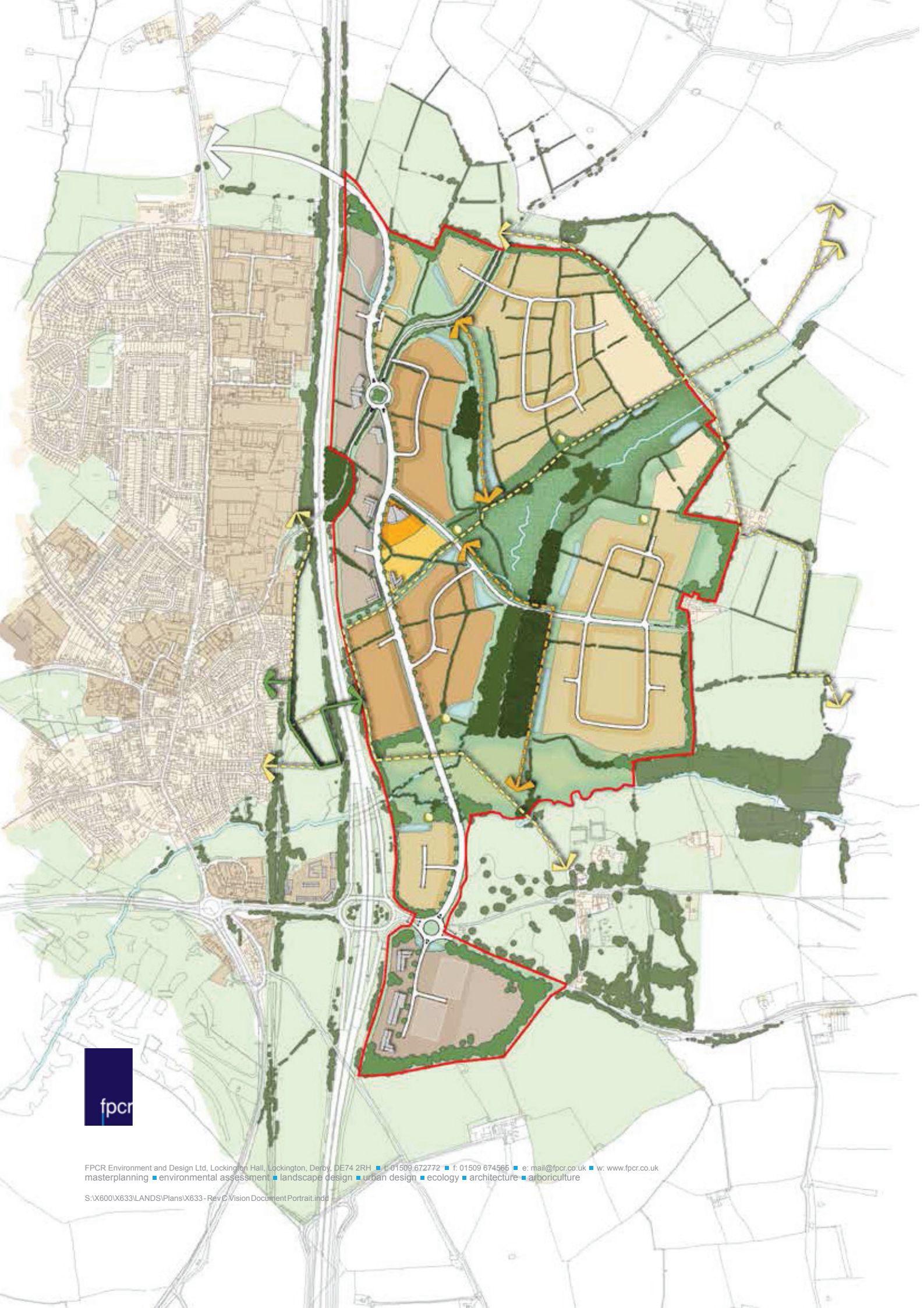


# *INITIAL MASTERPLAN*

A



***SCOTT WILSON  
'EASTERN' BYPASS  
OPTION***

**B**







***MODELLING  
TECHNICAL NOTE***

**C**

# LLITM | Lutterworth East Development:

## TN2: LLITM Modelling





# LLITM | Lutterworth East Development: TN2: LLITM Modelling

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## Section 1 – Introduction

### 1.1 Lutterworth East Modelling

- 1.1.1 As part of the assessment of the proposed Lutterworth East development, a number of model runs using the Leicester and Leicestershire Integrated Transport Model (LLITM) were requested. These looked at forecasting the impact of the proposed development and of the proposed link road between the development and the A426 to the north of Lutterworth.
- 1.1.2 The proposed Lutterworth East development is to contain around 2,500 dwellings and around 20 hectares of employment land, plus a primary school and local retail and community facilities. It is to be located to the east of the M1, with the majority of the development located to the north of the A4303.
- 1.1.3 The modelling within LLITM has represented the following four scenarios:
- the calibrated and validated 2008 base year;
  - a 2031 forecast using the existing ‘core scenario’ without the proposed development; and
  - a 2031 forecast based on the ‘core scenario’ and including the proposed development both:
    - without the link road between Gilmorton Road and the A426 north of Lutterworth; and
    - with the link road between Gilmorton Road and the A426 north of Lutterworth.
- 1.1.4 All modelling within LLITM has been based on LLITM v5.2, which uses the 2008 base year models calibrated and validated in September 2013.
- 1.1.5 This Technical Note discusses the modelled assumptions adopted in representing this proposed development within LLITM. This builds on the assumptions set out in ‘*TN1 - Lutterworth East Modelling Assumptions*’, and also includes some high-level analysis of the model forecasts.
- 1.1.6 This Technical Note contains the following Sections:
- Section 2 – Base Year Model Updates: details the updates to the base year models required to use development zones to represent the proposed development.
  - Section 3 – Land-Use Assumptions: details the processing of the assumption regarding the development into the format required for use within LLITM.
  - Section 4 – Network Assumptions: details the network assumptions (both highway and public transport), primarily focussing on the changes made in relation to the proposed development.
  - Section 5 – Model Forecasts: provides some high-level analysis of the model forecasts from LLITM.

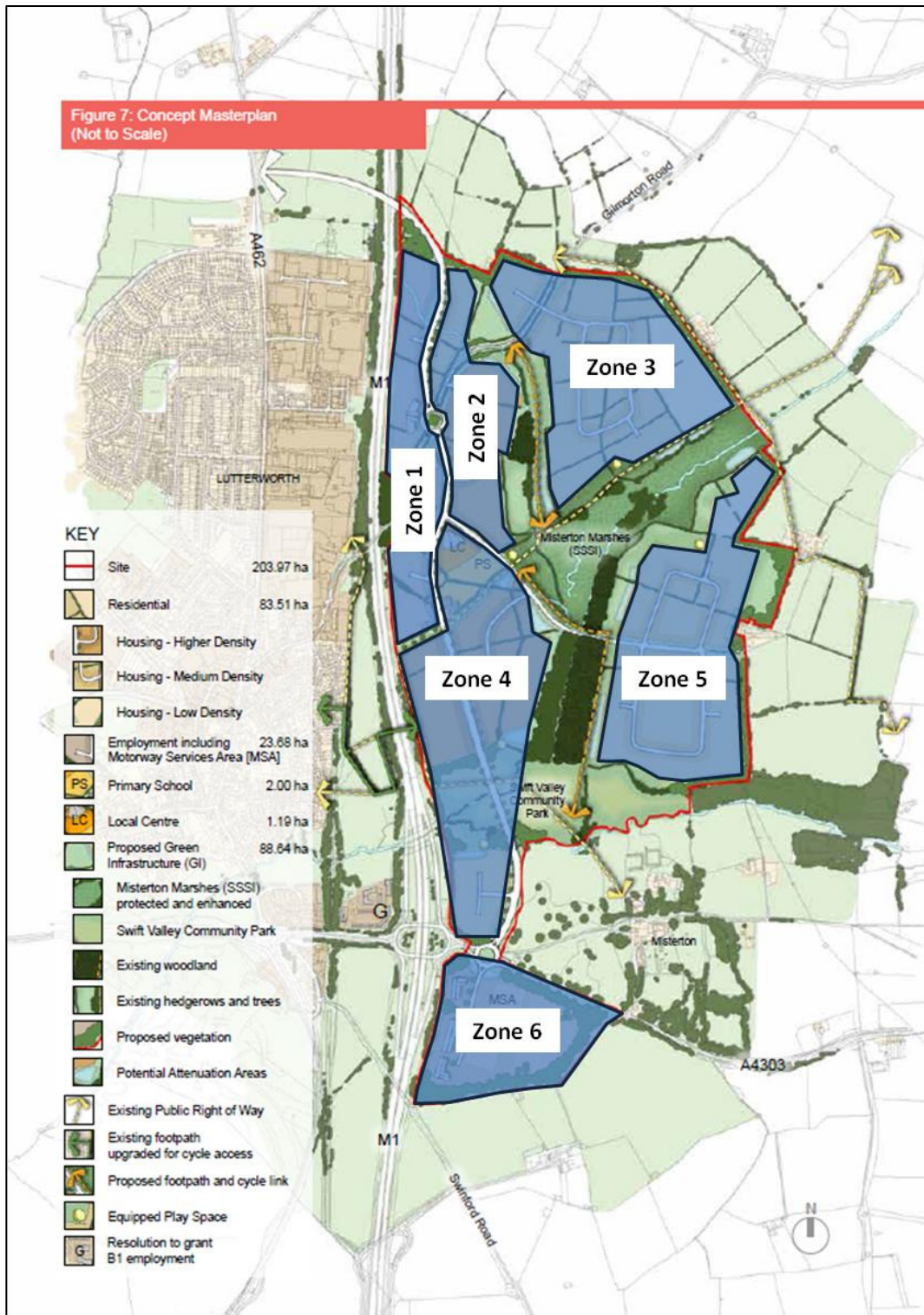
## Section 2 – Base Year Model Updates

### 2.1 Development Zones

- 2.1.1 In order to represent the proposed Lutterworth East development, it was agreed that a number of development zones would be used for this assessment. These development zones are empty zones within the base year model, and can be located throughout Leicester and Leicestershire to represent future year developments.
- 2.1.2 As the demand model contained within the LLITM suite is an incremental model, looking at changes in cost from the base year to a given future year scenario, the development zones to be used within the Lutterworth East assessment need to be moved to the location of the proposed development in the base year model. The base year model is then re-run with the development zones in place to generate representative costs of travel to / from these zones in the base year.
- 2.1.3 It is important when including these zones in the base year model that they have a limited impact on the base year highway and public transport assignment models. This has been achieved by removing the possibility of through traffic using the proposed Lutterworth East development network, and by using 'dummy' nodes within the highway assignment model. These 'dummy' nodes do not generate delay, and therefore have a limited impact on the base year assignment models.
- 2.1.4 As discussed in '*TN1 - Lutterworth East Modelling Assumptions*', it was agreed that a total of six development zones would be used to represent the proposed development. These have been defined so as to distinguish different types of land-use (residential and employment) and also areas of the development which load onto the network at different locations.
- 2.1.5 Figure 2.1 shows the definition of the six development zones used as part of the LLITM assessment of the proposed Lutterworth East development.



Figure 2.1: Lutterworth East Model Zones



## Section 3 – Land-Use Assumptions

### 3.1 ‘Core Scenario’

- 3.1.1 As part of the development of LLITM v5, a ‘core scenario’ was produced in late-2013 using the most up-to-date forecast assumptions at the time in terms of land-use development, highway network improvements, public transport service changes, investment in Smarter Choices initiatives and other model inputs. The land-use assumptions and forecasts which form part of this ‘core scenario’ is referred to as planning scenario ‘sp’.
- 3.1.2 This ‘sp’ land-use scenario has been forecast using the full land-use transport interaction (LUTI) model available within LLITM. This allows for iteration between the transport and land-use models whereby the forecast costs of travel influence the location of land-use, and the location of land-use changes influences the costs of travel.
- 3.1.3 The 2031 land-use forecasts from this ‘core scenario’ have been used as the input to the 2031 ‘without development’ scenario, and also as the basis for the ‘with development’ scenarios.
- 3.1.4 Further details on the assumptions underpinning the LLITM v5 ‘core scenario’ can be found in ‘PR104 - Revised Forecasting Report’.

### 3.2 Lutterworth East Land-Use Assumptions

- 3.2.1 Using the 2031 ‘sp’ forecasts, additional land-use has been added to the six defined development zones based on the proposed development contained within each zone. The definition of the amount of development located within each of the development zones is given in Table 3.1.

**Table 3.1: Assumed Dwelling and Employment by Zone**

Zone	Dwellings	Employment Land
1	0	10 ha
2	400	0
3	800	0
4	500	Primary school and local centre (~3 ha in total)
5	800	0
6	0	10 ha
<b>Total</b>	<b>2,500</b>	<b>20 ha plus primary school and local centre</b>

- 3.2.2 In order to use these inputs within LLITM, a number of assumptions are required to convert the inputs detailed in Table 3.1 into the format required for the model. Within LLITM, land-use forecasts are required for:
  - population by zone divided into 11 person types, and also divided into a number of car ownership classifications; and
  - employment by zone divided into 13 employment types.
- 3.2.3 In terms of population, the ‘core scenario’ forecasts for the model zones which constitute Lutterworth have been used to derive the required conversion factors. The first of these factors is the average occupancy of a dwelling to convert the input assumptions on the number of dwellings into an estimate of population. Using the forecasts for Lutterworth it has been assumed that there are, on average, 2.27 people per dwelling within

the proposed Lutterworth East development. This results in an estimated population for the Lutterworth East development of around 5,700.

3.2.4 This population is then required to be disaggregated into 11 person types based on age, gender and employment status. As with the average household size, the forecast demographics for Lutterworth have been used to define splits into these 11 person type. These disaggregation factors are given in Table 3.2,

**Table 3.2: Person Type Disaggregation Factors**

Person Type	Proportion
Children	20%
Male Full-time Employed	22%
Male Part-time Employed	2%
Male Student	0%
Male Unemployed	2%
Male Retired	11%
Female Full-time Employed	11%
Female Part-time Employed	9%
Female Student	0%
Female Unemployed	4%
Female Retired	18%

*Note: percentages have been rounded to the nearest whole value*

3.2.5 This forecast population is then required to be classified into a number of car ownership levels. This again uses the forecast car ownership levels for Lutterworth in the 2031 'core scenario', and applies these forecasts to the estimated population for the proposed Lutterworth East development. In summary, these car ownership levels are:

- 10% of households have no car;
- 40% of households have one car; and
- 50% of households have two or more cars.

3.2.6 In terms of employment forecasts, the first task is to understand the nature of the proposed employment land. For Zone 1 and Zone 6, the 10 hectares of employment land contained in each zone is assumed to be equally split between office (B1), warehousing / distribution (B8) and general (B2) land-uses.

3.2.7 These inputs on the area of employment land have been converted into an estimate of the number (and type) of jobs that will be generated by this development. The first assumption applied converts the total employment land into an approximation of the internal area of the buildings. Then, using employment densities from the Homes and Communities Agency<sup>1</sup>, these floorspace estimates have been converted to employment estimates.

3.2.8 Table 3.3 sets out the assumptions proposed to derive an estimate of the number of jobs generated by the employment in Zone 1 and Zone 6 of the proposed development. This methodology uses the following assumptions:

- the internal area of the employment buildings is 40% of the total land area; and
- office buildings are on average two storeys high, general (B2) buildings being on average 1.5 storeys high, and warehouse buildings being one storey high.

<sup>1</sup> <https://www.gov.uk/government/publications/employment-densities-guide>



This results in an estimated total employment for this site of around 3,400 jobs for each model zone.

**Table 3.3: Assumptions for Northern Employment Zone**

	Office (B1)	General (B2)	Warehouse / Distribution (B8)
Total employment land (ha)	3.33	3.33	3.33
Internal floorspace (%)	40%		
Internal floorspace (ha)	1.33	1.33	1.33
Building Storeys	2	1.5	1
Total Internal floorspace (ha)	2.67	2.00	1.33
Total Internal floorspace (m <sup>2</sup> )	26,667	20,000	13,333
Average employee density (m <sup>2</sup> per FTE)	10	36	75
Estimated Employees	2,667	556	178

3.2.9 A similar process has been adopted for the local centre contained within Zone 4 (as defined in Figure 2.1). This assumed a single storey retail centre (land-use A1), which equated to an estimated employment of around 265 for this element of the employment within Zone 4.

3.2.10 In addition to this there is proposed to be a primary school located within this zone. The estimated employment at the primary school has been based on the following assumptions:

- that there is one employee per 10 pupils attending the school;
- that all children of primary school age resident within the proposed development will attend the school, with children attending secondary schools and higher education travelling elsewhere; and
- that 35% of the children forecast to be resident within the proposed development are of primary school age.

This equates to around 400 primary school pupils, and therefore 40 jobs relating to the primary school.

3.2.11 Within LLITM employment is classified into thirteen categories defined by the DfT’s National Trip-End Model. Based on the employment estimates detailed above, the following correspondence to the required employment categories has been applied:

- B1 (office) employment has been classified as ‘*services (business, other, postal/courier) & equipment rental*’;
- B8 (warehouse / distribution) employment has been classified as ‘*industry, construction and transport*’;
- B2 (general) employment has been split equally between *services (business, other, postal/courier) & equipment rental*, ‘*industry, construction and transport*’ and ‘*business*’;
- employment relating to the primary school has been classified as ‘*primary & secondary schools*’; and
- employment relating to the local centre has been classified as ‘*retail trade*’.

### 3.3 Trip Rate and Distribution Assumptions

3.3.1 LLITM uses the DfT’s National Trip-End Model software (named CTripEnd) to forecast trip-ends based on the planning data inputs. It has therefore been assumed that the trip rates contained within the DfT’s National Trip-End Model are applicable to the proposed Lutterworth East development, and bespoke local trip rates are not required.

- 3.3.2 Similarly, LLITM requires a starting trip distribution for each development zone. For non-development zones the trip distribution in the base year model is used, but as for development zones there is no demand in the base year this is not possible. The in-built gravity model function within LLITM has been used to inform the forecast trip distribution to / from the proposed Lutterworth East development, and no adjustments to this process have been applied.

## Section 4 – Network Assumptions

### 4.1 Introduction

- 4.1.1 In addition to the assumptions on land-use data (detailed in Section 3) for the proposed development, the other main inputs into the model are the supply networks. These detail the assumed highway network infrastructure and the public transport service provision.
- 4.1.2 As with the land-use data, the existing 2031 'core scenario' has been used as the starting point for this application. The 2031 'core scenario' networks for highway and public transport have been used directly in the 'without development' scenario, with the necessary changes to the location of Lutterworth East development zones.
- 4.1.3 These 'core scenario' networks include a number of changes to highway infrastructure and public service provision. These are the schemes which are thought to be 'near certain' or 'more than likely', and a list of these schemes can be found in '*PR104 - Revised Forecasting Report*'.
- 4.1.4 For the 'with development' scenarios a number of changes to these 'core scenario' networks are required. These changes are detailed in this Section and are based on the interpretation of the current Masterplan document contained within '*TN1 - Lutterworth East Modelling Assumptions*'.

### 4.2 Highway Network Assumptions

- 4.2.1 The changes to the highway networks from the 'core scenario' are related to the access points for the proposed Lutterworth East development and the internal network. The proposed Lutterworth East development will access the existing road network at a limited number of locations. These are:
- a four-arm roundabout junction on the A4303 to the east of M1 Junction 20;
  - a three-arm roundabout junction on Gilmorton Road (without the northern A426 connection);
  - a priority junction access to Gilmorton Road from Zone 2; and
  - a priority junction access to Gilmorton Road from Zone 3.
- 4.2.2 In the scenario with the addition of the link road between Gilmorton Road and the A426 to the north of Lutterworth, the junction access point on Gilmorton Road is converted from a three-arm to a four-arm roundabout. The connection with the A426 has been assumed to be a three-arm roundabout located around 200m to the north of the junction with Bill Crane Way.
- 4.2.3 All junctions introduced as part of the proposed development have been assumed to be of a good standard, with, for example, flared approaches to roundabouts and dedicated right-turn lanes at priority junctions where required.
- 4.2.4 The spine road through the proposed development has been assumed to be a single carriageway route with a 30mph speed limit within built-up areas, and a 40mph limit outside the proposed built-up areas. The local access roads to / from residential and employment developments are assumed to have 20mph speed limits in place.

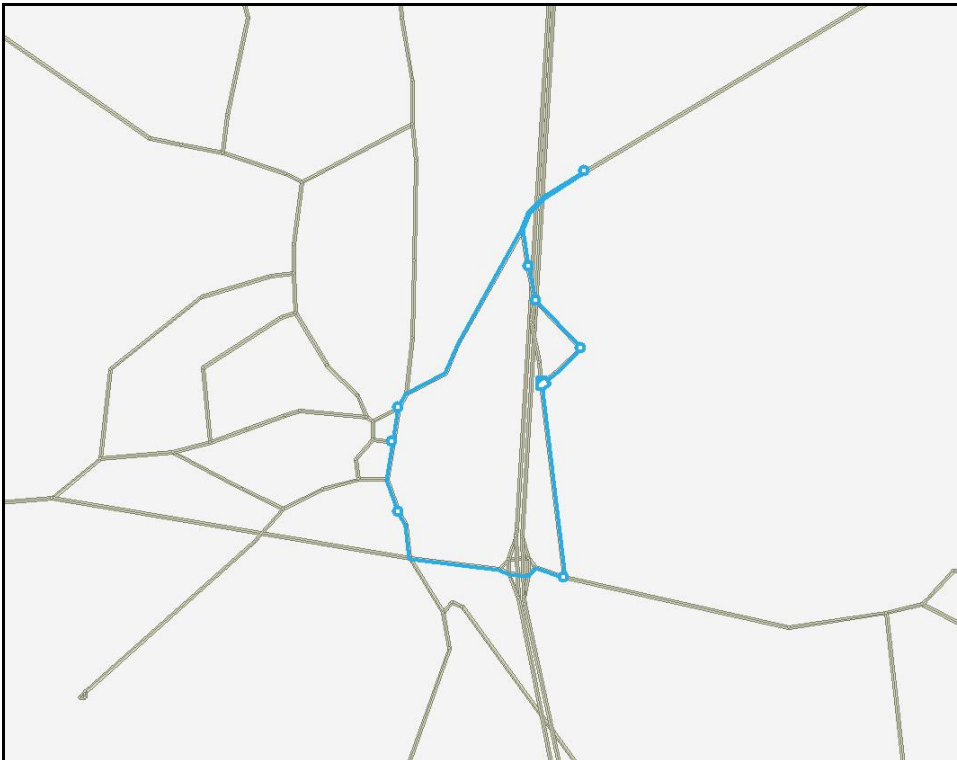
### 4.3 Public Transport Service Assumptions

- 4.3.1 As part of the 'with development' scenario it has been assumed that a shuttle bus service will be in operation between the proposed development and Lutterworth town centre. This is a notional service at present to provide public transport access to / from the proposed development, and should not be seen as a committed scheme as part of the proposed development. The public transport provision for the proposed development is assumed to be developed further as part of the Transport Assessment process.



4.3.2 For the purposes of modelling this shuttle service within LLITM, a circular route has been defined calling at a number of locations within the proposed development and Lutterworth town centre. It is assumed to run every half hour throughout the day. This shuttle service is shown in Figure 4.1, with the circles along the route showing the location of the assumed bus stops for this service.

