, the target mode share for staff driving to LCY each year by single occupancy car is shown in Table 3.1.

Table 3.1 – Target Mode Share for Staff Driving to London City Airport	
Year	**Modal Share**
2009	Base
2011[2]	-10%
2012	-17%
2013	-23%

Passenger Travel Targets

3.6 The proportion of passengers that drive and park at LCY is very low (3%), as shown in Chart 2.2. Therefore, whilst the Airport will continue to promote the use of non car modes of travel to and from the site, it will be difficult to achieve significant changes to the level of passengers that currently travel by this mode. However, London City Airport will continue to monitor car park charges on-site at the Airport to endeavour to encourage Airport passengers to use public transport wherever possible. LCY will report changes to its car park charges with the London Borough of Newham and the Airport Transport Forum when reporting on the performance of the Travel Plan. Airport car park charges will also be considered against the backdrop of local parking arrangements to ensure that local residents are not negatively impacted by increased passenger parking charges on-site.

3.7 LCY is committed to increasing the proportion of passengers arriving by public transport, including the DLR. It is anticipated that the DLR capacity and service enhancements which are planned will encourage a further increase in the proportion travelling by DLR. A corresponding reduction in car and taxi use is therefore expected. A £2,500,000 contribution towards the DLR improvements from LCY as set out in the Section 106 Planning Agreement and the encouragement of airlines to promote the DLR onboard flights are the first steps to supporting a further increase in DLR by Airport passengers.

3.8 LCY will closely monitor the passenger mode share and this will form an integral part of the Travel Plan monitoring process. This will report the proportions of passengers travelling by each mode, enabling the anticipated increase in public transport and reduction in private transport modes to be recorded.

[2] After review by the London Borough of Newham and subsequent updates by London City Airport, this Travel Plan was approved in early 2011.Following approval, the Airport is required through Section 106 Planning Agreement to implement the measures of the Travel Plan within six months. The first Staff Travel Survey following implementation of the Travel Plan measures therefore will take place in 2011 after these six months have passed.

3.9 There are several reasons why some passengers cannot use public transport for their journey to and from the Airport. These include the amount of luggage they may have, no available public transport options from their origin/to their destination and passenger disabilities. London City Airport will continue to provide parking subsidies for passengers with disabilities.

3.10 After the DLR, the second most popular mode of passenger travel to and from the Airport is taxi. The typical occupancy of taxis travelling from the Airport is 1.46 passengers. The increase in passengers as a result of the 2009 planning approval may increase demand for this mode of travel in the coming years, particularly in the absence of a direct DLR service between LCY and Canary Wharf.

3.11 The Travel Plan target for passengers aims to increase the efficiency of this mode of transport by increasing the occupancy of taxis travelling to and from the Airport at peak times. A minor but useful improvement can be achieved if LCY were to gain permission from the Public Carriage Office to run a taxi share scheme.

3.12 While LCY is not currently convinced that a taxi share scheme is in the interests of passenger comfort, safety or security, it will continue to monitor this situation and the level of demand. Research into demand for this service has been gauged through special questions included in the Airport's regular passenger satisfaction research. Feedback from these special questions was received in July 2010 and will be discussed with the London Borough of Newham and Airport Transport Forum, to which the Public Carriage Office is invited.

3.13 Taxi occupancy rates will be monitored by LCY.

3.14 The measures that will be implemented to achieve these targets are detailed in Section 5.

Travel Plan Strategy

4

Management

4.1 LCY Ltd as the owner and operator of the Airport is responsible for the existing and ongoing management of the site and as such will be responsible for the production and implementation of the Travel Plan.

Travel Plan Coordinator

4.2 The main element of the proposed management structure for the Travel Plan is the appointment of a Travel Plan Coordinator to oversee all elements of the Travel Plan.

4.3 The Travel Plan Coordinator is an existing staff member employed by LCY Ltd who has taken on the role as part of their job. The Coordinator has the full support of senior management with regards to the implementation of the Travel Plan. The staff member has skills and knowledge relevant to this responsibility, participating in regular Transport for London Travel Planning Conferences. This level of skill and training will enable the Coordinator to produce, implement, monitor and update a high quality Travel Plan.

Staff Travel Strategy

4.4 LCY Ltd is directly responsible for the c400 people it employs at the Airport which is approximately 20% of the total workforce currently employed on-site. Every person employed at the Airport is subject to the Travel Plan. The Travel Plan Coordinator is responsible for providing information regarding the Travel Plan to other companies on site.

4.5 Each individual employer (55 in total) with staff at the Airport will be encouraged to take part in the Travel Plan process and where practical would appoint a member of staff at the Airport to be the point of contact with the site wide Travel Plan Coordinator. This staff member will be designated as a Travel Plan Champion within each organisation. Any new or renewed lease arrangements will include a clause requiring that tenants liaise with the Travel Plan Coordinator, adhere to the Travel Plan and agree to participate in, and promote, travel surveys.

4.6 The responsibilities of the Travel Plan Coordinator include providing the interface between all parties on the site, reporting to the local authority, and monitoring the progress being made towards site-wide transport objectives and the provision of sustainability measures.

4.7 The first task in the development of this Travel Plan has been to undertake a comprehensive and robust Staff Travel Survey (October 2009).

4.8 The Travel Plan Coordinator is responsible for all aspects of the site-wide Travel Plan and their primary functions include:

- Promotion of sustainable transport measures to employees;
- Liaison and cooperation with the local planning, highway authorities and with local public transport operators;
- Liaison and cooperation with other Travel Plan Coordinators located in the area in order to coordinate efforts, measures and initiatives. There is potential for synergy with regards to area wide Travel Plan networks;
- Overseeing the Travel Plan Champions of other companies onsite at the Airport;
- Promotion of the objectives and benefits of the Travel Plan;
- Organisation and undertaking of the required travel surveys;
- Maintenance of all necessary systems, data and paperwork; including a car share scheme (if found to be an appropriate measure);
- Acting as the point of contact for information and exchange of ideas;
- Establishing a Working Group from members of the Airport Transport Forum, which includes staff representatives from each of the 55 employers at the Airport, the local planning and highway authorities and local public transport operators. This group would aid in the development, implementation, monitoring and review of the Travel Plan.
- Monitoring the achievements and performance of the Travel Plan and reporting back to the senior management of LCY Ltd; the Working Group; and Airport Transport Forum.

Marketing Strategy

4.9 Different methods of marketing the Travel Plan are employed to maximise the impact of the different measures to be implemented, including providing appropriate sustainable transport information.

4.10 Methods used and planned for disseminating information include:

- Payslips;
- Staff briefings;
- Staff notice boards and information points;
- Induction packs/seminars;
- Staff Training;
- "The Chronicle" - the Airport staff newspaper;
- London City Airport Website and Intranet;
- Staff Association;
- LCY Employers' Forum;
- Airline Operators Committee;
- Provision of information on ID pass forms.

Sustainable Travel Measures 5

5.1 To help facilitate and promote the use of sustainable modes of transport for journeys to and from the Airport and manage the impacts of the LCY's staff and passengers on the local road network, a variety of measures will be implemented. The measures outlined below are proposals only and will evolve through discussions between LCY Ltd and the relevant Local Authorities.

5.2 Changes, where reasonable and achievable, will also be made in response to results of the 2009 Staff Travel Survey and future Staff Travel Surveys.

5.3 The list is by no means exhaustive. The actual measures implemented by employers may vary between employers because of the varying nature of their businesses, type and number of employees, and financial ability to implement certain measures.

5.4 The regeneration agenda in Newham also encompasses job creation and initiatives designed to encourage people to live and work locally as part of the Sustainable Communities Agenda.

5.5 For the purpose of this plan, suggested measures have been focused on staff travel, with passengers benefiting from the improvements made to public transport and site enhancements.

On and Off-site Enhancement

Walking and Cycling

5.6 As part of the Travel Plan the environmental and health benefits of walking and cycling to work will be emphasised to staff, e.g. promotion of the. '10,000 steps a day campaign'.

5.7 The formation of walking and/or cycling clubs will be considered, which will encourage staff to walk and/or cycle together for commuting as well as leisure purposes either during the working day (journey to work, lunchtimes) or out of work hours.

5.8 The Travel Plan Coordinator will investigate possible discounts for employees with local cycle shops and the potential for holding cycle maintenance workshops with local cycle shops.

5.9 The Travel Plan Coordinator will encourage employers to offer their employees an interest free loan for the purchase of a cycle and relevant safety equipment. LCY currently operates a 'Cycle to Work' scheme in partnership with Halfords Cycle shop.

5.10 The 2009 Staff Travel Survey shows that approximately 67% of all staff on-site are aware of the cycle parking facilities and 46% are aware of the showering and changing facilities. Staff showering and changing facilities are currently provided only by LCY Ltd. The Travel Plan Coordinator will encourage employers on-site to make arrangements for their own staff welfare in regard to the availability of showering and changing facilities.

5.11 Cycle routes and other cycling information will be provided on notice boards and in induction packs.

5.12 Surface access improvements to the Airport for pedestrians and cyclists in the surrounding transport network will be considered and discussed with the relevant local authorities. Such improvement could enhance the role of walking and cycling as important modes of travel for airport employees who live in the surrounding area.

Public Transport

5.13 LCY is easily accessible to London's integrated public transport system.

5.14 Contact numbers and web details for the various transport providers and services (e.g. DLR, London Underground, TfL, National Rail Enquiries) as well as light rail, tube, rail and bus timetables and route maps and local taxi company details will be prominently displayed on notice boards. This information is also available at the terminal information desk.

5.15 LCY Ltd introduced the provision of season ticket loans to its employees from summer 2007. The Travel Plan Coordinator will encourage all employers at the Airport to offer their employees the provision of season ticket loans where possible.

5.16 The London City Airport Master Plan states that public transport should operate earlier to enable shift workers to arrive at the Airport in time for a 05.00hrs start. The Travel Plan Coordinator will investigate the possibility of this with public transport operators.

Docklands Light Railway

5.17 The extension of the DLR in 2005 to LCY has resulted in this mode of transport becoming the second most used mode of access to the Airport for staff after private car (19%, 2009), and the most popular mode for passengers travelling to the Airport (47%, 2009). The further DLR extension in 2009 to Woolwich Arsenal has given staff and passengers south of the river access to the Airport.

5.18 Upcoming developments to the DLR network include the introduction of a three-car service for all major routes, due to be completed in 2011. An extension to Stratford International is also being introduced in 2011, providing a direct link between London City Airport and Stratford International Station.

5.19 Through the Airport's Section 106 Planning Agreement, it is required to contribute the sum of £2,500,000 to the Council towards the cost of providing DLR service enhancements.

Bus

5.20 Bus route 474 is a 24 hour service, which provides a link to the 24-hour bus network. The network has a fairly significant coverage of the areas of East London where some airport shift-workers are likely to live.

5.21 As part of LCY's Section 106 Agreement with the London Borough of Newham, the Airport in 2009 paid £20,000 towards the improvement of local bus services to serve the Airport. LCY welcomes information on the precise nature of service enhancements and improvements to infrastructure that are forthcoming.

Taxi Share

5.22 LCY will continue to monitor the demand for a taxi-share scheme. The Airport is not currently convinced that a taxi-share scheme is in the best interests of its staff and passengers in regards to safety and security.

Car Share

5.23 A car share scheme is an effective way to reduce single-occupancy car trips made to the workplace.

5.24 The Travel Plan Coordinator will set up an informal car share database for all employees of LCY. This could be opened up to include the employees of surrounding developments.

5.25 An effective car share scheme necessarily includes the provision of a Guaranteed Ride Home Scheme (GRHS) in the event that a ride falls through and alternative modes of transport are not available, or an employee needs to return home quickly in the event of an emergency. This may simply involve the provision of subsidised (free or partial) taxi or public transport for the stranded employee.

Induction Packs/Seminars and Other Information Provision

5.26 Induction packs are provided on commencement of employment to new employees. They contain information on public transport services close to the employee's home and other measures for encouraging use of non-car modes of travel, in line with LCY's Section 106 Planning Agreement commitment.

5.27 The provision of information of alternatives to the car is an important aspect of travel plans and can be easy to deliver to employees via a number of media e.g. email, circulation with payslips, intranet etc. All employers and employees will receive the packs which will contain the following information:

- A summarised version of the Travel Plan document, that sets out the purpose and benefits etc;
- Timetables and route maps for public transport if available from TfL;
- Contact numbers and website details for transport providers and services (e.g. DLR, London Underground, TfL, National Rail Enquiries);
- Local taxi company details;
- Cycling and walking maps for the local area if available from TfL; and
- Web details for any community travel sites and Community Forum sites.

5.28 Public transport and other travel related information will also be displayed prominently within the Airport and will be added to displays in communal staff areas by the Travel Plan Coordinator.

Monitoring And Review

6

Monitoring

6.1 The LCY Travel Plan Coordinator will monitor the travel behaviour of employees and passengers on a regular basis. The exact form that this monitoring will take will be discussed with the London Borough of Newham although it is proposed that passenger travel will continue to be monitored as a part of the Airport's regular passenger survey programme.

6.2 The Travel Plan will be monitored annually on the anniversary of the initial employee baseline travel survey. This baseline survey represents the start of the travel plan for monitoring purposes and is known as Year 0.

6.3 The standard employee questionnaire requests the following information:

- origin and destination postcodes (full if known);
- main mode to work – form of travel used for the greatest amount of time,
- final mode into work – the last form of travel used before arriving at the site,
- first mode out – the first form of travel used when leaving work;
- main mode out - form of travel used for the greatest amount of time;
- car parking location (if applicable);
- if the employee has a disability affecting their travel to work; and
- the reasons staff who travel to work by car choose this mode of travel
- measures that would encourage the use of non car modes of transport and car sharing.

6.4 Additional monitoring of the following is also useful to judge whether the implementation or proportion of certain measures needs to be modified. These factors should be monitored on a constant basis:

- the level of usage of cycle stands;
- the level of usage of motorcycle parking;
- demand for additional cycle and motorcycle parking facilities;
- the take up of the car sharing scheme;
- taxi occupancy levels
- comments received from employees relating to the operation and implications of the Travel Plan.

6.5 The results of any monitoring will be reported back annually and discussed with Officers of the London Borough of Newham. Where necessary the Travel Plan targets will be reviewed and measures amended to help achieve the targets.

Review

6.6 Reviewing the Travel Plan will occur at two levels. The first is a basic review of targets and measures, which will occur in 2011 and 2012. These monitoring surveys will show whether targets are being met and whether the measures implemented are having the desired effect on employee and passenger travel.

6.7 The second level involves the Travel Plan Coordinator undertaking a full and comprehensive review of the Travel Plan in 2013. This review may involve updating the Travel Plan document to account for future growth at the Airport proposed in the Airport's Master Plan. The review will consider changes to transport availability, staffing changes, changes in travel patterns, and revisions to targets and measures.

Figures

Figure 1: Location of London City Airport

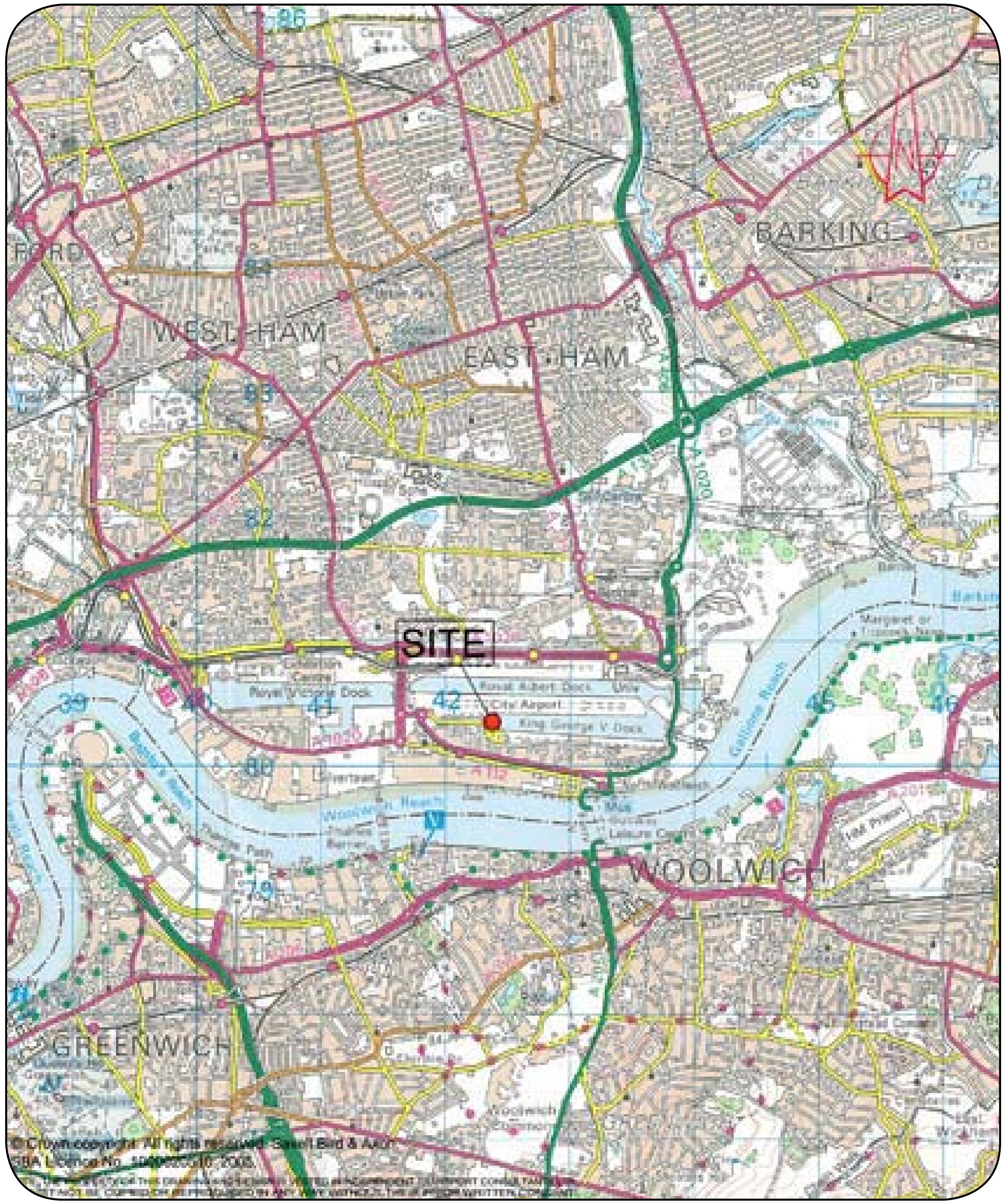


Figure 2: Pedestrian and Cycle Distances

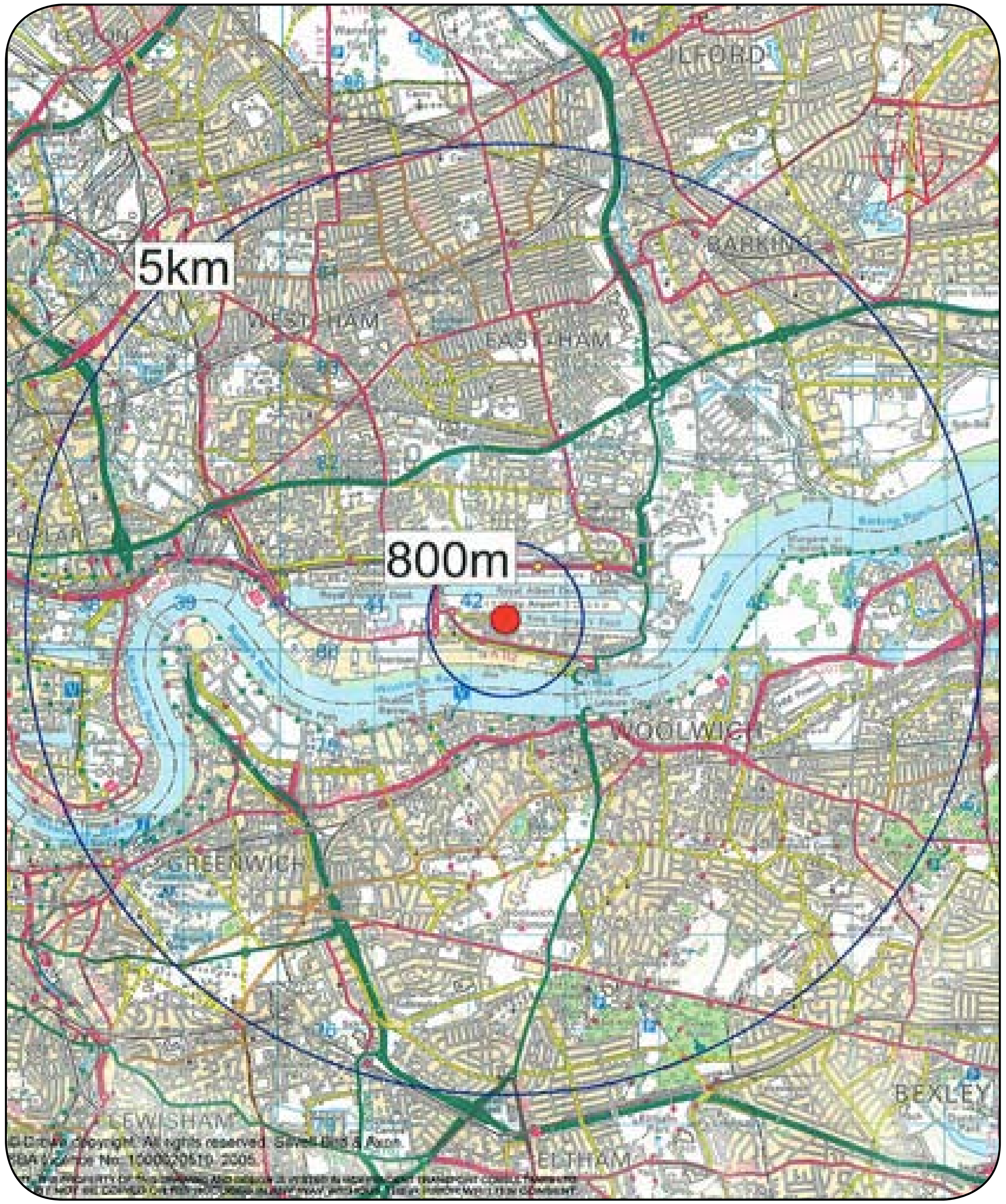


Figure 3: Location of Public Access Gate Map

Appendix A

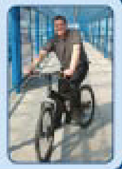
London City Airport Staff Transport Survey 2009 Questionnaire Distribution and Response

The Staff Travel Survey 2009 was distributed to both London City Airport Ltd employees and employees of external companies by the Helen Lancaster Research Company. Surveys were interviewer administered throughout a two week period in November 2009, with results expected in 2010. A copy of the survey is shown below:

LondonCityAirport

London City Airport Staff Travel Survey

London City Airport is committed to improving access to our site by all modes of transport, including DLR, bus, walking, cycling and car. In order to plan and improve services and facilities for both staff and visitors, we would be grateful if you could help us by answering the following questions. All questionnaires are anonymous and answers will not be linked to individuals.



SECTION A: ABOUT YOUR JOURNEY TO WORK (interviewer administered)

A1. How long does it normally take you to get to work? *(Please tick)*

- 0 - 15 minutes ☐
- 16 - 30 minutes ☐
- 31 - 60 minutes ☐
- 1 – 1.5 hours ☐
- Over 1.5 hours ☐

A2. What postcode do you travel to work from? *(Write in full postcode)*

....

A3. How do you usually travel to work? In general, how long is your journey in/on.....*(Write time in minutes in relevant box)*

	1st	2nd	3rd	4th
Drive own car alone				
Get lift in someone else's car, either a relative or friend				
Car share with a colleague				
Underground/tube				
DLR (Docklands Light Railway)				
London bus (*write in bus number*) ______				
Motorbike/moped				
Bicycle				
Minicab				
Black cab				
Plane				
Walk				
Train				

A4. . Why do you travel to work by… (Mode of transport spent most time on)? *(Please tick up to three)*

- Dropping off/collecting partner/children ☐
- Health Reasons ☐
- Satisfy work needs/commitments ☐
- Environmental reasons ☐
- Time savings ☐
- Lack of alternative from where I live ☐
- Cheaper than alternative ☐
- Too early for public transport ☐
- Too late for public transport ☐
- Weather ☐
- Reliability ☐
- Comfort ☐
- Personal safety ☐
- Quicker than alternatives ☐
- Other (please specify)...................................... ☐

A5. What other forms of transport do you ever use to get to work? *(Tick all that apply)*

- Drive own car alone ☐
- Get lift in someone else's car, either a relative or friend ☐
- Car share with a colleague ☐
- Train ☐
- Underground/tube ☐
- DLR (Docklands Light Railway) ☐
- London bus (write in bus number) .... ☐
- Motorbike/moped ☐
- Bicycle ☐
- Minicab ☐
- Black cab ☐
- Plane ☐
- Walk ☐
- None of these ☐

A6. *(Please answer if you ever use the DLR to get to work)* Has the opening of the DLR Woolwich Arsenal extension prompted you to start using the DLR to get to London City Airport or did you use it previously?

- Yes, Woolwich Arsenal extension prompted me to use DLR ☐
- Used DLR before Woolwich Arsenal extension was open ☐

SECTION B: TRAVEL BY CAR

ANSWER SECTION B IF YOU DRIVE YOUR OWN CAR TO WORK OR USE A CAR SHARE WITH A COLLEAGUE

B7. Do you have an airport car park permit?

- Yes ☐
- No ☐

B8. Where do you usually park? *(Please tick one)*

- Jet Centre ☐
- Western car park ☐
- Triangle (behind DLR) ☐
- Short stay (including eastside of City Aviation House) ☐
- Main stay (staff area E & F) ☐
- Blue shed/KGV House ☐
- Other *(please specify)* .... ☐

B9. Which of the following would most encourage you to use an alternative form of transport (i.e. not a car) to get to work? *(Tick all that apply)*

- If alternative mode of transport quicker ☐
- If alternative mode of transport cheaper ☐
- If alternative mode of transport easier ☐
- Health considerations ☐
- Concern for the environment ☐
- Pressure from peers/colleagues/friends ☐
- Lack of free airport car parking space ☐

B10. If you didn't go to work by car,what alternative form(s) of transport would you most likely use? *(Please tick all that apply)*

- Underground/tube ☐
- DLR (Docklands Light Railway) ☐
- London bus (*write in bus number*) ______ ☐
- Motorbike/moped ☐
- Bicycle ☐
- Minicab ☐
- Black cab ☐
- Plane ☐
- Walk ☐
- None ☐

B11. Would you be prepared to car share with a colleague?

- Yes ☐
- No ☐
- I already car share ☐

B12. Which of the following would encourage you to car share with a colleague? *(Please tick all that apply)*

- Help in finding car share partners with similar work hours ☐
- Free taxi home or to work if let down by car share driver ☐
- Preferential parking spaces for car sharers ☐
- Nothing ☐
- Other *(please specify)* ☐

....

SECTION C: TRAVEL BY PUBLIC TRANSPORT, CYCLE OR WALKING

SECTION C IS TO BE COMPLETED BY EVERYONE. IF YOU ALREADY USE THE TRANSPORT IN QUESTION PLEASE TICK WHICH IMPROVEMENTS YOU WOULD MOST LIKE TO SEE

C13. Which of the following improvements would most encourage you to use the **PUBLIC TRANSPORT** for your journey to work? *(Please tick three. If you already use the public transport please tick the improvements you would like to see)*

- Less crowding ☐
- More direct service ☐
- More frequent services ☐
- Earlier operating times ☐
- Later operating times ☐
- More reliable services ☐
- Cleaner/smarter trains/buses and bus stations ☐
- Increased security on trains/ buses & at stations ☐
- Subsidised fares ☐
- Annual season ticket loan ☐
- Easier access to timetable information ☐
- Up to date travel information at work on routes, times and fares ☐
- Having my journey planned for me ☐
- Nothing ☐
- Other (please specify) .... ☐

C14. Which of the following would encourage you to **WALK** to work? *(If you already walk please tick the improvements you would like to see)*

- Better quality and safer footpaths ☐
- Improved street lighting ☐
- Improved road crossing facilities ☐
- Availability of walking partner ☐
- Changing facilities, showers & lockers at work ☐
- Provision of a personal alarm/other safety equipment ☐
- Nothing I live too far away ☐
- Other (please specify) .... ☐

C15. Which of the following would encourage you to **CYCLE** to work? *(If you already cycle please tick the improvements you would like to see)*

- Improved cycle paths/lanes on journey to work ☐
- Improved and secure cycle parking at the airport ☐
- Changing facilities, showers & lockers at work ☐
- Interest free loan to purchase a bike ☐
- Discounts at local bike shops ☐
- Information on cycle routes and location of facilities ☐
- Onsite bicycle repair service ☐
- Nothing ☐
- Other *(please specify)* .... ☐

C16. Are you aware that cycle parking is available at London City Airport?

- Yes ☐
- No ☐

C17. Are you aware of any showers at London City Airport available to staff who walk or cycle to work? *If yes: Where are they located?*

- Yes, aware of showers
- - at City Aviation House ☐
- - at Fire Station ☐
- - at Jet Centre ☐
- - at other place (write in) .... ☐
- No, not aware of any showers ☐

C18. Would you consider taking part in . . .?

- Walking activities and/or club co-ordinated by the airport — Yes ☐ No ☐
- Cycling activities and/or club co-ordinated by the airport — Yes ☐ No ☐

SECTION D: ABOUT YOU

D19. Gender

- Male ☐
- Female ☐

D20. Age

- Under 25 ☐
- 25-34 ☐
- 35-44 ☐
- 45-55 ☐
- Over 55 ☐

D21. Where do you usually access the site?

- City Aviation House ☐
- Terminal Building ☐
- Vehicle control point (VCP)/Jet Centre ☐
- Blueshed/KGV House ☐
- Car Hire Wash Bays ☐
- Other (please specify) ☐

....

D22. Do you have a health problem or disability that affects your choice of travel to work?

- Yes - with blue badge ☐
- Yes - no blue badge ☐
- No ☐

D23. Which company/organisation or London City Airport department do you work for?

Name of company/organisation: *(write in)*

....

London City Airport department:

- City Aviation House (including Finance) ☐
- Facilities Management ☐
- Fire Service ☐
- Airside Operations and Safety Unit ☐
- Ramp Services/Ramp Control ☐
- Terminal Services (customer services & security) ☐
- Jet Centre ☐

D25. What is your role? Are you . . .? *(Please tick)*

- Staff (agent, operative, officer, cabin crew) ☐
- Supervisory (team leader, duty officer) ☐
- Management (manager, director, pilot) ☐

D26. Do you normally work full time or part time?

- Full time ☐
- Part time ☐

D27. Do you work shifts or fixed office hours (e.g. 0900-1730)?

- Shifts ☐
- Fixed hours ☐

D28. Please indicate if you work weekends only or evenings only.

- Weekends only ☐
- Evenings only ☐
- Neither ☐

D29. What is your earliest start time? Write in using 24 hour clock

....

What is your latest finish time? Write in using 24 hour clock

....

D30. Please write any other questions, comments or suggestions related to travel to work below.

....

....

Office only
Interviewer number:
Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐
Friday ☐ Saturday ☐ Sunday ☐
Time (24 hour clock):

TRAVEL PLAN COORDINATOR

020 7646 0025

London City Airport
City Aviation House
Royal Docks
London E16 2PB

www.londoncityairport.com

London City Airport
Get closer.

Your City Commuter

Better Travel Choices for Airport Employees

Welcome

We've turned traditional travel planning on its head with the creation of Your City Commuter.

Our ambition is still the same – we want more airport employees to travel sustainably. However the way we have approached this is very different. London City Airport is unlike other airports. Being the only airport in London puts us in an unusual position. It is great because of the public transport services that connect to the airport – but it does means the ways we can encourage more employees to travel sustainably are very different. That's why we need a different approach to staff travel planning at London City Airport.

We've developed Your City Commuter as the umbrella plan for anything that helps encourage staff out of their cars and on to buses, trains, the DLR or the tube. It has also been created in such a way as to get people thinking about alternative modes of transport where possible - such as carsharing, using a bike or walking to work. Your City Commuter is our way of bringing all staff travel options together in one place and providing all the information you'll need about the services available. All we are asking in return is that the information contained in Your City Commuter is used to encourage everyone at the airport to commute sustainably and that you provide feedback on how well it's working.

Your City Commuter is the travel plan for the airport community and we look forward to working on it together.

Our Sustainable Strategy

London City Airport wants to grow in a sustainable way and our Sustainability Strategy and Airport Sustainability Action Plan 2012 sets out our approach to achieve this. We're committed to assessing our impacts and acknowledging where we can make improvements. With over 2,000 staff working at the airport we have to look at how we can minimise any impacts on local congestion, local air quality as well as the airport's carbon footprint resulting from the 900,000 journeys they make every year.

Your City Commuter is part of our Airport Surface Access Strategy (ASAS). This is the overarching strategy that establishes our approach to encouraging airport staff and passengers to travel sustainably. The ASAS is aligned with the airport's operating agreement with Newham Council and with our growth plans. In the same way that Your City Commuter sets out the actions we will take for airport staff we have a similar plan aimed at passengers.

A Fresh Approach

To help shape this staff travel plan we talked to around 25 on-site companies about the travel issues facing their employees, and through an online shapshot survey we asked almost 25% of the airport workforce 12 key transport questions.

The survey results indicate that 39% of people use more than one type of transport on a daily basis. More importantly if you take out those trips which include a car, 32% of people still use more than one transport method. We know from talking to staff that some airport workers use different types on different days according to their shift pattern, whilst others will use three or four different means of travel in a single journey. This shows that the employee appetite for public transport is there and - with a focused approach - this can be developed further.

We know that just under a third of employees live within Newham which means public transport is a realistic option, as is walking or cycling to work. This is reinforced by the fact that only about 40% of employees rely mainly on their car for the journey into work.

According to the survey results, employees are now starting work earlier with 67% of respondents starting work by 6am and a further 10% by 7am. Depending on when public transport starts in the morning, this could be a reason why employees are using several types of transport or relying on their car when travelling to London City Airport.

Our Priority Areas

We've had to be creative in coming up with a travel plan that pin points areas of possible improvement rather than setting an overarching target. The actions defined within this travel plan are based on the journey profiles derived from feedback received from airport companies and employees. To aid the delivery and monitoring of these actions we have, for the first time, split these into priority areas. With this targeted approach we will aim to encourage airport employees to travel more sustainably where possible. The priority areas are;

LOCAL JOURNEYS
Encouraging short journeys to be made by bike or on foot

27%
of airport staff live within Newham

MIXED MODE JOURNEYS
Providing the right information and ticketing for mixed mode journeys

1/3
of staff travel by 2 or more modes of transport

CAR JOURNEYS
Making car journeys more efficient (carsharing, low carbon options, etc)

Around 40%
of staff rely primarily on the car for their commute to work

67%
of staff on duty by 6am

EARLY MORNING JOURNEYS
Providing public transport options for key shift start times

5,000
businesses operating across Newham

NETWORKING
Working with our neighbours to increase accessibility

This approach provides a focus on the key opportunities which will encourage airport employees to take advantage of the sustainable transport options available at London City Airport, as well as making sure we're addressing the issues that are important to our stakeholders. We will continue to maintain staff parking levels at a rate comparable with the 2009 provision and in line with existing agreements with Newham Borough Council, and we will continue to review staff parking capacities as our travel plan develops.

Working With You

We've designed Your City Commuter to be a user friendly travel plan. Through our travel plan co-ordinator we are committed to providing you and all airport staff with up to date and relevant travel information. In order to do this we will provide travel leaflets, posters for your crew and rest rooms and regular travel updates - all in a format that you can use. We'll also liaise with transport operators on your behalf to negotiate improved services to the airport.

All we ask in return is that you nominate a travel co-ordinator within your organisation. All they will need to do is promote this information to your employees and provide feedback to us on anything travel related.

This could be as simple as asking for travel information in a different format, or letting us know if staff from a certain location are struggling to get to work. We can then try and do something about it.

The Role of the Employer at LCY

Travel Options

DLR

The Docklands Light Rail runs throughout the day connecting the airport to a range of locations and transport interchanges. As the DLR connects into the terminal many staff will use the service for the final leg of their journey into the airport.

Car & Carsharing

We understand that many employees are unable to travel by public transport due to home location or shift patterns. It's important that we continue to provide safe and secure parking facilities while also looking at sustainable options such as carsharing or use of electric vehicles.

Bus

While only two services provide direct connections to the airport they do connect with other services at local transport interchanges. Some routes offer a 24 hour service.

Underground

The DLR connects to the Underground at a number of locations providing access to a range of locations across London.

Train

There is no rail station on-airport but the DLR provides connections to a range of stations providing interchange facilities across the region.

Cycling & Walking

The healthy option! Even if you can't make it all the way to work you may be surprised by how short the walk or ride may be to your nearest station.

Information

We'll work with Transport for London (TfL) and others to provide airport employees with access to information that helps them choose the most sustainable mode of transport that works for them.

The Actions Behind the Plan

We have identified a series of actions that will ensure airport employees continue to make sustainable travel choices. Some of these actions are for us to deliver, while others can only be achieved by working with our stakeholders, you being a pivotal one. We'll review progress against each action annually and replace any completed or redundant actions with something more relevant if required. This means our approach reflects current priorities while working towards longer term objectives set through our Surface Access Strategy.

Section	No.	Action	2013	2014	2015
Travel Plan	**1**	Maintain an airport travel plan, delivered by a named travel plan co-ordinator	•	•	•
Engagement	**2**	Maintain a travel plan on-airport that ensures airport companies are provided with the information their employees require	•	•	•
Local Journeys	**3**	Monitor on-airport cycle provision and look at providing additional cycle storage facilities	•	•	•
	4	Investigate opportunities for the creation of additional staff showering and changing facilities	–	•	–
	5	Hold 2 local staff focus groups to identify the barriers to cycling or walking to work	•	–	–
	6	Establish a cycle and walking user group tasked with exploring options for making cycling and walking more attractive to staff	–	•	–
	7	Work with local stakeholders to explore opportunities for improved cycle and walking routes and information provision	–	•	•
Mixed Transport Journeys	**8**	Hold 2 staff focus groups to identify the multi-modal journey issues that need addressing	•	–	–
	9	Look at ticketing and information improvements with TfL and individual transport operators	•	•	•
Car Journeys	**10**	Explore the opportunity to install carshare bays in prominent location close to terminal buildings	–	•	–
	11	Consider any other benefits that can be offered to carsharers	–	•	–
	12	Review the leading carshare packages that are publicly available and gauge their suitability for an airport environment	•	–	•
	13	Investigate longer term opportunities for the provision of electric vehicle charging points on-airport	–	•	–
	14	Work with transport operators to offer car users trial journeys on public transport (gather feedback on their experience through travel diaries)	–	•	–

Section	No.	Action	2013	2014	2015
	15	Consider the use of incentives that reduce reliance on the car (including discounted parking rates for carsharers, flexible pricing options, etc)	–	–	•
Improved Journeys	16	Work with TfL and local transport providers to identify priority improvements to public transport services	–	•	–
	17	Explore schemes where additional services can be trialled from key staff residency locations or at key shift start times	–	–	•
Local Travel Plan Network	18	Establish contact with local businesses and other organisations to gauge interest in creating a travel plan network (including both large and small businesses)	•	•	•
	19	Consider the creation of an 'easit'* style travel plan network scheme that brings businesses together to collaboratively address local travel issues	–	–	•
Staff Car Parking	20	Monitor staff parking requirements and maintain levels in accordance with agreed levels	•	•	•
Monitoring and Reporting	21	Each action will be monitored annually for progress and given the following rating; • Complete • On track for completion • Ongoing • Behind schedule	•	•	•
	22	Progress will be communicated annually as part of the Annual Performance Report (APR).	•	•	•
	23	Complete a snapshot staff travel survey	•	–	•
	24	Complete a full employee survey	–	•	–
	25	Share survey results with relevant stakeholders, including the Airport Transport Forum	•	•	•

*Easit is a transport network that has successfully been implemented at airports, business parks and other distinct areas and brings businesses together in a way that sees them working in partnership to address key local transport issues.

City Aviation House
Royal Docks
London
E16 2PB

www.londoncityairport.com

June 2013

APPENDIX H

Delivery and Servicing Plan

London City Airport

City Airport Development Programme

Delivery and Servicing Plan

May 2013

Network Building, 97 Tottenham Court Road, London W1T 4TP www.vectos.co.uk
Registered address: Vectos (South) Limited, Hardwick House, Prospect Place, Swindon SN1 3LJ Company no. 7591661

Contents

Appendices

1 INTRODUCTION

1.1 This Delivery and Servicing Plan (DSP) will be implemented at London City Airport in conjunction with the City Airport Development Programme (CADP).

1.2 The purpose of this DSP is to ensure that delivery and servicing activity can take place in a safe, efficient and sustainable manner. It has been developed in accordance with policies set out within “The London Plan” (July 2011); “The London Freight Plan” (November 2007); and “Travel planning for new development in London, Incorporating deliveries and servicing” (February 2011).

1.3 The remainder of this report is structured under the following chapter headings:

- Chapter 2 – Local Situation
- Chapter 3 – Policy Context
- Chapter 4 – Measures and Initiatives
- Chapter 5 – Monitoring and Review
- Chapter 6 – Summary

1.4 Effective management will ensure that the potential for vehicle conflicts is avoided and that the proposals have the minimum impact on both the surrounding highway and pedestrian network.

2 LOCAL SITUATION

Site Location

2.1 London City Airport is located between the Royal Albert Dock and the King George V Dock, adjacent to the Woolwich Reach and Gallions Reach of the River Thames. Currently the Airport is accessed from Hartmann Road.

Scheme Elements

2.2 The CADP chiefly comprises new passenger facilities and infrastructure that are required to enable the Airport to respond to forecast growth in passenger numbers and accommodate the new generation aircraft which are physically larger than the current fleet. Such improvements are broadly consistent with the long term plans which were described in London City Airport's 2006 Master Plan.

2.3 The proposals include a replacement landside forecourt area to include vehicle circulation, waiting and drop off areas and hard and soft landscaping.

Proposed Servicing Arrangements

2.4 The Airport will be serviced from a new service yard which will be accessed from an existing access point onto Hartmann Road.

2.5 Goods deliveries will be loaded and unloaded to / from two loading bays in a covered area at the North East corner of the proposed service yard. Goods are then taken through airside screening or into landside storage via a back-of-house corridor.

2.6 Typically deliveries to the retail facilities within the terminal take place on weekdays between 09:00 – 12:00 and 14:00 – 16:00.

2.7 Swept path analysis has been undertaken to demonstrate that vehicles up to the size of a 16.5 metre articulated vehicle are able to manoeuvre in and out. However, the largest size of vehicle which is likely to use the service yard on a regular basis is a 10 metre rigid lorry. Smaller vehicles including vans and cars associated with the Emergency Services, DLR operations and the UK Border Agency also use the service yard. A copy of the swept path analysis is provided at **Appendix A**.

Proposed Refuse Collection Arrangements

2.8 The main Airport refuse and recycling store with capacity for three eurobins will be located within the service yard. Refuse vehicles will enter the service yard and empty the bins directly from the store.

2.9 Waste from airside is taken by vehicles on the airside road and through to the service yard to await collection.

2.10 A further refuse store will be located in the forecourt adjacent to the sub-station. Refuse vehicles will park in the adjacent layby whilst emptying the bins.

2.11 At all times, refuse and recycling will be stored within the dedicated bins.

3 POLICY CONTEXT

National Policy

National Planning Policy Framework (NPPF)

3.1 The National Planning Policy Framework sets out the Government's planning policies for England and how these are expected to be applied.

3.2 Paragraph 35 states the following:

"Plans 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:

- *accommodate the efficient delivery of goods and supplies."*

Regional Policy

The London Plan

3.3 Policy 6.14 of the current London Plan (adopted July 2011) specifically relates to freight. On Development Proposals, it stipulates that:

"a. locate developments that generate high numbers of freight movements close to major transport routes

b. promote the uptake of the Freight Operators Recognition Scheme, construction logistics plans and delivery and servicing plans. These should be secured in line with the London Freight Plan and should be co-ordinated with travel plans and the development of approaches to consolidate freight

c. increase the use of the Blue Ribbon network for freight transport."

Travel planning for new development in London

3.4 This document relates to the Travel Planning process and the need to manage the movement of people and goods in London. Paragraphs 1.10 of this document notes the following:

"Strategies developed to manage deliveries and servicing to a site should:

- *Introduce measures to reduce, consolidate or eliminate delivery trips*
- *Provide safe and legal loading facilities, preferably off-street*
- *Ensure operators demonstrate best practice."*

The London Freight Plan

3.5 The London Freight Plan incorporates guidance on DSP's. It states that:

"Delivery and Servicing Plans (DSPs) will be used to increase building operational efficiency by reducing delivery and servicing impacts to premises, specifically CO2 emissions, congestion and collisions.

DSP's aim to reduce delivery trips (particularly during peak periods) and increase availability and use of safe and legal loading facilities, using a range of approaches including consolidation and out-of-hour deliveries."

Summary

3.6 This DSP for London City Airport accords with the relevant national and regional policies. The scheme has been designed to include on-site servicing yards, reducing the impact on the local road network. Furthermore, servicing and delivery activity will be managed to ensure it operates efficiency minimising any adverse impacts.

4 MEASURES AND INITIATIVES

4.1 This section of the Delivery and Servicing Plan outlines the specific management measures to be implemented. The measures aim to manage the impact of delivery and servicing activity.

Management of the Plan

4.2 The management will oversee the management, development and monitoring of the Delivery & Servicing Plan.

4.3 Measures that will be implemented include:

- Promoting the DSP to employees and suppliers;
- Ensure that delivery vehicles remain in the service yard for as little time as possible to maximise the efficiency of deliveries;
- Seek to reduce the number of deliveries taking place during network peak hours (07:30-09:00 and 16:30-18:00) wherever possible;
- Ensuring that refuse and recycling material is transferred to the storage areas in time for collection;
- Ensuring that the refuse and recycling stores are kept tidy so that collections can take place efficiently.
- Service yard staff will be trained to assist vehicles manoeuvring to and from the Airport as necessary; and
- Undertaking monthly servicing and maintenance checks of the service yard.

Working with Suppliers

4.4 London City Airport will continue to work in partnership with its suppliers to ensure the efficient movement of goods to / from the Airport.

5 MONITORING AND REVIEW

Monitoring

5.1 The management will be responsible for the on-going monitoring of the DSP.

5.2 The monitoring process will generate information by which the success of the DSP can be evaluated. The monitoring process will enable the DSP to be modified as appropriate to respond to any issues as they arise.

Review

5.3 London City Airport will undertake regular reviews of the DSP. Representatives from employees, suppliers, the London Borough of Newham and Transport for London will be consulted as necessary.

6 SUMMARY

6.1 This Delivery and Servicing Plan has been prepared for the City Airport Development Programme.

6.2 The CADP would be serviced by an on-site service yard which can accommodate all sizes of servicing vehicles up to the size of a maximum legal articulated lorry.

6.3 Refuse collection would also take place on-site. This ensures that there is no on-street servicing associated with the proposals.

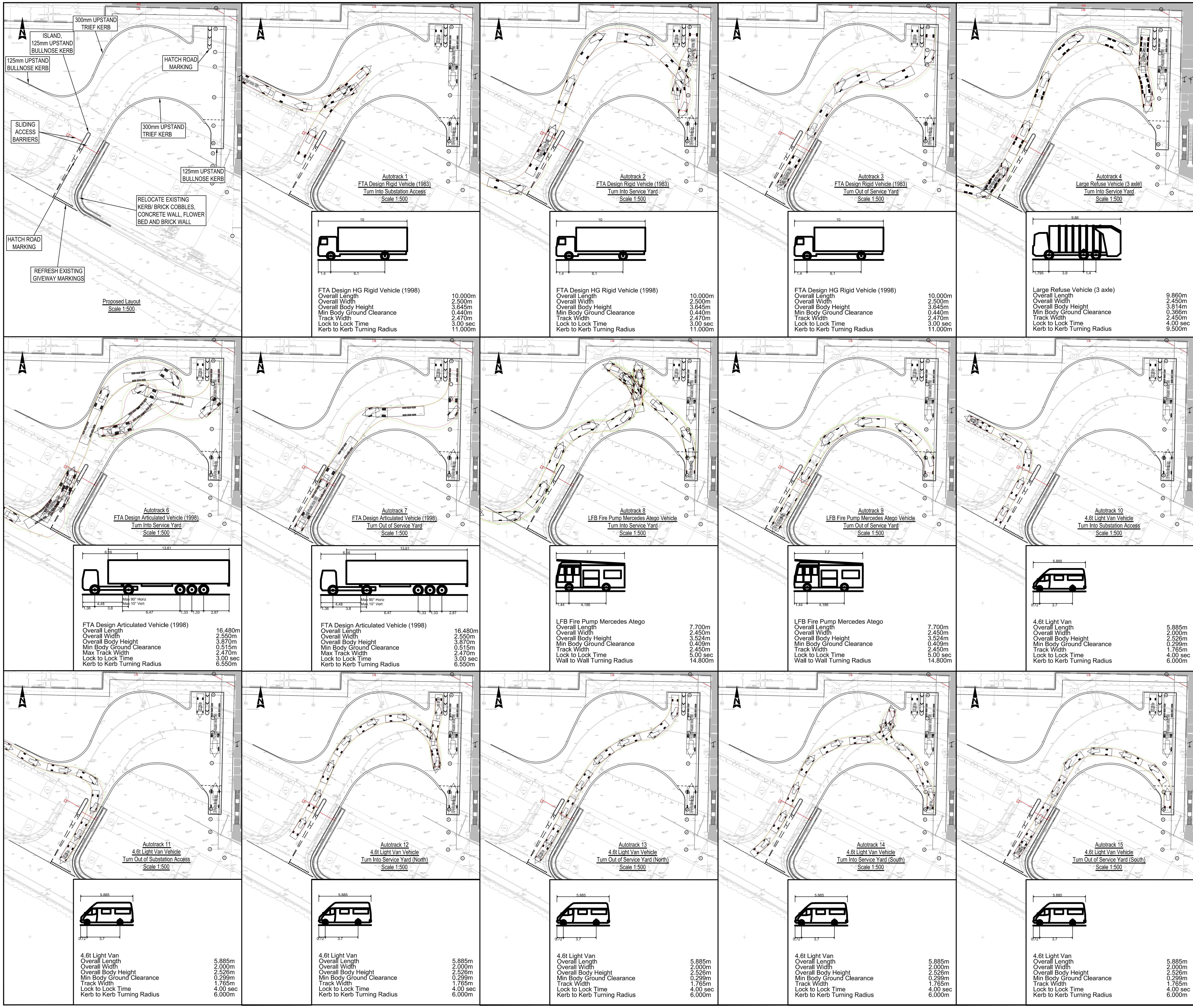
6.4 The DSP has been drafted in accordance with regional and national policy in relation to the movement of freight, in order to minimise the impact of deliveries.

6.5 The measures set out within this DSP will ensure the successful and efficient operation of servicing / delivery activity on a day to day basis, reducing the impact of servicing movements on the road network.

6.6 The DSP will be monitored on a regular basis by the management team, consulting with relevant stakeholders as necessary.

APPENDIX A

Swept Path Analysis



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DO NOT SCALE
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ATKINS

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING SIGNIFICANT RESIDUAL RISKS

CONSTRUCTION
NONE
MAINTENANCE/CLEANING
NONE
USE
NONE
DECOMMISSIONING/DEMOLITION
NONE

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Client

Project
LONDON CITY AIRPORT

Title
PRELIMINARY DESIGN
LCY TRIANGLE SECURITY BUILDING
SERVICE YARD PROPOSAL
VEHICLE TURNING TRACK ASSESSMENT

Sheet Size	Original Scale	Designed/Drawn	Checked	Authorised
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APPENDIX I

York Aviation Technical Note

York Aviation

London City Airport
Forecast Note

1. This note has been prepared to respond to points raised by Transport for London (TfL) in relation to the growth in passengers at London City Airport (LCY), in particular in relation to the robustness of the prediction of 5.87 mppa at 2023 as the basis for the assessment of the surface access impacts of the planning application. A fuller explanation of the forecasts will be contained in the planning application documentation.

Background

2. At the outset, it should be noted that the forecasts are derived from underlying projections of demand growth in the catchment area served by London City Airport based on DfT forecast market growth rates. We then examine in detail which routes are likely to be viable for the airlines and the appropriate balance between aircraft size and frequency of service having regard to the need for higher frequency services to meet business travel needs.

3. In terms of the robustness of the forecasts, there are key points about the commercial viability of air transport which must be taken into account:

   - Firstly, airlines will only ever offer capacity to meet demand. It is not in the interest of airlines to operate services with aircraft which are significantly larger than required because the operating costs typically increase as aircraft size does. Therefore, as far as possible, airlines will optimise their fleets for their networks. A good example of this is the use of both Fokker F50 turboprop and Avro RJ jet aircraft by CityJet currently, allowing ‘right-sizing’ of aircraft to the demand on each individual route. Larger aircraft would be unprofitable for the airline and lead to route withdrawals.

   - Secondly, as with other modes of travel, passenger demand is partly a function of service frequency. This is particularly pertinent at LCY because of the high number of business travellers using the Airport, for whom frequency can be a significant driver of demand. The passengers will often be attracted by airlines who operate higher frequencies on their chosen route because this increases flexibility, allowing passengers to move between flights as their business plans change, for example if meetings overrun these travellers like to know that they can move to a later flight than planned, can catch an earlier flight home if their meeting ends early, or can change flights at short notice if planned meetings change time or day.

- ✈ Thirdly, load factors are influenced by a combination of frequency and demand, but also by the need to retain a number of available seats on each flight for those on flexible tickets who may choose to move services. LCY is attractive to airlines because of the high level of business travellers, who will typically pay a premium to buy fully flexible fares, and this premium is attractive to the carriers. However, to maintain a level of service integrity the carriers must, therefore, ensure they do not regularly turn away passengers who wish to change services at short notice (even as late as arriving at the Airport simply in time to check-in for the next available service with no notification). Hence, airlines will need to supress the number of seats they sell for any one service to keep some seats free for flexible ticket holders.

Our forecasts have considered these interrelationships in detail to produce a forecast consistent in terms of frequency and load factor for each route.

It is worth noting that DfT's latest forecast (January 2013) shows London City's passenger traffic in the range 3 – 5 mppa at 2020 (Tables 5.5 and E.2) with around 104,000 ATMs, i.e. a similar number to those included within our assessment once the effect of noise factoring is taken into account and having regard to Jet Centre movements, largely outside of peak periods. At 120,000 ATMs (assuming no noise factoring and no Jet Centre traffic), DfT projects 3.7 – 6 mppa in 2030. In practice, we are more optimistic than DfT about LCY's ability to grow its share of the local market than DfT's based on detailed assessment than the aggregated outputs which emerge from DfT's national model. However, DfT's forecasts do not support the view that there is significant upside potential beyond the 6 million passengers per annum that we are projecting.

Fleet Mix

4. Broadly, the forecasts have been determined by estimating the future market capture for current and potential destinations from the catchment area as a whole based on frequency and then matching aircraft capacities to the likely demand for each route.

5. The forecasts have been compiled on the basis that airlines will continue to 'right-size' their aircraft fleet, for example CityJet is assumed to continue operating two different sized aircraft in the future and that load factors will be restricted by the need to retain seats for fully flexible travellers. In many cases, the forecasts indicate that using larger 100-110 seat aircraft instead of smaller 50-80 seat aircraft would lead to lower load factors, potentially making routes unviable, including routes which already exist from LCY as aircraft would be too large for the market. If the frequency were to be reduced in order to better match demand to the capacity of larger aircraft, then there is circularity because reducing the frequency on a route may reduce its attractiveness to passengers, thus demand could be expected to also reduce further, possibly pushing load factors below viable levels once more.

6. Furthermore, there are some destinations within the forecasts which we have already anticipated will require a frequency reduction in order to sustain natural fleet replacement by the airlines. Both Paris Orly and Rotterdam are forecast to require a reduction of one service per day in order to generate viable load factors on 74-seat turboprop aircraft (assumed to replace the 50-seat turboprops currently used on these routes over the next few years). These services would be unlikely to sustain even larger aircraft (100-110 seats) without undermining their viability and ability to attract passengers.

7. Even on major routes, such as Edinburgh, by 2023 if all services were operated by larger 110-seat aircraft then the amount of available capacity would exceed the demand and would reduce load factors for the airlines leading to reductions in frequency and the loss of demand.

8. For these reasons, we believe that there will not be a widescale move towards to larger 100-110 seat aircraft across the entire LCY network, as there would simply not be sufficient demand on many of the existing and likely new routes without destroying the value of frequencies and making services unviable for airlines operating larger aircraft at reduced load factors.

Peak Period Load Factors

9. In the peak hour, we do not anticipate that load factors are likely to consistently reach 100% because of passengers on flexible tickets which means that, on balance, there will always be spare seats on some flights even if others are full. In addition to airlines keeping an excess of seats on their aircraft free to accommodate passengers changing flights, there will also be a number of passengers who will change off peak services. As a result of needing to maintain the flexibility to attract high yielding business passengers, the airlines will be forced not to sell all seats on any flight in order not to compromise the integrity of their ticket offers.

10. In general, two things are most likely to happen for passengers who are booked on morning and evening peak services:

    - ✈ As morning peak arrivals typically present the first opportunity to arrive for an early meeting, then passengers are most likely to change to a later service (out of peak times) to arrive for a meeting time which moves later; and

    - ✈ Passengers booked on evening peak services may change flights because their meeting finishes early or overruns.

11. Clearly there could be some passengers booked on off-peak services who may wish to change to peak time services, but this further makes it difficult for airlines to project demand, driving down their overall booking load factor to maximise the capability to allow passengers to switch to and from services.

12. Whilst our overall load factor assumption is lower, consistent with that typically achieved on business services, the use of an 85% or 90% load factor in the peak periods in the With and Without Development Cases respectively reflects the passengers' preference for peak period operations. The difference between the With and Without Development case derives from the introduction of more larger aircraft with the enhanced infrastructure and the greater spare capacity which arises as aircraft size is increased ahead of demand at 2023. Our assumed load factors are lower at other times of the day in both scenarios. Whilst a 100% load factor might be achieved on any particular flight on a single day, this is unlikely to happen simultaneously across all services in that particular morning or evening peak, and the difference may therefore be between 7-10 passengers variation in the whole peak period across all flights combined.

13. Hence, we believe that the forecasts used for assessing the surface access implications robustly represent the likely peak passenger flows at 2023.

Infrastructure Constraints

14. The existing 18 stands provide for a mix of aircraft parking capability as not all stands can accommodate all operating types. Once stand 11 has been replaced, the maximum operational parking capability of the current 18 stands will be as follows:

    4 A318

    7 E190

    1 E170

    6 Q400

15. Although completion of the works would theoretically allow up to 11 larger aircraft to be parked at any one time on the 7 new stands and upgraded stands 21-24, in practice the number of such aircraft which will be able to operate simultaneously in peak periods will be limited by runway capacity, particularly in the easterly direction. Whilst completion of the parallel taxi-lane will allow more aircraft to use the runway in any given hour, larger wingspan aircraft, such as the C-Series will still need to back track on the runway on arrival in the westerly direction and on departure in the easterly direction. The extent of backtracking will be greater in the easterly direction and this is the limiting factor, albeit this runway direction is only used one third of the time. The scope to overcome this constraint is severely limited due to the configuration of the West Pier and, whilst an additional runway entry/exit point could be located adjacent to Stand 21 for these larger aircraft, this would have relatively limited impact. Our analysis would suggest that even on the basis of the number of larger Code C aircraft assumed in our original schedule, the level of runway delays in an easterly direction will be on the cusp of acceptable levels (10 mins average in peak periods) at 2023 movement levels and peak hour rates. Any increase above this number of larger aircraft would increase delays in the easterly direction to the point when airlines would not accept this impact even though the runway direction is used for a lower proportion of time. We consider that 8 concurrent operational movements by larger aircraft within the peak is the limit of what can be accommodated without the effective runway movement rate being reduced due to increased backtracking. The reduction in overall movement capacity would exceed any gain in passengers due to a greater number of larger aircraft being operated.

Sensitivity Test

16. Whilst our analysis of the runway constraints would suggest that any increase in the use of larger aircraft beyond the SWISS operation (already planned by the airline from 2016) and some marginal introduction on other very high density routes will give rise to escalating delays, a reasonable worst case for sensitivity testing purposes might see CityJet replace its Jet fleet by larger aircraft following its change of ownership. Alternatively, BA might choose to operate larger aircraft on its high density routes. A reasonable upper bound is a total of 8 larger Code C aircraft on the ground simultaneously (excluding delayed aircraft), which could be realised by either or both airlines changing some of the aircraft which they operate. Further changes to larger aircraft beyond this level would adversely impact on the declarable runway movement rate and the ability of the Airport to achieve 120,000 noise factored movements in total as indicated above. This is an increase of 3 larger Code C aircraft on the ground simultaneously in peak periods compared to 5 assumed in the most likely Planning Forecast. This would have negligible impact on both annual and peak period passenger volumes.

17. In order to test the sensitivity of surface access requirements, we have also set out the implications of increasing peak period to load factors to 90% in the With Development case. Whilst we do not believe this will arise in the timescale to 2023, such load factor increases could arise with demand growth beyond that date.

18. On this basis, we have assessed the upper bound of passengers which could be accommodated with the planned infrastructure to be no greater than 6.02 mppa, an increase over the year of 67,000 passengers.

Summary

19. In summary:

- ✈ the demand forecasts have been built up in detail taking on a route by route basis, taking into account viable aircraft sizes and load factors.

- ✈ because passenger demand at London City is strongly based on business travel and expected to remain so, airlines will operate at lower load factors than are seen in leisure markets. Even so, we have taken into account that flights in peak periods tend to be fuller than those in off-peak periods and allowed for load factors in the range 85-90% on average across all flights in the peak. Within that, some flights will be full and others operating at load factors around 75% or 80%.

- ✈ in developing the expected fleet mix, we have taken into account the appropriate size of aircraft relative to the level of passenger demand on each route and taking into account airlines' existing and planned fleets.

- ✈ ultimately, the ability of the airlines to switch entirely to larger aircraft is limited by the infrastructure at the Airport, specifically the West Pier, which results in larger aircraft having to backtrack on the runway in one direction even once the proposed works are complete. This limits the number of larger aircraft which can be handled to 8 simultaneously, without adversely impacting on the capacity of the Airport overall.

- ✈ the number of peak period larger aircraft in the Planning forecasts is already close to the limit of what could be handled with an acceptable level of delay in easterly runway operations. Given that this runway direction is used for less than half the time, the airlines might be willing to accept some greater risk of delay but this would escalate as more larger aircraft are in the mix. Hence, the reasonable worst case would be for 8 of the 11 available stands to be used by larger aircraft, albeit this may require some further enhancement of taxiway infrastructure in the vicinity of Stand 21. In addition, a worst case passenger projection would be to assume the average load factor would reach 90% on all peak period flights at some date beyond 2023.

rc/lc/12.7.13

2021 - With Development Timetable

Time	Flight No	Airline	Type	To/From	Seats	Passengers	Arr/Dep
0705	AF5230	Air France	DH4	ANR	74	63	ARR
0710	LG4591	Luxair	DH4	LUX	74	63	ARR
0715	LH041	Lufthansa	AT5	HAJ	48	41	ARR
0715	LH926	Lufthansa	E90	FRA	98	83	ARR
0715	BA002	British Airways	318	JFK	32	27	ARR
0720	AF5180	Air France	E90	AMS	98	83	ARR
0720	LH029	Lufthansa	DH4	STR	74	63	ARR
0725	BA8450	British Airways	E70	AMS	76	65	ARR
0725	LH035	Lufthansa	DH4	CGN	74	63	ARR
0730	LH011	Lufthansa	E90	DUS	98	83	ARR
0730	AF5212	Air France	DH4	LUX	74	63	ARR
0735	BA8731	British Airways	E70	FRA	76	65	ARR
0735	AF5018	Air France	DH4	ORY	74	63	ARR
0735	LH001	Lufthansa	E90	MUC	98	83	ARR
0745	BA1009	British Airways	E90	CPH	98	83	ARR
0745	AF5090	Air France	DH4	EIN	74	63	ARR
0750	SX500	Skywork	DH4	BRN	74	63	ARR
0755	AF5072	Air France	DH4	RTM	74	63	ARR
0755	LX484	SWISS	C10	BSL	110	94	ARR
0800	AF5232	Air France	DH4	ANR	74	63	ARR
0805	BA8701	British Airways	E90	EDI	98	83	ARR
0805	LX450	SWISS	C10	ZRH	110	94	ARR
0805	LX442	SWISS	C10	GVA	110	94	ARR
0810	AF5182	Air France	E90	AMS	98	83	ARR
0810	BA1027	British Airways	E90	MXP	98	83	ARR
0810	LH023	Lufthansa	DH4	TXL	74	63	ARR
0815	AF5116	Air France	E90	DUB	98	83	ARR
0815	BA8721	British Airways	E90	GLA	98	83	ARR
0820	BA3291	British Airways	E70	ABZ	76	65	ARR
0820	BA8760	British Airways	E70	ZRH	76	65	ARR
0820	OV001	Estonian Air	E90	TLL	112	95	ARR
0825	BA1017	British Airways	E70	BHD	76	65	ARR
0830	VE7050	Alitalia	E90	LIN	98	83	ARR
0830	AF5158	Air France	E90	EDI	98	83	ARR
0835	BA1003	British Airways	E90	BCN	98	83	ARR
0840	BA8711	British Airways	E90	EDI	98	83	ARR
0845	BA3281	British Airways	E70	IOM	76	65	ARR
0845	SI712	Blue Islands	AT5	JER	48	41	ARR
0850	AY001	Finnair	E70	HEL	76	65	ARR
0855	AF5184	Air France	E90	AMS	98	83	ARR
0855	AF5118	Air France	E90	DUB	98	83	ARR
0900	BA8490	British Airways	E70	ARN	76	65	ARR
0900	AF5074	Air France	DH4	RTM	74	63	ARR
0900	LO001	LOT Polish	E70	WAW	76	65	ARR
0905	LH019	Lufthansa	DH4	HAM	74	37	ARR
0905	BA8752	British Airways	E90	MAD	98	49	ARR
0905	AF5020	Air France	DH4	ORY	74	37	ARR
0910	BA8705	British Airways	E90	EDI	98	49	ARR
0910	VE003	Alitalia	E90	FCO	98	49	ARR
0910	SI001	Blue Islands	AT5	GCI	48	24	ARR
0910	BA8723	British Airways	E90	GLA	98	49	ARR
0915	BA8209	British Airways	AT5	BLL	48	24	ARR
0915	LH003	Lufthansa	E90	MUC	98	49	ARR
0920	SK005	SAS	DH4	CPH	74	37	ARR
0920	LH928	Lufthansa	E90	FRA	98	49	ARR
0925	SK001	SAS	E90	OSL	98	49	ARR
0925	OK001	CSA	E90	PRG	98	49	ARR
0930	LX460	SWISS	C10	ZRH	110	55	ARR
0940	OS001	Austrian	E90	VIE	98	49	ARR
1000	LH013	Lufthansa	DH4	DUS	74	37	ARR
1000	AF5170	Air France	DH4	DND	74	37	ARR
1005	BA004	British Airways	318	JFK	32	16	ARR
1010	BA8739	British Airways	E90	GLA	98	49	ARR
1010	BA8703	British Airways	E90	EDI	98	49	ARR
1020	AF5120	Air France	E90	DUB	98	49	ARR
1025	AF5162	Air France	E90	EDI	98	49	ARR
1030	BA1032	British Airways	E90	FRA	98	49	ARR
1045	BA8764	British Airways	E70	ZRH	76	38	ARR
1045	BA8496	British Airways	E70	AMS	76	38	ARR
1055	LX005	SWISS	C10	ZRH	110	55	ARR
1105	AF5186	Air France	E90	AMS	98	49	ARR
1110	LX003	SWISS	C10	GVA	110	55	ARR
1110	AF5234	Air France	DH4	ANR	74	37	ARR
1120	LO005	LOT Polish	E70	WAW	76	38	ARR
1125	AF5294	Air France	DH4	NTE	74	37	ARR
1130	BA8452	British Airways	E90	AMS	98	49	ARR
1150	LG4593	Luxair	DH4	LUX	74	37	ARR
1155	BA8725	British Airways	E90	GLA	98	49	ARR
1205	BA8715	British Airways	E70	EDI	76	38	ARR
1210	AF003	Air France	E90	DUB	98	49	ARR

Period	Load Factor
Shoulder	50%
Peak	85%
Off-Peak	40%

Passengers at the Airport

	Arrivals	Departures	Total
08:00 - 09:00	1688	1741	3429
17:00 - 18:00	1106	830	1936

Passengers on Surface Access

	Arrivals	Departures	Total
08:00 - 09:00	1072	1717	2789
17:00 - 18:00	1743	711	2453

1210	BA8733	British Airways	E70	FRA	76	38	ARR
1215	VE001	Alitalia	E90	LIN	98	49	ARR
1220	BA1024	British Airways	E90	MAD	98	49	ARR
1225	VE005	Alitalia	E90	FCO	98	49	ARR
1250	LX456	SWISS	C10	ZRH	110	55	ARR
1255	BA1005	British Airways	E90	FRA	98	49	ARR
1320	LX434	SWISS	C10	GVA	110	55	ARR
1330	BA1011	British Airways	E90	CPH	98	49	ARR
1330	BA3295	British Airways	E70	ABZ	76	38	ARR
1335	BA1037	British Airways	E90	MXP	98	49	ARR
1350	BA1016	British Airways	E90	GLA	98	49	ARR
1350	LH043	Lufthansa	AT5	HAJ	48	24	ARR
1405	AF002	Air France	E90	EDI	98	49	ARR
1410	AF5188	Air France	E90	AMS	98	49	ARR
1415	BA3285	British Airways	E70	IOM	76	38	ARR
1420	LH025	Lufthansa	DH4	TXL	74	37	ARR
1425	BA8472	British Airways	E90	BCN	98	49	ARR
1430	LX001	SWISS	C10	BSL	110	55	ARR
1440	LH007	Lufthansa	DH4	MUC	74	37	ARR
1440	AF5280	Air France	E90	FLR	98	49	ARR
1445	LH015	Lufthansa	DH4	DUS	74	37	ARR
1455	AF5216	Air France	DH4	LUX	74	37	ARR
1500	BA1040	British Airways	E70	ARN	76	38	ARR
1500	LH037	Lufthansa	DH4	CGN	74	37	ARR
1500	AF5236	Air France	DH4	ANR	74	37	ARR
1505	BA1019	British Airways	E70	BHD	76	38	ARR
1505	BA1034	British Airways	E90	EDI	98	49	ARR
1515	AY003	Finnair	E70	HEL	76	38	ARR
1520	LH031	Lufthansa	DH4	STR	74	37	ARR
1520	BA8713	British Airways	E90	EDI	98	49	ARR
1530	LG4595	Luxair	DH4	LUX	74	37	ARR
1550	AF005	Air France	DH4	PUF	74	37	ARR
1550	BA8480	British Airways	E90	VCE	98	49	ARR
1555	LX007	SWISS	C10	ZRH	110	55	ARR
1605	AF5080	Air France	DH4	RTM	74	37	ARR
1610	SK009	SAS	DH4	OSL	74	37	ARR
1615	LX436	SWISS	C10	GVA	110	55	ARR
1625	LH934	Lufthansa	E90	FRA	98	49	ARR
1625	BA8454	British Airways	E90	AMS	98	49	ARR
1630	AF5166	Air France	E90	EDI	98	49	ARR
1635	LH009	Lufthansa	DH4	MUC	74	37	ARR
1655	BA1002	British Airways	E90	AMS	98	49	ARR
1655	VE7052	Alitalia	E90	LIN	98	49	ARR
1700	LX464	SWISS	C10	ZRH	110	55	ARR
1700	AF008	Air France	E90	NCE	98	49	ARR
1705	AF5082	Air France	DH4	RTM	74	37	ARR
1715	LH045	Lufthansa	AT5	HAJ	48	24	ARR
1715	LH021	Lufthansa	DH4	HAM	74	37	ARR
1720	AF5194	Air France	E90	AMS	98	49	ARR
1720	VE007	Alitalia	E90	FCO	98	49	ARR
1730	BA8766	British Airways	E90	ZRH	98	83	ARR
1730	BA8727	British Airways	E90	GLA	98	83	ARR
1735	AF5238	Air France	DH4	ANR	74	63	ARR
1740	LH936	Lufthansa	E90	FRA	98	83	ARR
1745	LO003	LOT Polish	E70	WAW	76	65	ARR
1750	AF5024	Air France	DH4	ORY	74	63	ARR
1750	OK003	CSA	E90	PRG	98	83	ARR
1750	LX466	SWISS	C10	ZRH	110	94	ARR
1755	LH039	Lufthansa	DH4	CGN	74	63	ARR
1755	SK007	SAS	DH4	CPH	74	63	ARR
1755	LH033	Lufthansa	DH4	STR	74	63	ARR
1800	SX502	Skywork	DH4	BRN	74	63	ARR
1805	AF5096	Air France	DH4	EIN	74	63	ARR
1805	LH027	Lufthansa	DH4	TXL	74	63	ARR
1805	BA8707	British Airways	E70	EDI	76	65	ARR
1810	LX446	SWISS	C10	GVA	110	94	ARR
1810	AY005	Finnair	E70	HEL	76	65	ARR
1810	BA8754	British Airways	E90	MAD	98	83	ARR
1815	AF5196	Air France	E90	AMS	98	83	ARR
1815	AF5218	Air France	E90	LUX	98	83	ARR
1820	AF5084	Air France	DH4	RTM	74	63	ARR
1825	BA8492	British Airways	E70	ARN	76	65	ARR
1830	BA8456	British Airways	E70	AMS	76	65	ARR
1830	LH017	Lufthansa	E90	DUS	98	83	ARR
1835	BA8211	British Airways	AT5	BLL	48	41	ARR
1835	SI718	Blue Islands	AT5	JER	48	41	ARR
1840	BA1007	British Airways	E90	BCN	98	83	ARR
1840	BA8735	British Airways	E70	FRA	76	65	ARR
1845	BA1021	British Airways	E70	BHD	76	65	ARR
1850	BA1013	British Airways	E90	CPH	98	83	ARR
1850	AF5126	Air France	E90	DUB	98	83	ARR
1850	AF5026	Air France	DH4	ORY	74	63	ARR
1850	BA1029	British Airways	E90	MXP	98	83	ARR

1855	AF5208	Air France	DH4	NTE	74	63	ARR
1855	SK003	SAS	E90	OSL	98	83	ARR
1900	BA3297	British Airways	E70	ABZ	76	65	ARR
1900	BA3287	British Airways	E70	IOM	76	65	ARR
1905	AF5086	Air France	DH4	RTM	74	63	ARR
1905	LH005	Lufthansa	E90	MUC	98	83	ARR
1910	LG4597	Luxair	DH4	LUX	74	63	ARR
1910	LX486	SWISS	C10	BSL	110	94	ARR
1915	AF5198	Air France	E90	AMS	98	83	ARR
1915	OS003	Austrian	E90	VIE	98	83	ARR
1920	LX454	SWISS	C10	ZRH	110	94	ARR
1920	BA8709	British Airways	E90	EDI	98	83	ARR
1945	BA8768	British Airways	E90	ZRH	98	49	ARR
1950	BA1036	British Airways	E90	GLA	98	49	ARR
1955	BA8458	British Airways	E70	AMS	76	38	ARR
2000	AF5176	Air France	DH4	DND	74	37	ARR
2000	AF5028	Air France	DH4	ORY	74	37	ARR
2000	BA1026	British Airways	E90	FAO	98	49	ARR
2005	AF5088	Air France	DH4	RTM	74	37	ARR
2020	BA8717	British Airways	E90	EDI	98	49	ARR
2020	BA8729	British Airways	E90	GLA	98	49	ARR
2025	AF5168	Air France	E90	EDI	98	49	ARR
2045	LX440	SWISS	C10	GVA	110	44	ARR
2050	AF5222	Air France	E90	DUB	98	39	ARR
2105	BA8737	British Airways	E90	FRA	98	39	ARR
2115	LX462	SWISS	C10	ZRH	110	44	ARR
0630	LX463	SWISS	C10	ZRH	110	55	DEP
0645	LX441	SWISS	C10	GVA	110	55	DEP
0650	BA1023	British Airways	E90	MAD	98	49	DEP
0655	BA1031	British Airways	E90	FRA	98	49	DEP
0700	AF5115	Air France	E90	DUB	98	83	DEP
0700	BA8700	British Airways	E90	EDI	98	83	DEP
0700	BA8720	British Airways	E90	GLA	98	83	DEP
0700	BA8763	British Airways	E70	ZRH	76	65	DEP
0705	AF5159	Air France	E90	EDI	98	83	DEP
0735	AF5295	Air France	DH4	NTE	74	63	DEP
0740	LG4592	Luxair	DH4	LUX	74	63	DEP
0745	LH042	Lufthansa	AT5	HAJ	48	41	DEP
0750	AF5181	Air France	E90	AMS	98	83	DEP
0750	LH927	Lufthansa	E90	FRA	98	83	DEP
0750	LH030	Lufthansa	DH4	STR	74	63	DEP
0755	BA8497	British Airways	E70	AMS	76	65	DEP
0755	LH036	Lufthansa	DH4	CGN	74	63	DEP
0800	LH012	Lufthansa	E90	DUS	98	83	DEP
0800	AF5213	Air France	DH4	LUX	74	63	DEP
0805	BA8732	British Airways	E70	FRA	76	65	DEP
0805	AF5019	Air France	DH4	ORY	74	63	DEP
0810	LH002	Lufthansa	E90	MUC	98	83	DEP
0815	BA1010	British Airways	E90	CPH	98	83	DEP
0815	AF5091	Air France	DH4	EIN	74	63	DEP
0820	SX501	Skywork	DH4	BRN	74	63	DEP
0825	AF5073	Air France	DH4	RTM	74	63	DEP
0825	LX451	SWISS	C10	ZRH	110	94	DEP
0830	AF5231	Air France	DH4	ANR	74	63	DEP
0835	BA8451	British Airways	E90	AMS	98	83	DEP
0835	LX485	SWISS	C10	BSL	110	94	DEP
0835	LX443	SWISS	C10	GVA	110	94	DEP
0840	AF5187	Air France	E90	AMS	98	83	DEP
0840	BA1028	British Airways	E90	MXP	98	83	DEP
0840	LH024	Lufthansa	DH4	TXL	74	63	DEP
0845	AF5117	Air France	E90	DUB	98	83	DEP
0845	BA8722	British Airways	E90	GLA	98	83	DEP
0850	BA3292	British Airways	E70	ABZ	76	65	DEP
0850	BA8702	British Airways	E70	EDI	76	65	DEP
0850	OV002	Estonian Air	E90	TLL	112	95	DEP
0855	BA1018	British Airways	E70	BHD	76	65	DEP
0900	VE7051	Alitalia	E90	LIN	98	83	DEP
0900	AF007	Air France	E90	NCE	98	83	DEP
0905	BA1004	British Airways	E90	FRA	98	83	DEP
0910	BA8471	British Airways	E90	BCN	98	83	DEP
0915	BA3282	British Airways	E70	IOM	76	65	DEP
0915	SI713	Blue Islands	AT5	JER	48	41	DEP
0920	AY002	Finnair	E70	HEL	76	65	DEP
0925	AF5183	Air France	E90	AMS	98	83	DEP
0925	AF5281	Air France	E90	FLR	98	83	DEP
0930	BA8491	British Airways	E70	ARN	76	38	DEP
0930	AF5021	Air France	DH4	ORY	74	37	DEP
0930	LO002	LOT Polish	E70	WAW	76	38	DEP
0935	LH020	Lufthansa	DH4	HAM	74	37	DEP
0935	BA8753	British Airways	E90	MAD	98	49	DEP
0935	AF5075	Air France	DH4	RTM	74	37	DEP
0940	BA8704	British Airways	E90	EDI	98	49	DEP
0940	VE004	Alitalia	E90	FCO	98	49	DEP

0940	SI002	Blue Islands	AT5	GCI	48	24	DEP
0945	BA8210	British Airways	AT5	BLL	48	24	DEP
0950	SK006	SAS	DH4	CPH	74	37	DEP
0950	BA001	British Airways	318	JFK	32	16	DEP
0950	LH004	Lufthansa	E90	MUC	98	49	DEP
0955	LH929	Lufthansa	E90	FRA	98	49	DEP
0955	SK002	SAS	E90	OSL	98	49	DEP
0955	OK002	CSA	E90	PRG	98	49	DEP
1000	LX461	SWISS	C10	ZRH	110	55	DEP
1010	OS002	Austrian	E90	VIE	98	49	DEP
1030	LH014	Lufthansa	DH4	DUS	74	30	DEP
1030	AF004	Air France	DH4	PUF	74	30	DEP
1040	BA1015	British Airways	E90	GLA	98	39	DEP
1050	AF001	Air France	E90	EDI	98	39	DEP
1100	BA8479	British Airways	E90	VCE	98	39	DEP
1125	LX006	SWISS	C10	ZRH	110	44	DEP
1135	AF5185	Air France	E90	AMS	98	39	DEP
1140	LX004	SWISS	C10	GVA	110	44	DEP
1150	BA1033	British Airways	E90	EDI	98	39	DEP
1150	LO006	LOT Polish	E70	WAW	76	30	DEP
1220	AF5233	Air France	DH4	ANR	74	30	DEP
1220	LG4594	Luxair	DH4	LUX	74	30	DEP
1240	AF5119	Air France	E90	DUB	98	39	DEP
1245	BA1039	British Airways	E70	ARN	76	30	DEP
1245	VE002	Alitalia	E90	LIN	98	39	DEP
1250	BA1025	British Airways	E90	FAO	98	39	DEP
1255	VE006	Alitalia	E90	FCO	98	39	DEP
1255	BA8765	British Airways	E90	ZRH	98	39	DEP
1300	AF5163	Air France	E90	EDI	98	39	DEP
1305	BA8453	British Airways	E90	AMS	98	39	DEP
1325	BA1006	British Airways	E90	BCN	98	39	DEP
1345	LX457	SWISS	C10	ZRH	110	44	DEP
1355	LX435	SWISS	C10	GVA	110	44	DEP
1400	BA1012	British Airways	E90	CPH	98	39	DEP
1405	BA1038	British Airways	E90	MXP	98	39	DEP
1410	BA1001	British Airways	E90	AMS	98	39	DEP
1420	BA8716	British Airways	E70	EDI	76	30	DEP
1420	BA8726	British Airways	E90	GLA	98	39	DEP
1420	LH044	Lufthansa	AT5	HAJ	48	19	DEP
1445	BA8734	British Airways	E70	FRA	76	30	DEP
1450	BA3286	British Airways	E70	IOM	76	30	DEP
1450	LH026	Lufthansa	DH4	TXL	74	30	DEP
1455	AF5217	Air France	E90	LUX	98	39	DEP
1500	LX002	SWISS	C10	BSL	110	44	DEP
1505	AF5235	Air France	DH4	ANR	74	30	DEP
1510	AF5121	Air France	E90	DUB	98	39	DEP
1510	LH008	Lufthansa	DH4	MUC	74	30	DEP
1515	LH016	Lufthansa	DH4	DUS	74	30	DEP
1525	BA3296	British Airways	E70	ABZ	76	30	DEP
1525	AF5025	Air France	DH4	ORY	74	30	DEP
1530	BA8455	British Airways	E70	AMS	76	30	DEP
1530	LH038	Lufthansa	DH4	CGN	74	30	DEP
1535	BA1020	British Airways	E70	BHD	76	30	DEP
1535	BA1035	British Airways	E90	GLA	98	39	DEP
1545	AY004	Finnair	E70	HEL	76	30	DEP
1550	LH032	Lufthansa	DH4	STR	74	30	DEP
1550	BA8767	British Airways	E90	ZRH	98	39	DEP
1600	BA003	British Airways	318	JFK	32	13	DEP
1605	AF5193	Air France	E90	AMS	98	39	DEP
1605	LG4596	Luxair	DH4	LUX	74	30	DEP
1610	BA8706	British Airways	E90	EDI	98	39	DEP
1620	AF5175	Air France	DH4	DND	74	30	DEP
1625	LX008	SWISS	C10	ZRH	110	44	DEP
1635	AF5081	Air France	DH4	RTM	74	37	DEP
1640	SK010	SAS	DH4	OSL	74	37	DEP
1645	LX437	SWISS	C10	GVA	110	55	DEP
1655	AF5165	Air France	E90	EDI	98	49	DEP
1655	AF5209	Air France	DH4	NTE	74	37	DEP
1700	LH935	Lufthansa	E90	FRA	98	49	DEP
1700	BA8724	British Airways	E90	GLA	98	49	DEP
1705	BA8459	British Airways	E70	AMS	76	38	DEP
1705	LH010	Lufthansa	DH4	MUC	74	37	DEP
1710	BA8712	British Airways	E90	EDI	98	49	DEP
1725	BA8738	British Airways	E90	FRA	98	49	DEP
1725	VE7053	Alitalia	E90	LIN	98	49	DEP
1730	LX465	SWISS	C10	ZRH	110	94	DEP
1735	AF5123	Air France	E90	DUB	98	83	DEP
1735	AF5083	Air France	DH4	RTM	74	63	DEP
1745	LH046	Lufthansa	AT5	HAJ	48	41	DEP
1745	LH022	Lufthansa	DH4	HAM	74	63	DEP
1750	AF5195	Air France	E90	AMS	98	83	DEP
1750	VE009	Alitalia	E90	FCO	98	83	DEP
1800	BA8708	British Airways	E90	EDI	98	83	DEP