**Figure 4.1: Modelled Lutterworth East Shuttle Service**



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## Section 5 – Model Forecasts

### 5.1 Introduction

- 5.1.1 This Section details some high-level analysis which has been undertaken as part of the review and checking of the model forecasts. A more detailed assessment is to be undertaken as part of the local area modelling being undertaken, but this Section provides some information on the forecasts produced by LLITM.
- 5.1.2 This Section includes both forecast network performance statistics and forecast flow changes between scenarios from the highway model. Both these model forecasts report on the three time periods contained within the LLITM highway model. These are the AM Peak hour (08:00 to 09:00), an average interpeak hour (between 10:00 and 16:00) and the PM Peak hour (17:00 to 18:00).

### 5.2 Highway Network Statistics

- 5.2.1 Table 5.1 shows the highway network statistics in the three modelled hours and the four model scenarios for links within Harborough District. For each time period and scenario the table gives the forecast vehicle distance (a measure of total traffic on the network), assigned vehicle hours (a measure of total journey times), and average speeds.
- 5.2.2 In addition to the forecasts for these metrics, the changes between scenarios are also provided. These are incremental between scenarios, and therefore show:
- the change between the 2008 base year and the 2031 forecast without the proposed development;
  - the change between the 2031 forecast without and with the proposed development; and
  - the change between the 2031 forecasts without and with the connection from the development to the A426.
- 5.2.3 Firstly considering the change in network performance from the base year to a 2031 forecast scenario without the proposed Lutterworth East development, traffic on links within Harborough District is forecast to increase by between around 32% and 37% depending on the time period. This results in decreases in average speeds of between 2% and 2.6%.
- 5.2.4 When introducing the proposed Lutterworth East development, this increases traffic on the Harborough District network by between around 4% and 5%, which results in decreases in average speed of around 1.5% to 2%.
- 5.2.5 Introducing the link between the proposed development and the A426 to the north of Lutterworth does not significantly change the forecast traffic on the network. The total assigned travel time is however forecast to reduce, by between 0.1% and 0.5% depending on the modelled time period. Similarly, the forecast average speeds within Harborough District are forecast to increase by between 0.1% and 0.4% with the introduction of the link to the A426.

**Table 5.1: Highway Network Statistics: Harborough District**

		2008 Base Year	2031 'without development'	2031 'with development'	
				Without A426 Connection	With A426 Connection
AM Peak hour	Vehicle Distance (veh-km)	342,570	447,984	467,128	466,811
			30.8%	4.3%	-0.1%
	Assigned Vehicle-Time (veh-hours)	5,242	7,023	7,471	7,437
			34.0%	6.4%	-0.5%
Average Speed (kph)		65	64	63	63
			-2.4%	-2.0%	0.4%
Interpeak hour	Vehicle Distance (veh-km)	239,503	328,227	345,082	344,600
			37.0%	5.1%	-0.1%
	Assigned Vehicle-Time (veh-hours)	3,391	4,744	5,061	5,043
			39.9%	6.7%	-0.4%
Average Speed (kph)		71	69	68	68
			-2.0%	-1.4%	0.2%
PM Peak hour	Vehicle Distance (veh-km)	349,476	460,901	479,116	479,244
			31.9%	4.0%	0.0%
	Assigned Vehicle-Time (veh-hours)	5,322	7,210	7,607	7,598
			35.5%	5.5%	-0.1%
Average Speed (kph)		66	64	63	63
			-2.6%	-1.5%	0.1%

### 5.3 Highway Flow Change

- 5.3.1 Two sets of forecast flow change plots from the highway model have been produced. These show the forecast change in highway volumes with the introduction of the proposed Lutterworth East development, and then the forecast change in highway flows including the proposed development with the introduction of the link road to the A426.
- 5.3.2 Figure 5.1, Figure 5.2 and Figure 5.3 show the forecast change in highway volumes due to the introduction of the proposed Lutterworth East development in the AM Peak, interpeak and PM Peak hours. These three figures show a similar pattern of flow increases as a result of adding the proposed Lutterworth East development.
- 5.3.3 Figure 5.4, Figure 5.5 and Figure 5.6 show the forecast change in flows with the proposed Lutterworth East development due to the introduction of the link road from the proposed development to the A426 to the north of Lutterworth in the three modelled time periods. These again show a similar pattern of flow change between these two scenarios across time periods, with reductions in flow forecast within Lutterworth town centre.



Figure 5.1: Forecast Highway Flow Change 2031 'without' and 'with' development (AM Peak hour)

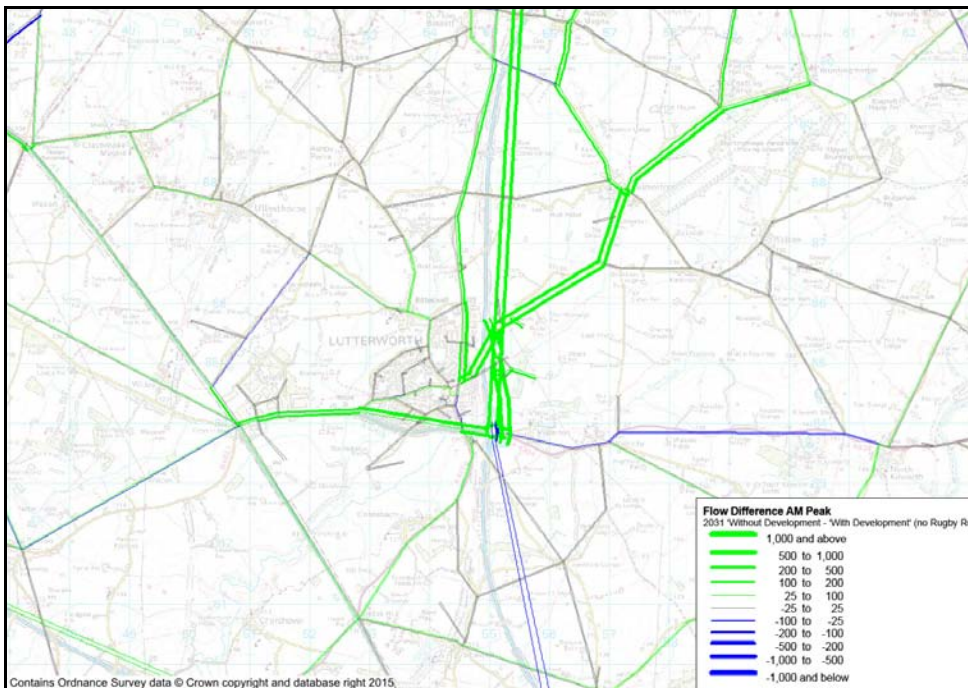


Figure 5.2: Forecast Highway Flow Change 2031 'without' and 'with' development (Interpeak hour)

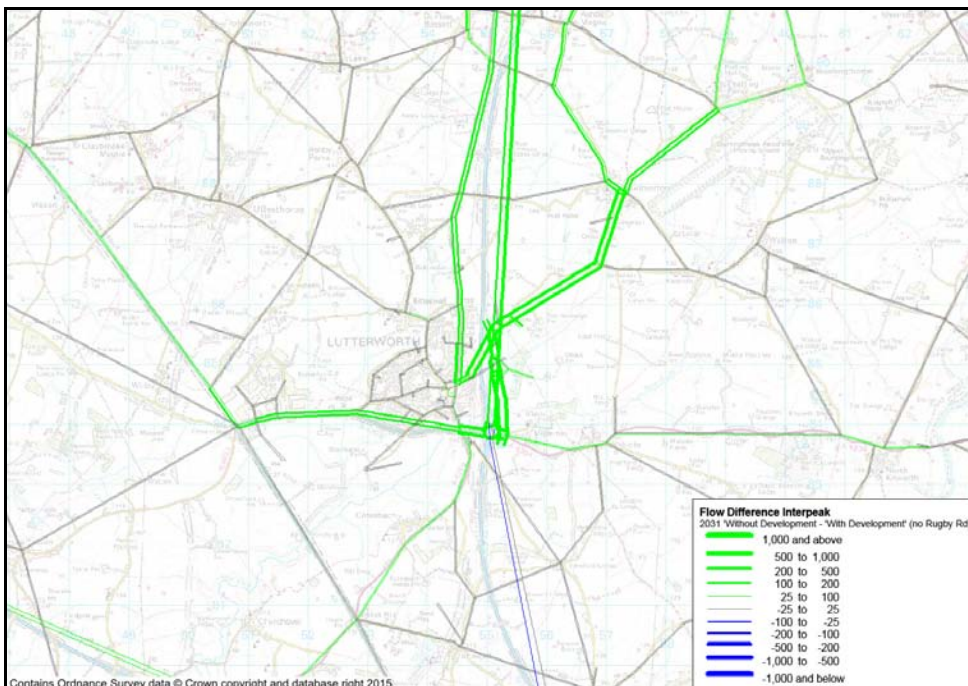


Figure 5.3: Forecast Highway Flow Change 2031 'without' and 'with' development (PM Peak hour)

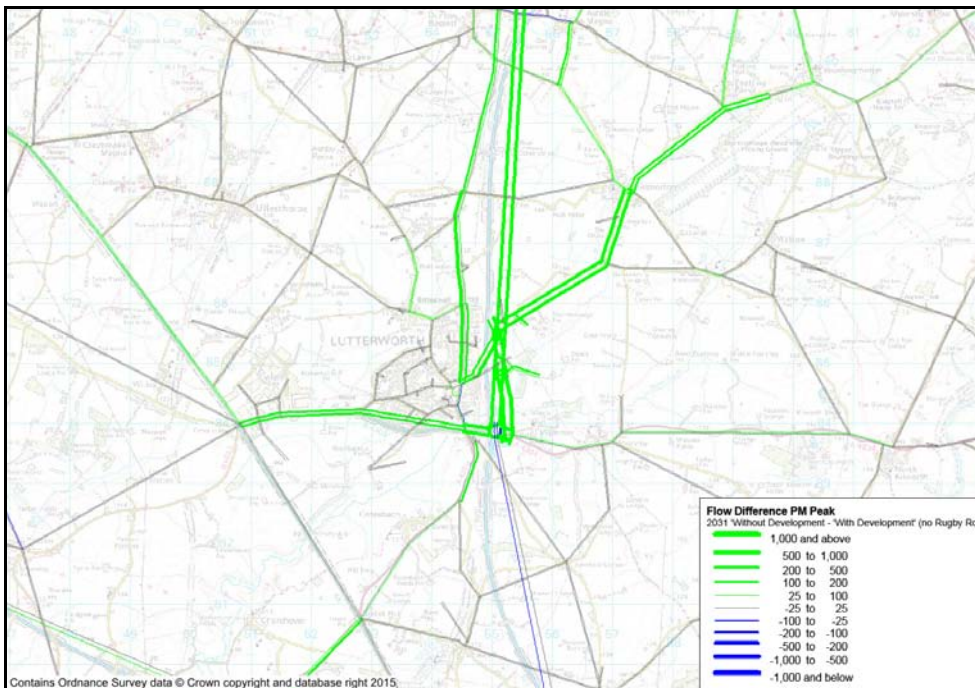
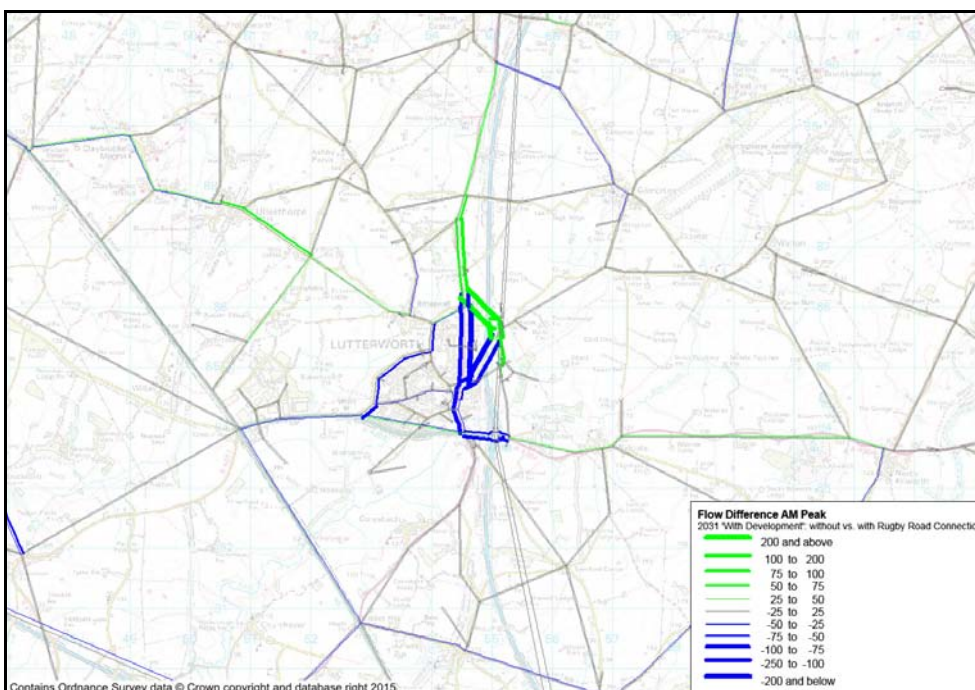
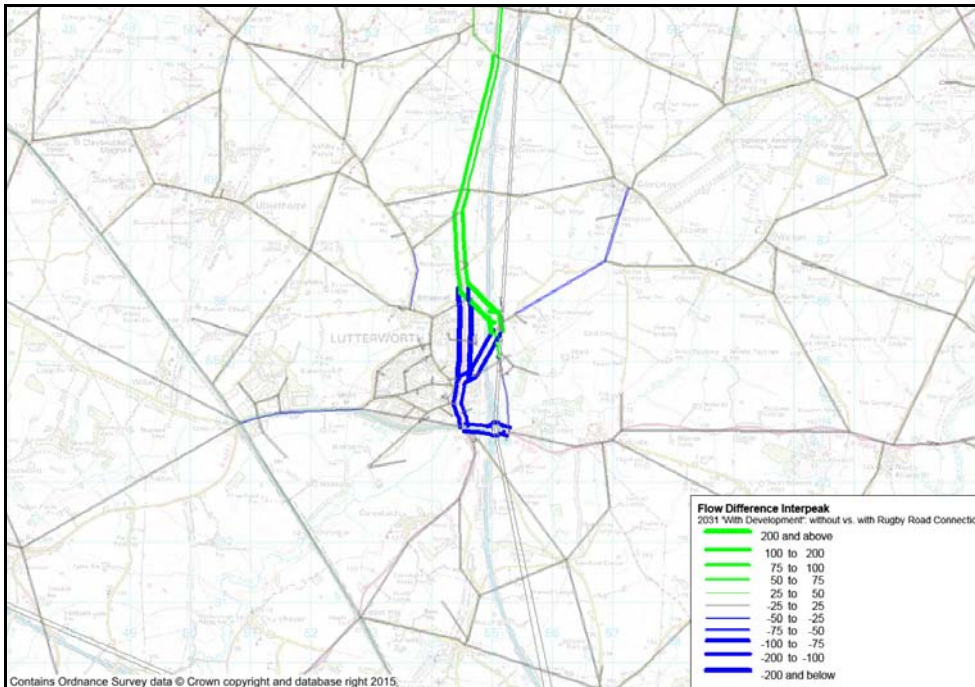


Figure 5.4: Forecast Highway Flow Change 2031 'with' development, without and with A426 link road (AM Peak hour)

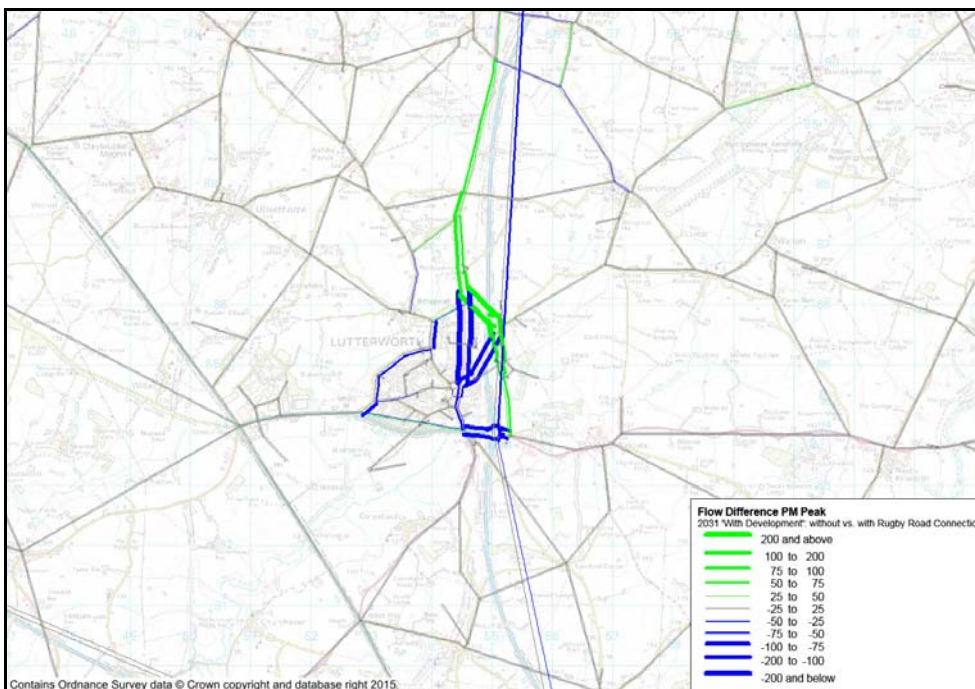




**Figure 5.5: Forecast Highway Flow Change 2031 'with' development, without and with A426 link road (Interpeak hour)**



**Figure 5.6: Forecast Highway Flow Change 2031 'with' development, without and with A426 link road (PM Peak hour)**



***TRAFFIC FLOW  
DIAGRAMS***

**D**



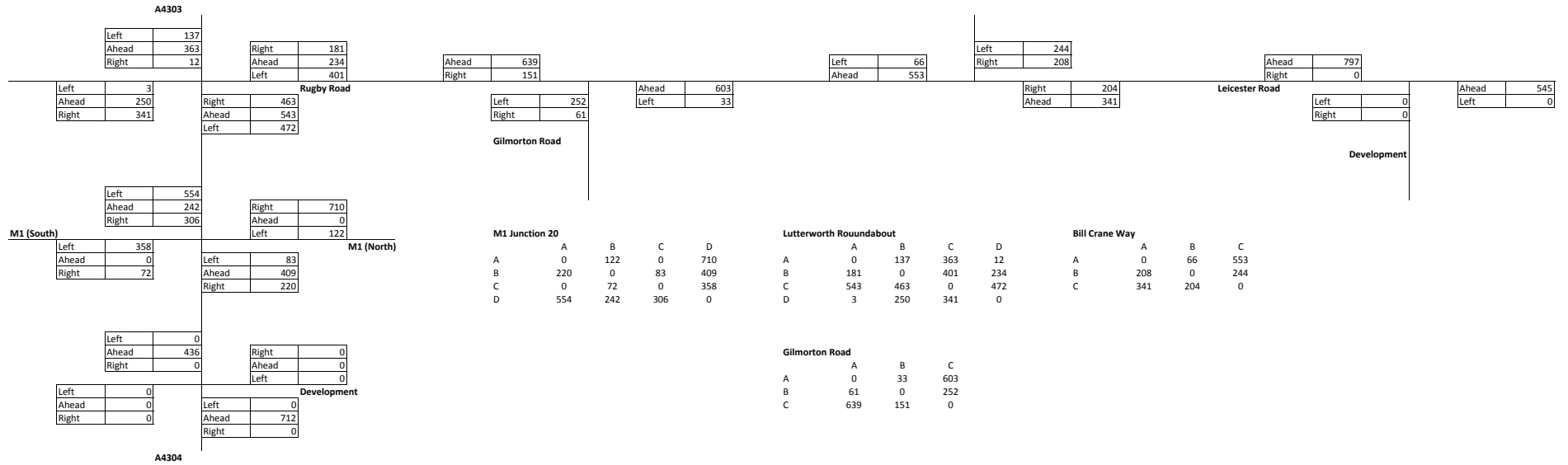


Figure 1: Baseline AM PCUs

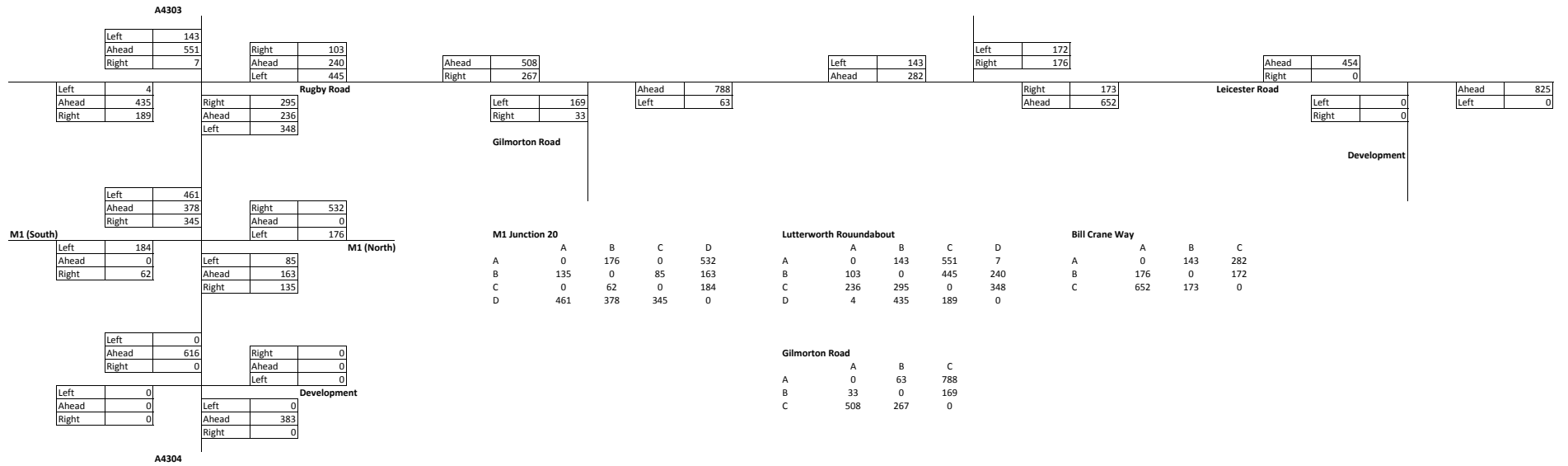


Figure 2: Baseline PM PCUs

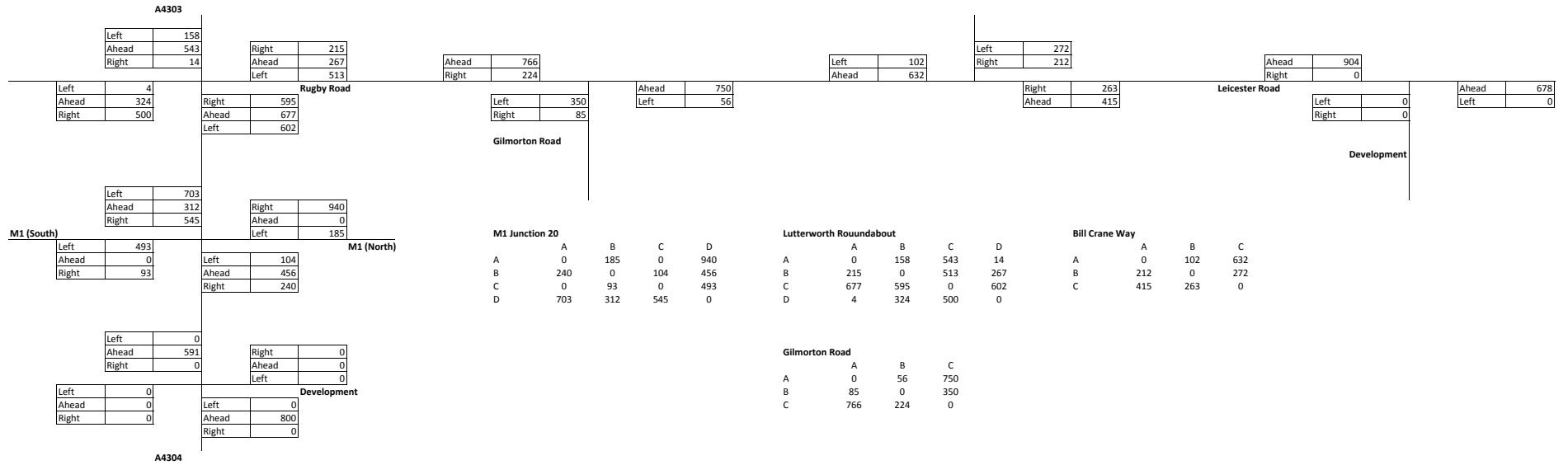


Figure 3: Reference AM PCUs

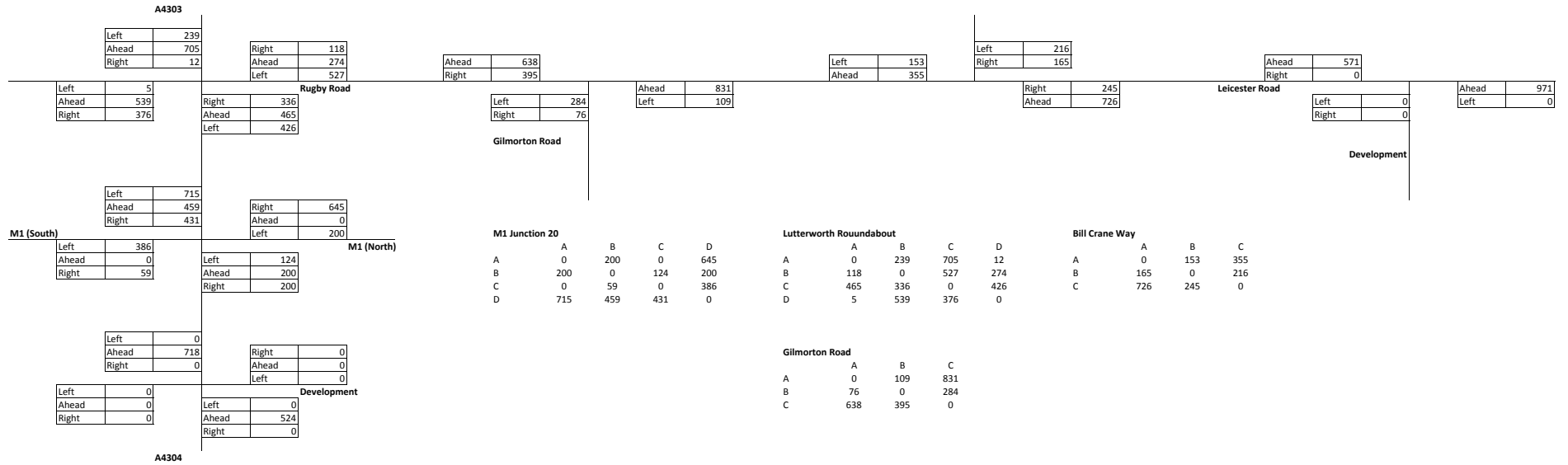


Figure 4: Reference PM PCUs



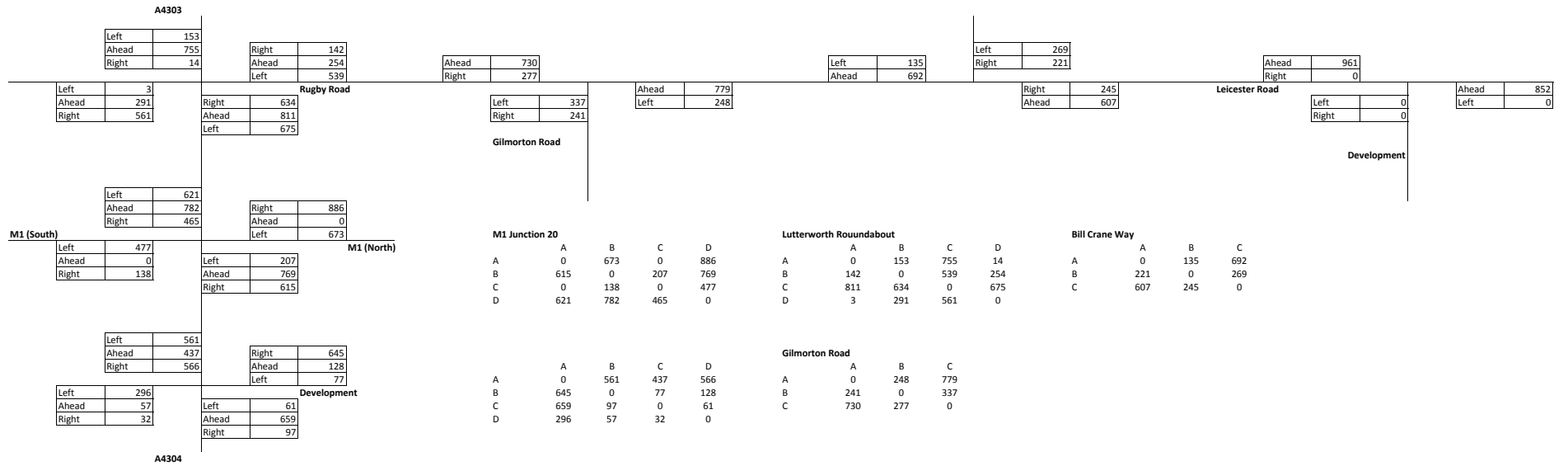


Figure 5: Design Case (without A426 Access) AM PCUs

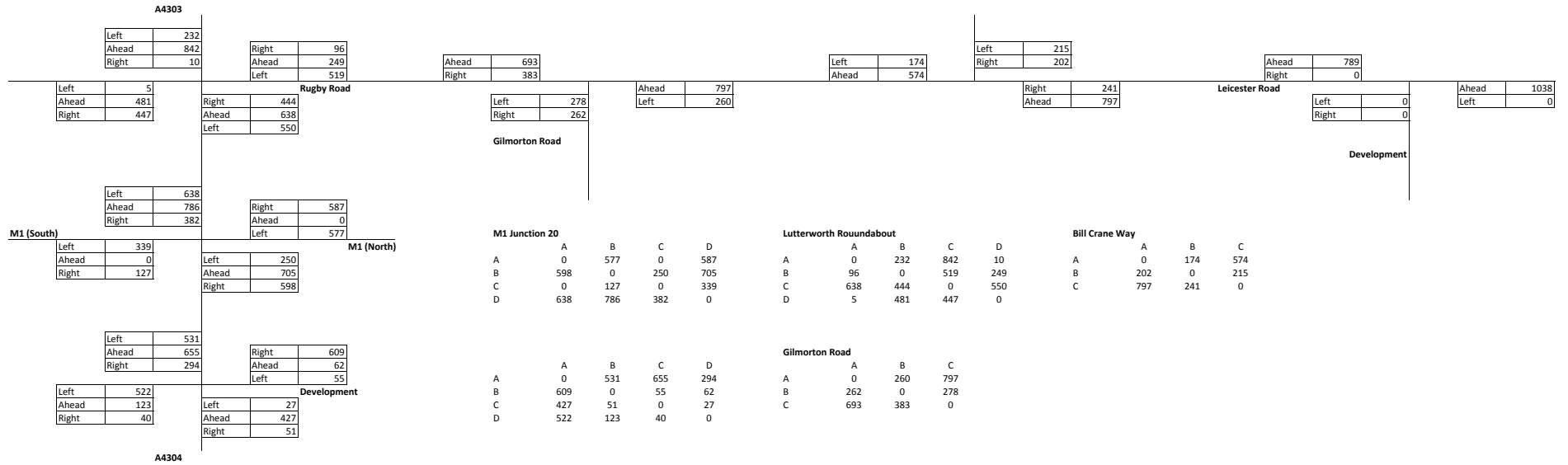


Figure 6: Design Case (without A426 Access) PM PCUs

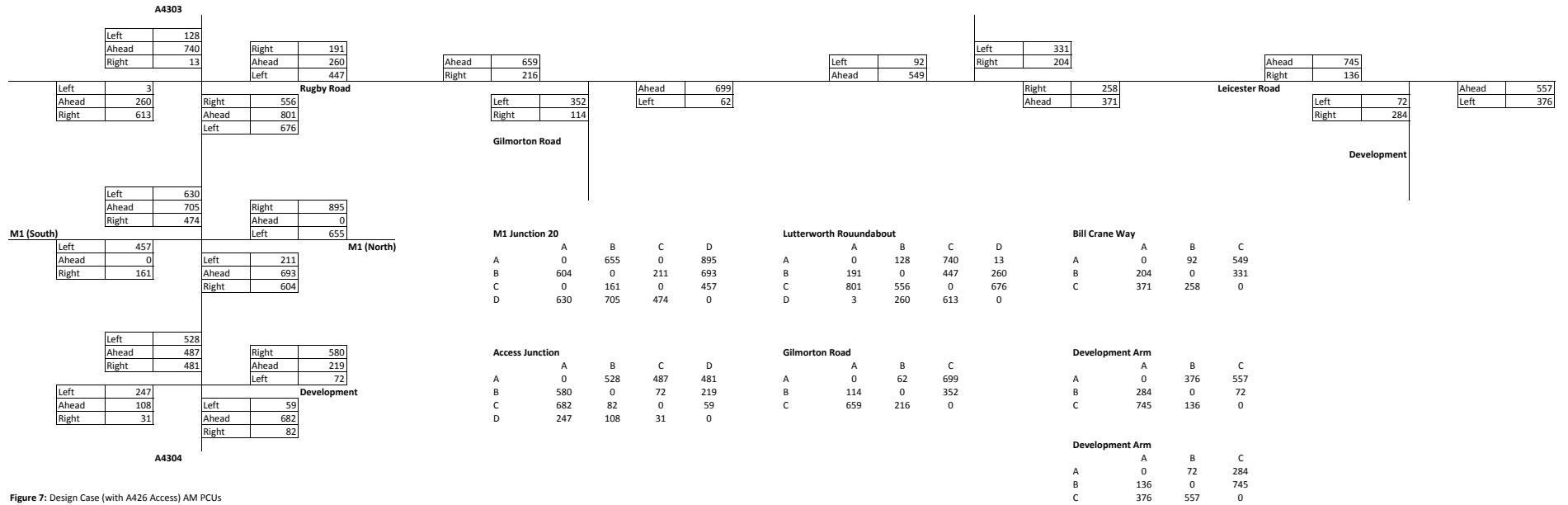


Figure 7: Design Case (with A426 Access) AM PCUs

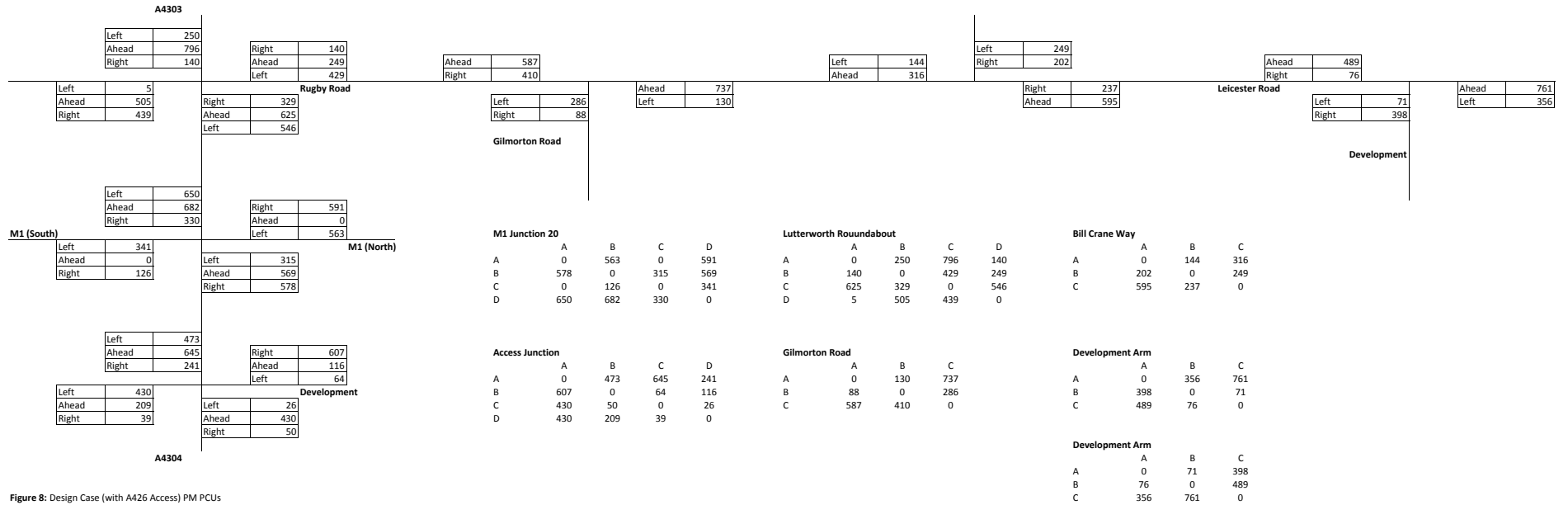
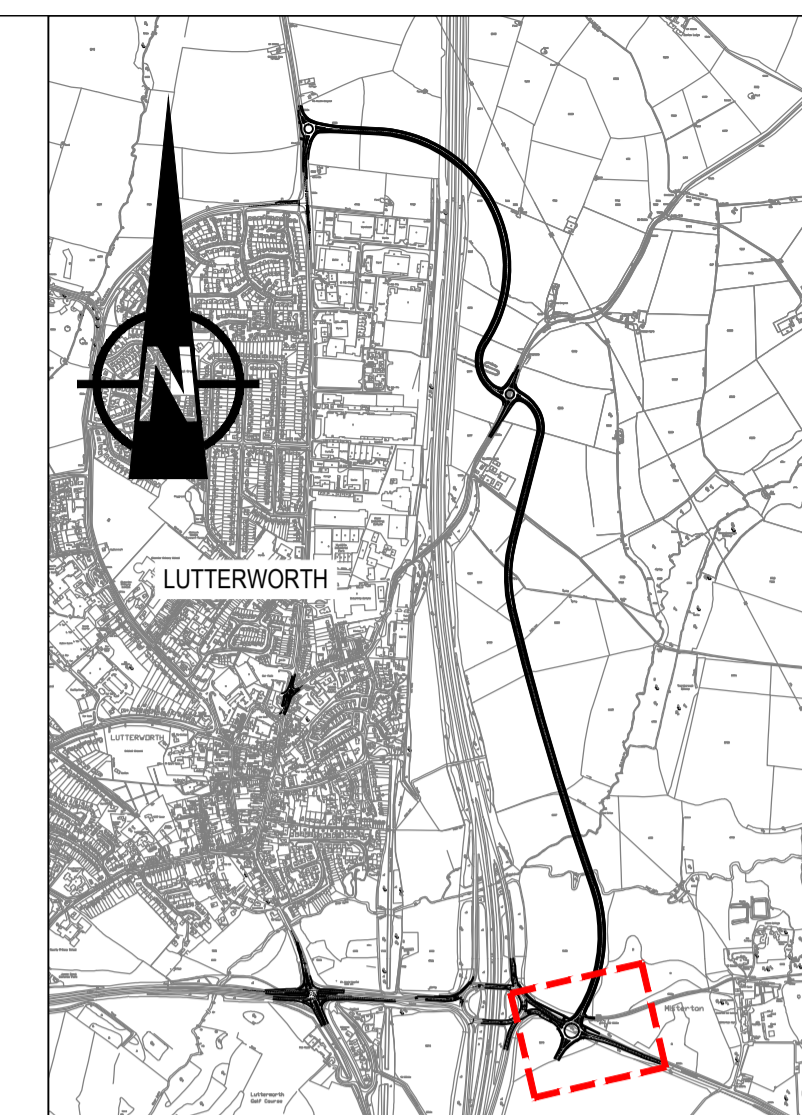
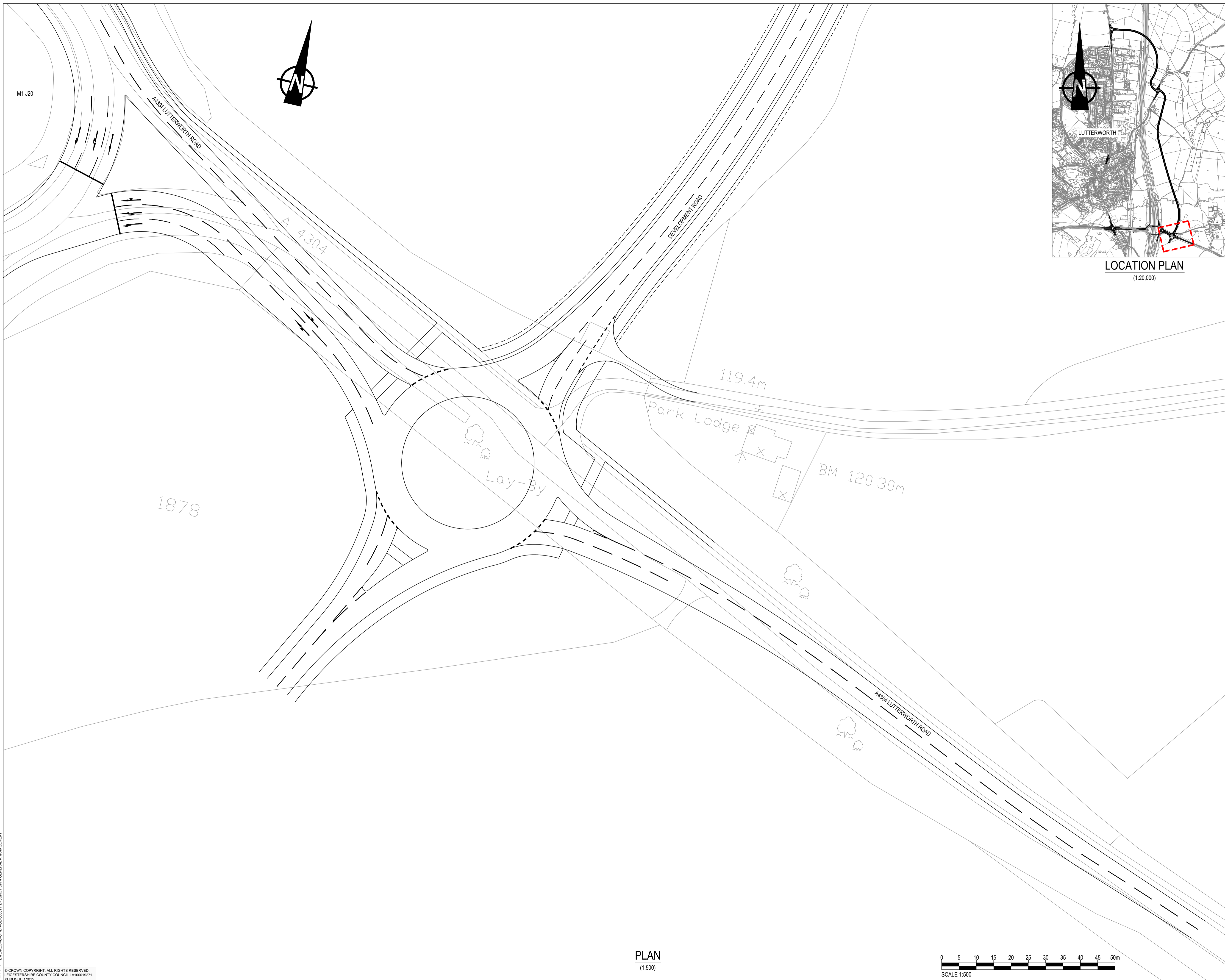


Figure 8: Design Case (with A426 Access) PM PCUs



***MAIN ACCESS DESIGN  
AND ARCADY***

**E**



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M1 J20 REVISED		KB	11.02.16	P2
Revision Details	By	Check	Date	Suffix

Purpose of issue  
**PRELIMINARY**

Client  
**LEICESTERSHIRE COUNTY COUNCIL**

Project Title  
**LUTTERWORTH EAST**

DRAFT  
**JUNCTION A  
GENERAL ARRANGEMENT**  
WORK IN PROGRESS

Designed	Drawn	Checked	Approved	Date
KB	KB	DB	GH	27/07/15

AECOM Internal Project No.  
47074731

Subsidiary  
-

Scale @ A1  
Zone  
-

AS SHOWN

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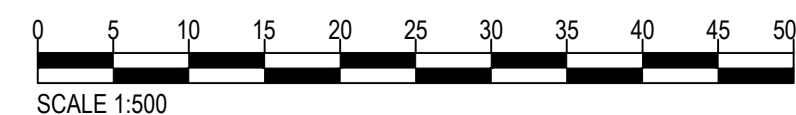
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Drawing Number  
**LWE-AEC-AJ-GF-DR-CE-00001**

Rev  
**P2**

PLAN  
(1:500)



Proj Date: 21/11/2016 2:03 PM  
File Name: LWE-AEC-AJ-GF-DR-CE-00001 P2 - JUNCTION A GENERAL ARRANGEMENT  
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<b>Junctions 8</b>
<b>ARCADY 8 - Roundabout Module</b>
Version: 8.0.4.487 [15039,24/03/2014] © Copyright TRL Limited, 2015
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Filename: Main Access\_Dual.arc8

Path: L:\MHA PSP1\LCC\47074731 - Lutterworth East\3\_Analysis\ARCADY

Report generation date: 31/07/2015 09:20:00

- » (Default Analysis Set) - With Rugby Road Link, AM
- » (Default Analysis Set) - With Rugby Road Link, PM
- » (Default Analysis Set) - Without Rigby Road, AM
- » (Default Analysis Set) - Without Rigby Road, PM

### Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
<b>A1 - With Rugby Road Link</b>								
Arm 1	3.70	8.24	0.79	A	2.79	6.81	0.74	A
Arm 2	4.69	18.37	0.83	C	2.53	10.73	0.72	B
Arm 3	2.37	9.61	0.71	A	0.58	3.74	0.37	A
Arm 4	1.05	8.96	0.51	A	2.94	14.56	0.75	B
<b>A1 - Without Rigby Road</b>								
Arm 1	4.33	9.26	0.82	A	3.48	7.83	0.78	A
Arm 2	4.60	18.48	0.83	C	2.19	10.02	0.69	B
Arm 3	2.61	10.69	0.73	B	0.58	3.74	0.37	A
Arm 4	1.14	9.84	0.54	A	3.06	15.02	0.76	C