1800	BA8728	British Airways	E90	GLA	98	83	DEP
1805	AF5027	Air France	DH4	ORY	74	63	DEP
1815	LH937	Lufthansa	E90	FRA	98	83	DEP
1815	LO004	LOT Polish	E70	WAW	76	65	DEP
1820	AF5237	Air France	DH4	ANR	74	63	DEP
1820	OK004	CSA	E90	PRG	98	83	DEP
1820	LX467	SWISS	C10	ZRH	110	94	DEP
1825	LH040	Lufthansa	DH4	CGN	74	63	DEP
1825	SK008	SAS	DH4	CPH	74	63	DEP
1825	LH034	Lufthansa	DH4	STR	74	63	DEP
1830	SX503	Skywork	DH4	BRN	74	63	DEP
1835	AF5097	Air France	DH4	EIN	74	63	DEP
1835	LH028	Lufthansa	DH4	TXL	74	63	DEP
1835	BA8769	British Airways	E70	ZRH	76	65	DEP
1840	LX447	SWISS	C10	GVA	110	94	DEP
1840	AY006	Finnair	E70	HEL	76	65	DEP
1840	BA8755	British Airways	E90	MAD	98	83	DEP
1845	AF5197	Air France	E90	AMS	98	83	DEP
1845	AF5167	Air France	E90	EDI	98	83	DEP
1850	AF5085	Air France	DH4	RTM	74	63	DEP
1900	BA8457	British Airways	E70	AMS	76	65	DEP
1900	BA8212	British Airways	AT5	BLL	48	41	DEP
1900	LH018	Lufthansa	E90	DUS	98	83	DEP
1905	BA8493	British Airways	E70	ARN	76	65	DEP
1905	SI719	Blue Islands	AT5	JER	48	41	DEP
1910	BA1008	British Airways	E90	BCN	98	83	DEP
1910	BA8736	British Airways	E70	FRA	76	65	DEP
1915	BA1022	British Airways	E70	BHD	76	65	DEP
1920	BA1014	British Airways	E90	CPH	98	83	DEP
1920	AF5125	Air France	E90	DUB	98	83	DEP
1920	AF5219	Air France	DH4	LUX	74	63	DEP
1920	BA1030	British Airways	E90	MXP	98	83	DEP
1925	AF5029	Air France	DH4	ORY	74	63	DEP
1925	SK004	SAS	E90	OSL	98	83	DEP
1930	BA3298	British Airways	E70	ABZ	76	38	DEP
1930	BA3288	British Airways	E70	IOM	76	38	DEP
1935	AF5087	Air France	DH4	RTM	74	37	DEP
1940	LG4598	Luxair	DH4	LUX	74	37	DEP
1940	LH006	Lufthansa	E90	MUC	98	49	DEP
1940	LX455	SWISS	C10	ZRH	110	55	DEP
1945	AF5199	Air France	E90	AMS	98	49	DEP
1945	OS004	Austrian	E90	VIE	98	49	DEP
1950	LX487	SWISS	C10	BSL	110	55	DEP
1950	BA8718	British Airways	E90	EDI	98	49	DEP
2015	BA8730	British Airways	E90	GLA	98	49	DEP
2025	AF5177	Air France	DH4	DND	74	37	DEP
2030	AF5239	Air France	DH4	ANR	74	30	DEP
2035	AF5089	Air France	DH4	RTM	74	30	DEP
2050	BA8714	British Airways	E90	EDI	98	39	DEP

Source: York Aviation

2023 - With Development Timetable

Time	Flight No	Airline	Type	To/From	Seats	Passengers	Arr/Dep
0705	AF5230	Air France	DH4	ANR	74	63	ARR
0710	LG4591	Luxair	DH4	LUX	74	63	ARR
0715	LH041	Lufthansa	AT5	HAJ	48	41	ARR
0715	LH926	Lufthansa	E90	FRA	98	83	ARR
0715	BA002	British Airways	318	JFK	32	27	ARR
0720	AF5180	Air France	E90	AMS	98	83	ARR
0720	LH029	Lufthansa	DH4	STR	74	63	ARR
0725	BA8450	British Airways	E90	AMS	98	83	ARR
0725	LH035	Lufthansa	DH4	CGN	74	63	ARR
0730	LH011	Lufthansa	E90	DUS	98	83	ARR
0730	AF5212	Air France	DH4	LUX	74	63	ARR
0735	BA8731	British Airways	E70	FRA	76	65	ARR
0735	AF5018	Air France	DH4	ORY	74	63	ARR
0735	LH001	Lufthansa	E90	MUC	98	83	ARR
0745	BA1009	British Airways	E90	CPH	98	83	ARR
0745	AF5090	Air France	DH4	EIN	74	63	ARR
0750	SX500	Skywork	DH4	BRN	74	63	ARR
0755	AF5072	Air France	DH4	RTM	74	63	ARR
0755	LX484	SWISS	C10	BSL	110	94	ARR
0800	AF5232	Air France	DH4	ANR	74	63	ARR
0805	BA8701	British Airways	C10	EDI	110	94	ARR
0805	LX450	SWISS	C10	ZRH	110	94	ARR
0805	LX442	SWISS	C10	GVA	110	94	ARR
0810	AF5182	Air France	E90	AMS	98	83	ARR
0810	BA1027	British Airways	E90	MXP	98	83	ARR
0810	LH023	Lufthansa	E90	TXL	98	83	ARR
0815	AF5116	Air France	E90	DUB	98	83	ARR
0815	BA8721	British Airways	E90	GLA	98	83	ARR
0820	BA3291	British Airways	E70	ABZ	76	65	ARR
0820	BA8760	British Airways	E90	ZRH	98	83	ARR
0820	OV001	Estonian Air	E90	TLL	112	95	ARR
0825	BA1017	British Airways	E90	BHD	98	83	ARR
0830	VE7050	Alitalia	E90	LIN	98	83	ARR
0830	AF5158	Air France	E90	EDI	98	83	ARR
0835	BA1003	British Airways	E90	BCN	98	83	ARR
0840	BA8711	British Airways	E90	EDI	98	83	ARR
0845	BA3281	British Airways	E70	IOM	76	65	ARR
0845	SI712	Blue Islands	AT5	JER	48	41	ARR
0850	AY001	Finnair	E90	HEL	98	83	ARR
0855	AF5184	Air France	E90	AMS	98	83	ARR
0855	AF5118	Air France	E90	DUB	98	83	ARR
0900	BA8490	British Airways	E90	ARN	98	83	ARR
0900	AF5074	Air France	DH4	RTM	74	63	ARR
0900	LO001	LOT Polish	E70	WAW	76	65	ARR
0905	LH019	Lufthansa	DH4	HAM	74	37	ARR
0905	BA8752	British Airways	E90	MAD	98	49	ARR
0905	AF5020	Air France	DH4	ORY	74	37	ARR
0910	BA8705	British Airways	C10	EDI	110	55	ARR
0910	VE003	Alitalia	E90	FCO	98	49	ARR
0910	SI001	Blue Islands	AT5	GCI	48	24	ARR
0910	BA8723	British Airways	E90	GLA	98	49	ARR
0915	BA8209	British Airways	AT5	BLL	48	24	ARR
0915	LH003	Lufthansa	E90	MUC	98	49	ARR
0920	SK005	SAS	DH4	CPH	74	37	ARR
0920	LH928	Lufthansa	E90	FRA	98	49	ARR
0925	SK001	SAS	E90	OSL	98	49	ARR
0925	OK001	CSA	E90	PRG	98	49	ARR
0930	LX460	SWISS	C10	ZRH	110	55	ARR
0940	OS001	Austrian	E90	VIE	98	49	ARR
1000	LH013	Lufthansa	DH4	DUS	74	37	ARR
1000	AF5170	Air France	DH4	DND	74	37	ARR
1005	BA004	British Airways	318	JFK	32	16	ARR
1010	BA8739	British Airways	E90	GLA	98	49	ARR
1010	BA8703	British Airways	E90	EDI	98	49	ARR
1020	AF5120	Air France	E90	DUB	98	49	ARR
1025	AF5162	Air France	E90	EDI	98	49	ARR
1030	BA1032	British Airways	E90	FRA	98	39	ARR
1045	BA8764	British Airways	E90	ZRH	98	39	ARR
1045	BA8496	British Airways	E90	AMS	98	39	ARR
1055	LX005	SWISS	C10	ZRH	110	44	ARR
1105	AF5186	Air France	E90	AMS	98	39	ARR
1110	LX003	SWISS	C10	GVA	110	44	ARR
1110	LH047	Lufthansa	DH4	MUC	74	30	ARR
1110	AF5234	Air France	DH4	ANR	74	30	ARR
1120	LO005	LOT Polish	E70	WAW	76	30	ARR
1125	AF5294	Air France	DH4	NTE	74	30	ARR
1130	BA8452	British Airways	C10	AMS	110	44	ARR
1150	LG4593	Luxair	DH4	LUX	74	30	ARR
1155	BA8725	British Airways	E90	GLA	98	39	ARR
1205	BA8715	British Airways	E90	EDI	98	39	ARR
1210	AF003	Air France	E90	DUB	98	39	ARR
1210	BA8733	British Airways	E70	FRA	76	30	ARR
1215	VE001	Alitalia	E90	LIN	98	39	ARR
1220	BA1024	British Airways	E90	MAD	98	39	ARR
1225	VE005	Alitalia	E90	FCO	98	39	ARR
1250	LX456	SWISS	C10	ZRH	110	44	ARR

Period	Load Factor
Shoulder	50%
Peak	85%
Off-Peak	40%

Passengers at the Airport

	Arrivals	Departures	Total
08:00 - 09:00	1775	1809	3584
17:00 - 18:00	1143	922	2065

Passengers on Surface Access

	Arrivals	Departures	Total
08:00 - 09:00	1107	1785	2892
17:00 - 18:00	1838	748	2586

1255	BA1005	British Airways	E90	FRA	98	39	ARR
1320	LX434	SWISS	C10	GVA	110	44	ARR
1330	BA1011	British Airways	E90	CPH	98	39	ARR
1330	BA3295	British Airways	E70	ABZ	76	30	ARR
1335	BA1037	British Airways	E90	MXP	98	39	ARR
1350	BA1016	British Airways	E90	GLA	98	39	ARR
1350	LH043	Lufthansa	AT5	HAJ	48	19	ARR
1405	AF002	Air France	E90	EDI	98	39	ARR
1410	AF5188	Air France	E90	AMS	98	39	ARR
1415	BA3285	British Airways	E70	IOM	76	30	ARR
1420	LH025	Lufthansa	E90	TXL	98	39	ARR
1425	BA8472	British Airways	E90	BCN	98	39	ARR
1430	LX001	SWISS	C10	BSL	110	44	ARR
1440	LH007	Lufthansa	DH4	MUC	74	30	ARR
1440	AF5280	Air France	E90	FLR	98	39	ARR
1445	LH015	Lufthansa	DH4	DUS	74	30	ARR
1455	AF5216	Air France	DH4	LUX	74	30	ARR
1500	BA1040	British Airways	E90	ARN	98	39	ARR
1500	BA1019	British Airways	E90	BHD	98	39	ARR
1500	LH037	Lufthansa	DH4	CGN	74	30	ARR
1500	AF5236	Air France	DH4	ANR	74	30	ARR
1505	BA1034	British Airways	E90	EDI	98	39	ARR
1515	AY003	Finnair	E90	HEL	98	39	ARR
1520	LH031	Lufthansa	DH4	STR	74	30	ARR
1520	BA8713	British Airways	C10	EDI	110	44	ARR
1530	LG4595	Luxair	DH4	LUX	74	30	ARR
1550	AF005	Air France	DH4	PUF	74	30	ARR
1550	BA8480	British Airways	E90	VCE	98	39	ARR
1555	LX007	SWISS	C10	ZRH	110	44	ARR
1600	SI003	Blue Islands	AT5	JER	48	19	ARR
1605	AF009	Air France	E90	DUB	98	39	ARR
1605	AF5080	Air France	DH4	RTM	74	30	ARR
1610	SK009	SAS	DH4	OSL	74	30	ARR
1615	LX436	SWISS	C10	GVA	110	44	ARR
1625	LH934	Lufthansa	E90	FRA	98	39	ARR
1625	BA8454	British Airways	C10	AMS	110	44	ARR
1630	AF5166	Air France	E90	EDI	98	49	ARR
1635	LH009	Lufthansa	E90	MUC	98	49	ARR
1655	BA1002	British Airways	E90	AMS	98	49	ARR
1655	VE7052	Alitalia	E90	LIN	98	49	ARR
1700	LX464	SWISS	C10	ZRH	110	55	ARR
1700	AF008	Air France	E90	NCE	98	49	ARR
1705	AF5082	Air France	DH4	RTM	74	37	ARR
1710	LH049	Lufthansa	DH4	DUS	74	37	ARR
1715	LH045	Lufthansa	AT5	HAJ	48	24	ARR
1715	LH021	Lufthansa	DH4	HAM	74	37	ARR
1720	AF5194	Air France	E90	AMS	98	49	ARR
1720	VE007	Alitalia	E90	FCO	98	49	ARR
1730	BA8766	British Airways	E90	ZRH	98	83	ARR
1730	BA8727	British Airways	E90	GLA	98	83	ARR
1735	AF5238	Air France	DH4	ANR	74	63	ARR
1740	LH936	Lufthansa	E90	FRA	98	83	ARR
1745	LO003	LOT Polish	E70	WAW	76	65	ARR
1750	AF5024	Air France	DH4	ORY	74	63	ARR
1750	OK003	CSA	E90	PRG	98	83	ARR
1750	LX466	SWISS	C10	ZRH	110	94	ARR
1755	LH039	Lufthansa	DH4	CGN	74	63	ARR
1755	SK007	SAS	DH4	CPH	74	63	ARR
1755	LH033	Lufthansa	DH4	STR	74	63	ARR
1800	SX502	Skywork	DH4	BRN	74	63	ARR
1805	AF5096	Air France	DH4	EIN	74	63	ARR
1805	LH027	Lufthansa	E90	TXL	98	83	ARR
1805	BA8707	British Airways	E90	EDI	98	83	ARR
1810	LX446	SWISS	C10	GVA	110	94	ARR
1810	AY005	Finnair	E90	HEL	98	83	ARR
1810	BA8754	British Airways	E90	MAD	98	83	ARR
1815	AF5196	Air France	E90	AMS	98	83	ARR
1815	AF5218	Air France	E90	LUX	98	83	ARR
1820	AF5084	Air France	DH4	RTM	74	63	ARR
1825	BA8492	British Airways	E90	ARN	98	83	ARR
1830	BA8456	British Airways	E90	AMS	98	83	ARR
1830	BA1021	British Airways	E90	BHD	98	83	ARR
1835	BA8211	British Airways	AT5	BLL	48	41	ARR
1835	SI718	Blue Islands	AT5	JER	48	41	ARR
1840	BA1007	British Airways	E90	BCN	98	83	ARR
1840	BA8735	British Airways	E70	FRA	76	65	ARR
1850	BA1013	British Airways	E90	CPH	98	83	ARR
1850	AF5126	Air France	E90	DUB	98	83	ARR
1850	AF5026	Air France	DH4	ORY	74	63	ARR
1850	BA1029	British Airways	E90	MXP	98	83	ARR
1855	LH017	Lufthansa	E90	DUS	98	83	ARR
1855	AF5208	Air France	DH4	NTE	74	63	ARR
1855	SK003	SAS	E90	OSL	98	83	ARR
1900	BA3297	British Airways	E70	ABZ	76	65	ARR
1900	BA3287	British Airways	E70	IOM	76	65	ARR
1905	AF5086	Air France	DH4	RTM	74	63	ARR
1905	LH005	Lufthansa	E90	MUC	98	83	ARR
1910	LG4597	Luxair	DH4	LUX	74	63	ARR
1910	LX486	SWISS	C10	BSL	110	94	ARR

1915	AF5198	Air France	E90	AMS	98	83	ARR
1915	OS003	Austrian	E90	VIE	98	83	ARR
1920	LX454	SWISS	C10	ZRH	110	94	ARR
1920	BA8709	British Airways	C10	EDI	110	94	ARR
1945	BA8768	British Airways	E90	ZRH	98	49	ARR
1950	BA1036	British Airways	E90	GLA	98	49	ARR
1955	BA8458	British Airways	E90	AMS	98	49	ARR
2000	AF5176	Air France	DH4	DND	74	37	ARR
2000	AF5028	Air France	DH4	ORY	74	37	ARR
2000	BA1026	British Airways	E90	FAO	98	49	ARR
2005	AF5088	Air France	DH4	RTM	74	37	ARR
2020	BA8717	British Airways	C10	EDI	110	55	ARR
2020	BA8729	British Airways	E90	GLA	98	49	ARR
2025	AF5168	Air France	E90	EDI	98	49	ARR
2045	LX440	SWISS	C10	GVA	110	44	ARR
2050	AF5222	Air France	E90	DUB	98	39	ARR
2105	BA8737	British Airways	E90	FRA	98	39	ARR
2115	LX462	SWISS	C10	ZRH	110	44	ARR
0630	LX463	SWISS	C10	ZRH	110		DEP
0645	LX441	SWISS	C10	GVA	110		DEP
0650	BA1023	British Airways	E90	MAD	98		DEP
0655	BA1031	British Airways	E90	FRA	98		DEP
0700	AF5115	Air France	E90	DUB	98	83	DEP
0700	BA8700	British Airways	E90	EDI	98	83	DEP
0700	BA8720	British Airways	E90	GLA	98	83	DEP
0700	BA8763	British Airways	E90	ZRH	98	83	DEP
0705	AF5159	Air France	E90	EDI	98	83	DEP
0735	AF5295	Air France	DH4	NTE	74	63	DEP
0740	LG4592	Luxair	DH4	LUX	74	63	DEP
0745	LH042	Lufthansa	AT5	HAJ	48	41	DEP
0750	AF5181	Air France	E90	AMS	98	83	DEP
0750	LH927	Lufthansa	E90	FRA	98	83	DEP
0750	LH030	Lufthansa	DH4	STR	74	63	DEP
0755	BA8497	British Airways	E90	AMS	98	83	DEP
0755	LH036	Lufthansa	DH4	CGN	74	63	DEP
0800	LH012	Lufthansa	E90	DUS	98	83	DEP
0800	AF5213	Air France	DH4	LUX	74	63	DEP
0805	BA8732	British Airways	E70	FRA	76	65	DEP
0805	AF5019	Air France	DH4	ORY	74	63	DEP
0810	LH002	Lufthansa	E90	MUC	98	83	DEP
0815	BA1010	British Airways	E90	CPH	98	83	DEP
0815	AF5091	Air France	DH4	EIN	74	63	DEP
0820	SX501	Skywork	DH4	BRN	74	63	DEP
0825	AF5073	Air France	DH4	RTM	74	63	DEP
0825	LX451	SWISS	C10	ZRH	110	94	DEP
0830	AF5231	Air France	DH4	ANR	74	63	DEP
0835	BA8451	British Airways	C10	AMS	110	94	DEP
0835	LX485	SWISS	C10	BSL	110	94	DEP
0835	LX443	SWISS	C10	GVA	110	94	DEP
0840	AF5187	Air France	E90	AMS	98	83	DEP
0840	BA1028	British Airways	E90	MXP	98	83	DEP
0840	LH024	Lufthansa	E90	TXL	98	83	DEP
0845	AF5117	Air France	E90	DUB	98	83	DEP
0845	BA8722	British Airways	E90	GLA	98	83	DEP
0850	BA3292	British Airways	E70	ABZ	76	65	DEP
0850	BA8702	British Airways	E90	EDI	98	83	DEP
0850	OV002	Estonian Air	E90	TLL	112	95	DEP
0855	BA1018	British Airways	E90	BHD	98	83	DEP
0900	VE7051	Alitalia	E90	LIN	98	83	DEP
0900	AF007	Air France	E90	NCE	98	83	DEP
0905	BA1004	British Airways	E90	FRA	98	83	DEP
0910	BA8471	British Airways	E90	BCN	98	83	DEP
0915	BA3282	British Airways	E70	IOM	76	65	DEP
0915	SI713	Blue Islands	AT5	JER	48	41	DEP
0920	AY002	Finnair	E90	HEL	98	83	DEP
0925	AF5183	Air France	E90	AMS	98	83	DEP
0925	AF5281	Air France	E90	FLR	98	83	DEP
0930	BA8491	British Airways	E90	ARN	98	49	DEP
0930	AF5021	Air France	DH4	ORY	74	37	DEP
0930	LO002	LOT Polish	E70	WAW	76	38	DEP
0935	LH020	Lufthansa	DH4	HAM	74	37	DEP
0935	BA8753	British Airways	E90	MAD	98	49	DEP
0935	AF5075	Air France	DH4	RTM	74	37	DEP
0940	BA8704	British Airways	C10	EDI	110	55	DEP
0940	VE004	Alitalia	E90	FCO	98	49	DEP
0940	SI002	Blue Islands	AT5	GCI	48	24	DEP
0945	BA8210	British Airways	AT5	BLL	48	24	DEP
0950	SK006	SAS	DH4	CPH	74	37	DEP
0950	BA001	British Airways	318	JFK	32	16	DEP
0950	LH004	Lufthansa	E90	MUC	98	49	DEP
0955	LH929	Lufthansa	E90	FRA	98	49	DEP
0955	SK002	SAS	E90	OSL	98	49	DEP
0955	OK002	CSA	E90	PRG	98	49	DEP
1000	LX461	SWISS	C10	ZRH	110	55	DEP
1010	OS002	Austrian	E90	VIE	98	49	DEP
1030	LH014	Lufthansa	DH4	DUS	74	30	DEP
1030	AF004	Air France	DH4	PUF	74	30	DEP
1040	BA1015	British Airways	E90	GLA	98	39	DEP
1050	AF001	Air France	E90	EDI	98	39	DEP

1100	BA8479	British Airways	E90	VCE	98	39	DEP
1125	LX006	SWISS	C10	ZRH	110	44	DEP
1135	AF5185	Air France	E90	AMS	98	39	DEP
1140	LX004	SWISS	C10	GVA	110	44	DEP
1140	LH048	Lufthansa	DH4	MUC	74	30	DEP
1150	BA1033	British Airways	E90	EDI	98	39	DEP
1150	LO006	LOT Polish	E70	WAW	76	30	DEP
1220	AF5233	Air France	DH4	ANR	74	30	DEP
1220	LG4594	Luxair	DH4	LUX	74	30	DEP
1240	AF5119	Air France	E90	DUB	98	39	DEP
1245	BA1039	British Airways	E90	ARN	98	39	DEP
1245	VE002	Alitalia	E90	LIN	98	39	DEP
1250	BA1025	British Airways	E90	FAO	98	39	DEP
1255	VE006	Alitalia	E90	FCO	98	39	DEP
1255	BA8765	British Airways	E90	ZRH	98	39	DEP
1300	AF5163	Air France	E90	EDI	98	39	DEP
1305	BA8453	British Airways	C10	AMS	110	44	DEP
1325	BA1006	British Airways	E90	BCN	98	39	DEP
1345	LX457	SWISS	C10	ZRH	110	44	DEP
1355	LX435	SWISS	C10	GVA	110	44	DEP
1400	BA1012	British Airways	E90	CPH	98	39	DEP
1405	BA1038	British Airways	E90	MXP	98	39	DEP
1410	BA1001	British Airways	E90	AMS	98	39	DEP
1420	BA8716	British Airways	E90	EDI	98	39	DEP
1420	BA8726	British Airways	E90	GLA	98	39	DEP
1420	LH044	Lufthansa	AT5	HAJ	48	19	DEP
1445	BA8734	British Airways	E70	FRA	76	30	DEP
1450	BA3286	British Airways	E70	IOM	76	30	DEP
1450	LH026	Lufthansa	E90	TXL	98	39	DEP
1455	AF5217	Air France	E90	LUX	98	39	DEP
1500	LX002	SWISS	C10	BSL	110	44	DEP
1505	AF5235	Air France	DH4	ANR	74	30	DEP
1510	AF5121	Air France	E90	DUB	98	39	DEP
1510	LH008	Lufthansa	DH4	MUC	74	30	DEP
1515	LH016	Lufthansa	DH4	DUS	74	30	DEP
1525	BA3296	British Airways	E70	ABZ	76	30	DEP
1525	AF5025	Air France	DH4	ORY	74	30	DEP
1530	BA8455	British Airways	E90	AMS	98	39	DEP
1530	BA1020	British Airways	E90	BHD	98	39	DEP
1530	LH038	Lufthansa	DH4	CGN	74	30	DEP
1535	BA1035	British Airways	E90	GLA	98	39	DEP
1545	AY004	Finnair	E90	HEL	98	39	DEP
1550	LH032	Lufthansa	DH4	STR	74	30	DEP
1550	BA8767	British Airways	E90	ZRH	98	39	DEP
1600	BA003	British Airways	318	JFK	32	13	DEP
1605	AF5193	Air France	E90	AMS	98	39	DEP
1605	LG4596	Luxair	DH4	LUX	74	30	DEP
1610	BA8706	British Airways	C10	EDI	110	44	DEP
1620	AF5175	Air France	DH4	DND	74	30	DEP
1625	LX008	SWISS	C10	ZRH	110	44	DEP
1630	SI004	Blue Islands	AT5	JER	48	24	DEP
1635	AF010	Air France	E90	DUB	98	49	DEP
1635	AF5081	Air France	DH4	RTM	74	37	DEP
1640	SK010	SAS	DH4	OSL	74	37	DEP
1645	LX437	SWISS	C10	GVA	110	55	DEP
1655	AF5165	Air France	E90	EDI	98	49	DEP
1655	AF5209	Air France	DH4	NTE	74	37	DEP
1700	LH935	Lufthansa	E90	FRA	98	49	DEP
1700	BA8724	British Airways	E90	GLA	98	49	DEP
1705	BA8459	British Airways	E90	AMS	98	49	DEP
1705	LH010	Lufthansa	E90	MUC	98	49	DEP
1710	BA8712	British Airways	C10	EDI	110	55	DEP
1725	BA8738	British Airways	E90	FRA	98	49	DEP
1725	VE7053	Alitalia	E90	LIN	98	49	DEP
1730	LX465	SWISS	C10	ZRH	110	94	DEP
1735	AF5123	Air France	E90	DUB	98	83	DEP
1735	AF5083	Air France	DH4	RTM	74	63	DEP
1740	LH050	Lufthansa	DH4	DUS	74	63	DEP
1745	LH046	Lufthansa	AT5	HAJ	48	41	DEP
1745	LH022	Lufthansa	DH4	HAM	74	63	DEP
1750	AF5195	Air France	E90	AMS	98	83	DEP
1750	VE009	Alitalia	E90	FCO	98	83	DEP
1800	BA8708	British Airways	E90	EDI	98	83	DEP
1800	BA8728	British Airways	E90	GLA	98	83	DEP
1805	AF5027	Air France	DH4	ORY	74	63	DEP
1815	LH937	Lufthansa	E90	FRA	98	83	DEP
1815	LO004	LOT Polish	E70	WAW	76	65	DEP
1820	AF5237	Air France	DH4	ANR	74	63	DEP
1820	OK004	CSA	E90	PRG	98	83	DEP
1820	LX467	SWISS	C10	ZRH	110	94	DEP
1825	LH040	Lufthansa	DH4	CGN	74	63	DEP
1825	SK008	SAS	DH4	CPH	74	63	DEP
1825	LH034	Lufthansa	DH4	STR	74	63	DEP
1830	SX503	Skywork	DH4	BRN	74	63	DEP
1835	AF5097	Air France	DH4	EIN	74	63	DEP
1835	LH028	Lufthansa	E90	TXL	98	83	DEP
1835	BA8769	British Airways	E90	ZRH	98	83	DEP
1840	LX447	SWISS	C10	GVA	110	94	DEP
1840	AY006	Finnair	E90	HEL	98	83	DEP

1840	BA8755	British Airways	E90	MAD	98	83	DEP
1845	AF5197	Air France	E90	AMS	98	83	DEP
1845	AF5167	Air France	E90	EDI	98	83	DEP
1850	AF5085	Air France	DH4	RTM	74	63	DEP
1900	BA8457	British Airways	E90	AMS	98	83	DEP
1900	BA1022	British Airways	E90	BHD	98	83	DEP
1900	BA8212	British Airways	AT5	BLL	48	41	DEP
1905	BA8493	British Airways	E90	ARN	98	83	DEP
1905	SI719	Blue Islands	AT5	JER	48	41	DEP
1910	BA1008	British Airways	E90	BCN	98	83	DEP
1910	BA8736	British Airways	E70	FRA	76	65	DEP
1920	BA1014	British Airways	E90	CPH	98	83	DEP
1920	AF5125	Air France	E90	DUB	98	83	DEP
1920	AF5219	Air France	DH4	LUX	74	63	DEP
1920	BA1030	British Airways	E90	MXP	98	83	DEP
1925	LH018	Lufthansa	E90	DUS	98	83	DEP
1925	AF5029	Air France	DH4	ORY	74	63	DEP
1925	SK004	SAS	E90	OSL	98	83	DEP
1930	BA3298	British Airways	E70	ABZ	76	38	DEP
1930	BA3288	British Airways	E70	IOM	76	38	DEP
1935	AF5087	Air France	DH4	RTM	74	37	DEP
1940	LG4598	Luxair	DH4	LUX	74	37	DEP
1940	LH006	Lufthansa	E90	MUC	98	49	DEP
1940	LX455	SWISS	C10	ZRH	110	55	DEP
1945	AF5199	Air France	E90	AMS	98	49	DEP
1945	OS004	Austrian	E90	VIE	98	49	DEP
1950	LX487	SWISS	C10	BSL	110	55	DEP
1950	BA8718	British Airways	C10	EDI	110	55	DEP
2015	BA8730	British Airways	E90	GLA	98	49	DEP
2025	AF5177	Air France	DH4	DND	74	37	DEP
2030	AF5239	Air France	DH4	ANR	74	30	DEP
2035	AF5089	Air France	DH4	RTM	74	30	DEP
2050	BA8714	British Airways	C10	EDI	110	44	DEP

Source: York Aviation

2012 - Timetable

Time	Flight No	Airline	Type	To/From	Seats	Passengers	Arr/Dep
0705	AF5070	Air France	F50	RTM	50	45	ARR
0705	AF5230	Air France	F50	ANR	50	45	ARR
0710	LG4591	Luxair	DH4	LUX	74	67	ARR
0715	BA002	British Airways	318	JFK	32	29	ARR
0715	LH926	Lufthansa	E90	FRA	98	88	ARR
0720	AF5180	Air France	AR8	AMS	82	74	ARR
0725	BA8450	British Airways	E70	AMS	76	68	ARR
0730	AF5212	Air France	F50	LUX	50	45	ARR
0735	AF5018	Air France	F50	ORY	50	45	ARR
0735	BA8731	British Airways	E70	FRA	76	68	ARR
0745	AF5090	Air France	F50	EIN	50	45	ARR
0750	SX500	Skywork	D38	BRN	29	26	ARR
0755	AF5072	Air France	F50	RTM	50	45	ARR
0755	LX484	SWISS	AR1	BSL	97	87	ARR
0800	AF5232	Air France	F50	ANR	50	45	ARR
0805	BA8701	British Airways	E90	EDI	98	88	ARR
0805	LX442	SWISS	AR1	GVA	97	87	ARR
0805	LX450	SWISS	AR1	ZRH	97	87	ARR
0810	AF5182	Air France	AR8	AMS	82	74	ARR
0815	AF5116	Air France	AR8	DUB	82	74	ARR
0815	BA8721	British Airways	E90	GLA	98	88	ARR
0820	BA3291	British Airways	E70	ABZ	76	68	ARR
0820	BA8760	British Airways	E70	ZRH	76	68	ARR
0830	AF5158	Air France	AR8	EDI	82	74	ARR
0830	VE7050	Alitalia	E90	LIN	98	88	ARR
0840	BA8711	British Airways	E90	EDI	98	88	ARR
0845	BA3281	British Airways	S20	IOM	50	45	ARR
0845	SI712	Blue Islands	AT5	JER	48	43	ARR
0855	AF5118	Air France	AR8	DUB	82	74	ARR
0855	AF5184	Air France	AR8	AMS	82	74	ARR
0900	AF5074	Air France	F50	RTM	50	45	ARR
0900	BA8490	British Airways	E70	ARN	76	68	ARR
0905	AF5020	Air France	F50	ORY	50	30	ARR
0905	BA8752	British Airways	E90	MAD	98	59	ARR
0910	BA8705	British Airways	E90	EDI	98	59	ARR
0910	BA8723	British Airways	E90	GLA	98	59	ARR
0915	BA8209	British Airways	D38	BLL	32	19	ARR
0920	LH928	Lufthansa	E90	FRA	98	59	ARR
0930	LX460	SWISS	AR1	ZRH	97	58	ARR
1000	AF5170	Air France	D38	DND	31	19	ARR
1005	BA004	British Airways	318	JFK	32	19	ARR
1010	BA8703	British Airways	E90	EDI	98	59	ARR
1015	BA8739	British Airways	E90	GLA	98	59	ARR
1020	AF5120	Air France	AR8	DUB	82	49	ARR
1025	AF5162	Air France	D38	EDI	31	19	ARR
1045	BA8496	British Airways	E70	AMS	76	30	ARR
1045	BA8764	British Airways	E70	ZRH	76	30	ARR
1105	AF5186	Air France	AR8	AMS	82	33	ARR
1110	AF5234	Air France	F50	ANR	50	20	ARR
1125	AF5294	Air France	F50	FMO	50	20	ARR
1130	BA8452	British Airways	E90	AMS	98	39	ARR
1150	LG4593	Luxair	DH4	LUX	74	30	ARR
1155	BA8725	British Airways	E90	GLA	98	39	ARR
1205	BA8715	British Airways	E70	EDI	76	30	ARR
1210	BA8733	British Airways	E70	FRA	76	30	ARR
1240	AF5076	Air France	F50	RTM	50	20	ARR
1250	LX456	SWISS	AR1	ZRH	97	39	ARR
1320	LX434	SWISS	AR1	GVA	97	39	ARR
1325	SX508	Skywork	D38	BRN	29	12	ARR
1330	BA3295	British Airways	E70	ABZ	76	30	ARR
1410	AF5188	Air France	AR8	AMS	82	33	ARR
1415	BA3285	British Airways	S20	IOM	50	20	ARR
1425	BA8472	British Airways	E90	BCN	98	39	ARR
1440	AF5280	Air France	AR8	FLR	82	33	ARR
1455	AF5216	Air France	F50	LUX	50	20	ARR
1500	AF5236	Air France	F50	ANR	50	20	ARR
1520	BA8713	British Airways	E90	EDI	98	39	ARR
1530	LG4595	Luxair	DH4	LUX	74	30	ARR
1550	AF5122	Air France	D38	DUB	31	12	ARR
1550	BA8480	British Airways	E90	VCE	98	39	ARR
1605	AF5080	Air France	F50	RTM	50	20	ARR
1615	LX436	SWISS	AR1	GVA	97	39	ARR
1625	BA8454	British Airways	E90	AMS	98	39	ARR
1625	LH934	Lufthansa	E90	FRA	98	39	ARR
1630	AF5166	Air France	D38	EDI	31	19	ARR
1640	LX464	SWISS	AR1	ZRH	97	58	ARR
1655	VE7052	Alitalia	E90	LIN	98	59	ARR
1705	AF5082	Air France	F50	RTM	50	30	ARR
1720	AF5194	Air France	AR8	AMS	82	49	ARR
1730	BA8727	British Airways	E90	GLA	98	88	ARR

Period	Load Factor
Shoulder	60%
Peak	90%
Off-Peak	40%

Passengers at the Airport

	Arrivals	Departures	Total
08:00 - 09:00	1166	1042	2209
17:00 - 18:00	521	590	1112

Passengers on Surface Access

	Arrivals	Departures	Total
08:00 - 09:00	536	1134	1670
17:00 - 18:00	946	623	1569

1730	BA8766	British Airways	E90	ZRH	98	88	ARR
1735	AF5238	Air France	F50	ANR	50	45	ARR
1740	LH936	Lufthansa	E90	FRA	98	88	ARR
1750	AF5024	Air France	F50	ORY	50	45	ARR
1750	LX466	SWISS	AR1	ZRH	97	87	ARR
1800	SX502	Skywork	D38	BRN	29	26	ARR
1805	AF5096	Air France	F50	EIN	50	45	ARR
1805	BA8707	British Airways	E70	EDI	76	68	ARR
1810	BA8754	British Airways	E90	MAD	98	88	ARR
1810	LX446	SWISS	AR1	GVA	97	87	ARR
1815	AF5196	Air France	AR8	AMS	82	74	ARR
1815	AF5218	Air France	AR8	LUX	82	74	ARR
1820	AF5084	Air France	F50	RTM	50	45	ARR
1825	BA8492	British Airways	E70	ARN	76	68	ARR
1830	BA8456	British Airways	E70	AMS	76	68	ARR
1835	BA8211	British Airways	D38	BLL	32	29	ARR
1835	SI718	Blue Islands	AT5	JER	48	43	ARR
1840	BA8735	British Airways	E70	FRA	76	68	ARR
1850	AF5026	Air France	F50	ORY	50	45	ARR
1850	AF5126	Air France	AR8	DUB	82	74	ARR
1855	AF5208	Air France	F50	NTE	50	45	ARR
1900	BA3287	British Airways	S20	IOM	50	45	ARR
1900	BA3297	British Airways	E70	ABZ	76	68	ARR
1905	AF5086	Air France	F50	RTM	50	45	ARR
1910	LG4597	Luxair	DH4	LUX	74	67	ARR
1910	LX486	SWISS	AR1	BSL	97	87	ARR
1915	AF5198	Air France	AR8	AMS	82	74	ARR
1920	BA8709	British Airways	E90	EDI	98	88	ARR
1920	LX454	SWISS	AR1	ZRH	97	87	ARR
1945	BA8768	British Airways	E90	ZRH	98	59	ARR
1955	BA8458	British Airways	E70	AMS	76	46	ARR
2000	AF5028	Air France	F50	ORY	50	30	ARR
2000	AF5176	Air France	D38	DND	31	19	ARR
2005	AF5088	Air France	F50	RTM	50	30	ARR
2020	BA8717	British Airways	E90	EDI	98	59	ARR
2020	BA8729	British Airways	E90	GLA	98	59	ARR
2025	AF5168	Air France	D38	EDI	31	19	ARR
2040	BA8737	British Airways	E90	FRA	98	39	ARR
2045	LX440	SWISS	AR1	GVA	97	39	ARR
2050	AF5222	Air France	AR8	DUB	82	33	ARR
2115	LX462	SWISS	AR1	ZRH	97	39	ARR
0630	LX463	SWISS	AR1	ZRH	97	58	DEP
0645	LX441	SWISS	AR1	GVA	97	58	DEP
0700	AF5115	Air France	AR8	DUB	82	74	DEP
0700	BA8700	British Airways	E90	EDI	98	88	DEP
0700	BA8763	British Airways	E70	ZRH	76	68	DEP
0705	AF5159	Air France	D38	EDI	31	28	DEP
0705	BA8720	British Airways	E90	GLA	98	88	DEP
0735	AF5071	Air France	F50	RTM	50	45	DEP
0735	AF5295	Air France	F50	FMO	50	45	DEP
0740	LG4592	Luxair	DH4	LUX	74	67	DEP
0750	LH927	Lufthansa	E90	FRA	98	88	DEP
0750	AF5181	Air France	AR8	AMS	82	74	DEP
0755	BA8497	British Airways	E70	AMS	76	68	DEP
0800	AF5213	Air France	F50	LUX	50	45	DEP
0805	AF5019	Air France	F50	ORY	50	45	DEP
0805	BA8732	British Airways	E70	FRA	76	68	DEP
0815	AF5091	Air France	F50	EIN	50	45	DEP
0820	SX501	Skywork	D38	BRN	29	26	DEP
0825	AF5073	Air France	F50	RTM	50	45	DEP
0825	LX451	SWISS	AR1	ZRH	97	87	DEP
0830	AF5231	Air France	F50	ANR	50	45	DEP
0835	BA8451	British Airways	E90	AMS	98	88	DEP
0835	LX443	SWISS	AR1	GVA	97	87	DEP
0835	LX485	SWISS	AR1	BSL	97	87	DEP
0840	AF5187	Air France	AR8	AMS	82	74	DEP
0845	AF5117	Air France	AR8	DUB	82	74	DEP
0845	BA8722	British Airways	E90	GLA	98	88	DEP
0850	BA3292	British Airways	E70	ABZ	76	68	DEP
0850	BA8702	British Airways	E70	EDI	76	68	DEP
0900	VE7051	Alitalia	E90	LIN	98	88	DEP
0910	BA8471	British Airways	E90	BCN	98	59	DEP
0915	BA3282	British Airways	S20	IOM	50	30	DEP
0915	SI713	Blue Islands	AT5	JER	48	29	DEP
0925	AF5281	Air France	AR8	FLR	82	49	DEP
0925	AF5183	Air France	AR8	AMS	82	49	DEP
0930	AF5021	Air France	F50	ORY	50	30	DEP
0930	BA8491	British Airways	E70	ARN	76	46	DEP
0935	AF5075	Air France	F50	RTM	50	30	DEP
0935	BA8753	British Airways	E90	MAD	98	59	DEP
0940	BA8704	British Airways	E90	EDI	98	59	DEP
0945	BA8210	British Airways	D38	BLL	32	19	DEP
0950	BA001	British Airways	318	JFK	32	19	DEP

0955	LH929	Lufthansa	E90	FRA	98	59	DEP
1000	LX461	SWISS	AR1	ZRH	97	58	DEP
1100	BA8479	British Airways	E90	VCE	98	39	DEP
1135	AF5185	Air France	AR8	AMS	82	33	DEP
1220	AF5233	Air France	F50	ANR	50	20	DEP
1220	LG4594	Luxair	DH4	LUX	74	30	DEP
1225	AF5119	Air France	D38	DUB	31	12	DEP
1255	BA8765	British Airways	E90	ZRH	98	39	DEP
1300	AF5163	Air France	D38	EDI	31	12	DEP
1305	BA8453	British Airways	E90	AMS	98	39	DEP
1310	AF5077	Air France	F50	RTM	50	20	DEP
1345	LX457	SWISS	AR1	ZRH	97	39	DEP
1355	LX435	SWISS	AR1	GVA	97	39	DEP
1355	SX509	Skywork	D38	BRN	29	12	DEP
1420	BA8726	British Airways	E90	GLA	98	39	DEP
1420	BA8716	British Airways	E70	EDI	76	30	DEP
1445	BA8734	British Airways	E70	FRA	76	30	DEP
1450	BA3286	British Airways	S20	IOM	50	20	DEP
1500	AF5217	Air France	AR8	LUX	82	33	DEP
1505	AF5235	Air France	F50	ANR	50	20	DEP
1510	AF5121	Air France	AR8	DUB	82	33	DEP
1525	BA3296	British Airways	E70	ABZ	76	30	DEP
1525	AF5025	Air France	F50	ORY	50	20	DEP
1530	BA8455	British Airways	E70	AMS	76	30	DEP
1550	BA8767	British Airways	E90	ZRH	98	39	DEP
1600	BA003	British Airways	318	JFK	32	13	DEP
1605	AF5193	Air France	AR8	AMS	82	33	DEP
1605	LG4596	Luxair	DH4	LUX	74	30	DEP
1610	BA8706	British Airways	E90	EDI	98	39	DEP
1620	AF5175	Air France	D38	DND	31	12	DEP
1635	AF5081	Air France	F50	RTM	50	30	DEP
1645	LX437	SWISS	AR1	GVA	97	58	DEP
1655	AF5209	Air France	F50	NTE	50	30	DEP
1655	AF5165	Air France	D38	EDI	31	19	DEP
1700	BA8738	British Airways	E90	FRA	98	59	DEP
1700	BA8724	British Airways	E90	GLA	98	59	DEP
1700	LH935	Lufthansa	E90	FRA	98	59	DEP
1705	BA8459	British Airways	E70	AMS	76	46	DEP
1710	BA8712	British Airways	E90	EDI	98	59	DEP
1710	LX465	SWISS	AR1	ZRH	97	58	DEP
1725	VE7053	Alitalia	E90	LIN	98	59	DEP
1735	AF5123	Air France	AR8	DUB	82	74	DEP
1735	AF5083	Air France	F50	RTM	50	45	DEP
1750	AF5195	Air France	AR8	AMS	82	74	DEP
1800	BA8728	British Airways	E90	GLA	98	88	DEP
1800	BA8708	British Airways	E90	EDI	98	88	DEP
1805	AF5027	Air France	F50	ORY	50	45	DEP
1815	LH937	Lufthansa	E90	FRA	98	88	DEP
1820	AF5237	Air France	F50	ANR	50	45	DEP
1820	LX467	SWISS	AR1	ZRH	97	87	DEP
1830	SX503	Skywork	D38	BRN	29	26	DEP
1835	AF5097	Air France	F50	EIN	50	45	DEP
1835	BA8769	British Airways	E70	ZRH	76	68	DEP
1840	BA8755	British Airways	E90	MAD	98	88	DEP
1840	LX447	SWISS	AR1	GVA	97	87	DEP
1845	AF5197	Air France	AR8	AMS	82	74	DEP
1845	AF5167	Air France	AR8	EDI	82	74	DEP
1850	AF5085	Air France	F50	RTM	50	45	DEP
1900	BA8457	British Airways	E70	AMS	76	68	DEP
1900	BA8212	British Airways	D38	BLL	32	29	DEP
1905	BA8493	British Airways	E70	ARN	76	68	DEP
1905	SI719	Blue Islands	AT5	JER	48	43	DEP
1910	BA8736	British Airways	E70	FRA	76	68	DEP
1920	AF5219	Air France	F50	LUX	50	45	DEP
1920	AF5125	Air France	AR8	DUB	82	74	DEP
1925	AF5029	Air France	F50	ORY	50	45	DEP
1930	BA3288	British Airways	S20	IOM	50	30	DEP
1930	BA3298	British Airways	E70	ABZ	76	46	DEP
1935	AF5087	Air France	F50	RTM	50	30	DEP
1940	LG4598	Luxair	DH4	LUX	74	44	DEP
1940	LX455	SWISS	AR1	ZRH	97	58	DEP
1945	AF5199	Air France	AR8	AMS	82	49	DEP
1950	BA8718	British Airways	E90	EDI	98	59	DEP
1950	LX487	SWISS	AR1	BSL	97	58	DEP
2015	BA8730	British Airways	E90	GLA	98	59	DEP
2025	AF5177	Air France	D38	DND	31	19	DEP
2030	AF5239	Air France	F50	ANR	50	20	DEP
2035	AF5089	Air France	F50	RTM	50	20	DEP
2050	BA8714	British Airways	E90	EDI	98	39	DEP

Source: York Aviation

2021 - Without Development Timetable

Time	Flight No	Airline	Type	To/From	Seats	Passengers	Arr/Dep
0705	AF5230	Air France	AT5	ANR	50	45	ARR
0705	AF5070	Air France	AT5	RTM	50	45	ARR
0710	LG4591	Luxair	DH4	LUX	74	67	ARR
0715	LH926	Lufthansa	E90	FRA	98	88	ARR
0715	BA002	British Airways	318	JFK	32	29	ARR
0720	AF5180	Air France	E90	AMS	98	88	ARR
0725	BA8450	British Airways	E70	AMS	76	68	ARR
0725	LH001	Lufthansa	E90	MUC	98	88	ARR
0730	AF5212	Air France	AT5	LUX	50	45	ARR
0730	LH011	Lufthansa	DH4	DUS	74	67	ARR
0735	AF5018	Air France	AT5	ORY	50	45	ARR
0735	BA8731	British Airways	E70	FRA	76	68	ARR
0745	AF5090	Air France	AT5	EIN	50	45	ARR
0745	BA1009	British Airways	E70	CPH	76	68	ARR
0750	SX500	Skywork	DH4	BRN	74	67	ARR
0755	AF5072	Air France	AT5	RTM	50	45	ARR
0755	LX484	SWISS	C10	ZRH	110	99	ARR
0800	AF5232	Air France	AT5	ANR	50	45	ARR
0805	BA8701	British Airways	E90	EDI	98	88	ARR
0805	LX442	SWISS	C10	GVA	110	99	ARR
0810	AF5182	Air France	E90	AMS	98	88	ARR
0815	AF5116	Air France	E90	DUB	98	88	ARR
0815	BA8721	British Airways	E90	GLA	98	88	ARR
0820	LH023	Lufthansa	AT5	TXL	48	43	ARR
0820	BA3291	British Airways	E70	ABZ	76	68	ARR
0820	BA8760	British Airways	E70	ZRH	76	68	ARR
0820	OV001	Estonian Air	E90	TLL	112	101	ARR
0830	AF5158	Air France	E90	EDI	98	88	ARR
0830	VE7050	Alitalia	E90	LIN	98	88	ARR
0835	BA8711	British Airways	E90	EDI	98	88	ARR
0840	LX450	SWISS	C10	BSL	110	99	ARR
0840	SI712	Blue Islands	AT5	JER	48	43	ARR
0845	BA3281	British Airways	E70	IOM	76	68	ARR
0855	AF5184	Air France	E90	AMS	98	88	ARR
0900	AF5118	Air France	E90	DUB	98	88	ARR
0900	AF5074	Air France	AT5	RTM	50	45	ARR
0900	BA8490	British Airways	E70	ARN	76	68	ARR
0905	AF5020	Air France	AT5	ORY	50	45	ARR
0905	BA8752	British Airways	E90	MAD	98	88	ARR
0905	LH019	Lufthansa	AT5	HAM	48	43	ARR
0910	BA8705	British Airways	E90	EDI	98	88	ARR
0910	BA8723	British Airways	E90	GLA	98	88	ARR
0915	BA8209	British Airways	AT5	BLL	48	43	ARR
0915	LH003	Lufthansa	E90	MUC	98	88	ARR
0920	BA1003	British Airways	E90	BCN	98	88	ARR
0920	LH928	Lufthansa	E90	FRA	98	88	ARR
0925	SI001	Blue Islands	AT5	GCI	48	43	ARR
0930	SK1001	SAS	DH4	CPH	74	44	ARR
0930	LX460	SWISS	C10	ZRH	110	66	ARR
1000	AF5170	Air France	AT5	DND	50	30	ARR
1005	BA004	British Airways	318	JFK	32	19	ARR
1010	BA8703	British Airways	E90	EDI	98	59	ARR
1015	BA8739	British Airways	E90	GLA	98	59	ARR
1020	AF5120	Air France	E90	DUB	98	59	ARR
1025	AF5162	Air France	E90	EDI	98	59	ARR
1030	BA1032	British Airways	E90	FRA	98	39	ARR
1045	BA8496	British Airways	E70	AMS	76	30	ARR
1045	BA8764	British Airways	E70	ZRH	76	30	ARR
1105	AF5186	Air France	E90	AMS	98	39	ARR
1105	VE001	Alitalia	E90	LIN	98	39	ARR
1110	AF5234	Air France	AT5	ANR	50	20	ARR
1125	AF5294	Air France	AT5	NTE	50	20	ARR
1130	BA8452	British Airways	E90	AMS	98	39	ARR
1150	LG4593	Luxair	DH4	LUX	74	30	ARR
1155	BA8725	British Airways	E90	GLA	98	39	ARR
1205	AF2001	Air France	AT5	ORY	50	20	ARR
1205	BA8715	British Airways	E70	EDI	76	30	ARR
1210	AF003	Air France	E90	DUB	98	39	ARR
1210	BA8733	British Airways	E70	FRA	76	30	ARR
1220	BA1024	British Airways	E90	MAD	98	39	ARR
1250	LX456	SWISS	C10	ZRH	110	44	ARR
1255	BA1005	British Airways	E90	GLA	98	39	ARR
1320	LX434	SWISS	C10	GVA	110	44	ARR
1330	BA1011	British Airways	E70	CPH	76	30	ARR
1330	BA3295	British Airways	E70	ABZ	76	30	ARR
1405	AF002	Air France	E90	EDI	98	39	ARR
1410	AF5188	Air France	E90	AMS	98	39	ARR
1415	BA3285	British Airways	E70	IOM	76	30	ARR
1420	LH025	Lufthansa	AT5	TXL	48	19	ARR
1425	BA8472	British Airways	E90	BCN	98	39	ARR
1430	LX001	SWISS	C10	BSL	110	44	ARR
1440	LH007	Lufthansa	DH4	MUC	74	30	ARR
1440	AF5280	Air France	E90	FLR	98	39	ARR
1445	LH015	Lufthansa	AT5	DUS	48	19	ARR
1455	AF5216	Air France	AT5	LUX	50	20	ARR
1500	BA1040	British Airways	E70	ARN	76	30	ARR

Period	Load Factor
Shoulder	60%
Peak	90%
Off-Peak	40%

Passengers at the Airport

	Arrivals	Departures	Total
08:00 - 09:00	1341	1325	2666
17:00 - 18:00	763	748	1510

Passengers on Surface Access

	Arrivals	Departures	Total
08:00 - 09:00	830	1508	2338
17:00 - 18:00	1377	670	2047

1500	AF5236	Air France	AT5	ANR	50	20	ARR
1505	BA1034	British Airways	E90	EDI	98	39	ARR
1520	BA8713	British Airways	E90	EDI	98	39	ARR
1520	VE003	Alitalia	E90	LIN	98	39	ARR
1530	LG4595	Luxair	DH4	LUX	74	30	ARR
1550	AF005	Air France	AT5	PUF	50	20	ARR
1550	BA8480	British Airways	E90	VCE	98	39	ARR
1555	LX007	SWISS	C10	ZRH	110	44	ARR
1605	AF5080	Air France	AT5	RTM	50	20	ARR
1615	LX436	SWISS	C10	GVA	110	44	ARR
1625	LH934	Lufthansa	E90	FRA	98	39	ARR
1625	BA8454	British Airways	E90	AMS	98	39	ARR
1630	AF5166	Air France	E90	EDI	98	59	ARR
1635	BA1016	British Airways	E70	GLA	76	46	ARR
1635	LH009	Lufthansa	DH4	MUC	74	44	ARR
1655	BA1002	British Airways	E90	AMS	98	59	ARR
1655	VE7052	Alitalia	E90	LIN	98	59	ARR
1700	LX464	SWISS	C10	ZRH	110	66	ARR
1700	AF008	Air France	E90	NCE	98	59	ARR
1705	AF5082	Air France	AT5	RTM	50	30	ARR
1715	LH021	Lufthansa	AT5	HAM	48	29	ARR
1720	AF5194	Air France	E90	AMS	98	59	ARR
1730	BA8727	British Airways	E90	GLA	98	88	ARR
1730	BA8766	British Airways	E90	ZRH	98	88	ARR
1735	AF5238	Air France	AT5	ANR	50	45	ARR
1740	LH936	Lufthansa	E90	FRA	98	88	ARR
1745	SK1003	SAS	DH4	CPH	74	67	ARR
1750	AF5024	Air France	AT5	ORY	50	45	ARR
1750	LX466	SWISS	C10	ZRH	110	99	ARR
1800	SX502	Skywork	DH4	BRN	74	67	ARR
1805	AF5096	Air France	AT5	EIN	50	45	ARR
1805	BA8707	British Airways	E70	EDI	76	68	ARR
1805	LH027	Lufthansa	AT5	TXL	48	43	ARR
1810	BA8754	British Airways	E90	MAD	98	88	ARR
1810	LX446	SWISS	C10	GVA	110	99	ARR
1815	AF5196	Air France	E90	AMS	98	88	ARR
1815	AF5218	Air France	E90	LUX	98	88	ARR
1820	AF5084	Air France	AT5	RTM	50	45	ARR
1825	BA8492	British Airways	E70	ARN	76	68	ARR
1830	BA8456	British Airways	E70	AMS	76	68	ARR
1830	LH017	Lufthansa	DH4	DUS	74	67	ARR
1835	BA8211	British Airways	AT5	BLL	48	43	ARR
1835	SI718	Blue Islands	AT5	JER	48	43	ARR
1840	BA1007	British Airways	E90	BCN	98	88	ARR
1840	BA8735	British Airways	E70	FRA	76	68	ARR
1850	AF5026	Air France	AT5	ORY	50	45	ARR
1850	AF5126	Air France	E90	DUB	98	88	ARR
1850	BA1013	British Airways	E70	CPH	76	68	ARR
1855	AF5208	Air France	AT5	NTE	50	45	ARR
1900	BA3287	British Airways	E70	IOM	76	68	ARR
1900	BA3297	British Airways	E70	ABZ	76	68	ARR
1905	AF5086	Air France	AT5	RTM	50	45	ARR
1905	LH005	Lufthansa	E90	MUC	98	88	ARR
1910	LG4597	Luxair	DH4	LUX	74	67	ARR
1910	LX486	SWISS	C10	BSL	110	99	ARR
1915	AF5198	Air France	E90	AMS	98	88	ARR
1920	BA8709	British Airways	E90	EDI	98	88	ARR
1920	LX454	SWISS	C10	ZRH	110	99	ARR
1945	BA8768	British Airways	E90	ZRH	98	59	ARR
1950	BA1036	British Airways	E90	GLA	98	59	ARR
1955	BA8458	British Airways	E70	AMS	76	46	ARR
2000	AF5176	Air France	AT5	DND	50	30	ARR
2000	AF5028	Air France	AT5	ORY	50	30	ARR
2000	BA1026	British Airways	E90	FAO	98	59	ARR
2005	AF5088	Air France	AT5	RTM	50	30	ARR
2020	BA8717	British Airways	E90	EDI	98	59	ARR
2020	BA8729	British Airways	E90	GLA	98	59	ARR
2025	AF5168	Air France	E90	EDI	98	59	ARR
2045	LX440	SWISS	C10	GVA	110	44	ARR
2050	AF5222	Air France	E90	DUB	98	39	ARR
2105	BA8737	British Airways	E90	FRA	98	39	ARR
2115	LX462	SWISS	C10	ZRH	110	44	ARR
0630	LX463	SWISS	C10	ZRH	110	66	DEP
0645	LX441	SWISS	C10	GVA	110	66	DEP
0650	BA1023	British Airways	E90	MAD	98	59	DEP
0655	BA1031	British Airways	E90	FRA	98	59	DEP
0700	AF5115	Air France	E90	DUB	98	88	DEP
0700	BA8763	British Airways	E70	ZRH	76	68	DEP
0700	BA8700	British Airways	E90	EDI	98	88	DEP
0705	AF5159	Air France	E90	EDI	98	88	DEP
0705	BA8720	British Airways	E90	GLA	98	88	DEP
0735	AF5295	Air France	AT5	NTE	50	45	DEP
0735	AF5071	Air France	AT5	RTM	50	45	DEP
0740	LG4592	Luxair	DH4	LUX	74	67	DEP
0750	LH927	Lufthansa	E90	FRA	98	88	DEP
0750	AF5181	Air France	E90	AMS	98	88	DEP
0755	BA8497	British Airways	E70	AMS	76	68	DEP
0755	LH002	Lufthansa	E90	MUC	98	88	DEP
0800	AF5213	Air France	AT5	LUX	50	45	DEP

0800	LH012	Lufthansa	DH4	DUS	74	67	DEP
0805	AF5019	Air France	AT5	ORY	48	43	DEP
0805	BA8732	British Airways	E70	FRA	76	68	DEP
0815	AF5091	Air France	AT5	EIN	50	45	DEP
0815	BA1010	British Airways	E70	CPH	76	68	DEP
0820	SX501	Skywork	DH4	BRN	74	67	DEP
0825	AF5073	Air France	AT5	RTM	50	45	DEP
0825	LX451	SWISS	C10	ZRH	110	99	DEP
0830	AF5231	Air France	AT5	ANR	50	45	DEP
0835	BA8451	British Airways	E90	AMS	98	88	DEP
0835	LX443	SWISS	C10	GVA	110	99	DEP
0840	AF5187	Air France	E90	AMS	98	88	DEP
0845	AF5117	Air France	E90	DUB	98	88	DEP
0845	BA8722	British Airways	E90	GLA	98	88	DEP
0850	LH024	Lufthansa	AT5	TXL	48	43	DEP
0850	BA3292	British Airways	E70	ABZ	76	68	DEP
0850	BA8702	British Airways	E70	EDI	76	68	DEP
0850	OV002	Estonian Air	E90	TLL	112	101	DEP
0900	AF007	Air France	E90	NCE	98	88	DEP
0900	VE7051	Alitalia	E90	LIN	98	88	DEP
0905	BA8471	British Airways	E90	BCN	98	88	DEP
0910	LX485	SWISS	C10	BSL	110	99	DEP
0910	SI713	Blue Islands	AT5	JER	48	43	DEP
0915	BA3282	British Airways	E70	IOM	76	68	DEP
0925	AF5183	Air France	E90	AMS	98	88	DEP
0930	AF5281	Air France	E90	FLR	98	59	DEP
0930	AF5021	Air France	AT5	ORY	48	29	DEP
0930	BA8491	British Airways	E70	ARN	76	46	DEP
0935	AF5075	Air France	AT5	RTM	50	30	DEP
0935	BA8753	British Airways	E90	MAD	98	59	DEP
0935	LH020	Lufthansa	AT5	HAM	48	29	DEP
0940	BA8704	British Airways	E90	EDI	98	59	DEP
0945	BA8210	British Airways	AT5	BLL	48	29	DEP
0950	BA001	British Airways	318	JFK	32	19	DEP
0950	BA1004	British Airways	E90	GLA	98	59	DEP
0950	LH004	Lufthansa	E90	MUC	98	59	DEP
0955	SI002	Blue Islands	AT5	GCI	48	29	DEP
0955	LH929	Lufthansa	E90	FRA	98	59	DEP
1000	SK1002	SAS	DH4	CPH	74	44	DEP
1000	LX461	SWISS	C10	ZRH	110	66	DEP
1030	AF004	Air France	AT5	PUF	50	20	DEP
1050	AF001	Air France	E90	EDI	98	39	DEP
1100	BA8479	British Airways	E90	VCE	98	39	DEP
1115	BA1015	British Airways	E70	GLA	76	30	DEP
1135	AF5185	Air France	E90	AMS	98	39	DEP
1135	VE002	Alitalia	E90	LIN	98	39	DEP
1150	BA1033	British Airways	E90	EDI	98	39	DEP
1220	AF5233	Air France	AT5	ANR	50	20	DEP
1220	LG4594	Luxair	DH4	LUX	74	30	DEP
1235	AF2002	Air France	AT5	ORY	50	20	DEP
1240	AF5119	Air France	E90	DUB	98	39	DEP
1245	BA1039	British Airways	E70	ARN	76	30	DEP
1250	BA1025	British Airways	E90	FAO	98	39	DEP
1255	BA8765	British Airways	E90	ZRH	98	39	DEP
1300	AF5163	Air France	E90	EDI	98	39	DEP
1305	BA8453	British Airways	E90	AMS	98	39	DEP
1325	BA1006	British Airways	E90	BCN	98	39	DEP
1345	LX457	SWISS	C10	ZRH	110	44	DEP
1355	LX435	SWISS	C10	GVA	110	44	DEP
1400	BA1012	British Airways	E70	CPH	76	30	DEP
1410	BA1001	British Airways	E90	AMS	98	39	DEP
1420	BA8726	British Airways	E90	GLA	98	39	DEP
1420	BA8716	British Airways	E70	EDI	76	30	DEP
1445	BA8734	British Airways	E70	FRA	76	30	DEP
1450	BA3286	British Airways	E70	IOM	76	30	DEP
1450	LH026	Lufthansa	AT5	TXL	48	19	DEP
1455	AF5217	Air France	E90	LUX	98	39	DEP
1500	LX002	SWISS	C10	BSL	110	44	DEP
1505	AF5235	Air France	AT5	ANR	50	20	DEP
1510	AF5121	Air France	E90	DUB	98	39	DEP
1510	LH008	Lufthansa	DH4	MUC	74	30	DEP
1515	LH016	Lufthansa	AT5	DUS	74	30	DEP
1525	BA3296	British Airways	E70	ABZ	76	30	DEP
1525	AF5025	Air France	AT5	ORY	48	19	DEP
1530	BA8455	British Airways	E70	AMS	76	30	DEP
1535	BA1035	British Airways	E90	GLA	98	39	DEP
1550	BA8767	British Airways	E90	ZRH	98	39	DEP
1550	VE004	Alitalia	E90	LIN	98	39	DEP
1600	BA003	British Airways	318	JFK	32	13	DEP
1605	AF5193	Air France	E90	AMS	98	39	DEP
1605	LG4596	Luxair	DH4	LUX	74	30	DEP
1610	BA8706	British Airways	E90	EDI	98	39	DEP
1620	AF5175	Air France	AT5	DND	50	20	DEP
1625	LX008	SWISS	C10	ZRH	110	44	DEP
1635	AF5081	Air France	AT5	RTM	50	30	DEP
1645	LX437	SWISS	C10	GVA	110	66	DEP
1655	AF5209	Air France	AT5	NTE	50	30	DEP
1655	AF5165	Air France	E90	EDI	98	59	DEP
1700	BA8724	British Airways	E90	GLA	98	59	DEP

1700	LH935	Lufthansa	E90	FRA	98	59	DEP
1705	BA8459	British Airways	E70	AMS	76	46	DEP
1705	LH010	Lufthansa	DH4	MUC	74	44	DEP
1710	BA8712	British Airways	E90	EDI	98	59	DEP
1725	BA8738	British Airways	E90	FRA	98	59	DEP
1725	VE7053	Alitalia	E90	LIN	98	59	DEP
1730	LX465	SWISS	C10	ZRH	110	99	DEP
1735	AF5123	Air France	E90	DUB	98	88	DEP
1735	AF5083	Air France	AT5	RTM	50	45	DEP
1745	LH022	Lufthansa	AT5	HAM	48	43	DEP
1750	AF5195	Air France	E90	AMS	98	88	DEP
1800	BA8728	British Airways	E90	GLA	98	88	DEP
1800	BA8708	British Airways	E90	EDI	98	88	DEP
1805	AF5027	Air France	AT5	ORY	48	43	DEP
1815	LH937	Lufthansa	E90	FRA	98	88	DEP
1815	SK1004	SAS	DH4	CPH	74	67	DEP
1820	AF5237	Air France	AT5	ANR	50	45	DEP
1820	LX467	SWISS	C10	ZRH	110	99	DEP
1830	SX503	Skywork	DH4	BRN	74	67	DEP
1835	AF5097	Air France	AT5	EIN	50	45	DEP
1835	BA8769	British Airways	E70	ZRH	76	68	DEP
1835	LH028	Lufthansa	AT5	TXL	48	43	DEP
1840	BA8755	British Airways	E90	MAD	98	88	DEP
1840	LX447	SWISS	C10	GVA	110	99	DEP
1845	AF5197	Air France	E90	AMS	98	88	DEP
1845	AF5167	Air France	E90	EDI	98	88	DEP
1850	AF5085	Air France	AT5	RTM	50	45	DEP
1900	BA8457	British Airways	E70	AMS	76	68	DEP
1900	LH018	Lufthansa	DH4	DUS	74	67	DEP
1900	BA8212	British Airways	AT5	BLL	48	43	DEP
1905	BA8493	British Airways	E70	ARN	76	68	DEP
1905	SI719	Blue Islands	AT5	JER	48	43	DEP
1910	BA1008	British Airways	E90	BCN	98	88	DEP
1910	BA8736	British Airways	E70	FRA	76	68	DEP
1920	AF5219	Air France	AT5	LUX	50	45	DEP
1920	AF5125	Air France	E90	DUB	98	88	DEP
1920	BA1014	British Airways	E70	CPH	76	68	DEP
1925	AF5029	Air France	AT5	ORY	48	43	DEP
1930	BA3288	British Airways	E70	IOM	76	46	DEP
1930	BA3298	British Airways	E70	ABZ	76	46	DEP
1935	AF5087	Air France	AT5	RTM	50	30	DEP
1940	LH006	Lufthansa	E90	MUC	98	59	DEP
1940	LG4598	Luxair	DH4	LUX	74	44	DEP
1940	LX455	SWISS	C10	ZRH	110	66	DEP
1945	AF5199	Air France	E90	AMS	98	59	DEP
1950	BA8718	British Airways	E90	EDI	98	59	DEP
1950	LX487	SWISS	C10	BSL	110	66	DEP
2015	BA8730	British Airways	E90	GLA	98	59	DEP
2025	AF5177	Air France	AT5	DND	50	30	DEP
2030	AF5239	Air France	AT5	ANR	50	20	DEP
2035	AF5089	Air France	AT5	RTM	50	20	DEP
2050	BA8714	British Airways	E90	EDI	98	39	DEP

Source: York Aviation

2023 - Without Development Timetable

Time	Flight No	Airline	Type	To/From	Seats	Passengers	Arr/Dep
0705	AF5230	Air France	AT5	ANR	50	45	ARR
0705	AF5070	Air France	AT5	RTM	50	45	ARR
0710	LG4591	Luxair	DH4	LUX	74	67	ARR
0715	LH926	Lufthansa	E90	FRA	98	88	ARR
0715	BA002	British Airways	318	JFK	32	29	ARR
0720	AF5180	Air France	E90	AMS	98	88	ARR
0725	BA8450	British Airways	E70	AMS	76	68	ARR
0725	LH001	Lufthansa	E90	MUC	98	88	ARR
0730	AF5212	Air France	AT5	LUX	50	45	ARR
0730	LH011	Lufthansa	DH4	DUS	74	67	ARR
0735	AF5018	Air France	AT5	ORY	50	45	ARR
0735	BA8731	British Airways	E70	FRA	76	68	ARR
0745	AF5090	Air France	AT5	EIN	50	45	ARR
0745	BA1009	British Airways	E70	CPH	76	68	ARR
0750	SX500	Skywork	DH4	BRN	74	67	ARR
0755	AF5072	Air France	AT5	RTM	50	45	ARR
0755	LX484	SWISS	C10	ZRH	110	99	ARR
0800	AF5232	Air France	AT5	ANR	50	45	ARR
0805	BA8701	British Airways	E90	EDI	98	88	ARR
0805	LX442	SWISS	C10	GVA	110	99	ARR
0810	AF5182	Air France	E90	AMS	98	88	ARR
0815	AF5116	Air France	E90	DUB	98	88	ARR
0815	BA8721	British Airways	E90	GLA	98	88	ARR
0820	LH023	Lufthansa	AT5	TXL	48	43	ARR
0820	BA3291	British Airways	E70	ABZ	76	68	ARR
0820	BA8760	British Airways	E70	ZRH	76	68	ARR
0820	OV001	Estonian Air	E90	TLL	112	101	ARR
0830	AF5158	Air France	E90	EDI	98	88	ARR
0830	VE7050	Alitalia	E90	LIN	98	88	ARR
0835	BA8711	British Airways	E90	EDI	98	88	ARR
0840	LX450	SWISS	C10	BSL	110	99	ARR
0840	SI712	Blue Islands	AT5	JER	48	43	ARR
0845	BA3281	British Airways	E70	IOM	76	68	ARR
0855	AF5184	Air France	E90	AMS	98	88	ARR
0900	AF5118	Air France	E90	DUB	98	88	ARR
0900	AF5074	Air France	AT5	RTM	50	45	ARR
0900	BA8490	British Airways	E70	ARN	76	68	ARR
0905	AF5020	Air France	AT5	ORY	50	45	ARR
0905	BA8752	British Airways	E90	MAD	98	88	ARR
0905	LH019	Lufthansa	AT5	HAM	48	43	ARR
0910	BA8705	British Airways	E90	EDI	98	88	ARR
0910	BA8723	British Airways	E90	GLA	98	88	ARR
0915	BA8209	British Airways	AT5	BLL	48	43	ARR
0915	LH003	Lufthansa	E90	MUC	98	88	ARR
0920	BA1003	British Airways	E90	BCN	98	88	ARR
0920	LH928	Lufthansa	E90	FRA	98	88	ARR
0925	SI001	Blue Islands	AT5	GCI	48	43	ARR
0930	SK1001	SAS	DH4	CPH	74	44	ARR
0930	LX460	SWISS	C10	ZRH	110	66	ARR
1000	AF5170	Air France	AT5	DND	50	30	ARR
1005	BA004	British Airways	318	JFK	32	19	ARR
1010	BA8703	British Airways	E90	EDI	98	59	ARR
1015	BA8739	British Airways	E90	GLA	98	59	ARR
1020	AF5120	Air France	E90	DUB	98	59	ARR
1025	AF5162	Air France	E90	EDI	98	59	ARR
1030	BA1032	British Airways	E90	FRA	98	39	ARR
1045	BA8496	British Airways	E70	AMS	76	30	ARR
1045	BA8764	British Airways	E70	ZRH	76	30	ARR
1105	AF5186	Air France	E90	AMS	98	39	ARR
1105	VE001	Alitalia	E90	LIN	98	39	ARR
1110	AF5234	Air France	AT5	ANR	50	20	ARR
1125	AF5294	Air France	AT5	NTE	50	20	ARR
1130	BA8452	British Airways	E90	AMS	98	39	ARR
1150	LG4593	Luxair	DH4	LUX	74	30	ARR
1155	BA8725	British Airways	E90	GLA	98	39	ARR
1205	AF2001	Air France	AT5	ORY	50	20	ARR
1205	BA8715	British Airways	E70	EDI	76	30	ARR
1210	AF003	Air France	E90	DUB	98	39	ARR
1210	BA8733	British Airways	E70	FRA	76	30	ARR
1220	BA1024	British Airways	E90	MAD	98	39	ARR
1250	LX456	SWISS	C10	ZRH	110	44	ARR
1255	BA1005	British Airways	E90	GLA	98	39	ARR
1320	LX434	SWISS	C10	GVA	110	44	ARR
1330	BA1011	British Airways	E70	CPH	76	30	ARR
1330	BA3295	British Airways	E70	ABZ	76	30	ARR
1405	AF002	Air France	E90	EDI	98	39	ARR
1410	AF5188	Air France	E90	AMS	98	39	ARR
1415	BA3285	British Airways	E70	IOM	76	30	ARR
1420	LH025	Lufthansa	AT5	TXL	48	19	ARR
1425	BA8472	British Airways	E90	BCN	98	39	ARR
1430	LX001	SWISS	C10	BSL	110	44	ARR
1440	LH007	Lufthansa	DH4	MUC	74	30	ARR
1440	AF5280	Air France	E90	FLR	98	39	ARR
1445	LH015	Lufthansa	AT5	DUS	48	19	ARR
1455	AF5216	Air France	AT5	LUX	50	20	ARR
1500	BA1040	British Airways	E70	ARN	76	30	ARR
1500	AF5236	Air France	AT5	ANR	50	20	ARR
1505	BA1034	British Airways	E90	EDI	98	39	ARR

Period	Load Factor
Shoulder	60%
Peak	90%
Off-Peak	40%

Passengers at the Airport

	Arrivals	Departures	Total
08:00 - 09:00	1341	1325	2666
17:00 - 18:00	763	748	1510

Passengers on Surface Access

	Arrivals	Departures	Total
08:00 - 09:00	830	1508	2338
17:00 - 18:00	1377	670	2047

1520	BA8713	British Airways	E90	EDI	98	39	ARR
1520	VE003	Alitalia	E90	LIN	98	39	ARR
1530	LG4595	Luxair	DH4	LUX	74	30	ARR
1550	AF005	Air France	AT5	PUF	50	20	ARR
1550	BA8480	British Airways	E90	VCE	98	39	ARR
1555	LX007	SWISS	C10	ZRH	110	44	ARR
1605	AF5080	Air France	AT5	RTM	50	20	ARR
1615	LX436	SWISS	C10	GVA	110	44	ARR
1625	LH934	Lufthansa	E90	FRA	98	39	ARR
1625	BA8454	British Airways	E90	AMS	98	39	ARR
1630	AF5166	Air France	E90	EDI	98	59	ARR
1635	BA1016	British Airways	E70	GLA	76	46	ARR
1635	LH009	Lufthansa	DH4	MUC	74	44	ARR
1655	BA1002	British Airways	E90	AMS	98	59	ARR
1655	VE7052	Alitalia	E90	LIN	98	59	ARR
1700	LX464	SWISS	C10	ZRH	110	66	ARR
1700	AF008	Air France	E90	NCE	98	59	ARR
1705	AF5082	Air France	AT5	RTM	50	30	ARR
1715	LH021	Lufthansa	AT5	HAM	48	29	ARR
1720	AF5194	Air France	E90	AMS	98	59	ARR
1730	BA8727	British Airways	E90	GLA	98	88	ARR
1730	BA8766	British Airways	E90	ZRH	98	88	ARR
1735	AF5238	Air France	AT5	ANR	50	45	ARR
1740	LH936	Lufthansa	E90	FRA	98	88	ARR
1745	SK1003	SAS	DH4	CPH	74	67	ARR
1750	AF5024	Air France	AT5	ORY	50	45	ARR
1750	LX466	SWISS	C10	ZRH	110	99	ARR
1800	SX502	Skywork	DH4	BRN	74	67	ARR
1805	AF5096	Air France	AT5	EIN	50	45	ARR
1805	BA8707	British Airways	E70	EDI	76	68	ARR
1805	LH027	Lufthansa	AT5	TXL	48	43	ARR
1810	BA8754	British Airways	E90	MAD	98	88	ARR
1810	LX446	SWISS	C10	GVA	110	99	ARR
1815	AF5196	Air France	E90	AMS	98	88	ARR
1815	AF5218	Air France	E90	LUX	98	88	ARR
1820	AF5084	Air France	AT5	RTM	50	45	ARR
1825	BA8492	British Airways	E70	ARN	76	68	ARR
1830	BA8456	British Airways	E70	AMS	76	68	ARR
1830	LH017	Lufthansa	DH4	DUS	74	67	ARR
1835	BA8211	British Airways	AT5	BLL	48	43	ARR
1835	SI718	Blue Islands	AT5	JER	48	43	ARR
1840	BA1007	British Airways	E90	BCN	98	88	ARR
1840	BA8735	British Airways	E70	FRA	76	68	ARR
1850	AF5026	Air France	AT5	ORY	50	45	ARR
1850	AF5126	Air France	E90	DUB	98	88	ARR
1850	BA1013	British Airways	E70	CPH	76	68	ARR
1855	AF5208	Air France	AT5	NTE	50	45	ARR
1900	BA3287	British Airways	E70	IOM	76	68	ARR
1900	BA3297	British Airways	E70	ABZ	76	68	ARR
1905	AF5086	Air France	AT5	RTM	50	45	ARR
1905	LH005	Lufthansa	E90	MUC	98	88	ARR
1910	LG4597	Luxair	DH4	LUX	74	67	ARR
1910	LX486	SWISS	C10	BSL	110	99	ARR
1915	AF5198	Air France	E90	AMS	98	88	ARR
1920	BA8709	British Airways	E90	EDI	98	88	ARR
1920	LX454	SWISS	C10	ZRH	110	99	ARR
1945	BA8768	British Airways	E90	ZRH	98	59	ARR
1950	BA1036	British Airways	E90	GLA	98	59	ARR
1955	BA8458	British Airways	E70	AMS	76	46	ARR
2000	AF5176	Air France	AT5	DND	50	30	ARR
2000	AF5028	Air France	AT5	ORY	50	30	ARR
2000	BA1026	British Airways	E90	FAO	98	59	ARR
2005	AF5088	Air France	AT5	RTM	50	30	ARR
2020	BA8717	British Airways	E90	EDI	98	59	ARR
2020	BA8729	British Airways	E90	GLA	98	59	ARR
2025	AF5168	Air France	E90	EDI	98	59	ARR
2045	LX440	SWISS	C10	GVA	110	44	ARR
2050	AF5222	Air France	E90	DUB	98	39	ARR
2105	BA8737	British Airways	E90	FRA	98	39	ARR
2115	LX462	SWISS	C10	ZRH	110	44	ARR
0630	LX463	SWISS	C10	ZRH	110	44	DEP
0645	LX441	SWISS	C10	GVA	110	66	DEP
0650	BA1023	British Airways	E90	MAD	98	59	DEP
0655	BA1031	British Airways	E90	FRA	98	59	DEP
0700	AF5115	Air France	E90	DUB	98	88	DEP
0700	BA8763	British Airways	E70	ZRH	76	68	DEP
0700	BA8700	British Airways	E90	EDI	98	88	DEP
0705	AF5159	Air France	E90	EDI	98	88	DEP
0705	BA8720	British Airways	E90	GLA	98	88	DEP
0735	AF5295	Air France	AT5	NTE	50	45	DEP
0735	AF5071	Air France	AT5	RTM	50	45	DEP
0740	LG4592	Luxair	DH4	LUX	74	67	DEP
0750	LH927	Lufthansa	E90	FRA	98	88	DEP
0750	AF5181	Air France	E90	AMS	98	88	DEP
0755	BA8497	British Airways	E70	AMS	76	68	DEP
0755	LH002	Lufthansa	E90	MUC	98	88	DEP
0800	AF5213	Air France	AT5	LUX	50	45	DEP
0800	LH012	Lufthansa	DH4	DUS	74	67	DEP
0805	AF5019	Air France	AT5	ORY	48	43	DEP
0805	BA8732	British Airways	E70	FRA	76	68	DEP
0815	AF5091	Air France	AT5	EIN	50	45	DEP

0815	BA1010	British Airways	E70	CPH	76	68	DEP
0820	SX501	Skywork	DH4	BRN	74	67	DEP
0825	AF5073	Air France	AT5	RTM	50	45	DEP
0825	LX451	SWISS	C10	ZRH	110	99	DEP
0830	AF5231	Air France	AT5	ANR	50	45	DEP
0835	BA8451	British Airways	E90	AMS	98	88	DEP
0835	LX443	SWISS	C10	GVA	110	99	DEP
0840	AF5187	Air France	E90	AMS	98	88	DEP
0845	AF5117	Air France	E90	DUB	98	88	DEP
0845	BA8722	British Airways	E90	GLA	98	88	DEP
0850	LH024	Lufthansa	AT5	TXL	48	43	DEP
0850	BA3292	British Airways	E70	ABZ	76	68	DEP
0850	BA8702	British Airways	E70	EDI	76	68	DEP
0850	OV002	Estonian Air	E90	TLL	112	101	DEP
0900	AF007	Air France	E90	NCE	98	88	DEP
0900	VE7051	Alitalia	E90	LIN	98	88	DEP
0905	BA8471	British Airways	E90	BCN	98	88	DEP
0910	LX485	SWISS	C10	BSL	110	99	DEP
0910	SI713	Blue Islands	AT5	JER	48	43	DEP
0915	BA3282	British Airways	E70	IOM	76	68	DEP
0925	AF5183	Air France	E90	AMS	98	88	DEP
0930	AF5281	Air France	E90	FLR	98	59	DEP
0930	AF5021	Air France	AT5	ORY	48	29	DEP
0930	BA8491	British Airways	E70	ARN	76	46	DEP
0935	AF5075	Air France	AT5	RTM	50	30	DEP
0935	BA8753	British Airways	E90	MAD	98	59	DEP
0935	LH020	Lufthansa	AT5	HAM	48	29	DEP
0940	BA8704	British Airways	E90	EDI	98	59	DEP
0945	BA8210	British Airways	AT5	BLL	48	29	DEP
0950	BA001	British Airways	318	JFK	32	19	DEP
0950	BA1004	British Airways	E90	GLA	98	59	DEP
0950	LH004	Lufthansa	E90	MUC	98	59	DEP
0955	SI002	Blue Islands	AT5	GCI	48	29	DEP
0955	LH929	Lufthansa	E90	FRA	98	59	DEP
1000	SK1002	SAS	DH4	CPH	74	44	DEP
1000	LX461	SWISS	C10	ZRH	110	66	DEP
1030	AF004	Air France	AT5	PUF	50	20	DEP
1050	AF001	Air France	E90	EDI	98	39	DEP
1100	BA8479	British Airways	E90	VCE	98	39	DEP
1115	BA1015	British Airways	E70	GLA	76	30	DEP
1135	AF5185	Air France	E90	AMS	98	39	DEP
1135	VE002	Alitalia	E90	LIN	98	39	DEP
1150	BA1033	British Airways	E90	EDI	98	39	DEP
1220	AF5233	Air France	AT5	ANR	50	20	DEP
1220	LG4594	Luxair	DH4	LUX	74	30	DEP
1235	AF2002	Air France	AT5	ORY	50	20	DEP
1240	AF5119	Air France	E90	DUB	98	39	DEP
1245	BA1039	British Airways	E70	ARN	76	30	DEP
1250	BA1025	British Airways	E90	FAO	98	39	DEP
1255	BA8765	British Airways	E90	ZRH	98	39	DEP
1300	AF5163	Air France	E90	EDI	98	39	DEP
1305	BA8453	British Airways	E90	AMS	98	39	DEP
1325	BA1006	British Airways	E90	BCN	98	39	DEP
1345	LX457	SWISS	C10	ZRH	110	44	DEP
1355	LX435	SWISS	C10	GVA	110	44	DEP
1400	BA1012	British Airways	E70	CPH	76	30	DEP
1410	BA1001	British Airways	E90	AMS	98	39	DEP
1420	BA8726	British Airways	E90	GLA	98	39	DEP
1420	BA8716	British Airways	E70	EDI	76	30	DEP
1445	BA8734	British Airways	E70	FRA	76	30	DEP
1450	BA3286	British Airways	E70	IOM	76	30	DEP
1450	LH026	Lufthansa	AT5	TXL	48	19	DEP
1455	AF5217	Air France	E90	LUX	98	39	DEP
1500	LX002	SWISS	C10	BSL	110	44	DEP
1505	AF5235	Air France	AT5	ANR	50	20	DEP
1510	AF5121	Air France	E90	DUB	98	39	DEP
1510	LH008	Lufthansa	DH4	MUC	74	30	DEP
1515	LH016	Lufthansa	AT5	DUS	74	30	DEP
1525	BA3296	British Airways	E70	ABZ	76	30	DEP
1525	AF5025	Air France	AT5	ORY	48	19	DEP
1530	BA8455	British Airways	E70	AMS	76	30	DEP
1535	BA1035	British Airways	E90	GLA	98	39	DEP
1550	BA8767	British Airways	E90	ZRH	98	39	DEP
1550	VE004	Alitalia	E90	LIN	98	39	DEP
1600	BA003	British Airways	318	JFK	32	13	DEP
1605	AF5193	Air France	E90	AMS	98	39	DEP
1605	LG4596	Luxair	DH4	LUX	74	30	DEP
1610	BA8706	British Airways	E90	EDI	98	39	DEP
1620	AF5175	Air France	AT5	DND	50	20	DEP
1625	LX008	SWISS	C10	ZRH	110	44	DEP
1635	AF5081	Air France	AT5	RTM	50	30	DEP
1645	LX437	SWISS	C10	GVA	110	66	DEP
1655	AF5209	Air France	AT5	NTE	50	30	DEP
1655	AF5165	Air France	E90	EDI	98	59	DEP
1700	BA8724	British Airways	E90	GLA	98	59	DEP
1700	LH935	Lufthansa	E90	FRA	98	59	DEP
1705	BA8459	British Airways	E70	AMS	76	46	DEP
1705	LH010	Lufthansa	DH4	MUC	74	44	DEP
1710	BA8712	British Airways	E90	EDI	98	59	DEP
1725	BA8738	British Airways	E90	FRA	98	59	DEP
1725	VE7053	Alitalia	E90	LIN	98	59	DEP

1730	LX465	SWISS	C10	ZRH	110	99	DEP
1735	AF5123	Air France	E90	DUB	98	88	DEP
1735	AF5083	Air France	AT5	RTM	50	45	DEP
1745	LH022	Lufthansa	AT5	HAM	48	43	DEP
1750	AF5195	Air France	E90	AMS	98	88	DEP
1800	BA8728	British Airways	E90	GLA	98	88	DEP
1800	BA8708	British Airways	E90	EDI	98	88	DEP
1805	AF5027	Air France	AT5	ORY	48	43	DEP
1815	LH937	Lufthansa	E90	FRA	98	88	DEP
1815	SK1004	SAS	DH4	CPH	74	67	DEP
1820	AF5237	Air France	AT5	ANR	50	45	DEP
1820	LX467	SWISS	C10	ZRH	110	99	DEP
1830	SX503	Skywork	DH4	BRN	74	67	DEP
1835	AF5097	Air France	AT5	EIN	50	45	DEP
1835	BA8769	British Airways	E70	ZRH	76	68	DEP
1835	LH028	Lufthansa	AT5	TXL	48	43	DEP
1840	BA8755	British Airways	E90	MAD	98	88	DEP
1840	LX447	SWISS	C10	GVA	110	99	DEP
1845	AF5197	Air France	E90	AMS	98	88	DEP
1845	AF5167	Air France	E90	EDI	98	88	DEP
1850	AF5085	Air France	AT5	RTM	50	45	DEP
1900	BA8457	British Airways	E70	AMS	76	68	DEP
1900	LH018	Lufthansa	DH4	DUS	74	67	DEP
1900	BA8212	British Airways	AT5	BLL	48	43	DEP
1905	BA8493	British Airways	E70	ARN	76	68	DEP
1905	SI719	Blue Islands	AT5	JER	48	43	DEP
1910	BA1008	British Airways	E90	BCN	98	88	DEP
1910	BA8736	British Airways	E70	FRA	76	68	DEP
1920	AF5219	Air France	AT5	LUX	50	45	DEP
1920	AF5125	Air France	E90	DUB	98	88	DEP
1920	BA1014	British Airways	E70	CPH	76	68	DEP
1925	AF5029	Air France	AT5	ORY	48	43	DEP
1930	BA3288	British Airways	E70	IOM	76	46	DEP
1930	BA3298	British Airways	E70	ABZ	76	46	DEP
1935	AF5087	Air France	AT5	RTM	50	30	DEP
1940	LH006	Lufthansa	E90	MUC	98	59	DEP
1940	LG4598	Luxair	DH4	LUX	74	44	DEP
1940	LX455	SWISS	C10	ZRH	110	66	DEP
1945	AF5199	Air France	E90	AMS	98	59	DEP
1950	BA8718	British Airways	E90	EDI	98	59	DEP
1950	LX487	SWISS	C10	BSL	110	66	DEP
2015	BA8730	British Airways	E90	GLA	98	59	DEP
2025	AF5177	Air France	AT5	DND	50	30	DEP
2030	AF5239	Air France	AT5	ANR	50	20	DEP
2035	AF5089	Air France	AT5	RTM	50	20	DEP
2050	BA8714	British Airways	E90	EDI	98	39	DEP

Source: York Aviation

APPENDIX J

Trip Attraction

London City Airport: City Airport Development Programme

Trip Attraction and Assignment for Peak Hour Assessment

Introduction

1. This note sets out the trip attraction associated with the change in passengers and staff at London City Airport, as part of the City Airport Development Programme. It also describes the methodology used to derive the trip assignment throughout the local highway network.