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

"D1 - With Rugby Road Link, AM" model duration: 07:45 - 09:15

"D2 - With Rugby Road Link, PM" model duration: 16:45 - 18:15

"D3 - Without Rigby Road, AM" model duration: 07:45 - 09:15

"D4 - Without Rigby Road, PM" model duration: 16:45 - 18:15

Run using Junctions 8.0.4.487 at 31/07/2015 09:19:59

## File summary

<b>Title</b>	Lutterworth East (Main Access)
<b>Location</b>	
<b>Site Number</b>	
<b>Date</b>	06/07/2015
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	32309dsg
<b>Description</b>	

## Analysis Options

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

## Units

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

# (Default Analysis Set) - With Rugby Road Link, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	DemandSets	D1 - With Rugby Road Link, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

## Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

## Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
With Rugby Road Link, AM	With Rugby Road Link	AM		ONE HOUR	07:45	09:15	90	15	✓			✓		

# Junction Network

## Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4				11.10	B



## Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	
3	3	(untitled)	
4	4	(untitled)	

### Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	7.30	7.30	0.00	20.00	55.00	25.00	
2	3.50	7.00	25.00	20.00	55.00	25.00	
3	7.30	7.30	0.00	20.00	55.00	25.00	
4	3.50	7.00	15.00	20.00	55.00	25.00	

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.689	2250.276
2		(calculated)	(calculated)	0.612	1823.996
3		(calculated)	(calculated)	0.689	2250.276
4		(calculated)	(calculated)	0.589	1696.590

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

## Traffic Flows

### Demand Set Data Options

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

# Entry Flows

## General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	1496.00	100.000
2	ONE HOUR	✓	871.00	100.000
3	ONE HOUR	✓	823.00	100.000
4	ONE HOUR	✓	386.00	100.000

# Turning Proportions

## Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	528.000	487.000	481.000
	2	580.000	0.000	72.000	219.000
	3	682.000	82.000	0.000	59.000
	4	247.000	108.000	31.000	0.000

## Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.35	0.33	0.32
	2	0.67	0.00	0.08	0.25
	3	0.83	0.10	0.00	0.07
	4	0.64	0.28	0.08	0.00

# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

## Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0

# Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.79	8.24	3.70	A	1496.00	1496.00	158.37	6.35	1.76	191.81	5.59
2	0.83	18.37	4.69	C	871.00	871.00	175.84	12.11	1.95	203.61	10.19
3	0.71	9.61	2.37	A	823.00	823.00	98.64	7.19	1.10	117.85	6.24
4	0.51	8.96	1.05	A	386.00	386.00	46.64	7.25	0.52	57.38	6.48

## Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1344.87	336.22	1342.40	1353.11	198.26	0.00	2113.65	2004.92	0.636	1.11	1.73	4.653	A
2	783.01	195.75	780.44	644.24	896.42	0.00	1275.69	997.89	0.614	0.91	1.56	7.231	A
3	739.86	184.97	738.33	529.32	1147.53	0.00	1459.48	1175.21	0.507	0.63	1.02	4.982	A
4	347.01	86.75	346.28	680.77	1205.09	0.00	987.39	663.50	0.351	0.35	0.54	5.610	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1647.13	411.78	1639.53	1648.32	242.12	0.00	2083.43	2004.92	0.791	1.73	3.62	7.975	A
2	958.99	239.75	947.50	786.80	1094.85	0.00	1154.32	997.89	0.831	1.56	4.43	16.563	C
3	906.14	226.53	901.03	646.02	1396.33	0.00	1288.03	1175.21	0.704	1.02	2.29	9.183	A
4	424.99	106.25	423.05	829.98	1467.38	0.00	833.04	663.50	0.510	0.54	1.02	8.739	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1647.13	411.78	1646.82	1660.42	243.26	0.00	2082.64	2004.92	0.791	3.62	3.70	8.244	A
2	958.99	239.75	957.93	790.37	1099.71	0.00	1151.35	997.89	0.833	4.43	4.69	18.373	C
3	906.14	226.53	905.83	649.41	1408.24	0.00	1279.82	1175.21	0.708	2.29	2.37	9.609	A
4	424.99	106.25	424.90	835.29	1478.78	0.00	826.33	663.50	0.514	1.02	1.05	8.964	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1344.87	336.22	1352.57	1370.31	199.90	0.00	2112.52	2004.92	0.637	3.70	1.78	4.783	A
2	783.01	195.75	795.24	649.26	903.22	0.00	1271.53	997.89	0.616	4.69	1.64	7.745	A
3	739.86	184.97	745.12	534.07	1164.38	0.00	1447.86	1175.21	0.511	2.37	1.06	5.159	A
4	347.01	86.75	348.97	688.25	1221.25	0.00	977.88	663.50	0.355	1.05	0.56	5.741	A

## Queueing Delay Results for each time segment

### Queueing Delay results: (08:00-08:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	25.02	1.67	4.653	A	A
2	22.33	1.49	7.231	A	A
3	14.81	0.99	4.982	A	A
4	7.85	0.52	5.610	A	A

### Queueing Delay results: (08:15-08:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	50.44	3.36	7.975	A	A
2	58.02	3.87	16.563	C	B
3	32.14	2.14	9.183	A	A
4	14.63	0.98	8.739	A	A

### Queueing Delay results: (08:30-08:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	55.07	3.67	8.244	A	A
2	68.83	4.59	18.373	C	B
3	35.17	2.34	9.609	A	A
4	15.56	1.04	8.964	A	A

### Queueing Delay results: (08:45-09:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	27.84	1.86	4.783	A	A
2	26.65	1.78	7.745	A	A
3	16.51	1.10	5.159	A	A
4	8.61	0.57	5.741	A	A

## (Default Analysis Set) - With Rugby Road Link, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	DemandSets	D2 - With Rugby Road Link, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

### Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

## Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
With Rugby Road Link, FM	With Rugby Road Link	FM		ONE HOUR	16:45	18:15	90	15	✓			✓		

# Junction Network

## Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4				8.85	A

## Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

# Arms

## Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	
3	3	(untitled)	
4	4	(untitled)	

## Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00

## Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	7.30	7.30	0.00	20.00	55.00	25.00	
2	3.50	7.00	25.00	20.00	55.00	25.00	
3	7.30	7.30	0.00	20.00	55.00	25.00	
4	3.50	7.00	15.00	20.00	55.00	25.00	

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.689	2250.276
2		(calculated)	(calculated)	0.612	1823.996
3		(calculated)	(calculated)	0.689	2250.276
4		(calculated)	(calculated)	0.589	1696.590

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

## Traffic Flows

### Demand Set Data Options

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

## Entry Flows

### General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	1359.00	100.000
2	ONE HOUR	✓	787.00	100.000
3	ONE HOUR	✓	506.00	100.000
4	ONE HOUR	✓	678.00	100.000

## Turning Proportions

### Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	473.000	645.000	241.000
	2	607.000	0.000	64.000	116.000
	3	430.000	50.000	0.000	26.000
	4	430.000	209.000	39.000	0.000

### Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.35	0.47	0.18
	2	0.77	0.00	0.08	0.15
	3	0.85	0.10	0.00	0.05
	4	0.63	0.31	0.06	0.00



# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

## Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0

# Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.74	6.81	2.79	A	1359.00	1359.00	124.22	5.48	1.38	152.80	4.90
2	0.72	10.73	2.53	B	787.00	787.00	107.27	8.18	1.19	129.30	7.16
3	0.37	3.74	0.58	A	506.00	506.00	28.48	3.38	0.32	36.81	3.17
4	0.75	14.56	2.94	B	678.00	678.00	118.20	10.46	1.31	139.91	9.00

## Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1221.71	305.43	1219.78	1316.02	267.19	0.00	2066.15	2036.07	0.591	0.95	1.43	4.244	A
2	707.50	176.87	705.82	656.78	830.19	0.00	1316.20	995.21	0.538	0.73	1.15	5.881	A
3	454.88	113.72	454.48	671.28	864.73	0.00	1654.36	1371.40	0.275	0.28	0.38	3.000	A
4	609.51	152.38	607.70	343.70	975.52	0.00	1122.50	479.27	0.543	0.72	1.17	6.967	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1496.29	374.07	1491.01	1606.22	325.59	0.00	2025.90	2036.07	0.739	1.43	2.75	6.663	A
2	866.50	216.63	861.20	801.98	1014.62	0.00	1203.39	995.21	0.720	1.15	2.47	10.361	B
3	557.12	139.28	556.33	820.25	1055.58	0.00	1522.85	1371.40	0.366	0.38	0.57	3.720	A
4	746.49	186.62	739.84	419.93	1191.98	0.00	995.11	479.27	0.750	1.17	2.83	13.757	B

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1496.29	374.07	1496.11	1614.74	327.95	0.00	2024.28	2036.07	0.739	2.75	2.79	6.809	A
2	866.50	216.63	866.26	805.76	1018.31	0.00	1201.14	995.21	0.721	2.47	2.53	10.730	B
3	557.12	139.28	557.10	823.44	1061.13	0.00	1519.02	1371.40	0.367	0.57	0.58	3.741	A
4	746.49	186.62	746.08	421.62	1196.61	0.00	992.39	479.27	0.752	2.83	2.94	14.556	B

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1221.71	305.43	1227.01	1327.98	270.49	0.00	2063.88	2036.07	0.592	2.79	1.47	4.328	A
2	707.50	176.87	712.89	662.09	835.41	0.00	1313.01	995.21	0.539	2.53	1.18	6.050	A
3	454.88	113.72	455.66	675.79	872.51	0.00	1649.01	1371.40	0.276	0.58	0.38	3.020	A
4	609.51	152.38	616.38	346.08	982.08	0.00	1118.63	479.27	0.545	2.94	1.22	7.264	A

**Queueing Delay Results for each time segment**
**Queueing Delay results: (17:00-17:15)**

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	20.85	1.39	4.244	A	A
2	16.62	1.11	5.881	A	A
3	5.58	0.37	3.000	A	A
4	16.86	1.12	6.967	A	A

**Queueing Delay results: (17:15-17:30)**

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	38.93	2.60	6.663	A	A
2	34.41	2.29	10.361	B	B
3	8.43	0.56	3.720	A	A
4	38.56	2.57	13.757	B	B

**Queueing Delay results: (17:30-17:45)**

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	41.63	2.78	6.809	A	A
2	37.64	2.51	10.730	B	B
3	8.63	0.58	3.741	A	A
4	43.43	2.90	14.556	B	B

**Queueing Delay results: (17:45-18:00)**

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	22.81	1.52	4.328	A	A
2	18.59	1.24	6.050	A	A
3	5.84	0.39	3.020	A	A
4	19.35	1.29	7.264	A	A

## (Default Analysis Set) - Without Rigby Road, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	DemandSets	D3 - Without Rigby Road, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

### Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

### Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
Without Rigby Road, AM	Without Rigby Road	AM		ONE HOUR	07:45	09:15	90	15	✓			✓		

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4				11.81	B

### Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	
3	3	(untitled)	
4	4	(untitled)	

### Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00

## Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	7.30	7.30	0.00	20.00	55.00	25.00	
2	3.50	7.00	25.00	20.00	55.00	25.00	
3	7.30	7.30	0.00	20.00	55.00	25.00	
4	3.50	7.00	15.00	20.00	55.00	25.00	

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.689	2250.276
2		(calculated)	(calculated)	0.612	1823.996
3		(calculated)	(calculated)	0.689	2250.276
4		(calculated)	(calculated)	0.589	1696.590

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

## Traffic Flows

### Demand Set Data Options

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

## Entry Flows

### General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	1564.00	100.000
2	ONE HOUR	✓	850.00	100.000
3	ONE HOUR	✓	817.00	100.000
4	ONE HOUR	✓	385.00	100.000

## Turning Proportions

### Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	561.000	437.000	566.000
	2	645.000	0.000	77.000	128.000
	3	659.000	97.000	0.000	61.000
	4	296.000	57.000	32.000	0.000

### Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.36	0.28	0.36
	2	0.76	0.00	0.09	0.15
	3	0.81	0.12	0.00	0.07
	4	0.77	0.15	0.08	0.00

## Vehicle Mix

### Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

### Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.82	9.26	4.33	A	1564.00	1564.00	180.60	6.93	2.01	216.75	6.04
2	0.83	18.48	4.60	C	850.00	850.00	172.31	12.16	1.91	199.44	10.23
3	0.73	10.69	2.61	B	817.00	817.00	106.13	7.79	1.18	125.73	6.71
4	0.54	9.84	1.14	A	385.00	385.00	50.04	7.80	0.56	61.08	6.92

## Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1406.00	351.50	1403.19	1434.54	166.84	0.00	2135.30	2055.59	0.658	1.19	1.90	4.899	A
2	764.13	191.03	761.61	641.45	928.57	0.00	1256.02	984.80	0.608	0.89	1.52	7.243	A
3	734.47	183.62	732.84	489.76	1200.42	0.00	1423.03	1120.46	0.516	0.65	1.05	5.203	A
4	346.11	86.53	345.32	677.21	1256.05	0.00	957.40	646.66	0.362	0.36	0.56	5.874	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1722.00	430.50	1712.72	1746.69	203.59	0.00	2109.98	2055.58	0.816	1.90	4.22	8.859	A
2	935.87	233.97	924.60	782.88	1133.43	0.00	1130.72	984.80	0.828	1.52	4.34	16.630	C
3	899.53	224.88	893.70	597.36	1460.67	0.00	1243.69	1120.46	0.723	1.05	2.51	10.120	B
4	423.89	105.97	421.69	825.78	1528.58	0.00	797.02	646.66	0.532	0.56	1.11	9.536	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1722.00	430.50	1721.55	1760.41	204.71	0.00	2109.20	2055.58	0.816	4.22	4.33	9.258	A
2	935.87	233.97	934.80	787.01	1139.26	0.00	1127.16	984.80	0.830	4.34	4.60	18.475	C
3	899.53	224.88	899.14	600.93	1473.14	0.00	1235.09	1120.46	0.728	2.51	2.61	10.690	B
4	423.89	105.97	423.77	830.92	1541.36	0.00	789.50	646.66	0.537	1.11	1.14	9.836	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1406.00	351.50	1415.47	1454.08	168.45	0.00	2134.20	2055.59	0.659	4.33	1.96	5.072	A
2	764.13	191.03	776.14	647.21	936.70	0.00	1251.05	984.80	0.611	4.60	1.60	7.765	A
3	734.47	183.62	740.52	494.76	1218.08	0.00	1410.86	1120.46	0.521	2.61	1.10	5.419	A
4	346.11	86.53	348.35	684.41	1274.18	0.00	946.73	646.66	0.366	1.14	0.58	6.037	A

## Queueing Delay Results for each time segment

### Queueing Delay results: (08:00-08:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	27.45	1.83	4.899	A	A
2	21.84	1.46	7.243	A	A
3	15.33	1.02	5.203	A	A
4	8.18	0.55	5.874	A	A

### Queueing Delay results: (08:15-08:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	57.97	3.86	8.859	A	A
2	56.89	3.79	16.630	C	B
3	34.91	2.33	10.120	B	B
4	15.84	1.06	9.536	A	A



**Queueing Delay results: (08:30-08:45)**

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	64.26	4.28	9.258	A	A
2	67.50	4.50	18.475	C	B
3	38.65	2.58	10.690	B	B
4	16.97	1.13	9.836	A	A

**Queueing Delay results: (08:45-09:00)**

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	30.93	2.06	5.072	A	A
2	26.08	1.74	7.765	A	A
3	17.24	1.15	5.419	A	A
4	9.04	0.60	6.037	A	A

## (Default Analysis Set) - Without Rigby Road, PM

**Data Errors and Warnings**

Severity	Area	Item	Description
Warning	DemandSets	D4 - Without Rigby Road, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

**Analysis Set Details**

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

**Demand Set Details**

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
Without Rigby Road, PM	Without Rigby Road	PM		ONE HOUR	16:45	18:15	90	15	✓			✓		

## Junction Network

**Junctions**

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4				9.14	A

**Junction Network Options**

Driving Side	Lighting
Left	Normal/unknown

# Arms

## Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	
3	3	(untitled)	
4	4	(untitled)	

## Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00

## Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	7.30	7.30	0.00	20.00	55.00	25.00	
2	3.50	7.00	25.00	20.00	55.00	25.00	
3	7.30	7.30	0.00	20.00	55.00	25.00	
4	3.50	7.00	15.00	20.00	55.00	25.00	

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.689	2250.276
2		(calculated)	(calculated)	0.612	1823.996
3		(calculated)	(calculated)	0.689	2250.276
4		(calculated)	(calculated)	0.589	1696.590

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

# Traffic Flows

## Demand Set Data Options

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

# Entry Flows

## General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	1480.00	100.000
2	ONE HOUR	✓	726.00	100.000
3	ONE HOUR	✓	505.00	100.000
4	ONE HOUR	✓	685.00	100.000

# Turning Proportions

## Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	531.000	655.000	294.000
	2	609.000	0.000	55.000	62.000
	3	427.000	51.000	0.000	27.000
	4	522.000	123.000	40.000	0.000

## Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.36	0.44	0.20
	2	0.84	0.00	0.08	0.09
	3	0.85	0.10	0.00	0.05
	4	0.76	0.18	0.06	0.00

# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

## Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0

# Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.78	7.83	3.48	A	1480.00	1480.00	150.67	6.11	1.67	183.25	5.40
2	0.69	10.02	2.19	B	726.00	726.00	93.95	7.76	1.04	113.87	6.84
3	0.37	3.74	0.58	A	505.00	505.00	28.42	3.38	0.32	36.73	3.17
4	0.76	15.02	3.06	C	685.00	685.00	122.20	10.70	1.36	144.30	9.18

## Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1330.49	332.62	1328.13	1397.61	191.90	0.00	2118.03	2081.31	0.628	1.08	1.67	4.543	A
2	652.66	163.16	651.19	632.56	887.47	0.00	1281.17	991.11	0.509	0.66	1.03	5.697	A
3	453.98	113.50	453.58	672.97	865.69	0.00	1653.70	1334.09	0.275	0.28	0.38	3.000	A
4	615.80	153.95	613.93	343.69	975.58	0.00	1122.46	464.18	0.549	0.73	1.20	7.054	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1629.51	407.38	1622.51	1705.66	233.87	0.00	2089.11	2081.31	0.780	1.67	3.42	7.603	A
2	799.34	199.84	794.89	772.37	1084.01	0.00	1160.95	991.11	0.689	1.03	2.14	9.717	A
3	556.02	139.00	555.23	821.92	1056.98	0.00	1521.88	1334.09	0.365	0.38	0.57	3.720	A
4	754.20	188.55	747.20	419.88	1192.34	0.00	994.90	464.18	0.758	1.20	2.94	14.149	B

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1629.51	407.38	1629.24	1714.88	235.51	0.00	2087.98	2081.31	0.780	3.42	3.48	7.835	A
2	799.34	199.84	799.15	776.04	1088.71	0.00	1158.08	991.11	0.690	2.14	2.19	10.017	B
3	556.02	139.00	556.00	825.60	1062.25	0.00	1518.25	1334.09	0.366	0.57	0.58	3.740	A
4	754.20	188.55	753.75	421.62	1196.63	0.00	992.37	464.18	0.760	2.94	3.06	15.016	C

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1330.49	332.62	1337.57	1410.57	194.18	0.00	2116.46	2081.31	0.629	3.48	1.72	4.662	A
2	652.66	163.16	657.17	637.70	894.05	0.00	1277.14	991.11	0.511	2.19	1.06	5.849	A
3	453.98	113.50	454.76	678.13	873.09	0.00	1648.61	1334.09	0.275	0.58	0.38	3.019	A
4	615.80	153.95	623.04	346.14	981.71	0.00	1118.86	464.18	0.550	3.06	1.25	7.365	A

## Queueing Delay Results for each time segment

### Queueing Delay results: (17:00-17:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	24.21	1.61	4.543	A	A
2	14.90	0.99	5.697	A	A
3	5.57	0.37	3.000	A	A
4	17.23	1.15	7.054	A	A

### Queueing Delay results: (17:15-17:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	47.77	3.18	7.603	A	A
2	29.99	2.00	9.717	A	A
3	8.41	0.56	3.720	A	A
4	39.95	2.66	14.149	B	B

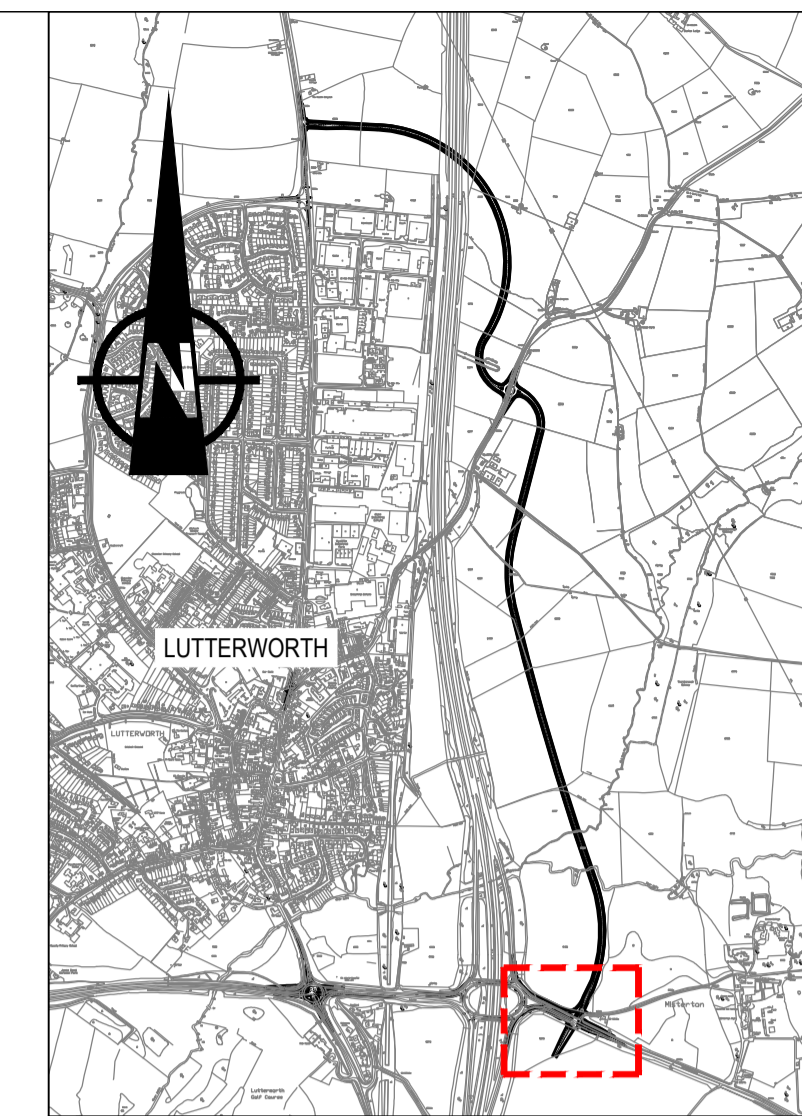
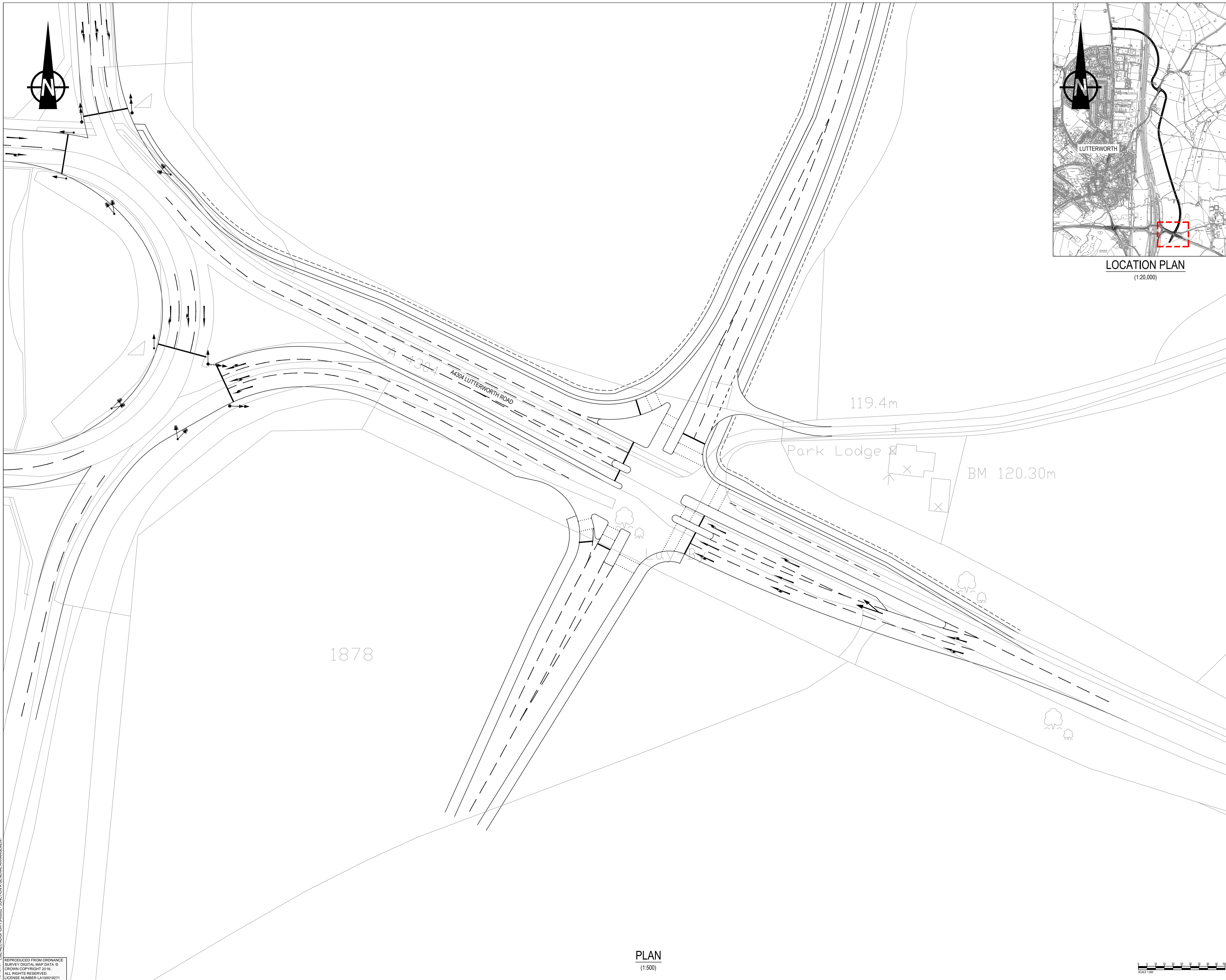
### Queueing Delay results: (17:30-17:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	51.87	3.46	7.835	A	A
2	32.51	2.17	10.017	B	B
3	8.61	0.57	3.740	A	A
4	45.19	3.01	15.016	C	B