2. York Aviation has supplied forecasts for passenger and staff numbers for the 2021 and 2023 With and Without development scenarios. These have been used as the basis for the assessment of the surface access impacts.

3. Passenger forecasts are based on the predicted number of scheduled movements, the frequency of flights serving different routes, the seating capacity of the aircrafts and load factors. York Aviation have derived a daily profile of passengers arriving and departing at the Airport. This is based on a typical busy, rather than average day.

4. Staff forecasts are based on the number of scheduled movements, the change in floorspace and including the proposed hotel.

5. Vehicle trip attraction has been based on forecasts for passengers and staff numbers. This is discussed in detail below.

Existing Peak Period Trip Attraction (2012)

6. A Manual Classified Count (MCC) survey was carried out in November 2010 at the junction of Hartmann Road / Connaught Road for the weekday AM and PM peak periods. This junction currently provides the single point of access to the Airport. Therefore, the actual hourly vehicle trip attraction can be calculated by assuming that all vehicles entering Hartmann Road are arrivals to the Airport and all vehicles exiting Hartmann Road are departures from the Airport.

7. A growth factor derived from Tempro v6.2 was applied to the turning counts to establish the likely vehicle trip attraction in 2012.

8. An Automatic Traffic Counter (ATC) was installed on Hartmann Road in November 2012 to obtain the daily traffic flows. This was also used to provide a validation check on peak hour movements entering / exiting Hartmann Road.

9. **Table 1** below shows the weekday AM and PM peak hour arrivals and departures from the Airport based on the 2010 MCC survey. **Table 2** shows the arrivals and departures with the growth factor from Tempro v6.2 applied. **Table 3** shows the average arrivals and departures taken from the 2012 ATC survey, in order to validate the flows.

Table 1: 2010 Peak Hour Arrivals/Departures

	Arrivals	Departures	Total
AM	329	389	718
PM	419	459	878

Table 1: 2012 Peak Hour Arrivals/Departures (Tempro growth factor applied)

	Arrivals	Departures	Total
AM	332	393	725
PM	423	463	886

Table 3: 2012 Average Peak Hour Arrivals/Departures (ATC)

	Arrivals	Departures	Total
AM	344	374	718
PM	415	465	880

10. The difference between results from the MCC and ATC is minimal. Therefore it is considered that the figures outlined in **Table 2** are robust and can be used as the basis for the 2012 weekday peak hour vehicle trip attraction.

Base Scenario

11. The existing trip attraction of London City Airport, as shown in Table 2 was deducted from total flows throughout the study network. The distribution of the existing Airport traffic was based on turning proportions at the key junctions. Remaining traffic (assumed to be non-airport related traffic) was subsequently adjusted to include growth factors (to 2021 and 2023 taken from Tempro v6.2), and to include committed developments. Further details on the committed developments used within the assessment are provided within the Transport Assessment.

12. Future airport traffic for the Without and With Development scenarios were subsequently added to the base flows. Details of the future trip attraction for both scenarios is provided below.

Future Peak Period Trip Attraction (2021/2023 With and Without Development Scenarios)

Total Passenger Trips

13. York Aviation has derived a daily profile of passengers arriving and departing on flights at the Airport. On average, passengers arrive 1 hour and 15 minutes prior to their flight departing from the airport if travelling on a scheduled flight, and when a flight arrives at the airport it

takes on average 15 minutes for passengers to depart from the airport. Therefore, those arriving on surface transport to the airport between 08:00-09:00, will be departing on flights between 09:15 and 10:15. Those departing the airport on surface transport between 08:00 and 09:00 will arrive on flights between 07:45 and 08:45.

14. The resultant peak hour passenger numbers accessing the Airport in 2021 and 2023 are shown in **Tables 4** and **5**.

Table 4: 2021 with Peak Hour Passenger Numbers

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)		
	Arr's	Dep's	Total	Arr's	Dep's	Total
Without Development	808	1,528	2,336	1,377	670	2,047
With Development	1,072	1,717	2,789	1,743	711	2,454
Change	264	189	453	366	41	406

Table 5: 2023 Peak Hour Passenger Numbers

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)		
	Arr's	Dep's	Total	Arr's	Dep's	Total
Without Development	808	1,508	2,316	1,377	670	2,047
With Development	1,107	1,785	2,892	1,838	748	2,586
Change	299	277	576	461	78	539

Mode Split

15. **Table 6** below summarises the existing mode split of passengers at airport, and the future mode split once the impact of the travel plan and other sustainable measures are implemented. The mode split for both the With and Without Development scenarios are the same.

Table 6: Existing and Future Passenger Mode Split

Mode	2012	2021 / 2023
Private car parked at Airport	2 %	2 %
Dropped off by car	9 %	8 %
Private Hire Minicab	16 %	14 %
Black Taxi	14 %	12 %
DLR	55 %	60 %
Bus	0 %	1 %
Transfer / Other	4 %	3 %
TOTAL	100 %	100 %

Passenger Vehicle Trips

16. By applying the mode split for all vehicles from the 2021/2023 column of Table 6 (36%) to the passenger numbers in Table 4 and Table 5, it is possible to calculate the future peak hour

passenger vehicle trips associated with the proposed CADP. This is summarised in **Table 7** and **Table 8** below.

Table 7: 2021 Peak Hour Passenger Vehicle Trips

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)		
	Arr's	Dep's	Total	Arr's	Dep's	Total
Without Development	292	552	843	497	242	739
With Development	387	620	1,007	629	257	886
Change	95	68	163	132	15	147

Table 8: 2023 Peak Hour Passenger Vehicle Trips

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)		
	Arr's	Dep's	Total	Arr's	Dep's	Total
Without Development	292	545	836	497	242	739
With Development	400	644	1,044	663	270	933
Change	108	100	208	166	28	195

17. Surveys show that black cabs have an average occupancy of 1.32 passengers. Applying this factor to black cabs provides the total vehicle trips for the assessment. This is summarised in **Table 9** and **Table 10** below.

Table 9: 2021 Peak Hour Passenger Vehicles

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)		
	Arr's	Dep's	Total	Arr's	Dep's	Total
Without Development	268	507	775	457	222	679
With Development	356	570	926	578	236	814
Change	88	63	151	121	14	135

Table 10: 2023 Peak Hour Passenger Vehicles

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)		
	Arr's	Dep's	Total	Arr's	Dep's	Total
Without Development	268	501	769	457	222	679
With Development	368	592	960	610	248	858
Change	100	91	191	153	26	179

Staff Vehicle Trips

18. York Aviation has forecast the staff numbers for the different scenarios. This is detailed below in **Table 11**.

Table 11: Staff Forecast

Year	Daily (With Dev)	Daily (Without Dev)
2012	1,900	1,900
2021	2,790	2,220
2023	2,860	2,160

19. Of the total number of staff, 74% work shifts, with 26% working normal daytime hours (i.e. arrive/depart during the peak periods). This has been revealed from the Travel Plan monitoring survey.

20. Mode split for single occupancy vehicle is currently 44%, with 5% car sharing, 4% drop off, and 3% in minicabs. With the continued implementation of the Travel Plan and since staff car parking is not increasing pro rata the increase in staff, it is predicted that the mode share for car will fall to 38% single occupancy, 6% car share, 4% drop off and 2% in minicabs, by 2021/2023.

21. It is assumed that there will be an even distribution of staff over the peak period (i.e. 07:00-10:00 AM peak, and 16:00-19:00 PM Peak). This is based on data for the arrivals/departures at the staff car park. Of staff arriving during the 3 hour AM peak period, 36% (approximately one third) arrive between 08:00-09:00. In addition, during the 3 hour PM peak period, 36% depart between 17:00-18:00. Therefore, approximately 9% of staff will arrive during the AM Peak (08:00-09:00) and depart during the PM Peak (17:00-18:00).

22. Applying this methodology to the forecast numbers in Table 11; give the future year staff vehicle trips in **Tables 12** and **13**.

Table 12: 2021 Peak Hour Staff Vehicle Trips

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)		
	Arr’s	Dep’s	Total	Arr’s	Dep’s	Total
Without Development	104	0	104	0	104	104
With Development	131	0	131	0	131	131
Change	27	0	27	0	27	27

Table 13: 2023 Peak Hour Staff Vehicle Trips

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)		
	Arr’s	Dep’s	Total	Arr’s	Dep’s	Total
Without Development	101	0	101	0	101	101
With Development	134	0	134	0	134	134
Change	33	0	33	0	33	33

23. Table 12 shows that there will be an additional 27 staff vehicle trips in the with development scenario compared to the without development scenario in 2021, whilst Table 13 shows an additional 33 staff vehicles trips in the 2023 with development scenario.

Total Vehicle Trips

24. **Table 14** and **Table 15** show the total number of peak hour vehicle trips for 2021 and 2023 respectively.

Table 14: 2021 Total Vehicle Trips

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)		
	Arr's	Dep's	Total	Arr's	Dep's	Total
Without Development	372	507	879	457	326	783
With Development	487	570	1057	578	367	945
Change	115	63	178	121	41	162

Table 15: 2023 Total Vehicle Trips

	AM Peak (08:00 – 09:00)			PM Peak (17:00 – 18:00)		
	Arr's	Dep's	Total	Arr's	Dep's	Total
Without Development	369	501	870	457	323	780
With Development	502	592	1094	610	382	992
Change	133	91	224	153	59	212

Hotel Vehicle Trips

25. Peak hour trip attraction for the proposed hotel was derived from TRAVL. Vehicle trips were added to the total vehicle trips for the 2021/2023 with development scenarios as part of the assessment. This related to an additional 10 arrivals and 26 departures in the AM Peak, and 30 arrivals and 12 departures in the PM Peak.

Assignment

26. The distribution and assignment of vehicle trips is based on existing passenger and staff postcode data. Separate assignments have been derived for the 'With' and 'Without' Development scenarios. The assignment for the 'With Development' scenario assumes that a second vehicle access to the Airport will be provided from Woolwich Manor Way. Therefore vehicles travelling from the east will access the Airport via Woolwich Manor Way. The assignment for the 'Without Development' scenario assumes all vehicles will continue to use the existing access from Hartmann Road.

27. Postcode data for Staff is derived from a Staff Travel Survey which was undertaken in October 2011, whilst passenger data is taken from a Passenger Travel Survey undertaken in June 2012. **Table 16** summarises the data for staff, whilst **Table 17** summarises the data for passengers.

Table 16: Staff Postcode Data

Postcode	%
Any E Postcode	37%
Any SE Postcode	12%
Any RM Postcode	11%
Any IG Postcode	6%
Any CM Postcode	5%
Any SS Postcode	4%
Any DA Postcode	2%
Any N Postcode	1%
Other	16%
Not Stated	6%

Table 17: Passenger Postcode Data

Postcode	%
Westminster (WC/SW)	9%
The City (EC)	11%
Docklands (E14/E16)	10%
Other London	34%
Home County	18%
Essex	9%
Kent	9%

TRAVL - Average Trip Rate by Mode and Time

List of Surveys:

Name	Address	Postcode	Survey Date
Battersea Travelodge	200 York Road	SW11 3SA	23/03/2000
Carlton Mitre Hotel	Carlton Mitre Hampton Court Road Hampton Court	KT8 9BN	06/05/2009
Express Holiday Inn	196 High Street	E15 2NE	06/06/2006
Ibis Hotel	30 Stockwell Street	SE10 9JN	27/01/1997

Number of sites considered 4

Counts By Mode:

Mode: Car Driver

Time Band	No of Sites	Trip Rate In	Trip Rate Out	Total Trip Rate	Predicted Trips In	Predicted Trips Out	Predicted Trips Total
07:00-07:30	4	0.00968	0.02258	0.03226	2.4	5.6	8.1
07:30-08:00	4	0.00968	0.04839	0.05806	2.4	12.1	14.5
08:00-08:30	4	0.02258	0.05806	0.08065	5.6	14.5	20.2
08:30-09:00	4	0.02258	0.02258	0.04516	5.6	5.6	11.3
09:00-09:30	4	0.03226	0.02581	0.05806	8.1	6.5	14.5
09:30-10:00	4	0.02581	0.01290	0.03871	6.5	3.2	9.7
10:00-10:30	4	0.01613	0.05161	0.06774	4.0	12.9	16.9
10:30-11:00	4	0.01290	0.02903	0.04194	3.2	7.3	10.5
11:00-11:30	4	0.01935	0.01613	0.03548	4.8	4.0	8.9
11:30-12:00	4	0.01613	0.01290	0.02903	4.0	3.2	7.3
12:00-12:30	4	0.02581	0.00968	0.03548	6.5	2.4	8.9
12:30-13:00	4	0.01613	0.01613	0.03226	4.0	4.0	8.1
13:00-13:30	4	0.01613	0.01290	0.02903	4.0	3.2	7.3
13:30-14:00	4	0.01290	0.00000	0.01290	3.2	0.0	3.2
14:00-14:30	4	0.01613	0.01290	0.02903	4.0	3.2	7.3
14:30-15:00	4	0.02258	0.03226	0.05484	5.6	8.1	13.7
15:00-15:30	4	0.01935	0.01290	0.03226	4.8	3.2	8.1
15:30-16:00	4	0.02258	0.01613	0.03871	5.6	4.0	9.7
16:00-16:30	4	0.02581	0.01290	0.03871	6.5	3.2	9.7
16:30-17:00	4	0.03871	0.00323	0.04194	9.7	0.8	10.5
17:00-17:30	4	0.05161	0.02903	0.08065	12.9	7.3	20.2
17:30-18:00	4	0.07097	0.01613	0.08710	17.7	4.0	21.8
18:00-18:30	4	0.03548	0.03548	0.07097	8.9	8.9	17.7
18:30-19:00	4	0.03226	0.00968	0.04194	8.1	2.4	10.5
19:00-19:30	4	0.03871	0.03226	0.07097	9.7	8.1	17.7
19:30-20:00	4	0.02258	0.01613	0.03871	5.6	4.0	9.7
20:00-20:30	4	0.01613	0.00968	0.02581	4.0	2.4	6.5
20:30-21:00	4	0.03548	0.02581	0.06129	8.9	6.5	15.3
21:00-21:30	4	0.01613	0.01290	0.02903	4.0	3.2	7.3
21:30-22:00	4	0.02581	0.02903	0.05484	6.5	7.3	13.7
22:00-22:30	4	0.01935	0.00968	0.02903	4.8	2.4	7.3
22:30-23:00	4	0.00968	0.00645	0.01613	2.4	1.6	4.0
23:00-23:30	4	0.00968	0.00000	0.00968	2.4	0.0	2.4
23:30-24:00	4	0.00323	0.00000	0.00323	0.8	0.0	0.8

Mode: **Car Driver**

Time Band	No of Sites	Trip Rate In	Trip Rate Out	Total Trip Rate	Predicted Trips In	Predicted Trips Out	Predicted Trips Total

Peak Period For **Car Driver**

In	**17:30-18:00**	**0.07**
Out	**08:00-08:30**	**0.06**
Total	**17:30-18:00**	**0.09**

APPENDIX K

PERS Audit

London City Airport

City Airport Development Programme

Pedestrian Environment Review System (PERS) Audit

July 2013

Network Building, 97 Tottenham Court Road, London W1T 4TP 020 7580 7373 www.vectos.co.uk
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Contents

Figures

1 INTRODUCTION

1.1 Vectos is retained by London City Airport to advise on all surface access matters in relation to this planning application, known as the City Airport Development Programme (CADP).

1.2 The CADP chiefly comprises new passenger facilities and infrastructure that are required to enable the Airport to respond to forecast growth in passenger numbers and accommodate the new generation aircraft which are physically larger than the current fleet. Such improvements are broadly consistent with the long term plans which were described in London City Airport's 2006 Master Plan.

1.3 Vectos has undertaken a Pedestrian Environment Review System (PERS) assessment of the route between the Airport and local destinations to establish the quality of the environment for pedestrians. This report describes the execution and outcomes of the PERS assessment.

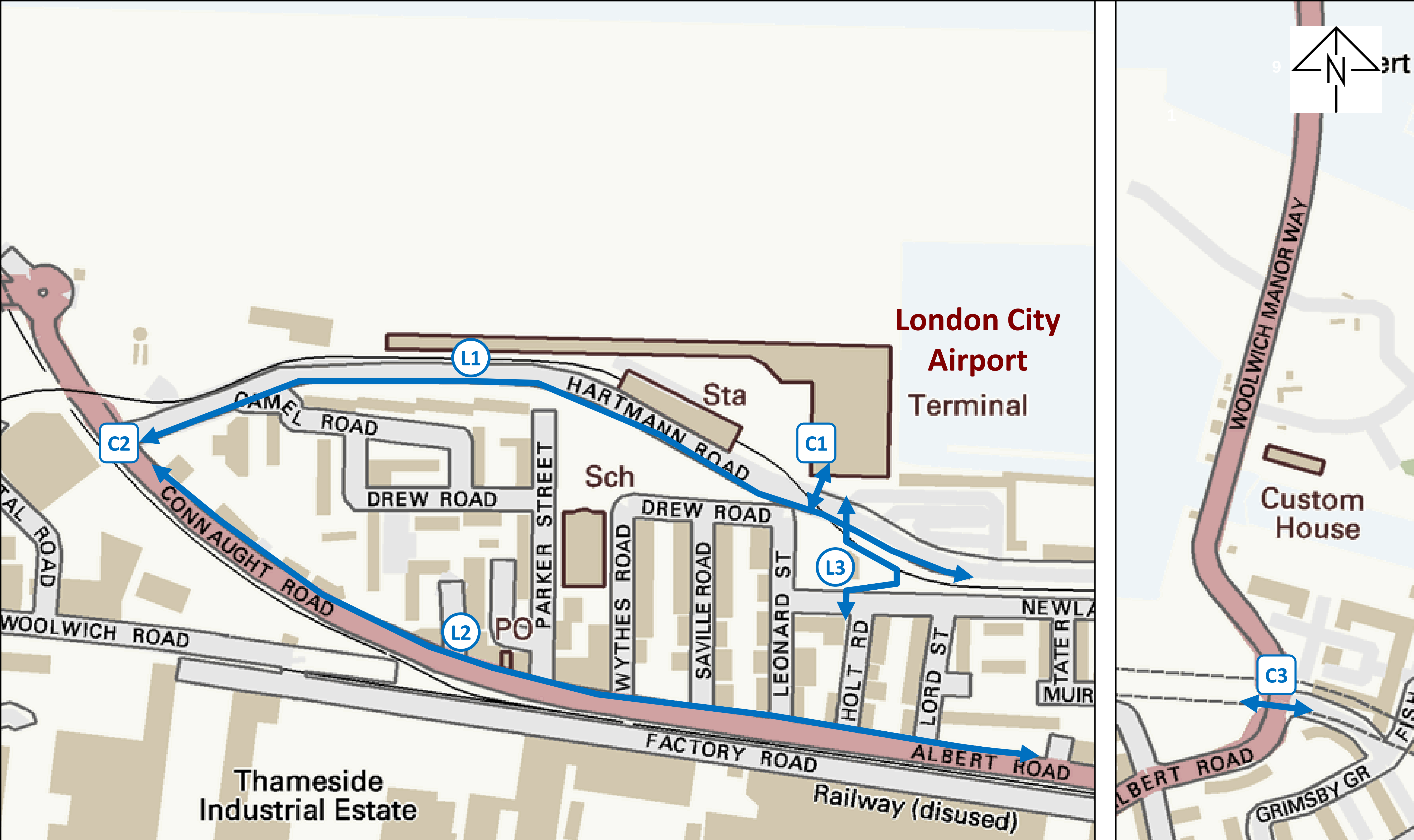
1.4 The PERS approach provides a qualitative and quantitative means of describing and valuing the urban realm and pedestrian environment. The objective of the PERS audit is:

To assess and grade the urban realm and pedestrian environment between the Airport and local destinations

1.5 The PERS assessment was undertaken on the 31st January 2013. The assessment area is shown in **Figure 1**.

1.6 The remainder of this report is set out as follows:

- Overview of the PERS process, its use and capabilities
- Summary of the PERS audit and scores for links and crossings surrounding London City Airport
- Summary and conclusion.



Key:

L1 Location of Link Assessed

C1 Location of Crossing Assessed

London City Airport

CADP

PERS Assessment Area

vectos transport planning specialists

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DRAWN:	CHECKED:	DATE:	SCALES:	DRAWING REFERENCE:
SO'D	EG	21/05/12	NTS	Figure 1

2 OVERVIEW OF PERS SYSTEM

Pedestrian Environment Review System (PERS) Approach

2.1 PERS is a tool that measures the quality of the pedestrian environment through subjective review, and provides an objective measure to pedestrian quality. The auditing process allows for an overall review of pedestrian accessibility to and from the site.

2.2 Transport for London (TfL) has recognised PERS as an appropriate tool to fully evaluate the pedestrian environment. TfL has commissioned a version of PERS specifically for use within London to identify where pedestrian environments require improvements.

2.3 PERS is produced by the Transport Research Laboratory (TRL) and is described as:

"a systematic [computer programme] process designed to assess the quality of the pedestrian environment within a framework that promotes objectivity."

2.4 The review process allows for a wide range of information to be collected and presented in a number of analytical formats suitable for presentation. In principle, PERS reviews the environment from the end-user's perspective, with emphasis placed on the viewpoint of a vulnerable pedestrian.

2.5 Government guidance, Manual for Streets was published in 2007 and updated in September 2010. It supersedes Design Bulletin 32 and Places Streets and Movement, and recognises the wider role of streets in creating successful places. It emphasises the need for a better balance between pedestrians and vehicles in the design of lightly trafficked and residential streets.

2.6 The Mayor's Transport Strategy aims to create a connected, safe, convenient and attractive environment that encourages people to walk, making London one of the most walking friendly cities for pedestrians by 2015.

2.7 Provision for walking is essential to the delivery of a sustainable and integrated transport policy, with the overall result of environmental, social and economic health benefits.

2.8 When designing walking schemes and assessing the pedestrian environment, consideration needs to be given to the 5 'C's. The London Advisory Planning Committee first introduced the

5C's in 1997 as a basis on which new measures to encourage walking should be developed. The 5C's are:

- Connected - routes should link origins and destinations;
- Convenient – routes should facilitate the desired journey without undue deviation or difficulty;
- Conspicuous – route design should allow the user to be seen by, and to see, other pedestrians and vehicles to promote personal security and road safety;
- Coherence – routes should be continuous; and
- Convivial – routes should be pleasant to use.

2.9 It is important to engineer routes that provide this experience. The 5C's reflect the fact that all transport users, regardless of mode, wish to make their journeys in the shortest, most convenient manner that is consistent with their personal and road safety and with a pleasant and comfortable journey experience.

2.10 PERS takes into consideration the 5C's above and works on a simple scoring method that breaks down various auditing criteria based on the pedestrian environment.

The Review Process

2.11 PERS as an audit tool consists of two parts:

- Check sheet(s) with accompanying guidance for use in the field to score environments and note comments; and
- Software that is used to store results and produce presentational outputs.

2.12 The approach that was adopted for the purposes of this study follows that recommended by TRL and summarised in **Table 2.1** below.

Table 2.1: Approach to PERS

Stage	Tasks
1. Definition of Study Area	The study area is defined on a base map, with all the pedestrian environments identified.
2. On-Street Evaluation	The auditor reviews their assigned environment using the summary sheets and scoring guides. Scores and comments are noted down as later inputs to the PERS software.

3. Data Input and Analysis	The scores and comments gathered are entered into the PERS software for each environment reviewed. The software assigns each environment and sub-criteria an overall score.
4. Display and Review of Outputs	The PERS software may be used to generate reports and charts to display all aspects of the auditing data gathered.

2.13 Using this approach, the PERS audit assesses the following parameters within the designated study area:

Table 2.2: PERS Typology of the Pedestrian Environment

Environment Type	Brief Description
Links	Any footway, footpath or highway. They can be divided into sections if very long or reviewed in total.
Crossings	Any designated or undesignated crossing where a pedestrian route intersects with a highway. You may choose to include side road junction crossings or not, dependent on the audit taking place.
Routes	A way that links a trip origin and a trip destination, for example from a public transport interchange to a school. Routes may consist of any number of links and crossings (reviewed separately) but has some characteristics specific to itself.

2.14 PERS can also be used to assess the pedestrian environment at public transport waiting areas, interchange spaces and public spaces.

2.15 This PERS audit looks specifically at the links and crossings in the vicinity of London City Airport which is accessed via Hartmann Road. The study area consists of the Hartmann Road Link, Albert Road/Connaught Road Link and the Airport Terminal to Newland Street Links. The study area also includes the proposed relocation of the Zebra crossing point outside the Airport Terminal, the signalled crossing on Hartmann Road at the junction with Connaught Road, and the crossing on Albert Road/Woolwich Manor Way at junction with Fishguard Way. **Figure 1** shows the location of each link and crossing that has been assessed as part of this PERS audit.

2.16 Based on such best practice guidance in Manual for Streets and the 5 C's, PERS works on a simple scoring method that breaks down various parameters into a number of sub categories or 'characteristics'.

2.17 Each characteristic is scored on a range from +3 to -3, where +3 is the highest score and -3 the lowest. The PERS software weights the score for each characteristic depending on its deemed importance, to give a final overall score for each environment type.

Score	Condition
-3	Exceptionally poor example or practice
-2	Significant problems
-1	Minor problems
0	Neutral, neither good nor poor
+1	Slightly better than average
+2	Very good
+3	Exceptionally good example or practice

2.18 Although quantitative methods are used when reviewing pedestrian environments, within PERS much of the auditing is also qualitative, using the judgement of the auditor. This allows the 'feel' of an environment to be gauged and assessed. Surveyors trained and experienced in the use of PERS were used to ensure the pedestrian environment was specifically viewed from the perspective of the end user and those most vulnerable.

2.19 The key to the process relies on the reviewer to:

"recognise the implications of current conditions for a whole range of users and their needs, bearing in mind the need to give particular consideration to the needs of pedestrians with mobility impairment."

2.20 Once the scores have been inputted into the PERS software, the environment type and each individual characteristic are rated as either Red (poor quality) Amber (satisfactory quality) or Green (good quality) depending on their scores. The rating is also influenced by the observed importance of the pedestrian environment. If a route is deemed to have 'strategic importance' it is rated more harshly than if the route has 'local importance'.

2.21 Albert Road/Connaught Road and Hartmann Road form the main pedestrian access route to the Airport and were consequently deemed to have strategic importance. The quality of the environment was measured taking this into account. The pedestrian link between the Airport Terminal and Newland Street was deemed to be neutral in terms of importance as a pedestrian link.

3 PERS AUDIT

Introduction

3.1 The PERS audit assessed the walking environment for the links and crossings in the vicinity of London City Airport. These are deemed to be the key environments used by visitors to the Airport, which also encompass a number of bus stops.

3.2 **Table 3.1** below provides a summary detailing the individual scores for the3 links assessed within the study area. **Table 3.2**, also below, summarises the results for the 3 crossings points.

3.3 **Figure 2** shows the geographic location and Red Amber, Green (RAG) rating of the links and crossings, and the PERS score each link/crossing achieved in the audit.

3.4 A detailed summary of each link and crossing follows the tables and figure.

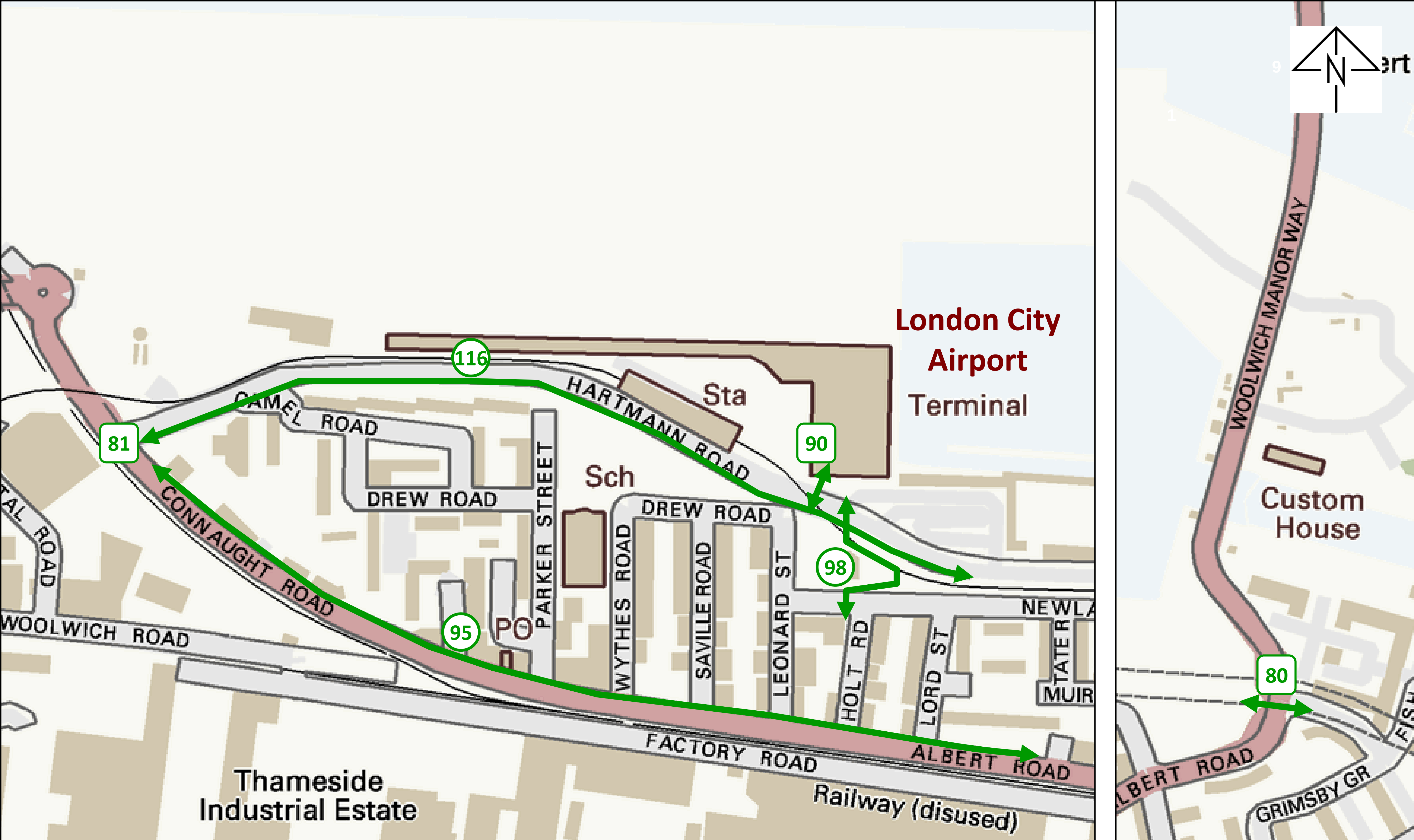
3.5 As mentioned in the introduction, each characteristic is scored on a range from -3 to +3, where +3 is the highest score and -3 the lowest. The total score is obtained through the PERS software weighting different categories depending on their deemed importance to the pedestrian environment.

Table 3.1: PERS Scores – Links

Route	Effective Width	Dropped Kerbs	Obstructions	Permeability	Legibility	Lighting	Tactile Information	Colour Contrast	Personal Security	Surface Quality	User Conflict	Environment Quality	Maintenance	Score	RAG
1. Hartmann Road	2	2	1	2	1	2	2	2	2	3	2	2	2	116	
2. Albert Road/Connaught Road	1	2	1	2	2	2	2	2	1	0	2	1	0	95	
3. Airport Terminal to Newland Street Link	2	2	1	2	1	2	2	2	1	1	1	1	1	98	

Table 3.2: PERS Scores - Crossings

Route	Crossing Provision	Deviation	Performance	Crossing Capacity	Delay	Legibility	Sensory Impaired	Dropped Kerbs	Obstructions	Surface Quality	Maintenance	Score	RAG
1. Airport Terminal Crossing (Proposed)	2	3	2	2	2	2	2	2	2	2	2	90	
2. Hartmann Road Crossing (Western End)	2	2	2	2	2	1	1	2	0	2	2	81	
3. Albert Road/Woolwich Manor Way Crossing	2	1	2	2	1	2	2	2	1	2	2	80	



Key:

- Good Quality Link/Crossing
- Satisfactory Link/Crossing
- Poor Quality Link/Crossing

London City Airport

CADP

PERS Scores and RAG Ratings

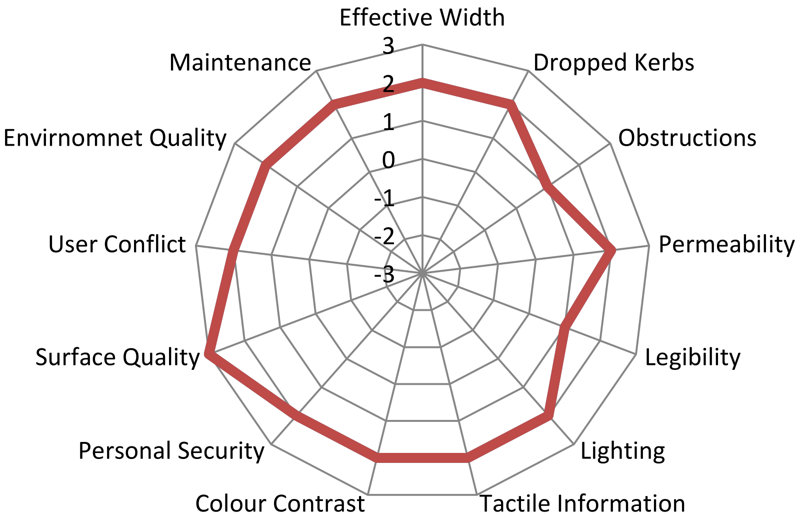
vectos transport planning specialists

Network Building, 97 Tottenham Court Road, London W1T 4TP
Tel: 020 7580 7373 Email: london@vectos.co.uk www.vectos.co.uk

DRAWN:	CHECKED:	DATE:	SCALES:	DRAWING REFERENCE:
SO'D	EG	21/05/12	NTS	Figure 2

Link 1: Hartmann Road

- Good effective width which is reduced in places by the presence of obstacles
- Dropped kerbs and tactile paving are present at all crossings and crossfalls
- Excellent surface quality and maintenance along the link
- Barriers along parts of the link provide protection from traffic



3.6 Hartmann Road provides the main access to London City Airport for pedestrians and vehicles alike.

3.7 The effective width of footpaths along the link is adequate for the level of footfall in the area which was observed to be low. Road signs located along the footway reduce the effective width in some areas, but there is still sufficient width for pedestrian movement.

3.8 Pedestrian phases operate on each approach at the signalised junction of Hartmann Road and Connaught Road, creating safe crossing areas.

3.9 There is good use of colour contrasting on the crossings, giving pedestrians a sense of space. Dropped kerbs and tactile paving assist sensory impaired individuals. Dropped kerbs which are flush with the carriageway and tactile paving are present at all crossfalls along the link.

3.10 Lighting along the link is good and there is a steady flow of traffic along the route. This increases the sense of personal security for pedestrians during non-daylight hours.

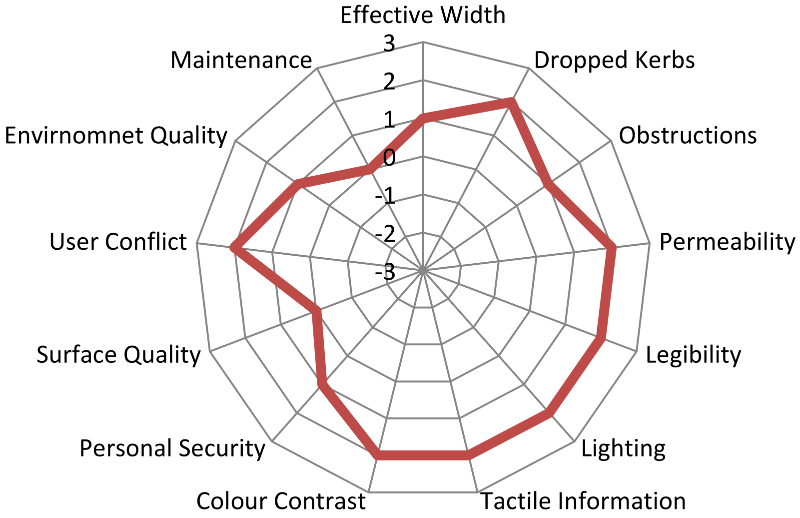
3.11 Overall the quality of the surface along the link is very good; the surface is even and well maintained. Pedestrian guard railing along parts of the link provide protection from traffic.

Photo 1: Hartmann Road

Photo 2: Hartmann Road

Link 2: Albert Road/Connaught Road

- Good effective width
- Permeable and legible
- Maintenance could be improved in places



3.12 Albert Road/ Connaught Road runs parallel to the Airport and provides local access for pedestrians.

3.13 At the time of the audit Crossrail works were occurring along parts of Connaught Road/Albert Road. One lane of traffic was closed, with works expected to be complete in late 2014.

3.14 Permeability along the link is good despite moderate traffic volumes. This is aided by the signalised pedestrian crossing at the junction with Long Drive. Legibility is also good, assisted by the built form, and a number of signs.

3.15 Dropped kerbs and tactile paving at crossfalls along the link assist sensory impaired individuals.

3.16 The link benefits from a good level of street lighting and a high level of foot fall which adds to natural surveillance. Both contribute to a sense of personal security.

3.17 The quality of the surface could be improved in places with water lodging at some locations. In areas, the surface is uneven, and some cracking is present, particularly on the western section. Minor maintenance work here would significantly improve the quality of the link.

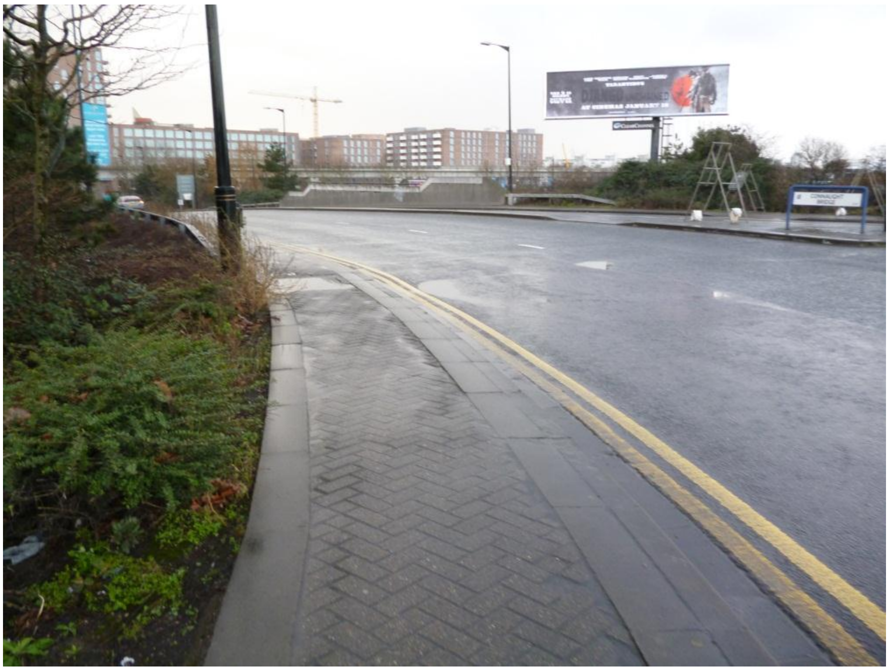
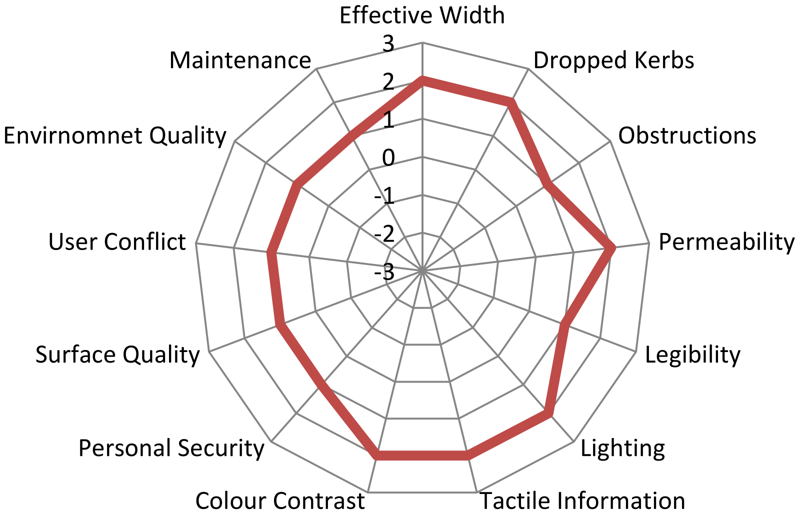


Photo 3: Connaught Road

Photo 4: Albert Road

Link 3: Airport Terminal to Newland Street

- Good effective width
- Dropped kerbs and tactile paving are proposed for relocated crossing
- Surface quality and maintenance could be improved on Newland Street



3.18 This is the pedestrian link between the main entrance to the Airport Terminal and bus stops on Newland Street. The link will be made up of a relocated zebra on Hartmann Road and a pedestrian ramp which links Hartmann Road and Newland Street.

3.19 The effective width along the link is adequate for the level of footfall in the area.

3.20 The proposed relocation of the pedestrian crossing on Hartmann Road links the pedestrian ramp to the airport terminal (see Crossing 1). The proposed crossing makes good use of colour contrasting giving pedestrians a sense of space. Dropped kerbs and tactile paving will assist sensory impaired individuals.

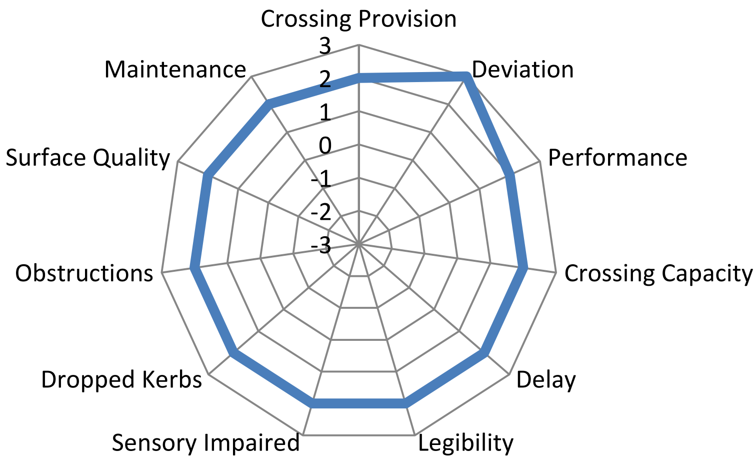
3.21 Lighting along the link is good and adds to the sense of personal security for pedestrians during non-daylight hours. Natural surveillance in the form of footfall also adds to a sense of personal security in the area. Pedestrian barriers on Hartmann road provide protection from traffic. Overall the quality of the surface along the link is good but could be improved on Newland Street. In areas, the surface is uneven, and some cracking is present. Minor maintenance work here would significantly improve the quality of the link.

Photo 5: Airport Terminal to Newland Street Link

Photo 6: Airport Terminal to Newland Street Link

Crossing 1: Airport Terminal Proposed Crossing

- The proposed Zebra Crossing will be suitable for the location given the high volumes of footfall and slow moving traffic
- Proposals include use of tactile paving and colour contrast
- Crossing will be clearly legible
- Proposed crossing is much closer to the desire line compared to existing crossing



3.22 Crossing 1 is a relocated zebra crossing which will link to Airport Terminal to Hartmann Road.

3.23 The proposed crossing is much closer to the desire line for pedestrians when compared with the existing situation. The proposed crossing links the pedestrian ramp from Newland Street to the Airport Terminal.

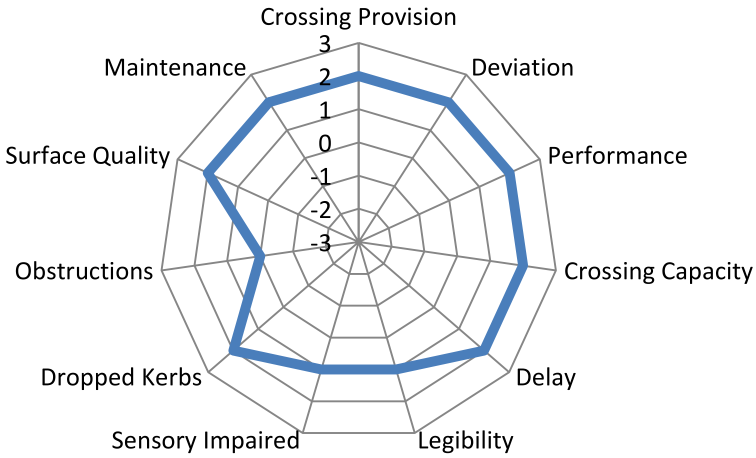
3.24 The provision of a Zebra Crossing is considered suitable for the volume and speed of traffic on Hartmann Road. Hartmann Road has a high level of traffic but speeds are low and visibility is good, allowing pedestrians who are waiting to cross to be clearly identified.

3.25 The capacity on the proposed crossings is considered adequate for the level of footfall.

3.26 Tactile paving will be provided both sides of the crossing to assist visually impaired individuals. Tactile paving will have a contrasting colour to the rest of the link and kerbs will be flush with the carriageway.

Crossing 2: Hartmann Road (Western End) – Signalised Crossing

- The provision of a signalised pedestrian junction is suitable for the location given the level of traffic and the proximity of the junction with Connaught Road
- Surface quality is generally good
- Tactile paving and dropped kerbs assists visually impaired pedestrians



3.27 Crossing 2 is a signalised pedestrian crossing and is on Hartmann Road close to the junction with Connaught Road.

3.28 The crossing is suitable for the level of traffic on Hartmann Road, with adequate capacity for the level of foot fall. Visibility is good at the junction, allowing pedestrians who are waiting to cross to be clearly identified.

3.29 Pedestrian barriers are provided at either side of the crossing. This increases the level of protection for pedestrians.

3.30 Tactile paving is used well on both sides of the crossing to assist visually impaired individuals. Tactile paving has a contrasting colour to the rest of the link and kerbs are flush with the carriageway.

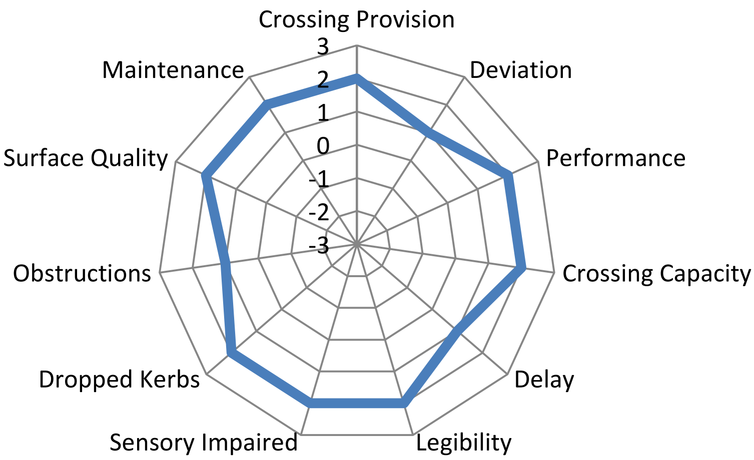
3.31 The quality of the surface is good and markings are clear.

Photo 7: Hartmann Road Crossing

Photo 8: Hartmann Road Crossing

Crossing 3: Albert Road/Woolwich Manor Way – Signalised Crossing

- The provision of a signalised crossing is suitable for the context given the high levels of traffic and width of the road.
- A central reservation and pedestrian barriers increases the level of safety for pedestrians
- Tactile paving and dropped kerbs assist visually impaired pedestrians



3.32 Crossing 3 is a signalised pedestrian crossing located on Albert Road at the junction with Fishguard Way.

3.33 The capacity on the crossing is adequate for the level of foot fall.

3.34 The crossing has a central reservation to allow the crossing to be undertaken in two phases. This increases the level of safety for the pedestrian.

3.35 Tactile paving is present on both sides of the crossing. Kerbs are flush with the carriageway and the quality of the surface is good.

Photo 9: Albert Road/Woolwich Manor Way Crossing

Photo 10: Albert Road/ Woolwich Manor Way Crossing

4 SUMMARY

4.1 Vectos is retained by London City Airport to provide advice on all surface access matters in relation to this planning application, known as the City Airport Development Programme (CADP).

4.2 Vectos has undertaken a Pedestrian Environment Review System (PERS) assessment of the route between the Airport and local destinations to establish the quality of the environment for pedestrians.

4.3 The existing environment for pedestrians is good along Hartmann Road and Albert Road/Connaught Road. The effective width of the footways is good and tactile paving is provided on all crossing points.

4.4 Crossings on the links are considered suitable for their context and observed to work well.

4.5 There are a number of improvements or "quick wins" that could be implemented in order to improve the environment for pedestrians in the area, such as:

- Minor maintenance could significantly improve the pedestrian environment on Albert Road/Connaught Road and on Newland Street

4.6 In light of the above, it can be concluded that there is currently a good pedestrian environment in the vicinity of the airport.

APPENDIX L

Traffic Survey Data

K&M TRAFFIC SURVEYS

DATE : WEDNESDAY 14TH NOVEMBER 2012

LOCATION : **CONNAUGHT BRIDGE / CONNAUGHT ROAD ROUNDABOUT, CITY AIRPORT, LONDON E16**

	FROM CONNAUGHT BRIDGE NORTH LEFT TO CONNAUGHT RD (AIRPORT)						FROM CONNAUGHT BRIDGE NORTH AHEAD SOUTHBOUND TO A1020						FROM CONNAUGHT BRIDGE NORTH U TURNS					
	CAR	HGV	BUS	MCY	PCY	**TOT**	CAR	HGV	BUS	MCY	PCY	**TOT**	CAR	HGV	BUS	MCY	PCY	**TOT**
0630-0645	58	3	1	2		**64**	90	11	1	1	4	**107**	1					**1**
0645-0700	51	3	2		1	**57**	121	19		2	1	**143**	0					**0**
0700-0715	52	2	3	1	1	**59**	141	12		4		**157**	0					**0**
0715-0730	45	2	1		3	**51**	134	18		2	1	**155**	0					**0**
0730-0745	45		1	1	1	**48**	115	13		4		**132**	0					**0**
0745-0800	39		1		2	**42**	133	13		3	1	**150**	0					**0**
0800-0815	52	3	3		2	**60**	131	20		2		**153**	0					**0**
0815-0830	41	2	2		1	**46**	132	9	1	1		**143**	0					**0**
0830-0845	42	1	2	1	1	**47**	110	11		1	2	**124**	0					**0**
0845-0900	63	4	1		1	**69**	101	15		1		**117**	0					**0**
0900-0915	48		3		3	**54**	57	11		1		**69**	0					**0**
0915-0930	42	2	2			**46**	63	5				**68**	1					**1**
0630-0930	**578**	**22**	**22**	**5**	**16**	**643**	**1328**	**157**	**2**	**22**	**9**	**1518**	**2**	**0**	**0**	**0**	**0**	**2**
0630-0730	206	10	7	3	5	**231**	486	60	1	9	6	**562**	1	0	0	0	0	**1**
0645-0745	193	7	7	2	6	**215**	511	62	0	12	2	**587**	0	0	0	0	0	**0**
0700-0800	181	4	6	2	7	**200**	523	56	0	13	2	**594**	0	0	0	0	0	**0**
0715-0815	181	5	6	1	8	**201**	513	64	0	11	2	**590**	0	0	0	0	0	**0**
0730-0830	177	5	7	1	6	**196**	511	55	1	10	1	**578**	0	0	0	0	0	**0**
0745-0845	174	6	8	1	6	**195**	506	53	1	7	3	**570**	0	0	0	0	0	**0**
0800-0900	198	10	8	1	5	**222**	474	55	1	5	2	**537**	0	0	0	0	0	**0**
0815-0915	194	7	8	1	6	**216**	400	46	1	4	2	**453**	0	0	0	0	0	**0**
0830-0930	195	7	8	1	5	**216**	331	42	0	3	2	**378**	1	0	0	0	0	**1**

	FROM CONNAUGHT BRIDGE NORTH LEFT TO CONNAUGHT RD (AIRPORT)						FROM CONNAUGHT BRIDGE NORTH AHEAD SOUTHBOUND TO A1020						FROM CONNAUGHT BRIDGE NORTH U TURNS					
	CAR	HGV	BUS	MCY	PCY	**TOT**	CAR	HGV	BUS	MCY	PCY	**TOT**	CAR	HGV	BUS	MCY	PCY	**TOT**
1600-1615	27	2	2		2	**33**	67	7	1			**75**	0					**0**
1615-1630	30	1	3		3	**37**	60	7	1	1	1	**70**	0					**0**
1630-1645	31	2	2		2	**37**	48	4		1		**53**	0					**0**
1645-1700	35			2	3	**40**	68	6		1		**75**	0					**0**
1700-1715	41	1	3	1	1	**47**	80	4		4		**88**	0					**0**
1715-1730	42		1		2	**45**	58	5		1		**64**	0					**0**
1730-1745	32		2	1		**35**	67	4		3		**74**	0					**0**
1745-1800	40	1		1	1	**43**	64	4		1		**69**	0					**0**
1800-1815	37	1	2		1	**41**	82	1		2		**85**	0					**0**
1815-1830	32		1			**33**	61	2				**63**	0					**0**
1830-1845	32	2	1		2	**37**	61	2		1		**64**	0					**0**
1845-1900	31		3			**34**	57	2				**59**	0					**0**
1600-1900	**410**	**10**	**20**	**5**	**17**	**462**	**773**	**48**	**2**	**15**	**1**	**839**	**0**	**0**	**0**	**0**	**0**	**0**
1600-1700	123	5	7	2	10	**147**	243	24	2	3	1	**273**	0	0	0	0	0	**0**
1615-1715	137	4	8	3	9	**161**	256	21	1	7	1	**286**	0	0	0	0	0	**0**
1630-1730	149	3	6	3	8	**169**	254	19	0	7	0	**280**	0	0	0	0	0	**0**
1645-1745	150	1	6	4	6	**167**	273	19	0	9	0	**301**	0	0	0	0	0	**0**
1700-1800	155	2	6	3	4	**170**	269	17	0	9	0	**295**	0	0	0	0	0	**0**
1715-1815	151	2	5	2	4	**164**	271	14	0	7	0	**292**	0	0	0	0	0	**0**
1730-1830	141	2	5	2	2	**152**	274	11	0	6	0	**291**	0	0	0	0	0	**0**
1745-1845	141	4	4	1	4	**154**	268	9	0	4	0	**281**	0	0	0	0	0	**0**
1800-1900	132	3	7	0	3	**145**	261	7	0	3	0	**271**	0	0	0	0	0	**0**

(The west arm of the roundabout is a locked gated access)

K&M TRAFFIC SURVEYS

DATE : WEDNESDAY 14TH NOVEMBER 2012

LOCATION : **CONNAUGHT BRIDGE / CONNAUGHT ROAD ROUNDABOUT, CITY AIRPORT, LONDON E16**

	FROM CONNAUGHT ROAD EAST LEFT TO CONNAUGHT BRIDGE S						FROM CONNAUGHT ROAD EAST LEFT TO CONNAUGHT BRIDGE N						FROM CONNAUGHT ROAD EAST U TURNS					
	CAR	HGV	BUS	MCY	PCY	TOT	CAR	HGV	BUS	MCY	PCY	TOT	CAR	HGV	BUS	MCY	PCY	TOT
0630-0645	54	3	1			**58**	21					**21**	0					**0**
0645-0700	66	1	2			**69**	23	1	2			**26**	0					**0**
0700-0715	69	1	1			**71**	27		2			**29**	0					**0**
0715-0730	65		1			**66**	31		1			**32**	0					**0**
0730-0745	78		2			**80**	24		2			**26**	0					**0**
0745-0800	78		2			**80**	26	1	2			**29**	0					**0**
0800-0815	64		1			**65**	18	1	1		1	**21**	0					**0**
0815-0830	66		1			**67**	18		1			**19**	0					**0**
0830-0845	42	1	2			**45**	70		2		1	**73**	0					**0**
0845-0900	61	1				**62**	25	1	3			**29**	0					**0**
0900-0915	55		2			**57**	15		1			**16**	0					**0**
0915-0930	45	1	1	2		**49**	14		1			**15**	0					**0**
0630-0930	**743**	**8**	**16**	**2**	**0**	**769**	**312**	**4**	**18**	**0**	**2**	**336**	**0**	**0**	**0**	**0**	**0**	**0**
0630-0730	254	5	5	0	0	**264**	102	1	5	0	0	**108**	0	0	0	0	0	**0**
0645-0745	278	2	6	0	0	**286**	105	1	7	0	0	**113**	0	0	0	0	0	**0**
0700-0800	290	1	6	0	0	**297**	108	1	7	0	0	**116**	0	0	0	0	0	**0**
0715-0815	285	0	6	0	0	**291**	99	2	6	0	1	**108**	0	0	0	0	0	**0**
0730-0830	286	0	6	0	0	**292**	86	2	6	0	1	**95**	0	0	0	0	0	**0**
0745-0845	250	1	6	0	0	**257**	132	2	6	0	2	**142**	0	0	0	0	0	**0**
0800-0900	233	2	4	0	0	**239**	131	2	7	0	2	**142**	0	0	0	0	0	**0**
0815-0915	224	2	5	0	0	**231**	128	1	7	0	1	**137**	0	0	0	0	0	**0**
0830-0930	203	3	5	2	0	**213**	124	1	7	0	1	**133**	0	0	0	0	0	**0**

	FROM CONNAUGHT ROAD EAST LEFT TO CONNAUGHT BRIDGE S						FROM CONNAUGHT ROAD EAST LEFT TO CONNAUGHT BRIDGE N						FROM CONNAUGHT ROAD EAST U TURNS					
	CAR	HGV	BUS	MCY	PCY	TOT	CAR	HGV	BUS	MCY	PCY	TOT	CAR	HGV	BUS	MCY	PCY	TOT
1600-1615	60	1	1			**62**	18		1	1		**20**	0					**0**
1615-1630	58		1			**59**	39		2			**41**	0					**0**
1630-1645	72	2	1			**75**	26		1			**27**	0					**0**
1645-1700	68		1			**69**	25		2			**27**	0					**0**
1700-1715	56		1	1		**58**	32		2		1	**35**	0					**0**
1715-1730	71		1			**72**	26		1			**27**	0					**0**
1730-1745	61		1			**62**	31	1	2			**34**	0					**0**
1745-1800	78		1	1		**80**	19		2			**21**	0					**0**
1800-1815	85		2	1	1	**89**	39		1		1	**41**	0					**0**
1815-1830	78		1			**79**	28		1			**29**	0					**0**
1830-1845	58		2		1	**61**	19		2			**21**	0					**0**
1845-1900	53	3	1	1		**58**	31	1	2		1	**35**	0					**0**
1600-1900	**798**	**6**	**14**	**4**	**2**	**824**	**333**	**2**	**19**	**1**	**3**	**358**	**0**	**0**	**0**	**0**	**0**	**0**
1600-1700	258	3	4	0	0	**265**	108	0	6	1	0	**115**	0	0	0	0	0	**0**
1615-1715	254	2	4	1	0	**261**	122	0	7	0	1	**130**	0	0	0	0	0	**0**
1630-1730	267	2	4	1	0	**274**	109	0	6	0	1	**116**	0	0	0	0	0	**0**
1645-1745	256	0	4	1	0	**261**	114	1	7	0	1	**123**	0	0	0	0	0	**0**
1700-1800	266	0	4	2	0	**272**	108	1	7	0	1	**117**	0	0	0	0	0	**0**
1715-1815	295	0	5	2	1	**303**	115	1	6	0	1	**123**	0	0	0	0	0	**0**
1730-1830	302	0	5	2	1	**310**	117	1	6	0	1	**125**	0	0	0	0	0	**0**
1745-1845	299	0	6	2	2	**309**	105	0	6	0	1	**112**	0	0	0	0	0	**0**
1800-1900	274	3	6	2	2	**287**	117	1	6	0	2	**126**	0	0	0	0	0	**0**

(The west arm of the roundabout is a locked gated access)

K&M TRAFFIC SURVEYS

DATE : WEDNESDAY 14TH NOVEMBER 2012

LOCATION : **CONNAUGHT BRIDGE / CONNAUGHT ROAD ROUNDABOUT, CITY AIRPORT, LONDON E16**

	FROM CONNAUGHT BRIDGE SOUTH AHEAD NORTHBOUND						FROM CONNAUGHT BRIDGE SOUTH RIGHT TO CONNAUGHT RD (AIRPORT)						FROM CONNAUGHT BRIDGE SOUTH U TURNS					
	CAR	HGV	BUS	MCY	PCY	TOT	CAR	HGV	BUS	MCY	PCY	TOT	CAR	HGV	BUS	MCY	PCY	TOT
0630-0645	17	10	4	3		**34**	99		3			**102**	0					**0**
0645-0700	32	14	1			**47**	98	2	4	1		**105**	0					**0**
0700-0715	29	10	1			**40**	64	5	4	2		**75**	0					**0**
0715-0730	29	10	2	1	1	**43**	66	2	5	1		**74**	0					**0**
0730-0745	45	10		1		**56**	101	6	3	1		**111**	1					**1**
0745-0800	61	9	1			**71**	75	3	4			**82**	0	1				**1**
0800-0815	47	16	1			**64**	54	1	3		1	**59**	0					**0**
0815-0830	56	11	1		1	**69**	58	4	5		1	**68**	0					**0**
0830-0845	79	11		1		**91**	86	2	2			**90**	0					**0**
0845-0900	84	11	3			**98**	89	1	4			**94**	0					**0**
0900-0915	57	13	2	2	1	**75**	70	2	4	1		**77**	1					**1**
0915-0930	69	19	1	2	1	**92**	59	6	3			**68**	1					**1**
0630-0930	**605**	**144**	**17**	**10**	**4**	**780**	**919**	**34**	**44**	**6**	**2**	**1005**	**3**	**1**	**0**	**0**	**0**	**4**
0630-0730	107	44	8	4	1	**164**	327	9	16	4	0	**356**	0	0	0	0	0	**0**
0645-0745	135	44	4	2	1	**186**	329	15	16	5	0	**365**	1	0	0	0	0	**1**
0700-0800	164	39	4	2	1	**210**	306	16	16	4	0	**342**	1	1	0	0	0	**2**
0715-0815	182	45	4	2	1	**234**	296	12	15	2	1	**326**	1	1	0	0	0	**2**
0730-0830	209	46	3	1	1	**260**	288	14	15	1	2	**320**	1	1	0	0	0	**2**
0745-0845	243	47	3	1	1	**295**	273	10	14	0	2	**299**	0	1	0	0	0	**1**
0800-0900	266	49	5	1	1	**322**	287	8	14	0	2	**311**	0	0	0	0	0	**0**
0815-0915	276	46	6	3	2	**333**	303	9	15	1	1	**329**	1	0	0	0	0	**1**
0830-0930	289	54	6	5	2	**356**	304	11	13	1	0	**329**	2	0	0	0	0	**2**

	FROM CONNAUGHT BRIDGE SOUTH AHEAD NORTHBOUND						FROM CONNAUGHT BRIDGE SOUTH RIGHT TO CONNAUGHT RD (AIRPORT)						FROM CONNAUGHT BRIDGE SOUTH U TURNS					
	CAR	HGV	BUS	MCY	PCY	TOT	CAR	HGV	BUS	MCY	PCY	TOT	CAR	HGV	BUS	MCY	PCY	TOT
1600-1615	130	13	2	1	1	**147**	107	9	4	1	1	**122**	0					**0**
1615-1630	143	8	1	3		**155**	94	5	5	1		**105**	0					**0**
1630-1645	166	18		2	2	**188**	102	1	3	1		**107**	0					**0**
1645-1700	127	10	1	4		**142**	96	6	5	2	1	**110**	0					**0**
1700-1715	171	8	1	3	2	**185**	97	8	4	1	1	**111**	0					**0**
1715-1730	143	10	2	3	1	**159**	126	4	5			**135**	0					**0**
1730-1745	150	6		3	4	**163**	93	4	3	1		**101**	0					**0**
1745-1800	156	5	1	8	1	**171**	115	1	5	3		**124**	0					**0**
1800-1815	137	1		3	2	**143**	94	3	5	2		**104**	0					**0**
1815-1830	114	6	1			**121**	107	3	3	2	2	**117**	0					**0**
1830-1845	94	3	1	1	2	**101**	82	1	4	3	1	**91**	0					**0**
1845-1900	104	1				**105**	82		2	1		**85**	0					**0**
1600-1900	**1635**	**89**	**10**	**31**	**15**	**1780**	**1195**	**45**	**48**	**18**	**6**	**1312**	**0**	**0**	**0**	**0**	**0**	**0**
1600-1700	566	49	4	10	3	**632**	399	21	17	5	2	**444**	0	0	0	0	0	**0**
1615-1715	607	44	3	12	4	**670**	389	20	17	5	2	**433**	0	0	0	0	0	**0**
1630-1730	607	46	4	12	5	**674**	421	19	17	4	2	**463**	0	0	0	0	0	**0**
1645-1745	591	34	4	13	7	**649**	412	22	17	4	2	**457**	0	0	0	0	0	**0**
1700-1800	620	29	4	17	8	**678**	431	17	17	5	1	**471**	0	0	0	0	0	**0**
1715-1815	586	22	3	17	8	**636**	428	12	18	6	0	**464**	0	0	0	0	0	**0**
1730-1830	557	18	2	14	7	**598**	409	11	16	8	2	**446**	0	0	0	0	0	**0**
1745-1845	501	15	3	12	5	**536**	398	8	17	10	3	**436**	0	0	0	0	0	**0**
1800-1900	449	11	2	4	4	**470**	365	7	14	8	3	**397**	0	0	0	0	0	**0**

(The west arm of the roundabout is a locked gated access)

K&M TRAFFIC SURVEYS

DATE : 14th NOVEMBER 2010

DAY : TUESDAY

LOCATION : CITY AIRPORT, EAST LONDON

	MOVEMENT 1							MOVEMENT 2						
	LIGHT	TAXI	HGV	BUS	MCYCLE	PCYCLE	TOTAL	LIGHT	TAXI	HGV	BUS	MCYCLE	PCYCLE	TOTAL
0500-0515	1	1	0	1	0	0	**3**	11	3	0	2	0	0	**16**
0515-0530	5	1	0	2	0	0	**8**	29	5	1	2	0	0	**37**
0530-0545	1	0	0	2	0	0	**3**	59	6	1	3	0	0	**69**
0545-0600	0	1	0	2	0	0	**3**	57	9	1	1	0	0	**68**
0600-0615	6	0	0	1	0	0	**7**	76	10	0	2	0	0	**88**
0615-0630	3	0	0	1	0	0	**4**	68	4	1	2	0	0	**75**
0630-0645	4	0	0	3	0	0	**7**	95	15	0	3	0	0	**113**
0645-0700	4	2	0	2	0	0	**8**	82	18	0	2	0	0	**102**
0700-0715	4	0	0	4	0	0	**8**	71	40	1	2	0	0	**114**
0715-0730	8	0	0	2	0	0	**10**	94	47	0	3	0	0	**144**
0730-0745	2	0	0	3	0	0	**5**	89	58	0	3	0	0	**150**
0745-0800	2	0	0	3	0	0	**5**	70	20	1	2	0	0	**93**
0800-0815	2	0	0	2	0	0	**4**	38	44	1	3	0	0	**86**
0815-0830	2	0	0	2	0	0	**4**	39	45	0	2	0	0	**86**
0830-0845	4	0	0	4	0	0	**8**	38	49	2	4	0	0	**93**
0845-0900	5	0	1	3	0	0	**9**	37	58	2	2	0	0	**99**
0900-0915	1	0	0	3	0	0	**4**	30	46	1	3	0	0	**80**
0915-0930	7	0	0	4	0	0	**11**	27	42	1	3	1	0	**74**
0930-0945	3	0	0	3	0	0	**6**	18	48	1	2	0	0	**69**
0945-1000	4	0	0	2	0	0	**6**	13	30	0	3	1	1	**48**
1000-1015	1	0	0	2	0	0	**3**	22	18	1	2	0	1	**44**
1015-1030	1	0	0	4	0	0	**5**	13	33	0	4	1	0	**51**
1030-1045	8	1	0	3	0	0	**12**	23	28	1	4	0	0	**56**
1045-1100	4	0	0	2	0	0	**6**	41	63	0	3	0	0	**107**
1100-1115	3	1	0	3	0	0	**7**	32	47	2	2	0	0	**83**
1115-1130	4	0	0	3	0	0	**7**	32	22	0	1	0	1	**56**
1130-1145	4	0	0	3	0	0	**7**	42	55	0	2	0	0	**99**
1145-1200	5	0	0	2	0	0	**7**	44	33	1	3	0	0	**81**
1200-1215	4	0	0	1	0	0	**5**	28	18	1	2	1	0	**50**
1215-1230	2	1	0	3	0	0	**6**	34	19	0	2	1	0	**56**
1230-1245	3	1	0	4	0	0	**8**	25	23	3	3	0	1	**55**
1245-1300	6	0	0	2	0	0	**8**	39	22	1	2	0	0	**64**
1300-1315	1	0	0	3	0	0	**4**	39	18	2	3	0	1	**63**
1315-1330	3	0	0	2	0	0	**5**	35	17	1	3	0	0	**56**
1330-1345	2	0	0	2	0	0	**4**	46	18	1	3	0	0	**68**
1345-1400	2	0	0	3	1	0	**6**	45	18	1	4	0	1	**69**
1400-1415	1	0	1	3	0	0	**5**	43	15	3	4	0	0	**65**
1415-1430	3	1	0	2	0	0	**6**	38	15	2	1	0	0	**56**
1430-1445	4	0	0	4	0	0	**8**	35	24	1	3	0	0	**63**
1445-1500	4	0	0	2	0	0	**6**	36	14	2	3	0	1	**56**
1500-1515	4	0	0	3	0	1	**8**	34	18	2	4	0	0	**58**
1515-1530	1	2	0	2	0	0	**5**	30	29	1	3	1	0	**64**
1530-1545	3	0	0	4	0	0	**7**	20	18	0	4	1	0	**43**
1545-1600	2	2	0	2	0	0	**6**	35	37	0	3	0	0	**75**
1600-1615	5	0	0	2	0	0	**7**	32	33	0	3	1	0	**69**
1615-1630	4	2	0	4	0	0	**10**	42	25	2	3	0	0	**72**
1630-1645	2	0	0	2	0	0	**4**	42	41	1	2	0	1	**87**
1645-1700	3	0	0	3	0	0	**6**	47	47	1	2	1	1	**99**
1700-1715	6	1	0	3	0	0	**10**	41	61	0	1	0	0	**103**
1715-1730	2	1	0	1	0	0	**4**	47	54	1	3	0	0	**105**
1730-1745	6	2	0	2	0	0	**10**	47	68	1	3	0	0	**119**
1745-1800	4	0	0	5	0	0	**9**	44	51	1	3	0	0	**99**
1800-1815	9	0	0	1	0	0	**10**	42	49	0	3	0	0	**94**
1815-1830	2	0	1	3	0	0	**6**	42	44	1	3	0	1	**91**
1830-1845	5	0	0	3	0	0	**8**	55	41	1	3	0	0	**100**
1845-1900	4	0	0	3	0	0	**7**	52	46	0	1	1	0	**100**
1900-1915	3	0	0	3	0	0	**6**	52	44	0	2	1	0	**99**
1915-1930	1	0	0	2	0	0	**3**	53	35	1	4	0	0	**93**
1930-1945	3	0	0	3	1	0	**7**	39	36	0	3	0	0	**78**
1945-2000	4	0	0	3	0	0	**7**	65	40	0	2	0	0	**107**
2000-2015	0	0	0	1	0	0	**1**	58	29	1	2	0	0	**90**
2015-2030	1	0	0	2	0	0	**3**	59	40	1	5	1	0	**106**
2030-2045	2	0	0	4	0	0	**6**	30	6	0	2	1	0	**39**
2045-2100	2	0	0	4	0	0	**6**	25	15	0	2	1	0	**43**
2100-2115	3	0	0	1	0	0	**4**	51	23	0	2	0	2	**78**
2115-2130	4	0	0	2	0	0	**6**	13	6	1	3	1	0	**24**
2130-2145	4	1	0	1	0	0	**6**	40	9	0	1	0	0	**50**
2145-2200	0	0	0	3	0	0	**3**	36	5	0	2	0	0	**43**
2200-2215	1	0	0	2	0	0	**3**	9	6	0	2	0	0	**17**
2215-2230	1	1	0	1	0	0	**3**	3	1	1	2	0	0	**7**
2230-2245	0	0	0	1	0	0	**1**	5	1	0	2	0	0	**8**
2245-2300	1	0	0	2	0	0	**3**	2	0	0	2	0	0	**4**
0500-2300	**225**	**22**	**3**	**180**	**2**	**1**	**433**	**2925**	**2075**	**54**	**185**	**15**	**12**	**5266**

	MOVEMENT 3							MOVEMENT 4						
	LIGHT	TAXI	HGV	BUS	MCYCLE	PCYCLE	TOTAL	LIGHT	TAXI	HGV	BUS	MCYCLE	PCYCLE	TOTAL
0500-0515	4	0	0	2	0	0	**6**	42	11	0	1	0	0	**54**
0515-0530	3	1	0	2	0	0	**6**	73	9	0	2	0	1	**85**
0530-0545	1	3	0	3	0	0	**7**	76	18	2	2	2	1	**101**
0545-0600	5	4	0	2	0	0	**11**	99	14	0	2	0	0	**115**
0600-0615	9	3	0	3	0	0	**15**	78	19	0	2	1	0	**100**
0615-0630	8	2	0	1	0	0	**11**	93	12	0	2	0	0	**107**
0630-0645	6	3	0	2	0	0	**11**	110	27	0	2	0	0	**139**
0645-0700	5	1	0	2	0	0	**8**	93	32	2	2	0	0	**129**
0700-0715	5	0	0	4	0	0	**9**	90	34	0	2	0	0	**126**
0715-0730	8	3	0	2	0	0	**13**	89	46	0	2	0	0	**137**
0730-0745	3	1	0	3	0	0	**7**	91	47	1	4	0	0	**143**
0745-0800	5	2	0	4	0	0	**11**	92	40	0	2	1	0	**135**
0800-0815	4	0	0	2	0	0	**6**	42	42	0	4	0	0	**88**
0815-0830	4	0	0	2	0	0	**6**	38	31	3	3	0	0	**75**
0830-0845	3	0	0	3	0	0	**6**	35	28	0	2	0	0	**65**
0845-0900	4	1	0	2	0	0	**7**	46	26	1	3	0	0	**76**
0900-0915	1	0	0	2	0	0	**3**	28	43	2	3	0	0	**76**
0915-0930	6	0	0	4	0	0	**10**	24	28	1	4	1	1	**59**
0930-0945	1	1	1	1	0	0	**4**	22	26	1	2	0	0	**51**
0945-1000	4	0	0	4	0	0	**8**	18	32	2	5	0	0	**57**
1000-1015	3	0	0	1	0	0	**4**	12	21	0	4	0	0	**37**
1015-1030	5	0	0	4	0	0	**9**	35	21	2	3	0	0	**61**
1030-1045	3	0	0	2	0	0	**5**	21	21	0	3	0	0	**45**
1045-1100	2	0	0	3	0	0	**5**	37	24	1	3	1	0	**66**
1100-1115	4	1	0	3	0	0	**8**	35	30	0	3	0	0	**68**
1115-1130	1	1	0	3	0	0	**5**	37	29	1	2	0	0	**69**
1130-1145	4	0	0	3	0	0	**7**	46	35	1	2	0	0	**84**
1145-1200	3	0	0	3	0	0	**6**	35	38	0	2	0	0	**75**
1200-1215	5	0	0	1	0	0	**6**	35	34	1	3	1	0	**74**
1215-1230	7	1	0	4	0	0	**12**	32	29	1	1	1	0	**64**
1230-1245	2	0	0	2	0	0	**4**	44	24	1	3	0	1	**73**
1245-1300	3	0	0	2	0	0	**5**	43	18	2	2	1	0	**66**
1300-1315	3	0	0	1	0	0	**4**	44	23	2	4	0	1	**74**
1315-1330	4	0	0	4	0	0	**8**	38	22	1	3	0	1	**65**
1330-1345	6	0	0	3	0	0	**9**	47	19	3	2	1	0	**72**
1345-1400	2	1	0	4	0	0	**7**	23	24	1	2	0	0	**50**
1400-1415	3	1	1	1	0	0	**6**	26	25	0	4	0	0	**55**
1415-1430	5	0	0	3	0	0	**8**	37	28	0	3	0	0	**68**
1430-1445	2	0	0	1	0	0	**3**	31	30	0	3	0	0	**64**
1445-1500	5	0	0	3	0	0	**8**	39	24	1	3	0	1	**68**
1500-1515	4	0	0	3	0	0	**7**	19	28	1	2	0	1	**51**
1515-1530	4	0	0	2	0	0	**6**	31	28	0	4	1	0	**64**
1530-1545	2	0	0	3	0	0	**5**	18	25	1	3	0	0	**47**
1545-1600	1	1	0	2	0	0	**4**	31	38	1	3	0	0	**73**
1600-1615	2	0	0	5	0	0	**7**	31	38	2	3	0	0	**74**
1615-1630	7	0	0	2	0	0	**9**	38	44	1	3	0	0	**86**
1630-1645	1	0	0	3	0	0	**4**	36	46	1	3	1	0	**87**
1645-1700	3	0	0	1	0	0	**4**	31	43	0	3	0	0	**77**
1700-1715	5	0	0	2	0	0	**7**	46	53	0	2	0	0	**101**
1715-1730	3	0	0	5	0	0	**8**	50	63	0	1	0	1	**115**
1730-1745	4	1	0	3	0	0	**8**	39	56	2	2	0	0	**99**
1745-1800	2	0	0	2	0	0	**4**	45	28	1	3	1	0	**78**
1800-1815	7	0	0	5	0	0	**12**	27	59	1	3	1	0	**91**
1815-1830	6	0	0	2	0	0	**8**	30	33	0	4	0	0	**67**
1830-1845	12	0	0	4	0	0	**16**	50	22	4	2	0	0	**78**
1845-1900	6	0	0	1	0	0	**7**	48	35	2	3	1	0	**89**
1900-1915	6	0	0	2	0	0	**8**	38	33	0	3	0	0	**74**
1915-1930	1	1	1	4	0	0	**7**	36	29	0	3	0	0	**68**
1930-1945	4	1	1	2	0	0	**8**	35	16	1	2	1	0	**55**
1945-2000	3	2	0	4	0	0	**9**	29	19	1	4	0	0	**53**
2000-2015	0	0	0	2	0	0	**2**	16	14	1	2	0	0	**33**
2015-2030	4	0	0	3	0	0	**7**	19	31	1	3	0	0	**54**
2030-2045	0	0	0	1	0	0	**1**	32	28	0	3	1	1	**65**
2045-2100	3	0	0	4	0	0	**7**	24	11	2	2	0	0	**39**
2100-2115	2	0	0	1	0	0	**3**	6	11	1	2	0	1	**21**
2115-2130	1	0	0	3	0	0	**4**	19	7	0	2	0	0	**28**
2130-2145	1	0	0	3	0	0	**4**	6	2	0	2	0	0	**10**
2145-2200	1	0	0	2	0	0	**3**	8	0	0	2	0	2	**12**
2200-2215	0	0	0	2	0	0	**2**	7	2	1	2	0	0	**12**
2215-2230	0	0	0	2	0	0	**2**	3	0	0	3	0	1	**7**
2230-2245	1	0	0	1	0	0	**2**	2	0	0	2	0	0	**4**
2245-2300	0	0	0	1	0	0	**1**	3	2	1	1	0	0	**7**
0500-2300	**257**	**36**	**4**	**183**	**0**	**0**	**480**	**2829**	**1928**	**59**	**188**	**17**	**14**	**5035**

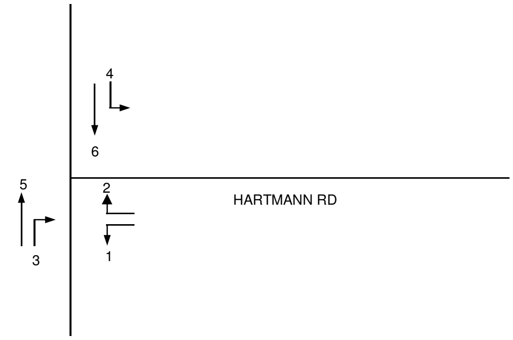
K&M TRAFFIC SURVEYS

DATE : 14th NOVEMBER 2010

DAY : TUESDAY

LOCATION : CITY AIRPORT, EAST LONDON

	MOVEMENT 5							MOVEMENT 6						
	LIGHT	TAXI	HGV	BUS	MCYCLE	PCYCLE	**TOTAL**	LIGHT	TAXI	HGV	BUS	MCYCLE	PCYCLE	**TOTAL**
0500-0515	4	0	0	0	0	0	**4**	11	2	0	1	0	0	**14**
0515-0530	9	0	1	0	0	0	**10**	7	0	0	0	0	0	**7**
0530-0545	10	1	0	1	1	0	**13**	6	0	0	0	0	0	**6**
0545-0600	17	0	0	0	0	1	**18**	8	2	0	1	0	0	**11**
0600-0615	15	1	0	0	0	0	**16**	14	0	0	0	0	0	**14**
0615-0630	18	0	0	0	1	0	**19**	3	0	1	0	0	0	**4**
0630-0645	32	0	5	0	2	0	**39**	7	0	2	0	0	0	**9**
0645-0700	32	0	1	0	0	1	**34**	9	0	2	0	0	0	**11**
0700-0715	29	1	1	1	1	1	**34**	11	0	1	0	0	0	**12**
0715-0730	38	0	1	1	0	0	**40**	17	1	0	0	0	0	**18**
0730-0745	32	1	1	0	0	0	**34**	15	0	1	0	0	0	**16**
0745-0800	32	0	3	0	0	0	**35**	33	0	2	0	0	0	**35**
0800-0815	44	1	2	0	1	2	**50**	21	0	0	0	0	0	**21**
0815-0830	42	1	1	0	0	0	**44**	32	1	1	0	0	0	**34**
0830-0845	69	1	1	0	0	0	**71**	28	0	0	0	0	0	**28**
0845-0900	69	0	2	1	0	0	**72**	36	0	1	0	0	0	**37**
0900-0915	42	0	2	0	1	1	**46**	45	0	3	0	0	0	**48**
0915-0930	45	0	5	0	0	0	**50**	26	0	4	0	0	0	**30**
0930-0945	28	0	1	0	0	0	**29**	22	0	1	0	0	0	**23**
0945-1000	31	0	2	0	0	0	**33**	29	0	0	1	0	0	**30**
1000-1015	27	0	2	0	1	0	**30**	15	0	1	0	0	0	**16**
1015-1030	27	0	3	0	0	0	**30**	22	0	3	0	0	0	**25**
1030-1045	27	1	5	0	0	0	**33**	16	0	5	0	0	0	**21**
1045-1100	23	0	2	0	1	1	**27**	30	2	1	0	1	0	**34**
1100-1115	25	0	1	0	0	0	**26**	39	0	3	0	0	0	**42**
1115-1130	29	0	1	0	0	0	**30**	18	0	1	0	0	0	**19**
1130-1145	34	1	0	1	0	0	**36**	29	0	5	0	0	0	**34**
1145-1200	12	0	1	0	1	0	**14**	31	0	2	0	0	0	**33**
1200-1215	34	0	4	0	0	0	**38**	28	0	1	0	0	0	**29**
1215-1230	22	0	3	0	0	1	**26**	19	0	2	0	0	0	**21**
1230-1245	19	0	1	0	0	0	**20**	23	0	3	0	0	0	**26**
1245-1300	39	0	0	0	0	0	**39**	27	0	3	0	1	0	**31**
1300-1315	35	0	0	1	0	0	**36**	29	1	1	1	0	0	**32**
1315-1330	18	0	1	0	1	0	**20**	20	0	2	0	0	0	**22**
1330-1345	41	0	2	0	0	0	**43**	22	1	2	1	0	0	**26**
1345-1400	17	1	1	0	0	0	**19**	19	0	3	0	0	0	**22**
1400-1415	21	0	2	0	0	0	**23**	25	0	3	0	0	0	**28**
1415-1430	22	0	3	0	1	1	**27**	27	0	0	0	0	0	**27**
1430-1445	26	0	2	0	0	0	**28**	11	0	1	0	0	0	**12**
1445-1500	22	0	0	1	0	0	**23**	25	1	0	0	0	0	**26**
1500-1515	47	1	1	0	1	0	**50**	31	0	3	0	0	0	**34**
1515-1530	45	1	3	1	0	0	**50**	48	0	0	0	2	0	**50**
1530-1545	44	1	1	1	0	0	**47**	34	2	1	0	0	0	**37**
1545-1600	32	1	1	0	0	0	**34**	33	0	1	0	0	0	**34**
1600-1615	33	0	0	0	0	0	**33**	43	0	2	0	2	0	**47**
1615-1630	40	1	1	0	2	1	**45**	39	1	0	0	0	0	**40**
1630-1645	26	0	1	0	0	0	**27**	50	1	0	0	1	1	**53**
1645-1700	35	0	0	0	0	0	**35**	37	1	2	0	1	0	**41**
1700-1715	27	0	0	0	1	0	**28**	36	0	1	0	0	0	**37**
1715-1730	38	0	0	0	0	0	**38**	49	0	1	0	1	2	**53**
1730-1745	39	0	1	0	0	1	**41**	52	0	3	0	2	2	**59**
1745-1800	38	0	0	0	1	0	**39**	55	0	0	0	2	0	**57**
1800-1815	35	0	2	0	0	0	**37**	26	0	0	0	1	0	**27**
1815-1830	42	0	0	0	1	0	**43**	44	0	1	0	0	0	**45**
1830-1845	34	0	1	0	0	1	**36**	54	0	0	0	0	0	**54**
1845-1900	23	0	0	0	0	1	**24**	35	0	0	0	1	0	**36**
1900-1915	32	0	1	0	1	0	**34**	36	1	0	0	1	0	**38**
1915-1930	33	0	0	0	0	0	**33**	28	1	0	0	0	1	**30**
1930-1945	27	0	2	0	1	0	**30**	33	0	0	0	0	0	**33**
1945-2000	18	1	0	0	0	0	**19**	29	0	1	0	0	0	**30**
2000-2015	18	0	1	0	0	0	**19**	20	0	0	0	1	0	**21**
2015-2030	28	0	0	0	0	0	**28**	24	1	1	0	0	1	**27**
2030-2045	21	2	1	0	0	0	**24**	23	0	0	0	0	0	**23**
2045-2100	17	0	0	0	1	0	**18**	22	1	0	0	0	0	**23**
2100-2115	23	0	0	2	0	0	**25**	23	0	0	0	0	0	**23**
2115-2130	17	0	0	1	0	0	**18**	19	2	0	1	0	1	**23**
2130-2145	19	0	0	0	0	0	**19**	18	0	0	0	0	0	**18**
2145-2200	17	0	0	0	0	0	**17**	16	0	0	0	2	0	**18**
2200-2215	12	0	0	0	0	0	**12**	16	0	0	0	0	0	**16**
2215-2230	14	0	0	0	2	0	**16**	19	1	0	0	3	0	**23**
2230-2245	13	0	0	0	0	0	**13**	12	0	0	0	2	0	**14**
2245-2300	10	0	0	0	0	0	**10**	18	0	0	0	0	0	**18**
0500-2300	**2055**	**18**	**80**	**12**	**23**	**13**	**2201**	**1877**	**23**	**78**	**6**	**24**	**8**	**2016**



K&M TRAFFIC SURVEYS

DATE : WEDNESDAY 15TH JANUARY 2013

LOCATION : **FISHGUARD WAY / ALBERT RD / WOOLWICH MANOR WAY SIGNALS, LONDON E16**

	WOOLWICH MANOR WAY LEFT TO FISHGUARD WAY						WOOLWICH MANOR WAY AHEAD TO ALBERT ROAD						WOOLWICH MANOR WAY RIGHT TO SITE ACCESS					
	CAR	HGV	BUS	MCY	PCY	**TOT**	CAR	HGV	BUS	MCY	PCY	**TOT**	CAR	HGV	BUS	MCY	PCY	**TOT**
0630-0645	0					**0**	51	12	2	2	3	**70**	0					**0**
0645-0700	6					**6**	72	6	1	1	2	**82**	0					**0**
0700-0715	4					**4**	70	6	1	1		**78**	0	1				**1**
0715-0730	1					**1**	62	4	1	2	2	**71**	0					**0**
0730-0745	6					**6**	52	1	1	1		**55**	0					**0**
0745-0800	1					**1**	42	4	2		1	**49**	0					**0**
0800-0815	6					**6**	44	1	2	2	1	**50**	0					**0**
0815-0830	6		1			**7**	49	8	3			**60**	0					**0**
0830-0845	14					**14**	59	5	1	1		**66**	0					**0**
0845-0900	12					**12**	62	9	2		1	**74**	0					**0**
0900-0915	10					**10**	64	6	1		1	**72**	0					**0**
0915-0930	8					**8**	53	8	1			**62**	0					**0**
0630-0930	**74**	**0**	**1**	**0**	**0**	**75**	**680**	**70**	**18**	**10**	**11**	**789**	**0**	**1**	**0**	**0**	**0**	**1**

	CAR	HGV	BUS	MCY	PCY	TOT	CAR	HGV	BUS	MCY	PCY	TOT	CAR	HGV	BUS	MCY	PCY	TOT
0630-0730	11	0	0	0	0	**11**	255	28	5	6	7	**301**	0	1	0	0	0	**1**
0645-0745	17	0	0	0	0	**17**	256	17	4	5	4	**286**	0	1	0	0	0	**1**
0700-0800	12	0	0	0	0	**12**	226	15	5	4	3	**253**	0	1	0	0	0	**1**
0715-0815	14	0	0	0	0	**14**	200	10	6	5	4	**225**	0	0	0	0	0	**0**
0730-0830	19	0	1	0	0	**20**	187	14	8	3	2	**214**	0	0	0	0	0	**0**
0745-0845	27	0	1	0	0	**28**	194	18	8	3	2	**225**	0	0	0	0	0	**0**
0800-0900	38	0	1	0	0	**39**	214	23	8	3	2	**250**	0	0	0	0	0	**0**
0815-0915	42	0	1	0	0	**43**	234	28	7	1	2	**272**	0	0	0	0	0	**0**
0830-0930	44	0	0	0	0	**44**	238	28	5	1	2	**274**	0	0	0	0	0	**0**

	WOOLWICH MANOR WAY LEFT TO FISHGUARD WAY						WOOLWICH MANOR WAY AHEAD TO ALBERT ROAD						WOOLWICH MANOR WAY RIGHT TO SITE ACCESS					
	CAR	HGV	BUS	MCY	PCY	**TOT**	CAR	HGV	BUS	MCY	PCY	**TOT**	CAR	HGV	BUS	MCY	PCY	**TOT**
1600-1615	5					**5**	51	7	5			**63**	1	1				**2**
1615-1630	10					**10**	58	3	2	2	3	**68**	0	1				**1**
1630-1645	12	1		1		**14**	83	5	2	3	1	**94**	0					**0**
1645-1700	12					**12**	71	5	1	1	2	**80**	0					**0**
1700-1715	17				1	**18**	79	3	3	1	3	**89**	0					**0**
1715-1730	11				1	**12**	71	3	1	1		**76**	0	1				**1**
1730-1745	19					**19**	71	1	2	2		**76**	0	1				**1**
1745-1800	10				1	**11**	56	5	1	2	2	**66**	0					**0**
1800-1815	15					**15**	65	4	1	3	1	**74**	0					**0**
1815-1830	11			2		**13**	93	1	1	2	3	**100**	0					**0**
1830-1845	13					**13**	62	1	2	3		**68**	0					**0**
1845-1900	12					**12**	55	2	1	2		**60**	0					**0**
1600-1900	**147**	**1**	**0**	**3**	**3**	**154**	**815**	**40**	**22**	**22**	**15**	**914**	**1**	**4**	**0**	**0**	**0**	**5**

	CAR	HGV	BUS	MCY	PCY	TOT	CAR	HGV	BUS	MCY	PCY	TOT	CAR	HGV	BUS	MCY	PCY	TOT
1600-1700	39	1	0	1	0	**41**	263	20	10	6	6	**305**	1	2	0	0	0	**3**
1615-1715	51	1	0	1	1	**54**	291	16	8	7	9	**331**	0	1	0	0	0	**1**
1630-1730	52	1	0	1	2	**56**	304	16	7	6	6	**339**	0	1	0	0	0	**1**
1645-1745	59	0	0	0	2	**61**	292	12	7	5	5	**321**	0	2	0	0	0	**2**
1700-1800	57	0	0	0	3	**60**	277	12	7	6	5	**307**	0	2	0	0	0	**2**
1715-1815	55	0	0	0	2	**57**	263	13	5	8	3	**292**	0	2	0	0	0	**2**
1730-1830	55	0	0	2	1	**58**	285	11	5	9	6	**316**	0	1	0	0	0	**1**
1745-1845	49	0	0	2	1	**52**	276	11	5	10	6	**308**	0	0	0	0	0	**0**
1800-1900	51	0	0	2	0	**53**	275	8	5	10	4	**302**	0	0	0	0	0	**0**

K&M TRAFFIC SURVEYS

DATE : WEDNESDAY 15TH JANUARY 2013

LOCATION : **FISHGUARD WAY / ALBERT RD / WOOLWICH MANOR WAY SIGNALS, LONDON E16**

	FISHGUARD WAY LEFT TO ALBERT WAY						FISHGUARD WAY AHEAD TO SITE ACCESS						FISHGUARD WAY RIGHT TO WOOLWICH MANOR WAY					
	CAR	HGV	BUS	MCY	PCY	**TOT**	CAR	HGV	BUS	MCY	PCY	**TOT**	CAR	HGV	BUS	MCY	PCY	**TOT**
0630-0645	2					**2**	0					**0**	6					**6**
0645-0700	7					**7**	0					**0**	9				1	**10**
0700-0715	10			1	1	**12**	0					**0**	7				1	**8**
0715-0730	6					**6**	0					**0**	10					**10**
0730-0745	6					**6**	0					**0**	16					**16**
0745-0800	7					**7**	0					**0**	10					**10**
0800-0815	6					**6**	0					**0**	14				1	**15**
0815-0830	10					**10**	0					**0**	13			1		**14**
0830-0845	15					**15**	0					**0**	22			1		**23**
0845-0900	4					**4**	0					**0**	8					**8**
0900-0915	9					**9**	0					**0**	9					**9**
0915-0930	7					**7**	0					**0**	8					**8**
0630-0930	**89**	**0**	**0**	**1**	**1**	**91**	**0**	**0**	**0**	**0**	**0**	**0**	**132**	**0**	**0**	**2**	**3**	**137**
0630-0730	25	0	0	1	1	**27**	0	0	0	0	0	**0**	32	0	0	0	2	**34**
0645-0745	29	0	0	1	1	**31**	0	0	0	0	0	**0**	42	0	0	0	2	**44**
0700-0800	29	0	0	1	1	**31**	0	0	0	0	0	**0**	43	0	0	0	1	**44**
0715-0815	25	0	0	0	0	**25**	0	0	0	0	0	**0**	50	0	0	0	1	**51**
0730-0830	29	0	0	0	0	**29**	0	0	0	0	0	**0**	53	0	0	1	1	**55**
0745-0845	38	0	0	0	0	**38**	0	0	0	0	0	**0**	59	0	0	2	1	**62**
0800-0900	35	0	0	0	0	**35**	0	0	0	0	0	**0**	57	0	0	2	1	**60**
0815-0915	38	0	0	0	0	**38**	0	0	0	0	0	**0**	52	0	0	2	0	**54**
0830-0930	35	0	0	0	0	**35**	0	0	0	0	0	**0**	47	0	0	1	0	**48**

	FISHGUARD WAY LEFT TO ALBERT WAY						FISHGUARD WAY AHEAD TO SITE ACCESS						FISHGUARD WAY RIGHT TO WOOLWICH MANOR WAY					
	CAR	HGV	BUS	MCY	PCY	**TOT**	CAR	HGV	BUS	MCY	PCY	**TOT**	CAR	HGV	BUS	MCY	PCY	**TOT**
1600-1615	3					**3**	0					**0**	11					**11**
1615-1630	3					**3**	0					**0**	10					**10**
1630-1645	7					**7**	0					**0**	6					**6**
1645-1700	6					**6**	0					**0**	6			1		**7**
1700-1715	3			1		**4**	0					**0**	10			1		**11**
1715-1730	2					**2**	0					**0**	4					**4**
1730-1745	6					**6**	0					**0**	9					**9**
1745-1800	2					**2**	0					**0**	10					**10**
1800-1815	5					**5**	0					**0**	7			1		**8**
1815-1830	2					**2**	0					**0**	11					**11**
1830-1845	2					**2**	0					**0**	8			1		**9**
1845-1900	3					**3**	0					**0**	9			1		**10**
1600-1900	**44**	**0**	**0**	**1**	**0**	**45**	**0**	**0**	**0**	**0**	**0**	**0**	**101**	**0**	**0**	**5**	**0**	**106**
1600-1700	19	0	0	0	0	**19**	0	0	0	0	0	**0**	33	0	0	1	0	**34**
1615-1715	19	0	0	1	0	**20**	0	0	0	0	0	**0**	32	0	0	2	0	**34**
1630-1730	18	0	0	1	0	**19**	0	0	0	0	0	**0**	26	0	0	2	0	**28**
1645-1745	17	0	0	1	0	**18**	0	0	0	0	0	**0**	29	0	0	2	0	**31**
1700-1800	13	0	0	1	0	**14**	0	0	0	0	0	**0**	33	0	0	1	0	**34**
1715-1815	15	0	0	0	0	**15**	0	0	0	0	0	**0**	30	0	0	1	0	**31**
1730-1830	15	0	0	0	0	**15**	0	0	0	0	0	**0**	37	0	0	1	0	**38**
1745-1845	11	0	0	0	0	**11**	0	0	0	0	0	**0**	36	0	0	2	0	**38**
1800-1900	12	0	0	0	0	**12**	0	0	0	0	0	**0**	35	0	0	3	0	**38**

K&M TRAFFIC SURVEYS

DATE : WEDNESDAY 15TH JANUARY 2013

LOCATION : **FISHGUARD WAY / ALBERT RD / WOOLWICH MANOR WAY SIGNALS, LONDON E16**

	ALBERT ROAD LEFT TO SITE ACCESS						ALBERT ROAD AHEAD TO WOOLWICH MANOR WAY						ALBERT ROAD RIGHT TO FISHGUARD WAY					
	CAR	HGV	BUS	MCY	PCY	**TOT**	CAR	HGV	BUS	MCY	PCY	**TOT**	CAR	HGV	BUS	MCY	PCY	**TOT**
0630-0645	0					**0**	52	5		2	3	**62**	1					**1**
0645-0700	0					**0**	34	5	2	1		**42**	1					**1**
0700-0715	0					**0**	60	6	1	4	1	**72**	2			1		**3**
0715-0730	0					**0**	22	1	1		1	**25**	1					**1**
0730-0745	0					**0**	21		1			**22**	2					**2**
0745-0800	0					**0**	26	5	2		1	**34**	0					**0**
0800-0815	0					**0**	39	3	1		1	**44**	1		1			**2**
0815-0830	0					**0**	39	2	3		3	**47**	1					**1**
0830-0845	1					**1**	33		1		2	**36**	2					**2**
0845-0900	0					**0**	45	7	1	1	2	**56**	1					**1**
0900-0915	0					**0**	42	11	1	1		**55**	4					**4**
0915-0930	0					**0**	54	8	2		1	**65**	2					**2**
0630-0930	**1**	**0**	**0**	**0**	**0**	**1**	**467**	**53**	**16**	**9**	**15**	**560**	**18**	**0**	**1**	**1**	**0**	**20**
0630-0730	0	0	0	0	0	**0**	168	17	4	7	5	**201**	5	0	0	1	0	**6**
0645-0745	0	0	0	0	0	**0**	137	12	5	5	2	**161**	6	0	0	1	0	**7**
0700-0800	0	0	0	0	0	**0**	129	12	5	4	3	**153**	5	0	0	1	0	**6**
0715-0815	0	0	0	0	0	**0**	108	9	5	0	3	**125**	4	0	1	0	0	**5**
0730-0830	0	0	0	0	0	**0**	125	10	7	0	5	**147**	4	0	1	0	0	**5**
0745-0845	1	0	0	0	0	**1**	137	10	7	0	7	**161**	4	0	1	0	0	**5**
0800-0900	1	0	0	0	0	**1**	156	12	6	1	8	**183**	5	0	1	0	0	**6**
0815-0915	1	0	0	0	0	**1**	159	20	6	2	7	**194**	8	0	0	0	0	**8**
0830-0930	1	0	0	0	0	**1**	174	26	5	2	5	**212**	9	0	0	0	0	**9**

	ALBERT ROAD LEFT TO SITE ACCESS						ALBERT ROAD AHEAD TO WOOLWICH MANOR WAY						ALBERT ROAD RIGHT TO FISHGUARD WAY					
	CAR	HGV	BUS	MCY	PCY	**TOT**	CAR	HGV	BUS	MCY	PCY	**TOT**	CAR	HGV	BUS	MCY	PCY	**TOT**
1600-1615	0					**0**	73	9	2		1	**85**	2					**2**
1615-1630	0					**0**	65	2		1		**68**	2					**2**
1630-1645	0					**0**	98	6	3	1	1	**109**	5			1		**6**
1645-1700	0					**0**	72	7	1	2	1	**83**	5					**5**
1700-1715	1					**1**	83	1	1	2	1	**88**	5					**5**
1715-1730	0					**0**	64	5	2			**71**	3			2	1	**6**
1730-1745	0					**0**	72	3	1	2	1	**79**	6			1		**7**
1745-1800	0					**0**	68	4	1	2	1	**76**	7			1		**8**
1800-1815	0					**0**	55	2	1		2	**60**	7			1		**8**
1815-1830	0					**0**	64	4	1		1	**70**	10			1		**11**
1830-1845	0					**0**	76	2	1			**79**	7					**7**
1845-1900	0					**0**	44	2	1			**47**	5			1		**6**
1600-1900	**1**	**0**	**0**	**0**	**0**	**1**	**834**	**47**	**15**	**10**	**9**	**915**	**64**	**0**	**0**	**8**	**1**	**73**
1600-1700	0	0	0	0	0	**0**	308	24	6	4	3	**345**	14	0	0	1	0	**15**
1615-1715	1	0	0	0	0	**1**	318	16	5	6	3	**348**	17	0	0	1	0	**18**
1630-1730	1	0	0	0	0	**1**	317	19	7	5	3	**351**	18	0	0	3	1	**22**
1645-1745	1	0	0	0	0	**1**	291	16	5	6	3	**321**	19	0	0	3	1	**23**
1700-1800	1	0	0	0	0	**1**	287	13	5	6	3	**314**	21	0	0	4	1	**26**
1715-1815	0	0	0	0	0	**0**	259	14	5	4	4	**286**	23	0	0	5	1	**29**
1730-1830	0	0	0	0	0	**0**	259	13	4	4	5	**285**	30	0	0	4	0	**34**
1745-1845	0	0	0	0	0	**0**	263	12	4	2	4	**285**	31	0	0	3	0	**34**
1800-1900	0	0	0	0	0	**0**	239	10	4	0	3	**256**	29	0	0	3	0	**32**

(Woolwich Ferry not in operation between 0705 - 0844)

K&M TRAFFIC SURVEYS

DATE : WEDNESDAY 15TH JANUARY 2013

LOCATION : **FISHGUARD WAY / ALBERT RD / WOOLWICH MANOR WAY SIGNALS, LONDON E16**

	SITE ACCESS LEFT TO WOOLWICH MANOR WAY						SITE ACCESS AHEAD TO FISHGUARD WAY						SITE ACCESS RIGHT TO ALBERT RD					
	CAR	HGV	BUS	MCY	PCY	TOT	CAR	HGV	BUS	MCY	PCY	TOT	CAR	HGV	BUS	MCY	PCY	TOT
0630-0645	0					**0**	0					**0**	0					**0**
0645-0700	0					**0**	0					**0**	0					**0**
0700-0715	0					**0**	0					**0**	0					**0**
0715-0730	0					**0**	0					**0**	0					**0**
0730-0745	0					**0**	0					**0**	0					**0**
0745-0800	0					**0**	0					**0**	0					**0**
0800-0815	0					**0**	0					**0**	0					**0**
0815-0830	0					**0**	0					**0**	0					**0**
0830-0845	0					**0**	0					**0**	0					**0**
0845-0900	1					**1**	0					**0**	0					**0**
0900-0915	0	1				**1**	0					**0**	0					**0**
0915-0930	0					**0**	0					**0**	0					**0**
0630-0930	**1**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0630-0730	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
0645-0745	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
0700-0800	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
0715-0815	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
0730-0830	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
0745-0845	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
0800-0900	1	0	0	0	0	**1**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
0815-0915	1	1	0	0	0	**2**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
0830-0930	1	1	0	0	0	**2**	0	0	0	0	0	**0**	0	0	0	0	0	**0**

	SITE ACCESS LEFT TO WOOLWICH MANOR WAY						SITE ACCESS AHEAD TO FISHGUARD WAY						SITE ACCESS RIGHT TO ALBERT RD					
	CAR	HGV	BUS	MCY	PCY	TOT	CAR	HGV	BUS	MCY	PCY	TOT	CAR	HGV	BUS	MCY	PCY	TOT
1600-1615	1					**1**	0					**0**	0					**0**
1615-1630	0					**0**	0					**0**	0					**0**
1630-1645	1					**1**	0					**0**	0					**0**
1645-1700	1	2				**3**	0					**0**	0					**0**
1700-1715	0					**0**	0					**0**	0					**0**
1715-1730	0					**0**	0					**0**	0					**0**
1730-1745	0					**0**	0					**0**	0					**0**
1745-1800	0					**0**	0					**0**	0					**0**
1800-1815	0	1				**1**	0					**0**	0					**0**
1815-1830	0					**0**	0					**0**	0					**0**
1830-1845	0					**0**	0					**0**	0					**0**
1845-1900	0	1				**1**	0					**0**	0					**0**
1600-1900	**3**	**4**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1600-1700	3	2	0	0	0	**5**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
1615-1715	2	2	0	0	0	**4**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
1630-1730	2	2	0	0	0	**4**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
1645-1745	1	2	0	0	0	**3**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
1700-1800	0	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
1715-1815	0	1	0	0	0	**1**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
1730-1830	0	1	0	0	0	**1**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
1745-1845	0	1	0	0	0	**1**	0	0	0	0	0	**0**	0	0	0	0	0	**0**
1800-1900	0	2	0	0	0	**2**	0	0	0	0	0	**0**	0	0	0	0	0	**0**

APPENDIX M

Modelling Output

ARCADY 7

File: X:\Projects\110000\110116A - City Airport ESD\Modelling\ARCADY\Connaught Bridge Road Roundabout.arc7
Report generation date: 24/06/2013 11:42:09

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	17/01/2012
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	VECTOS\Robert.Roughan
Description	

Analysis Options

RFC Threshold	Vehicle Length (m)	Do Queue Variations
0.85	5.75	

Sorting and Display

Show Arm Names	Arm Grouping	Sorting Direction	Sorting Type	Data Matrix Style	Time Style
	Order	Ascending	Numerical	By Destination	Absolute Time

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	Veh	Veh	perHour	min	-Min	perMin

A1 - (Default Analysis Set) - D1 - Existing, AM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Include In Report	Use Specific Demand Set	Demand Set	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)		Yes		(D1)		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Locked	Run Automatically	Use Relationship	Relationship	Start Time (HH:mm)	Finish Time (HH:mm)	Time Period Length (min)	Time Segment Length (min)	Traffic Profile Type
Existing, AM Peak	Existing	AM Peak						07:45	09:15	90	15	ONE HOUR

Roundabout Network

Roundabout Type(s)

ID	Name	Arm Order	Roundabout Type	Grade Separated	Large Roundabout	Do Geometric Delay
1	Connaught Bridge Road/Connaught Road	A,B,C,D	Standard			

Roundabout Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	((Mini-roundabouts only))	

Arms

Arms

ID	Name	Description
A	Connaught Bridge Road (N)	
B	Connaught Road (E)	
C	Connaught Bridge Road (South)	
D	Silvertown Quays	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.30	7.50	1.00	20.00	46.50	24.50	
B	4.50	7.00	15.00	19.00	46.50	23.00	
C	7.30	7.50	1.00	19.00	46.50	25.00	
D	5.00	7.30	15.00	40.00	46.50	26.00	

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Arm Slope/ Intercept and Capacity

Slope and Intercept used in model

Arm	Enter Directly	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		((calculated))	((calculated))	0.743	2291.771
B		((calculated))	((calculated))	0.667	1897.860
C		((calculated))	((calculated))	0.740	2282.081
D		((calculated))	((calculated))	0.703	2058.499

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
		Yes	Yes	HV Percentages	2.00				Yes	Yes

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)	PHF
A	ONE HOUR	Yes	752.00	100.000	N/A
B	ONE HOUR	Yes	617.00	100.000	N/A
C	ONE HOUR	Yes	630.00	100.000	N/A
D	ONE HOUR	Yes	0.00	100.000	N/A

Direct/Resultant Flows

Direct Flows Data

Time Segment	Arm	Direct Demand Entry Flow (Veh/hr)	DirectDemandEntryFlowInPCU (PCU/hr)	Direct Demand Exit Flow (Veh/hr)	Direct Demand Pedestrian Flow (Ped/hr)
1	A	566.15	622.00	N/A	N/A
1	B	464.51	475.77	N/A	N/A
1	C	474.30	531.41	N/A	N/A
1	D	0.00	0.00	N/A	N/A
2	A	676.03	742.72	N/A	N/A
2	B	554.67	568.11	N/A	N/A
2	C	566.36	634.56	N/A	N/A
2	D	0.00	0.00	N/A	N/A
3	A	827.97	909.65	N/A	N/A
3	B	679.33	695.80	N/A	N/A
3	C	693.64	777.17	N/A	N/A
3	D	0.00	0.00	N/A	N/A

4	A	827.97	909.65	N/A	N/A
4	B	679.33	695.80	N/A	N/A
4	C	693.64	777.17	N/A	N/A
4	D	0.00	0.00	N/A	N/A
5	A	676.03	742.72	N/A	N/A
5	B	554.67	568.11	N/A	N/A
5	C	566.36	634.56	N/A	N/A
5	D	0.00	0.00	N/A	N/A
6	A	566.15	622.00	N/A	N/A
6	B	464.51	475.77	N/A	N/A
6	C	474.30	531.41	N/A	N/A
6	D	0.00	0.00	N/A	N/A

Turning Proportions

Turning Counts or Proportions (Veh/hr) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	217.000	535.000	0.000
	B	228.000	0.000	389.000	0.000
	C	321.000	309.000	0.000	0.000
	D	0.000	0.000	0.000	0.000

Turning Proportions (Veh) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.00	0.29	0.71	0.00
	B	0.37	0.00	0.63	0.00
	C	0.51	0.49	0.00	0.00
	D	0.25	0.25	0.25	0.25

Vehicle Mix

Average PCU Per Vehicle - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	1.000	1.083	1.105	1.000
	B	1.040	1.000	1.015	1.000
	C	1.168	1.071	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	8.300	10.500	0.000
	B	4.000	0.000	1.500	0.000
	C	16.800	7.100	0.000	0.000
	D	0.000	0.000	0.000	0.000

Results

Results Summary

Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max LOS	Total Demand (Veh/hr)	Total Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (min)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Queueing Total Delay (Veh-min)	Inclusive Queueing Average Delay (min)	Slope	Intercept (PCU/hr)
A	0.45	0.06	0.82	A	690.05	1035.07	53.50	0.05	0.59	53.50	0.05	0.743	2291.771
B	0.48	0.08	0.90	A	566.17	849.25	56.76	0.07	0.63	56.76	0.07	0.667	1897.860
C	0.37	0.05	0.59	A	578.10	867.15	40.17	0.05	0.45	40.17	0.05	0.740	2282.081
D	0.00	0.00	0.00	A	0.00	0.00	0.00	0.00	0.00	0.00	166666666.65	0.703	2058.499

Overview: Standard Roundabout Geometry

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only	Final Slope	Final Intercept (PCU/hr)
A	7.30	7.50	1.00	20.00	46.50	24.50		0.743	2291.771
B	4.50	7.00	15.00	19.00	46.50	23.00		0.667	1897.860
C	7.30	7.50	1.00	19.00	46.50	25.00		0.740	2282.081
D	5.00	7.30	15.00	40.00	46.50	26.00		0.703	2058.499

Overview: Time Segment Results

Time Segment Results

Time Segment	Arm	Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Pedestrian Demand (Ped/hr)	Start Queue (Veh)	End Queue (Veh)	Queueing Total Delay (Veh-min)	Geometric Total Delay (Veh-min)	Average Delay Per Arriving Vehicle (min)
1	A	566.15	1918.00	0.295	0.00	0.00	0.42	6.14	(0.02)	0.044
1	B	464.51	1563.84	0.297	0.00	0.00	0.42	6.17	(0.02)	0.054
1	C	474.30	1919.39	0.247	0.00	0.00	0.33	4.82	(0.01)	0.041
1	D	0.00	1560.72	0.000	0.00	0.00	0.00	0.00	(0.02)	0.000
2	A	676.03	1884.98	0.359	0.00	0.42	0.56	8.22	(0.02)	0.050
2	B	554.67	1506.99	0.368	0.00	0.42	0.58	8.52	(0.02)	0.063
2	C	566.36	1896.25	0.299	0.00	0.33	0.42	6.28	(0.01)	0.045
2	D	0.00	1462.80	0.000	0.00	0.00	0.00	0.00	(0.02)	0.000
3	A	827.97	1839.87	0.450	0.00	0.56	0.81	11.94	(0.02)	0.059
3	B	679.33	1429.42	0.475	0.00	0.58	0.90	13.09	(0.02)	0.080
3	C	693.65	1864.78	0.372	0.00	0.42	0.59	8.69	(0.01)	0.051
3	D	0.00	1329.20	0.000	0.00	0.00	0.00	0.00	(0.02)	0.000
4	A	827.97	1839.64	0.450	0.00	0.81	0.82	12.21	(0.02)	0.059
4	B	679.33	1428.90	0.475	0.00	0.90	0.90	13.50	(0.02)	0.080
4	C	693.65	1864.46	0.372	0.00	0.59	0.59	8.85	(0.01)	0.051
4	D	0.00	1328.35	0.000	0.00	0.00	0.00	0.00	(0.02)	0.000
5	A	676.03	1884.61	0.359	0.00	0.82	0.56	8.58	(0.02)	0.050
5	B	554.67	1506.19	0.368	0.00	0.90	0.59	9.00	(0.02)	0.063
5	C	566.36	1895.77	0.299	0.00	0.59	0.43	6.51	(0.01)	0.045
5	D	0.00	1461.47	0.000	0.00	0.00	0.00	0.00	(0.02)	0.000
6	A	566.15	1917.40	0.295	0.00	0.56	0.42	6.40	(0.02)	0.044
6	B	464.51	1562.70	0.297	0.00	0.59	0.43	6.49	(0.02)	0.055
6	C	474.30	1918.80	0.247	0.00	0.43	0.33	5.01	(0.01)	0.042
6	D	0.00	1558.75	0.000	0.00	0.00	0.00	0.00	(0.02)	0.000

ARCADY 7

File: X:\Projects\110000\110116A - City Airport ESD\Modelling\ARCADY\Connaught Bridge Road Roundabout.arc7
Report generation date: 24/06/2013 11:42:51

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	17/01/2012
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	VECTOS\Robert.Roughan
Description	

Analysis Options

RFC Threshold	Vehicle Length (m)	Do Queue Variations
0.85	5.75	

Sorting and Display

Show Arm Names	Arm Grouping	Sorting Direction	Sorting Type	Data Matrix Style	Time Style
	Order	Ascending	Numerical	By Destination	Absolute Time

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	Veh	Veh	perHour	min	-Min	perMin

A1 - (Default Analysis Set) - D2 - Existing, PM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Include In Report	Use Specific Demand Set	Demand Set	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)		Yes		(D1)		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Locked	Run Automatically	Use Relationship	Relationship	Start Time (HH:mm)	Finish Time (HH:mm)	Time Period Length (min)	Time Segment Length (min)	Traffic Profile Type
Existing, PM Peak	Existing	PM Peak			Yes			16:45	18:15	90	15	ONE HOUR

Roundabout Network

Roundabout Type(s)

ID	Name	Arm Order	Roundabout Type	Grade Separated	Large Roundabout	Do Geometric Delay
1	Connaught Bridge Road/Connaught Road	A,B,C,D	Standard			

Roundabout Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	((Mini-roundabouts only))	

Arms

Arms

ID	Name	Description
A	Connaught Bridge Road (N)	
B	Connaught Road (E)	
C	Connaught Bridge Road (South)	
D	Silvertown Quays	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.30	7.50	1.00	20.00	46.50	24.50	
B	4.50	7.00	15.00	19.00	46.50	23.00	
C	7.30	7.50	1.00	19.00	46.50	25.00	
D	5.00	7.30	15.00	40.00	46.50	26.00	

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Arm Slope/ Intercept and Capacity

Slope and Intercept used in model

Arm	Enter Directly	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		((calculated))	((calculated))	0.743	2291.771
B		((calculated))	((calculated))	0.667	1897.860
C		((calculated))	((calculated))	0.740	2282.081
D		((calculated))	((calculated))	0.703	2058.499

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
		Yes	Yes	HV Percentages	2.00				Yes	Yes

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)	PHF
A	ONE HOUR	Yes	461.00	100.000	N/A
B	ONE HOUR	Yes	534.00	100.000	N/A
C	ONE HOUR	Yes	1140.00	100.000	N/A
D	ONE HOUR	Yes	0.00	100.000	N/A

Direct/Resultant Flows

Direct Flows Data

Time Segment	Arm	Direct Demand Entry Flow (Veh/hr)	DirectDemandEntryFlowInPCU (PCU/hr)	Direct Demand Exit Flow (Veh/hr)	Direct Demand Pedestrian Flow (Ped/hr)
1	A	347.06	366.69	N/A	N/A
1	B	402.02	410.97	N/A	N/A
1	C	858.25	908.44	N/A	N/A
1	D	0.00	0.00	N/A	N/A
2	A	414.43	437.87	N/A	N/A
2	B	480.06	490.73	N/A	N/A
2	C	1024.84	1084.77	N/A	N/A
2	D	0.00	0.00	N/A	N/A
3	A	507.57	536.28	N/A	N/A
3	B	587.94	601.03	N/A	N/A
3	C	1255.16	1328.57	N/A	N/A
3	D	0.00	0.00	N/A	N/A

4	A	507.57	536.28	N/A	N/A
4	B	587.94	601.03	N/A	N/A
4	C	1255.16	1328.57	N/A	N/A
4	D	0.00	0.00	N/A	N/A
5	A	414.43	437.87	N/A	N/A
5	B	480.06	490.73	N/A	N/A
5	C	1024.84	1084.77	N/A	N/A
5	D	0.00	0.00	N/A	N/A
6	A	347.06	366.69	N/A	N/A
6	B	402.02	410.97	N/A	N/A
6	C	858.25	908.44	N/A	N/A
6	D	0.00	0.00	N/A	N/A

Turning Proportions

Turning Counts or Proportions (Veh/hr) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	166.000	295.000	0.000
	B	182.000	0.000	352.000	0.000
	C	670.000	470.000	0.000	0.000
	D	0.000	0.000	0.000	0.000

Turning Proportions (Veh) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.00	0.36	0.64	0.00
	B	0.34	0.00	0.66	0.00
	C	0.59	0.41	0.00	0.00
	D	0.25	0.25	0.25	0.25

Vehicle Mix

Average PCU Per Vehicle - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	1.000	1.054	1.058	1.000
	B	1.044	1.000	1.011	1.000
	C	1.049	1.072	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	5.400	5.800	0.000
	B	4.400	0.000	1.100	0.000
	C	4.900	7.200	0.000	0.000
	D	0.000	0.000	0.000	0.000

Results

Results Summary

Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max LOS	Total Demand (Veh/hr)	Total Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (min)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Queueing Total Delay (Veh-min)	Inclusive Queueing Average Delay (min)	Slope	Intercept (PCU/hr)
A	0.29	0.05	0.40	A	423.02	634.53	27.19	0.04	0.30	27.19	0.04	0.743	2291.771
B	0.36	0.06	0.56	A	490.01	735.01	37.99	0.05	0.42	37.99	0.05	0.667	1897.860
C	0.62	0.08	1.65	A	1046.09	1569.13	100.40	0.06	1.12	100.41	0.06	0.740	2282.081
D	0.00	0.00	0.00	A	0.00	0.00	0.00	0.00	0.00	0.00	166666666.65	0.703	2058.499

Overview: Standard Roundabout Geometry

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only	Final Slope	Final Intercept (PCU/hr)
A	7.30	7.50	1.00	20.00	46.50	24.50		0.743	2291.771
B	4.50	7.00	15.00	19.00	46.50	23.00		0.667	1897.860
C	7.30	7.50	1.00	19.00	46.50	25.00		0.740	2282.081
D	5.00	7.30	15.00	40.00	46.50	26.00		0.703	2058.499

Overview: Time Segment Results

Time Segment Results

Time Segment	Arm	Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Pedestrian Demand (Ped/hr)	Start Queue (Veh)	End Queue (Veh)	Queueing Total Delay (Veh-min)	Geometric Total Delay (Veh-min)	Average Delay Per Arriving Vehicle (min)
1	A	347.06	1903.30	0.182	0.00	0.00	0.22	3.29	(0.02)	0.039
1	B	402.02	1703.57	0.236	0.00	0.00	0.31	4.53	(0.02)	0.046
1	C	858.25	2056.34	0.417	0.00	0.00	0.71	10.44	(0.02)	0.050
1	D	0.00	1321.45	0.000	0.00	0.00	0.00	0.00	(0.02)	0.000
2	A	414.43	1851.02	0.224	0.00	0.22	0.29	4.26	(0.02)	0.042
2	B	480.05	1673.52	0.287	0.00	0.31	0.40	5.92	(0.02)	0.050
2	C	1024.84	2036.73	0.503	0.00	0.71	1.00	14.75	(0.02)	0.059
2	D	0.00	1176.46	0.000	0.00	0.00	0.00	0.00	(0.02)	0.000
3	A	507.57	1779.88	0.285	0.00	0.29	0.40	5.87	(0.02)	0.047
3	B	587.94	1632.43	0.360	0.00	0.40	0.56	8.25	(0.02)	0.057
3	C	1255.17	2009.97	0.624	0.00	1.00	1.64	23.77	(0.02)	0.079
3	D	0.00	979.10	0.000	0.00	0.00	0.00	0.00	(0.02)	0.000
4	A	507.57	1779.11	0.285	0.00	0.40	0.40	5.97	(0.02)	0.047
4	B	587.94	1632.24	0.360	0.00	0.56	0.56	8.41	(0.02)	0.057
4	C	1255.17	2009.81	0.625	0.00	1.64	1.65	24.71	(0.02)	0.079
4	D	0.00	977.08	0.000	0.00	0.00	0.00	0.00	(0.02)	0.000
5	A	414.43	1849.87	0.224	0.00	0.40	0.29	4.40	(0.02)	0.042
5	B	480.05	1673.21	0.287	0.00	0.56	0.40	6.16	(0.02)	0.050
5	C	1024.84	2036.48	0.503	0.00	1.65	1.02	15.71	(0.02)	0.060
5	D	0.00	1173.46	0.000	0.00	0.00	0.00	0.00	(0.02)	0.000
6	A	347.06	1902.04	0.182	0.00	0.29	0.22	3.40	(0.02)	0.039
6	B	402.02	1703.06	0.236	0.00	0.40	0.31	4.72	(0.02)	0.046
6	C	858.25	2055.94	0.417	0.00	1.02	0.72	11.01	(0.02)	0.050
6	D	0.00	1318.04	0.000	0.00	0.00	0.00	0.00	(0.02)	0.000

ARCADY 7

File: X:\Projects\110000\110116A - City Airport ESD\Modelling\ARCADY\Connaught Bridge Road Roundabout.arc7
Report generation date: 24/06/2013 11:43:19

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	17/01/2012
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	VECTOS\Robert.Roughan
Description	

Analysis Options

RFC Threshold	Vehicle Length (m)	Do Queue Variations
0.85	5.75	

Sorting and Display

Show Arm Names	Arm Grouping	Sorting Direction	Sorting Type	Data Matrix Style	Time Style
	Order	Ascending	Numerical	By Destination	Absolute Time

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	Veh	Veh	perHour	min	-Min	perMin

A1 - (Default Analysis Set) - D3 - 2021 Without Development, AM Peak

Development, AM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Include In Report	Use Specific Demand Set	Demand Set	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)		Yes		(D1)		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Locked	Run Automatically	Use Relationship	Relationship	Start Time (HH:mm)	Finish Time (HH:mm)	Time Period Length (min)	Time Segment Length (min)	Traffic Profile Type
2021 Without Development, AM Peak	2021 Without Development	AM Peak						07:45	09:15	90	15	ONE HOUR

Roundabout Network

Roundabout Type(s)

ID	Name	Arm Order	Roundabout Type	Grade Separated	Large Roundabout	Do Geometric Delay
1	Connaught Bridge Road/Connaught Road	A,B,C,D	Standard			

Roundabout Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	((Mini-roundabouts only))	

Arms

Arms

ID	Name	Description
A	Connaught Bridge Road (N)	
B	Connaught Road (E)	
C	Connaught Bridge Road (South)	
D	Silvertown Quays	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.30	7.50	1.00	20.00	46.50	24.50	
B	4.50	7.00	15.00	19.00	46.50	23.00	
C	7.30	7.50	1.00	19.00	46.50	25.00	
D	5.00	7.30	15.00	40.00	46.50	26.00	

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Arm Slope/ Intercept and Capacity

Slope and Intercept used in model

Arm	Enter Directly	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		((calculated))	((calculated))	0.743	2291.771
B		((calculated))	((calculated))	0.667	1897.860
C		((calculated))	((calculated))	0.740	2282.081
D		((calculated))	((calculated))	0.703	2058.499

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
		Yes	Yes	HV Percentages	2.00				Yes	Yes

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)	PHF
A	ONE HOUR	Yes	1102.00	100.000	N/A
B	ONE HOUR	Yes	860.00	100.000	N/A
C	ONE HOUR	Yes	882.00	100.000	N/A
D	ONE HOUR	Yes	164.00	100.000	N/A

Direct/Resultant Flows

Direct Flows Data

Time Segment	Arm	Direct Demand Entry Flow (Veh/hr)	DirectDemandEntryFlowInPCU (PCU/hr)	Direct Demand Exit Flow (Veh/hr)	Direct Demand Pedestrian Flow (Ped/hr)
1	A	829.64	893.32	N/A	N/A
1	B	647.45	660.62	N/A	N/A
1	C	664.02	729.67	N/A	N/A
1	D	123.47	123.47	N/A	N/A
2	A	990.68	1066.71	N/A	N/A
2	B	773.12	788.85	N/A	N/A
2	C	792.90	871.30	N/A	N/A
2	D	147.43	147.43	N/A	N/A
3	A	1213.32	1306.44	N/A	N/A
3	B	946.88	966.14	N/A	N/A

3	C	971.10	1067.12	N/A	N/A
3	D	180.57	180.57	N/A	N/A
4	A	1213.32	1306.44	N/A	N/A
4	B	946.88	966.14	N/A	N/A
4	C	971.10	1067.12	N/A	N/A
4	D	180.57	180.57	N/A	N/A
5	A	990.68	1066.71	N/A	N/A
5	B	773.12	788.85	N/A	N/A
5	C	792.90	871.30	N/A	N/A
5	D	147.43	147.43	N/A	N/A
6	A	829.64	893.32	N/A	N/A
6	B	647.45	660.62	N/A	N/A
6	C	664.02	729.67	N/A	N/A
6	D	123.47	123.47	N/A	N/A

Turning Proportions

Turning Counts or Proportions (Veh/hr) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	255.000	752.000	95.000
	B	308.000	0.000	540.000	12.000
	C	470.000	406.000	0.000	6.000
	D	138.000	17.000	9.000	0.000

Turning Proportions (Veh) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.00	0.23	0.68	0.09
	B	0.36	0.00	0.63	0.01
	C	0.53	0.46	0.00	0.01
	D	0.84	0.10	0.05	0.00

Vehicle Mix

Average PCU Per Vehicle - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	1.000	1.081	1.085	1.000
	B	1.034	1.000	1.013	1.000
	C	1.132	1.062	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	8.100	8.500	0.000
	B	3.400	0.000	1.300	0.000
	C	13.200	6.200	0.000	0.000
	D	0.000	0.000	0.000	0.000

Results

Results Summary

Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max LOS	Total Demand (Veh/hr)	Total Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (min)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Queueing Total Delay (Veh-min)	Inclusive Queueing Average Delay (min)	Slope	Intercept (PCU/hr)
A	0.68	0.11	2.11	A	1011.21	1516.82	119.78	0.08	1.33	119.79	0.08	0.743	2291.771
B	0.79	0.24	3.64	B	789.15	1183.73	169.65	0.14	1.88	169.66	0.14	0.667	1897.860
C	0.55	0.08	1.22	A	809.34	1214.01	75.77	0.06	0.84	75.78	0.06	0.740	2282.081
D	0.17	0.07	0.20	A	150.49	225.73	12.99	0.06	0.14	12.99	0.06	0.703	2058.499

Overview: Standard Roundabout Geometry

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only	Final Slope	Final Intercept (PCU/hr)
A	7.30	7.50	1.00	20.00	46.50	24.50		0.743	2291.771
B	4.50	7.00	15.00	19.00	46.50	23.00		0.667	1897.860
C	7.30	7.50	1.00	19.00	46.50	25.00		0.740	2282.081
D	5.00	7.30	15.00	40.00	46.50	26.00		0.703	2058.499

Overview: Time Segment Results

Time Segment Results

Time Segment	Arm	Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Pedestrian Demand (Ped/hr)	Start Queue (Veh)	End Queue (Veh)	Queueing Total Delay (Veh-min)	Geometric Total Delay (Veh-min)	Average Delay Per Arriving Vehicle (min)
1	A	829.64	1891.77	0.439	0.00	0.00	0.78	11.34	(0.02)	0.056
1	B	647.45	1408.80	0.460	0.00	0.00	0.84	12.21	(0.02)	0.078
1	C	664.02	1862.18	0.357	0.00	0.00	0.55	8.09	(0.02)	0.050
1	D	123.47	1382.48	0.089	0.00	0.00	0.10	1.44	(0.02)	0.048
2	A	990.67	1845.20	0.537	0.00	0.78	1.15	16.78	(0.02)	0.070
2	B	773.12	1320.00	0.586	0.00	0.84	1.39	20.03	(0.02)	0.109
2	C	792.90	1819.93	0.436	0.00	0.55	0.77	11.28	(0.02)	0.058
2	D	147.43	1249.43	0.118	0.00	0.10	0.13	1.97	(0.02)	0.054
3	A	1213.32	1781.81	0.681	0.00	1.15	2.09	29.88	(0.02)	0.104
3	B	946.88	1199.69	0.789	0.00	1.39	3.50	47.27	(0.02)	0.223
3	C	971.10	1763.82	0.551	0.00	0.77	1.21	17.65	(0.02)	0.075
3	D	180.57	1069.65	0.169	0.00	0.13	0.20	2.98	(0.02)	0.067
4	A	1213.32	1781.19	0.681	0.00	2.09	2.11	31.56	(0.02)	0.106
4	B	946.88	1197.70	0.791	0.00	3.50	3.64	53.74	(0.02)	0.237
4	C	971.10	1761.56	0.551	0.00	1.21	1.22	18.26	(0.02)	0.076
4	D	180.57	1066.25	0.169	0.00	0.20	0.20	3.04	(0.02)	0.068
5	A	990.67	1844.27	0.537	0.00	2.11	1.17	18.15	(0.02)	0.071
5	B	773.12	1317.15	0.587	0.00	3.64	1.45	23.07	(0.02)	0.114
5	C	792.90	1816.80	0.436	0.00	1.22	0.78	11.97	(0.02)	0.059
5	D	147.43	1244.56	0.118	0.00	0.20	0.13	2.06	(0.02)	0.055
6	A	829.64	1890.67	0.439	0.00	1.17	0.79	12.07	(0.02)	0.057
6	B	647.45	1406.27	0.460	0.00	1.45	0.86	13.32	(0.02)	0.080
6	C	664.02	1860.44	0.357	0.00	0.78	0.56	8.51	(0.02)	0.050
6	D	123.47	1378.62	0.090	0.00	0.13	0.10	1.50	(0.02)	0.048

ARCADY 7

File: X:\Projects\110000\110116A - City Airport ESD\Modelling\ARCADY\Connaught Bridge Road Roundabout.arc7
Report generation date: 24/06/2013 11:44:07

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	17/01/2012
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	VECTOS\Robert.Roughan
Description	

Analysis Options

RFC Threshold	Vehicle Length (m)	Do Queue Variations
0.85	5.75	

Sorting and Display

Show Arm Names	Arm Grouping	Sorting Direction	Sorting Type	Data Matrix Style	Time Style
	Order	Ascending	Numerical	By Destination	Absolute Time

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	Veh	Veh	perHour	min	-Min	perMin

A1 - (Default Analysis Set) - D4 - 2021 Without Development, PM Peak

Development, PM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Include In Report	Use Specific Demand Set	Demand Set	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)		Yes		(D1)		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Locked	Run Automatically	Use Relationship	Relationship	Start Time (HH:mm)	Finish Time (HH:mm)	Time Period Length (min)	Time Segment Length (min)	Traffic Profile Type
2021 Without Development, PM Peak	2021 Without Development	PM Peak			Yes			16:45	18:15	90	15	ONE HOUR

Roundabout Network

Roundabout Type(s)

ID	Name	Arm Order	Roundabout Type	Grade Separated	Large Roundabout	Do Geometric Delay
1	Connaught Bridge Road/Connaught Road	A,B,C,D	Standard			

Roundabout Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	((Mini-roundabouts only))	

Arms

Arms

ID	Name	Description
A	Connaught Bridge Road (N)	
B	Connaught Road (E)	
C	Connaught Bridge Road (South)	
D	Silvertown Quays	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.30	7.50	1.00	20.00	46.50	24.50	
B	4.50	7.00	15.00	19.00	46.50	23.00	
C	7.30	7.50	1.00	19.00	46.50	25.00	
D	5.00	7.30	15.00	40.00	46.50	26.00	

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Arm Slope/ Intercept and Capacity

Slope and Intercept used in model

Arm	Enter Directly	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		((calculated))	((calculated))	0.743	2291.771
B		((calculated))	((calculated))	0.667	1897.860
C		((calculated))	((calculated))	0.740	2282.081
D		((calculated))	((calculated))	0.703	2058.499

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
		Yes	Yes	HV Percentages	2.00				Yes	Yes

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)	PHF
A	ONE HOUR	Yes	829.00	100.000	N/A
B	ONE HOUR	Yes	530.00	100.000	N/A
C	ONE HOUR	Yes	1449.00	100.000	N/A
D	ONE HOUR	Yes	159.00	100.000	N/A

Direct/Resultant Flows

Direct Flows Data

Time Segment	Arm	Direct Demand Entry Flow (Veh/hr)	DirectDemandEntryFlowInPCU (PCU/hr)	Direct Demand Exit Flow (Veh/hr)	Direct Demand Pedestrian Flow (Ped/hr)
1	A	624.11	646.42	N/A	N/A
1	B	399.01	409.43	N/A	N/A
1	C	1090.88	1148.36	N/A	N/A
1	D	119.70	119.70	N/A	N/A
2	A	745.25	771.88	N/A	N/A
2	B	476.46	488.90	N/A	N/A
2	C	1302.62	1371.25	N/A	N/A
2	D	142.94	142.94	N/A	N/A
3	A	912.75	945.36	N/A	N/A
3	B	583.54	598.78	N/A	N/A

3	C	1595.38	1679.44	N/A	N/A
3	D	175.06	175.06	N/A	N/A
4	A	912.75	945.36	N/A	N/A
4	B	583.54	598.78	N/A	N/A
4	C	1595.38	1679.44	N/A	N/A
4	D	175.06	175.06	N/A	N/A
5	A	745.25	771.88	N/A	N/A
5	B	476.46	488.90	N/A	N/A
5	C	1302.62	1371.25	N/A	N/A
5	D	142.94	142.94	N/A	N/A
6	A	624.11	646.42	N/A	N/A
6	B	399.01	409.43	N/A	N/A
6	C	1090.88	1148.36	N/A	N/A
6	D	119.70	119.70	N/A	N/A

Turning Proportions

Turning Counts or Proportions (Veh/hr) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	214.000	430.000	185.000
	B	151.000	0.000	356.000	23.000
	C	888.000	550.000	0.000	11.000
	D	134.000	8.000	17.000	0.000

Turning Proportions (Veh) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.00	0.26	0.52	0.22
	B	0.28	0.00	0.67	0.04
	C	0.61	0.38	0.00	0.01
	D	0.84	0.05	0.11	0.00

Vehicle Mix

Average PCU Per Vehicle - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	1.000	1.048	1.045	1.000
	B	1.061	1.000	1.013	1.000
	C	1.042	1.071	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	4.800	4.500	0.000
	B	6.100	0.000	1.300	0.000
	C	4.200	7.100	0.000	0.000
	D	0.000	0.000	0.000	0.000

Results

Results Summary

Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max LOS	Total Demand (Veh/hr)	Total Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (min)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Queueing Total Delay (Veh-min)	Inclusive Queueing Average Delay (min)	Slope	Intercept (PCU/hr)
A	0.53	0.07	1.11	A	760.71	1141.06	68.55	0.06	0.76	68.55	0.06	0.743	2291.771
B	0.42	0.08	0.73	A	486.34	729.51	46.45	0.06	0.52	46.45	0.06	0.667	1897.860
C	0.85	0.21	5.31	B	1329.63	1994.44	246.65	0.12	2.74	246.68	0.12	0.740	2282.081
D	0.23	0.10	0.30	A	145.90	218.85	17.12	0.08	0.19	17.12	0.08	0.703	2058.499

Overview: Standard Roundabout Geometry

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only	Final Slope	Final Intercept (PCU/hr)
A	7.30	7.50	1.00	20.00	46.50	24.50		0.743	2291.771
B	4.50	7.00	15.00	19.00	46.50	23.00		0.667	1897.860
C	7.30	7.50	1.00	19.00	46.50	25.00		0.740	2282.081
D	5.00	7.30	15.00	40.00	46.50	26.00		0.703	2058.499

Overview: Time Segment Results

Time Segment Results

Time Segment	Arm	Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Pedestrian Demand (Ped/hr)	Start Queue (Veh)	End Queue (Veh)	Queueing Total Delay (Veh-min)	Geometric Total Delay (Veh-min)	Average Delay Per Arriving Vehicle (min)
1	A	624.12	1882.65	0.332	0.00	0.00	0.49	7.26	(0.02)	0.048
1	B	399.01	1531.69	0.261	0.00	0.00	0.35	5.15	(0.02)	0.053
1	C	1090.88	1973.73	0.553	0.00	0.00	1.22	17.72	(0.02)	0.067
1	D	119.70	1175.80	0.102	0.00	0.00	0.11	1.66	(0.02)	0.057
2	A	745.26	1817.78	0.410	0.00	0.49	0.69	10.17	(0.02)	0.056
2	B	476.46	1469.19	0.324	0.00	0.35	0.48	7.04	(0.02)	0.060
2	C	1302.62	1935.52	0.673	0.00	1.22	2.02	29.06	(0.02)	0.094
2	D	142.94	1002.27	0.143	0.00	0.11	0.17	2.44	(0.02)	0.070
3	A	912.75	1731.51	0.527	0.00	0.69	1.10	16.10	(0.02)	0.073
3	B	583.54	1384.06	0.422	0.00	0.48	0.72	10.59	(0.02)	0.075
3	C	1595.38	1883.50	0.847	0.00	2.02	5.11	68.37	(0.02)	0.192
3	D	175.06	771.18	0.227	0.00	0.17	0.29	4.26	(0.02)	0.100
4	A	912.75	1728.08	0.528	0.00	1.10	1.11	16.64	(0.02)	0.074
4	B	583.54	1383.22	0.422	0.00	0.72	0.73	10.88	(0.02)	0.075
4	C	1595.38	1883.01	0.847	0.00	5.11	5.31	78.51	(0.02)	0.207
4	D	175.06	762.47	0.230	0.00	0.29	0.30	4.42	(0.02)	0.102
5	A	745.26	1813.02	0.411	0.00	1.11	0.70	10.77	(0.02)	0.056
5	B	476.46	1467.93	0.325	0.00	0.73	0.48	7.40	(0.02)	0.061
5	C	1302.62	1934.78	0.673	0.00	5.31	2.10	33.66	(0.02)	0.099
5	D	142.94	990.16	0.144	0.00	0.30	0.17	2.60	(0.02)	0.071
6	A	624.12	1880.16	0.332	0.00	0.70	0.50	7.61	(0.02)	0.048
6	B	399.01	1530.26	0.261	0.00	0.48	0.35	5.40	(0.02)	0.053
6	C	1090.88	1972.83	0.553	0.00	2.10	1.25	19.33	(0.02)	0.069
6	D	119.70	1169.29	0.102	0.00	0.17	0.11	1.75	(0.02)	0.057

ARCADY 7

File: X:\Projects\110000\110116A - City Airport ESD\Modelling\ARCADY\Connaught Bridge Road Roundabout.arc7
Report generation date: 24/06/2013 11:44:55

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	17/01/2012
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	VECTOS\Robert.Roughan
Description	

Analysis Options

RFC Threshold	Vehicle Length (m)	Do Queue Variations
0.85	5.75	

Sorting and Display

Show Arm Names	Arm Grouping	Sorting Direction	Sorting Type	Data Matrix Style	Time Style
	Order	Ascending	Numerical	By Destination	Absolute Time

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	Veh	Veh	perHour	min	-Min	perMin

A1 - (Default Analysis Set) - D5 - 2021 With Development, AM Peak

Development, AM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Include In Report	Use Specific Demand Set	Demand Set	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)		Yes		(D1)		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Locked	Run Automatically	Use Relationship	Relationship	Start Time (HH:mm)	Finish Time (HH:mm)	Time Period Length (min)	Time Segment Length (min)	Traffic Profile Type
2021 With Development, AM Peak	2021 With Development	AM Peak						07:45	09:15	90	15	ONE HOUR

Roundabout Network

Roundabout Type(s)

ID	Name	Arm Order	Roundabout Type	Grade Separated	Large Roundabout	Do Geometric Delay
1	Connaught Bridge Road/Connaught Road	A,B,C,D	Standard			

Roundabout Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	((Mini-roundabouts only))	

Arms

Arms

ID	Name	Description
A	Connaught Bridge Road (N)	
B	Connaught Road (E)	
C	Connaught Bridge Road (South)	
D	Silvertown Quays	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.30	7.50	1.00	20.00	46.50	24.50	
B	4.50	7.00	15.00	19.00	46.50	23.00	
C	7.30	7.50	1.00	19.00	46.50	25.00	
D	5.00	7.30	15.00	40.00	46.50	26.00	

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Arm Slope/ Intercept and Capacity

Slope and Intercept used in model

Arm	Enter Directly	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		((calculated))	((calculated))	0.743	2291.771
B		((calculated))	((calculated))	0.667	1897.860
C		((calculated))	((calculated))	0.740	2282.081
D		((calculated))	((calculated))	0.703	2058.499

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
		Yes	Yes	HV Percentages	2.00				Yes	Yes

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)	PHF
A	ONE HOUR	Yes	995.00	100.000	N/A
B	ONE HOUR	Yes	810.00	100.000	N/A
C	ONE HOUR	Yes	948.00	100.000	N/A
D	ONE HOUR	Yes	164.00	100.000	N/A

Direct/Resultant Flows

Direct Flows Data

Time Segment	Arm	Direct Demand Entry Flow (Veh/hr)	DirectDemandEntryFlowInPCU (PCU/hr)	Direct Demand Exit Flow (Veh/hr)	Direct Demand Pedestrian Flow (Ped/hr)
1	A	749.09	812.81	N/A	N/A
1	B	609.81	622.95	N/A	N/A
1	C	713.70	779.24	N/A	N/A
1	D	123.47	123.47	N/A	N/A
2	A	894.48	970.57	N/A	N/A
2	B	728.17	743.86	N/A	N/A
2	C	852.23	930.49	N/A	N/A
2	D	147.43	147.43	N/A	N/A
3	A	1095.52	1188.71	N/A	N/A
3	B	891.83	911.04	N/A	N/A

3	C	1043.77	1139.62	N/A	N/A
3	D	180.57	180.57	N/A	N/A
4	A	1095.52	1188.71	N/A	N/A
4	B	891.83	911.04	N/A	N/A
4	C	1043.77	1139.62	N/A	N/A
4	D	180.57	180.57	N/A	N/A
5	A	894.48	970.57	N/A	N/A
5	B	728.17	743.86	N/A	N/A
5	C	852.23	930.49	N/A	N/A
5	D	147.43	147.43	N/A	N/A
6	A	749.09	812.81	N/A	N/A
6	B	609.81	622.95	N/A	N/A
6	C	713.70	779.24	N/A	N/A
6	D	123.47	123.47	N/A	N/A

Turning Proportions

Turning Counts or Proportions (Veh/hr) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	148.000	752.000	95.000
	B	147.000	0.000	651.000	12.000
	C	470.000	472.000	0.000	6.000
	D	138.000	17.000	9.000	0.000

Turning Proportions (Veh) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.00	0.15	0.76	0.10
	B	0.18	0.00	0.80	0.01
	C	0.50	0.50	0.00	0.01
	D	0.84	0.10	0.05	0.00

Vehicle Mix

Average PCU Per Vehicle - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	1.000	1.140	1.085	1.000
	B	1.070	1.000	1.011	1.000
	C	1.132	1.053	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	14.000	8.500	0.000
	B	7.000	0.000	1.100	0.000
	C	13.200	5.300	0.000	0.000
	D	0.000	0.000	0.000	0.000

Results

Results Summary

Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max LOS	Total Demand (Veh/hr)	Total Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (min)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Queueing Total Delay (Veh-min)	Inclusive Queueing Average Delay (min)	Slope	Intercept (PCU/hr)
A	0.64	0.10	1.74	A	913.03	1369.54	101.53	0.07	1.13	101.54	0.07	0.743	2291.771
B	0.75	0.20	2.85	B	743.27	1114.91	141.06	0.13	1.57	141.07	0.13	0.667	1897.860
C	0.55	0.07	1.22	A	869.90	1304.85	77.03	0.06	0.86	77.04	0.06	0.740	2282.081
D	0.16	0.06	0.19	A	150.49	225.73	12.21	0.05	0.14	12.21	0.05	0.703	2058.499

Overview: Standard Roundabout Geometry

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only	Final Slope	Final Intercept (PCU/hr)
A	7.30	7.50	1.00	20.00	46.50	24.50		0.743	2291.771
B	4.50	7.00	15.00	19.00	46.50	23.00		0.667	1897.860
C	7.30	7.50	1.00	19.00	46.50	25.00		0.740	2282.081
D	5.00	7.30	15.00	40.00	46.50	26.00		0.703	2058.499

Overview: Time Segment Results

Time Segment Results

Time Segment	Arm	Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Pedestrian Demand (Ped/hr)	Start Queue (Veh)	End Queue (Veh)	Queueing Total Delay (Veh-min)	Geometric Total Delay (Veh-min)	Average Delay Per Arriving Vehicle (min)
1	A	749.08	1843.41	0.406	0.00	0.00	0.68	9.96	(0.02)	0.055
1	B	609.81	1407.09	0.433	0.00	0.00	0.76	11.01	(0.02)	0.075
1	C	713.70	1955.96	0.365	0.00	0.00	0.57	8.39	(0.02)	0.048
1	D	123.47	1432.55	0.086	0.00	0.00	0.09	1.39	(0.02)	0.046
2	A	894.48	1790.55	0.500	0.00	0.68	0.99	14.50	(0.02)	0.067
2	B	728.18	1318.39	0.552	0.00	0.76	1.22	17.60	(0.02)	0.101
2	C	852.23	1929.53	0.442	0.00	0.57	0.79	11.57	(0.02)	0.056
2	D	147.43	1309.38	0.113	0.00	0.09	0.13	1.87	(0.02)	0.052
3	A	1095.51	1718.54	0.637	0.00	0.99	1.73	24.89	(0.02)	0.095
3	B	891.83	1198.01	0.744	0.00	1.22	2.78	38.31	(0.02)	0.188
3	C	1043.77	1894.09	0.551	0.00	0.79	1.22	17.73	(0.02)	0.070
3	D	180.57	1142.07	0.158	0.00	0.13	0.19	2.76	(0.02)	0.062
4	A	1095.51	1717.90	0.638	0.00	1.73	1.74	26.08	(0.02)	0.096
4	B	891.83	1196.28	0.746	0.00	2.78	2.85	42.37	(0.02)	0.196
4	C	1043.77	1893.06	0.551	0.00	1.22	1.22	18.29	(0.02)	0.071
4	D	180.57	1139.97	0.158	0.00	0.19	0.19	2.81	(0.02)	0.063
5	A	894.48	1789.59	0.500	0.00	1.74	1.01	15.57	(0.02)	0.067
5	B	728.18	1315.87	0.553	0.00	2.85	1.26	19.83	(0.02)	0.104
5	C	852.23	1928.09	0.442	0.00	1.22	0.80	12.23	(0.02)	0.056
5	D	147.43	1306.30	0.113	0.00	0.19	0.13	1.94	(0.02)	0.052
6	A	749.08	1842.22	0.407	0.00	1.01	0.69	10.55	(0.02)	0.055
6	B	609.81	1404.69	0.434	0.00	1.26	0.77	11.94	(0.02)	0.076
6	C	713.70	1955.00	0.365	0.00	0.80	0.58	8.81	(0.02)	0.048
6	D	123.47	1429.45	0.086	0.00	0.13	0.09	1.44	(0.02)	0.046

ARCADY 7

File: X:\Projects\110000\110116A - City Airport ESD\Modelling\ARCADY\Connaught Bridge Road Roundabout.arc7
Report generation date: 24/06/2013 11:46:23

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	17/01/2012
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	VECTOS\Robert.Roughan
Description	

Analysis Options

RFC Threshold	Vehicle Length (m)	Do Queue Variations
0.85	5.75	

Sorting and Display

Show Arm Names	Arm Grouping	Sorting Direction	Sorting Type	Data Matrix Style	Time Style
	Order	Ascending	Numerical	By Destination	Absolute Time

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	Veh	Veh	perHour	min	-Min	perMin

A1 - (Default Analysis Set) - D6 - 2021 With Development, PM Peak

Development, PM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Include In Report	Use Specific Demand Set	Demand Set	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)		Yes		(D1)		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Locked	Run Automatically	Use Relationship	Relationship	Start Time (HH:mm)	Finish Time (HH:mm)	Time Period Length (min)	Time Segment Length (min)	Traffic Profile Type
2021 With Development, PM Peak	2021 With Development	PM Peak			Yes			16:45	18:15	90	15	ONE HOUR

Roundabout Network

Roundabout Type(s)

ID	Name	Arm Order	Roundabout Type	Grade Separated	Large Roundabout	Do Geometric Delay
1	Connaught Bridge Road/Connaught Road	A,B,C,D	Standard			

Roundabout Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	((Mini-roundabouts only))	

Arms

Arms

ID	Name	Description
A	Connaught Bridge Road (N)	
B	Connaught Road (E)	
C	Connaught Bridge Road (South)	
D	Silvertown Quays	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.30	7.50	1.00	20.00	46.50	24.50	
B	4.50	7.00	15.00	19.00	46.50	23.00	
C	7.30	7.50	1.00	19.00	46.50	25.00	
D	5.00	7.30	15.00	40.00	46.50	26.00	

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Arm Slope/ Intercept and Capacity

Slope and Intercept used in model

Arm	Enter Directly	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		((calculated))	((calculated))	0.743	2291.771
B		((calculated))	((calculated))	0.667	1897.860
C		((calculated))	((calculated))	0.740	2282.081
D		((calculated))	((calculated))	0.703	2058.499

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
		Yes	Yes	HV Percentages	2.00				Yes	Yes

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)	PHF
A	ONE HOUR	Yes	509.00	100.000	N/A
B	ONE HOUR	Yes	449.00	100.000	N/A
C	ONE HOUR	Yes	1590.00	100.000	N/A
D	ONE HOUR	Yes	159.00	100.000	N/A

Direct/Resultant Flows

Direct Flows Data

Time Segment	Arm	Direct Demand Entry Flow (Veh/hr)	DirectDemandEntryFlowInPCU (PCU/hr)	Direct Demand Exit Flow (Veh/hr)	Direct Demand Pedestrian Flow (Ped/hr)
1	A	383.20	405.74	N/A	N/A
1	B	338.03	348.35	N/A	N/A
1	C	1197.04	1254.25	N/A	N/A
1	D	119.70	119.70	N/A	N/A
2	A	457.58	484.49	N/A	N/A
2	B	403.64	415.97	N/A	N/A
2	C	1429.38	1497.69	N/A	N/A
2	D	142.94	142.94	N/A	N/A
3	A	560.42	593.38	N/A	N/A
3	B	494.36	509.46	N/A	N/A

3	C	1750.62	1834.29	N/A	N/A
3	D	175.06	175.06	N/A	N/A
4	A	560.42	593.38	N/A	N/A
4	B	494.36	509.46	N/A	N/A
4	C	1750.62	1834.29	N/A	N/A
4	D	175.06	175.06	N/A	N/A
5	A	457.58	484.49	N/A	N/A
5	B	403.64	415.97	N/A	N/A
5	C	1429.38	1497.69	N/A	N/A
5	D	142.94	142.94	N/A	N/A
6	A	383.20	405.74	N/A	N/A
6	B	338.03	348.35	N/A	N/A
6	C	1197.04	1254.25	N/A	N/A
6	D	119.70	119.70	N/A	N/A

Turning Proportions

Turning Counts or Proportions (Veh/hr) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	79.000	430.000	0.000
	B	50.000	0.000	376.000	23.000
	C	888.000	691.000	0.000	11.000
	D	134.000	8.000	17.000	0.000

Turning Proportions (Veh) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.00	0.16	0.84	0.00
	B	0.11	0.00	0.84	0.05
	C	0.56	0.43	0.00	0.01
	D	0.84	0.05	0.11	0.00

Vehicle Mix

Average PCU Per Vehicle - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	1.000	1.134	1.045	1.000
	B	1.184	1.000	1.012	1.000
	C	1.042	1.056	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	13.400	4.500	0.000
	B	18.400	0.000	1.200	0.000
	C	4.200	5.600	0.000	0.000
	D	0.000	0.000	0.000	0.000

Results

Results Summary

Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max LOS	Total Demand (Veh/hr)	Total Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (min)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Queueing Total Delay (Veh-min)	Inclusive Queueing Average Delay (min)	Slope	Intercept (PCU/hr)
A	0.35	0.06	0.55	A	467.07	700.60	35.67	0.05	0.40	35.67	0.05	0.743	2291.771
B	0.33	0.06	0.49	A	412.01	618.01	32.73	0.05	0.36	32.74	0.05	0.667	1897.860
C	0.83	0.16	4.67	A	1459.02	2188.53	231.83	0.11	2.58	231.85	0.11	0.740	2282.081
D	0.24	0.11	0.31	A	145.90	218.85	17.82	0.08	0.20	17.82	0.08	0.703	2058.499

Overview: Standard Roundabout Geometry

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only	Final Slope	Final Intercept (PCU/hr)
A	7.30	7.50	1.00	20.00	46.50	24.50		0.743	2291.771
B	4.50	7.00	15.00	19.00	46.50	23.00		0.667	1897.860
C	7.30	7.50	1.00	19.00	46.50	25.00		0.740	2282.081
D	5.00	7.30	15.00	40.00	46.50	26.00		0.703	2058.499

Overview: Time Segment Results

Time Segment Results

Time Segment	Arm	Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Pedestrian Demand (Ped/hr)	Start Queue (Veh)	End Queue (Veh)	Queueing Total Delay (Veh-min)	Geometric Total Delay (Veh-min)	Average Delay Per Arriving Vehicle (min)
1	A	383.20	1767.56	0.217	0.00	0.00	0.28	4.07	(0.02)	0.043
1	B	338.03	1614.95	0.209	0.00	0.00	0.26	3.89	(0.02)	0.047
1	C	1197.04	2134.45	0.561	0.00	0.00	1.26	18.34	(0.02)	0.063
1	D	119.70	1154.72	0.104	0.00	0.00	0.12	1.69	(0.02)	0.058
2	A	457.58	1689.51	0.271	0.00	0.28	0.37	5.47	(0.02)	0.049
2	B	403.64	1570.39	0.257	0.00	0.26	0.34	5.09	(0.02)	0.051
2	C	1429.38	2125.87	0.672	0.00	1.26	2.02	29.12	(0.02)	0.085
2	D	142.94	976.99	0.146	0.00	0.12	0.17	2.51	(0.02)	0.072
3	A	560.42	1584.86	0.354	0.00	0.37	0.54	8.01	(0.02)	0.059
3	B	494.36	1509.58	0.327	0.00	0.34	0.48	7.14	(0.02)	0.059
3	C	1750.63	2114.18	0.828	0.00	2.02	4.54	62.08	(0.02)	0.156
3	D	175.06	738.64	0.237	0.00	0.17	0.31	4.49	(0.02)	0.106
4	A	560.42	1581.72	0.354	0.00	0.54	0.55	8.19	(0.02)	0.059
4	B	494.36	1509.16	0.328	0.00	0.48	0.49	7.28	(0.02)	0.059
4	C	1750.63	2114.11	0.828	0.00	4.54	4.67	69.32	(0.02)	0.164
4	D	175.06	731.57	0.239	0.00	0.31	0.31	4.67	(0.02)	0.108
5	A	457.58	1685.13	0.272	0.00	0.55	0.37	5.71	(0.02)	0.049
5	B	403.64	1569.73	0.257	0.00	0.49	0.35	5.30	(0.02)	0.051
5	C	1429.38	2125.76	0.672	0.00	4.67	2.09	33.05	(0.02)	0.089
5	D	142.94	967.14	0.148	0.00	0.31	0.17	2.67	(0.02)	0.073
6	A	383.20	1764.83	0.217	0.00	0.37	0.28	4.23	(0.02)	0.043
6	B	338.03	1614.05	0.209	0.00	0.35	0.27	4.04	(0.02)	0.047
6	C	1197.04	2134.27	0.561	0.00	2.09	1.29	19.92	(0.02)	0.064
6	D	119.70	1148.55	0.104	0.00	0.17	0.12	1.78	(0.02)	0.058