### Queueing Delay results: (17:45-18:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	26.82	1.79	4.662	A	A
2	16.55	1.10	5.849	A	A
3	5.82	0.39	3.019	A	A
4	19.83	1.32	7.365	A	A





LOCATION PLAN  
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Revision Details	By	Date	Suffix

Purpose of issue  
**PRELIMINARY**

Client  
**LEICESTERSHIRE COUNTY COUNCIL**

Project Title  
**LUTTERWORTH EAST**

Drawing Title  
**DRAFT  
JUNCTION A  
GENERAL ARRANGEMENT  
WORK IN PROGRESS**

Designed	Drawn	Checked	Approved	Date
DJM	DJM			

AECOM Internal Project No.  
47074731

Subsidiary  
-

Scale @ A1  
AS SHOWN

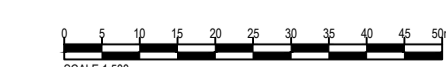
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Drawing Number	Rev
LWE-AEC-AJ-GF-DR-TS-00002	P1

PLAN  
(1:500)



PROJ DWG: 21/01/2016 2:00 PM  
FILE NAME: LWE-AEC-AJ-GF-DR-TS-00002 - JUNCTION A GENERAL ARRANGEMENT  
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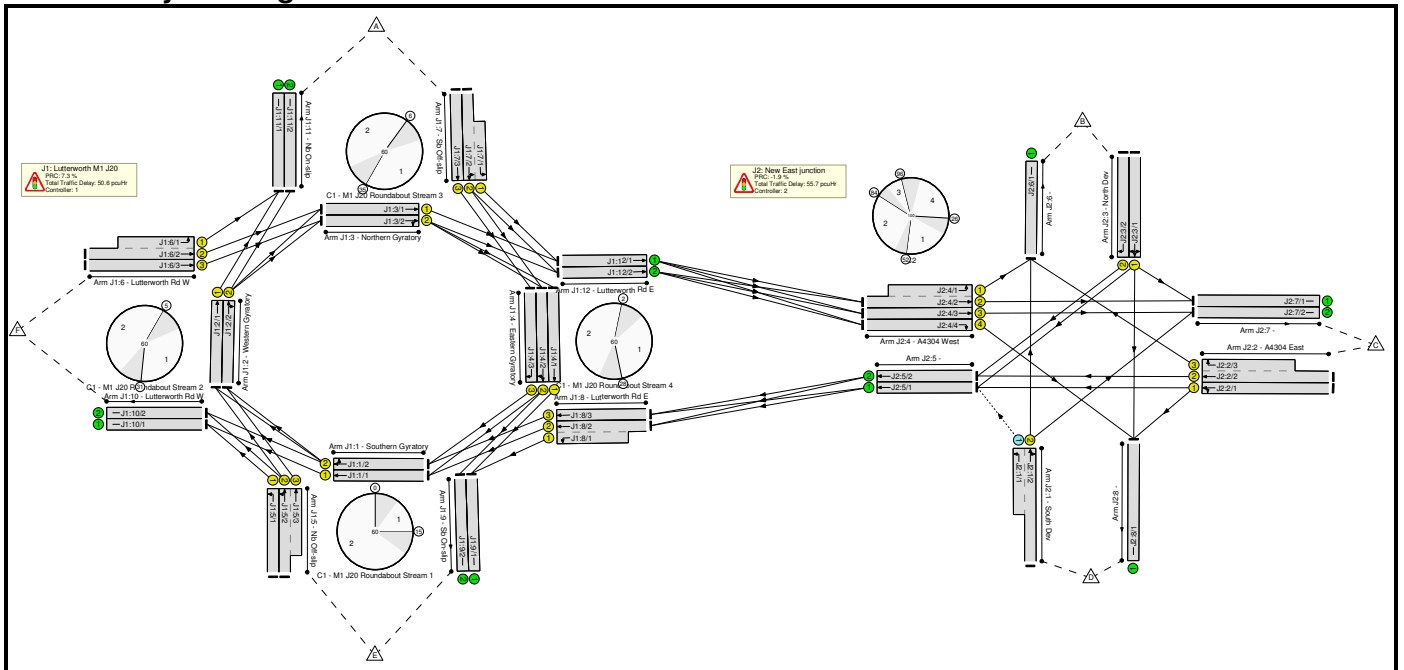


# Basic Results Summary

## Basic Results Summary

### Scenario 1: 'AM' (FG1: 'AM', Plan 1: 'Lutterworth')

#### Network Layout Diagram



Basic Results Summary

**Network Results**

Item	Lane Description	Deg Sat (%)	Mean Max Queue (pcu)
<b>Network</b>	-	<b>91.7%</b>	-
<b>J1: Lutterworth M1 J20</b>	-	<b>83.8%</b>	-
1/1	Southern Gyratory Ahead	74.9%	6.8
1/2	Southern Gyratory Right Ahead	80.3%	8.1
2/1	Western Gyratory Ahead	49.0%	4.6
2/2	Western Gyratory Right Ahead	54.0%	6.2
3/1	Northern Gyratory Ahead	75.8%	6.2
3/2	Northern Gyratory Right Ahead	70.9%	3.7
4/1	Eastern Gyratory Ahead	46.5%	6.0
4/2	Eastern Gyratory Right Ahead	64.7%	4.2
4/3	Eastern Gyratory Right	69.2%	2.6
5/1	Nb Off-slip Left	52.2%	3.1
5/2+5/3	Nb Off-slip Ahead Left	83.8 : 62.1%	6.1
6/2+6/1	Lutterworth Rd W Ahead Left	81.1 : 81.1%	10.0
6/3	Lutterworth Rd W Ahead	61.6%	8.4
7/2+7/1	Sb Off-slip Ahead Left	80.8 : 80.8%	9.2
7/3	Sb Off-slip Ahead	64.2%	8.0
8/2+8/1	Lutterworth Rd E Ahead Left	66.8 : 66.8%	9.4
8/3	Lutterworth Rd E Ahead	62.4%	8.5
<b>J2: New East junction</b>	-	<b>91.7%</b>	-
1/2+1/1	South Dev Left Ahead Right	83.6 : 83.6%	6.2
2/1	A4304 East Ahead Left	90.3%	13.3
2/2+2/3	A4304 East Ahead Right	91.7 : 91.7%	15.1
3/1	North Dev Right Left Ahead	90.2%	16.0
3/2	North Dev Right	89.6%	15.1
4/2+4/1	A4304 West Left Ahead	67.1 : 67.1%	11.6
4/3	A4304 West Ahead	41.4%	4.9
4/4	A4304 West Right	90.6%	17.2

## Basic Results Summary

C1 - M1 J20 Roundabout	Stream: 1	PRC for Signalled Lanes (%)	7.3	Total Delay for Signalled Lanes (pcuHr)	11.50	Cycle Time (s)	60
C1 - M1 J20 Roundabout	Stream: 2	PRC for Signalled Lanes (%)	11.0	Total Delay for Signalled Lanes (pcuHr)	12.15	Cycle Time (s)	60
C1 - M1 J20 Roundabout	Stream: 3	PRC for Signalled Lanes (%)	11.4	Total Delay for Signalled Lanes (pcuHr)	14.32	Cycle Time (s)	60
C1 - M1 J20 Roundabout	Stream: 4	PRC for Signalled Lanes (%)	30.1	Total Delay for Signalled Lanes (pcuHr)	12.65	Cycle Time (s)	60
C2		PRC for Signalled Lanes (%)	-1.9	Total Delay for Signalled Lanes (pcuHr)	55.74	Cycle Time (s)	100
		PRC Over All Lanes (%)	-1.9	Total Delay Over All Lanes(pcuHr)	106.37		



## Basic Results Summary

**Network Results**

Item	Lane Description	Deg Sat (%)	Mean Max Queue (pcu)
<b>Network</b>	-	<b>79.6%</b>	-
<b>J1: Lutterworth M1 J20</b>	-	<b>75.7%</b>	-
1/1	Southern Gyratory Ahead	57.0%	4.4
1/2	Southern Gyratory Right Ahead	63.3%	7.1
2/1	Western Gyratory Ahead	51.5%	5.8
2/2	Western Gyratory Right Ahead	59.0%	5.2
3/1	Northern Gyratory Ahead	53.0%	7.0
3/2	Northern Gyratory Right Ahead	54.5%	2.0
4/1	Eastern Gyratory Ahead	28.6%	3.5
4/2	Eastern Gyratory Right Ahead	50.7%	3.0
4/3	Eastern Gyratory Right	47.8%	0.9
5/1	Nb Off-slip Left	37.3%	1.9
5/2+5/3	Nb Off-slip Ahead Left	75.1 : 48.4%	4.5
6/2+6/1	Lutterworth Rd W Ahead Left	75.7 : 75.7%	9.1
6/3	Lutterworth Rd W Ahead	51.7%	6.6
7/2+7/1	Sb Off-slip Ahead Left	73.5 : 73.5%	7.5
7/3	Sb Off-slip Ahead	50.6%	5.2
8/2+8/1	Lutterworth Rd E Ahead Left	55.5 : 55.5%	7.0
8/3	Lutterworth Rd E Ahead	56.2%	7.3
<b>J2: New East junction</b>	-	<b>79.6%</b>	-
1/2+1/1	South Dev Left Ahead Right	76.4 : 76.4%	7.5
2/1	A4304 East Ahead Left	43.1%	4.0
2/2+2/3	A4304 East Ahead Right	67.7 : 67.7%	7.7
3/1	North Dev Right Left Ahead	79.4%	11.6
3/2	North Dev Right	72.5%	9.6
4/2+4/1	A4304 West Left Ahead	79.6 : 74.6%	10.5
4/3	A4304 West Ahead	58.4%	6.8
4/4	A4304 West Right	76.0%	7.3

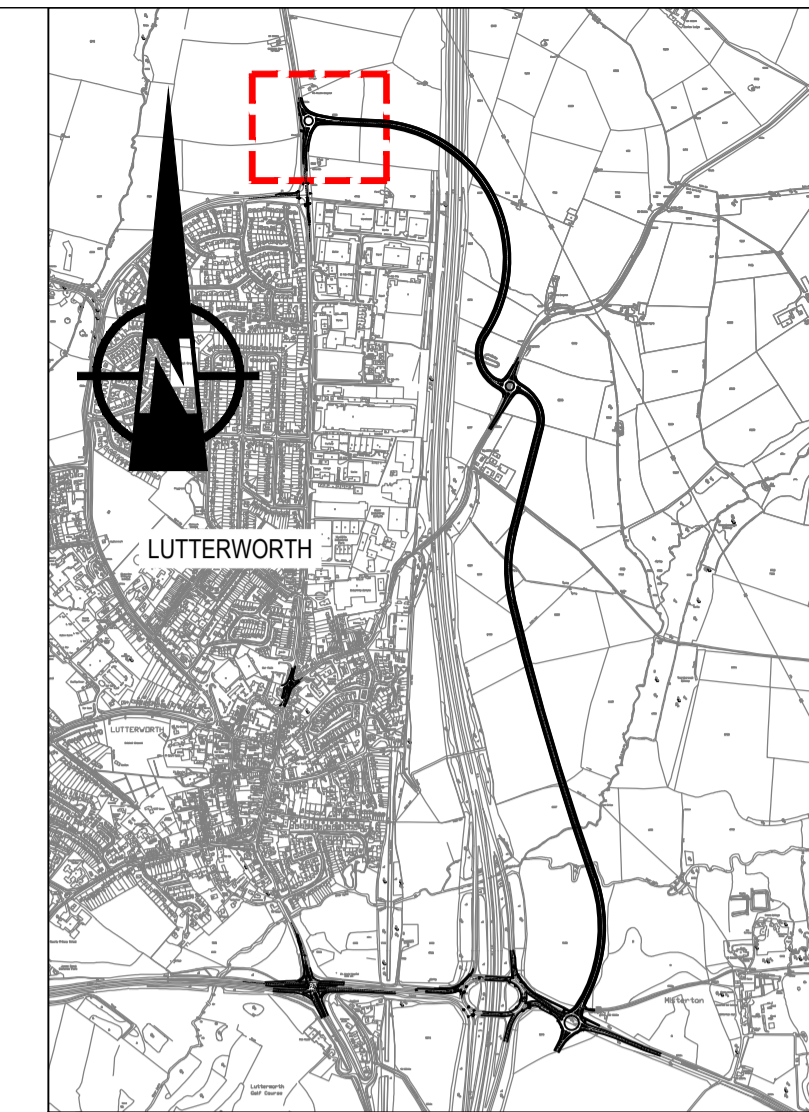
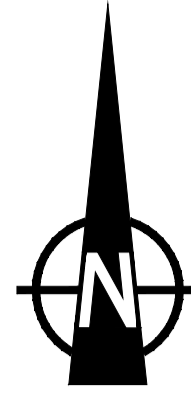
## Basic Results Summary

C1 - M1 J20 Roundabout	Stream: 1	PRC for Signalled Lanes (%)	19.8	Total Delay for Signalled Lanes (pcuHr)	6.87	Cycle Time (s)	60
C1 - M1 J20 Roundabout	Stream: 2	PRC for Signalled Lanes (%)	18.8	Total Delay for Signalled Lanes (pcuHr)	9.91	Cycle Time (s)	60
C1 - M1 J20 Roundabout	Stream: 3	PRC for Signalled Lanes (%)	22.5	Total Delay for Signalled Lanes (pcuHr)	9.38	Cycle Time (s)	60
C1 - M1 J20 Roundabout	Stream: 4	PRC for Signalled Lanes (%)	60.3	Total Delay for Signalled Lanes (pcuHr)	9.00	Cycle Time (s)	60
C2		PRC for Signalled Lanes (%)	13.1	Total Delay for Signalled Lanes (pcuHr)	34.23	Cycle Time (s)	90
		PRC Over All Lanes (%)	13.1	Total Delay Over All Lanes (pcuHr)	69.38		



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MINOR AMENDMENT TO SOUTHERN ROAD MARKINGS	KB	11.02.16	P2
Revision Details	By	Date	Suffix
	Check		

Purpose of issue  
**PRELIMINARY**

Client  
**LEICESTERSHIRE COUNTY COUNCIL**

Project Title  
**LUTTERWORTH EAST**

DRAFT  
**JUNCTION C  
GENERAL ARRANGEMENT**  
WORK IN PROGRESS

Designed	Drawn	Checked	Approved	Date
KB	KB	DB	GH	27/07/15

AECOM Internal Project No.  
47074731  
Subsidiary  
-  
Scale @ A1  
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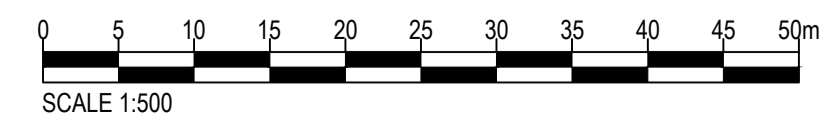
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Drawing Number	Rev
LWE-AEC-CJ-GF-DR-CE-00001	P2

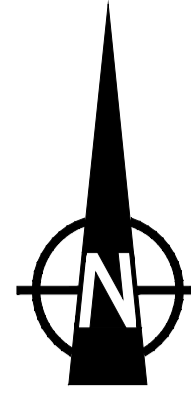


PLAN  
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File Name: LWE-AEC-CJ-GF-DR-CE-00001 P2 - JUNCTION C GENERAL ARRANGEMENT

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Meadow Cottage

The Wooden Bungalow

132.2m

CROSSING FACILITIES TO BE CONSIDERED AT DETAILED DESIGN

6320

Pond

5809

Silverside

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Project Title  
**LUTTERWORTH EAST**

Drawing Title  
**JUNCTION C  
GENERAL ARRANGEMENT**

Designed	Drawn	Checked	Approved	Date
DJM	DJM			

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<b>Junctions 8</b>
<b>ARCADY 8 - Roundabout Module</b>
Version: 8.0.4.487 [15039,24/03/2014] © Copyright TRL Limited, 2015
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**Filename:** Northern Access - ARCADY.arc8  
**Path:** L:\MHA PSP1\LCC\47074731 - Lutterworth East\3\_Analysis\ARCADY  
**Report generation date:** 31/07/2015 09:21:27

- » With Link Road - With Link Road, AM
- » With Link Road - With Link Road, PM

### Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
<b>With Link Road - With Link Road</b>								
<b>Arm 1</b>	2.29	8.12	0.70	A	4.21	12.68	0.81	B
<b>Arm 2</b>	0.50	4.58	0.33	A	0.98	6.92	0.50	A
<b>Arm 3</b>	2.40	9.04	0.71	A	0.93	5.40	0.48	A

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

"D1 - With Link Road, AM" model duration: 07:45 - 09:15  
 "D2 - With Link Road, PM" model duration: 16:45 - 18:15

Run using Junctions 8.0.4.487 at 31/07/2015 09:21:27

### File summary

<b>Title</b>	(untitled)
<b>Location</b>	
<b>Site Number</b>	
<b>Date</b>	07/07/2015
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	32309dsg
<b>Description</b>	

### Analysis Options

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

## Units

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

# With Link Road - With Link Road, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	DemandSets	D1 - With Link Road, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

## Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set(s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
With Link Road	ARCADY		✓				100.000	100.000	

## Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
With Link Road, AM	With Link Road	AM		ONE HOUR	07:45	09:15	90	15	✓			✓		

# Junction Network

## Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3				7.91	A

## Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

# Arms

## Arms

Arm	Arm	Name	Description
1	1	A426 (N)	
2	2	Development	
3	3	A426 (S)	

## Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00



## Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.00	7.00	15.00	15.00	30.00	25.00	
2	3.00	7.00	15.00	15.00	30.00	25.00	
3	3.00	7.00	15.00	15.00	30.00	25.00	

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.631	1564.598
2		(calculated)	(calculated)	0.631	1564.598
3		(calculated)	(calculated)	0.631	1564.598

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

## Traffic Flows

### Demand Set Data Options

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

## Entry Flows

### General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	933.00	100.000
2	ONE HOUR	✓	356.00	100.000
3	ONE HOUR	✓	881.00	100.000

## Turning Proportions

### Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	376.000	557.000
	2	284.000	0.000	72.000
	3	745.000	136.000	0.000

### Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.40	0.60
	2	0.80	0.00	0.20
	3	0.85	0.15	0.00



# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		1	2	3
From	1	1.000	1.000	1.000
	2	1.000	1.000	1.000
	3	1.000	1.000	1.000

## Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	0.0	0.0
	2	0.0	0.0	0.0
	3	0.0	0.0	0.0

# Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.70	8.12	2.29	A	933.00	933.00	105.01	6.75	1.17	131.37	6.14
2	0.33	4.58	0.50	A	356.00	356.00	25.05	4.22	0.28	32.82	4.02
3	0.71	9.04	2.40	A	881.00	881.00	108.10	7.36	1.20	134.00	6.63

## Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	838.75	209.69	837.14	923.36	122.00	0.00	1487.67	1461.97	0.564	0.87	1.28	5.521	A
2	320.04	80.01	319.70	459.37	499.77	0.00	1249.48	1014.28	0.256	0.26	0.34	3.871	A
3	792.00	198.00	790.32	564.43	255.04	0.00	1403.79	1054.41	0.564	0.86	1.28	5.851	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1027.25	256.81	1023.34	1128.80	149.07	0.00	1470.61	1461.97	0.699	1.28	2.25	7.978	A
2	391.96	97.99	391.36	561.48	610.93	0.00	1179.39	1014.28	0.332	0.34	0.49	4.568	A
3	970.00	242.50	965.66	690.09	312.21	0.00	1367.75	1054.41	0.709	1.28	2.36	8.857	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1027.25	256.81	1027.12	1132.81	149.71	0.00	1470.20	1461.97	0.699	2.25	2.29	8.119	A
2	391.96	97.99	391.95	563.65	613.19	0.00	1177.97	1014.28	0.333	0.49	0.50	4.579	A
3	970.00	242.50	969.84	692.46	312.68	0.00	1367.45	1054.41	0.709	2.36	2.40	9.045	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	838.75	209.69	842.64	929.20	122.93	0.00	1487.09	1461.97	0.564	2.29	1.31	5.621	A
2	320.04	80.01	320.63	462.52	503.06	0.00	1247.41	1014.28	0.257	0.50	0.35	3.888	A
3	792.00	198.00	796.34	567.90	255.79	0.00	1403.32	1054.41	0.564	2.40	1.31	5.974	A

**Queueing Delay Results for each time segment**
**Queueing Delay results: (08:00-08:15)**

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	18.52	1.23	5.521	A	A
2	5.05	0.34	3.871	A	A
3	18.51	1.23	5.851	A	A

**Queueing Delay results: (08:15-08:30)**

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	31.93	2.13	7.978	A	A
2	7.26	0.48	4.568	A	A
3	33.26	2.22	8.857	A	A

**Queueing Delay results: (08:30-08:45)**

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	34.09	2.27	8.119	A	A
2	7.43	0.50	4.579	A	A
3	35.77	2.38	9.045	A	A

**Queueing Delay results: (08:45-09:00)**

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	20.46	1.36	5.621	A	A
2	5.31	0.35	3.888	A	A
3	20.56	1.37	5.974	A	A

## With Link Road - With Link Road, PM

**Data Errors and Warnings**

Severity	Area	Item	Description
Warning	DemandSets	D2 - With Link Road, PM	Time results are shown for central hour only. (Model is run for a 90 minute period.)

## Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set(s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
With Link Road	ARCADY		✓				100.000	100.000	

## Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
With Link Road, FM	With Link Road	FM		ONE HOUR	16:45	18:15	90	15	✓			✓		

# Junction Network

## Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3				9.51	A

## Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

# Arms

## Arms

Arm	Arm	Name	Description
1	1	A426 (N)	
2	2	Development	
3	3	A426 (S)	

## Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00

## Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.00	7.00	15.00	15.00	30.00	25.00	
2	3.00	7.00	15.00	15.00	30.00	25.00	
3	3.00	7.00	15.00	15.00	30.00	25.00	

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.631	1564.598
2		(calculated)	(calculated)	0.631	1564.598
3		(calculated)	(calculated)	0.631	1564.598

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

## Traffic Flows

### Demand Set Data Options

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

## Entry Flows

### General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	1117.00	100.000
2	ONE HOUR	✓	469.00	100.000
3	ONE HOUR	✓	565.00	100.000

## Turning Proportions

### Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	356.000	761.000
	2	398.000	0.000	71.000
	3	489.000	76.000	0.000

### Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.32	0.68
	2	0.85	0.00	0.15
	3	0.87	0.13	0.00

# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		1	2	3
From	1	1.000	1.000	1.000
	2	1.000	1.000	1.000
	3	1.000	1.000	1.000

## Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	0.0	0.0
	2	0.0	0.0	0.0
	3	0.0	0.0	0.0

# Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.81	12.68	4.21	B	1117.00	1117.00	176.48	9.48	1.96	213.13	8.32
2	0.50	6.92	0.98	A	469.00	469.00	46.61	5.96	0.52	59.04	5.49
3	0.48	5.40	0.93	A	565.00	565.00	45.71	4.85	0.51	59.10	4.56

## Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1004.16	251.04	1001.39	796.24	68.24	0.00	1521.57	1474.16	0.660	1.21	1.90	6.883	A
2	421.62	105.41	420.92	387.39	682.24	0.00	1134.43	931.35	0.372	0.41	0.59	5.040	A
3	507.92	126.98	507.28	745.96	357.20	0.00	1339.38	1066.26	0.379	0.44	0.61	4.320	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1229.84	307.46	1221.14	974.20	83.51	0.00	1511.94	1474.16	0.813	1.90	4.08	12.027	B
2	516.38	129.09	514.84	472.70	831.95	0.00	1040.04	931.35	0.497	0.59	0.97	6.833	A
3	622.08	155.52	620.81	909.89	436.90	0.00	1289.12	1066.26	0.483	0.61	0.92	5.377	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1229.84	307.46	1229.31	976.54	83.67	0.00	1511.84	1474.16	0.813	4.08	4.21	12.677	B
2	516.38	129.09	516.33	475.47	837.52	0.00	1036.53	931.35	0.498	0.97	0.98	6.920	A
3	622.08	155.52	622.05	915.68	438.16	0.00	1288.33	1066.26	0.483	0.92	0.93	5.402	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1004.16	251.04	1013.05	799.77	68.49	0.00	1521.41	1474.16	0.660	4.21	1.98	7.200	A
2	421.62	105.41	423.15	391.36	690.18	0.00	1129.42	931.35	0.373	0.98	0.60	5.107	A
3	507.92	126.98	509.17	754.24	359.09	0.00	1338.18	1066.26	0.380	0.93	0.62	4.350	A

**Queueing Delay Results for each time segment**
**Queueing Delay results: (17:00-17:15)**

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	27.24	1.82	6.883	A	A
2	8.59	0.57	5.040	A	A
3	8.91	0.59	4.320	A	A

**Queueing Delay results: (17:15-17:30)**

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	55.30	3.69	12.027	B	B
2	14.05	0.94	6.833	A	A
3	13.44	0.90	5.377	A	A

**Queueing Delay results: (17:30-17:45)**

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	62.33	4.16	12.677	B	B
2	14.69	0.98	6.920	A	A
3	13.89	0.93	5.402	A	A

**Queueing Delay results: (17:45-18:00)**

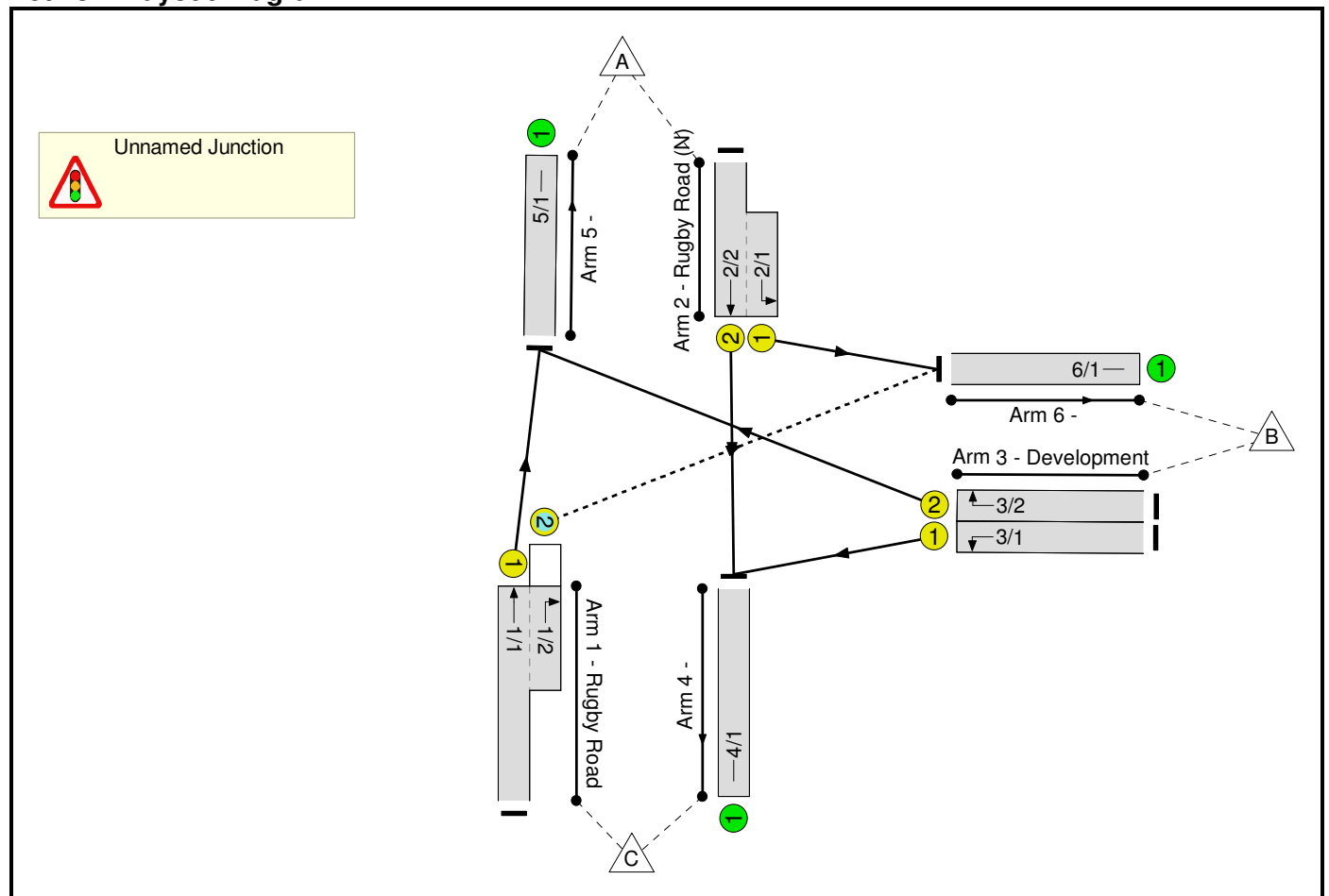
Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	31.61	2.11	7.200	A	A
2	9.27	0.62	5.107	A	A
3	9.47	0.63	4.350	A	A

Full Input Data And Results  
**Full Input Data And Results**

**User and Project Details**

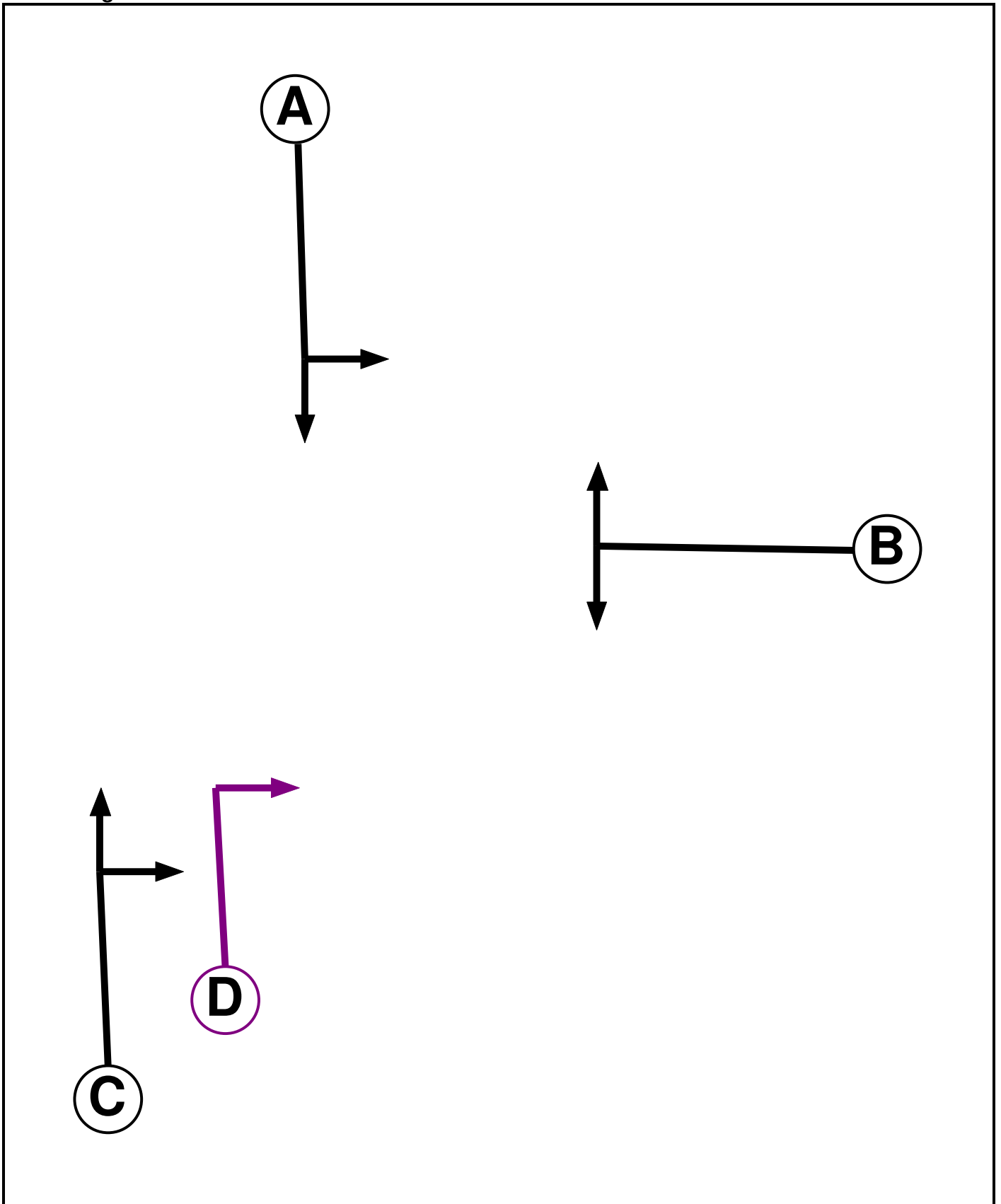
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<b>Author:</b>	
<b>Company:</b>	
<b>Address:</b>	
<b>Notes:</b>	

**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	Ind. Arrow	C	4	4

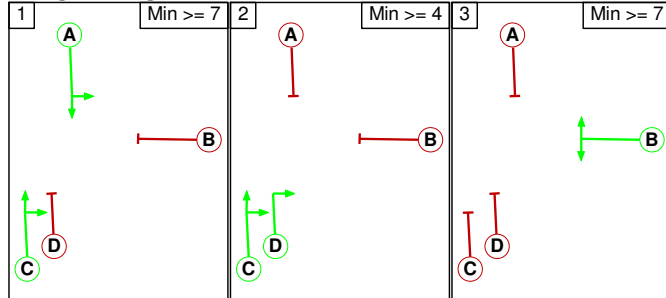
### Phase Intergreens Matrix

		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	-	6
	B	6		6	6
	C	-	6		-
	D	6	6	-	

### Phases in Stage

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

### Stage Diagram



### Phase Delays

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

### Prohibited Stage Change

		To Stage		
		1	2	3
From Stage	1		6	6
	2	6		6
	3	6	6	

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)
1/2 (Rugby Road)	6/1 (Right)	1439	0	2/2	1.09	All	2.00	-	0.50	2	2.00
				2/1	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 (Rugby Road)	U	C	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Ahead	Inf
1/2 (Rugby Road)	O	C D	2	3	5.0	Geom	-	3.25	0.00	Y	Arm 6 Right	25.00
2/1 (Rugby Road (N))	U	A	2	3	5.0	Geom	-	3.25	0.00	Y	Arm 6 Left	15.00
2/2 (Rugby Road (N))	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
3/1 (Development)	U	B	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Left	15.00
3/2 (Development)	U	B	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Right	25.00
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: 'Design 2031 AM'	08:00	09:00	01:00	
2: 'Design 2031 PM'	17:00	18:00	01:00	

**Scenario 1: 'Design 2031 - AM'** (FG1: 'Design 2031 AM', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
	A	B	C	Tot.	
Origin	A	0	376	557	933
	B	284	0	72	356
	C	745	136	0	881
	Tot.	1029	512	629	2170

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 1: Design 2031 - AM
<b>Junction: Unnamed Junction</b>	
1/1 (with short)	881(In) 745(Out)
1/2 (short)	136
2/1 (short)	376
2/2 (with short)	933(In) 557(Out)
3/1	72
3/2	284
4/1	629
5/1	1029
6/1	512

**Lane Saturation Flows**

<b>Junction: Unnamed Junction</b>								
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 (Rugby Road)	3.25	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1940	1940
1/2 (Rugby Road)	3.25	0.00	Y	Arm 6 Right	25.00	100.0 %	1830	1830
2/1 (Rugby Road (N))	3.25	0.00	Y	Arm 6 Left	15.00	100.0 %	1764	1764
2/2 (Rugby Road (N))	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
3/1 (Development)	3.25	0.00	Y	Arm 4 Left	15.00	100.0 %	1764	1764
3/2 (Development)	3.25	0.00	Y	Arm 5 Right	25.00	100.0 %	1830	1830
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

**Scenario 2: 'Design 2031 - PM'** (FG2: 'Design 2031 PM', Plan 2: 'Network Control Plan 2')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	356	761	1117
	B	398	0	71	469
	C	489	76	0	565
	Tot.	887	432	832	2151

Full Input Data And Results

**Traffic Lane Flows**

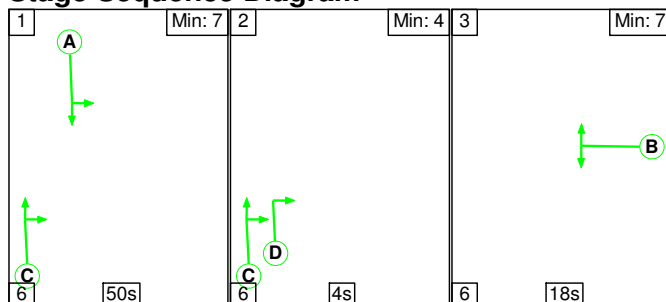
Lane	Scenario 2: Design 2031 - PM
<b>Junction: Unnamed Junction</b>	
1/1 (with short)	565(In) 489(Out)
1/2 (short)	76
2/1 (short)	356
2/2 (with short)	1117(In) 761(Out)
3/1	71
3/2	398
4/1	832
5/1	887
6/1	432

**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 (Rugby Road)	3.25	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1940	1940	
1/2 (Rugby Road)	3.25	0.00	Y	Arm 6 Right	25.00	100.0 %	1830	1830	
2/1 (Rugby Road (N))	3.25	0.00	Y	Arm 6 Left	15.00	100.0 %	1764	1764	
2/2 (Rugby Road (N))	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940	
3/1 (Development)	3.25	0.00	Y	Arm 4 Left	15.00	100.0 %	1764	1764	
3/2 (Development)	3.25	0.00	Y	Arm 5 Right	25.00	100.0 %	1830	1830	
4/1	Infinite Saturation Flow							Inf	Inf
5/1	Infinite Saturation Flow							Inf	Inf
6/1	Infinite Saturation Flow							Inf	Inf