ARCADY 7

File: X:\Projects\110000\110116A - City Airport ESD\Modelling\ARCADY\Connaught Bridge Road Roundabout.arc7
Report generation date: 24/06/2013 11:46:51

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	17/01/2012
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	VECTOS\Robert.Roughan
Description	

Analysis Options

RFC Threshold	Vehicle Length (m)	Do Queue Variations
0.85	5.75	

Sorting and Display

Show Arm Names	Arm Grouping	Sorting Direction	Sorting Type	Data Matrix Style	Time Style
	Order	Ascending	Numerical	By Destination	Absolute Time

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	Veh	Veh	perHour	min	-Min	perMin

A1 - (Default Analysis Set) - D7 - 2023 Without Development, AM Peak

Development, AM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Include In Report	Use Specific Demand Set	Demand Set	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)		Yes		(D1)		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Locked	Run Automatically	Use Relationship	Relationship	Start Time (HH:mm)	Finish Time (HH:mm)	Time Period Length (min)	Time Segment Length (min)	Traffic Profile Type
2023 Without Development, AM Peak	2023 Without Development	AM Peak						07:45	09:15	90	15	ONE HOUR

Roundabout Network

Roundabout Type(s)

ID	Name	Arm Order	Roundabout Type	Grade Separated	Large Roundabout	Do Geometric Delay
1	Connaught Bridge Road/Connaught Road	A,B,C,D	Standard			

Roundabout Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	((Mini-roundabouts only))	

Arms

Arms

ID	Name	Description
A	Connaught Bridge Road (N)	
B	Connaught Road (E)	
C	Connaught Bridge Road (South)	
D	Silvertown Quays	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.30	7.50	1.00	20.00	46.50	24.50	
B	4.50	7.00	15.00	19.00	46.50	23.00	
C	7.30	7.50	1.00	19.00	46.50	25.00	
D	5.00	7.30	15.00	40.00	46.50	26.00	

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Arm Slope/ Intercept and Capacity

Slope and Intercept used in model

Arm	Enter Directly	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		((calculated))	((calculated))	0.743	2291.771
B		((calculated))	((calculated))	0.667	1897.860
C		((calculated))	((calculated))	0.740	2282.081
D		((calculated))	((calculated))	0.703	2058.499

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
		Yes	Yes	HV Percentages	2.00				Yes	Yes

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)	PHF
A	ONE HOUR	Yes	1127.00	100.000	N/A
B	ONE HOUR	Yes	865.00	100.000	N/A
C	ONE HOUR	Yes	902.00	100.000	N/A
D	ONE HOUR	Yes	164.00	100.000	N/A

Direct/Resultant Flows

Direct Flows Data

Time Segment	Arm	Direct Demand Entry Flow (Veh/hr)	DirectDemandEntryFlowInPCU (PCU/hr)	Direct Demand Exit Flow (Veh/hr)	Direct Demand Pedestrian Flow (Ped/hr)
1	A	848.46	914.70	N/A	N/A
1	B	651.22	664.65	N/A	N/A
1	C	679.07	747.39	N/A	N/A
1	D	123.47	123.47	N/A	N/A
2	A	1013.15	1092.24	N/A	N/A
2	B	777.62	793.66	N/A	N/A
2	C	810.88	892.45	N/A	N/A
2	D	147.43	147.43	N/A	N/A
3	A	1240.85	1337.72	N/A	N/A
3	B	952.38	972.03	N/A	N/A

3	C	993.12	1093.03	N/A	N/A
3	D	180.57	180.57	N/A	N/A
4	A	1240.85	1337.72	N/A	N/A
4	B	952.38	972.03	N/A	N/A
4	C	993.12	1093.03	N/A	N/A
4	D	180.57	180.57	N/A	N/A
5	A	1013.15	1092.24	N/A	N/A
5	B	777.62	793.66	N/A	N/A
5	C	810.88	892.45	N/A	N/A
5	D	147.43	147.43	N/A	N/A
6	A	848.46	914.70	N/A	N/A
6	B	651.22	664.65	N/A	N/A
6	C	679.07	747.39	N/A	N/A
6	D	123.47	123.47	N/A	N/A

Turning Proportions

Turning Counts or Proportions (Veh/hr) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	257.000	775.000	95.000
	B	307.000	0.000	546.000	12.000
	C	484.000	412.000	0.000	6.000
	D	138.000	17.000	9.000	0.000

Turning Proportions (Veh) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.00	0.23	0.69	0.08
	B	0.35	0.00	0.63	0.01
	C	0.54	0.46	0.00	0.01
	D	0.84	0.10	0.05	0.00

Vehicle Mix

Average PCU Per Vehicle - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	1.000	1.083	1.086	1.000
	B	1.035	1.000	1.013	1.000
	C	1.133	1.064	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	8.300	8.600	0.000
	B	3.500	0.000	1.300	0.000
	C	13.300	6.400	0.000	0.000
	D	0.000	0.000	0.000	0.000

Results

Results Summary

Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max LOS	Total Demand (Veh/hr)	Total Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (min)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Queueing Total Delay (Veh-min)	Inclusive Queueing Average Delay (min)	Slope	Intercept (PCU/hr)
A	0.70	0.11	2.30	A	1034.15	1551.23	128.19	0.08	1.42	128.21	0.08	0.743	2291.771
B	0.81	0.26	4.02	C	793.74	1190.61	182.01	0.15	2.02	182.03	0.15	0.667	1897.860
C	0.56	0.08	1.29	A	827.69	1241.53	79.33	0.06	0.88	79.34	0.06	0.740	2282.081
D	0.17	0.07	0.21	A	150.49	225.73	13.19	0.06	0.15	13.19	0.06	0.703	2058.499

Overview: Standard Roundabout Geometry

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only	Final Slope	Final Intercept (PCU/hr)
A	7.30	7.50	1.00	20.00	46.50	24.50		0.743	2291.771
B	4.50	7.00	15.00	19.00	46.50	23.00		0.667	1897.860
C	7.30	7.50	1.00	19.00	46.50	25.00		0.740	2282.081
D	5.00	7.30	15.00	40.00	46.50	26.00		0.703	2058.499

Overview: Time Segment Results

Time Segment Results

Time Segment	Arm	Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Pedestrian Demand (Ped/hr)	Start Queue (Veh)	End Queue (Veh)	Queueing Total Delay (Veh-min)	Geometric Total Delay (Veh-min)	Average Delay Per Arriving Vehicle (min)
1	A	848.46	1885.74	0.450	0.00	0.00	0.81	11.86	(0.02)	0.058
1	B	651.22	1395.82	0.467	0.00	0.00	0.87	12.54	(0.02)	0.080
1	C	679.07	1859.66	0.365	0.00	0.00	0.57	8.40	(0.02)	0.051
1	D	123.47	1370.49	0.090	0.00	0.00	0.10	1.46	(0.02)	0.048
2	A	1013.15	1838.50	0.551	0.00	0.81	1.21	17.73	(0.02)	0.072
2	B	777.62	1304.58	0.596	0.00	0.87	1.45	20.85	(0.02)	0.113
2	C	810.88	1817.57	0.446	0.00	0.57	0.80	11.76	(0.02)	0.059
2	D	147.43	1235.09	0.119	0.00	0.10	0.13	2.00	(0.02)	0.055
3	A	1240.85	1774.21	0.699	0.00	1.21	2.27	32.34	(0.02)	0.111
3	B	952.38	1181.09	0.806	0.00	1.45	3.85	51.33	(0.02)	0.243
3	C	993.12	1761.90	0.564	0.00	0.80	1.28	18.58	(0.02)	0.078
3	D	180.57	1052.38	0.172	0.00	0.13	0.21	3.04	(0.02)	0.069
4	A	1240.85	1773.55	0.700	0.00	2.27	2.30	34.34	(0.02)	0.113
4	B	952.38	1178.85	0.808	0.00	3.85	4.02	59.27	(0.02)	0.262
4	C	993.12	1759.39	0.564	0.00	1.28	1.29	19.25	(0.02)	0.078
4	D	180.57	1048.64	0.172	0.00	0.21	0.21	3.10	(0.02)	0.069
5	A	1013.15	1837.52	0.551	0.00	2.30	1.24	19.27	(0.02)	0.074
5	B	777.62	1301.39	0.598	0.00	4.02	1.51	24.30	(0.02)	0.119
5	C	810.88	1814.07	0.447	0.00	1.29	0.81	12.50	(0.02)	0.060
5	D	147.43	1229.73	0.120	0.00	0.21	0.14	2.08	(0.02)	0.055
6	A	848.46	1884.60	0.450	0.00	1.24	0.82	12.65	(0.02)	0.058
6	B	651.22	1393.13	0.467	0.00	1.51	0.89	13.72	(0.02)	0.081
6	C	679.07	1857.85	0.366	0.00	0.81	0.58	8.84	(0.02)	0.051
6	D	123.47	1366.47	0.090	0.00	0.14	0.10	1.51	(0.02)	0.048

ARCADY 7

File: X:\Projects\110000\110116A - City Airport ESD\Modelling\ARCADY\Connaught Bridge Road Roundabout.arc7
Report generation date: 24/06/2013 11:47:35

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	17/01/2012
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	VECTOS\Robert.Roughan
Description	

Analysis Options

RFC Threshold	Vehicle Length (m)	Do Queue Variations
0.85	5.75	

Sorting and Display

Show Arm Names	Arm Grouping	Sorting Direction	Sorting Type	Data Matrix Style	Time Style
	Order	Ascending	Numerical	By Destination	Absolute Time

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	Veh	Veh	perHour	min	-Min	perMin

A1 - (Default Analysis Set) - D8 - 2023 Without Development, PM Peak

Development, PM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Include In Report	Use Specific Demand Set	Demand Set	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)		Yes		(D1)		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Locked	Run Automatically	Use Relationship	Relationship	Start Time (HH:mm)	Finish Time (HH:mm)	Time Period Length (min)	Time Segment Length (min)	Traffic Profile Type
2023 Without Development, PM Peak	2023 Without Development	PM Peak			Yes			16:45	18:15	90	15	ONE HOUR

Roundabout Network

Roundabout Type(s)

ID	Name	Arm Order	Roundabout Type	Grade Separated	Large Roundabout	Do Geometric Delay
1	Connaught Bridge Road/Connaught Road	A,B,C,D	Standard			

Roundabout Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	((Mini-roundabouts only))	

Arms

Arms

ID	Name	Description
A	Connaught Bridge Road (N)	
B	Connaught Road (E)	
C	Connaught Bridge Road (South)	
D	Silvertown Quays	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.30	7.50	1.00	20.00	46.50	24.50	
B	4.50	7.00	15.00	19.00	46.50	23.00	
C	7.30	7.50	1.00	19.00	46.50	25.00	
D	5.00	7.30	15.00	40.00	46.50	26.00	

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Arm Slope/ Intercept and Capacity

Slope and Intercept used in model

Arm	Enter Directly	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		((calculated))	((calculated))	0.743	2291.771
B		((calculated))	((calculated))	0.667	1897.860
C		((calculated))	((calculated))	0.740	2282.081
D		((calculated))	((calculated))	0.703	2058.499

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
		Yes	Yes	HV Percentages	2.00				Yes	Yes

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)	PHF
A	ONE HOUR	Yes	843.00	100.000	N/A
B	ONE HOUR	Yes	534.00	100.000	N/A
C	ONE HOUR	Yes	1492.00	100.000	N/A
D	ONE HOUR	Yes	159.00	100.000	N/A

Direct/Resultant Flows

Direct Flows Data

Time Segment	Arm	Direct Demand Entry Flow (Veh/hr)	DirectDemandEntryFlowInPCU (PCU/hr)	Direct Demand Exit Flow (Veh/hr)	Direct Demand Pedestrian Flow (Ped/hr)
1	A	634.65	658.09	N/A	N/A
1	B	402.02	412.67	N/A	N/A
1	C	1123.26	1183.07	N/A	N/A
1	D	119.70	119.70	N/A	N/A
2	A	757.84	785.82	N/A	N/A
2	B	480.06	492.77	N/A	N/A
2	C	1341.28	1412.70	N/A	N/A
2	D	142.94	142.94	N/A	N/A
3	A	928.16	962.43	N/A	N/A
3	B	587.94	603.52	N/A	N/A

3	C	1642.72	1730.20	N/A	N/A
3	D	175.06	175.06	N/A	N/A
4	A	928.16	962.43	N/A	N/A
4	B	587.94	603.52	N/A	N/A
4	C	1642.72	1730.20	N/A	N/A
4	D	175.06	175.06	N/A	N/A
5	A	757.84	785.82	N/A	N/A
5	B	480.06	492.77	N/A	N/A
5	C	1341.28	1412.70	N/A	N/A
5	D	142.94	142.94	N/A	N/A
6	A	634.65	658.09	N/A	N/A
6	B	402.02	412.67	N/A	N/A
6	C	1123.26	1183.07	N/A	N/A
6	D	119.70	119.70	N/A	N/A

Turning Proportions

Turning Counts or Proportions (Veh/hr) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	215.000	443.000	185.000
	B	150.000	0.000	361.000	23.000
	C	918.000	563.000	0.000	11.000
	D	134.000	8.000	17.000	0.000

Turning Proportions (Veh) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.00	0.26	0.53	0.22
	B	0.28	0.00	0.68	0.04
	C	0.62	0.38	0.00	0.01
	D	0.84	0.05	0.11	0.00

Vehicle Mix

Average PCU Per Vehicle - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	1.000	1.050	1.046	1.000
	B	1.063	1.000	1.013	1.000
	C	1.043	1.071	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	5.000	4.600	0.000
	B	6.300	0.000	1.300	0.000
	C	4.300	7.100	0.000	0.000
	D	0.000	0.000	0.000	0.000

Results

Results Summary

Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max LOS	Total Demand (Veh/hr)	Total Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (min)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Queueing Total Delay (Veh-min)	Inclusive Queueing Average Delay (min)	Slope	Intercept (PCU/hr)
A	0.54	0.08	1.17	A	773.55	1160.32	71.57	0.06	0.80	71.58	0.06	0.743	2291.771
B	0.43	0.08	0.75	A	490.01	735.01	47.48	0.06	0.53	47.48	0.06	0.667	1897.860
C	0.87	0.25	6.45	B	1369.08	2053.63	283.81	0.14	3.15	283.84	0.14	0.740	2282.081
D	0.24	0.11	0.31	A	145.90	218.85	17.89	0.08	0.20	17.89	0.08	0.703	2058.499

Overview: Standard Roundabout Geometry

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only	Final Slope	Final Intercept (PCU/hr)
A	7.30	7.50	1.00	20.00	46.50	24.50		0.743	2291.771
B	4.50	7.00	15.00	19.00	46.50	23.00		0.667	1897.860
C	7.30	7.50	1.00	19.00	46.50	25.00		0.740	2282.081
D	5.00	7.30	15.00	40.00	46.50	26.00		0.703	2058.499

Overview: Time Segment Results

Time Segment Results

Time Segment	Arm	Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Pedestrian Demand (Ped/hr)	Start Queue (Veh)	End Queue (Veh)	Queueing Total Delay (Veh-min)	Geometric Total Delay (Veh-min)	Average Delay Per Arriving Vehicle (min)
1	A	634.65	1873.05	0.339	0.00	0.00	0.51	7.49	(0.02)	0.048
1	B	402.02	1524.30	0.264	0.00	0.00	0.36	5.24	(0.02)	0.053
1	C	1123.25	1973.09	0.569	0.00	0.00	1.31	18.91	(0.02)	0.070
1	D	119.70	1152.04	0.104	0.00	0.00	0.12	1.70	(0.02)	0.058
2	A	757.84	1806.83	0.419	0.00	0.51	0.72	10.57	(0.02)	0.057
2	B	480.05	1460.47	0.329	0.00	0.36	0.49	7.17	(0.02)	0.061
2	C	1341.28	1934.98	0.693	0.00	1.31	2.21	31.69	(0.02)	0.100
2	D	142.94	973.92	0.147	0.00	0.12	0.17	2.52	(0.02)	0.072
3	A	928.16	1719.46	0.540	0.00	0.72	1.16	16.91	(0.02)	0.075
3	B	587.94	1373.58	0.428	0.00	0.49	0.74	10.86	(0.02)	0.076
3	C	1642.72	1883.11	0.872	0.00	2.21	6.13	80.04	(0.02)	0.222
3	D	175.06	738.50	0.237	0.00	0.17	0.31	4.49	(0.02)	0.106
4	A	928.16	1715.24	0.541	0.00	1.16	1.17	17.51	(0.02)	0.076
4	B	587.94	1372.68	0.428	0.00	0.74	0.75	11.16	(0.02)	0.076
4	C	1642.72	1882.60	0.873	0.00	6.13	6.45	94.78	(0.02)	0.245
4	D	175.06	727.73	0.241	0.00	0.31	0.31	4.69	(0.02)	0.109
5	A	757.84	1800.90	0.421	0.00	1.17	0.73	11.22	(0.02)	0.058
5	B	480.05	1459.12	0.329	0.00	0.75	0.49	7.55	(0.02)	0.061
5	C	1341.28	1934.21	0.693	0.00	6.45	2.31	37.65	(0.02)	0.107
5	D	142.94	958.77	0.149	0.00	0.31	0.18	2.70	(0.02)	0.074
6	A	634.65	1870.33	0.339	0.00	0.73	0.52	7.87	(0.02)	0.049
6	B	402.02	1522.80	0.264	0.00	0.49	0.36	5.49	(0.02)	0.054
6	C	1123.25	1972.18	0.570	0.00	2.31	1.34	20.73	(0.02)	0.071
6	D	119.70	1144.92	0.105	0.00	0.18	0.12	1.79	(0.02)	0.059

ARCADY 7
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File: X:\Projects\110000\110116A - City Airport ESD\Modelling\ARCADY\Connaught Bridge Road Roundabout.arc7
Report generation date: 24/06/2013 11:48:02

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	17/01/2012
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	VECTOS\Robert.Roughan
Description	

Analysis Options

RFC Threshold	Vehicle Length (m)	Do Queue Variations
0.85	5.75	

Sorting and Display

Show Arm Names	Arm Grouping	Sorting Direction	Sorting Type	Data Matrix Style	Time Style
	Order	Ascending	Numerical	By Destination	Absolute Time

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	Veh	Veh	perHour	min	-Min	perMin

A1 - (Default Analysis Set) - D9 - 2023 With Development, AM Peak

Development, AM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Include In Report	Use Specific Demand Set	Demand Set	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)		Yes		(D1)		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Locked	Run Automatically	Use Relationship	Relationship	Start Time (HH:mm)	Finish Time (HH:mm)	Time Period Length (min)	Time Segment Length (min)	Traffic Profile Type
2023 With Development, AM Peak	2023 With Development	AM Peak						07:45	09:15	90	15	ONE HOUR

Roundabout Network

Roundabout Type(s)

ID	Name	Arm Order	Roundabout Type	Grade Separated	Large Roundabout	Do Geometric Delay
1	Connaught Bridge Road/Connaught Road	A,B,C,D	Standard			

Roundabout Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	((Mini-roundabouts only))	

Arms

Arms

ID	Name	Description
A	Connaught Bridge Road (N)	
B	Connaught Road (E)	
C	Connaught Bridge Road (South)	
D	Silvertown Quays	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.30	7.50	1.00	20.00	46.50	24.50	
B	4.50	7.00	15.00	19.00	46.50	23.00	
C	7.30	7.50	1.00	19.00	46.50	25.00	
D	5.00	7.30	15.00	40.00	46.50	26.00	

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Arm Slope/ Intercept and Capacity

Slope and Intercept used in model

Arm	Enter Directly	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		((calculated))	((calculated))	0.743	2291.771
B		((calculated))	((calculated))	0.667	1897.860
C		((calculated))	((calculated))	0.740	2282.081
D		((calculated))	((calculated))	0.703	2058.499

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
		Yes	Yes	HV Percentages	2.00				Yes	Yes

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)	PHF
A	ONE HOUR	Yes	1022.00	100.000	N/A
B	ONE HOUR	Yes	837.00	100.000	N/A
C	ONE HOUR	Yes	976.00	100.000	N/A
D	ONE HOUR	Yes	164.00	100.000	N/A

Direct/Resultant Flows

Direct Flows Data

Time Segment	Arm	Direct Demand Entry Flow (Veh/hr)	DirectDemandEntryFlowInPCU (PCU/hr)	Direct Demand Exit Flow (Veh/hr)	Direct Demand Pedestrian Flow (Ped/hr)
1	A	769.42	835.61	N/A	N/A
1	B	630.14	643.84	N/A	N/A
1	C	734.78	803.00	N/A	N/A
1	D	123.47	123.47	N/A	N/A
2	A	918.76	997.80	N/A	N/A
2	B	752.45	768.80	N/A	N/A
2	C	877.40	958.87	N/A	N/A
2	D	147.43	147.43	N/A	N/A
3	A	1125.24	1222.06	N/A	N/A
3	B	921.55	941.59	N/A	N/A

3	C	1074.60	1174.37	N/A	N/A
3	D	180.57	180.57	N/A	N/A
4	A	1125.24	1222.06	N/A	N/A
4	B	921.55	941.59	N/A	N/A
4	C	1074.60	1174.37	N/A	N/A
4	D	180.57	180.57	N/A	N/A
5	A	918.76	997.80	N/A	N/A
5	B	752.45	768.80	N/A	N/A
5	C	877.40	958.87	N/A	N/A
5	D	147.43	147.43	N/A	N/A
6	A	769.42	835.61	N/A	N/A
6	B	630.14	643.84	N/A	N/A
6	C	734.78	803.00	N/A	N/A
6	D	123.47	123.47	N/A	N/A

Turning Proportions

Turning Counts or Proportions (Veh/hr) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	152.000	775.000	95.000
	B	152.000	0.000	673.000	12.000
	C	484.000	486.000	0.000	6.000
	D	138.000	17.000	9.000	0.000

Turning Proportions (Veh) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.00	0.15	0.76	0.09
	B	0.18	0.00	0.80	0.01
	C	0.50	0.50	0.00	0.01
	D	0.84	0.10	0.05	0.00

Vehicle Mix

Average PCU Per Vehicle - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	1.000	1.140	1.086	1.000
	B	1.071	1.000	1.011	1.000
	C	1.133	1.054	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	14.000	8.600	0.000
	B	7.100	0.000	1.100	0.000
	C	13.300	5.400	0.000	0.000
	D	0.000	0.000	0.000	0.000

Results

Results Summary

Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max LOS	Total Demand (Veh/hr)	Total Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (min)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Queueing Total Delay (Veh-min)	Inclusive Queueing Average Delay (min)	Slope	Intercept (PCU/hr)
A	0.66	0.10	1.92	A	937.80	1406.70	109.78	0.08	1.22	109.79	0.08	0.743	2291.771
B	0.78	0.23	3.47	B	768.04	1152.07	163.15	0.14	1.81	163.17	0.14	0.667	1897.860
C	0.57	0.07	1.31	A	895.60	1343.40	82.00	0.06	0.91	82.00	0.06	0.740	2282.081
D	0.16	0.06	0.19	A	150.49	225.73	12.50	0.06	0.14	12.50	0.06	0.703	2058.499

Overview: Standard Roundabout Geometry

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only	Final Slope	Final Intercept (PCU/hr)
A	7.30	7.50	1.00	20.00	46.50	24.50		0.743	2291.771
B	4.50	7.00	15.00	19.00	46.50	23.00		0.667	1897.860
C	7.30	7.50	1.00	19.00	46.50	25.00		0.740	2282.081
D	5.00	7.30	15.00	40.00	46.50	26.00		0.703	2058.499

Overview: Time Segment Results

Time Segment Results

Time Segment	Arm	Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Pedestrian Demand (Ped/hr)	Start Queue (Veh)	End Queue (Veh)	Queueing Total Delay (Veh-min)	Geometric Total Delay (Veh-min)	Average Delay Per Arriving Vehicle (min)
1	A	769.41	1833.97	0.420	0.00	0.00	0.72	10.50	(0.02)	0.056
1	B	630.14	1394.26	0.452	0.00	0.00	0.82	11.85	(0.02)	0.078
1	C	734.79	1951.38	0.377	0.00	0.00	0.60	8.82	(0.02)	0.049
1	D	123.47	1413.05	0.087	0.00	0.00	0.10	1.41	(0.02)	0.047
2	A	918.75	1779.62	0.516	0.00	0.72	1.06	15.47	(0.02)	0.069
2	B	752.44	1303.10	0.577	0.00	0.82	1.34	19.39	(0.02)	0.108
2	C	877.41	1924.44	0.456	0.00	0.60	0.83	12.24	(0.02)	0.057
2	D	147.43	1286.04	0.115	0.00	0.10	0.13	1.91	(0.02)	0.053
3	A	1125.24	1705.60	0.660	0.00	1.06	1.90	27.26	(0.02)	0.102
3	B	921.55	1179.53	0.781	0.00	1.34	3.35	45.38	(0.02)	0.219
3	C	1074.60	1888.51	0.569	0.00	0.83	1.31	19.02	(0.02)	0.073
3	D	180.57	1113.75	0.162	0.00	0.13	0.19	2.84	(0.02)	0.064
4	A	1125.24	1704.90	0.660	0.00	1.90	1.92	28.71	(0.02)	0.103
4	B	921.55	1177.55	0.783	0.00	3.35	3.47	51.38	(0.02)	0.233
4	C	1074.60	1887.24	0.569	0.00	1.31	1.31	19.67	(0.02)	0.074
4	D	180.57	1111.30	0.162	0.00	0.19	0.19	2.90	(0.02)	0.064
5	A	918.75	1778.57	0.517	0.00	1.92	1.08	16.69	(0.02)	0.070
5	B	752.44	1300.25	0.579	0.00	3.47	1.40	22.25	(0.02)	0.113
5	C	877.41	1922.67	0.456	0.00	1.31	0.85	12.97	(0.02)	0.058
5	D	147.43	1282.47	0.115	0.00	0.19	0.13	1.99	(0.02)	0.053
6	A	769.41	1832.71	0.420	0.00	1.08	0.73	11.16	(0.02)	0.057
6	B	630.14	1391.68	0.453	0.00	1.40	0.84	12.91	(0.02)	0.079
6	C	734.79	1950.34	0.377	0.00	0.85	0.61	9.27	(0.02)	0.049
6	D	123.47	1409.73	0.088	0.00	0.13	0.10	1.46	(0.02)	0.047

ARCADY 7
Version: 7.1.1.245 [9th June 2011] © Copyright Transport Research Laboratory 2011
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File: X:\Projects\110000\110116A - City Airport ESD\Modelling\ARCADY\Connaught Bridge Road Roundabout.arc7
Report generation date: 24/06/2013 11:48:38

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	17/01/2012
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	VECTOS\Robert.Roughan
Description	

Analysis Options

RFC Threshold	Vehicle Length (m)	Do Queue Variations
0.85	5.75	

Sorting and Display

Show Arm Names	Arm Grouping	Sorting Direction	Sorting Type	Data Matrix Style	Time Style
	Order	Ascending	Numerical	By Destination	Absolute Time

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	Veh	Veh	perHour	min	-Min	perMin

A1 - (Default Analysis Set) - D10 - 2023 With Development, PM Peak

Development, PM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Include In Report	Use Specific Demand Set	Demand Set	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)		Yes		(D1)		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Locked	Run Automatically	Use Relationship	Relationship	Start Time (HH:mm)	Finish Time (HH:mm)	Time Period Length (min)	Time Segment Length (min)	Traffic Profile Type
2023 With Development, PM Peak	2023 With Development	PM Peak			Yes			16:45	18:15	90	15	ONE HOUR

Roundabout Network

Roundabout Type(s)

ID	Name	Arm Order	Roundabout Type	Grade Separated	Large Roundabout	Do Geometric Delay
1	Connaught Bridge Road/Connaught Road	A,B,C,D	Standard			

Roundabout Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	((Mini-roundabouts only))	

Arms

Arms

ID	Name	Description
A	Connaught Bridge Road (N)	
B	Connaught Road (E)	
C	Connaught Bridge Road (South)	
D	Silvertown Quays	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.30	7.50	1.00	20.00	46.50	24.50	
B	4.50	7.00	15.00	19.00	46.50	23.00	
C	7.30	7.50	1.00	19.00	46.50	25.00	
D	5.00	7.30	15.00	40.00	46.50	26.00	

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Arm Slope/ Intercept and Capacity

Slope and Intercept used in model

Arm	Enter Directly	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		((calculated))	((calculated))	0.743	2291.771
B		((calculated))	((calculated))	0.667	1897.860
C		((calculated))	((calculated))	0.740	2282.081
D		((calculated))	((calculated))	0.703	2058.499

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
		Yes	Yes	HV Percentages	2.00				Yes	Yes

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)	PHF
A	ONE HOUR	Yes	711.00	100.000	N/A
B	ONE HOUR	Yes	469.00	100.000	N/A
C	ONE HOUR	Yes	1651.00	100.000	N/A
D	ONE HOUR	Yes	159.00	100.000	N/A

Direct/Resultant Flows

Direct Flows Data

Time Segment	Arm	Direct Demand Entry Flow (Veh/hr)	DirectDemandEntryFlowInPCU (PCU/hr)	Direct Demand Exit Flow (Veh/hr)	Direct Demand Pedestrian Flow (Ped/hr)
1	A	535.28	558.62	N/A	N/A
1	B	353.09	363.99	N/A	N/A
1	C	1242.96	1303.12	N/A	N/A
1	D	119.70	119.70	N/A	N/A
2	A	639.17	667.04	N/A	N/A
2	B	421.62	434.64	N/A	N/A
2	C	1484.22	1556.05	N/A	N/A
2	D	142.94	142.94	N/A	N/A
3	A	782.83	816.96	N/A	N/A
3	B	516.38	532.32	N/A	N/A

3	C	1817.78	1905.76	N/A	N/A
3	D	175.06	175.06	N/A	N/A
4	A	782.83	816.96	N/A	N/A
4	B	516.38	532.32	N/A	N/A
4	C	1817.78	1905.76	N/A	N/A
4	D	175.06	175.06	N/A	N/A
5	A	639.17	667.04	N/A	N/A
5	B	421.62	434.64	N/A	N/A
5	C	1484.22	1556.05	N/A	N/A
5	D	142.94	142.94	N/A	N/A
6	A	535.28	558.62	N/A	N/A
6	B	353.09	363.99	N/A	N/A
6	C	1242.96	1303.12	N/A	N/A
6	D	119.70	119.70	N/A	N/A

Turning Proportions

Turning Counts or Proportions (Veh/hr) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	83.000	443.000	185.000
	B	56.000	0.000	390.000	23.000
	C	918.000	722.000	0.000	11.000
	D	134.000	8.000	17.000	0.000

Turning Proportions (Veh) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.00	0.12	0.62	0.26
	B	0.12	0.00	0.83	0.05
	C	0.56	0.44	0.00	0.01
	D	0.84	0.05	0.11	0.00

Vehicle Mix

Average PCU Per Vehicle - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	1.000	1.128	1.046	1.000
	B	1.175	1.000	1.012	1.000
	C	1.043	1.056	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	12.800	4.600	0.000
	B	17.500	0.000	1.200	0.000
	C	4.300	5.600	0.000	0.000
	D	0.000	0.000	0.000	0.000

Results

Results Summary

Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max LOS	Total Demand (Veh/hr)	Total Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (min)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Queueing Total Delay (Veh-min)	Inclusive Queueing Average Delay (min)	Slope	Intercept (PCU/hr)
A	0.50	0.08	0.98	A	652.43	978.64	59.90	0.06	0.67	59.90	0.06	0.743	2291.771
B	0.38	0.07	0.60	A	430.36	645.55	39.25	0.06	0.44	39.25	0.06	0.667	1897.860
C	0.93	0.38	10.73	C	1514.98	2272.48	410.31	0.18	4.56	410.35	0.18	0.740	2282.081
D	0.26	0.12	0.34	A	145.90	218.85	19.12	0.09	0.21	19.12	0.09	0.703	2058.499

Overview: Standard Roundabout Geometry

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only	Final Slope	Final Intercept (PCU/hr)
A	7.30	7.50	1.00	20.00	46.50	24.50		0.743	2291.771
B	4.50	7.00	15.00	19.00	46.50	23.00		0.667	1897.860
C	7.30	7.50	1.00	19.00	46.50	25.00		0.740	2282.081
D	5.00	7.30	15.00	40.00	46.50	26.00		0.703	2058.499

Overview: Time Segment Results

Time Segment Results

Time Segment	Arm	Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Pedestrian Demand (Ped/hr)	Start Queue (Veh)	End Queue (Veh)	Queueing Total Delay (Veh-min)	Geometric Total Delay (Veh-min)	Average Delay Per Arriving Vehicle (min)
1	A	535.28	1776.18	0.301	0.00	0.00	0.43	6.31	(0.02)	0.048
1	B	353.09	1517.82	0.233	0.00	0.00	0.30	4.44	(0.02)	0.051
1	C	1242.96	2031.78	0.612	0.00	0.00	1.56	22.38	(0.02)	0.075
1	D	119.70	1117.73	0.107	0.00	0.00	0.12	1.76	(0.02)	0.060
2	A	639.18	1693.82	0.377	0.00	0.43	0.60	8.88	(0.02)	0.057
2	B	421.62	1454.26	0.290	0.00	0.30	0.41	5.99	(0.02)	0.058
2	C	1484.21	2003.26	0.741	0.00	1.56	2.78	39.42	(0.02)	0.113
2	D	142.94	933.18	0.153	0.00	0.12	0.18	2.65	(0.02)	0.076
3	A	782.83	1588.07	0.493	0.00	0.60	0.96	14.06	(0.02)	0.074
3	B	516.38	1367.71	0.378	0.00	0.41	0.60	8.84	(0.02)	0.070
3	C	1817.78	1964.42	0.925	0.00	2.78	9.67	117.80	(0.02)	0.306
3	D	175.06	696.07	0.252	0.00	0.18	0.33	4.84	(0.02)	0.115
4	A	782.83	1580.34	0.495	0.00	0.96	0.98	14.57	(0.02)	0.075
4	B	516.38	1366.85	0.378	0.00	0.60	0.60	9.06	(0.02)	0.071
4	C	1817.78	1964.06	0.926	0.00	9.67	10.73	154.24	(0.02)	0.376
4	D	175.06	678.93	0.258	0.00	0.33	0.34	5.12	(0.02)	0.119
5	A	639.18	1681.89	0.380	0.00	0.98	0.62	9.45	(0.02)	0.058
5	B	421.62	1452.95	0.290	0.00	0.60	0.41	6.28	(0.02)	0.058
5	C	1484.21	2002.71	0.741	0.00	10.73	2.95	51.58	(0.02)	0.131
5	D	142.94	906.68	0.158	0.00	0.34	0.19	2.89	(0.02)	0.079
6	A	535.28	1772.27	0.302	0.00	0.62	0.43	6.63	(0.02)	0.049
6	B	353.09	1516.33	0.233	0.00	0.41	0.30	4.64	(0.02)	0.052
6	C	1242.96	2031.11	0.612	0.00	2.95	1.60	24.89	(0.02)	0.077
6	D	119.70	1109.05	0.108	0.00	0.19	0.12	1.85	(0.02)	0.061

ARCADY 7

File: X:\Projects\110000\110116A - City Airport ESD\Modelling\ARCADY\Connaught Bridge Road Roundabout.arc7
Report generation date: 24/06/2013 11:49:20

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	17/01/2012
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	VECTOS\Robert.Roughan
Description	

Analysis Options

RFC Threshold	Vehicle Length (m)	Do Queue Variations
0.85	5.75	

Sorting and Display

Show Arm Names	Arm Grouping	Sorting Direction	Sorting Type	Data Matrix Style	Time Style
	Order	Ascending	Numerical	By Destination	Absolute Time

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	Veh	Veh	perHour	min	-Min	perMin

A1 - (Default Analysis Set) - D11 - 2023 With Development - Sensitivitiy, AM Peak

Development - Sensitivity, AM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Include In Report	Use Specific Demand Set	Demand Set	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)		Yes		(D1)		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Locked	Run Automatically	Use Relationship	Relationship	Start Time (HH:mm)	Finish Time (HH:mm)	Time Period Length (min)	Time Segment Length (min)	Traffic Profile Type
2023 With Development - Sensitivitiy, AM Peak	2023 With Development - Sensitivitiy	AM Peak						07:45	09:15	90	15	ONE HOUR

Roundabout Network

Roundabout Type(s)

ID	Name	Arm Order	Roundabout Type	Grade Separated	Large Roundabout	Do Geometric Delay
1	Connaught Bridge Road/Connaught Road	A,B,C,D	Standard			

Roundabout Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	((Mini-roundabouts only))	

Arms

Arms

ID	Name	Description
A	Connaught Bridge Road (N)	
B	Connaught Road (E)	
C	Connaught Bridge Road (South)	
D	Silvertown Quays	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.30	7.50	1.00	20.00	46.50	24.50	
B	4.50	7.00	15.00	19.00	46.50	23.00	
C	7.30	7.50	1.00	19.00	46.50	25.00	

D	5.00	7.30	15.00	40.00	46.50	26.00	

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Arm Slope/ Intercept and Capacity

Slope and Intercept used in model

Arm	Enter Directly	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		((calculated))	((calculated))	0.743	2291.771
B		((calculated))	((calculated))	0.667	1897.860
C		((calculated))	((calculated))	0.740	2282.081
D		((calculated))	((calculated))	0.703	2058.499

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
		Yes	Yes	HV Percentages	2.00				Yes	Yes

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)	PHF
A	ONE HOUR	Yes	1024.00	100.000	N/A
B	ONE HOUR	Yes	869.00	100.000	N/A
C	ONE HOUR	Yes	984.00	100.000	N/A
D	ONE HOUR	Yes	164.00	100.000	N/A

Direct/Resultant Flows

Direct Flows Data

Time Segment	Arm	Direct Demand Entry Flow (Veh/hr)	DirectDemandEntryFlowInPCU (PCU/hr)	Direct Demand Exit Flow (Veh/hr)	Direct Demand Pedestrian Flow (Ped/hr)
1	A	770.92	837.21	N/A	N/A
1	B	654.23	667.58	N/A	N/A
1	C	740.81	808.98	N/A	N/A
1	D	123.47	123.47	N/A	N/A
2	A	920.55	999.72	N/A	N/A
2	B	781.21	797.16	N/A	N/A
2	C	884.60	966.00	N/A	N/A
2	D	147.43	147.43	N/A	N/A
3	A	1127.45	1224.40	N/A	N/A

3	B	956.79	976.31	N/A	N/A
3	C	1083.40	1183.11	N/A	N/A
3	D	180.57	180.57	N/A	N/A
4	A	1127.45	1224.40	N/A	N/A
4	B	956.79	976.31	N/A	N/A
4	C	1083.40	1183.11	N/A	N/A
4	D	180.57	180.57	N/A	N/A
5	A	920.55	999.72	N/A	N/A
5	B	781.21	797.16	N/A	N/A
5	C	884.60	966.00	N/A	N/A
5	D	147.43	147.43	N/A	N/A
6	A	770.92	837.21	N/A	N/A
6	B	654.23	667.58	N/A	N/A
6	C	740.81	808.98	N/A	N/A
6	D	123.47	123.47	N/A	N/A

Turning Proportions

Turning Counts or Proportions (Veh/hr) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	154.000	775.000	95.000
	B	158.000	0.000	699.000	12.000
	C	484.000	494.000	0.000	6.000
	D	138.000	17.000	9.000	0.000

Turning Proportions (Veh) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.00	0.15	0.76	0.09
	B	0.18	0.00	0.80	0.01
	C	0.49	0.50	0.00	0.01
	D	0.84	0.10	0.05	0.00

Vehicle Mix

Average PCU Per Vehicle - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	1.000	1.139	1.086	1.000
	B	1.068	1.000	1.010	1.000
	C	1.133	1.053	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	13.900	8.600	0.000
	B	6.800	0.000	1.000	0.000
	C	13.300	5.300	0.000	0.000
	D	0.000	0.000	0.000	0.000

Results

Results Summary

Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max LOS	Total Demand (Veh/hr)	Total Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (min)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Queueing Total Delay (Veh-min)	Inclusive Queueing Average Delay (min)	Slope	Intercept (PCU/hr)
A	0.66	0.10	1.95	A	939.64	1409.46	111.11	0.08	1.23	111.11	0.08	0.743	2291.771
B	0.81	0.27	4.11	C	797.41	1196.11	185.01	0.15	2.06	185.02	0.15	0.667	1897.860
C	0.57	0.07	1.34	A	902.93	1354.40	83.56	0.06	0.93	83.57	0.06	0.740	2282.081
D	0.16	0.07	0.20	A	150.49	225.73	12.62	0.06	0.14	12.62	0.06	0.703	2058.499

Overview: Standard Roundabout Geometry

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only	Final Slope	Final Intercept (PCU/hr)
A	7.30	7.50	1.00	20.00	46.50	24.50		0.743	2291.771
B	4.50	7.00	15.00	19.00	46.50	23.00		0.667	1897.860
C	7.30	7.50	1.00	19.00	46.50	25.00		0.740	2282.081
D	5.00	7.30	15.00	40.00	46.50	26.00		0.703	2058.499

Overview: Time Segment Results

Time Segment Results

Time Segment	Arm	Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Pedestrian Demand (Ped/hr)	Start Queue (Veh)	End Queue (Veh)	Queueing Total Delay (Veh-min)	Geometric Total Delay (Veh-min)	Average Delay Per Arriving Vehicle (min)
1	A	770.92	1829.98	0.421	0.00	0.00	0.72	10.57	(0.02)	0.056
1	B	654.23	1396.09	0.469	0.00	0.00	0.87	12.64	(0.02)	0.080
1	C	740.80	1949.83	0.380	0.00	0.00	0.61	8.94	(0.02)	0.049
1	D	123.47	1405.75	0.088	0.00	0.00	0.10	1.42	(0.02)	0.047
2	A	920.56	1774.83	0.519	0.00	0.72	1.07	15.61	(0.02)	0.070
2	B	781.21	1304.81	0.599	0.00	0.87	1.46	21.07	(0.02)	0.114
2	C	884.59	1922.28	0.460	0.00	0.61	0.85	12.45	(0.02)	0.058
2	D	147.43	1277.31	0.115	0.00	0.10	0.13	1.92	(0.02)	0.053
3	A	1127.45	1699.73	0.663	0.00	1.07	1.93	27.67	(0.02)	0.104
3	B	956.78	1181.11	0.810	0.00	1.46	3.93	52.30	(0.02)	0.246
3	C	1083.40	1885.73	0.575	0.00	0.85	1.34	19.43	(0.02)	0.074
3	D	180.57	1103.29	0.164	0.00	0.13	0.19	2.87	(0.02)	0.065
4	A	1127.45	1699.01	0.664	0.00	1.93	1.95	29.16	(0.02)	0.105
4	B	956.78	1179.09	0.811	0.00	3.93	4.11	60.56	(0.02)	0.267
4	C	1083.40	1884.23	0.575	0.00	1.34	1.34	20.11	(0.02)	0.075
4	D	180.57	1100.58	0.164	0.00	0.19	0.20	2.93	(0.02)	0.065
5	A	920.56	1773.74	0.519	0.00	1.95	1.09	16.86	(0.02)	0.071
5	B	781.21	1301.90	0.600	0.00	4.11	1.53	24.60	(0.02)	0.120
5	C	884.59	1920.19	0.461	0.00	1.34	0.86	13.21	(0.02)	0.058
5	D	147.43	1273.37	0.116	0.00	0.20	0.13	2.00	(0.02)	0.053
6	A	770.92	1828.69	0.422	0.00	1.09	0.73	11.24	(0.02)	0.057
6	B	654.23	1393.49	0.469	0.00	1.53	0.89	13.84	(0.02)	0.082
6	C	740.80	1948.71	0.380	0.00	0.86	0.62	9.41	(0.02)	0.050
6	D	123.47	1402.32	0.088	0.00	0.13	0.10	1.47	(0.02)	0.047

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ARCADY 7

File: X:\Projects\110000\110116A - City Airport ESD\Modelling\ARCADY\Connaught Bridge Road Roundabout.arc7
Report generation date: 24/06/2013 11:49:57

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	17/01/2012
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	VECTOS\Robert.Roughan
Description	

Analysis Options

RFC Threshold	Vehicle Length (m)	Do Queue Variations
0.85	5.75	

Sorting and Display

Show Arm Names	Arm Grouping	Sorting Direction	Sorting Type	Data Matrix Style	Time Style
	Order	Ascending	Numerical	By Destination	Absolute Time

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	Veh	Veh	perHour	min	-Min	perMin

A1 - (Default Analysis Set) - D12 - 2023 With Development - Sensitivity, PM Peak

Development - Sensitivity, PM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Include In Report	Use Specific Demand Set	Demand Set	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)		Yes		(D1)		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Locked	Run Automatically	Use Relationship	Relationship	Start Time (HH:mm)	Finish Time (HH:mm)	Time Period Length (min)	Time Segment Length (min)	Traffic Profile Type
2023 With Development - Sensitivity, PM Peak	2023 With Development - Sensitivity	PM Peak			Yes			16:45	18:15	90	15	ONE HOUR

Roundabout Network

Roundabout Type(s)

ID	Name	Arm Order	Roundabout Type	Grade Separated	Large Roundabout	Do Geometric Delay
1	Connaught Bridge Road/Connaught Road	A,B,C,D	Standard			

Roundabout Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	((Mini-roundabouts only))	

Arms

Arms

ID	Name	Description
A	Connaught Bridge Road (N)	
B	Connaught Road (E)	
C	Connaught Bridge Road (South)	
D	Silvertown Quays	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.30	7.50	1.00	20.00	46.50	24.50	
B	4.50	7.00	15.00	19.00	46.50	23.00	
C	7.30	7.50	1.00	19.00	46.50	25.00	

D	5.00	7.30	15.00	40.00	46.50	26.00	

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Arm Slope/ Intercept and Capacity

Slope and Intercept used in model

Arm	Enter Directly	Slope	Intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		((calculated))	((calculated))	0.743	2291.771
B		((calculated))	((calculated))	0.667	1897.860
C		((calculated))	((calculated))	0.740	2282.081
D		((calculated))	((calculated))	0.703	2058.499

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
		Yes	Yes	HV Percentages	2.00				Yes	Yes

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)	PHF
A	ONE HOUR	Yes	717.00	100.000	N/A
B	ONE HOUR	Yes	473.00	100.000	N/A
C	ONE HOUR	Yes	1676.00	100.000	N/A
D	ONE HOUR	Yes	159.00	100.000	N/A

Direct/Resultant Flows

Direct Flows Data

Time Segment	Arm	Direct Demand Entry Flow (Veh/hr)	DirectDemandEntryFlowInPCU (PCU/hr)	Direct Demand Exit Flow (Veh/hr)	Direct Demand Pedestrian Flow (Ped/hr)
1	A	539.80	563.18	N/A	N/A
1	B	356.10	366.83	N/A	N/A
1	C	1261.78	1321.87	N/A	N/A
1	D	119.70	119.70	N/A	N/A
2	A	644.57	672.49	N/A	N/A
2	B	425.22	438.03	N/A	N/A
2	C	1506.69	1578.44	N/A	N/A
2	D	142.94	142.94	N/A	N/A
3	A	789.43	823.63	N/A	N/A

3	B	520.78	536.48	N/A	N/A
3	C	1845.31	1933.19	N/A	N/A
3	D	175.06	175.06	N/A	N/A
4	A	789.43	823.63	N/A	N/A
4	B	520.78	536.48	N/A	N/A
4	C	1845.31	1933.19	N/A	N/A
4	D	175.06	175.06	N/A	N/A
5	A	644.57	672.49	N/A	N/A
5	B	425.22	438.03	N/A	N/A
5	C	1506.69	1578.44	N/A	N/A
5	D	142.94	142.94	N/A	N/A
6	A	539.80	563.18	N/A	N/A
6	B	356.10	366.83	N/A	N/A
6	C	1261.78	1321.87	N/A	N/A
6	D	119.70	119.70	N/A	N/A

Turning Proportions

Turning Counts or Proportions (Veh/hr) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	89.000	443.000	185.000
	B	55.000	0.000	395.000	23.000
	C	918.000	747.000	0.000	11.000
	D	134.000	8.000	17.000	0.000

Turning Proportions (Veh) - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.00	0.12	0.62	0.26
	B	0.12	0.00	0.84	0.05
	C	0.55	0.45	0.00	0.01
	D	0.84	0.05	0.11	0.00

Vehicle Mix

Average PCU Per Vehicle - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	1.000	1.120	1.046	1.000
	B	1.173	1.000	1.012	1.000
	C	1.043	1.054	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Roundabout 1 (for whole period)

		To			
		A	B	C	D
From	A	0.000	12.000	4.600	0.000
	B	17.300	0.000	1.200	0.000
	C	4.300	5.400	0.000	0.000
	D	0.000	0.000	0.000	0.000

Results

Results Summary

Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max LOS	Total Demand (Veh/hr)	Total Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (min)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Queueing Total Delay (Veh-min)	Inclusive Queueing Average Delay (min)	Slope	Intercept (PCU/hr)
A	0.51	0.08	1.01	A	657.93	986.89	61.86	0.06	0.69	61.87	0.06	0.743	2291.771
B	0.38	0.07	0.61	A	434.03	651.05	39.70	0.06	0.44	39.71	0.06	0.667	1897.860
C	0.94	0.43	12.48	D	1537.93	2306.89	455.37	0.20	5.06	455.41	0.20	0.740	2282.081
D	0.26	0.12	0.36	A	145.90	218.85	19.60	0.09	0.22	19.60	0.09	0.703	2058.499

Overview: Standard Roundabout Geometry

Standard Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only	Final Slope	Final Intercept (PCU/hr)
A	7.30	7.50	1.00	20.00	46.50	24.50		0.743	2291.771
B	4.50	7.00	15.00	19.00	46.50	23.00		0.667	1897.860
C	7.30	7.50	1.00	19.00	46.50	25.00		0.740	2282.081
D	5.00	7.30	15.00	40.00	46.50	26.00		0.703	2058.499

Overview: Time Segment Results

Time Segment Results

Time Segment	Arm	Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Pedestrian Demand (Ped/hr)	Start Queue (Veh)	End Queue (Veh)	Queueing Total Delay (Veh-min)	Geometric Total Delay (Veh-min)	Average Delay Per Arriving Vehicle (min)
1	A	539.79	1763.42	0.306	0.00	0.00	0.44	6.45	(0.02)	0.049
1	B	356.10	1518.91	0.234	0.00	0.00	0.30	4.48	(0.02)	0.052
1	C	1261.78	2033.98	0.620	0.00	0.00	1.61	23.17	(0.02)	0.076
1	D	119.70	1105.39	0.108	0.00	0.00	0.12	1.78	(0.02)	0.061
2	A	644.57	1678.49	0.384	0.00	0.44	0.62	9.12	(0.02)	0.058
2	B	425.22	1455.31	0.292	0.00	0.30	0.41	6.06	(0.02)	0.058
2	C	1506.69	2005.57	0.751	0.00	1.61	2.93	41.41	(0.02)	0.118
2	D	142.94	918.51	0.156	0.00	0.12	0.18	2.70	(0.02)	0.077
3	A	789.43	1570.69	0.503	0.00	0.62	1.00	14.59	(0.02)	0.076
3	B	520.78	1368.73	0.380	0.00	0.41	0.61	8.95	(0.02)	0.071
3	C	1845.31	1966.89	0.938	0.00	2.93	10.98	130.58	(0.02)	0.336
3	D	175.06	681.18	0.257	0.00	0.18	0.34	4.98	(0.02)	0.118
4	A	789.43	1561.86	0.505	0.00	1.00	1.01	15.15	(0.02)	0.078
4	B	520.78	1367.83	0.381	0.00	0.61	0.61	9.17	(0.02)	0.071
4	C	1845.31	1966.52	0.938	0.00	10.98	12.48	177.65	(0.02)	0.432
4	D	175.06	661.92	0.264	0.00	0.34	0.36	5.29	(0.02)	0.123
5	A	644.57	1664.10	0.387	0.00	1.01	0.64	9.76	(0.02)	0.059
5	B	425.22	1453.94	0.292	0.00	0.61	0.42	6.35	(0.02)	0.058
5	C	1506.69	2005.00	0.751	0.00	12.48	3.12	56.70	(0.02)	0.140
5	D	142.94	887.14	0.161	0.00	0.36	0.19	2.97	(0.02)	0.081
6	A	539.79	1759.21	0.307	0.00	0.64	0.44	6.78	(0.02)	0.049
6	B	356.10	1517.38	0.235	0.00	0.42	0.31	4.69	(0.02)	0.052
6	C	1261.78	2033.30	0.621	0.00	3.12	1.66	25.86	(0.02)	0.079
6	D	119.70	1096.21	0.109	0.00	0.19	0.12	1.88	(0.02)	0.062

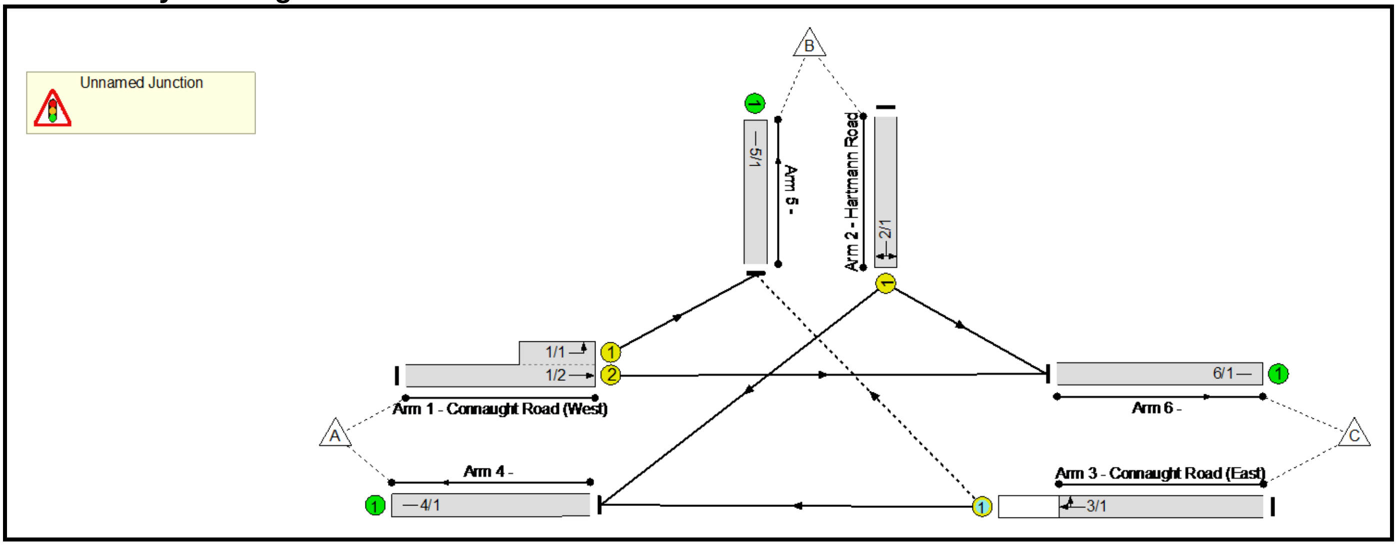
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Full Input Data And Results

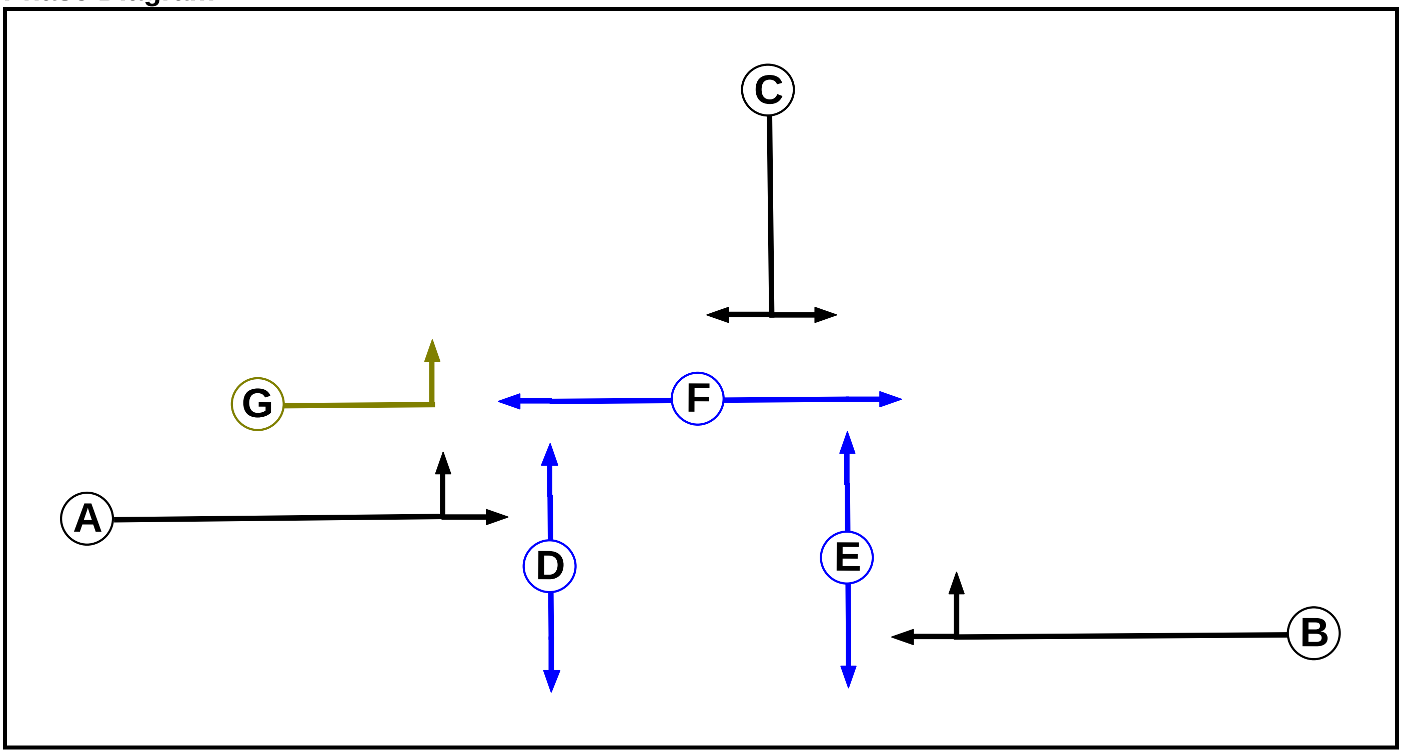
User and Project Details

Project:	**City Airport**
Title:	**Apron Stand Replacement Project**
Location:	London
File name:	Connaught Road-Hartmann Road.lsg3x
Author:	RR
Company:	Vectos
Address:	
Notes:	

Network Layout Diagram



Phase Diagram



Full Input Data And Results

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	Pedestrian		6	6
E	Pedestrian		6	6
F	Pedestrian		6	6
G	Filter	A	4	0

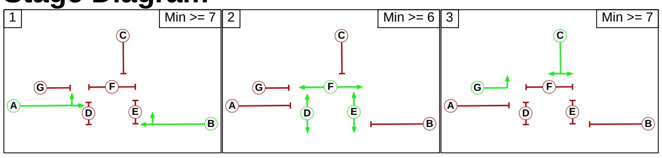
Phase Intergreens Matrix

		Starting Phase						
Terminating Phase		A	B	C	D	E	F	G
	A		-	7	5	11	9	-
	B	-		7	11	5	12	-
	C	5	5		11	10	5	-
	D	12	12	12		-	-	12
	E	9	9	9	-		-	-
	F	11	11	11	-	-		11
	G	-	-	-	5	-	9	

Phases in Stage

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

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	3	G	Gaining absolute	5	5

Full Input Data And Results

Prohibited Stage Change

		To Stage		
		1	2	3
From Stage	1		12	7
	2	12		12
	3	5	X	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Unnamed Junction											
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)**
3/1 (Connaught Road (East))	5/1 (Right)	1439	0	1/1	1.09	All	4.00	-	0.50	4	2.00
				1/2	1.09	All					

Full Input Data And Results

Lane Input Data

Junction: Unnamed Junction													
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Connaught Road (West))	U	A G	2	3	5.0	Geom	-	2.75	0.00	Y	Arm 5 Left	22.50
1/2 (Connaught Road (West))	U	A	2	3	60.0	Geom	-	2.75	0.00	Y	Arm 6 Ahead	Inf
2/1 (Hartmann Road)	U	C	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 4 Right	22.50
											Arm 6 Left	10.00
3/1 (Connaught Road (East))	O	B	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 4 Ahead	Inf
											Arm 5 Right	10.00
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Existing AM Peak'	08:00	09:00	01:00	
2: 'Existing PM Peak'	17:00	18:00	01:00	
3: '2021 Without Development AM Peak'	08:00	09:00	01:00	
4: '2021 Without Development PM Peak'	17:00	18:00	01:00	
5: '2021 With Development AM Peak'	08:00	09:00	01:00	
6: '2021 With Development PM Peak'	17:00	18:00	01:00	
7: '2023 Without Development AM Peak'	08:00	09:00	01:00	
8: '2023 Without Development PM Peak'	17:00	18:00	01:00	
9: '2023 With Development AM Peak'	08:00	09:00	01:00	
10: '2023 With Development PM Peak'	17:00	18:00	01:00	
11: '2023 With Development AM Peak - Sensitivity Test'	08:00	09:00	01:00	
12: '2023 With Development PM Peak - Sensitivity Test'	17:00	18:00	01:00	

Scenario 1: 'Existing AM Peak' (FG1: 'Existing AM Peak', Plan 1: 'Peds Every Cycle')

Traffic Flows, Desired

Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	323	123	446
	B	384	0	37	421
	C	244	34	0	278
	Tot.	628	357	160	1145

Traffic Lane Flows

Lane	Scenario 1: Existing AM Peak
Junction: Unnamed Junction	
1/1 (short)	323
1/2 (with short)	446(In) 123(Out)
2/1	421
3/1	278
4/1	628
5/1	357
6/1	160

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Connaught Road (West))	2.75	0.00	Y	Arm 5 Left	22.50	100.0 %	1772	1772
1/2 (Connaught Road (West))	2.75	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1890	1890
2/1 (Hartmann Road)	4.00	0.00	Y	Arm 4 Right	22.50	91.2 %	1876	1876
				Arm 6 Left	10.00	8.8 %		
3/1 (Connaught Road (East))	4.00	0.00	Y	Arm 4 Ahead	Inf	87.8 %	1979	1979
				Arm 5 Right	10.00	12.2 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'Existing PM Peak' (FG2: 'Existing PM Peak', Plan 1: 'Peds Every Cycle')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	407	209	616
	B	443	0	44	487
	C	147	39	0	186
	Tot.	590	446	253	1289

Traffic Lane Flows

Lane	Scenario 2: Existing PM Peak
Junction: Unnamed Junction	
1/1 (short)	407
1/2 (with short)	616(In) 209(Out)
2/1	487
3/1	186
4/1	590
5/1	446
6/1	253

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Connaught Road (West))	2.75	0.00	Y	Arm 5 Left	22.50	100.0 %	1772	1772
1/2 (Connaught Road (West))	2.75	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1890	1890
2/1 (Hartmann Road)	4.00	0.00	Y	Arm 4 Right	22.50	91.0 %	1876	1876
				Arm 6 Left	10.00	9.0 %		
3/1 (Connaught Road (East))	4.00	0.00	Y	Arm 4 Ahead	Inf	79.0 %	1954	1954
				Arm 5 Right	10.00	21.0 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: '2021 Without Development AM Peak' (FG3: '2021 Without Development AM Peak', Plan 1: 'Peds Every Cycle')

Traffic Flows, Desired

Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	359	222	581
	B	466	0	41	507
	C	381	37	0	418
	Tot.	847	396	263	1506

Traffic Lane Flows

Lane	Scenario 3: 2021 Without Development AM Peak
Junction: Unnamed Junction	
1/1 (short)	359
1/2 (with short)	581(In) 222(Out)
2/1	507
3/1	418
4/1	847
5/1	396
6/1	263

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Connaught Road (West))	2.75	0.00	Y	Arm 5 Left	22.50	100.0 %	1772	1772
1/2 (Connaught Road (West))	2.75	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1890	1890
2/1 (Hartmann Road)	4.00	0.00	Y	Arm 4 Right	22.50	91.9 %	1877	1877
				Arm 6 Left	10.00	8.1 %		
3/1 (Connaught Road (East))	4.00	0.00	Y	Arm 4 Ahead	Inf	91.1 %	1989	1989
				Arm 5 Right	10.00	8.9 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 4: '2021 Without Development PM Peak' (FG4: '2021 Without Development PM Peak', Plan 1: 'Peds Every Cycle')

Traffic Flows, Desired

Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	438	320	758
	B	316	0	33	349
	C	272	42	0	314
	Tot.	588	480	353	1421

Traffic Lane Flows

Lane	Scenario 4: 2021 Without Development PM Peak
Junction: Unnamed Junction	
1/1 (short)	438
1/2 (with short)	758(In) 320(Out)
2/1	349
3/1	314
4/1	588
5/1	480
6/1	353

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Connaught Road (West))	2.75	0.00	Y	Arm 5 Left	22.50	100.0 %	1772	1772
1/2 (Connaught Road (West))	2.75	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1890	1890
2/1 (Hartmann Road)	4.00	0.00	Y	Arm 4 Right	22.50	90.5 %	1875	1875
				Arm 6 Left	10.00	9.5 %		
3/1 (Connaught Road (East))	4.00	0.00	Y	Arm 4 Ahead	Inf	86.6 %	1975	1975
				Arm 5 Right	10.00	13.4 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 5: '2021 With Development AM Peak' (FG5: '2021 With Development AM Peak', Plan 1: 'Peds Every Cycle')

Traffic Flows, Desired

Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	302	220	522
	B	417	0	6	423
	C	381	13	0	394
	Tot.	798	315	226	1339

Traffic Lane Flows

Lane	Scenario 5: 2021 With Development AM Peak
Junction: Unnamed Junction	
1/1 (short)	302
1/2 (with short)	522(In) 220(Out)
2/1	423
3/1	394
4/1	798
5/1	315
6/1	226

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Connaught Road (West))	2.75	0.00	Y	Arm 5 Left	22.50	100.0 %	1772	1772
1/2 (Connaught Road (West))	2.75	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1890	1890
2/1 (Hartmann Road)	4.00	0.00	Y	Arm 4 Right	22.50	98.6 %	1887	1887
				Arm 6 Left	10.00	1.4 %		
3/1 (Connaught Road (East))	4.00	0.00	Y	Arm 4 Ahead	Inf	96.7 %	2005	2005
				Arm 5 Right	10.00	3.3 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 6: '2021 With Development PM Peak' (FG6: '2021 With Development PM Peak', Plan 1: 'Peds Every Cycle')

Traffic Flows, Desired

Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	443	320	763
	B	235	0	11	246
	C	272	12	0	284
	Tot.	507	455	331	1293

Traffic Lane Flows

Lane	Scenario 6: 2021 With Development PM Peak
Junction: Unnamed Junction	
1/1 (short)	443
1/2 (with short)	763(In) 320(Out)
2/1	246
3/1	284
4/1	507
5/1	455
6/1	331

Lane Saturation Flows

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
Junction: Unnamed Junction								
1/1 (Connaught Road (West))	2.75	0.00	Y	Arm 5 Left	22.50	100.0 %	1772	1772
1/2 (Connaught Road (West))	2.75	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1890	1890
2/1 (Hartmann Road)	4.00	0.00	Y	Arm 4 Right	22.50	95.5 %	1882	1882
				Arm 6 Left	10.00	4.5 %		
3/1 (Connaught Road (East))	4.00	0.00	Y	Arm 4 Ahead	Inf	95.8 %	2002	2002
				Arm 5 Right	10.00	4.2 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 7: '2023 Without Development AM Peak' (FG7: '2023 Without Development AM Peak', Plan 1: 'Peds Every Cycle')

Traffic Flows, Desired

Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	357	228	585
	B	483	0	46	529
	C	392	37	0	429
	Tot.	875	394	274	1543

Traffic Lane Flows

Lane	Scenario 7: 2023 Without Development AM Peak
Junction: Unnamed Junction	
1/1 (short)	357
1/2 (with short)	585(In) 228(Out)
2/1	529
3/1	429
4/1	875
5/1	394
6/1	274

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Connaught Road (West))	2.75	0.00	Y	Arm 5 Left	22.50	100.0 %	1772	1772
1/2 (Connaught Road (West))	2.75	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1890	1890
2/1 (Hartmann Road)	4.00	0.00	Y	Arm 4 Right	22.50	91.3 %	1876	1876
				Arm 6 Left	10.00	8.7 %		
3/1 (Connaught Road (East))	4.00	0.00	Y	Arm 4 Ahead	Inf	91.4 %	1989	1989
				Arm 5 Right	10.00	8.6 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 8: '2023 Without Development PM Peak' (FG8: '2023 Without Development PM Peak', Plan 1: 'Peds Every Cycle')

Traffic Flows, Desired

Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	438	329	767
	B	314	0	33	347
	C	279	42	0	321
	Tot.	593	480	362	1435

Traffic Lane Flows

Lane	Scenario 8: 2023 Without Development PM Peak
Junction: Unnamed Junction	
1/1 (short)	438
1/2 (with short)	767(In) 329(Out)
2/1	347
3/1	321
4/1	593
5/1	480
6/1	362

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Connaught Road (West))	2.75	0.00	Y	Arm 5 Left	22.50	100.0 %	1772	1772
1/2 (Connaught Road (West))	2.75	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1890	1890
2/1 (Hartmann Road)	4.00	0.00	Y	Arm 4 Right	22.50	90.5 %	1875	1875
				Arm 6 Left	10.00	9.5 %		
3/1 (Connaught Road (East))	4.00	0.00	Y	Arm 4 Ahead	Inf	86.9 %	1976	1976
				Arm 5 Right	10.00	13.1 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 9: '2023 With Development AM Peak' (FG9: '2023 With Development AM Peak', Plan 1: 'Peds Every Cycle')

Traffic Flows, Desired

Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	327	228	555
	B	455	0	12	467
	C	392	13	0	405
	Tot.	847	340	240	1427

Traffic Lane Flows

Lane	Scenario 9: 2023 With Development AM Peak
Junction: Unnamed Junction	
1/1 (short)	327
1/2 (with short)	555(In) 228(Out)
2/1	467
3/1	405
4/1	847
5/1	340
6/1	240

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Connaught Road (West))	2.75	0.00	Y	Arm 5 Left	22.50	100.0 %	1772	1772
1/2 (Connaught Road (West))	2.75	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1890	1890
2/1 (Hartmann Road)	4.00	0.00	Y	Arm 4 Right	22.50	97.4 %	1885	1885
				Arm 6 Left	10.00	2.6 %		
3/1 (Connaught Road (East))	4.00	0.00	Y	Arm 4 Ahead	Inf	96.8 %	2005	2005
				Arm 5 Right	10.00	3.2 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 10: '2023 With Development PM Peak' (FG10: '2023 With Development PM Peak', Plan 1: 'Peds Every Cycle')

Traffic Flows, Desired

Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	466	329	795
	B	244	0	11	255
	C	279	12	0	291
	Tot.	523	478	340	1341

Traffic Lane Flows

Lane	Scenario 10: 2023 With Development PM Peak
Junction: Unnamed Junction	
1/1 (short)	466
1/2 (with short)	795(In) 329(Out)
2/1	255
3/1	291
4/1	523
5/1	478
6/1	340

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Connaught Road (West))	2.75	0.00	Y	Arm 5 Left	22.50	100.0 %	1772	1772
1/2 (Connaught Road (West))	2.75	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1890	1890
2/1 (Hartmann Road)	4.00	0.00	Y	Arm 4 Right	22.50	95.7 %	1883	1883
				Arm 6 Left	10.00	4.3 %		
3/1 (Connaught Road (East))	4.00	0.00	Y	Arm 4 Ahead	Inf	95.9 %	2003	2003
				Arm 5 Right	10.00	4.1 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 11: '2023 With Development AM Peak - Sensitivity Test' (FG11: '2023 With Development AM Peak - Sensitivity Test', Plan 1: 'Peds Every Cycle')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	336	228	564
	B	487	0	13	500
	C	392	13	0	405
	Tot.	879	349	241	1469

Traffic Lane Flows

Lane	Scenario 11: 2023 With Development AM Peak - Sensitivity Test
Junction: Unnamed Junction	
1/1 (short)	336
1/2 (with short)	564(In) 228(Out)
2/1	500
3/1	405
4/1	879
5/1	349
6/1	241

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Connaught Road (West))	2.75	0.00	Y	Arm 5 Left	22.50	100.0 %	1772	1772
1/2 (Connaught Road (West))	2.75	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1890	1890
2/1 (Hartmann Road)	4.00	0.00	Y	Arm 4 Right	22.50	97.4 %	1885	1885
				Arm 6 Left	10.00	2.6 %		
3/1 (Connaught Road (East))	4.00	0.00	Y	Arm 4 Ahead	Inf	96.8 %	2005	2005
				Arm 5 Right	10.00	3.2 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 12: '2023 With Development PM Peak - Sensitivity Test' (FG12: '2023 With Development PM Peak - Sensitivity Test', Plan 1: 'Peds Every Cycle')

Traffic Flows, Desired

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	496	329	825
	B	250	0	11	261
	C	279	12	0	291
	Tot.	529	508	340	1377

Traffic Lane Flows

Lane	Scenario 12: 2023 With Development PM Peak - Sensitivity Test
Junction: Unnamed Junction	
1/1 (short)	496
1/2 (with short)	825(In) 329(Out)
2/1	261
3/1	291
4/1	529
5/1	508
6/1	340

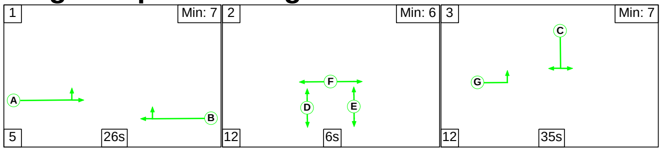
Lane Saturation Flows

Junction: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Connaught Road (West))	2.75	0.00	Y	Arm 5 Left	22.50	100.0 %	1772	1772
1/2 (Connaught Road (West))	2.75	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1890	1890
2/1 (Hartmann Road)	4.00	0.00	Y	Arm 4 Right	22.50	95.8 %	1883	1883
				Arm 6 Left	10.00	4.2 %		
3/1 (Connaught Road (East))	4.00	0.00	Y	Arm 4 Ahead	Inf	95.9 %	2003	2003
				Arm 5 Right	10.00	4.1 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 1: 'Existing AM Peak' (FG1: 'Existing AM Peak', Plan 1: 'Peds Every Cycle')

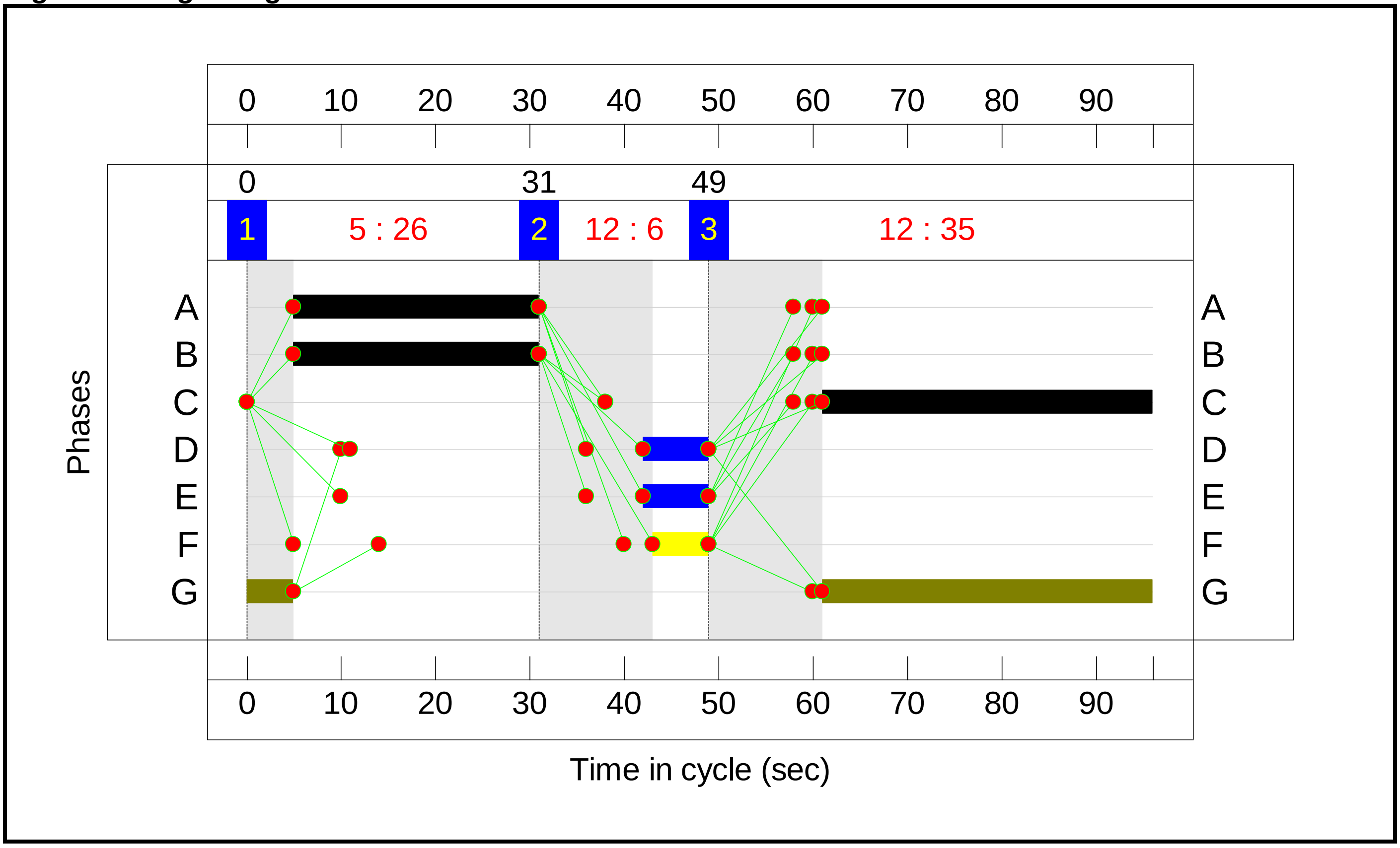
Stage Sequence Diagram



Stage Timings

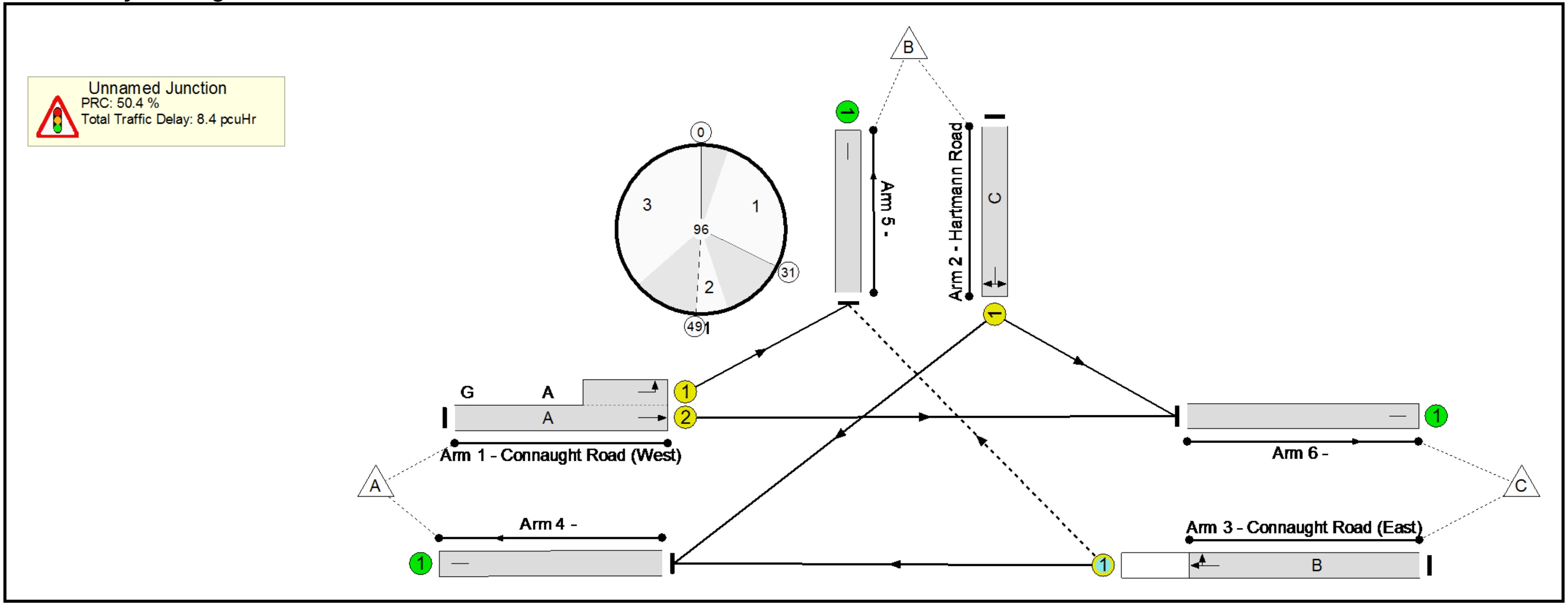
Stage	1	2	3
Duration	26	6	35
Change Point	0	31	49

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

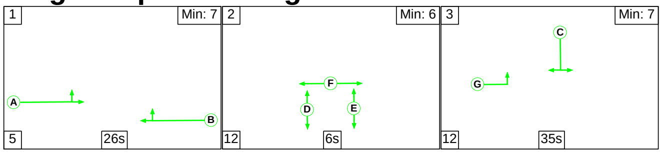
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Apron Stand Replacement Project	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**59.8%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**59.8%**
1/2+1/1	Connaught Road (West) Left Ahead	U	N/A	N/A	A	G	1	26:66	40	446	1890:1772	999	44.6%
2/1	Hartmann Road Right Left	U	N/A	N/A	C		1	35	-	421	1876	704	59.8%
3/1	Connaught Road (East) Ahead Right	O	N/A	N/A	B		1	26	-	278	1979	477	58.3%
4/1		U	N/A	N/A	-		-	-	-	628	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	357	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	160	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Apron Stand Replacement Project	**-**	**-**	**33**	**0**	**1**	**6.5**	**1.8**	**0.0**	**8.4**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**33**	**0**	**1**	**6.5**	**1.8**	**0.0**	**8.4**	**-**	**-**	**-**	**-**
1/2+1/1	446	446	-	-	-	1.4	0.4	-	1.8	14.5	3.1	0.4	3.5
2/1	421	421	-	-	-	2.8	0.7	-	3.6	30.5	9.0	0.7	9.7
3/1	278	278	33	0	1	2.3	0.7	0.0	3.0	39.2	6.5	0.7	7.2
4/1	628	628	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	357	357	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	160	160	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

C1	PRC for Signalled Lanes (%):	50.4	Total Delay for Signalled Lanes (pcuHr):	8.39	Cycle Time (s):	96
	PRC Over All Lanes (%):	50.4	Total Delay Over All Lanes(pcuHr):	8.39		

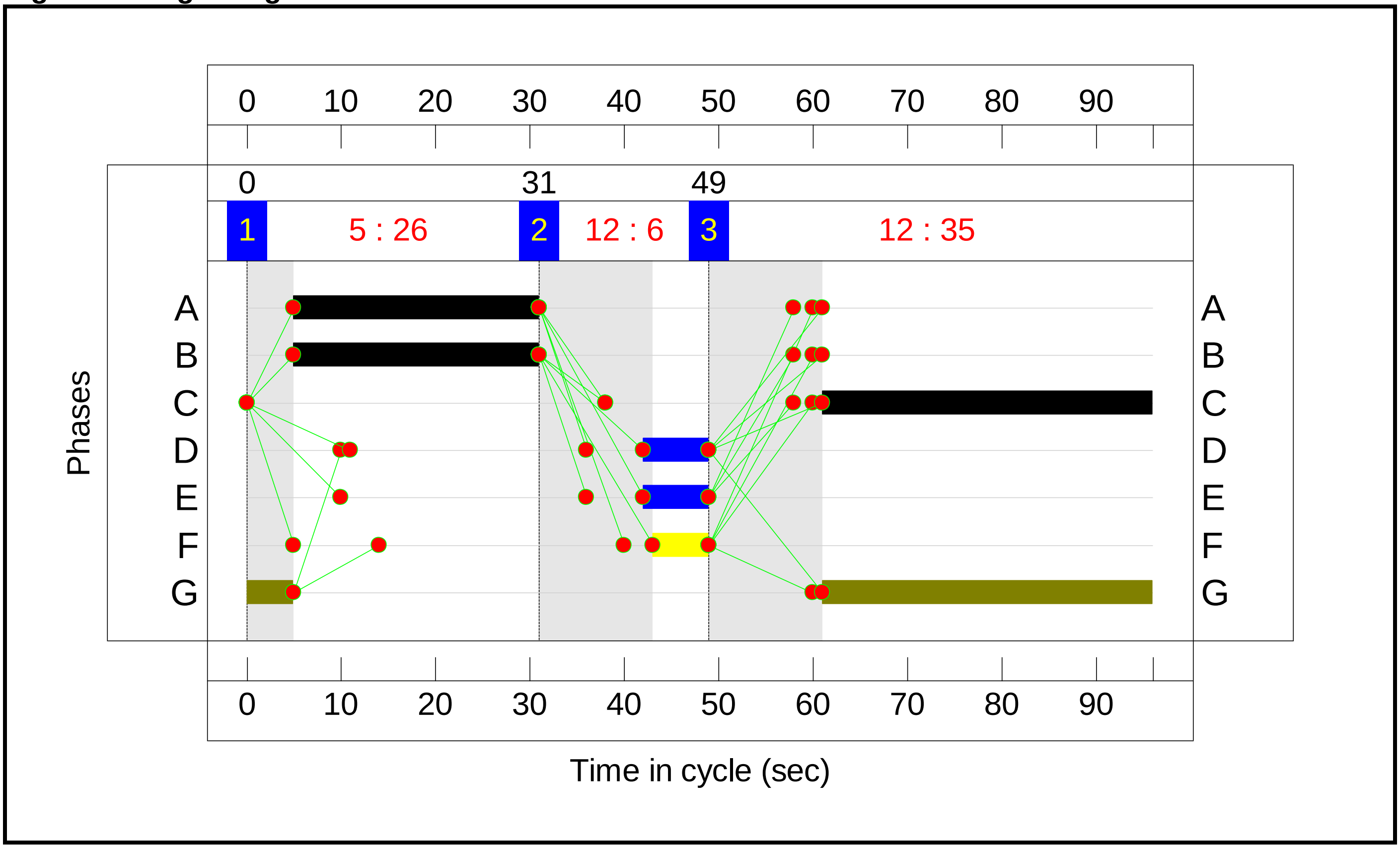
Full Input Data And Results
Scenario 2: 'Existing PM Peak' (FG2: 'Existing PM Peak', Plan 1: 'Peds Every Cycle')
Stage Sequence Diagram



Stage Timings

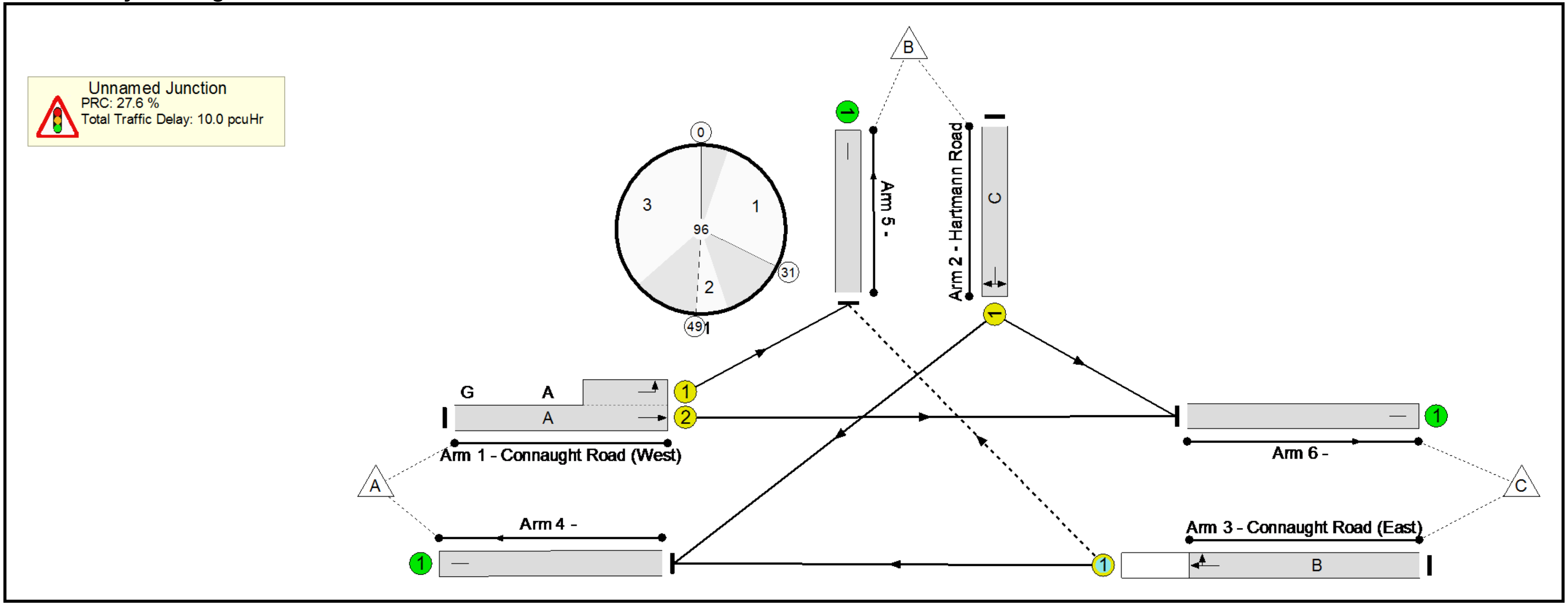
Stage	1	2	3
Duration	26	6	35
Change Point	0	31	49

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: Apron Stand Replacement Project	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**70.5%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**70.5%**
1/2+1/1	Connaught Road (West) Left Ahead	U	N/A	N/A	A	G	1	26:66	40	616	1890:1772	873	70.5%
2/1	Hartmann Road Right Left	U	N/A	N/A	C		1	35	-	487	1876	704	69.2%
3/1	Connaught Road (East) Ahead Right	O	N/A	N/A	B		1	26	-	186	1954	355	52.4%
4/1		U	N/A	N/A	-		-	-	-	590	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	446	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	253	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Apron Stand Replacement Project	**-**	**-**	**37**	**0**	**2**	**7.1**	**2.8**	**0.1**	**10.0**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**37**	**0**	**2**	**7.1**	**2.8**	**0.1**	**10.0**	**-**	**-**	**-**	**-**
1/2+1/1	616	616	-	-	-	2.3	1.2	-	3.4	20.2	4.5	1.2	5.7
2/1	487	487	-	-	-	3.4	1.1	-	4.5	33.6	11.0	1.1	12.1
3/1	186	186	37	0	2	1.4	0.5	0.1	2.1	39.7	3.9	0.5	4.5
4/1	590	590	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	446	446	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	253	253	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

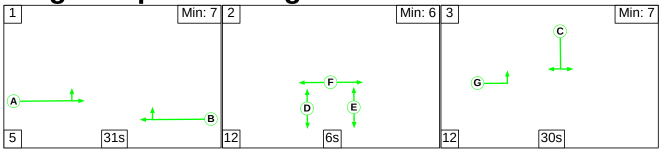
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	27.6	Total Delay for Signalled Lanes (pcuHr):	10.04	Cycle Time (s):	96
	PRC Over All Lanes (%):	27.6	Total Delay Over All Lanes(pcuHr):	10.04		

Full Input Data And Results

Scenario 3: '2021 Without Development AM Peak' (FG3: '2021 Without Development AM Peak', Plan 1: 'Peds Every Cycle')

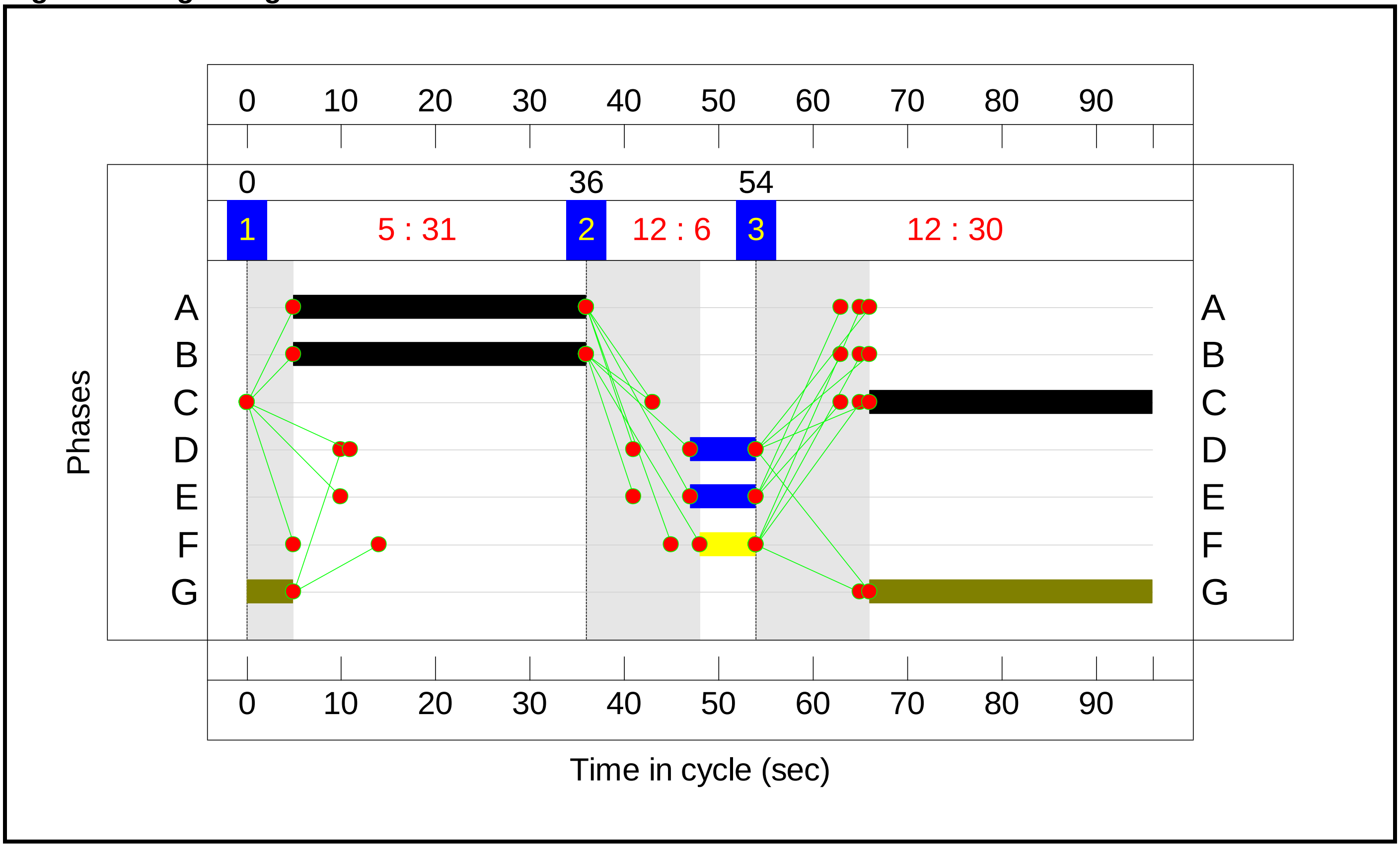
Stage Sequence Diagram



Stage Timings

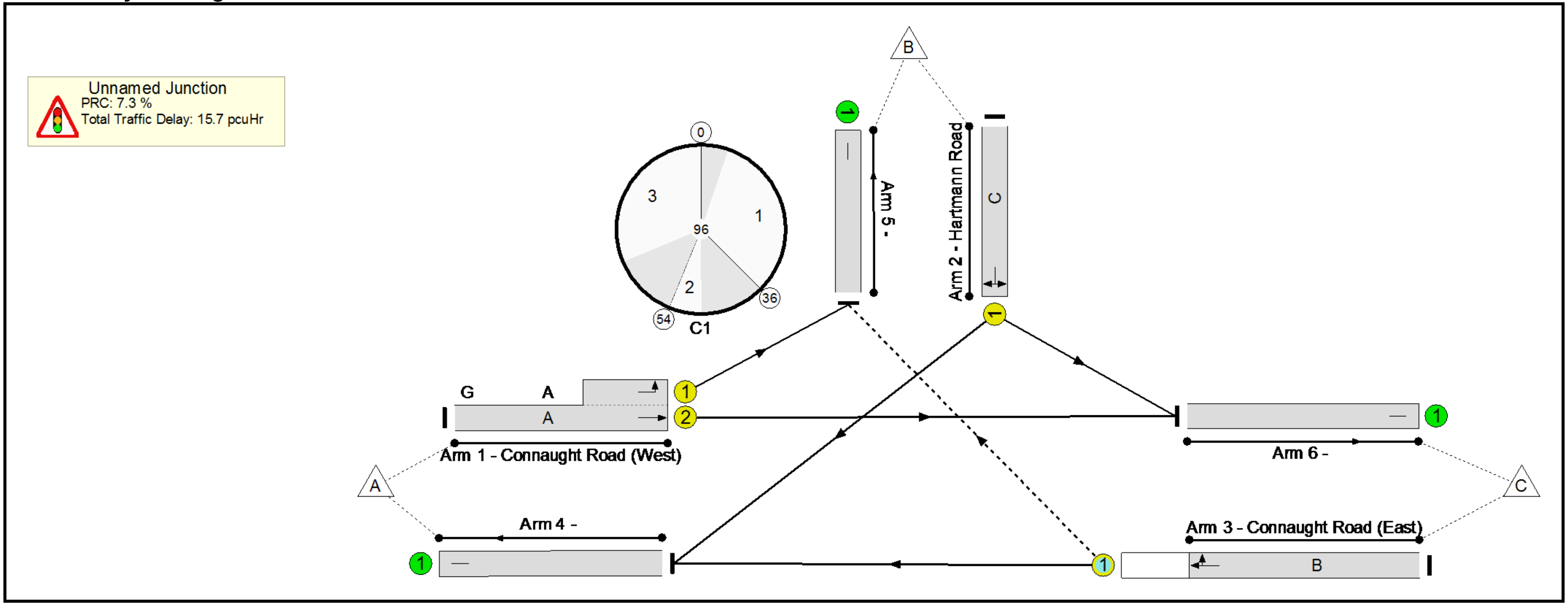
Stage	1	2	3
Duration	31	6	30
Change Point	0	36	54

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: Apron Stand Replacement Project	-	-	**N/A**	-	-		-	-	-	-	-	-	**83.9%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**83.9%**
1/2+1/1	Connaught Road (West) Left Ahead	U	N/A	N/A	A	G	1	31:66	35	581	1890:1772	907	64.1%
2/1	Hartmann Road Right Left	U	N/A	N/A	C		1	30	-	507	1877	606	83.6%
3/1	Connaught Road (East) Ahead Right	O	N/A	N/A	B		1	31	-	418	1989	498	83.9%
4/1		U	N/A	N/A	-		-	-	-	847	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	396	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	263	Inf	Inf	0.0%

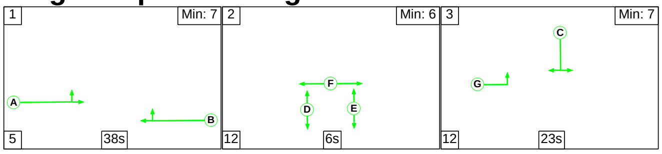
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Apron Stand Replacement Project	-	-	**34**	**0**	**3**	**9.9**	**5.8**	**0.0**	**15.7**	-	-	-	-
Unnamed Junction	-	-	**34**	**0**	**3**	**9.9**	**5.8**	**0.0**	**15.7**	-	-	-	-
1/2+1/1	581	581	-	-	-	2.0	0.9	-	2.9	18.1	4.4	0.9	5.3
2/1	507	507	-	-	-	4.2	2.4	-	6.7	47.5	12.5	2.4	15.0
3/1	418	418	34	0	3	3.6	2.4	0.0	6.1	52.6	10.4	2.4	12.9
4/1	847	847	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	396	396	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	263	263	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

C1	PRC for Signalled Lanes (%):	7.3	Total Delay for Signalled Lanes (pcuHr):	15.71	Cycle Time (s):	96
	PRC Over All Lanes (%):	7.3	Total Delay Over All Lanes(pcuHr):	15.71		

Full Input Data And Results
Scenario 4: '2021 Without Development PM Peak' (FG4: '2021 Without Development PM Peak', Plan 1: 'Peds Every Cycle')

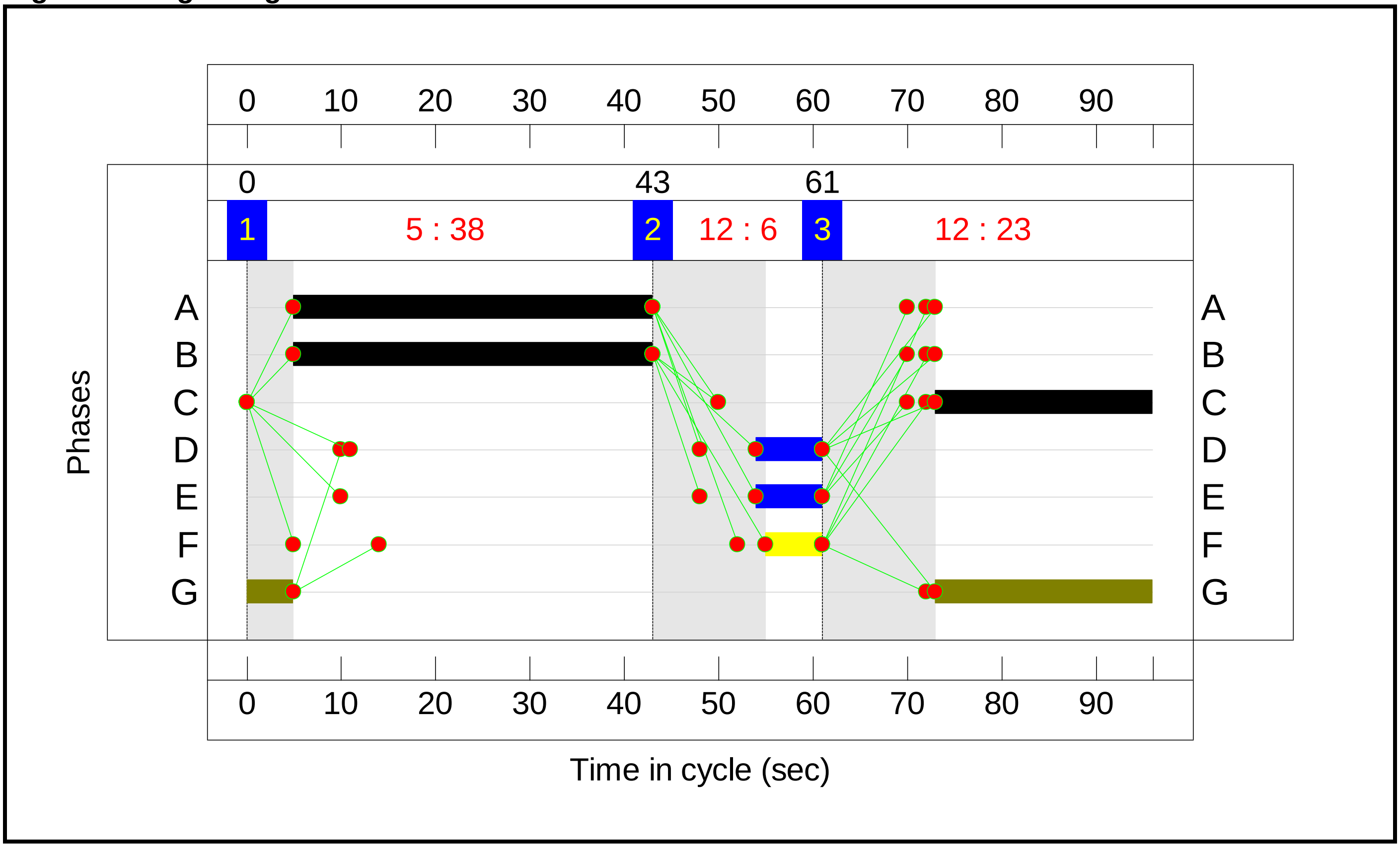
Stage Sequence Diagram



Stage Timings

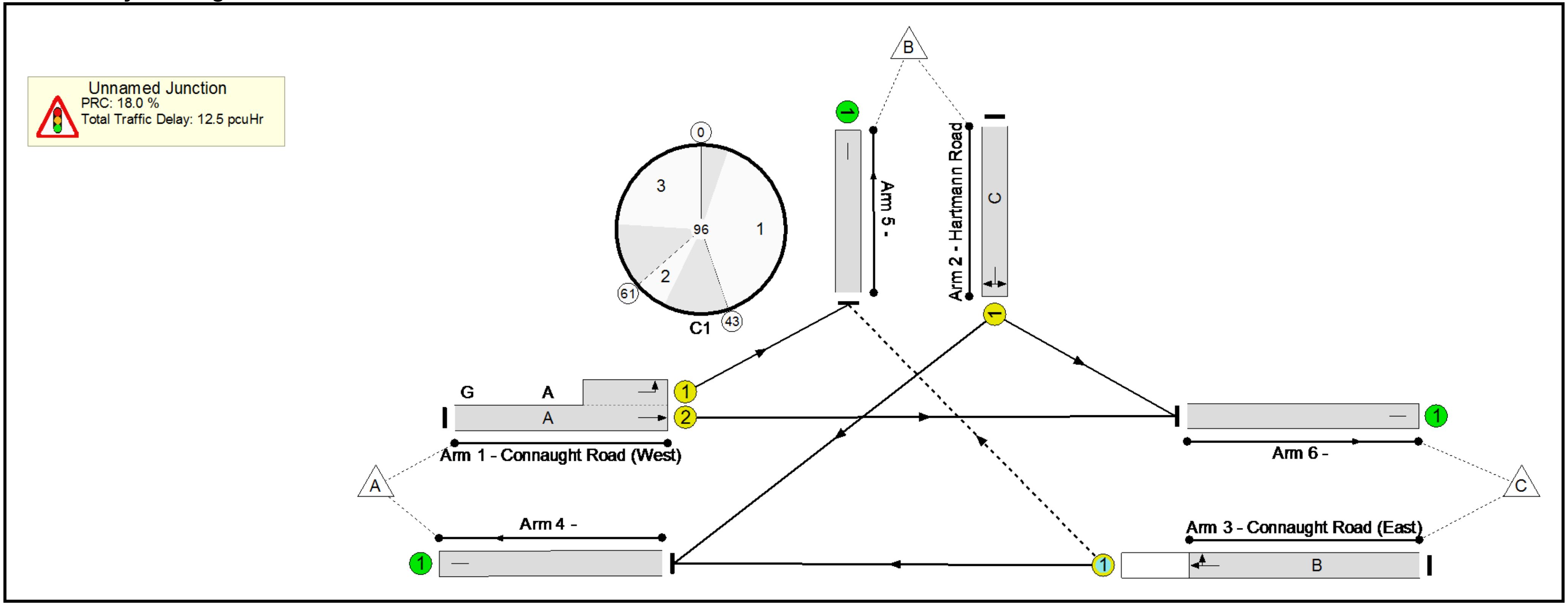
Stage	1	2	3
Duration	38	6	23
Change Point	0	43	61

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: Apron Stand Replacement Project	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**76.3%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**76.3%**
1/2+1/1	Connaught Road (West) Left Ahead	U	N/A	N/A	A	G	1	38:66	28	758	1890:1772	994	76.3%
2/1	Hartmann Road Right Left	U	N/A	N/A	C		1	23	-	349	1875	469	74.5%
3/1	Connaught Road (East) Ahead Right	O	N/A	N/A	B		1	38	-	314	1975	427	73.6%
4/1		U	N/A	N/A	-		-	-	-	588	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	480	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	353	Inf	Inf	0.0%

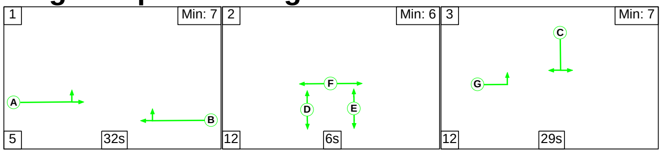
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Apron Stand Replacement Project	**-**	**-**	**40**	**0**	**2**	**8.1**	**4.4**	**0.1**	**12.5**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**40**	**0**	**2**	**8.1**	**4.4**	**0.1**	**12.5**	**-**	**-**	**-**	**-**
1/2+1/1	758	758	-	-	-	2.7	1.6	-	4.3	20.3	9.0	1.6	10.6
2/1	349	349	-	-	-	3.2	1.4	-	4.6	47.9	8.5	1.4	10.0
3/1	314	314	40	0	2	2.2	1.4	0.1	3.6	41.8	7.5	1.4	8.9
4/1	588	588	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	480	480	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	353	353	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

C1	PRC for Signalled Lanes (%):	18.0	Total Delay for Signalled Lanes (pcuHr):	12.55	Cycle Time (s):	96
	PRC Over All Lanes (%):	18.0	Total Delay Over All Lanes(pcuHr):	12.55		

Full Input Data And Results
Scenario 5: '2021 With Development AM Peak' (FG5: '2021 With Development AM Peak', Plan 1: 'Peds Every Cycle')

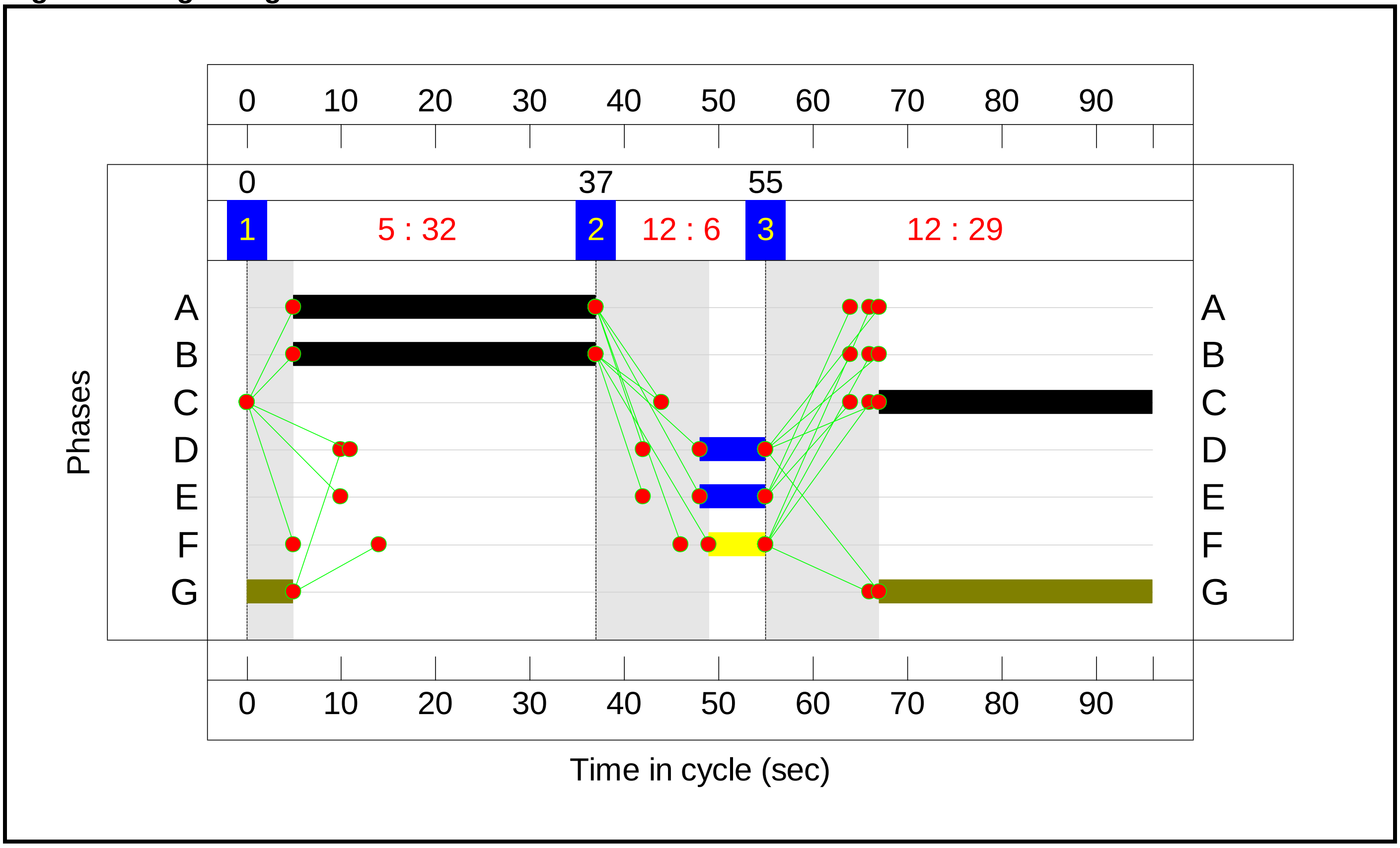
Stage Sequence Diagram



Stage Timings

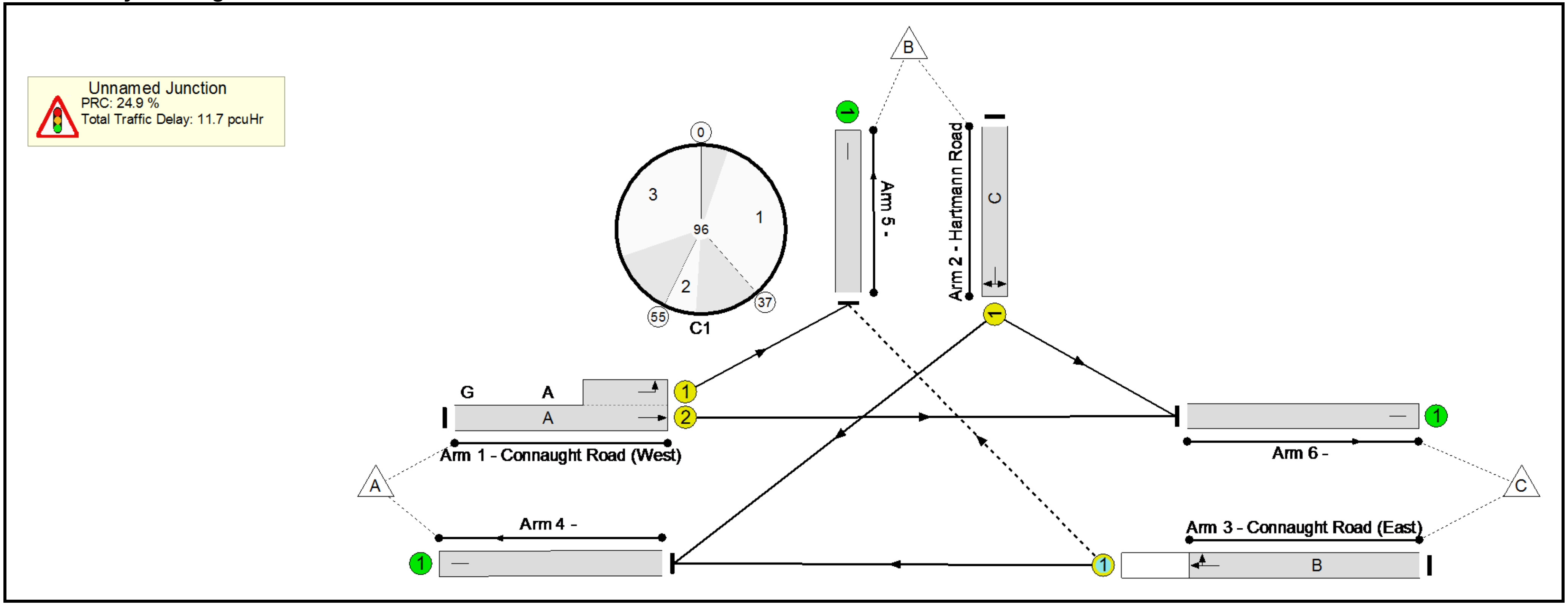
Stage	1	2	3
Duration	32	6	29
Change Point	0	37	55

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: Apron Stand Replacement Project	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**72.1%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**72.1%**
1/2+1/1	Connaught Road (West) Left Ahead	U	N/A	N/A	A	G	1	32:66	34	522	1890:1772	881	59.3%
2/1	Hartmann Road Right Left	U	N/A	N/A	C		1	29	-	423	1887	590	71.7%
3/1	Connaught Road (East) Ahead Right	O	N/A	N/A	B		1	32	-	394	2005	547	72.1%
4/1		U	N/A	N/A	-		-	-	-	798	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	315	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	226	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Apron Stand Replacement Project	**-**	**-**	**12**	**0**	**1**	**8.5**	**3.2**	**0.0**	**11.7**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**12**	**0**	**1**	**8.5**	**3.2**	**0.0**	**11.7**	**-**	**-**	**-**	**-**
1/2+1/1	522	522	-	-	-	1.9	0.7	-	2.6	17.9	4.3	0.7	5.1
2/1	423	423	-	-	-	3.4	1.3	-	4.7	39.9	10.0	1.3	11.2
3/1	394	394	12	0	1	3.2	1.3	0.0	4.5	40.7	9.4	1.3	10.7
4/1	798	798	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	315	315	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	226	226	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

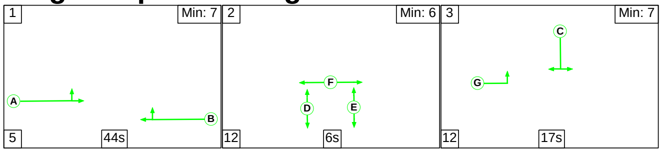
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	24.9	Total Delay for Signalled Lanes (pcuHr):	11.74	Cycle Time (s):	96
	PRC Over All Lanes (%):	24.9	Total Delay Over All Lanes(pcuHr):	11.74		

Full Input Data And Results

Scenario 6: '2021 With Development PM Peak' (FG6: '2021 With Development PM Peak', Plan 1: 'Peds Every Cycle')

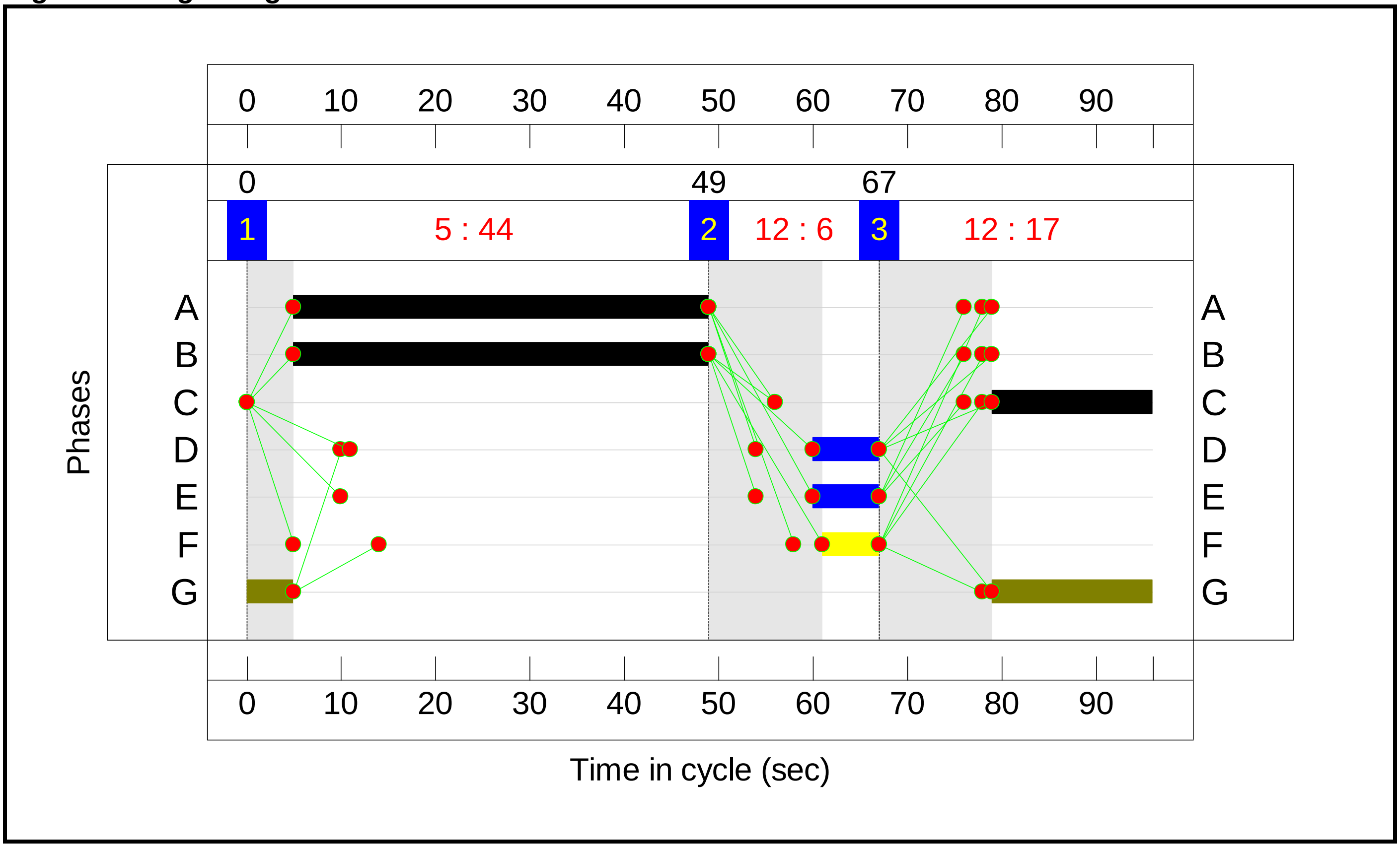
Stage Sequence Diagram



Stage Timings

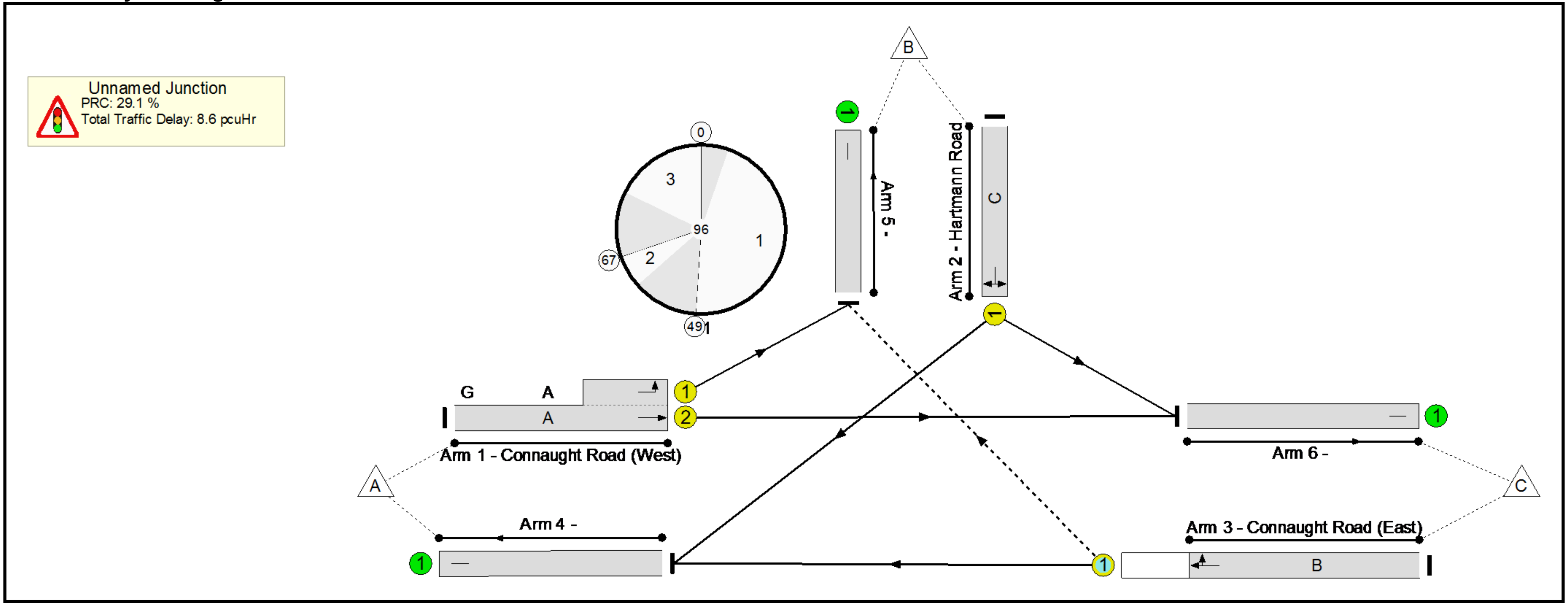
Stage	1	2	3
Duration	44	6	17
Change Point	0	49	67

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: Apron Stand Replacement Project	-	-	**N/A**	-	-		-	-	-	-	-	-	**69.7%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**69.7%**
1/2+1/1	Connaught Road (West) Left Ahead	U	N/A	N/A	A	G	1	44:66	22	763	1890:1772	1110	68.7%
2/1	Hartmann Road Right Left	U	N/A	N/A	C		1	17	-	246	1882	353	69.7%
3/1	Connaught Road (East) Ahead Right	O	N/A	N/A	B		1	44	-	284	2002	696	40.8%
4/1		U	N/A	N/A	-		-	-	-	507	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	455	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	331	Inf	Inf	0.0%

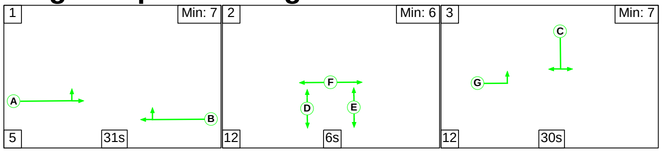
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Apron Stand Replacement Project	-	-	**11**	**0**	**0**	**6.0**	**2.6**	**0.0**	**8.6**	-	-	-	-
Unnamed Junction	-	-	**11**	**0**	**0**	**6.0**	**2.6**	**0.0**	**8.6**	-	-	-	-
1/2+1/1	763	763	-	-	-	2.2	1.1	-	3.3	15.5	6.9	1.1	8.0
2/1	246	246	-	-	-	2.5	1.1	-	3.6	53.0	6.1	1.1	7.2
3/1	284	284	11	0	0	1.4	0.3	0.0	1.7	21.8	5.7	0.3	6.0
4/1	507	507	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	455	455	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	331	331	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

C1	PRC for Signalled Lanes (%):	29.1	Total Delay for Signalled Lanes (pcuHr):	8.63	Cycle Time (s):	96
	PRC Over All Lanes (%):	29.1	Total Delay Over All Lanes(pcuHr):	8.63		

Full Input Data And Results
Scenario 7: '2023 Without Development AM Peak' (FG7: '2023 Without Development AM Peak', Plan 1: 'Peds Every Cycle')

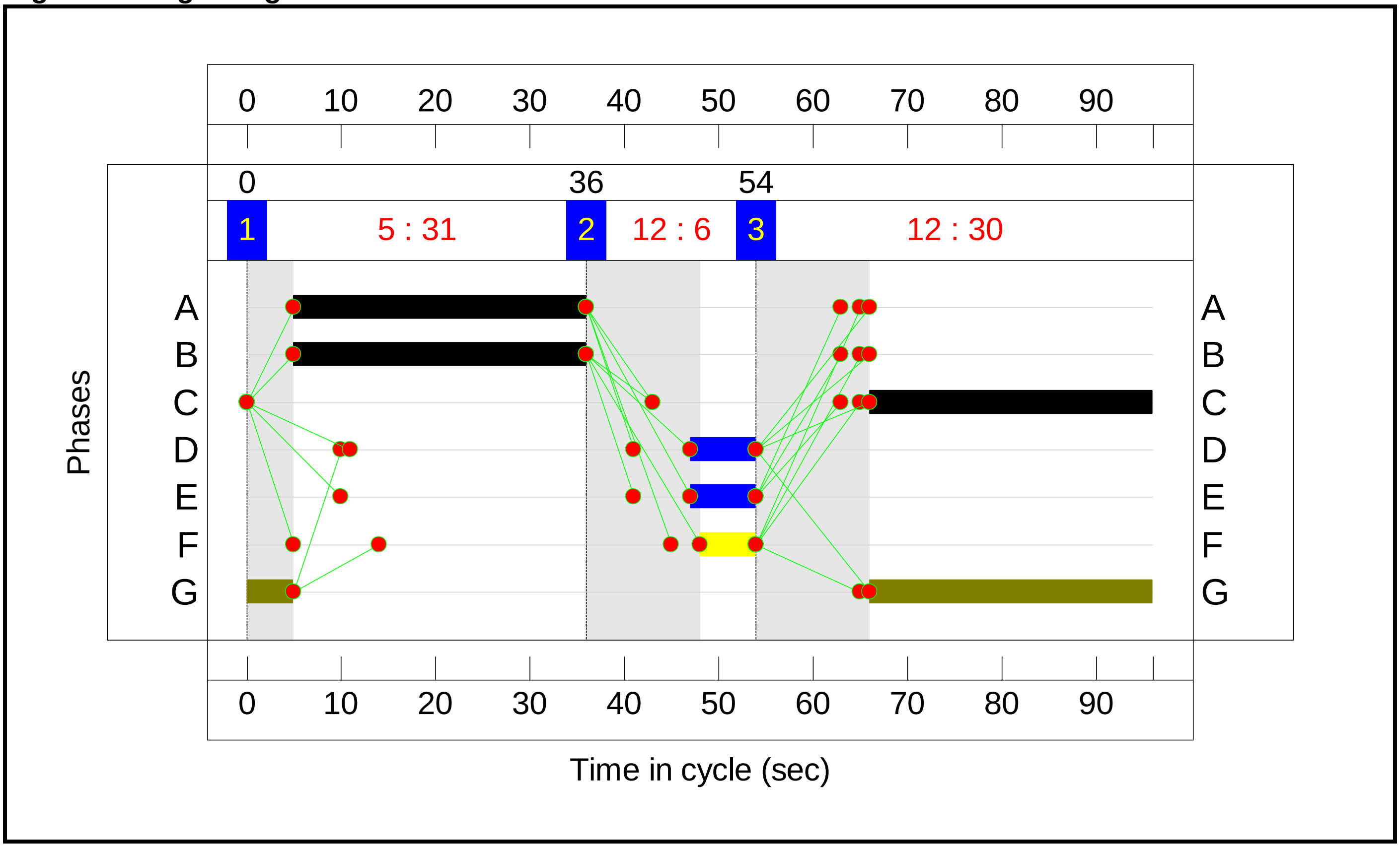
Stage Sequence Diagram



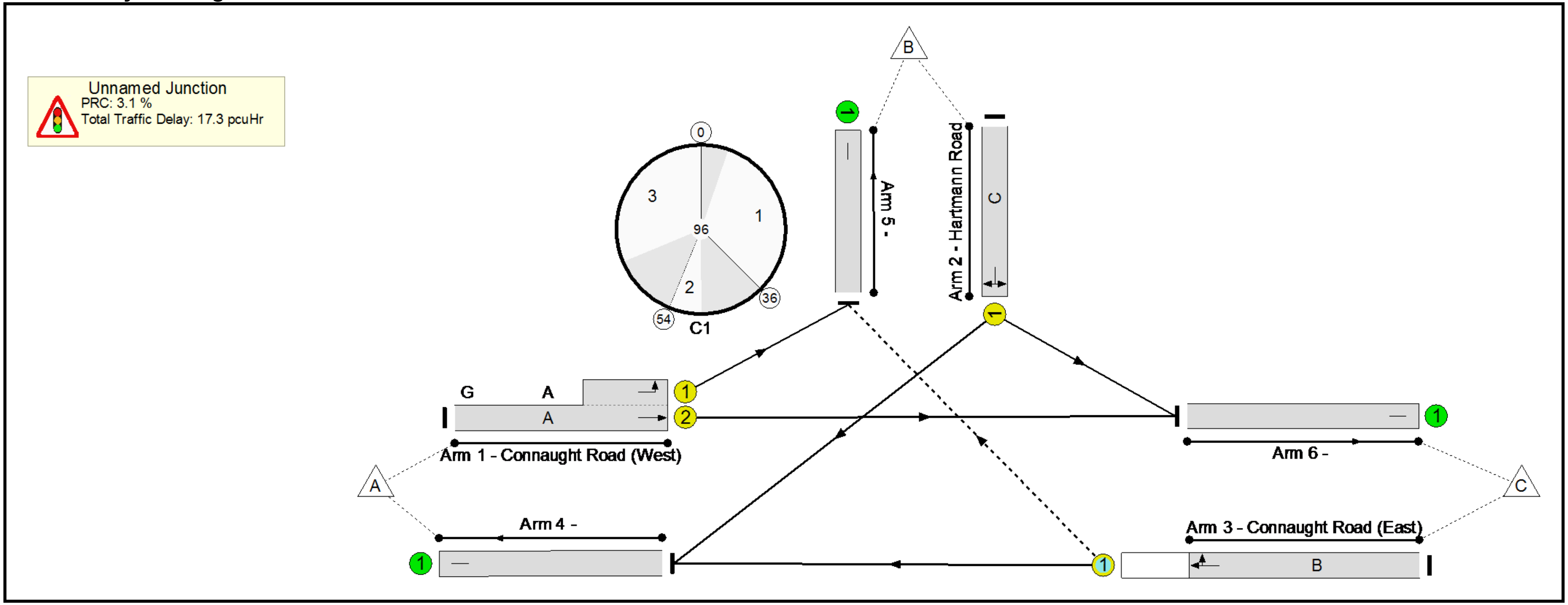
Stage Timings

Stage	1	2	3
Duration	31	6	30
Change Point	0	36	54

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: Apron Stand Replacement Project	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.3%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.3%**
1/2+1/1	Connaught Road (West) Left Ahead	U	N/A	N/A	A	G	1	31:66	35	585	1890:1772	897	65.2%
2/1	Hartmann Road Right Left	U	N/A	N/A	C		1	30	-	529	1876	606	87.3%
3/1	Connaught Road (East) Ahead Right	O	N/A	N/A	B		1	31	-	429	1989	499	85.9%
4/1		U	N/A	N/A	-		-	-	-	875	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	394	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	274	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Apron Stand Replacement Project	**-**	**-**	**33**	**0**	**4**	**10.3**	**6.9**	**0.0**	**17.3**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**33**	**0**	**4**	**10.3**	**6.9**	**0.0**	**17.3**	**-**	**-**	**-**	**-**
1/2+1/1	585	585	-	-	-	2.1	0.9	-	3.0	18.5	4.6	0.9	5.5
2/1	529	529	-	-	-	4.5	3.2	-	7.7	52.3	13.2	3.2	16.4
3/1	429	429	33	0	4	3.8	2.8	0.0	6.6	55.5	10.8	2.8	13.7
4/1	875	875	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	394	394	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	274	274	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

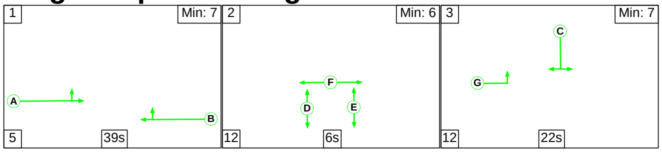
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	3.1	Total Delay for Signalled Lanes (pcuHr):	17.31	Cycle Time (s):	96
	PRC Over All Lanes (%):	3.1	Total Delay Over All Lanes(pcuHr):	17.31		

Full Input Data And Results

Scenario 8: '2023 Without Development PM Peak' (FG8: '2023 Without Development PM Peak', Plan 1: 'Peds Every Cycle')

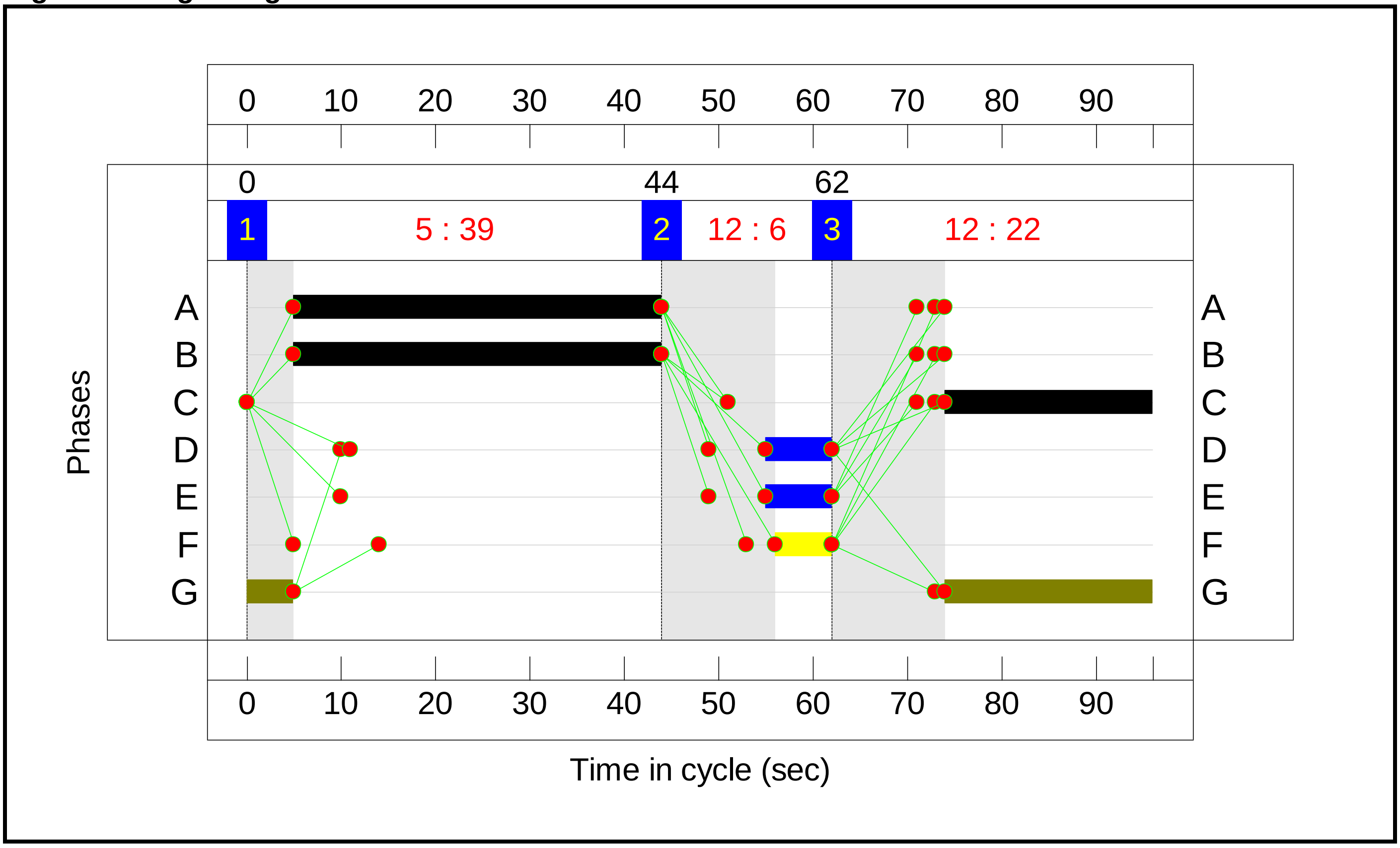
Stage Sequence Diagram



Stage Timings

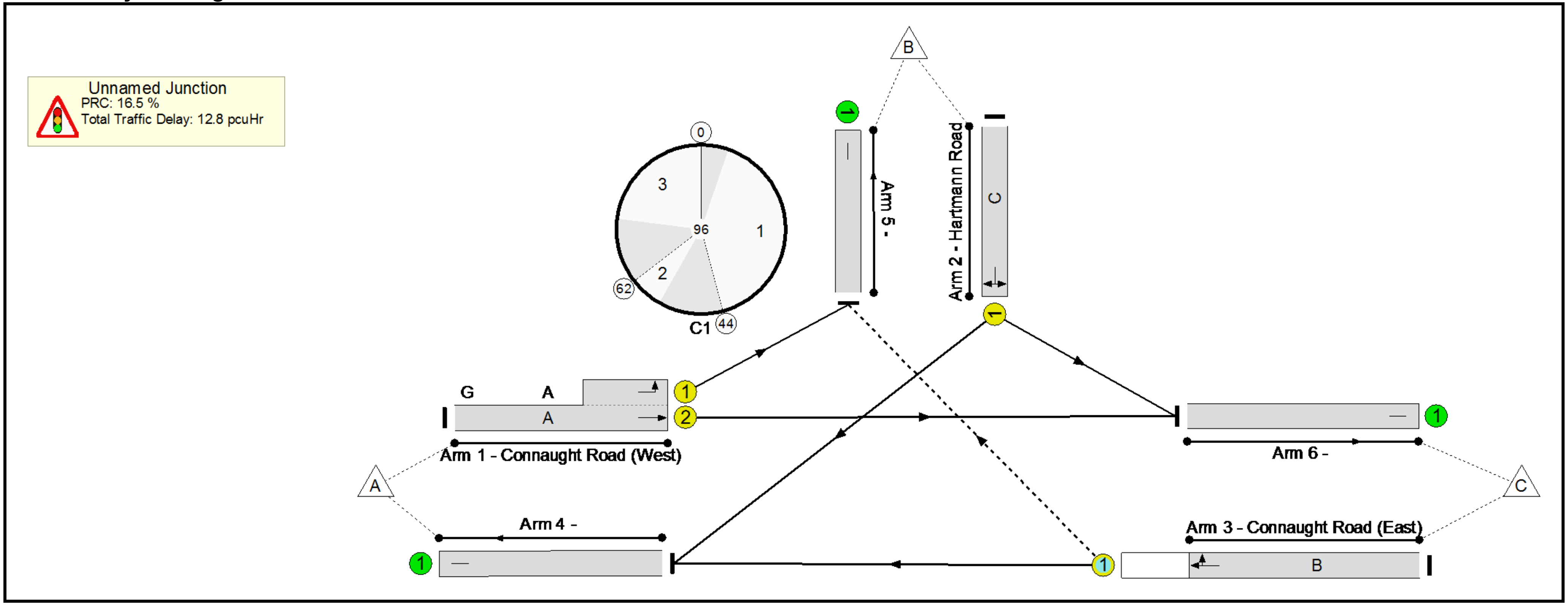
Stage	1	2	3
Duration	39	6	22
Change Point	0	44	62

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: Apron Stand Replacement Project	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**77.2%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**77.2%**
1/2+1/1	Connaught Road (West) Left Ahead	U	N/A	N/A	A	G	1	39:66	27	767	1890:1772	1006	76.2%
2/1	Hartmann Road Right Left	U	N/A	N/A	C		1	22	-	347	1875	449	77.2%
3/1	Connaught Road (East) Ahead Right	O	N/A	N/A	B		1	39	-	321	1976	440	72.9%
4/1		U	N/A	N/A	-		-	-	-	593	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	480	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	362	Inf	Inf	0.0%

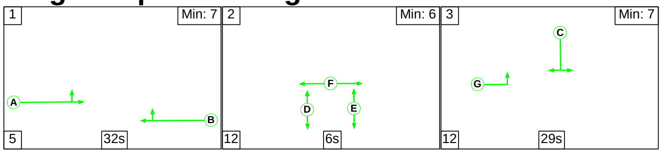
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Apron Stand Replacement Project	**-**	**-**	**40**	**0**	**2**	**8.1**	**4.5**	**0.1**	**12.8**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**40**	**0**	**2**	**8.1**	**4.5**	**0.1**	**12.8**	**-**	**-**	**-**	**-**
1/2+1/1	767	767	-	-	-	2.7	1.6	-	4.3	20.1	9.3	1.6	10.8
2/1	347	347	-	-	-	3.3	1.6	-	4.9	51.1	8.6	1.6	10.2
3/1	321	321	40	0	2	2.2	1.3	0.1	3.6	40.3	7.7	1.3	9.0
4/1	593	593	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	480	480	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	362	362	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

C1	PRC for Signalled Lanes (%):	16.5	Total Delay for Signalled Lanes (pcuHr):	12.80	Cycle Time (s):	96
	PRC Over All Lanes (%):	16.5	Total Delay Over All Lanes(pcuHr):	12.80		

Full Input Data And Results
Scenario 9: '2023 With Development AM Peak' (FG9: '2023 With Development AM Peak', Plan 1: 'Peds Every Cycle')

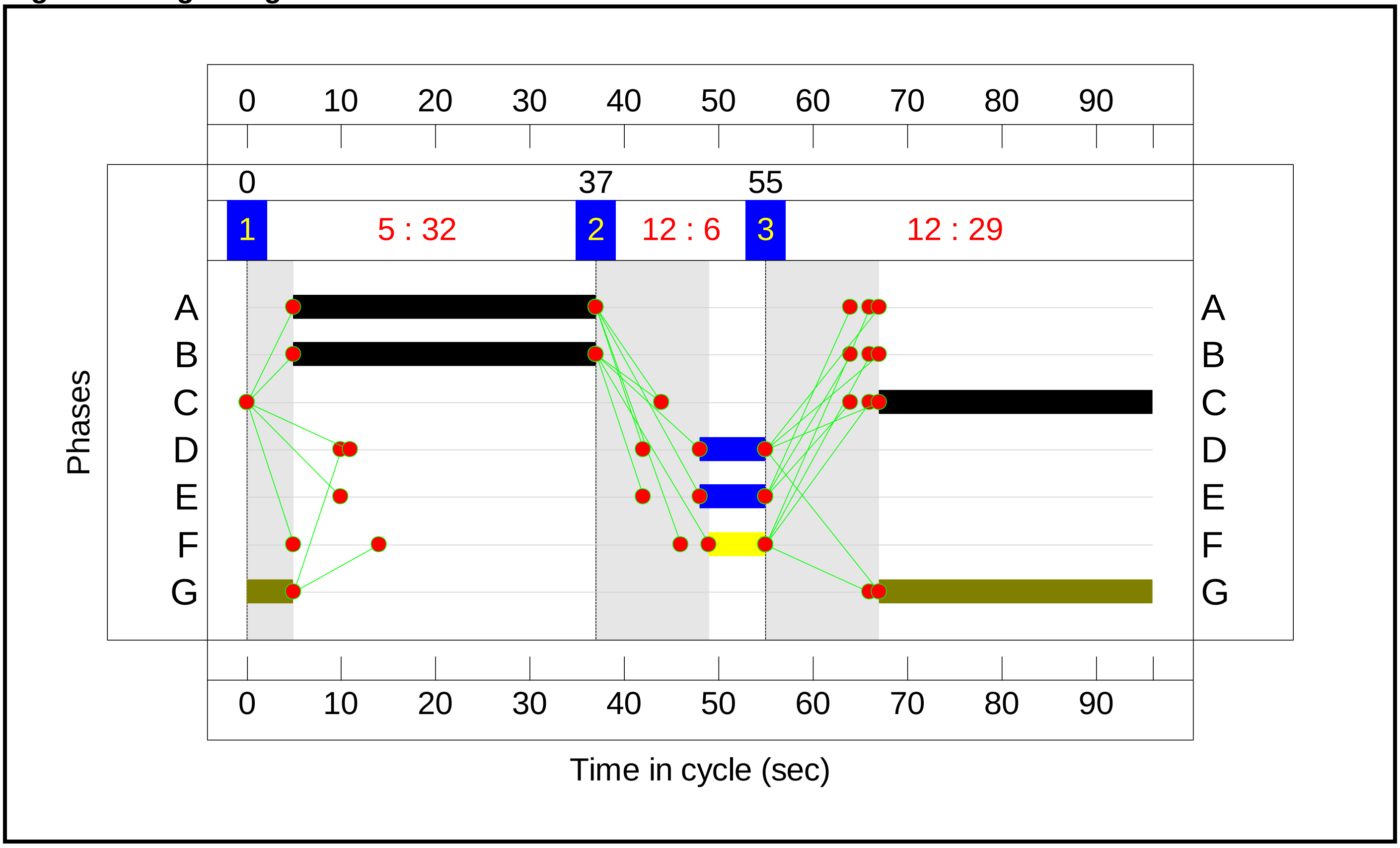
Stage Sequence Diagram



Stage Timings

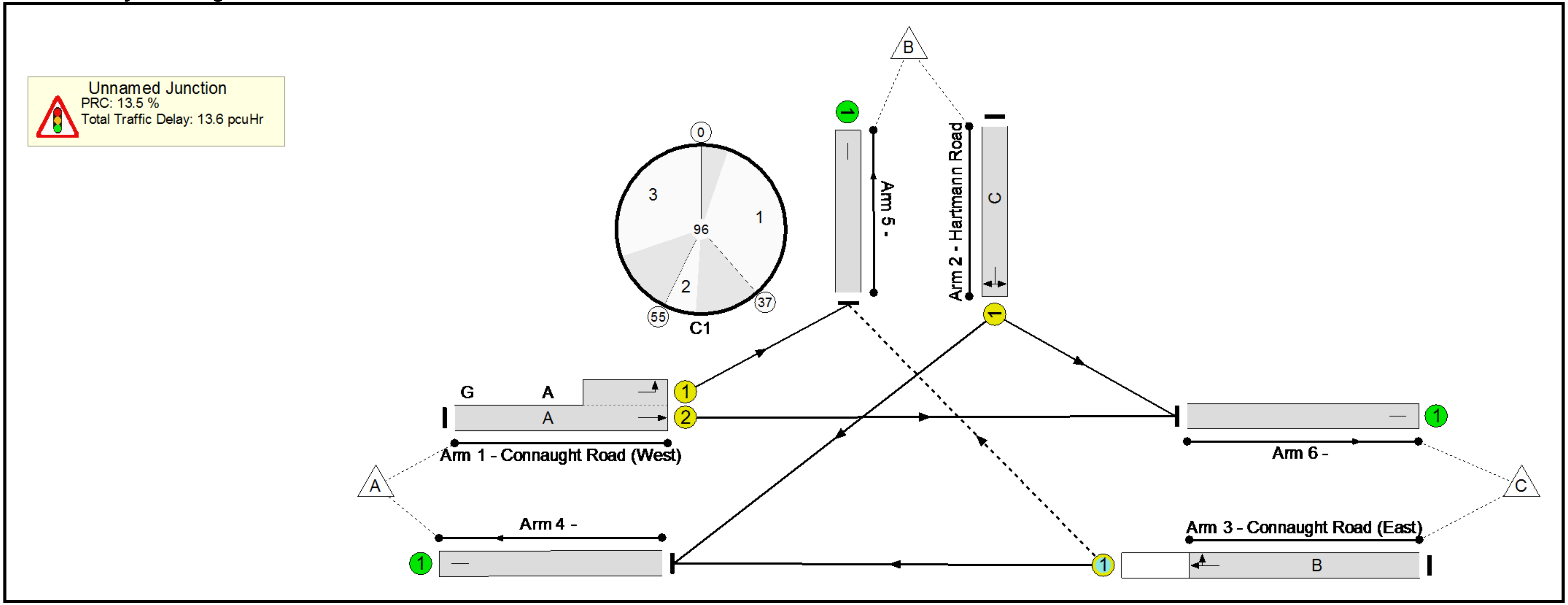
Stage	1	2	3
Duration	32	6	29
Change Point	0	37	55

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: Apron Stand Replacement Project	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**79.3%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**79.3%**
1/2+1/1	Connaught Road (West) Left Ahead	U	N/A	N/A	A	G	1	32:66	34	555	1890:1772	892	62.2%
2/1	Hartmann Road Right Left	U	N/A	N/A	C		1	29	-	467	1885	589	79.3%
3/1	Connaught Road (East) Ahead Right	O	N/A	N/A	B		1	32	-	405	2005	526	77.0%
4/1		U	N/A	N/A	-		-	-	-	847	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	340	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	240	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Apron Stand Replacement Project	**-**	**-**	**12**	**0**	**1**	**9.2**	**4.3**	**0.0**	**13.6**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**12**	**0**	**1**	**9.2**	**4.3**	**0.0**	**13.6**	**-**	**-**	**-**	**-**
1/2+1/1	555	555	-	-	-	2.0	0.8	-	2.8	18.1	4.5	0.8	5.3
2/1	467	467	-	-	-	3.9	1.9	-	5.8	44.5	11.3	1.9	13.1
3/1	405	405	12	0	1	3.4	1.6	0.0	5.0	44.4	9.9	1.6	11.5
4/1	847	847	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	340	340	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	240	240	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

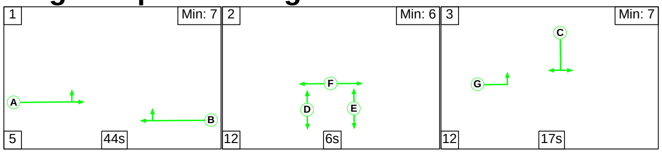
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	13.5	Total Delay for Signalled Lanes (pcuHr):	13.56	Cycle Time (s):	96
	PRC Over All Lanes (%):	13.5	Total Delay Over All Lanes(pcuHr):	13.56		

Full Input Data And Results

Scenario 10: '2023 With Development PM Peak' (FG10: '2023 With Development PM Peak', Plan 1: 'Peds Every Cycle')

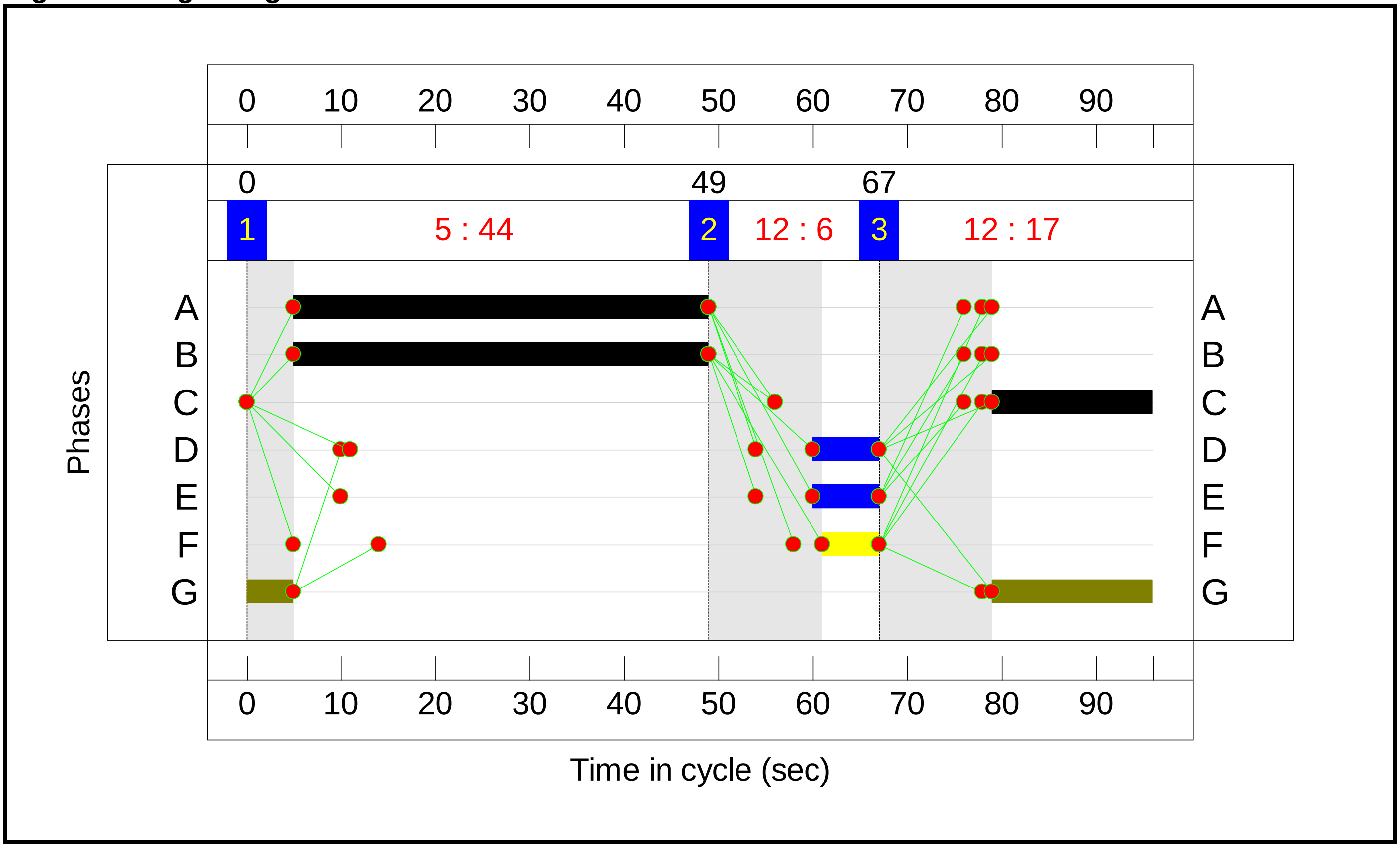
Stage Sequence Diagram



Stage Timings

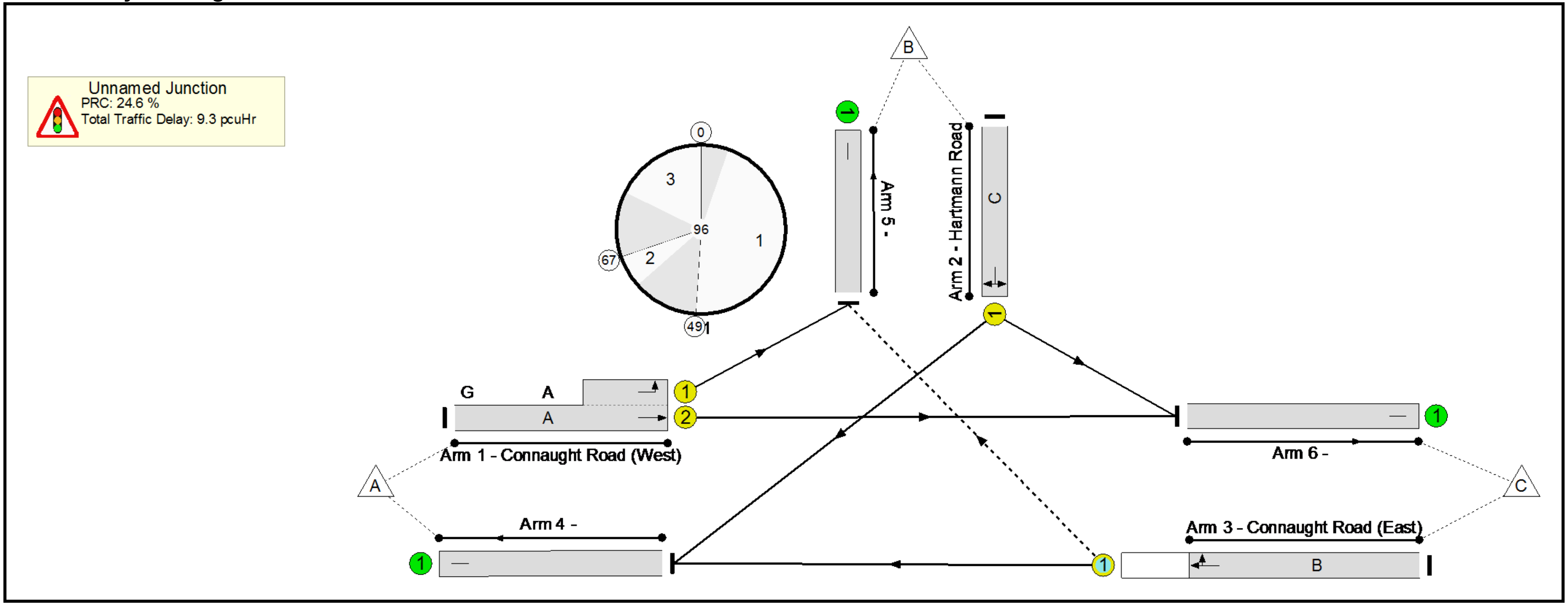
Stage	1	2	3
Duration	44	6	17
Change Point	0	49	67

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: Apron Stand Replacement Project	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**72.2%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**72.2%**
1/2+1/1	Connaught Road (West) Left Ahead	U	N/A	N/A	A	G	1	44:66	22	795	1890:1772	1116	71.2%
2/1	Hartmann Road Right Left	U	N/A	N/A	C		1	17	-	255	1883	353	72.2%
3/1	Connaught Road (East) Ahead Right	O	N/A	N/A	B		1	44	-	291	2003	661	44.0%
4/1		U	N/A	N/A	-		-	-	-	523	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	478	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	340	Inf	Inf	0.0%

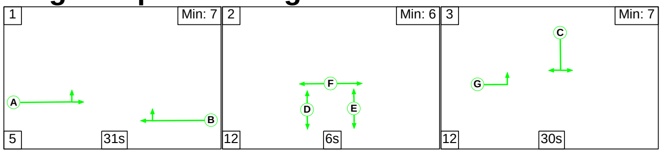
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Apron Stand Replacement Project	**-**	**-**	**11**	**0**	**0**	**6.4**	**2.9**	**0.0**	**9.3**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**11**	**0**	**0**	**6.4**	**2.9**	**0.0**	**9.3**	**-**	**-**	**-**	**-**
1/2+1/1	795	795	-	-	-	2.3	1.2	-	3.6	16.1	7.4	1.2	8.7
2/1	255	255	-	-	-	2.6	1.3	-	3.9	54.5	6.4	1.3	7.6
3/1	291	291	11	0	0	1.4	0.4	0.0	1.9	22.9	6.0	0.4	6.4
4/1	523	523	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	478	478	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	340	340	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

C1	PRC for Signalled Lanes (%):	24.6	Total Delay for Signalled Lanes (pcuHr):	9.27	Cycle Time (s):	96
	PRC Over All Lanes (%):	24.6	Total Delay Over All Lanes(pcuHr):	9.27		

Full Input Data And Results
Scenario 11: '2023 With Development AM Peak - Sensitivity Test' (FG11: '2023 With Development AM Peak - Sensitivity Test', Plan 1: 'Peds Every Cycle')

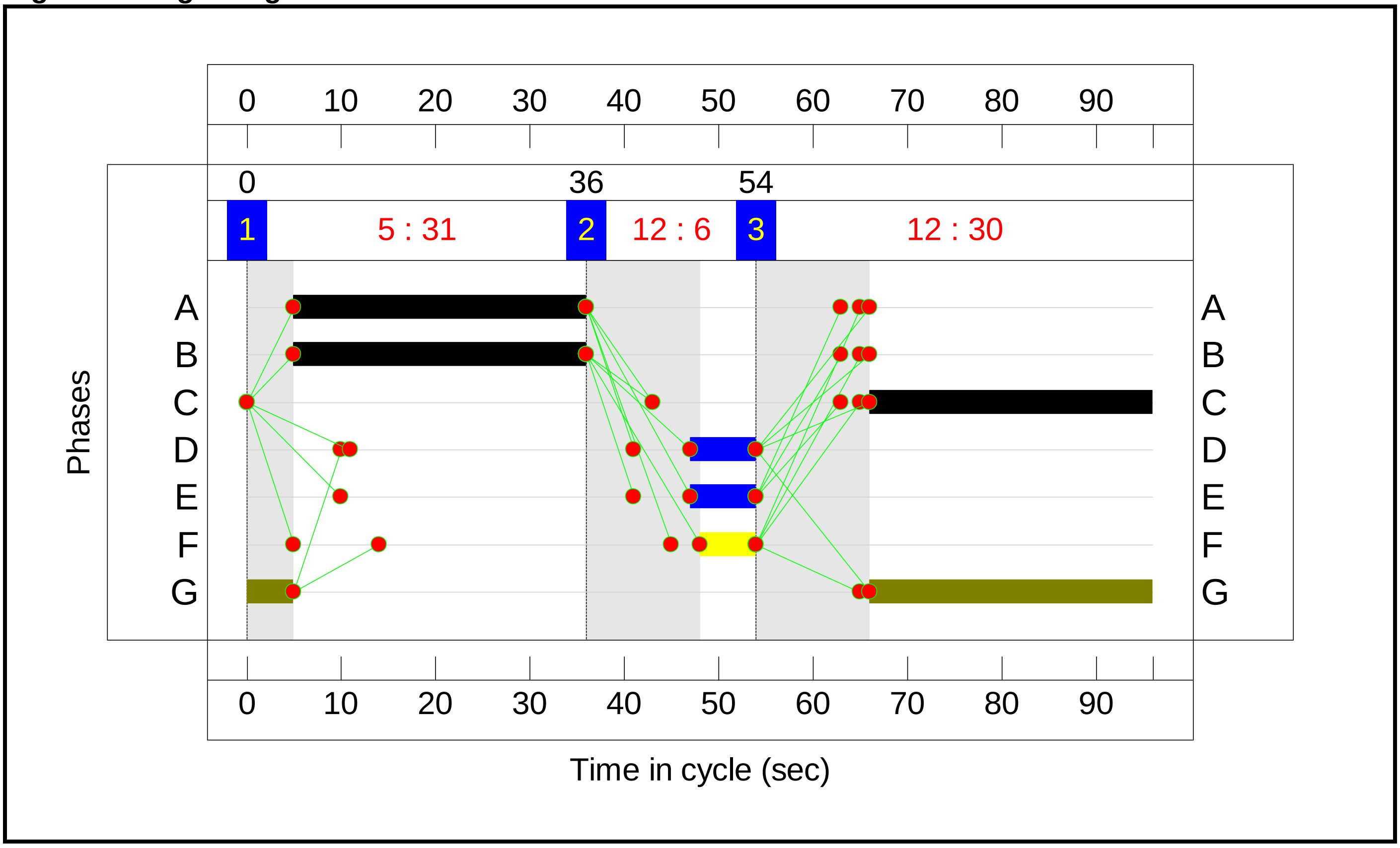
Stage Sequence Diagram



Stage Timings

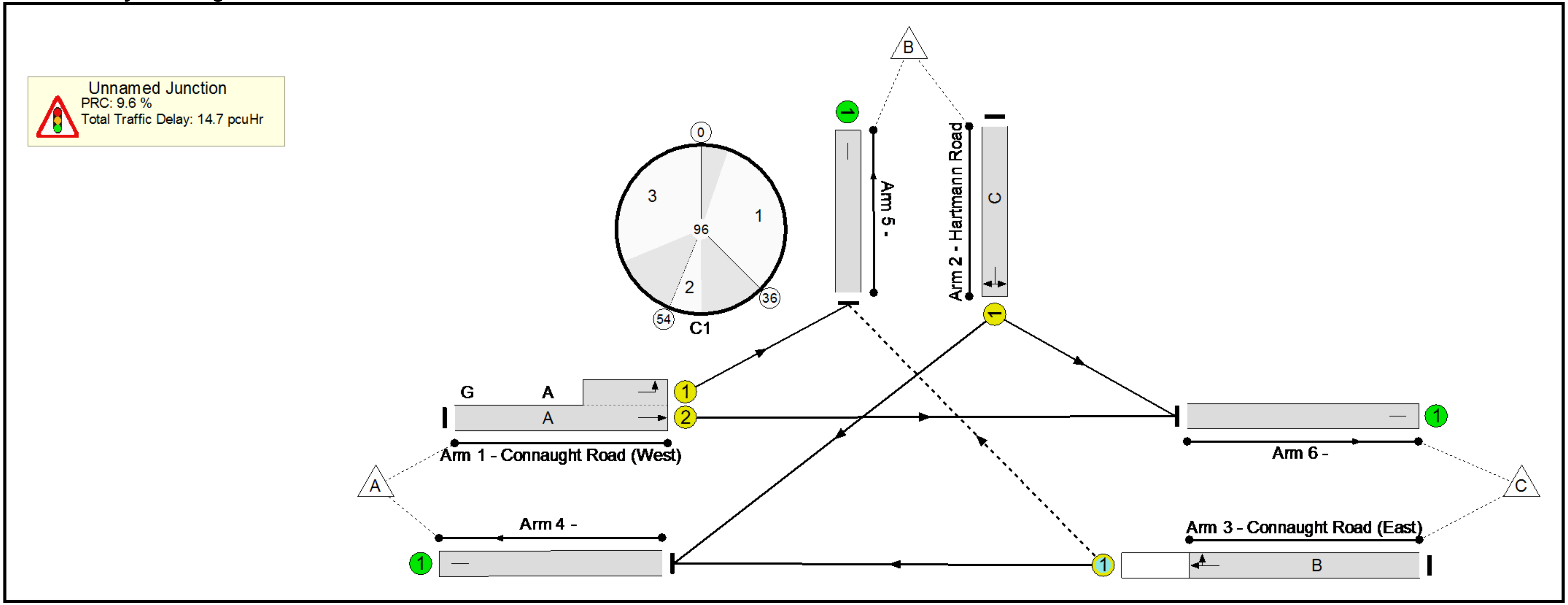
Stage	1	2	3
Duration	31	6	30
Change Point	0	36	54