**Scenario 1: 'Design 2031 - AM'** (FG1: 'Design 2031 AM', Plan 1: 'Network Control Plan 1')

**Stage Sequence Diagram**

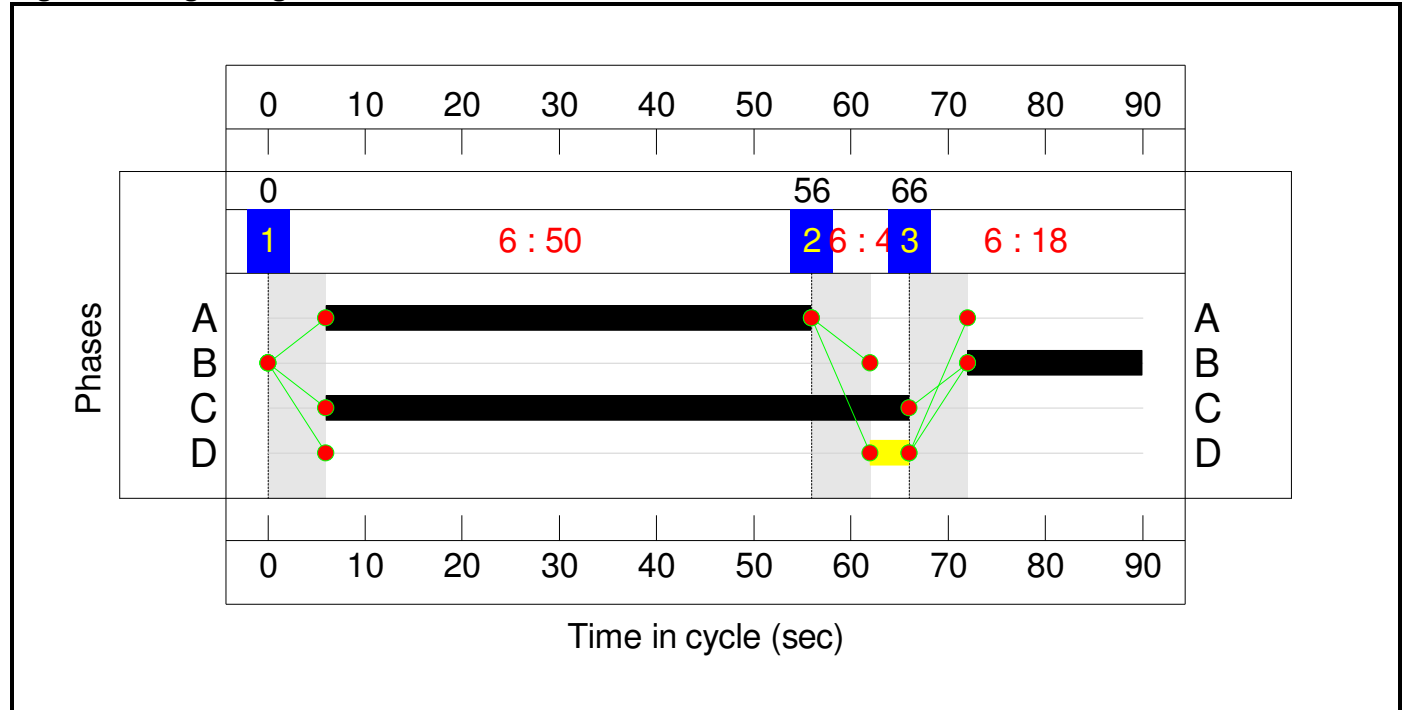


Full Input Data And Results

**Stage Timings**

Stage	1	2	3
Duration	50	4	18
Change Point	0	56	66


**Signal Timings Diagram**

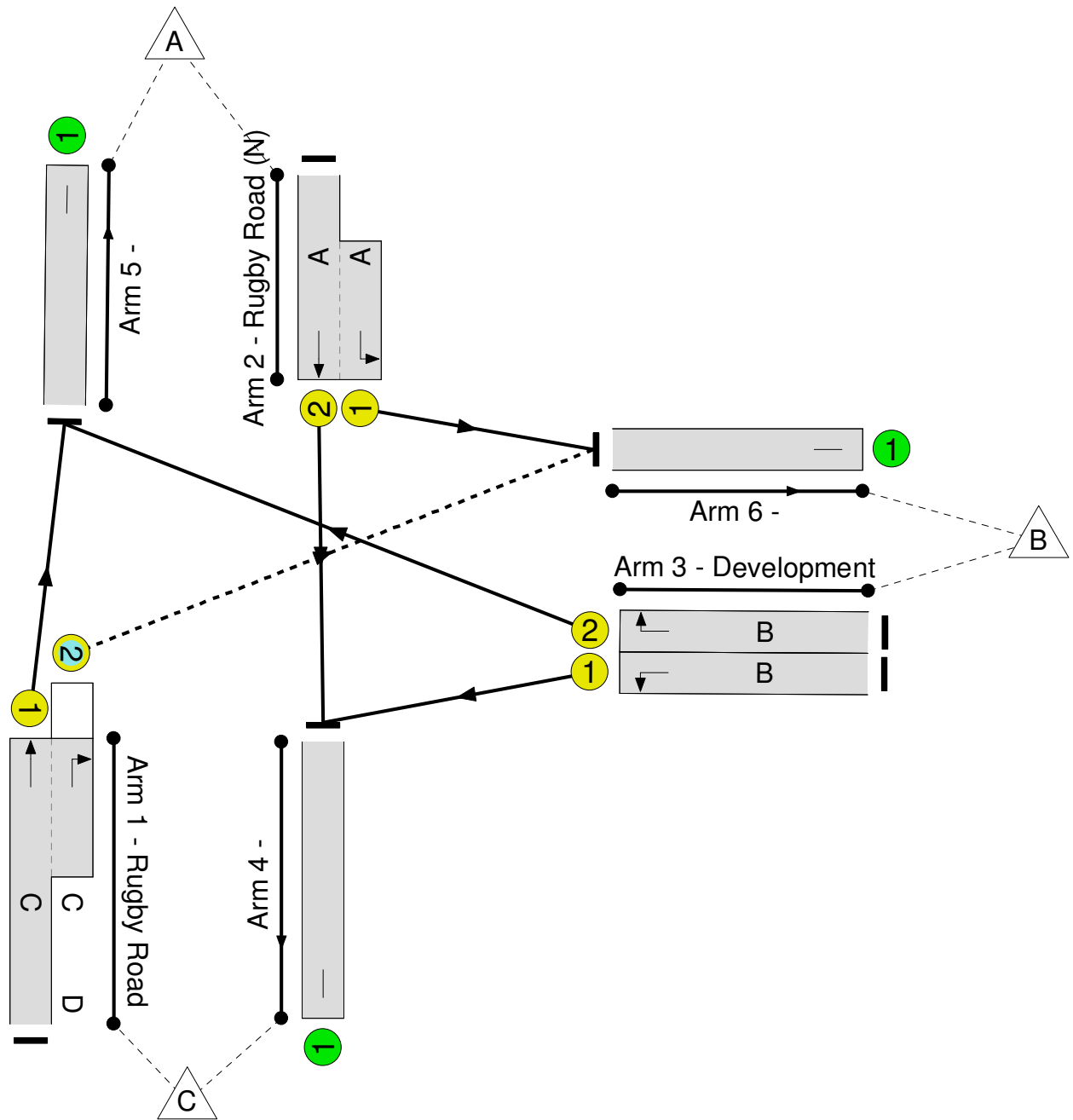




Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

 **Unnamed Junction**  
PRC: 16.3 %  
Total Traffic Delay: 13.1 pcuHr



Full Input Data And Results

**Network Results**

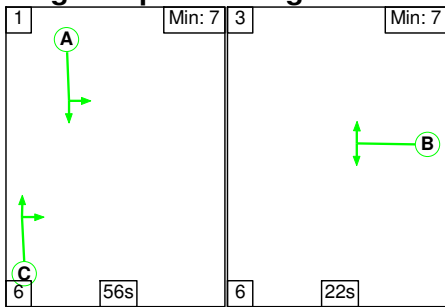
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	
<b>Network</b>	-	-	N/A	-	-		-	-	-	-	-	-	77.4%	
<b>Unnamed Junction</b>	-	-	N/A	-	-		-	-	-	-	-	-	77.4%	
1/1+1/2	Rugby Road Ahead Right	U+O	N/A	N/A	C	D	1	60	4	881	1940:1830	1347	65.4%	
2/2+2/1	Rugby Road (N) Ahead Left	U	N/A	N/A	A		1	50	-	933	1940:1764	1205	77.4%	
3/1	Development Left	U	N/A	N/A	B		1	18	-	72	1764	372	19.3%	
3/2	Development Right	U	N/A	N/A	B		1	18	-	284	1830	386	73.5%	
4/1		U	N/A	N/A	-		-	-	-	629	Inf	Inf	0.0%	
5/1		U	N/A	N/A	-		-	-	-	1029	Inf	Inf	0.0%	
6/1		U	N/A	N/A	-		-	-	-	512	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)	
<b>Network</b>	-	-	119	14	3	8.3	4.1	0.7	13.1	-	-	-	-	
<b>Unnamed Junction</b>	-	-	119	14	3	8.3	4.1	0.7	13.1	-	-	-	-	
1/1+1/2	881	881	119	14	3	1.9	0.9	0.7	3.5	14.2	11.1	0.9	12.0	
2/2+2/1	933	933	-	-	-	3.2	1.7	-	4.9	19.0	13.0	1.7	14.6	
3/1	72	72	-	-	-	0.6	0.1	-	0.7	35.2	1.5	0.1	1.6	
3/2	284	284	-	-	-	2.6	1.4	-	4.0	50.3	6.6	1.4	8.0	
4/1	629	629	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
5/1	1029	1029	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
6/1	512	512	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
C1			PRC for Signalled Lanes (%):	16.3	Total Delay for Signalled Lanes (pcuHr):			13.07	Cycle Time (s):		90			
			PRC Over All Lanes (%):	16.3	Total Delay Over All Lanes(pcuHr):			13.07						

Full Input Data And Results

Full Input Data And Results

Scenario 2: 'Design 2031 - PM' (FG2: 'Design 2031 PM', Plan 2: 'Network Control Plan 2')

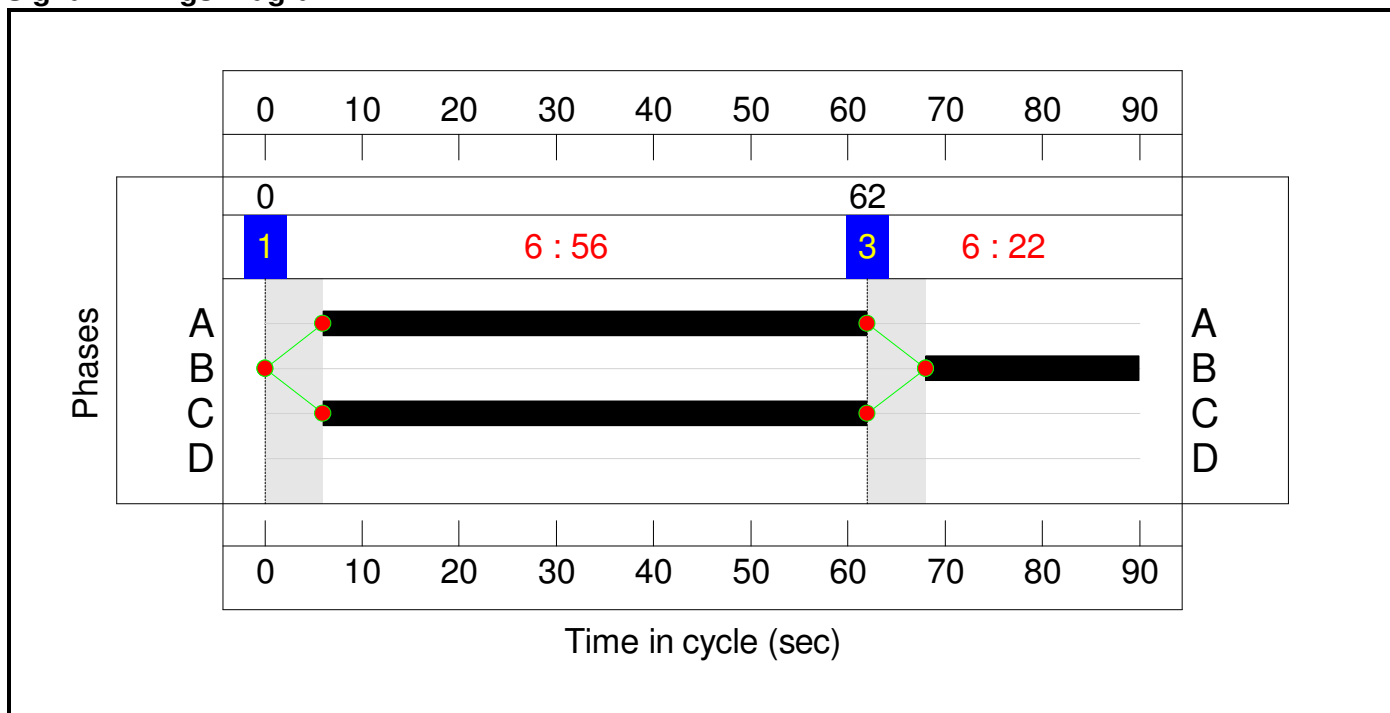
Stage Sequence Diagram



Stage Timings


Stage	1	3
Duration	56	22
Change Point	0	62

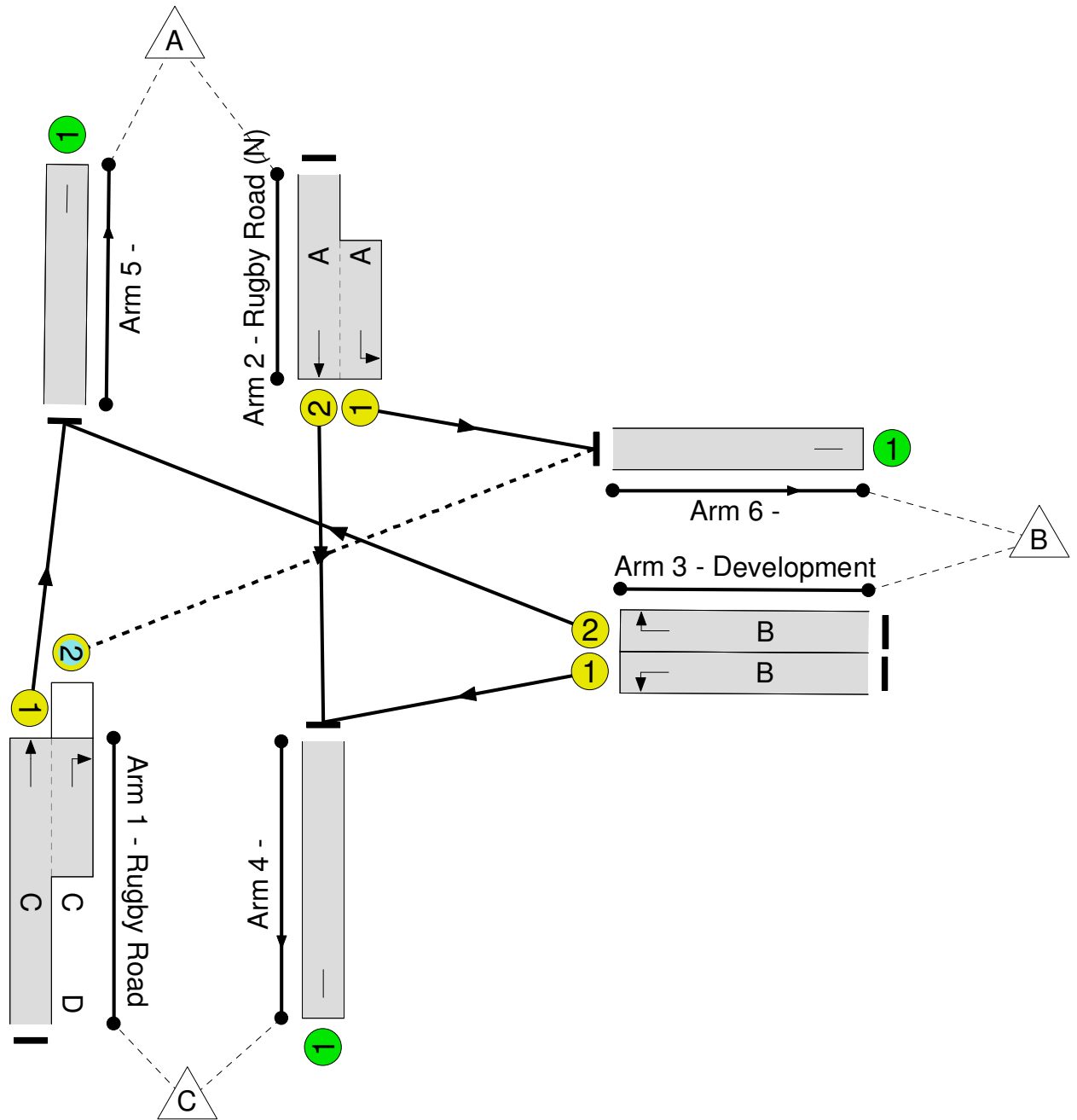
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

 **Unnamed Junction**  
PRC: 4.4 %  
Total Traffic Delay: 15.6 pcuHr





Full Input Data And Results

**Network Results**

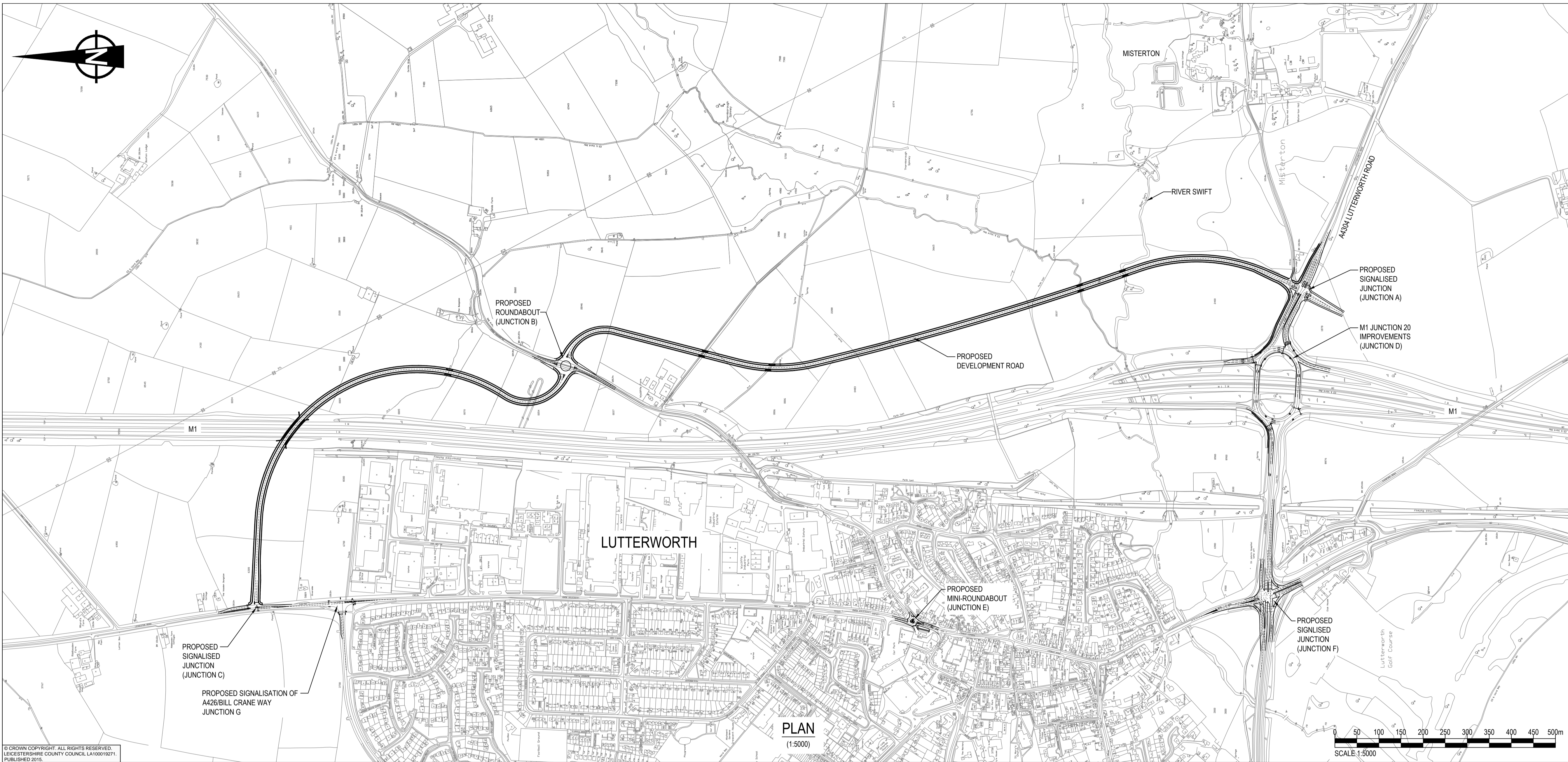
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network</b>	-	-	N/A	-	-		-	-	-	-	-	-	86.2%
<b>Unnamed Junction</b>	-	-	N/A	-	-		-	-	-	-	-	-	86.2%
1/1+1/2	Rugby Road Ahead Right	U+O	N/A	N/A	C	D	1	56	0	565	1940:1830	1213	46.6%
2/2+2/1	Rugby Road (N) Ahead Left	U	N/A	N/A	A		1	56	-	1117	1940:1764	1296	86.2%
3/1	Development Left	U	N/A	N/A	B		1	22	-	71	1764	451	15.7%
3/2	Development Right	U	N/A	N/A	B		1	22	-	398	1830	468	85.1%
4/1		U	N/A	N/A	-		-	-	-	832	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	887	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	432	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)
<b>Network</b>	-	-	49	0	27	8.8	6.2	0.7	15.6	-	-	-	-
<b>Unnamed Junction</b>	-	-	49	0	27	8.8	6.2	0.7	15.6	-	-	-	-
1/1+1/2	565	565	49	0	27	1.2	0.4	0.7	2.4	15.0	6.1	0.4	6.6
2/2+2/1	1117	1117	-	-	-	3.5	3.0	-	6.5	21.0	18.8	3.0	21.8
3/1	71	71	-	-	-	0.5	0.1	-	0.6	30.7	1.4	0.1	1.5
3/2	398	398	-	-	-	3.5	2.7	-	6.2	55.9	9.4	2.7	12.1
4/1	832	832	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	887	887	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	432	432	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		4.4	Total Delay for Signalled Lanes (pcuHr):			15.64	Cycle Time (s): 90			
			PRC Over All Lanes (%):		4.4	Total Delay Over All Lanes(pcuHr):			15.64				

## Full Input Data And Results

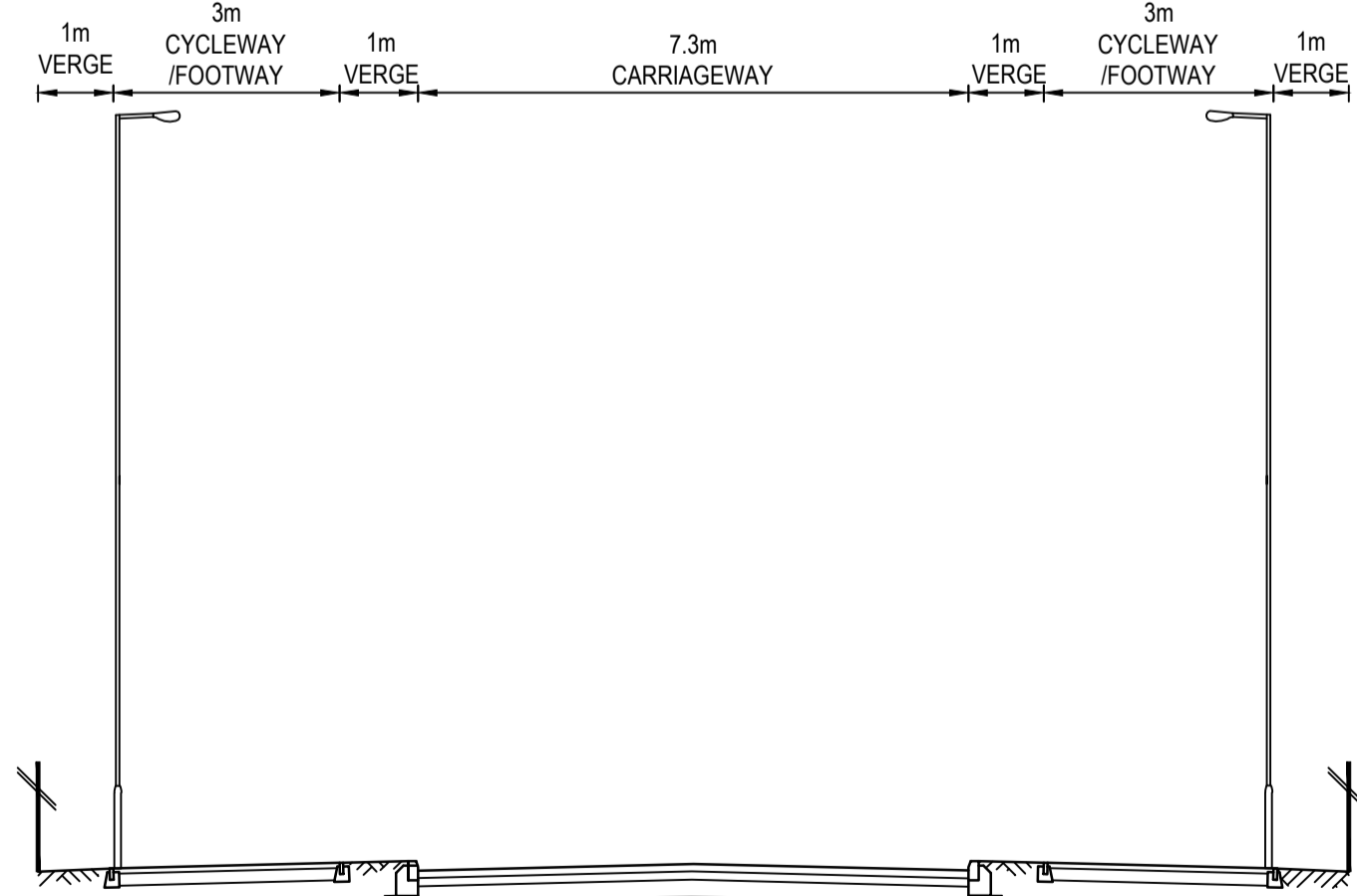
***SPINE ROAD DESIGNS***

**G**

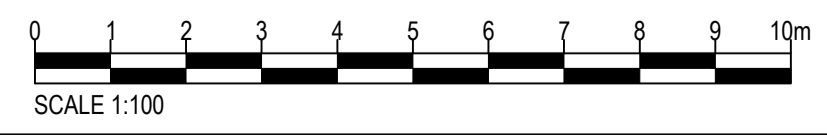




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**TYPICAL DEVELOPMENT ROAD CORRIDOR SECTION**  
(1:100)



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**KEY**

RIVER AND PIPE CROSSING, UNDERPASS AND M1 BRIDGE

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PROPOSED LAYOUT REVISED	KB	11.02.16	P2
Revision Details	By	Date	Suffix
	Check		

Purpose of issue  
**PRELIMINARY**

Client  
**LEICESTERSHIRE COUNTY COUNCIL**

Project Title  
**LUTTERWORTH EAST**

Drawing Title  
**GENERAL ARRANGEMENT AND TYPICAL SECTIONS**  
DRAFT  
WORK IN PROGRESS

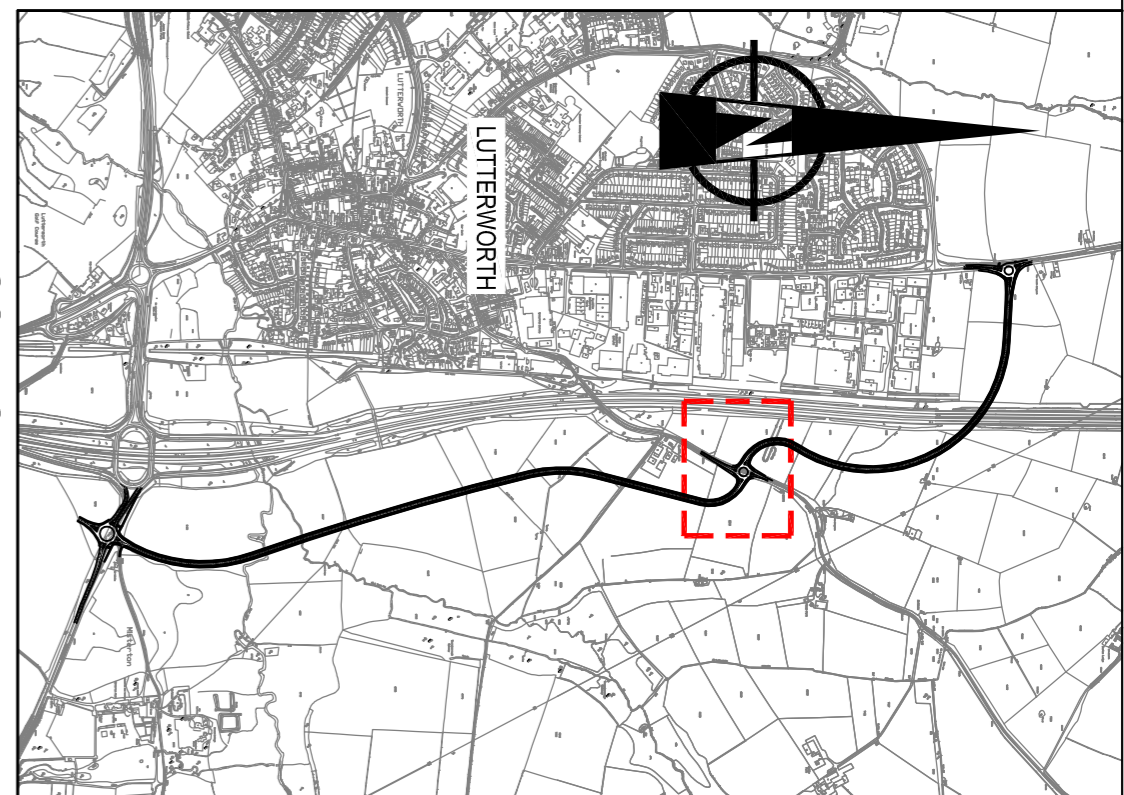
Designed	Drawn	Checked	Approved	Date
KB	KB	DB	GH	27/07/15
AECOM Internal Project No. 47074731			Suitability -	
Scale @ A1 AS SHOWN			Zone -	