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: Apron Stand Replacement Project	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**82.1%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**82.1%**
1/2+1/1	Connaught Road (West) Left Ahead	U	N/A	N/A	A	G	1	31:66	35	564	1890:1772	880	64.1%
2/1	Hartmann Road Right Left	U	N/A	N/A	C		1	30	-	500	1885	609	82.1%
3/1	Connaught Road (East) Ahead Right	O	N/A	N/A	B		1	31	-	405	2005	505	80.2%
4/1		U	N/A	N/A	-		-	-	-	879	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	349	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	241	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Apron Stand Replacement Project	**-**	**-**	**12**	**0**	**1**	**9.7**	**5.0**	**0.0**	**14.7**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**12**	**0**	**1**	**9.7**	**5.0**	**0.0**	**14.7**	**-**	**-**	**-**	**-**
1/2+1/1	564	564	-	-	-	2.0	0.9	-	2.9	18.7	4.6	0.9	5.4
2/1	500	500	-	-	-	4.2	2.2	-	6.4	45.9	12.2	2.2	14.4
3/1	405	405	12	0	1	3.5	1.9	0.0	5.4	48.2	10.0	1.9	12.0
4/1	879	879	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	349	349	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	241	241	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

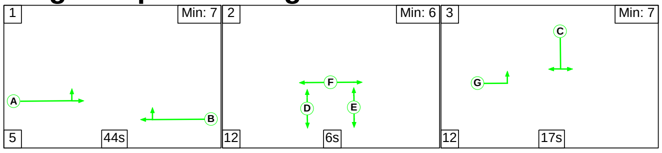
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	9.6	Total Delay for Signalled Lanes (pcuHr):	14.72	Cycle Time (s):	96
	PRC Over All Lanes (%):	9.6	Total Delay Over All Lanes(pcuHr):	14.72		

Full Input Data And Results

Scenario 12: '2023 With Development PM Peak - Sensitivity Test' (FG12: '2023 With Development PM Peak - Sensitivity Test', Plan 1: 'Peds Every Cycle')

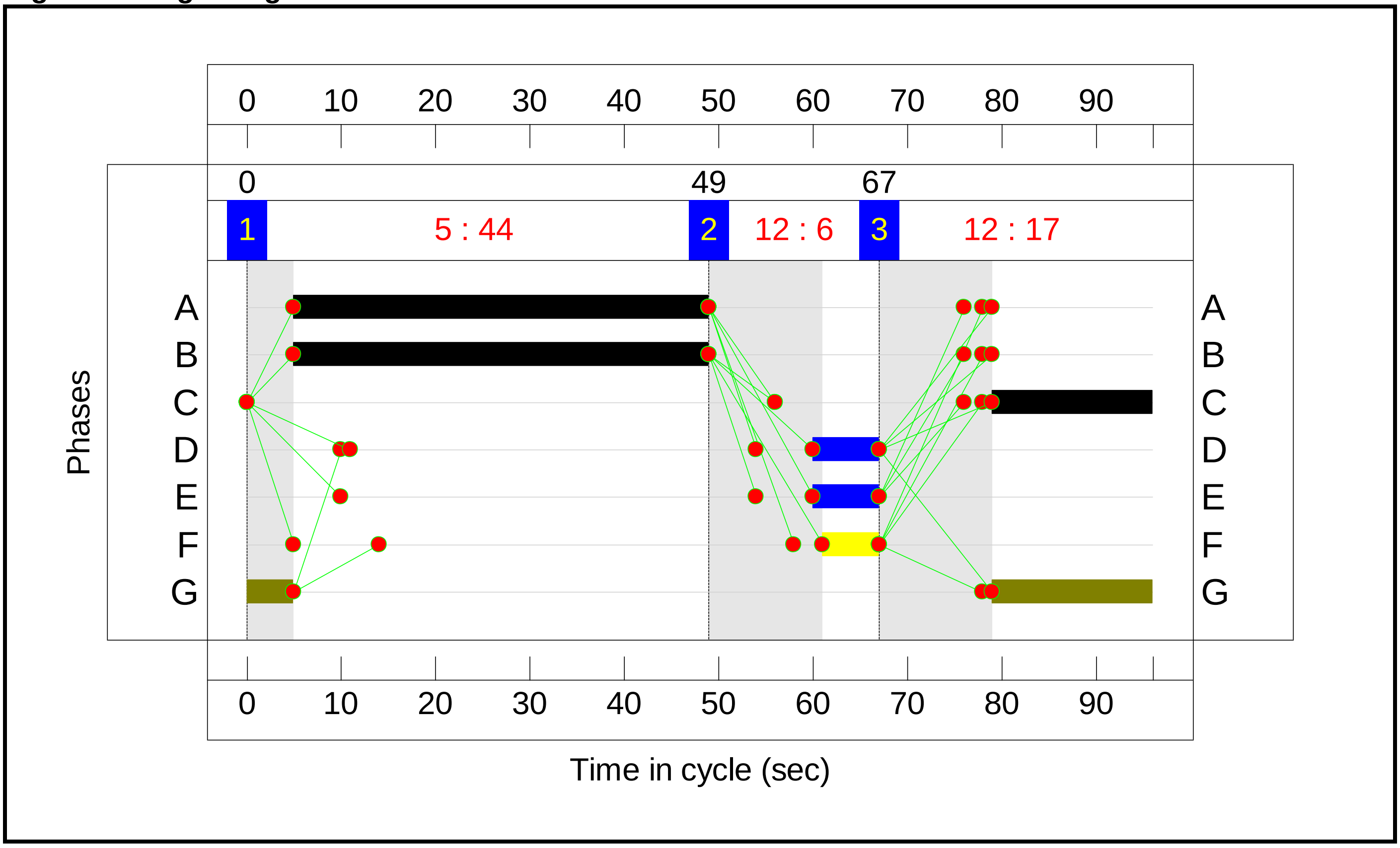
Stage Sequence Diagram



Stage Timings

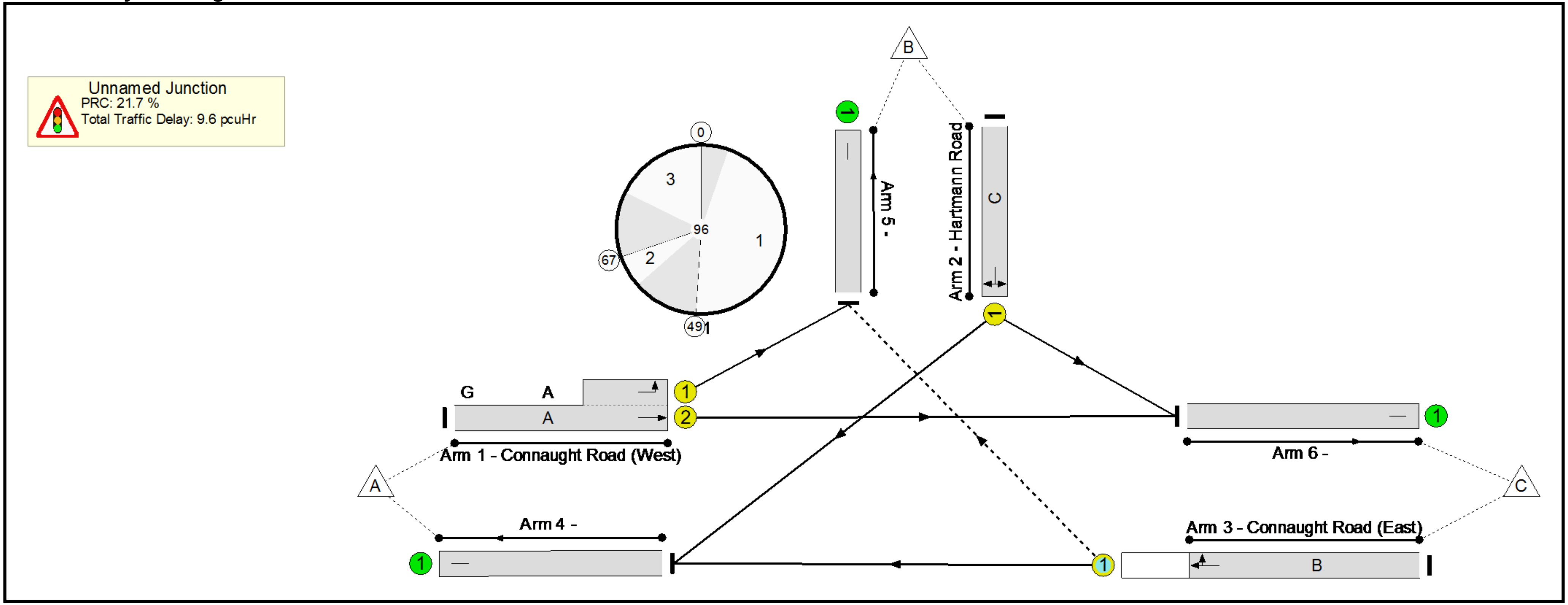
Stage	1	2	3
Duration	44	6	17
Change Point	0	49	67

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: Apron Stand Replacement Project	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**73.9%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**73.9%**
1/2+1/1	Connaught Road (West) Left Ahead	U	N/A	N/A	A	G	1	44:66	22	825	1890:1772	1133	72.8%
2/1	Hartmann Road Right Left	U	N/A	N/A	C		1	17	-	261	1883	353	73.9%
3/1	Connaught Road (East) Ahead Right	O	N/A	N/A	B		1	44	-	291	2003	656	44.4%
4/1		U	N/A	N/A	-		-	-	-	529	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	508	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	340	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Apron Stand Replacement Project	**-**	**-**	**11**	**0**	**0**	**6.5**	**3.1**	**0.0**	**9.6**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**11**	**0**	**0**	**6.5**	**3.1**	**0.0**	**9.6**	**-**	**-**	**-**	**-**
1/2+1/1	825	825	-	-	-	2.4	1.3	-	3.7	16.3	7.8	1.3	9.1
2/1	261	261	-	-	-	2.7	1.4	-	4.0	55.8	6.5	1.4	7.9
3/1	291	291	11	0	0	1.4	0.4	0.0	1.9	23.0	6.0	0.4	6.4
4/1	529	529	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	508	508	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	340	340	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

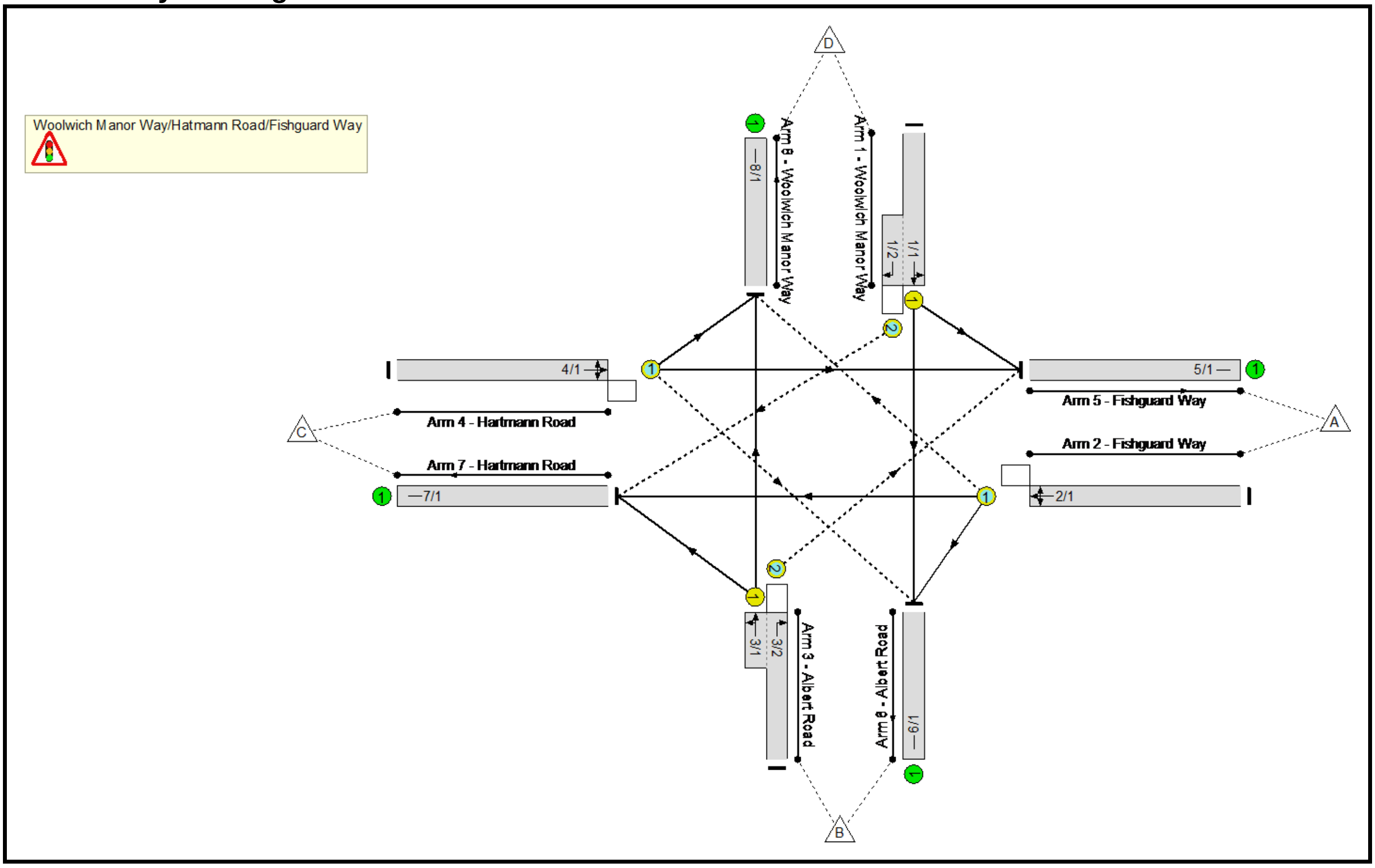
C1	PRC for Signalled Lanes (%):	21.7	Total Delay for Signalled Lanes (pcuHr):	9.64	Cycle Time (s):	96
	PRC Over All Lanes (%):	21.7	Total Delay Over All Lanes(pcuHr):	9.64		

Full Input Data And Results

User and Project Details

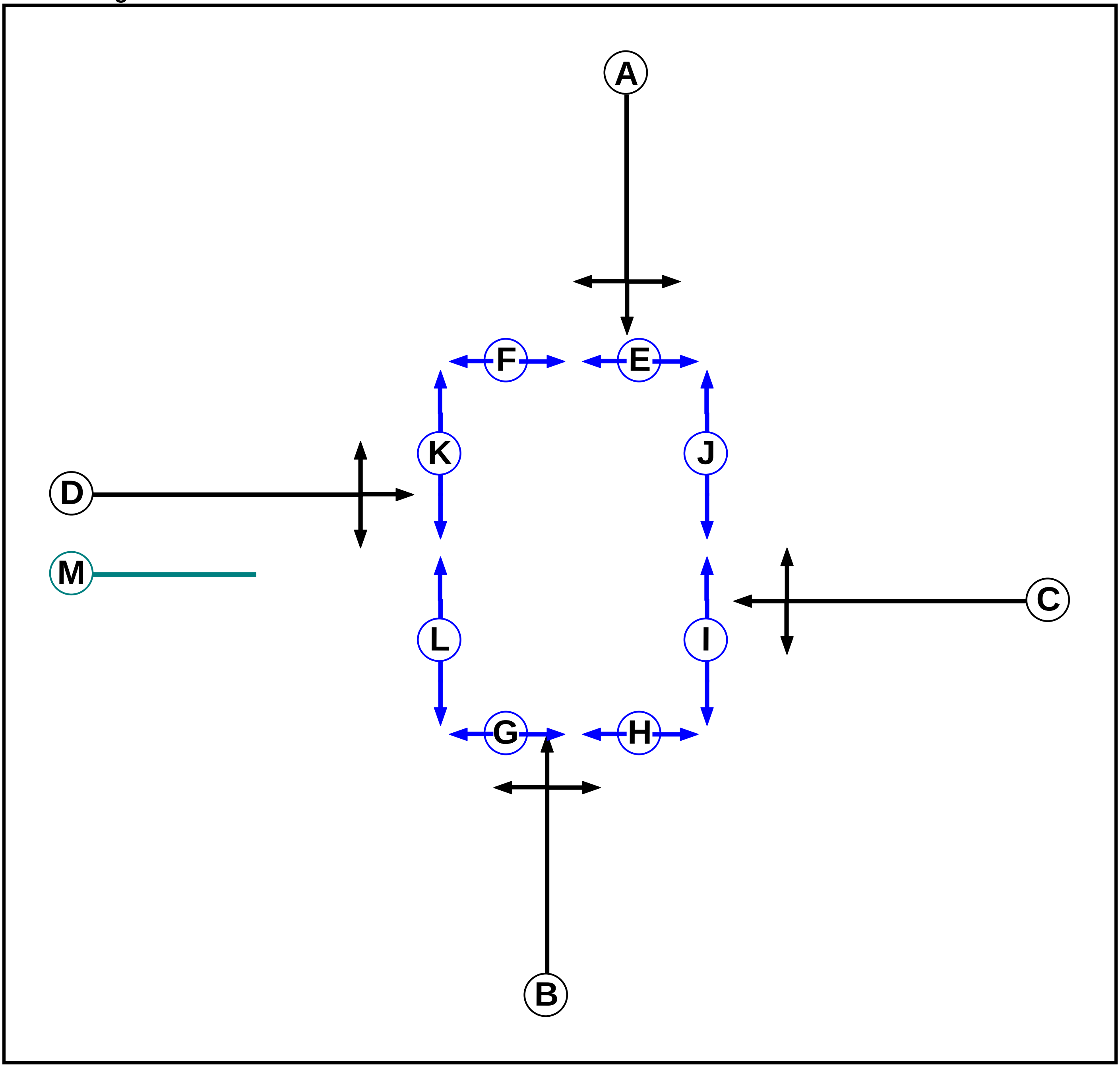
Project:	
Title:	
Location:	
File name:	Woolwich Manor Road, Hartmann Road v3 - 130620.lsg3x
Author:	
Company:	
Address:	
Notes:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Full Input Data And Results

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	Pedestrian		5	5
F	Pedestrian		5	5
G	Pedestrian		5	5
H	Pedestrian		5	5
I	Pedestrian		5	5
J	Pedestrian		5	5
K	Pedestrian		5	5
L	Pedestrian		5	5
M	Dummy		3	3

Phase Intergreens Matrix

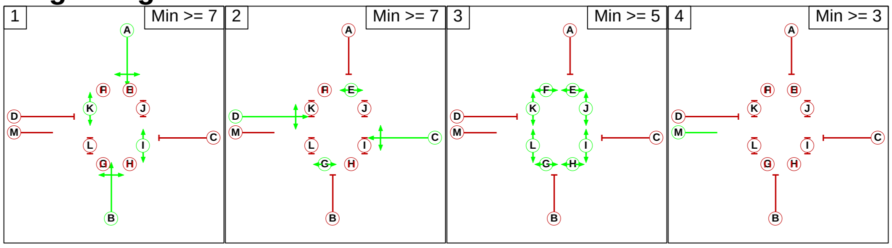
		Starting Phase												
Terminating Phase		A	B	C	D	E	F	G	H	I	J	K	L	M
	A		-	7	7	5	-	-	11	-	9	-	12	3
	B	-		7	7	-	10	5	-	-	13	-	8	3
	C	6	6		-	-	11	-	9	5	-	-	9	3
	D	6	6	-		-	8	-	13	-	10	5	-	3
	E	9	-	-	-		-	-	-	-	-	-	-	3
	F	-	10	10	10	-		-	-	-	-	-	-	4
	G	-	10	-	-	-	-		-	-	-	-	-	4
	H	8	-	8	8	-	-	-		-	-	-	-	3
	I	-	-	8	-	-	-	-	-		-	-	-	3
	J	9	9	-	9	-	-	-	-	-		-	-	3
	K	-	-	-	8	-	-	-	-	-	-		-	3
	L	11	11	11	-	-	-	-	-	-	-	-		4
	M	2	2	2	2	2	2	2	2	2	2	2	2	

Phases in Stage

Stage No.	Phases in Stage
1	A B I K
2	C D E G
3	E F G H I J K L
4	M

Full Input Data And Results

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	A	Losing	1	1
1	2	B	Losing	1	1
2	1	C	Losing	4	4
2	1	D	Losing	4	4

Prohibited Stage Change

	To Stage				
		1	2	3	4
From Stage	1		8	13	3
	2	10		13	4
	3	11	11		4
	4	2	2	2	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way											
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)
1/2 (Woolwich Manor Way)	7/1 (Right)	1439	0	3/1	1.09	All	2.00	-	0.50	2	2.00
2/1 (Fishguard Way)	8/1 (Right)	1439	0	4/1	1.09	To 5/1 (Ahead) To 8/1 (Left)	2.00	2.00	0.50	2	2.00
3/2 (Albert Road)	5/1 (Right)	1439	0	1/1	1.09	All	2.00	-	0.50	2	2.00
4/1 (Hartmann Road)	6/1 (Right)	1439	0	2/1	1.09	To 6/1 (Left) To 7/1 (Ahead)	2.00	2.00	0.50	2	2.00

Full Input Data And Results

Lane Input Data

Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way												
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 (Woolwich Manor Way)	U	A	2	3	60.0	Geom	-	2.75	0.00	Y	Arm 5 Left	15.00
											Arm 6 Ahead	Inf
1/2 (Woolwich Manor Way)	O	A	2	3	5.0	Geom	-	3.00	0.00	Y	Arm 7 Right	10.00
2/1 (Fishguard Way)	O	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 6 Left	10.00
											Arm 7 Ahead	Inf
											Arm 8 Right	15.00
3/1 (Albert Road)	U	B	2	3	4.0	Geom	-	2.75	0.00	Y	Arm 7 Left	9.00
											Arm 8 Ahead	Inf
3/2 (Albert Road)	O	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Right	15.00
4/1 (Hartmann Road)	O	D	2	3	60.0	Geom	-	4.50	0.00	Y	Arm 5 Ahead	10.00
											Arm 6 Right	Inf
											Arm 8 Left	10.00
5/1 (Fishguard Way)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Albert Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Hartmann Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Woolwich Manor Way)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'Existing AM Peak'	08:00	09:00	01:00	
2: 'Existing PM Peak'	17:00	18:00	01:00	
3: '2021 Without Development AM Peak'	08:00	09:00	01:00	
4: '2021 Without Development PM Peak'	17:00	18:00	01:00	
5: '2021 With Development AM Peak'	08:00	09:00	01:00	
6: '2021 With Development PM Peak'	17:00	18:00	01:00	
7: '2023 Without Development AM Peak'	08:00	09:00	01:00	
8: '2023 Without Development PM Peak'	17:00	18:00	01:00	
9: '2023 With Development AM Peak'	08:00	09:00	01:00	
10: '2023 With Development PM Peak'	17:00	18:00	01:00	
11: '2023 With Development AM Peak - Sensitivity Test'	08:00	09:00	01:00	
12: '2023 With Development PM Peak - Sensitivity Test'	17:00	18:00	01:00	

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

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	35	0	60	95
	B	7	0	19	184	210
	C	0	0	0	1	1
	D	40	281	0	0	321
	Tot.	47	316	19	245	627

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: Existing AM Peak
Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way	
1/1 (with short)	321(In) 321(Out)
1/2 (short)	0
2/1	95
3/1 (short)	203
3/2 (with short)	210(In) 7(Out)
4/1	1
5/1	47
6/1	316
7/1	19
8/1	245

Lane Saturation Flows

Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way								
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 (Woolwich Manor Way)	2.75	0.00	Y	Arm 5 Left	15.00	12.5 %	1867	1867
				Arm 6 Ahead	Inf	87.5 %		
1/2 (Woolwich Manor Way)	3.00	0.00	Y	Arm 7 Right	10.00	0.0 %	1915	1915
2/1 (Fishguard Way)	3.50	0.00	Y	Arm 6 Left	10.00	36.8 %	1757	1757
				Arm 7 Ahead	Inf	0.0 %		
				Arm 8 Right	15.00	63.2 %		
3/1 (Albert Road)	2.75	0.00	Y	Arm 7 Left	9.00	9.4 %	1861	1861
				Arm 8 Ahead	Inf	90.6 %		
3/2 (Albert Road)	3.00	0.00	Y	Arm 5 Right	15.00	100.0 %	1741	1741
4/1 (Hartmann Road)	4.50	0.00	Y	Arm 5 Ahead	10.00	0.0 %	1796	1796
				Arm 6 Right	Inf	0.0 %		
				Arm 8 Left	10.00	100.0 %		
5/1 (Fishguard Way Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Albert Road Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Hartmann Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Woolwich Manor Way Lane 1)	Infinite Saturation Flow						Inf	Inf

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

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	14	0	34	48
	B	26	0	19	314	359
	C	0	0	0	0	0
	D	60	326	4	0	390
	Tot.	86	340	23	348	797

Traffic Lane Flows

Lane	Scenario 2: Existing PM Peak
Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way	
1/1 (with short)	390(In) 386(Out)
1/2 (short)	4
2/1	48
3/1 (short)	333
3/2 (with short)	359(In) 26(Out)
4/1	0
5/1	86
6/1	340
7/1	23
8/1	348

Lane Saturation Flows

Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way								
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 (Woolwich Manor Way)	2.75	0.00	Y	Arm 5 Left	15.00	15.5 %	1861	1861
				Arm 6 Ahead	Inf	84.5 %		
1/2 (Woolwich Manor Way)	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
2/1 (Fishguard Way)	3.50	0.00	Y	Arm 6 Left	10.00	29.2 %	1763	1763
				Arm 7 Ahead	Inf	0.0 %		
				Arm 8 Right	15.00	70.8 %		
3/1 (Albert Road)	2.75	0.00	Y	Arm 7 Left	9.00	5.7 %	1872	1872
				Arm 8 Ahead	Inf	94.3 %		
3/2 (Albert Road)	3.00	0.00	Y	Arm 5 Right	15.00	100.0 %	1741	1741
4/1 (Hartmann Road)	4.50	0.00	Y	Arm 5 Ahead	10.00	0.0 %	2065	2065
				Arm 6 Right	Inf	0.0 %		
				Arm 8 Left	10.00	0.0 %		
5/1 (Fishguard Way Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Albert Road Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Hartmann Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Woolwich Manor Way Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2021 Without Development AM Peak' (FG3: '2021 Without Development AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	40	0	69	109
	B	8	0	22	218	248
	C	0	0	0	1	1
	D	46	346	0	0	392
	Tot.	54	386	22	288	750

Traffic Lane Flows

Lane	Scenario 3: 2021 Without Development AM Peak
Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way	
1/1 (with short)	392(In) 392(Out)
1/2 (short)	0
2/1	109
3/1 (short)	240
3/2 (with short)	248(In) 8(Out)
4/1	1
5/1	54
6/1	386
7/1	22
8/1	288

Lane Saturation Flows

Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way								
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 (Woolwich Manor Way)	2.75	0.00	Y	Arm 5 Left	15.00	11.7 %	1868	1868
				Arm 6 Ahead	Inf	88.3 %		
1/2 (Woolwich Manor Way)	3.00	0.00	Y	Arm 7 Right	10.00	0.0 %	1915	1915
2/1 (Fishguard Way)	3.50	0.00	Y	Arm 6 Left	10.00	36.7 %	1757	1757
				Arm 7 Ahead	Inf	0.0 %		
				Arm 8 Right	15.00	63.3 %		
3/1 (Albert Road)	2.75	0.00	Y	Arm 7 Left	9.00	9.2 %	1862	1862
				Arm 8 Ahead	Inf	90.8 %		
3/2 (Albert Road)	3.00	0.00	Y	Arm 5 Right	15.00	100.0 %	1741	1741
4/1 (Hartmann Road)	4.50	0.00	Y	Arm 5 Ahead	10.00	0.0 %	1796	1796
				Arm 6 Right	Inf	0.0 %		
				Arm 8 Left	10.00	100.0 %		
5/1 (Fishguard Way Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Albert Road Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Hartmann Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Woolwich Manor Way Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2021 Without Development PM Peak' (FG4: '2021 Without Development PM Peak', Plan 1: 'Network

Full Input Data And Results
Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	16	0	39	55
	B	30	0	22	359	411
	C	0	0	0	0	0
	D	69	373	4	0	446
	Tot.	99	389	26	398	912

Traffic Lane Flows

Lane	**Scenario 4: 2021 Without Development PM Peak**
Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way	
1/1 (with short)	446(In) 442(Out)
1/2 (short)	4
2/1	55
3/1 (short)	381
3/2 (with short)	411(In) 30(Out)
4/1	0
5/1	99
6/1	389
7/1	26
8/1	398

Lane Saturation Flows

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way								
1/1 (Woolwich Manor Way)	2.75	0.00	Y	Arm 5 Left	15.00	15.6 %	1861	1861
				Arm 6 Ahead	Inf	84.4 %		
1/2 (Woolwich Manor Way)	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
2/1 (Fishguard Way)	3.50	0.00	Y	Arm 6 Left	10.00	29.1 %	1763	1763
				Arm 7 Ahead	Inf	0.0 %		
				Arm 8 Right	15.00	70.9 %		
3/1 (Albert Road)	2.75	0.00	Y	Arm 7 Left	9.00	5.8 %	1872	1872
				Arm 8 Ahead	Inf	94.2 %		
3/2 (Albert Road)	3.00	0.00	Y	Arm 5 Right	15.00	100.0 %	1741	1741
4/1 (Hartmann Road)	4.50	0.00	Y	Arm 5 Ahead	10.00	0.0 %	2065	2065
				Arm 6 Right	Inf	0.0 %		
				Arm 8 Left	10.00	0.0 %		
5/1 (Fishguard Way Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Albert Road Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Hartmann Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Woolwich Manor Way Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 5: '2021 With Development AM Peak' (FG5: '2021 With Development AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	40	0	69	109
	B	8	0	22	218	248
	C	0	0	0	174	174
	D	46	346	191	0	583
	Tot.	54	386	213	461	1114

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 5: 2021 With Development AM Peak
Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way	
1/1 (with short)	583(In) 392(Out)
1/2 (short)	191
2/1	109
3/1 (short)	240
3/2 (with short)	248(In) 8(Out)
4/1	174
5/1	54
6/1	386
7/1	213
8/1	461

Lane Saturation Flows

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way								
1/1 (Woolwich Manor Way)	2.75	0.00	Y	Arm 5 Left	15.00	11.7 %	1868	1868
				Arm 6 Ahead	Inf	88.3 %		
1/2 (Woolwich Manor Way)	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
2/1 (Fishguard Way)	3.50	0.00	Y	Arm 6 Left	10.00	36.7 %	1757	1757
				Arm 7 Ahead	Inf	0.0 %		
				Arm 8 Right	15.00	63.3 %		
3/1 (Albert Road)	2.75	0.00	Y	Arm 7 Left	9.00	9.2 %	1862	1862
				Arm 8 Ahead	Inf	90.8 %		
3/2 (Albert Road)	3.00	0.00	Y	Arm 5 Right	15.00	100.0 %	1741	1741
4/1 (Hartmann Road)	4.50	0.00	Y	Arm 5 Ahead	10.00	0.0 %	1796	1796
				Arm 6 Right	Inf	0.0 %		
				Arm 8 Left	10.00	100.0 %		
5/1 (Fishguard Way Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Albert Road Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Hartmann Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Woolwich Manor Way Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2021 With Development PM Peak' (FG6: '2021 With Development PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
Origin		A	B	C	D	Tot.
	A	0	16	0	39	55
	B	0	0	22	359	381
	C	0	0	0	156	156
	D	69	373	180	0	622
	Tot.	69	389	202	554	1214

Traffic Lane Flows

Lane	Scenario 6: 2021 With Development PM Peak
Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way	
1/1 (with short)	622(In) 442(Out)
1/2 (short)	180
2/1	55
3/1 (short)	381
3/2 (with short)	381(In) 0(Out)
4/1	156
5/1	69
6/1	389
7/1	202
8/1	554

Lane Saturation Flows

Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way								
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 (Woolwich Manor Way)	2.75	0.00	Y	Arm 5 Left	15.00	15.6 %	1861	1861
				Arm 6 Ahead	Inf	84.4 %		
1/2 (Woolwich Manor Way)	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
2/1 (Fishguard Way)	3.50	0.00	Y	Arm 6 Left	10.00	29.1 %	1763	1763
				Arm 7 Ahead	Inf	0.0 %		
				Arm 8 Right	15.00	70.9 %		
3/1 (Albert Road)	2.75	0.00	Y	Arm 7 Left	9.00	5.8 %	1872	1872
				Arm 8 Ahead	Inf	94.2 %		
3/2 (Albert Road)	3.00	0.00	Y	Arm 5 Right	15.00	0.0 %	1915	1915
4/1 (Hartmann Road)	4.50	0.00	Y	Arm 5 Ahead	10.00	0.0 %	1796	1796
				Arm 6 Right	Inf	0.0 %		
				Arm 8 Left	10.00	100.0 %		
5/1 (Fishguard Way Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Albert Road Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Hartmann Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Woolwich Manor Way Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 7: '2023 Without Development AM Peak' (FG7: '2023 Without Development AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	42	0	71	113
	B	8	0	22	226	256
	C	0	0	0	1	1
	D	48	358	0	0	406
	Tot.	56	400	22	298	776

Traffic Lane Flows

Lane	Scenario 7: 2023 Without Development AM Peak
Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way	
1/1 (with short)	406(In) 406(Out)
1/2 (short)	0
2/1	113
3/1 (short)	248
3/2 (with short)	256(In) 8(Out)
4/1	1
5/1	56
6/1	400
7/1	22
8/1	298

Lane Saturation Flows

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way								
1/1 (Woolwich Manor Way)	2.75	0.00	Y	Arm 5 Left	15.00	11.8 %	1868	1868
				Arm 6 Ahead	Inf	88.2 %		
1/2 (Woolwich Manor Way)	3.00	0.00	Y	Arm 7 Right	10.00	0.0 %	1915	1915
2/1 (Fishguard Way)	3.50	0.00	Y	Arm 6 Left	10.00	37.2 %	1757	1757
				Arm 7 Ahead	Inf	0.0 %		
				Arm 8 Right	15.00	62.8 %		
3/1 (Albert Road)	2.75	0.00	Y	Arm 7 Left	9.00	8.9 %	1862	1862
				Arm 8 Ahead	Inf	91.1 %		
3/2 (Albert Road)	3.00	0.00	Y	Arm 5 Right	15.00	100.0 %	1741	1741
4/1 (Hartmann Road)	4.50	0.00	Y	Arm 5 Ahead	10.00	0.0 %	1796	1796
				Arm 6 Right	Inf	0.0 %		
				Arm 8 Left	10.00	100.0 %		
5/1 (Fishguard Way Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Albert Road Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Hartmann Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Woolwich Manor Way Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 8: '2023 Without Development PM Peak' (FG8: '2023 Without Development PM Peak', Plan 1: 'Network

Full Input Data And Results
Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	17	0	40	57
	B	31	0	22	373	426
	C	0	0	0	0	0
	D	71	387	4	0	462
	Tot.	102	404	26	413	945

Traffic Lane Flows

Lane	Scenario 8: 2023 Without Development PM Peak
Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way	
1/1 (with short)	462(In) 458(Out)
1/2 (short)	4
2/1	57
3/1 (short)	395
3/2 (with short)	426(In) 31(Out)
4/1	0
5/1	102
6/1	404
7/1	26
8/1	413

Full Input Data And Results

Lane Saturation Flows

Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way								
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 (Woolwich Manor Way)	2.75	0.00	Y	Arm 5 Left	15.00	15.5 %	1861	1861
				Arm 6 Ahead	Inf	84.5 %		
1/2 (Woolwich Manor Way)	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
2/1 (Fishguard Way)	3.50	0.00	Y	Arm 6 Left	10.00	29.8 %	1762	1762
				Arm 7 Ahead	Inf	0.0 %		
				Arm 8 Right	15.00	70.2 %		
3/1 (Albert Road)	2.75	0.00	Y	Arm 7 Left	9.00	5.6 %	1873	1873
				Arm 8 Ahead	Inf	94.4 %		
3/2 (Albert Road)	3.00	0.00	Y	Arm 5 Right	15.00	100.0 %	1741	1741
4/1 (Hartmann Road)	4.50	0.00	Y	Arm 5 Ahead	10.00	0.0 %	2065	2065
				Arm 6 Right	Inf	0.0 %		
				Arm 8 Left	10.00	0.0 %		
5/1 (Fishguard Way Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Albert Road Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Hartmann Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Woolwich Manor Way Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 9: '2023 With Development AM Peak' (FG9: '2023 With Development AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	42	0	71	113
	B	8	0	22	226	256
	C	0	0	0	180	180
	D	48	358	196	0	602
	Tot.	56	400	218	477	1151

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 9: 2023 With Development AM Peak
Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way	
1/1 (with short)	602(In) 406(Out)
1/2 (short)	196
2/1	113
3/1 (short)	248
3/2 (with short)	256(In) 8(Out)
4/1	180
5/1	56
6/1	400
7/1	218
8/1	477

Lane Saturation Flows

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way								
1/1 (Woolwich Manor Way)	2.75	0.00	Y	Arm 5 Left	15.00	11.8 %	1868	1868
				Arm 6 Ahead	Inf	88.2 %		
1/2 (Woolwich Manor Way)	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
2/1 (Fishguard Way)	3.50	0.00	Y	Arm 6 Left	10.00	37.2 %	1757	1757
				Arm 7 Ahead	Inf	0.0 %		
				Arm 8 Right	15.00	62.8 %		
3/1 (Albert Road)	2.75	0.00	Y	Arm 7 Left	9.00	8.9 %	1862	1862
				Arm 8 Ahead	Inf	91.1 %		
3/2 (Albert Road)	3.00	0.00	Y	Arm 5 Right	15.00	100.0 %	1741	1741
4/1 (Hartmann Road)	4.50	0.00	Y	Arm 5 Ahead	10.00	0.0 %	1796	1796
				Arm 6 Right	Inf	0.0 %		
				Arm 8 Left	10.00	100.0 %		
5/1 (Fishguard Way Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Albert Road Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Hartmann Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Woolwich Manor Way Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 10: '2023 With Development PM Peak' (FG10: '2023 With Development PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	17	0	40	57
	B	31	0	22	373	426
	C	0	0	0	162	162
	D	71	387	190	0	648
	Tot.	102	404	212	575	1293

Traffic Lane Flows

Lane	Scenario 10: 2023 With Development PM Peak
Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way	
1/1 (with short)	648(In) 458(Out)
1/2 (short)	190
2/1	57
3/1 (short)	395
3/2 (with short)	426(In) 31(Out)
4/1	162
5/1	102
6/1	404
7/1	212
8/1	575

Lane Saturation Flows

Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way								
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 (Woolwich Manor Way)	2.75	0.00	Y	Arm 5 Left	15.00	15.5 %	1861	1861
				Arm 6 Ahead	Inf	84.5 %		
1/2 (Woolwich Manor Way)	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
2/1 (Fishguard Way)	3.50	0.00	Y	Arm 6 Left	10.00	29.8 %	1762	1762
				Arm 7 Ahead	Inf	0.0 %		
				Arm 8 Right	15.00	70.2 %		
3/1 (Albert Road)	2.75	0.00	Y	Arm 7 Left	9.00	5.6 %	1873	1873
				Arm 8 Ahead	Inf	94.4 %		
3/2 (Albert Road)	3.00	0.00	Y	Arm 5 Right	15.00	100.0 %	1741	1741
4/1 (Hartmann Road)	4.50	0.00	Y	Arm 5 Ahead	10.00	0.0 %	1796	1796
				Arm 6 Right	Inf	0.0 %		
				Arm 8 Left	10.00	100.0 %		
5/1 (Fishguard Way Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Albert Road Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Hartmann Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Woolwich Manor Way Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 11: 'Copy of 2023 With Development AM Peak' (FG11: '2023 With Development AM Peak - Sensitivity Test', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	42	0	71	113
	B	8	0	22	226	256
	C	0	0	0	194	194
	D	48	358	198	0	604
	Tot.	56	400	220	491	1167

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 11: Copy of 2023 With Development AM Peak
Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way	
1/1 (with short)	604(In) 406(Out)
1/2 (short)	198
2/1	113
3/1 (short)	248
3/2 (with short)	256(In) 8(Out)
4/1	194
5/1	56
6/1	400
7/1	220
8/1	491

Lane Saturation Flows

Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way								
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 (Woolwich Manor Way)	2.75	0.00	Y	Arm 5 Left	15.00	11.8 %	1868	1868
				Arm 6 Ahead	Inf	88.2 %		
1/2 (Woolwich Manor Way)	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
2/1 (Fishguard Way)	3.50	0.00	Y	Arm 6 Left	10.00	37.2 %	1757	1757
				Arm 7 Ahead	Inf	0.0 %		
				Arm 8 Right	15.00	62.8 %		
3/1 (Albert Road)	2.75	0.00	Y	Arm 7 Left	9.00	8.9 %	1862	1862
				Arm 8 Ahead	Inf	91.1 %		
3/2 (Albert Road)	3.00	0.00	Y	Arm 5 Right	15.00	100.0 %	1741	1741
4/1 (Hartmann Road)	4.50	0.00	Y	Arm 5 Ahead	10.00	0.0 %	1796	1796
				Arm 6 Right	Inf	0.0 %		
				Arm 8 Left	10.00	100.0 %		
5/1 (Fishguard Way Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Albert Road Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Hartmann Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Woolwich Manor Way Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 12: 'Copy of 2023 With Development PM Peak' (FG12: '2023 With Development PM Peak - Sensitivity

Full Input Data And Results
Test', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	17	0	40	57
	B	31	0	22	373	426
	C	0	0	0	163	163
	D	71	387	202	0	660
	Tot.	102	404	224	576	1306

Traffic Lane Flows

Lane	Scenario 12: Copy of 2023 With Development PM Peak
Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way	
1/1 (with short)	660(In) 458(Out)
1/2 (short)	202
2/1	57
3/1 (short)	395
3/2 (with short)	426(In) 31(Out)
4/1	163
5/1	102
6/1	404
7/1	224
8/1	576

Full Input Data And Results

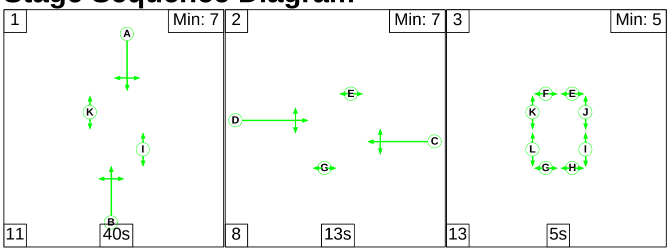
Lane Saturation Flows

Junction: Woolwich Manor Way/Hatmann Road/Fishguard Way

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 (Woolwich Manor Way)	2.75	0.00	Y	Arm 5 Left	15.00	15.5 %	1861	1861
				Arm 6 Ahead	Inf	84.5 %		
1/2 (Woolwich Manor Way)	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
2/1 (Fishguard Way)	3.50	0.00	Y	Arm 6 Left	10.00	29.8 %	1762	1762
				Arm 7 Ahead	Inf	0.0 %		
				Arm 8 Right	15.00	70.2 %		
3/1 (Albert Road)	2.75	0.00	Y	Arm 7 Left	9.00	5.6 %	1873	1873
				Arm 8 Ahead	Inf	94.4 %		
3/2 (Albert Road)	3.00	0.00	Y	Arm 5 Right	15.00	100.0 %	1741	1741
4/1 (Hartmann Road)	4.50	0.00	Y	Arm 5 Ahead	10.00	0.0 %	1796	1796
				Arm 6 Right	Inf	0.0 %		
				Arm 8 Left	10.00	100.0 %		
5/1 (Fishguard Way Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Albert Road Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Hartmann Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Woolwich Manor Way Lane 1)	Infinite Saturation Flow						Inf	Inf

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

Stage Sequence Diagram

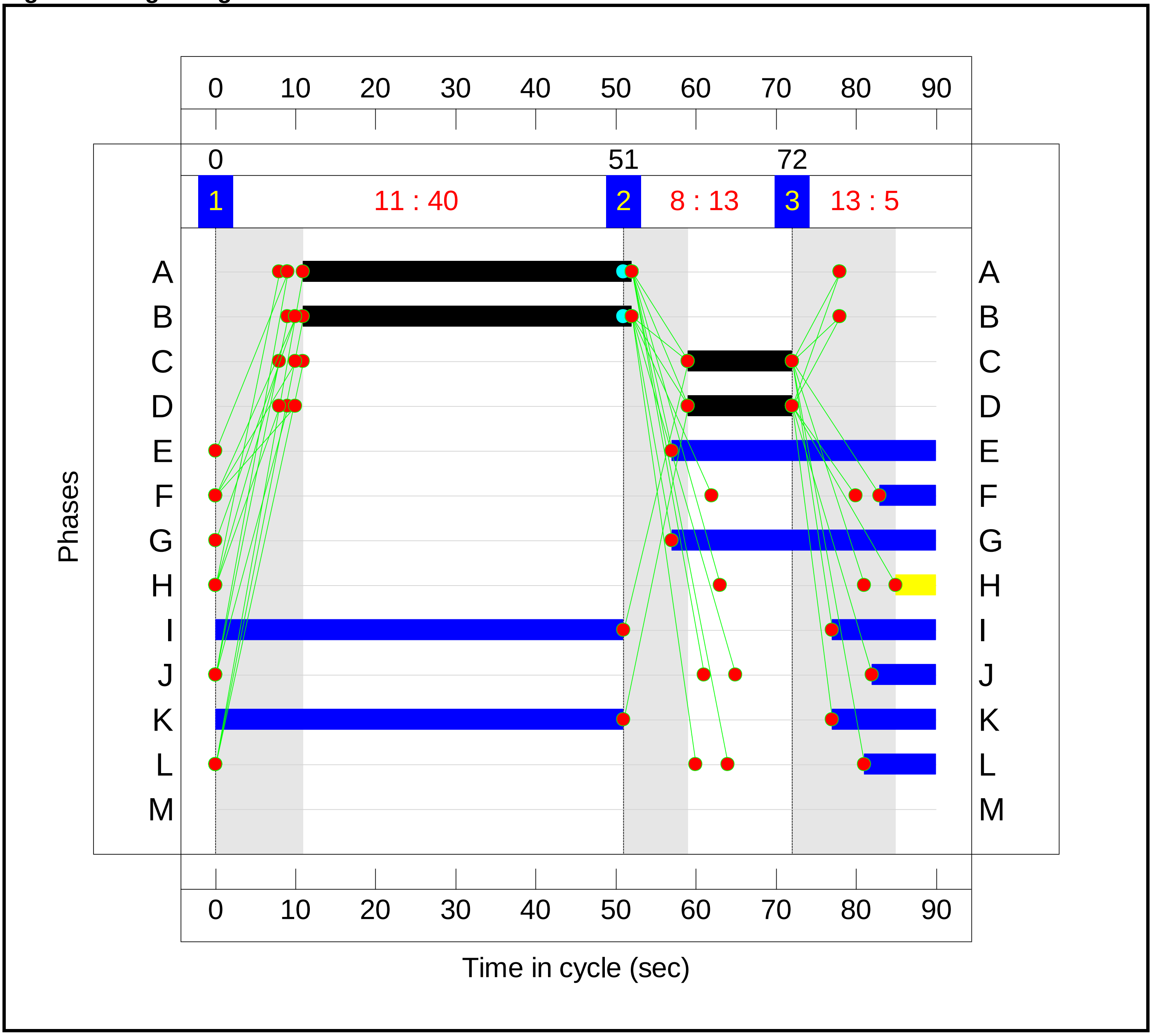


Stage Timings

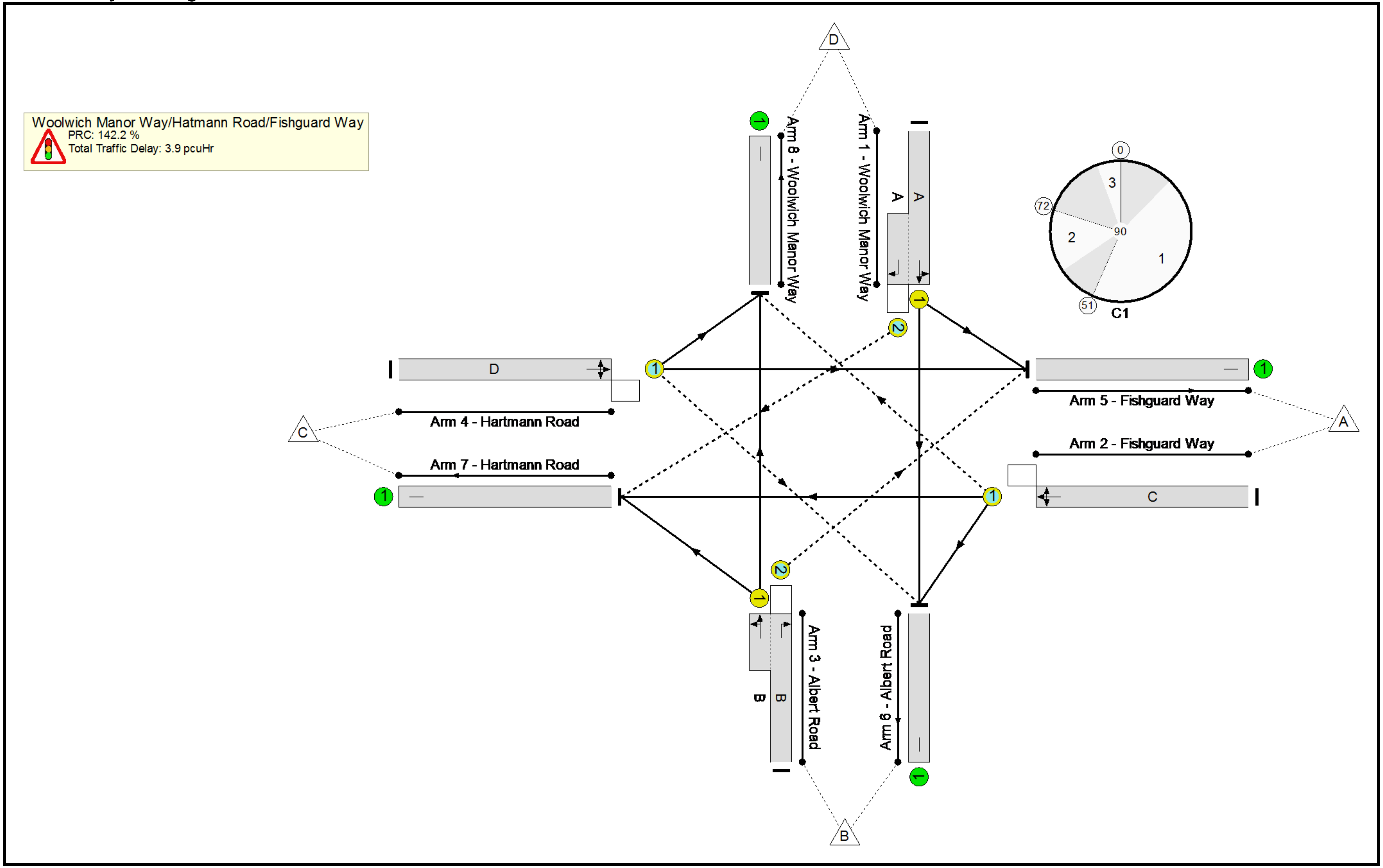
Stage	1	2	3
Duration	40	13	5
Change Point	0	51	72

Full Input Data And Results

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**37.2%**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**37.2%**
1/1+1/2	Woolwich Manor Way Left Ahead Right	U+O	N/A	N/A	A		1	41	-	321	1867:1915	864	37.2%
2/1	Fishguard Way Left Ahead Right	O	N/A	N/A	C		1	13	-	95	1757	273	34.8%
3/2+3/1	Albert Road Right Left Ahead	O+U	N/A	N/A	B		1	41	-	210	1741:1861	867	24.2%
4/1	Hartmann Road Ahead Right Left	O	N/A	N/A	D		1	13	-	1	1796	279	0.4%
5/1	Fishguard Way	U	N/A	N/A	-		-	-	-	47	Inf	Inf	0.0%
6/1	Albert Road	U	N/A	N/A	-		-	-	-	316	Inf	Inf	0.0%
7/1	Hartmann Road	U	N/A	N/A	-		-	-	-	19	Inf	Inf	0.0%
8/1	Woolwich Manor Way	U	N/A	N/A	-		-	-	-	245	Inf	Inf	0.0%

Full Input Data And Results

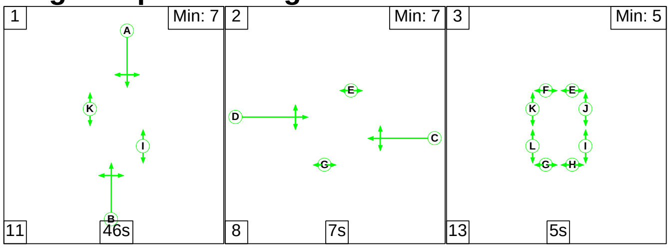
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**67**	**0**	**0**	**3.1**	**0.7**	**0.0**	**3.9**	**-**	**-**	**-**	**-**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**67**	**0**	**0**	**3.1**	**0.7**	**0.0**	**3.9**	**-**	**-**	**-**	**-**
1/1+1/2	321	321	0	0	0	1.4	0.3	0.0	1.7	18.8	5.2	0.3	5.5
2/1	95	95	60	0	0	0.9	0.3	0.0	1.2	44.0	2.1	0.3	2.4
3/2+3/1	210	210	7	0	0	0.8	0.2	0.0	1.0	17.3	3.0	0.2	3.1
4/1	1	1	0	0	0	0.0	0.0	0.0	0.0	39.0	0.0	0.0	0.0
5/1	47	47	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	316	316	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	19	19	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	245	245	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 142.2 Total Delay for Signalled Lanes (pcuHr): 3.85 Cycle Time (s): 90
PRC Over All Lanes (%): 142.2 Total Delay Over All Lanes(pcuHr): 3.85

Full Input Data And Results

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

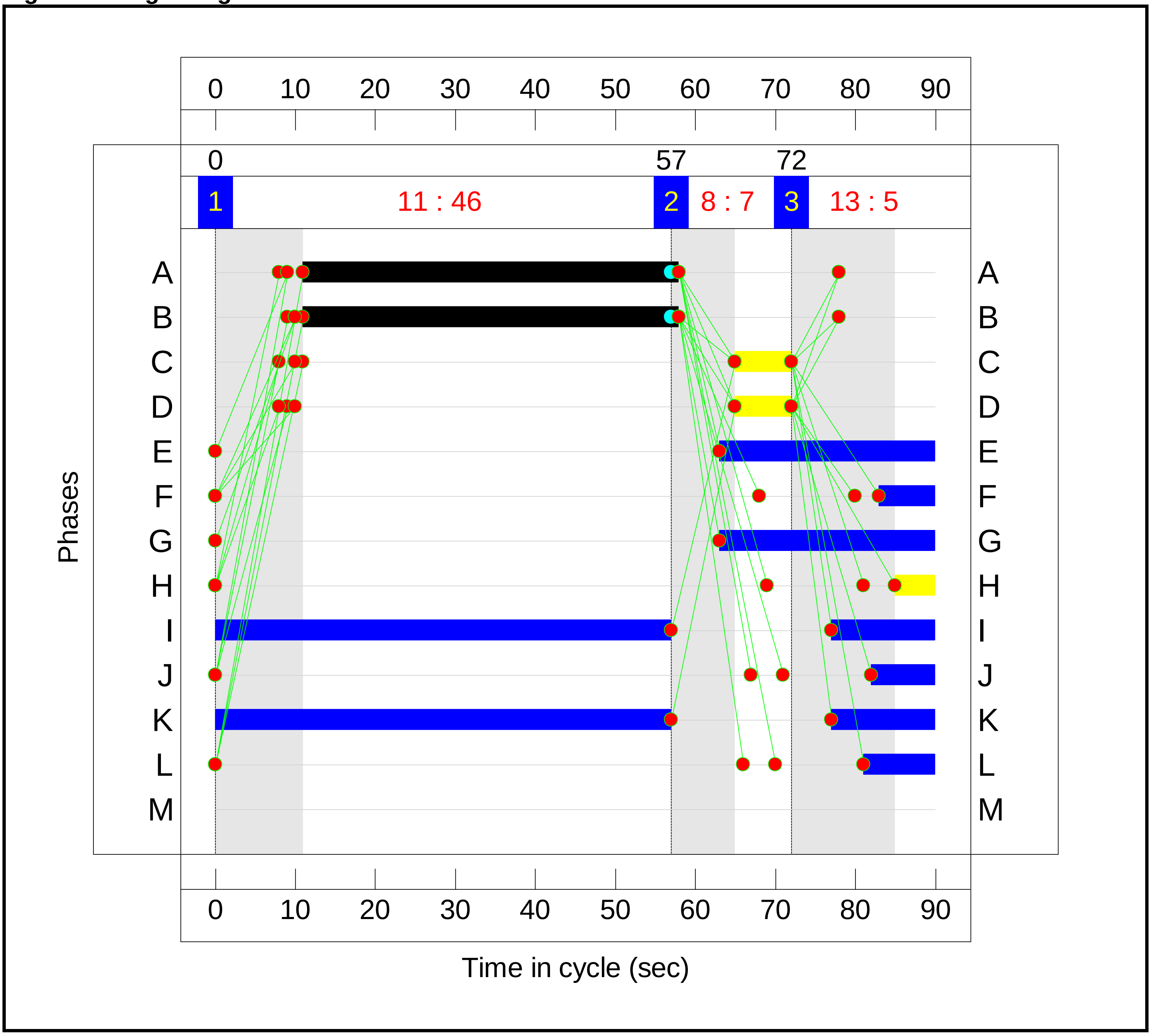
Stage Sequence Diagram



Stage Timings

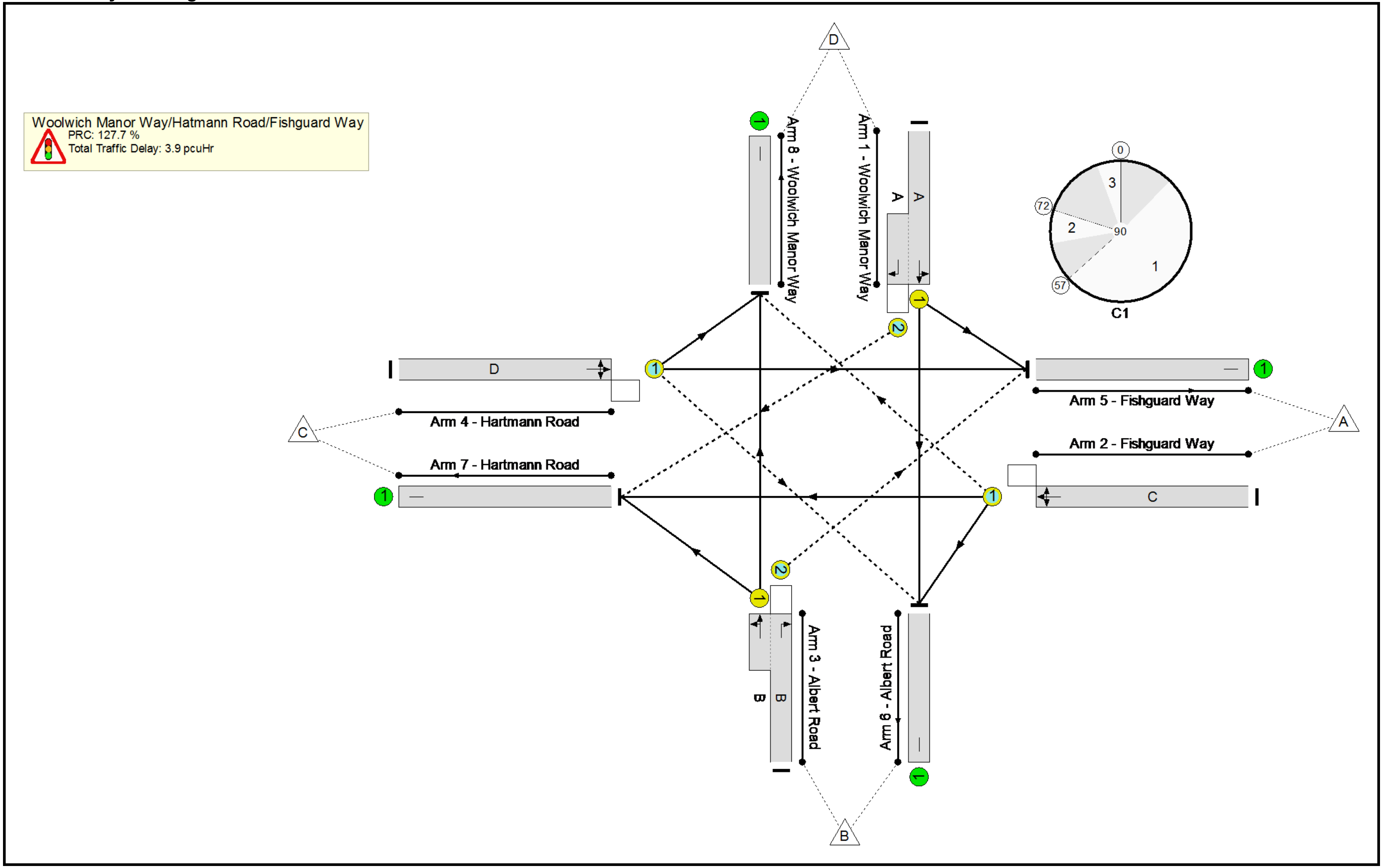
Stage	1	2	3
Duration	46	7	5
Change Point	0	57	72

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**39.5%**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**39.5%**
1/1+1/2	Woolwich Manor Way Left Ahead Right	U+O	N/A	N/A	A		1	47	-	390	1861:1665	987	39.5%
2/1	Fishguard Way Left Ahead Right	O	N/A	N/A	C		1	7	-	48	1763	157	30.6%
3/2+3/1	Albert Road Right Left Ahead	O+U	N/A	N/A	B		1	47	-	359	1741:1872	1000	35.9%
4/1	Hartmann Road Ahead Right Left	O	N/A	N/A	D		1	7	-	0	2065	184	0.0%
5/1	Fishguard Way	U	N/A	N/A	-		-	-	-	86	Inf	Inf	0.0%
6/1	Albert Road	U	N/A	N/A	-		-	-	-	340	Inf	Inf	0.0%
7/1	Hartmann Road	U	N/A	N/A	-		-	-	-	23	Inf	Inf	0.0%
8/1	Woolwich Manor Way	U	N/A	N/A	-		-	-	-	348	Inf	Inf	0.0%

Full Input Data And Results

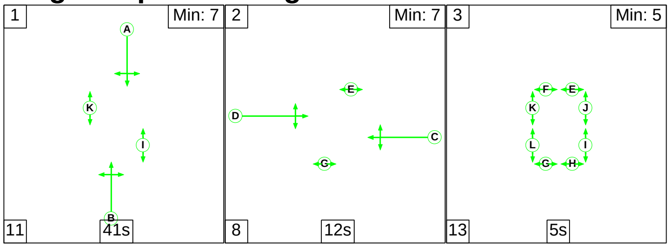
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**64**	**0**	**0**	**3.0**	**0.8**	**0.0**	**3.9**	**-**	**-**	**-**	**-**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**64**	**0**	**0**	**3.0**	**0.8**	**0.0**	**3.9**	**-**	**-**	**-**	**-**
1/1+1/2	390	390	4	0	0	1.3	0.3	0.0	1.7	15.4	5.7	0.3	6.0
2/1	48	48	34	0	0	0.5	0.2	0.0	0.7	54.9	1.1	0.2	1.3
3/2+3/1	359	359	26	0	0	1.2	0.3	0.0	1.5	15.1	4.8	0.3	5.1
4/1	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5/1	86	86	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	340	340	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	23	23	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	348	348	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 127.7 Total Delay for Signalled Lanes (pcuHr): 3.91 Cycle Time (s): 90
PRC Over All Lanes (%): 127.7 Total Delay Over All Lanes(pcuHr): 3.91

Full Input Data And Results

Scenario 3: '2021 Without Development AM Peak' (FG3: '2021 Without Development AM Peak', Plan 1: 'Network Control Plan 1')

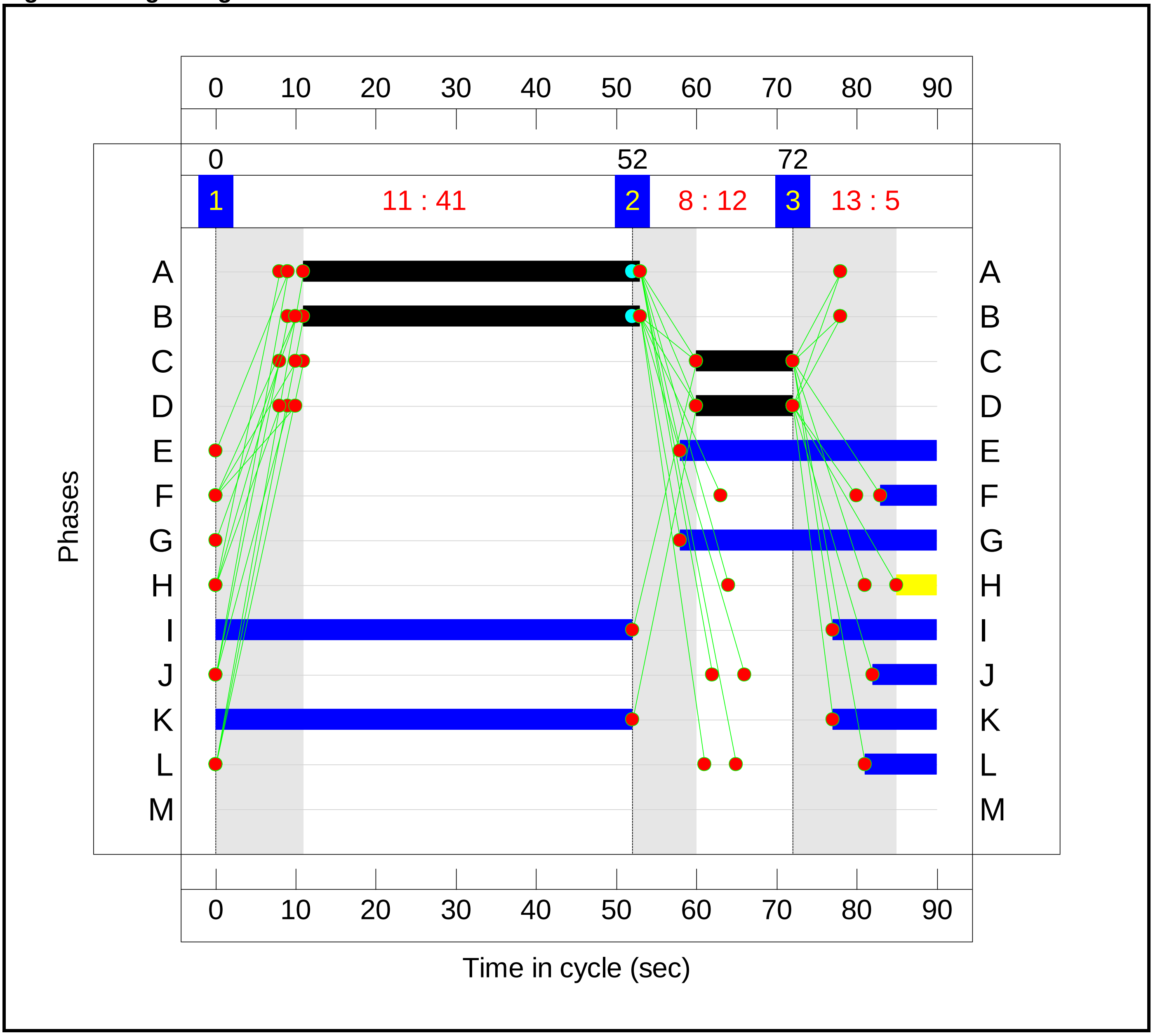
Stage Sequence Diagram



Stage Timings

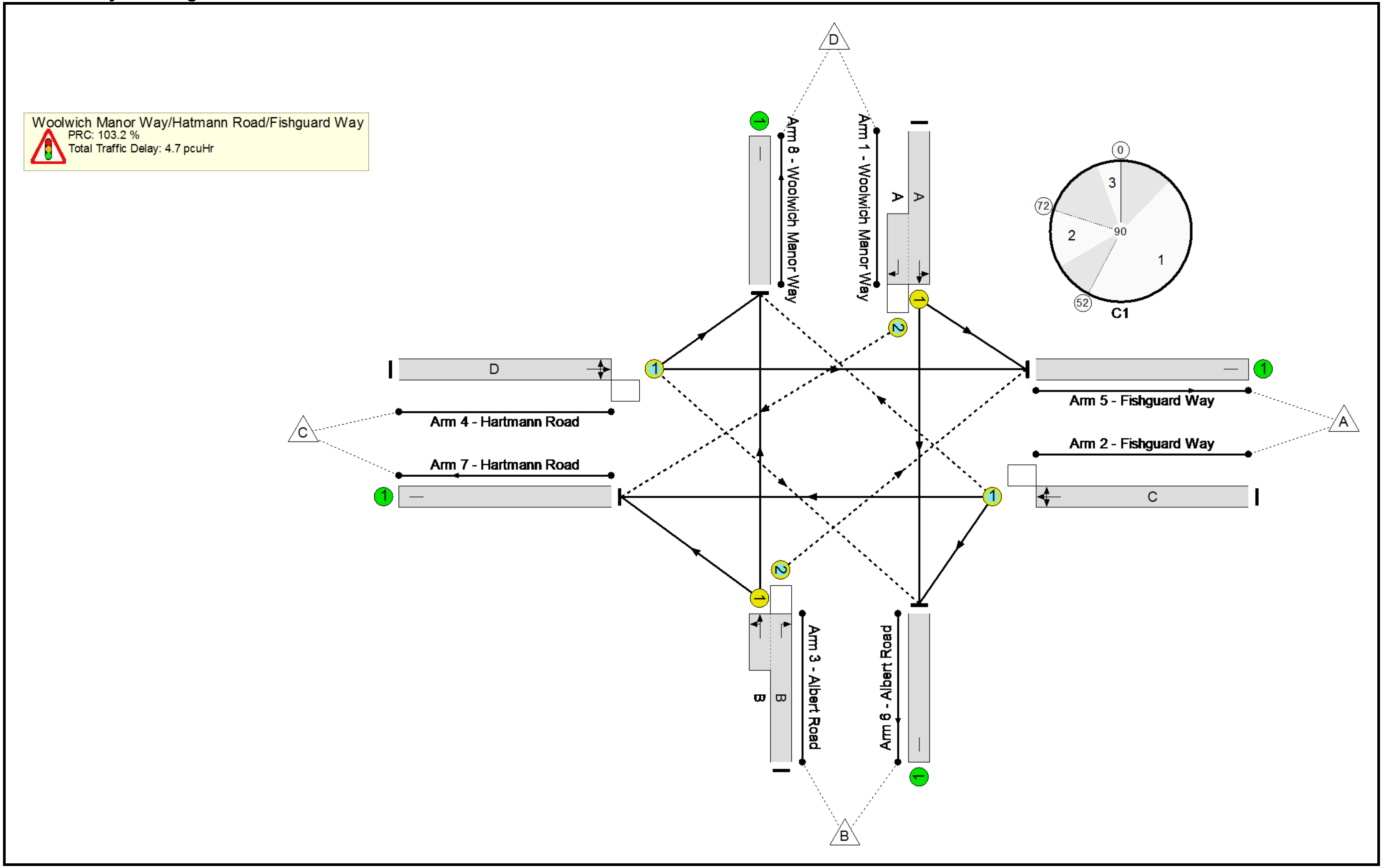
Stage	1	2	3
Duration	41	12	5
Change Point	0	52	72

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**44.3%**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**44.3%**
1/1+1/2	Woolwich Manor Way Left Ahead Right	U+O	N/A	N/A	A		1	42	-	392	1868:1915	885	44.3%
2/1	Fishguard Way Left Ahead Right	O	N/A	N/A	C		1	12	-	109	1757	254	42.9%
3/2+3/1	Albert Road Right Left Ahead	O+U	N/A	N/A	B		1	42	-	248	1741:1862	888	27.9%
4/1	Hartmann Road Ahead Right Left	O	N/A	N/A	D		1	12	-	1	1796	259	0.4%
5/1	Fishguard Way	U	N/A	N/A	-		-	-	-	54	Inf	Inf	0.0%
6/1	Albert Road	U	N/A	N/A	-		-	-	-	386	Inf	Inf	0.0%
7/1	Hartmann Road	U	N/A	N/A	-		-	-	-	22	Inf	Inf	0.0%
8/1	Woolwich Manor Way	U	N/A	N/A	-		-	-	-	288	Inf	Inf	0.0%

Full Input Data And Results

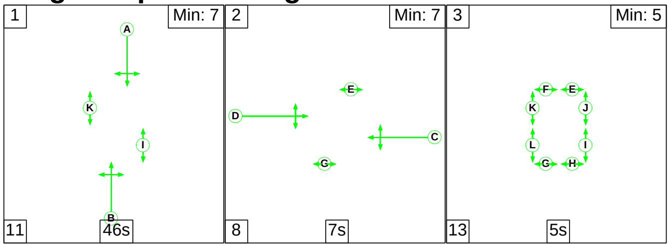
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**77**	**0**	**0**	**3.7**	**1.0**	**0.0**	**4.7**	**-**	**-**	**-**	**-**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**77**	**0**	**0**	**3.7**	**1.0**	**0.0**	**4.7**	**-**	**-**	**-**	**-**
1/1+1/2	392	392	0	0	0	1.7	0.4	0.0	2.1	19.2	6.4	0.4	6.8
2/1	109	109	69	0	0	1.1	0.4	0.0	1.4	47.5	2.5	0.4	2.9
3/2+3/1	248	248	8	0	0	1.0	0.2	0.0	1.2	17.1	3.5	0.2	3.7
4/1	1	1	0	0	0	0.0	0.0	0.0	0.0	40.3	0.0	0.0	0.0
5/1	54	54	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	386	386	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	22	22	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	288	288	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 103.2 Total Delay for Signalled Lanes (pcuHr): 4.72 Cycle Time (s): 90
PRC Over All Lanes (%): 103.2 Total Delay Over All Lanes(pcuHr): 4.72

Full Input Data And Results

Scenario 4: '2021 Without Development PM Peak' (FG4: '2021 Without Development PM Peak', Plan 1: 'Network Control Plan 1')

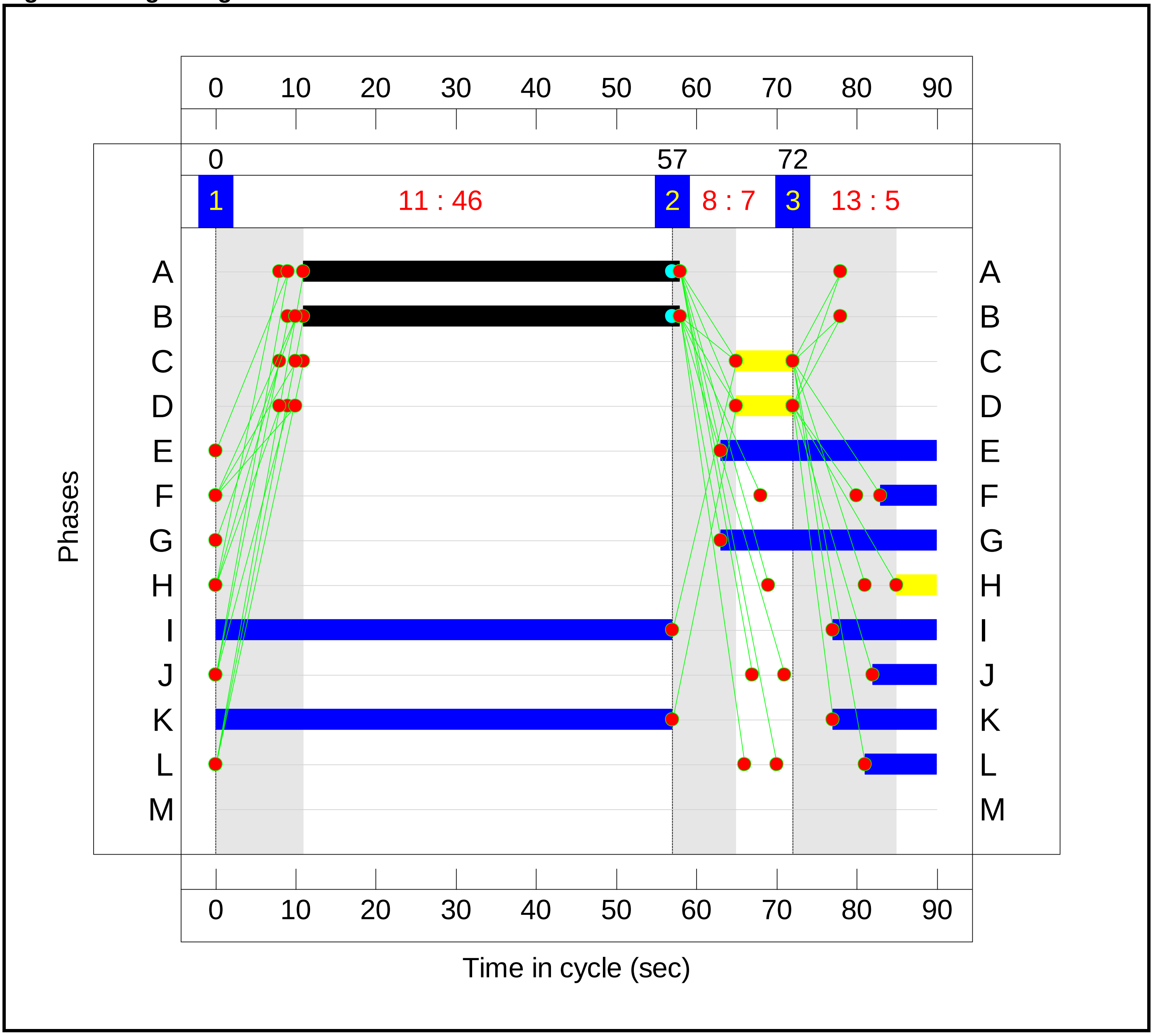
Stage Sequence Diagram



Stage Timings

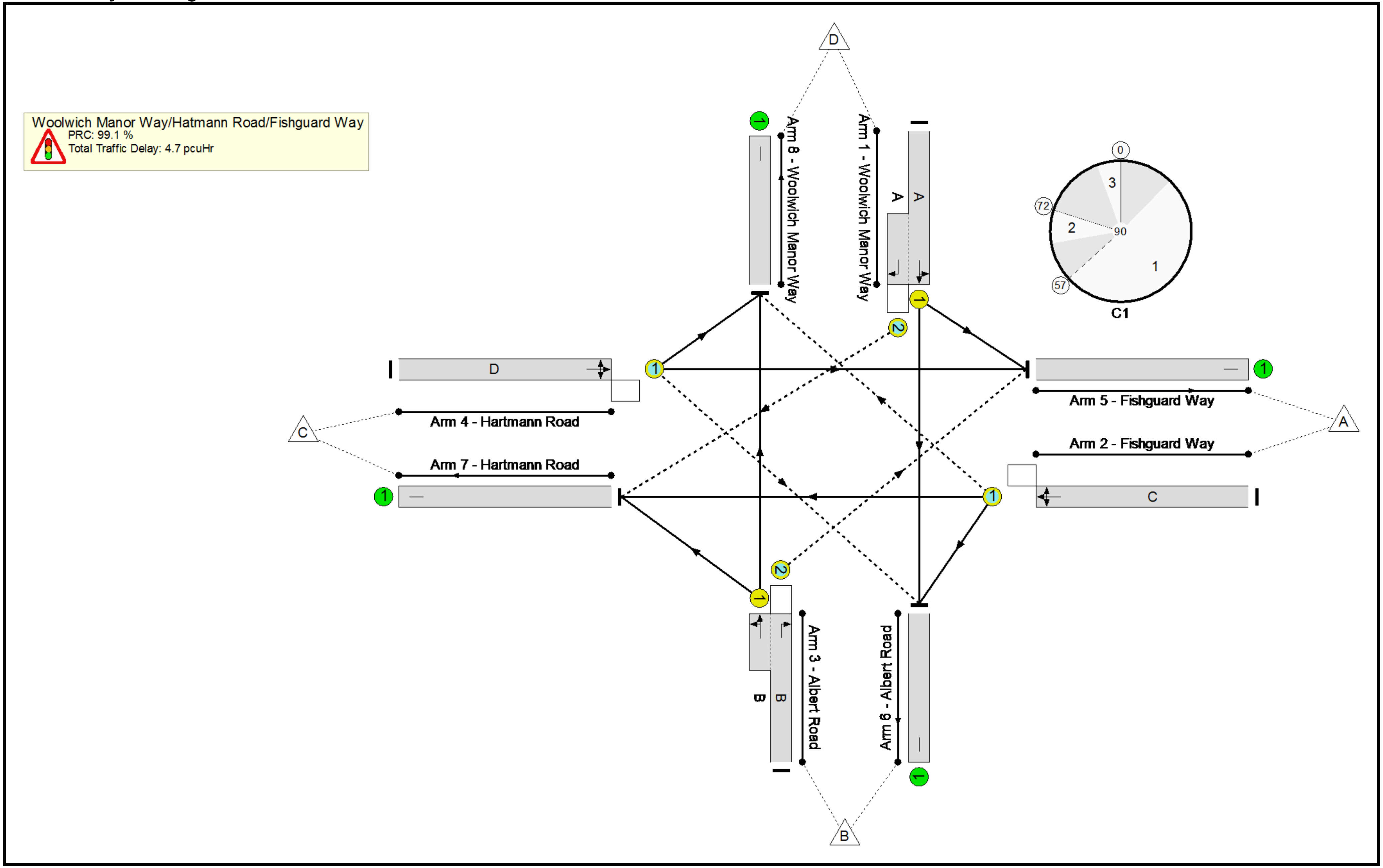
Stage	1	2	3
Duration	46	7	5
Change Point	0	57	72

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**45.2%**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**45.2%**
1/1+1/2	Woolwich Manor Way Left Ahead Right	U+O	N/A	N/A	A		1	47	-	446	1861:1665	987	45.2%
2/1	Fishguard Way Left Ahead Right	O	N/A	N/A	C		1	7	-	55	1763	157	35.1%
3/2+3/1	Albert Road Right Left Ahead	O+U	N/A	N/A	B		1	47	-	411	1741:1872	1000	41.1%
4/1	Hartmann Road Ahead Right Left	O	N/A	N/A	D		1	7	-	0	2065	184	0.0%
5/1	Fishguard Way	U	N/A	N/A	-		-	-	-	99	Inf	Inf	0.0%
6/1	Albert Road	U	N/A	N/A	-		-	-	-	389	Inf	Inf	0.0%
7/1	Hartmann Road	U	N/A	N/A	-		-	-	-	26	Inf	Inf	0.0%
8/1	Woolwich Manor Way	U	N/A	N/A	-		-	-	-	398	Inf	Inf	0.0%

Full Input Data And Results

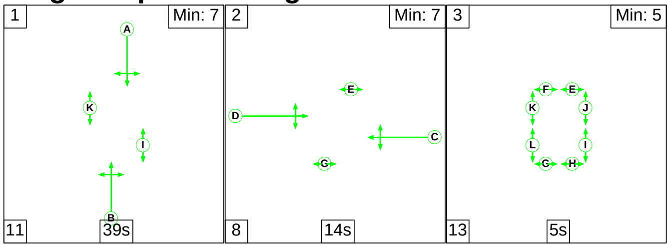
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**73**	**0**	**0**	**3.6**	**1.0**	**0.1**	**4.7**	**-**	**-**	**-**	**-**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**73**	**0**	**0**	**3.6**	**1.0**	**0.1**	**4.7**	**-**	**-**	**-**	**-**
1/1+1/2	446	446	4	0	0	1.6	0.4	0.0	2.0	16.3	6.8	0.4	7.2
2/1	55	55	39	0	0	0.6	0.3	0.0	0.9	56.2	1.3	0.3	1.6
3/2+3/1	411	411	30	0	0	1.4	0.3	0.1	1.8	15.8	5.7	0.3	6.1
4/1	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5/1	99	99	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	389	389	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	26	26	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	398	398	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 99.1 Total Delay for Signalled Lanes (pcuHr): 4.68 Cycle Time (s): 90
PRC Over All Lanes (%): 99.1 Total Delay Over All Lanes(pcuHr): 4.68

Full Input Data And Results

Scenario 5: '2021 With Development AM Peak' (FG5: '2021 With Development AM Peak', Plan 1: 'Network Control Plan 1')

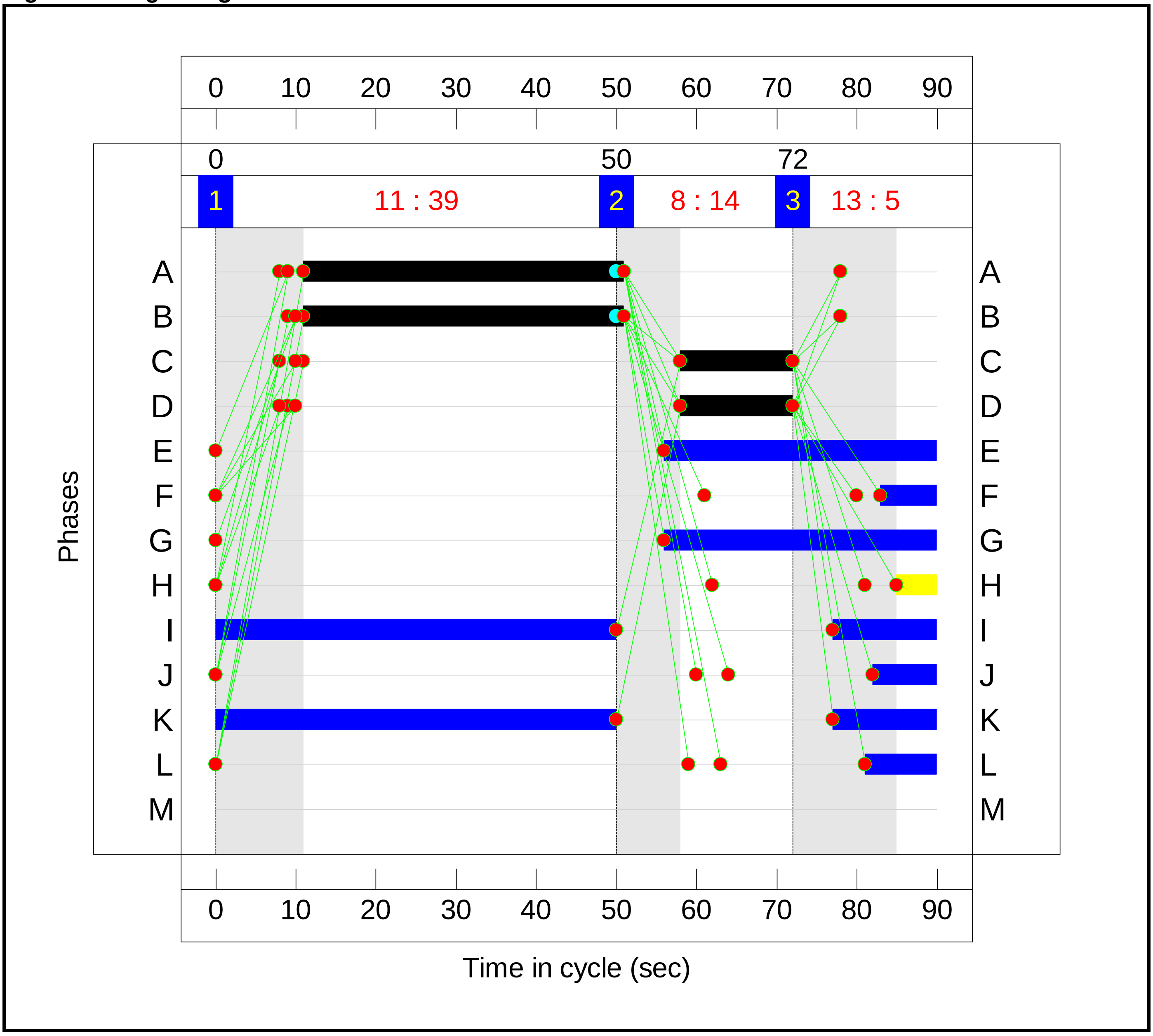
Stage Sequence Diagram



Stage Timings

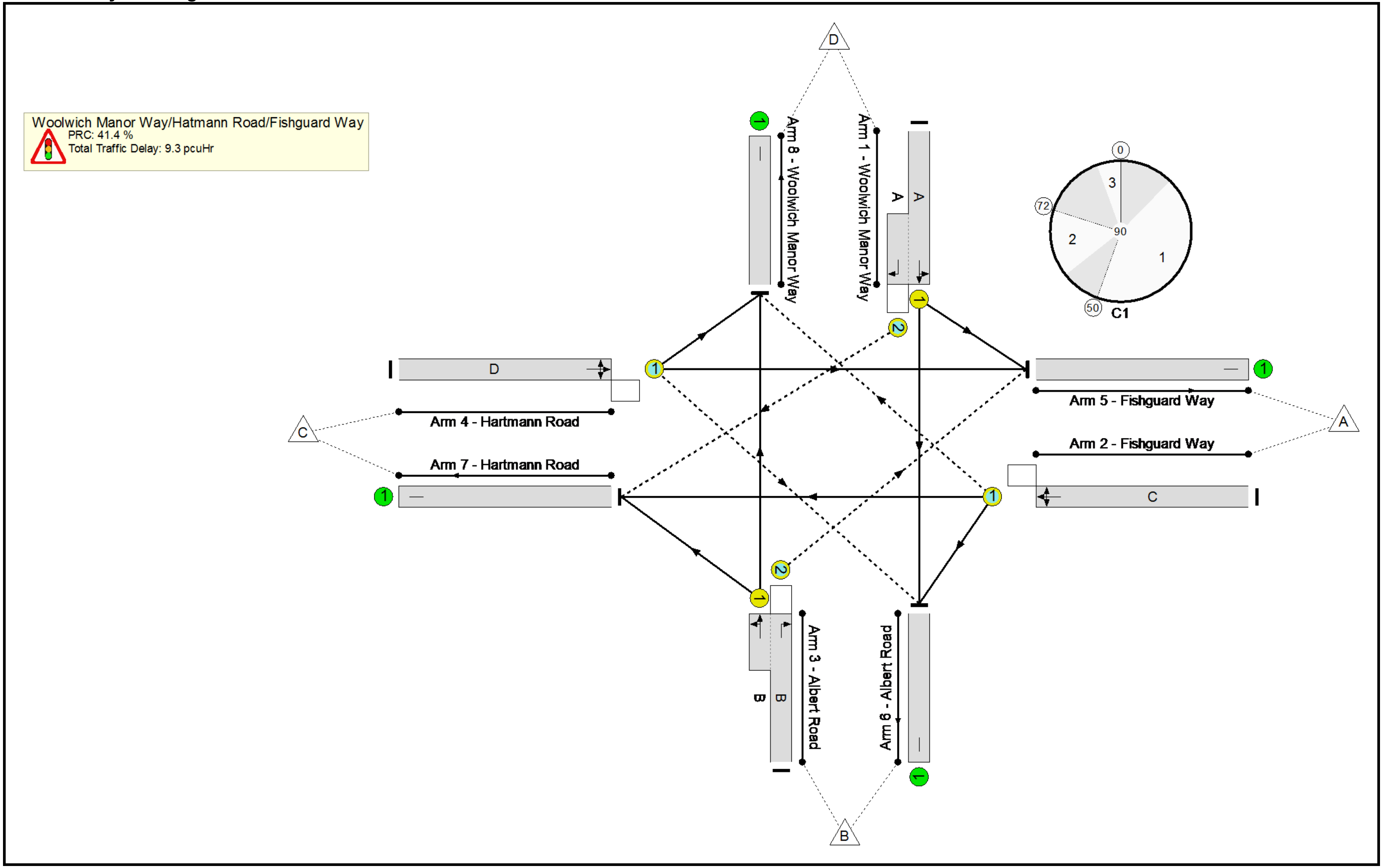
Stage	1	2	3
Duration	39	14	5
Change Point	0	50	72

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**63.6%**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**63.6%**
1/1+1/2	Woolwich Manor Way Left Ahead Right	U+O	N/A	N/A	A		1	40	-	583	1868:1665	916	63.6%
2/1	Fishguard Way Left Ahead Right	O	N/A	N/A	C		1	14	-	109	1757	185	58.9%
3/2+3/1	Albert Road Right Left Ahead	O+U	N/A	N/A	B		1	40	-	248	1741:1862	847	29.3%
4/1	Hartmann Road Ahead Right Left	O	N/A	N/A	D		1	14	-	174	1796	299	58.1%
5/1	Fishguard Way	U	N/A	N/A	-		-	-	-	54	Inf	Inf	0.0%
6/1	Albert Road	U	N/A	N/A	-		-	-	-	386	Inf	Inf	0.0%
7/1	Hartmann Road	U	N/A	N/A	-		-	-	-	213	Inf	Inf	0.0%
8/1	Woolwich Manor Way	U	N/A	N/A	-		-	-	-	461	Inf	Inf	0.0%

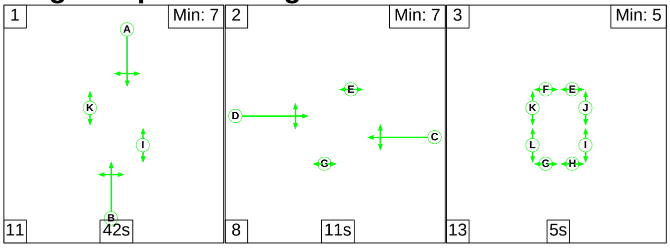
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**268**	**0**	**0**	**6.5**	**2.5**	**0.4**	**9.3**	**-**	**-**	**-**	**-**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**268**	**0**	**0**	**6.5**	**2.5**	**0.4**	**9.3**	**-**	**-**	**-**	**-**
1/1+1/2	583	583	191	0	0	2.8	0.9	0.2	3.9	23.8	8.1	0.9	9.0
2/1	109	109	69	0	0	1.0	0.7	0.1	1.9	61.2	2.4	0.7	3.1
3/2+3/1	248	248	8	0	0	1.1	0.2	0.0	1.3	18.5	3.7	0.2	3.9
4/1	174	174	0	0	0	1.7	0.7	0.0	2.4	48.8	4.0	0.7	4.7
5/1	54	54	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	386	386	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	213	213	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	461	461	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 41.4 Total Delay for Signalled Lanes (pcuHr): 9.34 Cycle Time (s): 90
PRC Over All Lanes (%): 41.4 Total Delay Over All Lanes(pcuHr): 9.34

Full Input Data And Results
Scenario 6: '2021 With Development PM Peak' (FG6: '2021 With Development PM Peak', Plan 1: 'Network Control Plan 1')

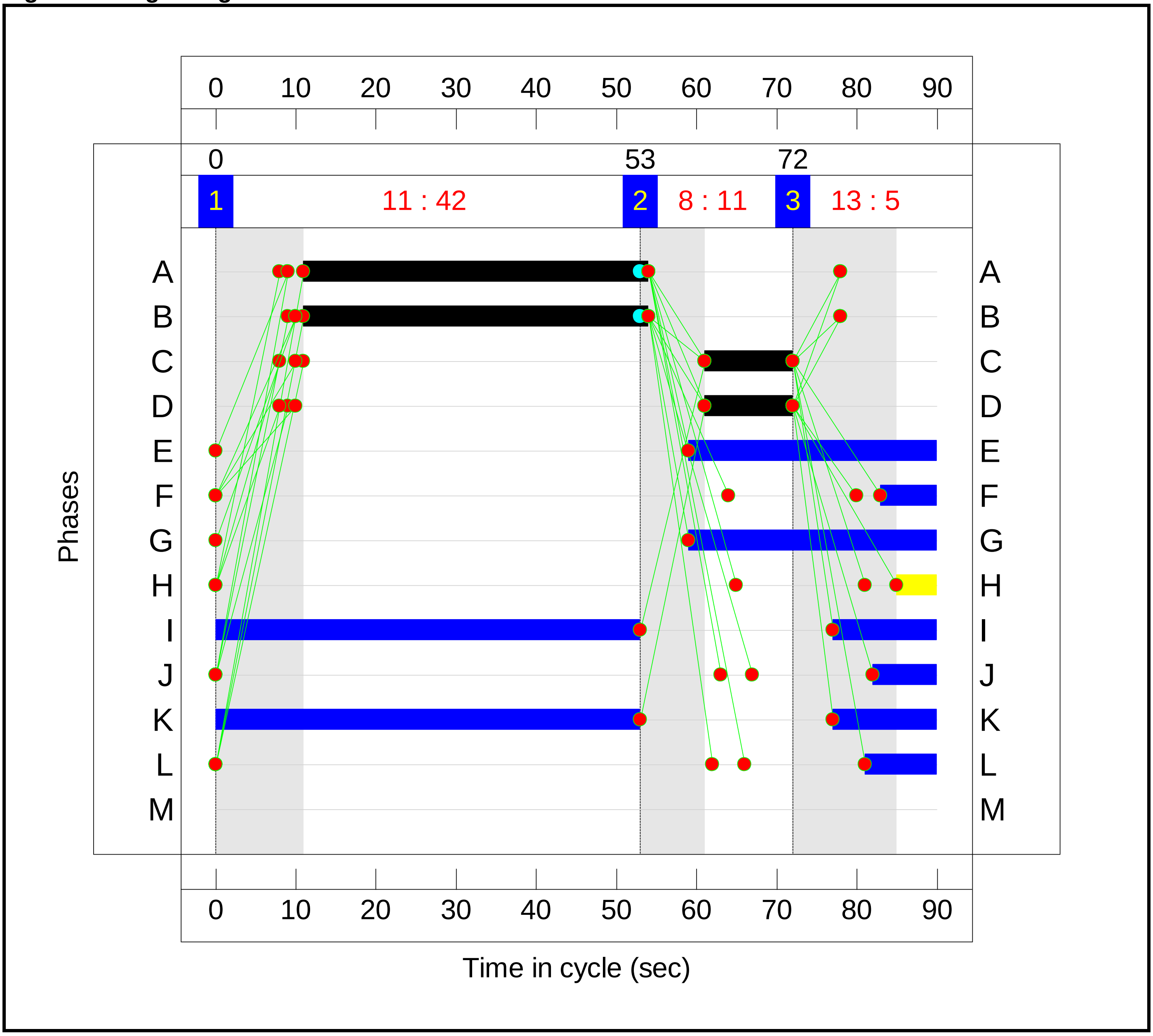
Stage Sequence Diagram



Stage Timings

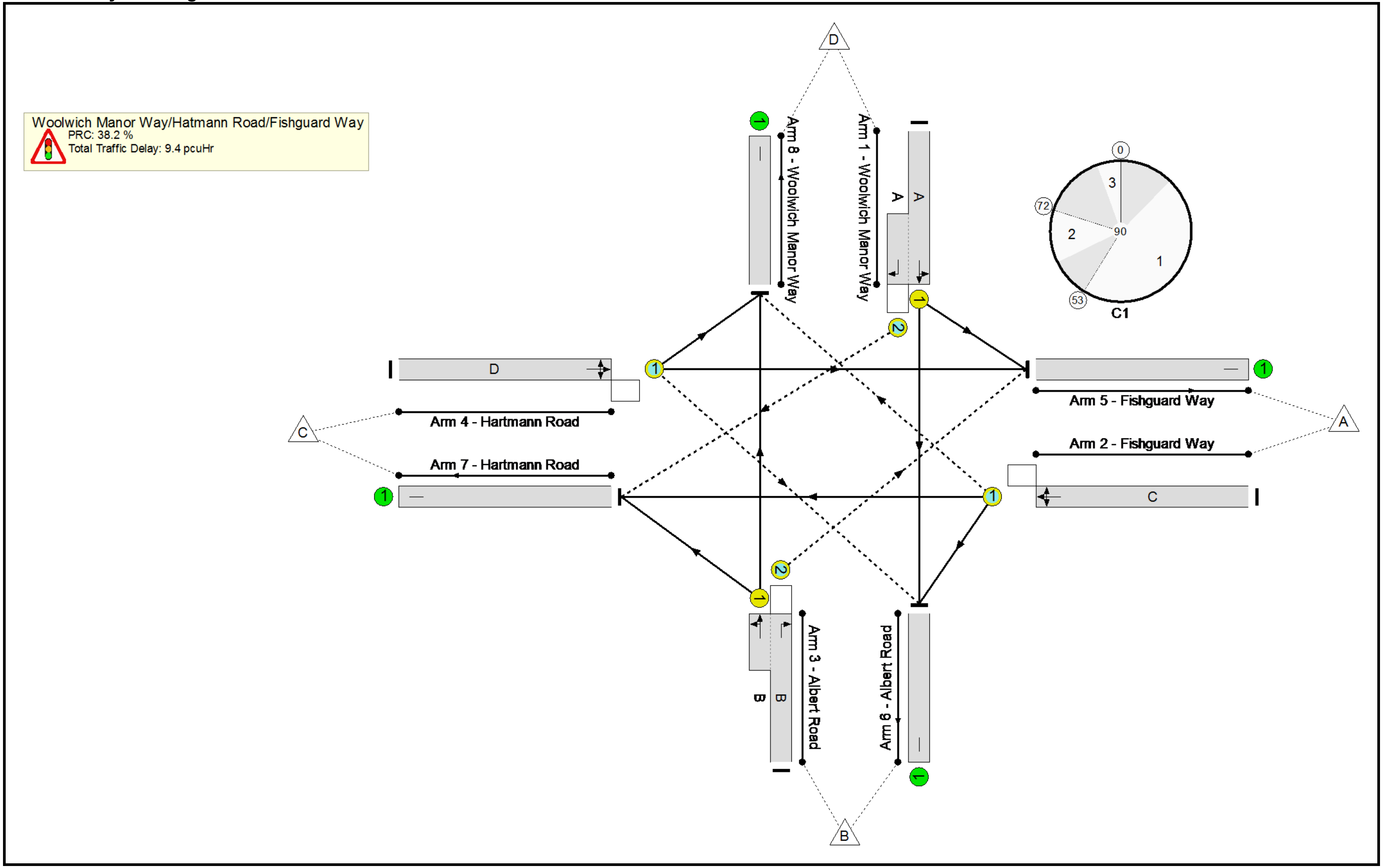
Stage	1	2	3
Duration	42	11	5
Change Point	0	53	72

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**65.1%**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**65.1%**
1/1+1/2	Woolwich Manor Way Left Ahead Right	U+O	N/A	N/A	A		1	43	-	622	1861:1665	961	64.7%
2/1	Fishguard Way Left Ahead Right	O	N/A	N/A	C		1	11	-	55	1763	132	41.5%
3/2+3/1	Albert Road Right Left Ahead	O+U	N/A	N/A	B		1	43	-	381	1915:1872	909	41.9%
4/1	Hartmann Road Ahead Right Left	O	N/A	N/A	D		1	11	-	156	1796	239	65.1%
5/1	Fishguard Way	U	N/A	N/A	-		-	-	-	69	Inf	Inf	0.0%
6/1	Albert Road	U	N/A	N/A	-		-	-	-	389	Inf	Inf	0.0%
7/1	Hartmann Road	U	N/A	N/A	-		-	-	-	202	Inf	Inf	0.0%
8/1	Woolwich Manor Way	U	N/A	N/A	-		-	-	-	554	Inf	Inf	0.0%

Full Input Data And Results

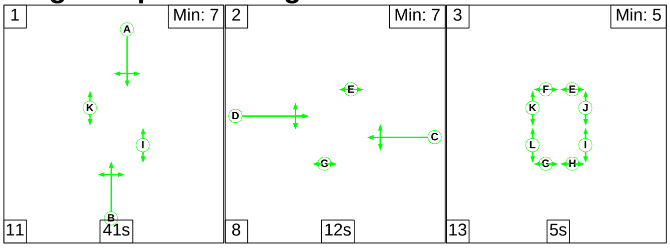
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**219**	**0**	**0**	**6.4**	**2.5**	**0.4**	**9.4**	**-**	**-**	**-**	**-**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**219**	**0**	**0**	**6.4**	**2.5**	**0.4**	**9.4**	**-**	**-**	**-**	**-**
1/1+1/2	622	622	180	0	0	2.7	0.9	0.4	4.0	23.1	9.0	0.9	9.9
2/1	55	55	39	0	0	0.5	0.4	0.1	1.0	63.0	1.2	0.4	1.6
3/2+3/1	381	381	0	0	0	1.6	0.4	0.0	1.9	18.2	6.1	0.4	6.5
4/1	156	156	0	0	0	1.6	0.9	0.0	2.5	58.1	3.7	0.9	4.6
5/1	69	69	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	389	389	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	202	202	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	554	554	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	PRC for Signalled Lanes (%):	38.2	Total Delay for Signalled Lanes (pcuHr):	9.40	Cycle Time (s):	90
	PRC Over All Lanes (%):	38.2	Total Delay Over All Lanes(pcuHr):	9.40		

Full Input Data And Results

Scenario 7: '2023 Without Development AM Peak' (FG7: '2023 Without Development AM Peak', Plan 1: 'Network Control Plan 1')

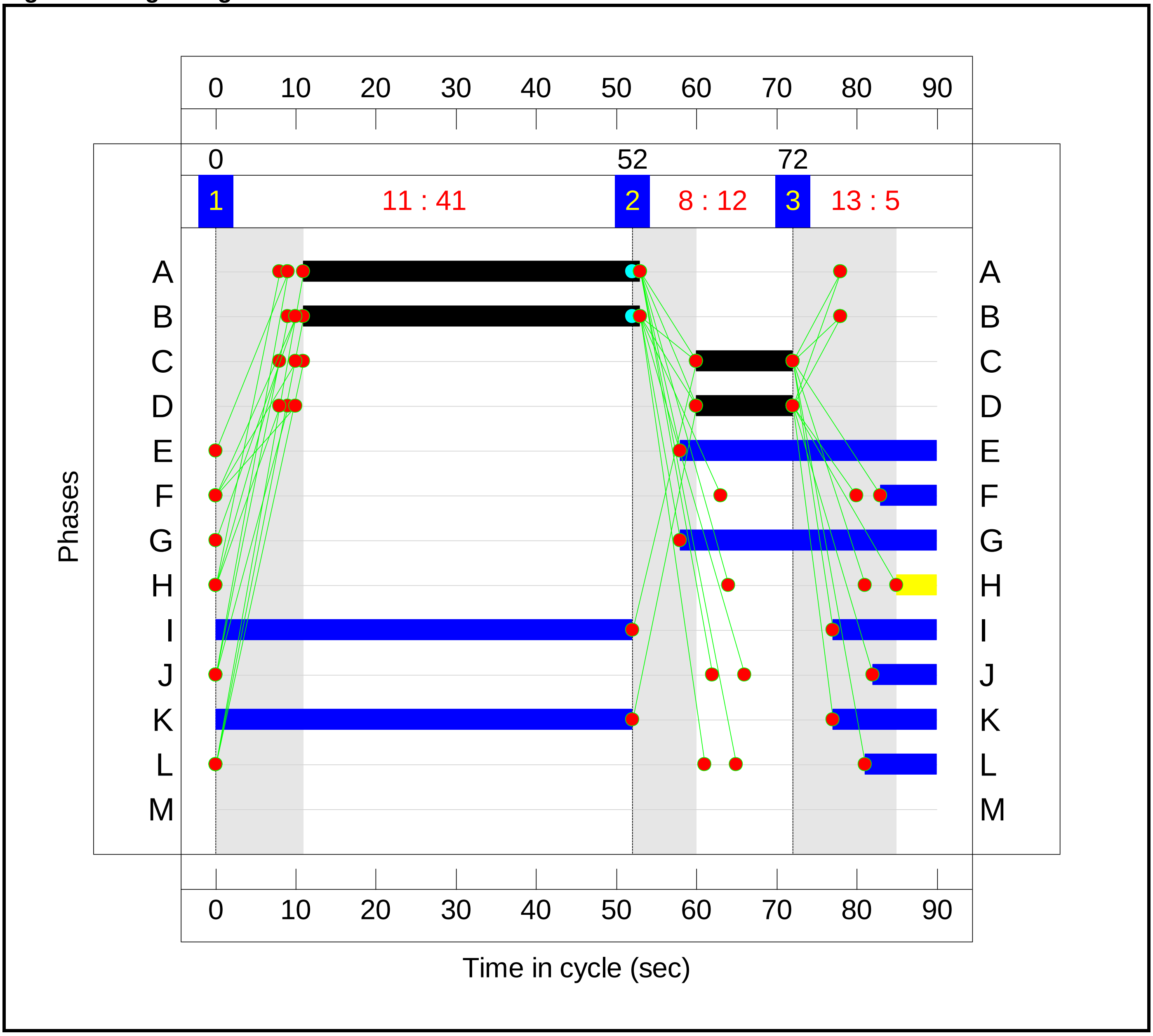
Stage Sequence Diagram



Stage Timings

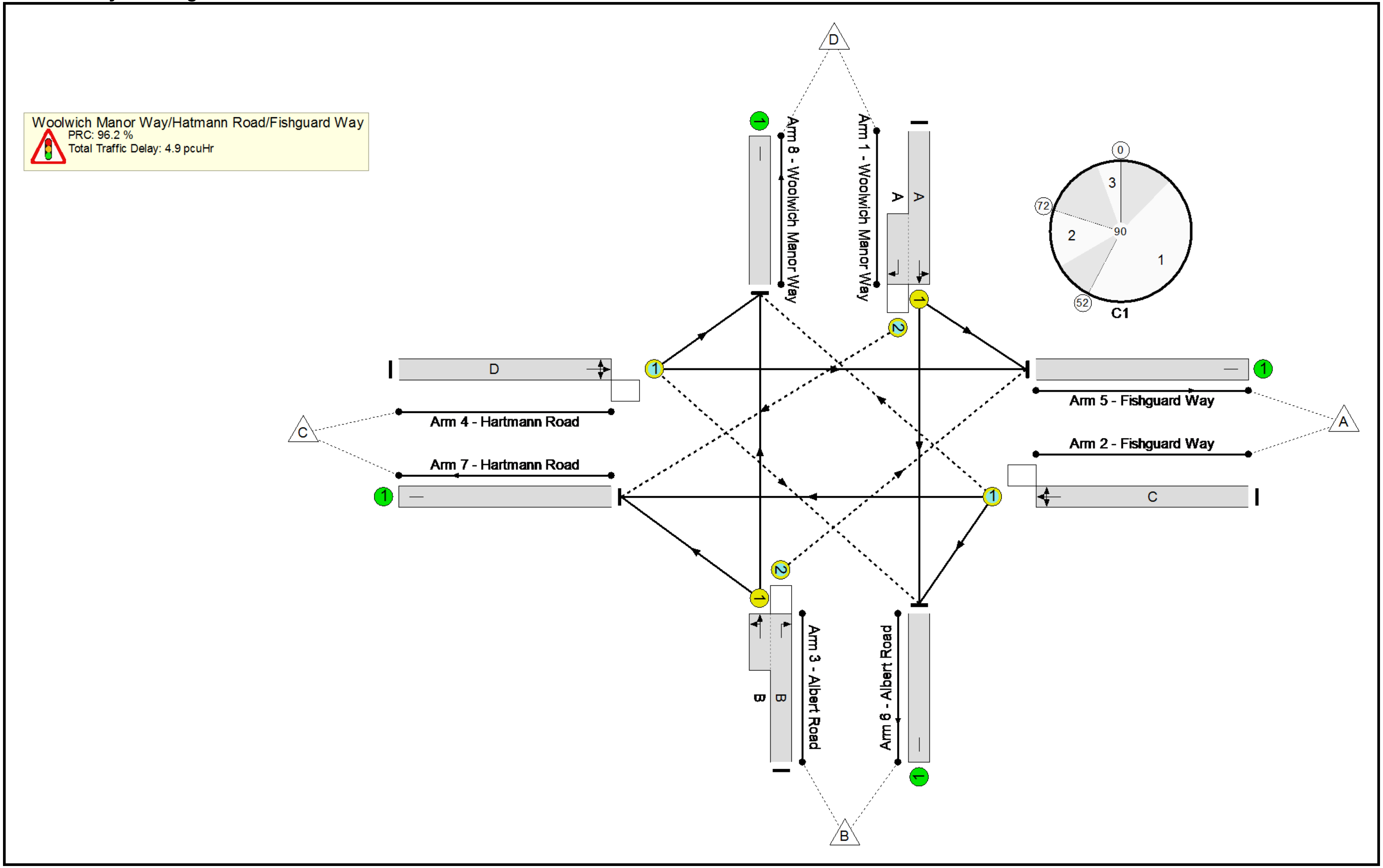
Stage	1	2	3
Duration	41	12	5
Change Point	0	52	72

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**45.9%**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**45.9%**
1/1+1/2	Woolwich Manor Way Left Ahead Right	U+O	N/A	N/A	A		1	42	-	406	1868:1915	885	45.9%
2/1	Fishguard Way Left Ahead Right	O	N/A	N/A	C		1	12	-	113	1757	254	44.5%
3/2+3/1	Albert Road Right Left Ahead	O+U	N/A	N/A	B		1	42	-	256	1741:1862	888	28.8%
4/1	Hartmann Road Ahead Right Left	O	N/A	N/A	D		1	12	-	1	1796	259	0.4%
5/1	Fishguard Way	U	N/A	N/A	-		-	-	-	56	Inf	Inf	0.0%
6/1	Albert Road	U	N/A	N/A	-		-	-	-	400	Inf	Inf	0.0%
7/1	Hartmann Road	U	N/A	N/A	-		-	-	-	22	Inf	Inf	0.0%
8/1	Woolwich Manor Way	U	N/A	N/A	-		-	-	-	298	Inf	Inf	0.0%

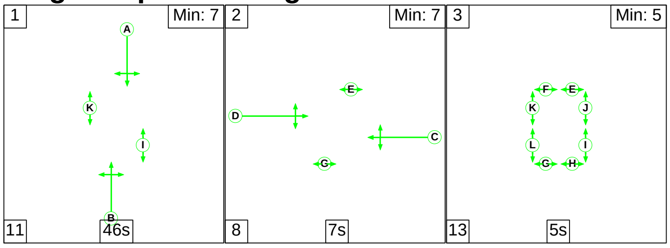
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**79**	**0**	**0**	**3.9**	**1.0**	**0.0**	**4.9**	**-**	**-**	**-**	**-**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**79**	**0**	**0**	**3.9**	**1.0**	**0.0**	**4.9**	**-**	**-**	**-**	**-**
1/1+1/2	406	406	0	0	0	1.8	0.4	0.0	2.2	19.5	6.8	0.4	7.2
2/1	113	113	71	0	0	1.1	0.4	0.0	1.5	47.9	2.6	0.4	3.0
3/2+3/1	256	256	8	0	0	1.0	0.2	0.0	1.2	17.2	3.7	0.2	3.9
4/1	1	1	0	0	0	0.0	0.0	0.0	0.0	40.3	0.0	0.0	0.0
5/1	56	56	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	400	400	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	22	22	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	298	298	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 96.2 Total Delay for Signalled Lanes (pcuHr): 4.94 Cycle Time (s): 90
PRC Over All Lanes (%): 96.2 Total Delay Over All Lanes(pcuHr): 4.94

Full Input Data And Results
Scenario 8: '2023 Without Development PM Peak' (FG8: '2023 Without Development PM Peak', Plan 1: 'Network Control Plan 1')

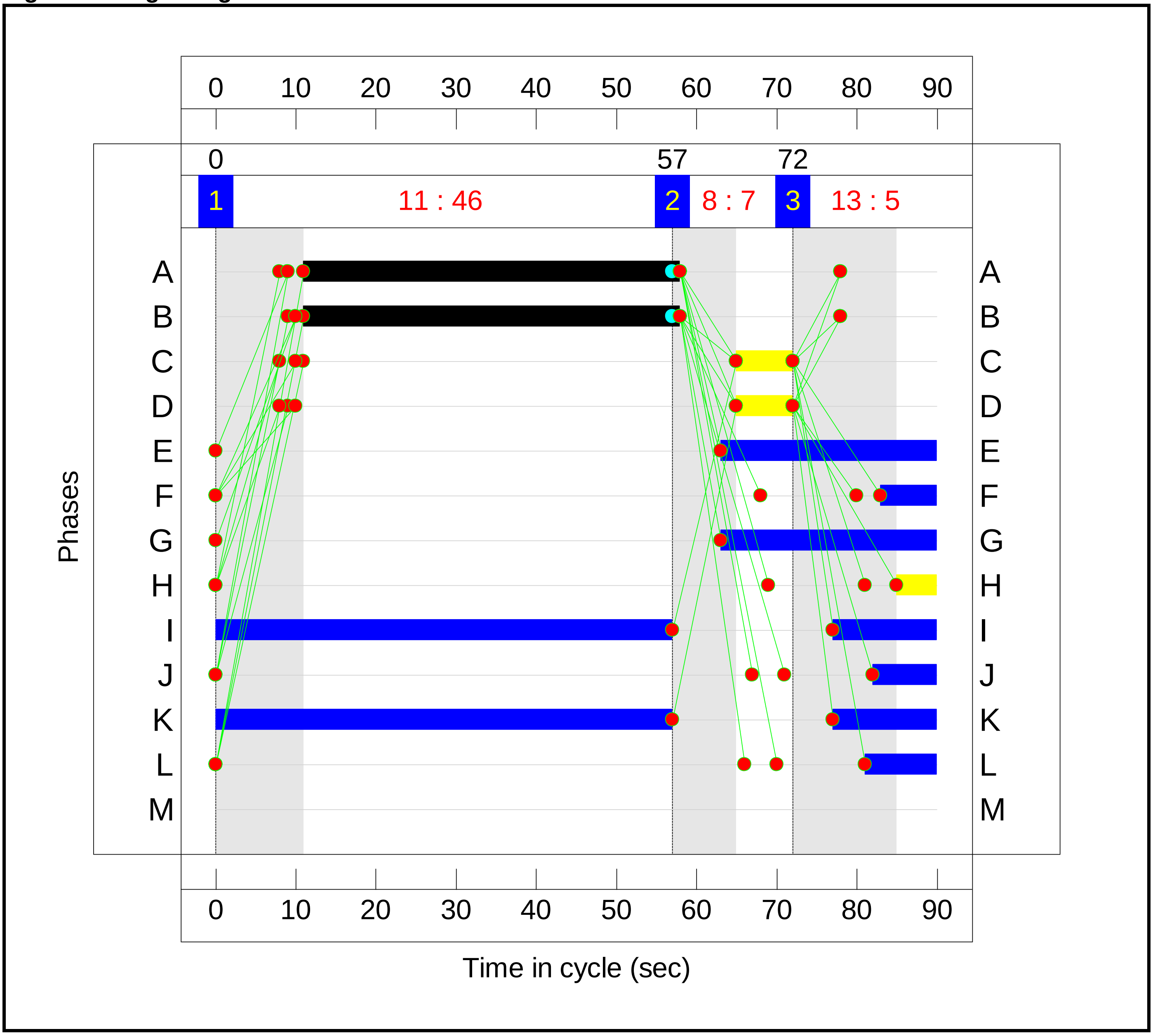
Stage Sequence Diagram



Stage Timings

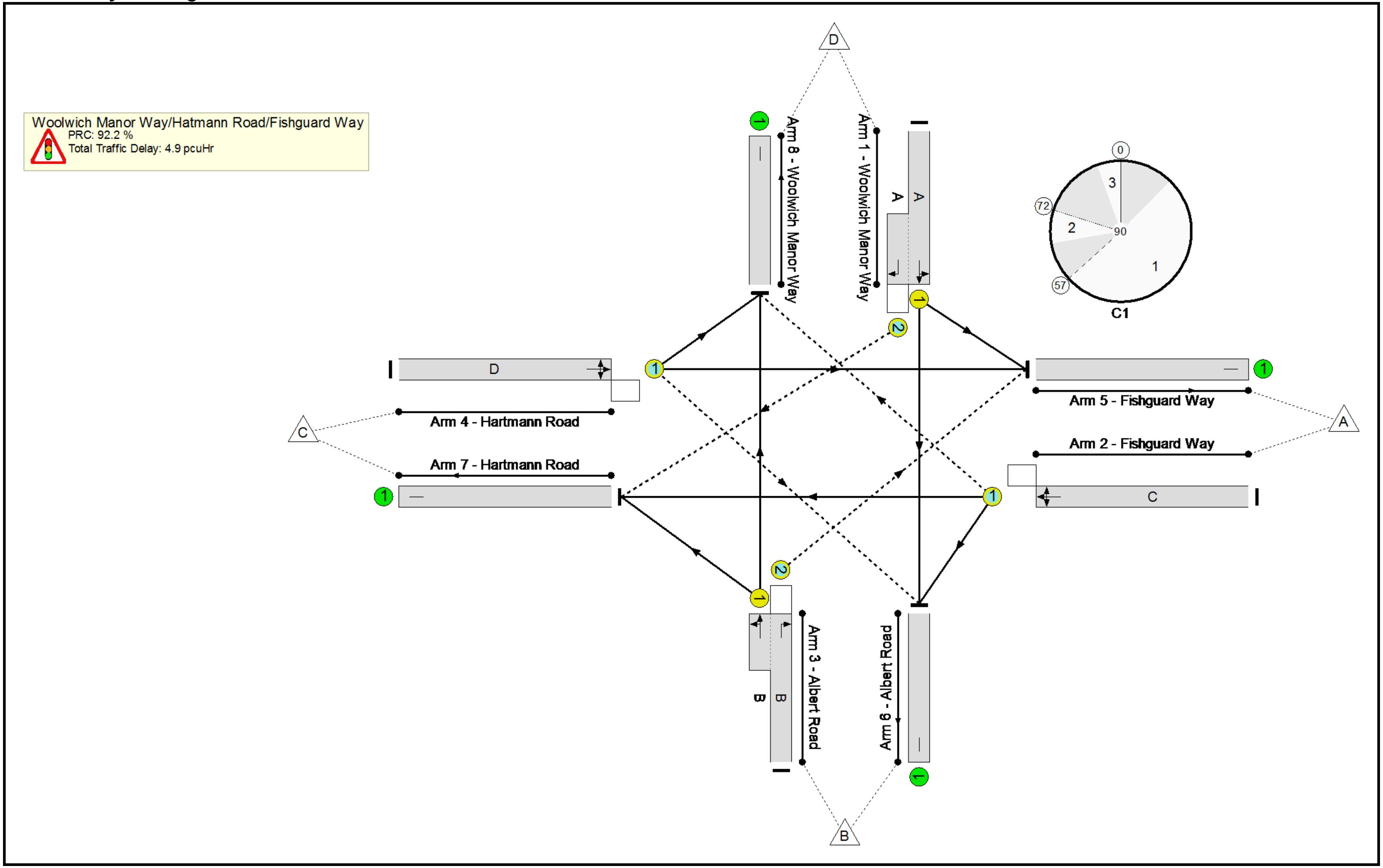
Stage	1	2	3
Duration	46	7	5
Change Point	0	57	72

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**46.8%**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**46.8%**
1/1+1/2	Woolwich Manor Way Left Ahead Right	U+O	N/A	N/A	A		1	47	-	462	1861:1665	987	46.8%
2/1	Fishguard Way Left Ahead Right	O	N/A	N/A	C		1	7	-	57	1762	157	36.4%
3/2+3/1	Albert Road Right Left Ahead	O+U	N/A	N/A	B		1	47	-	426	1741:1873	1000	42.6%
4/1	Hartmann Road Ahead Right Left	O	N/A	N/A	D		1	7	-	0	2065	184	0.0%
5/1	Fishguard Way	U	N/A	N/A	-		-	-	-	102	Inf	Inf	0.0%
6/1	Albert Road	U	N/A	N/A	-		-	-	-	404	Inf	Inf	0.0%
7/1	Hartmann Road	U	N/A	N/A	-		-	-	-	26	Inf	Inf	0.0%
8/1	Woolwich Manor Way	U	N/A	N/A	-		-	-	-	413	Inf	Inf	0.0%

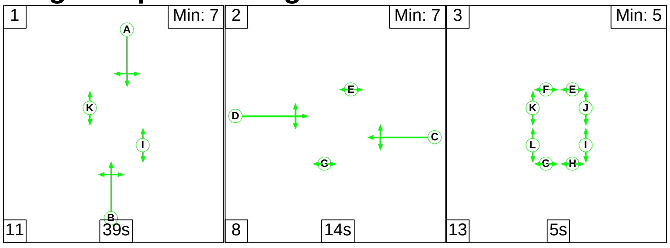
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**75**	**0**	**0**	**3.8**	**1.1**	**0.1**	**4.9**	**-**	**-**	**-**	**-**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**75**	**0**	**0**	**3.8**	**1.1**	**0.1**	**4.9**	**-**	**-**	**-**	**-**
1/1+1/2	462	462	4	0	0	1.7	0.4	0.0	2.1	16.5	7.1	0.4	7.6
2/1	57	57	40	0	0	0.6	0.3	0.0	0.9	56.6	1.3	0.3	1.6
3/2+3/1	426	426	31	0	0	1.5	0.4	0.1	1.9	16.0	6.1	0.4	6.4
4/1	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5/1	102	102	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	404	404	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	26	26	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	413	413	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 92.2 Total Delay for Signalled Lanes (pcuHr): 4.92 Cycle Time (s): 90
PRC Over All Lanes (%): 92.2 Total Delay Over All Lanes(pcuHr): 4.92

Full Input Data And Results
Scenario 9: '2023 With Development AM Peak' (FG9: '2023 With Development AM Peak', Plan 1: 'Network Control Plan 1')

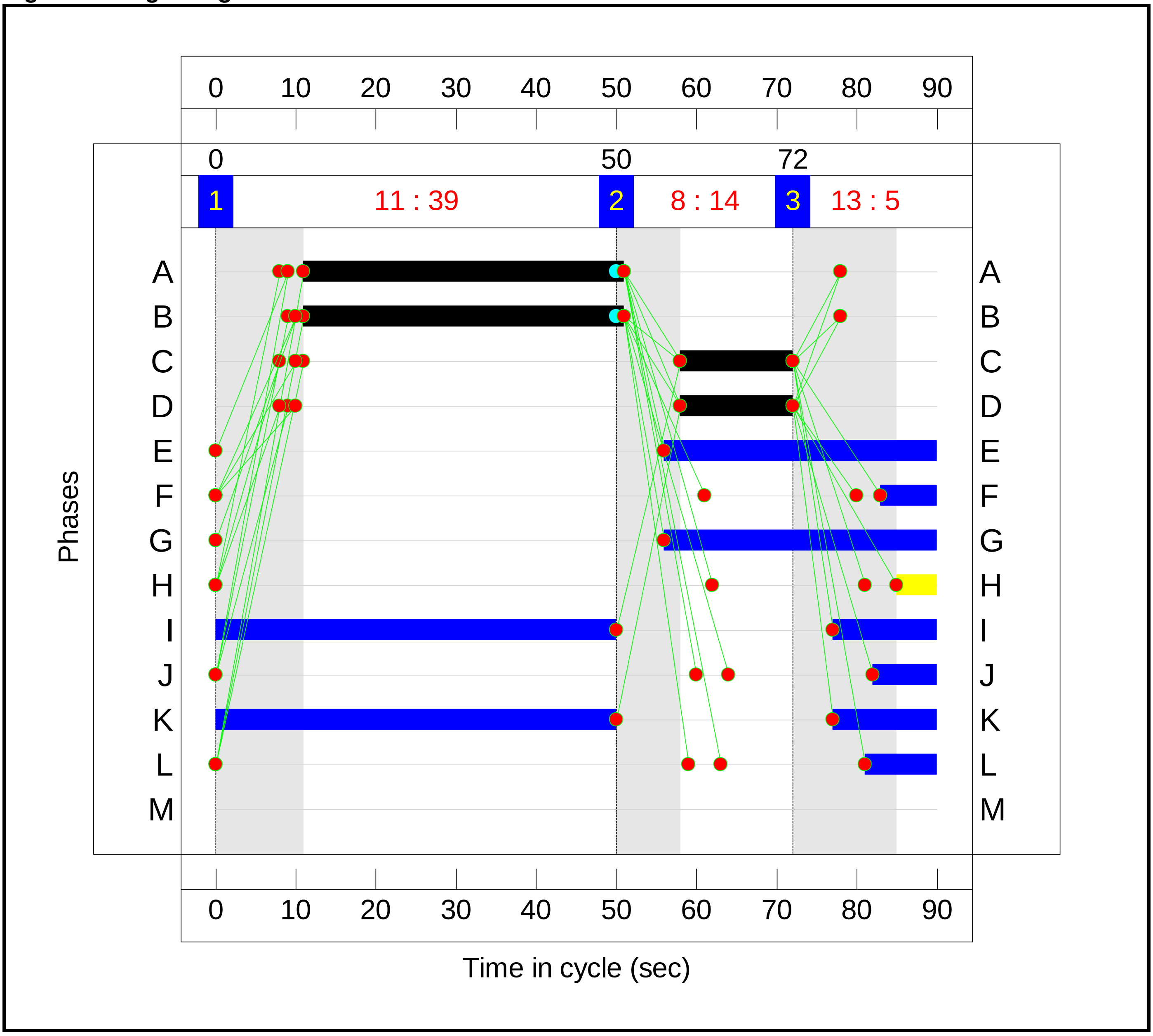
Stage Sequence Diagram



Stage Timings

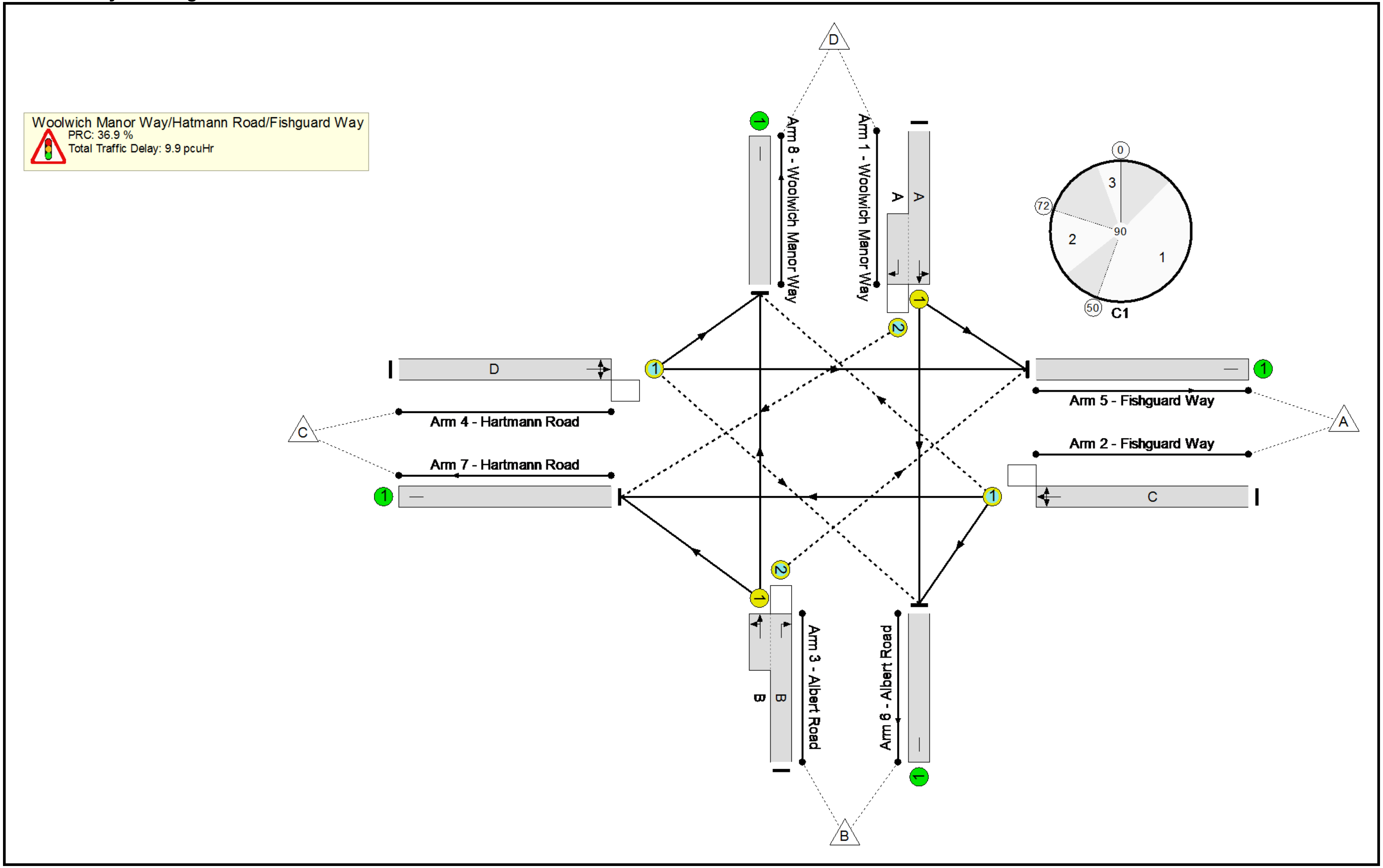
Stage	1	2	3
Duration	39	14	5
Change Point	0	50	72

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**65.8%**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**65.8%**
1/1+1/2	Woolwich Manor Way Left Ahead Right	U+O	N/A	N/A	A		1	40	-	602	1868:1665	915	65.8%
2/1	Fishguard Way Left Ahead Right	O	N/A	N/A	C		1	14	-	113	1757	186	60.8%
3/2+3/1	Albert Road Right Left Ahead	O+U	N/A	N/A	B		1	40	-	256	1741:1862	846	30.2%
4/1	Hartmann Road Ahead Right Left	O	N/A	N/A	D		1	14	-	180	1796	299	60.1%
5/1	Fishguard Way	U	N/A	N/A	-		-	-	-	56	Inf	Inf	0.0%
6/1	Albert Road	U	N/A	N/A	-		-	-	-	400	Inf	Inf	0.0%
7/1	Hartmann Road	U	N/A	N/A	-		-	-	-	218	Inf	Inf	0.0%
8/1	Woolwich Manor Way	U	N/A	N/A	-		-	-	-	477	Inf	Inf	0.0%

Full Input Data And Results

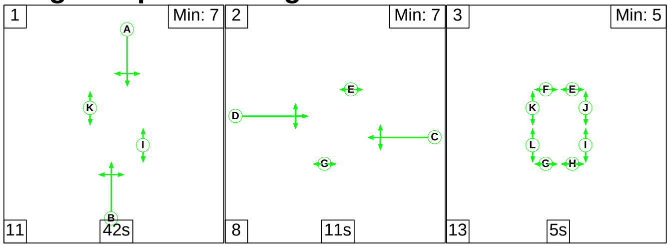
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**275**	**0**	**0**	**6.8**	**2.7**	**0.4**	**9.9**	**-**	**-**	**-**	**-**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**275**	**0**	**0**	**6.8**	**2.7**	**0.4**	**9.9**	**-**	**-**	**-**	**-**
1/1+1/2	602	602	196	0	0	2.9	1.0	0.2	4.1	24.5	8.6	1.0	9.6
2/1	113	113	71	0	0	1.0	0.8	0.2	2.0	62.4	2.5	0.8	3.3
3/2+3/1	256	256	8	0	0	1.1	0.2	0.0	1.3	18.6	3.9	0.2	4.1
4/1	180	180	0	0	0	1.7	0.7	0.0	2.5	49.6	4.2	0.7	4.9
5/1	56	56	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	400	400	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	218	218	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	477	477	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 36.9 Total Delay for Signalled Lanes (pcuHr): 9.85 Cycle Time (s): 90
PRC Over All Lanes (%): 36.9 Total Delay Over All Lanes(pcuHr): 9.85

Full Input Data And Results

Scenario 10: '2023 With Development PM Peak' (FG10: '2023 With Development PM Peak', Plan 1: 'Network Control Plan 1')

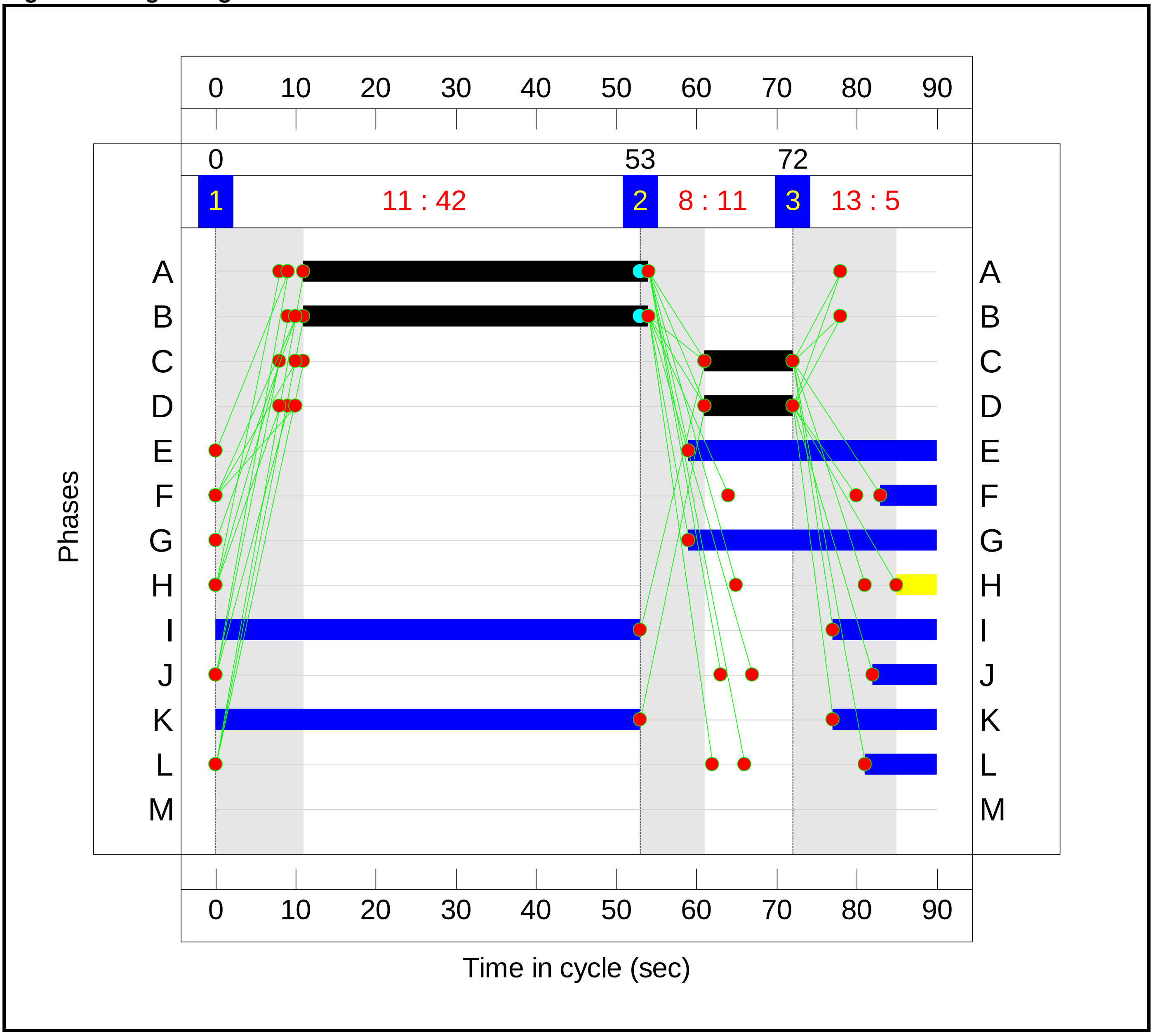
Stage Sequence Diagram



Stage Timings

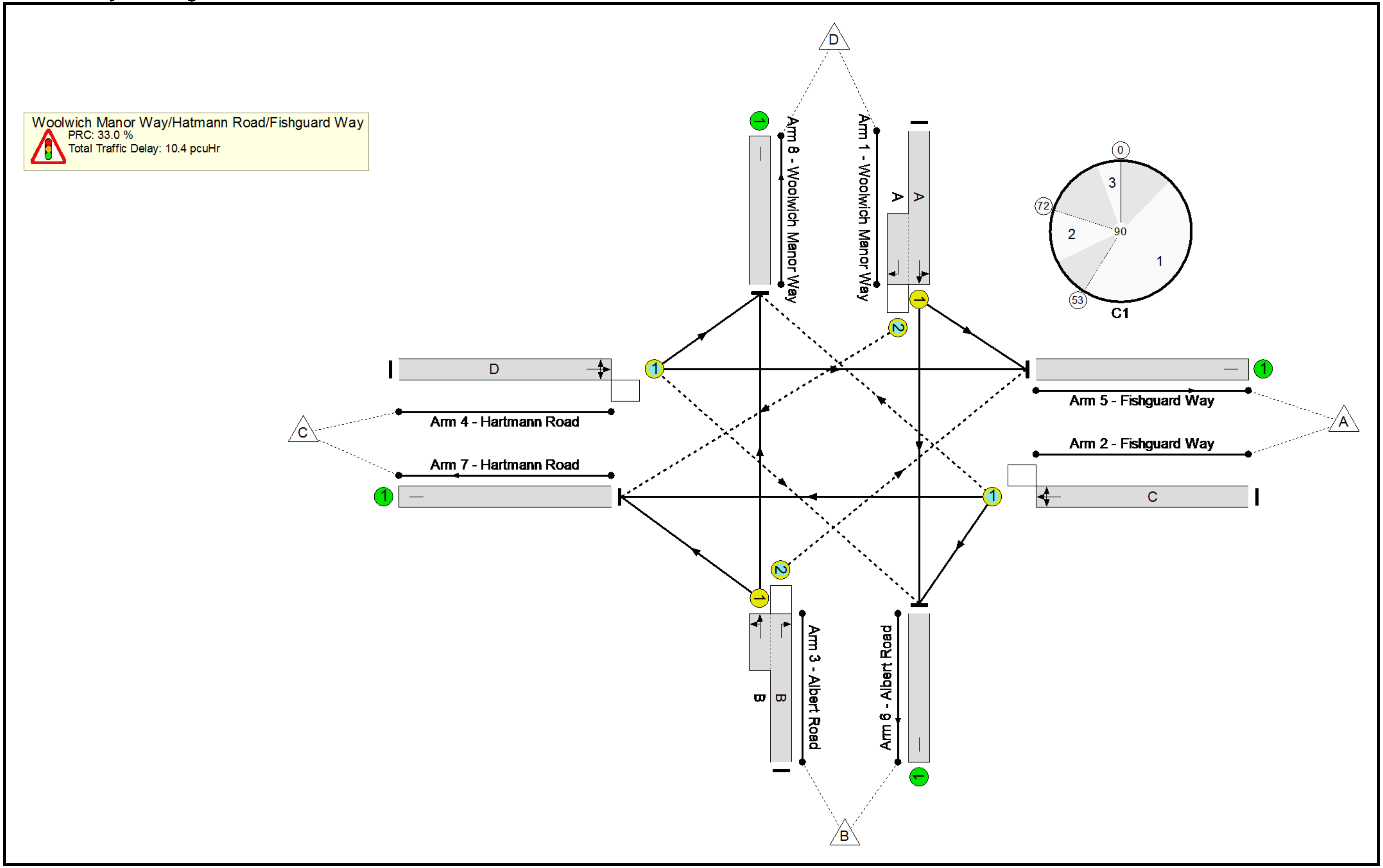
Stage	1	2	3
Duration	42	11	5
Change Point	0	53	72

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**67.7%**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**67.7%**
1/1+1/2	Woolwich Manor Way Left Ahead Right	U+O	N/A	N/A	A		1	43	-	648	1861:1665	963	67.3%
2/1	Fishguard Way Left Ahead Right	O	N/A	N/A	C		1	11	-	57	1762	114	50.0%
3/2+3/1	Albert Road Right Left Ahead	O+U	N/A	N/A	B		1	43	-	426	1741:1873	918	46.4%
4/1	Hartmann Road Ahead Right Left	O	N/A	N/A	D		1	11	-	162	1796	239	67.7%
5/1	Fishguard Way	U	N/A	N/A	-		-	-	-	102	Inf	Inf	0.0%
6/1	Albert Road	U	N/A	N/A	-		-	-	-	404	Inf	Inf	0.0%
7/1	Hartmann Road	U	N/A	N/A	-		-	-	-	212	Inf	Inf	0.0%
8/1	Woolwich Manor Way	U	N/A	N/A	-		-	-	-	575	Inf	Inf	0.0%

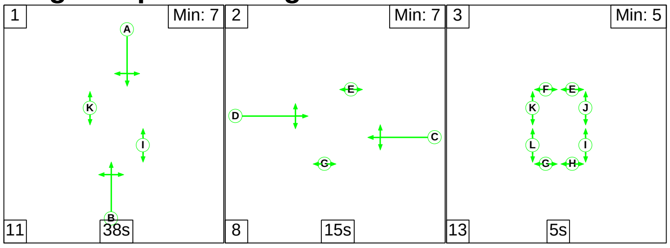
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**261**	**0**	**0**	**6.9**	**3.0**	**0.6**	**10.4**	**-**	**-**	**-**	**-**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**261**	**0**	**0**	**6.9**	**3.0**	**0.6**	**10.4**	**-**	**-**	**-**	**-**
1/1+1/2	648	648	190	0	0	2.9	1.0	0.4	4.3	24.1	9.6	1.0	10.6
2/1	57	57	40	0	0	0.6	0.5	0.1	1.1	71.3	1.3	0.5	1.8
3/2+3/1	426	426	31	0	0	1.8	0.4	0.1	2.3	19.3	6.7	0.4	7.1
4/1	162	162	0	0	0	1.7	1.0	0.0	2.7	59.8	3.8	1.0	4.8
5/1	102	102	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	404	404	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	212	212	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	575	575	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 33.0 Total Delay for Signalled Lanes (pcuHr): 10.43 Cycle Time (s): 90
PRC Over All Lanes (%): 33.0 Total Delay Over All Lanes(pcuHr): 10.43

Full Input Data And Results
Scenario 11: 'Copy of 2023 With Development AM Peak' (FG11: '2023 With Development AM Peak - Sensitivity Test', Plan 1: 'Network Control Plan 1')

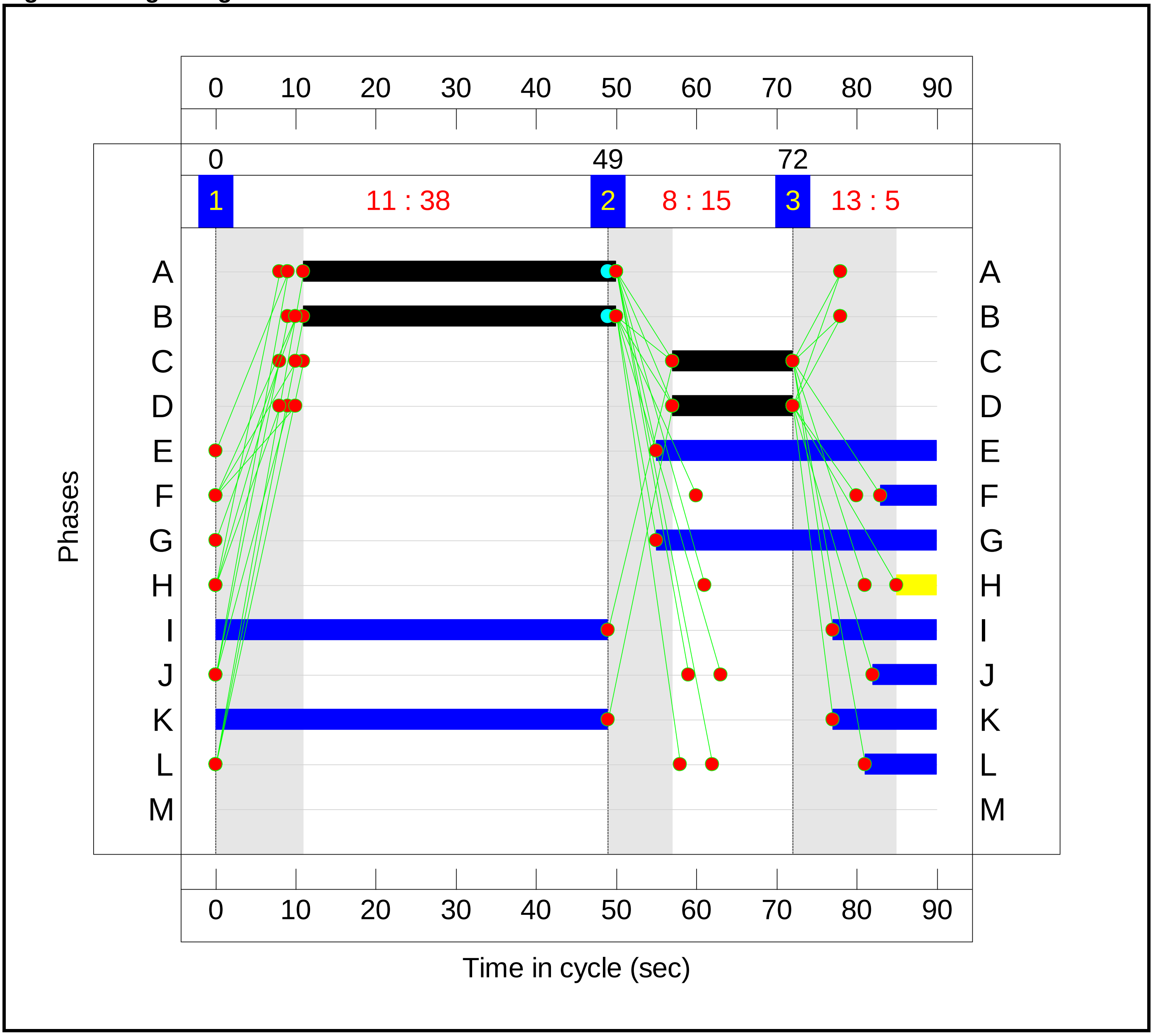
Stage Sequence Diagram



Stage Timings

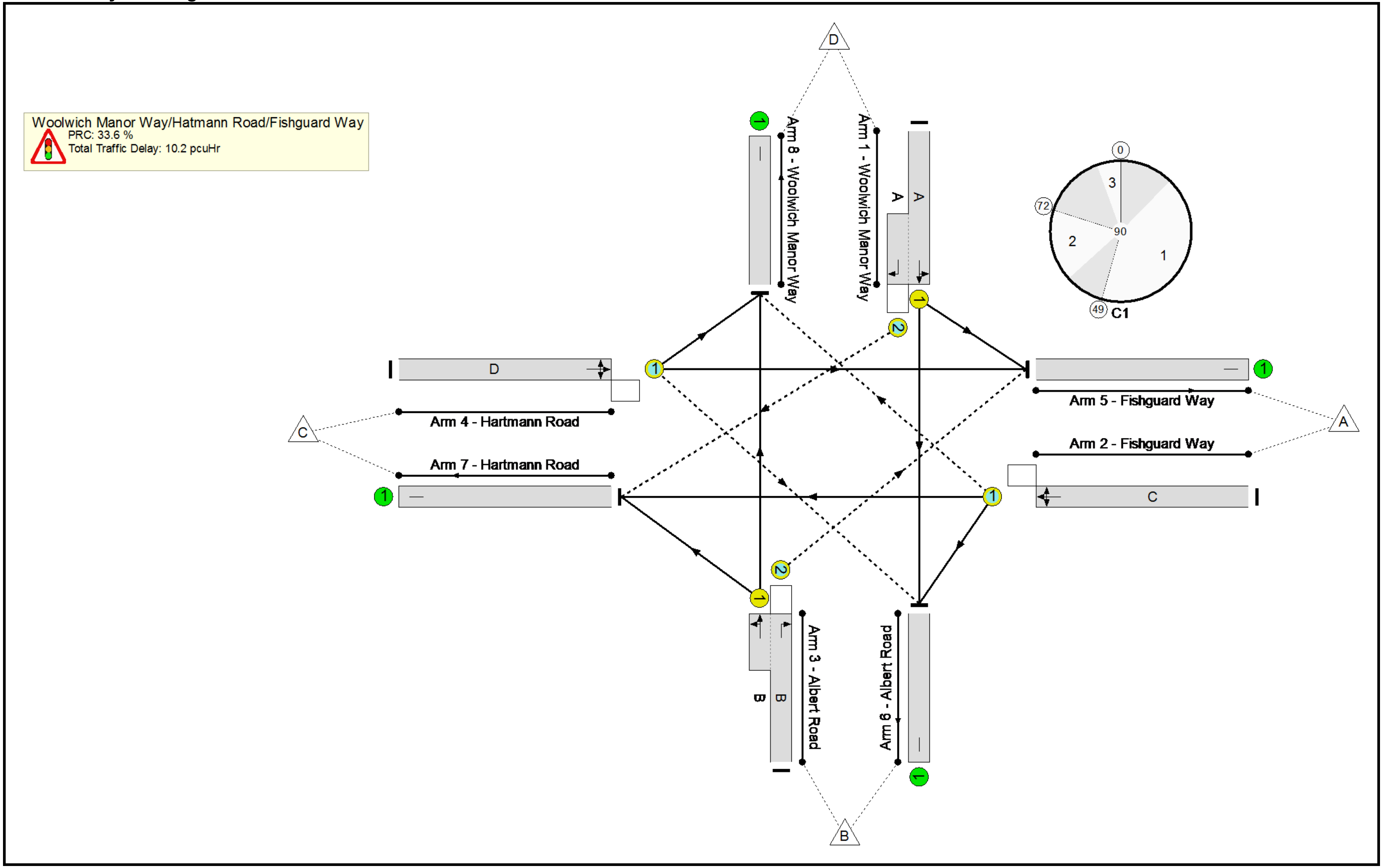
Stage	1	2	3
Duration	38	15	5
Change Point	0	49	72

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**67.4%**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**67.4%**
1/1+1/2	Woolwich Manor Way Left Ahead Right	U+O	N/A	N/A	A		1	39	-	604	1868:1665	896	67.4%
2/1	Fishguard Way Left Ahead Right	O	N/A	N/A	C		1	15	-	113	1757	186	60.8%
3/2+3/1	Albert Road Right Left Ahead	O+U	N/A	N/A	B		1	39	-	256	1741:1862	826	31.0%
4/1	Hartmann Road Ahead Right Left	O	N/A	N/A	D		1	15	-	194	1796	319	60.8%
5/1	Fishguard Way	U	N/A	N/A	-		-	-	-	56	Inf	Inf	0.0%
6/1	Albert Road	U	N/A	N/A	-		-	-	-	400	Inf	Inf	0.0%
7/1	Hartmann Road	U	N/A	N/A	-		-	-	-	220	Inf	Inf	0.0%
8/1	Woolwich Manor Way	U	N/A	N/A	-		-	-	-	491	Inf	Inf	0.0%

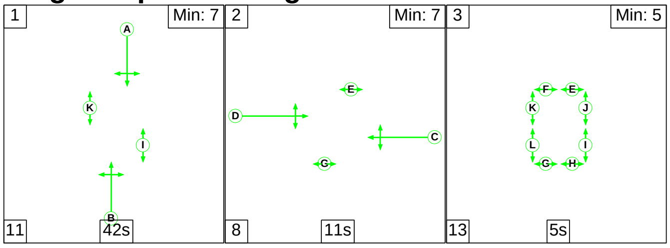
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**277**	**0**	**0**	**7.0**	**2.8**	**0.4**	**10.2**	**-**	**-**	**-**	**-**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**277**	**0**	**0**	**7.0**	**2.8**	**0.4**	**10.2**	**-**	**-**	**-**	**-**
1/1+1/2	604	604	198	0	0	3.0	1.0	0.2	4.3	25.7	8.8	1.0	9.8
2/1	113	113	71	0	0	1.0	0.8	0.2	1.9	61.8	2.5	0.8	3.2
3/2+3/1	256	256	8	0	0	1.1	0.2	0.0	1.4	19.3	3.9	0.2	4.2
4/1	194	194	0	0	0	1.8	0.8	0.0	2.6	48.3	4.4	0.8	5.2
5/1	56	56	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	400	400	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	220	220	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	491	491	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 33.6 Total Delay for Signalled Lanes (pcuHr): 10.23 Cycle Time (s): 90
PRC Over All Lanes (%): 33.6 Total Delay Over All Lanes(pcuHr): 10.23

Full Input Data And Results
Scenario 12: 'Copy of 2023 With Development PM Peak' (FG12: '2023 With Development PM Peak - Sensitivity Test', Plan 1: 'Network Control Plan 1')

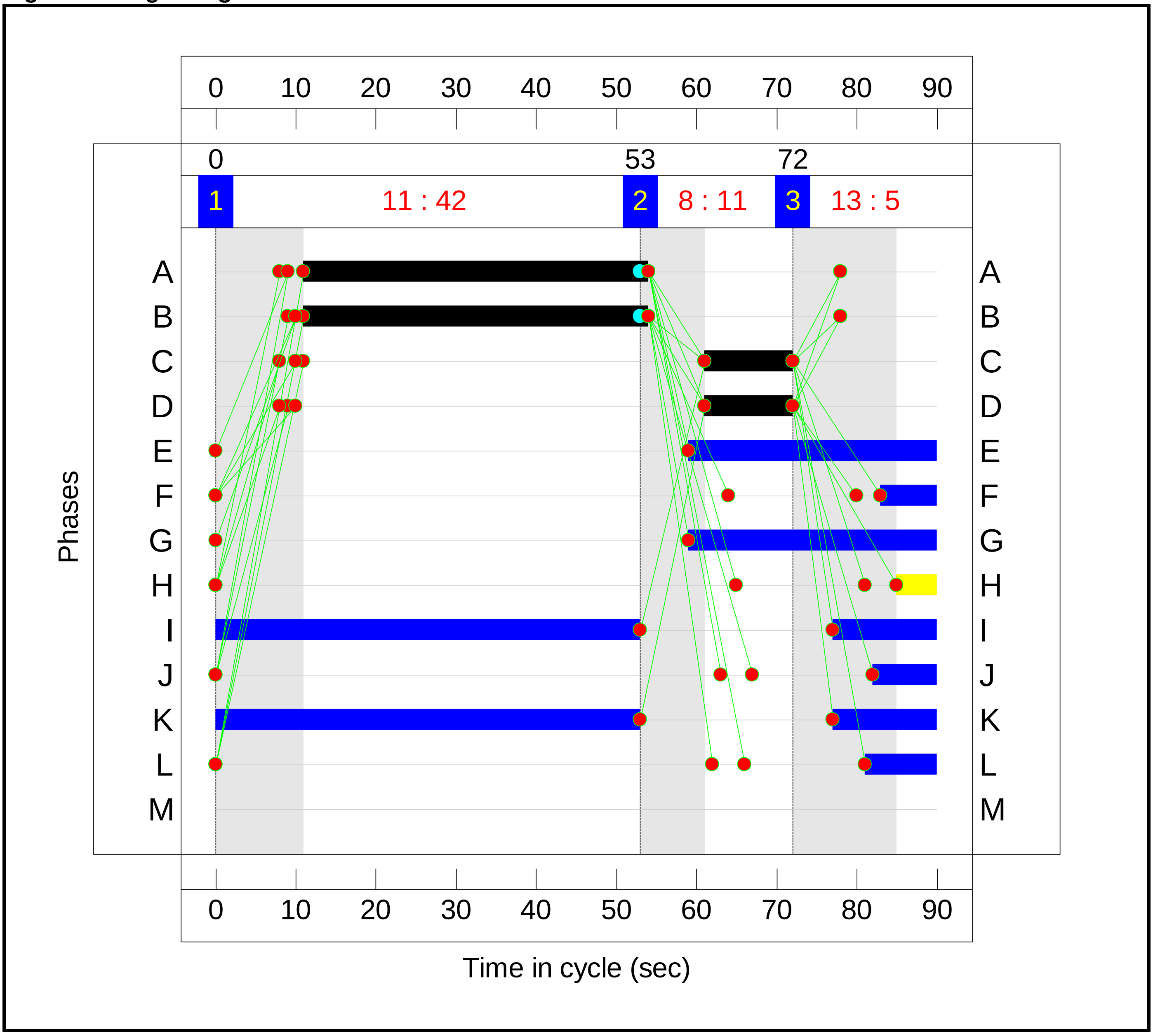
Stage Sequence Diagram



Stage Timings

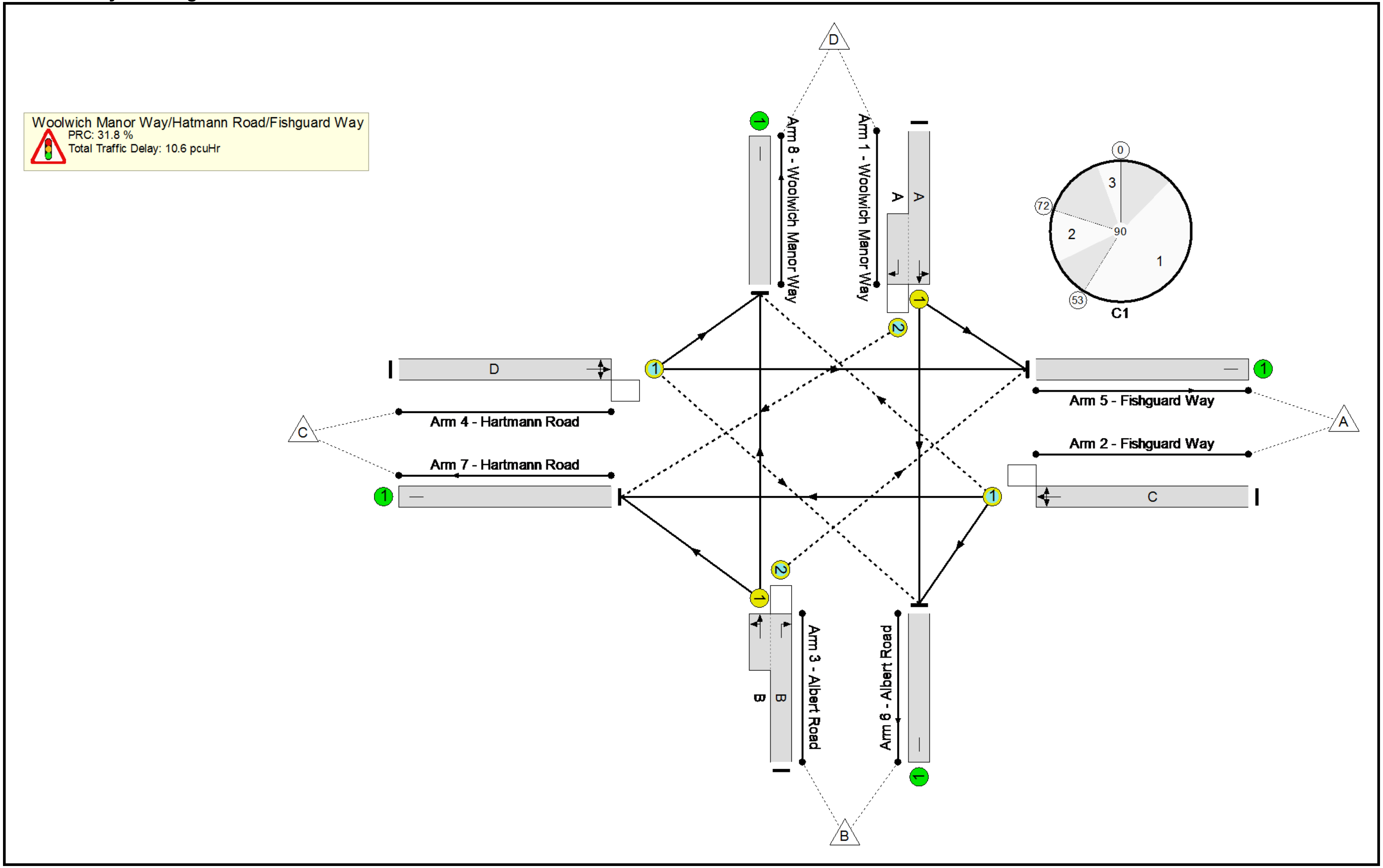
Stage	1	2	3
Duration	42	11	5
Change Point	0	53	72

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**68.3%**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**68.3%**
1/1+1/2	Woolwich Manor Way Left Ahead Right	U+O	N/A	N/A	A		1	43	-	660	1861:1665	967	68.3%
2/1	Fishguard Way Left Ahead Right	O	N/A	N/A	C		1	11	-	57	1762	114	50.0%
3/2+3/1	Albert Road Right Left Ahead	O+U	N/A	N/A	B		1	43	-	426	1741:1873	918	46.4%
4/1	Hartmann Road Ahead Right Left	O	N/A	N/A	D		1	11	-	163	1796	239	68.1%
5/1	Fishguard Way	U	N/A	N/A	-		-	-	-	102	Inf	Inf	0.0%
6/1	Albert Road	U	N/A	N/A	-		-	-	-	404	Inf	Inf	0.0%
7/1	Hartmann Road	U	N/A	N/A	-		-	-	-	224	Inf	Inf	0.0%
8/1	Woolwich Manor Way	U	N/A	N/A	-		-	-	-	576	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**273**	**0**	**0**	**7.0**	**3.0**	**0.6**	**10.6**	**-**	**-**	**-**	**-**
Woolwich Manor Way/Hatmann Road/Fishguard Way	**-**	**-**	**273**	**0**	**0**	**7.0**	**3.0**	**0.6**	**10.6**	**-**	**-**	**-**	**-**
1/1+1/2	660	660	202	0	0	3.0	1.1	0.4	4.5	24.4	9.7	1.1	10.8
2/1	57	57	40	0	0	0.6	0.5	0.1	1.1	71.3	1.3	0.5	1.8
3/2+3/1	426	426	31	0	0	1.8	0.4	0.1	2.3	19.2	6.7	0.4	7.1
4/1	163	163	0	0	0	1.7	1.0	0.0	2.7	60.1	3.8	1.0	4.9
5/1	102	102	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	404	404	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	224	224	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	576	576	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 31.8 Total Delay for Signalled Lanes (pcuHr): 10.61 Cycle Time (s): 90
PRC Over All Lanes (%): 31.8 Total Delay Over All Lanes(pcuHr): 10.61