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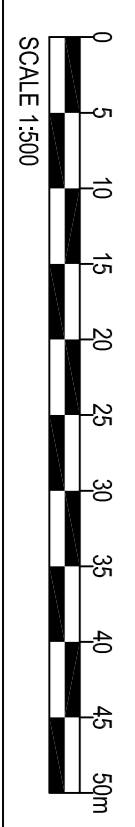
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Revision Details	By	Date	Status

Project Title  
**LUTTERWORTH EAST**  
 Client  
**LEICESTERSHIRE COUNTY COUNCIL**

Project Title  
**JUNCTION B GENERAL ARRANGEMENT**

Design	Drawn	Checked	Approved	Date
KB	KB	DB	CH	27/07/15

AECOM Internal Project No. 47074731  
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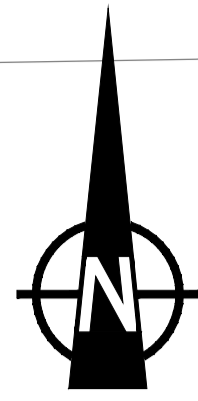
**AECOM**

Drawing Number: **LWE-AEC-BJ-GF-DR-CE-00001** Rev: **P1**

***OFF SITE HIGHWAYS  
MITIGATION (TO BE  
COMPLETETED)***

H





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3700

5809

Silverside

132.2m

6700

Track

Sorting Office

Ware

NOBLE CLOSE

**DRAFT**  
JUNCTION G  
GENERAL ARRANGEMENT  
**WORK IN PROGRESS**

Revision Details

Purpose of issue  
**PRELIMINARY**

Client  
**LEICESTERSHIRE COUNTY COUNCIL**

Project Title  
**LUTTERWORTH EAST**

Designed  
DJM  
AECOM Internal Project No.  
47074731  
Scale @ A1  
1:500

Checked  
DJM  
Subality  
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Approved  
Date  
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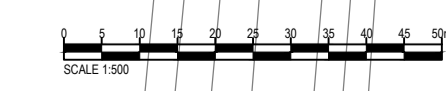
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Drawing Number  
**LWE-AEC-GJ-GF-DR-TS-00001**

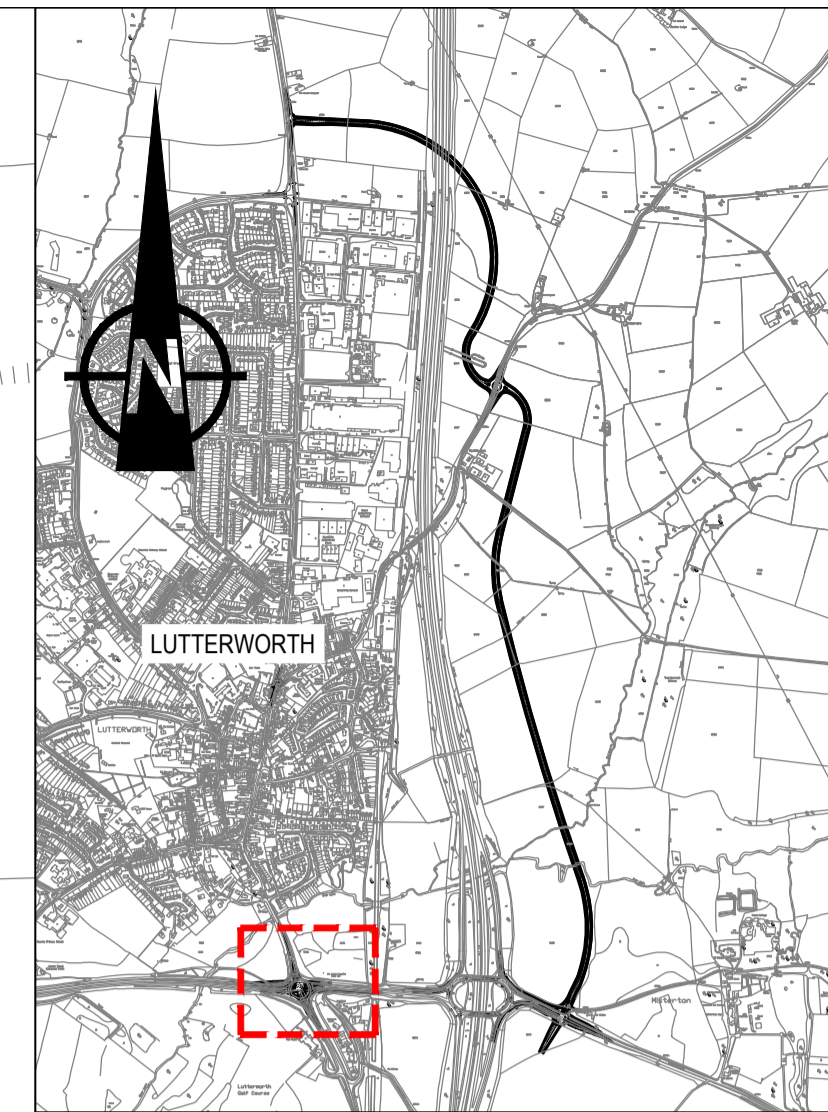
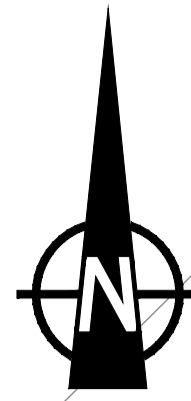
Rev  
**P1**

Proj Date: 21/10/2016 9:58 PM  
File Name: LWE-AEC-GJ-GF-DR-TS-00001 - JUNCTION G GENERAL ARRANGEMENT

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LOCATION PLAN  
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Revision Details By Check Date Suffix

Purpose of issue  
**PRELIMINARY**

Client  
**LEICESTERSHIRE COUNTY COUNCIL**

Project Title  
**LUTTERWORTH EAST**

DRAFT  
**JUNCTION F  
GENERAL ARRANGEMENT**  
WORK IN PROGRESS

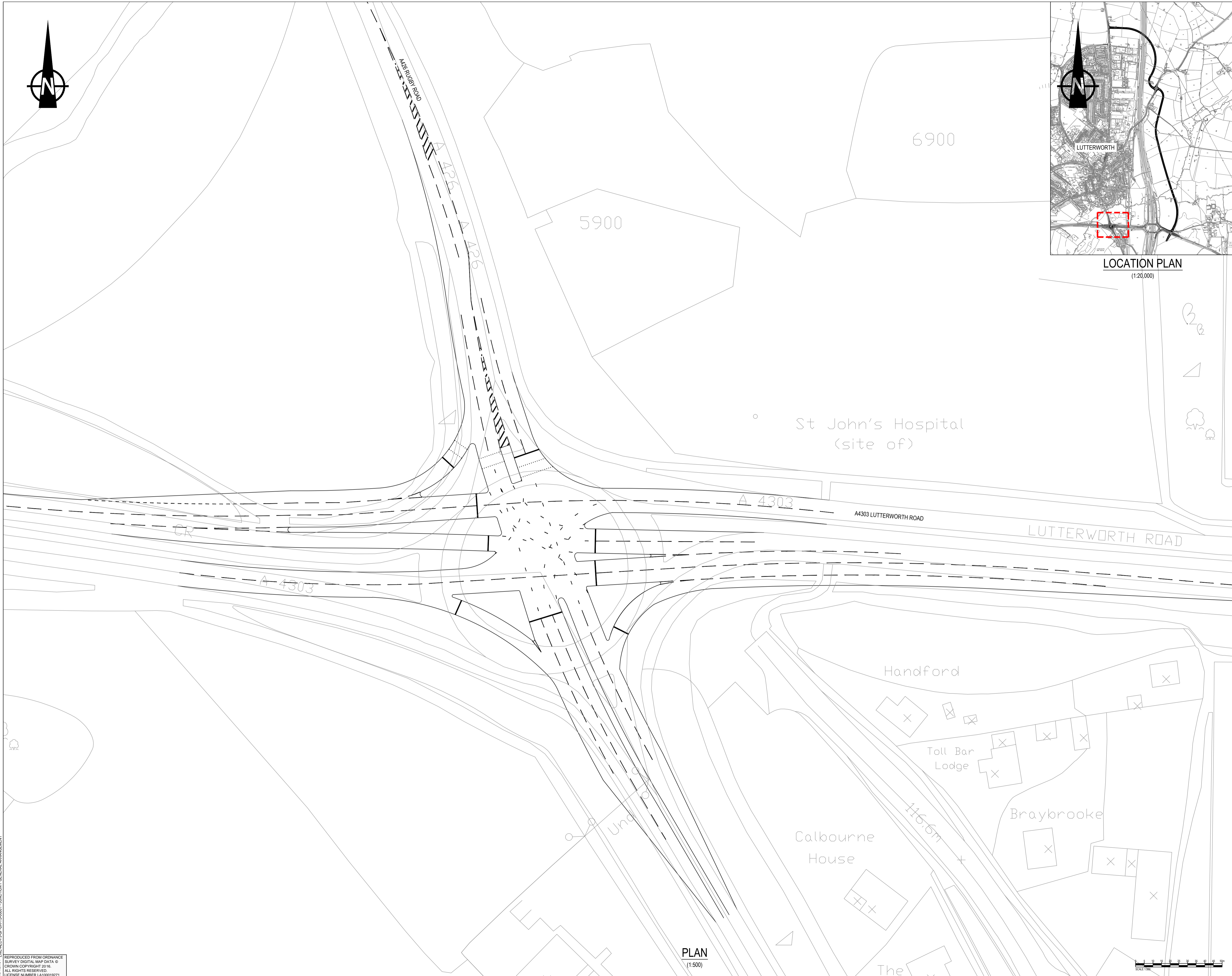
Designed	Drawn	Checked	Approved	Date
DJM	DJM			
AECOM Internal Project No. 47074731		Suitability -		
Scale @ A1		Zone -		
AS SHOWN				

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**LWE-AEC-FJ-GF-DR-TS-00001**

Rev  
**P1**



PLAN  
(1:500)

Proj Date: 21/05/2016 2:09 PM  
File Name: LWE-AEC-FJ-GF-DR-TS-00001 - JUNCTION F GENERAL ARRANGEMENT

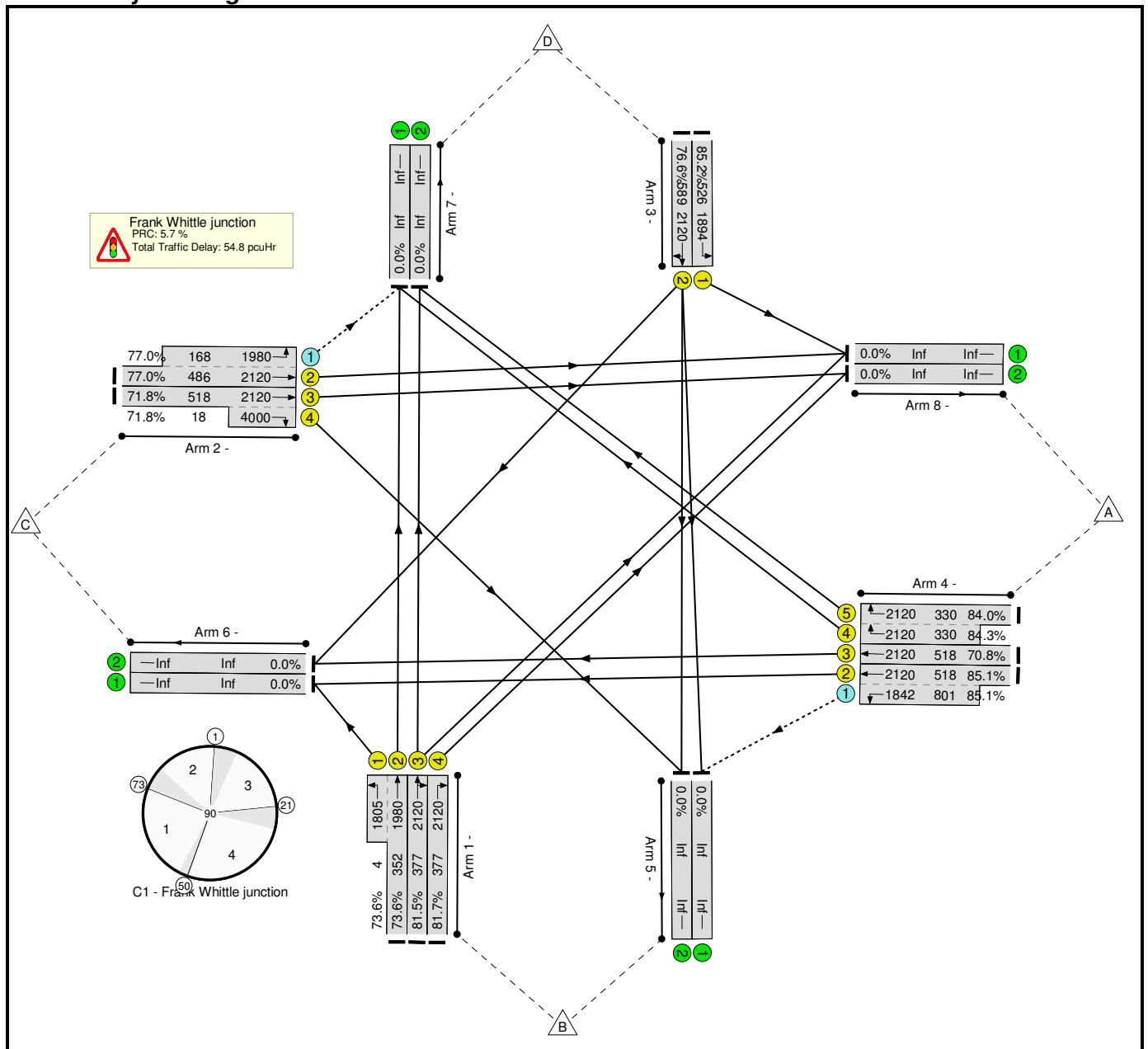
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Basic Results Summary  
**Basic Results Summary**

**User and Project Details**

<b>Project:</b>	
<b>Title:</b>	
<b>Location:</b>	
<b>File name:</b>	Frank Whittle junction.lsg3x
<b>Author:</b>	
<b>Company:</b>	
<b>Address:</b>	
<b>Notes:</b>	

**Scenario 1: 'AM Base' (FG1: 'AM Peak', Plan 1: 'Network Control Plan 1')**  
**Network Layout Diagram**



Basic Results Summary

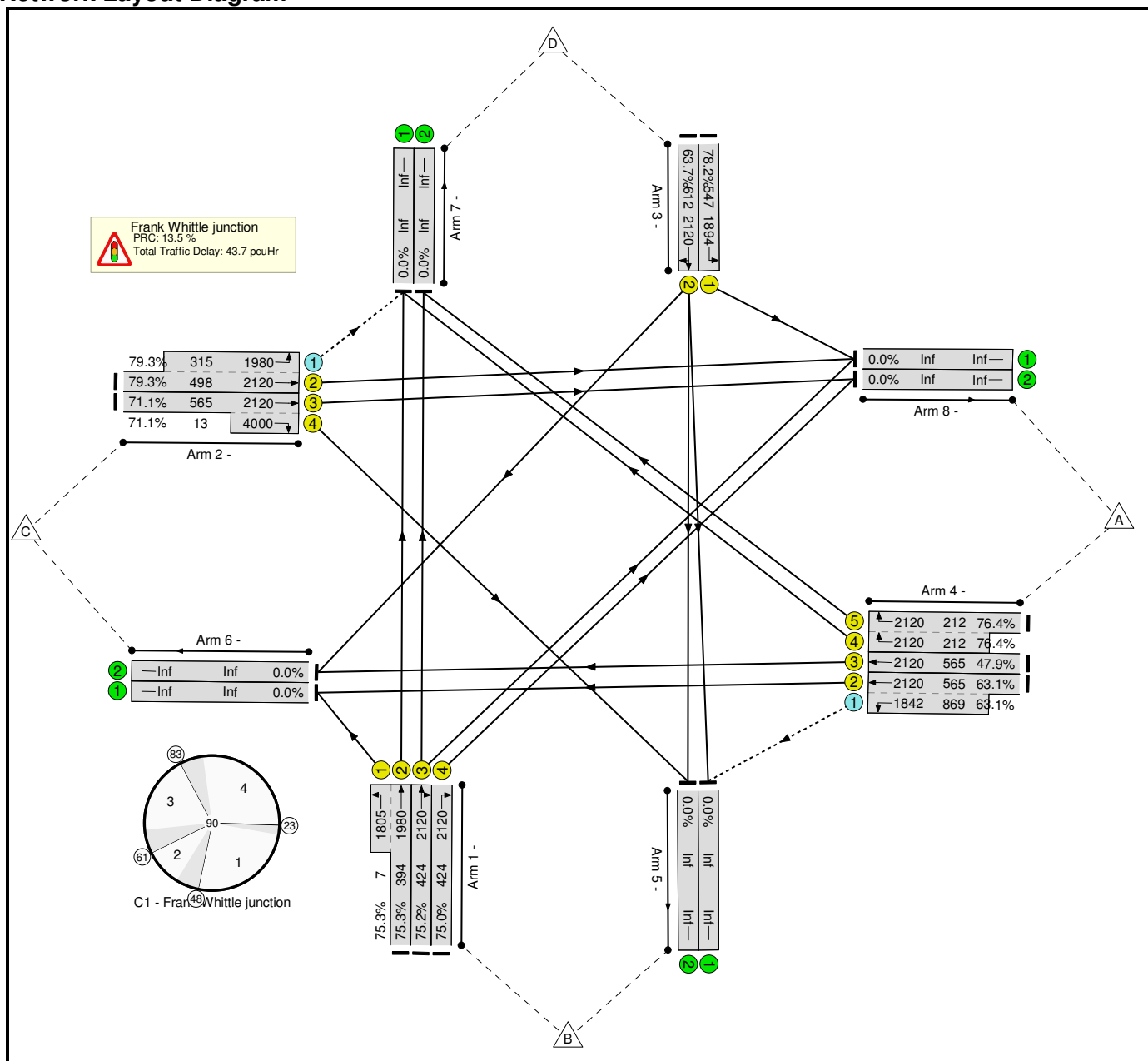
**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	
<b>Network</b>	-	-	-		-	-	-	-	-	-	85.2%	212	599	0	54.8	-	-	
<b>Frank Whittle junction</b>	-	-	-		-	-	-	-	-	-	85.2%	212	599	0	54.8	-	-	
1/2+1/1	Left Ahead	U	B		1	15	-	262	1980:1805	352+4	73.6 : 73.6%	-	-	-	3.9	53.6	7.5	
1/3	Ahead Right	U	A		1	15	-	307	2120	377	81.5%	-	-	-	5.1	59.9	9.4	
1/4	Right	U	A		1	15	-	308	2120	377	81.7%	-	-	-	5.2	60.2	9.5	
2/2+2/1	Left Ahead	U+O	D -		1	21	-	503	2120:1980	486+168	77.0 : 77.0%	23	106	0	4.9	35.1	10.2	
2/3+2/4	Right Ahead	U	D C		1	21:13	-	385	2120:4000	518+18	71.8 : 71.8%	-	-	-	4.6	42.9	9.8	
3/1	Left	U	F		1	24	-	448	1894	526	85.2%	-	-	-	6.5	52.3	13.3	
3/2	Ahead Right	U	E		1	24	-	451	2120	589	76.6%	-	-	-	5.3	42.6	11.9	
4/2+4/1	Left Ahead	U+O	H -		1	21	-	1123	2120:1842	518+801	85.1 : 85.1%	189	493	0	6.8	21.6	13.2	
4/3	Ahead	U	H		1	21	-	367	2120	518	70.8%	-	-	-	4.4	42.8	9.6	
4/5+4/4	Right	U	G		1	13	-	555	2120:2120	330+330	84.0 : 84.3%	-	-	-	8.2	53.4	9.2	
C1 - Frank Whittle junction					PRC for Signalled Lanes (%): 5.7			Total Delay for Signalled Lanes (pcuHr): 54.83			Cycle Time (s): 90							
					PRC Over All Lanes (%): 5.7			Total Delay Over All Lanes(pcuHr): 54.83										

Basic Results Summary

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

Network Layout Diagram

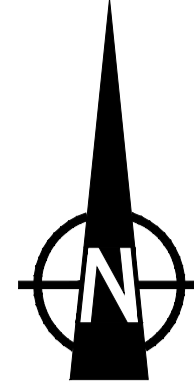


Basic Results Summary

**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	79.3%	209	590	0	43.7	-	-
<b>Frank Whittle junction</b>	-	-	-		-	-	-	-	-	-	79.3%	209	590	0	43.7	-	-
1/2+1/1	Left Ahead	U	B		1	17	-	302	1980:1805	394+7	75.3 : 75.3%	-	-	-	4.3	51.5	8.4
1/3	Ahead Right	U	A		1	17	-	319	2120	424	75.2%	-	-	-	4.5	50.6	8.9
1/4	Right	U	A		1	17	-	318	2120	424	75.0%	-	-	-	4.5	50.4	8.9
2/2+2/1	Left Ahead	U+O	D -		1	23	-	645	2120:1980	498+315	79.3 : 79.3%	50	200	0	5.2	29.1	10.8
2/3+2/4	Right Ahead	U	D C		1	23:8	-	411	2120:4000	565+13	71.1 : 71.1%	-	-	-	4.6	40.6	10.3
3/1	Left	U	F		1	25	-	428	1894	547	78.2%	-	-	-	5.2	44.1	11.5
3/2	Ahead Right	U	E		1	25	-	390	2120	612	63.7%	-	-	-	3.9	35.9	9.3
4/2+4/1	Left Ahead	U+O	H -		1	23	-	906	2120:1842	565+869	63.1 : 63.1%	159	390	0	3.7	14.9	8.7
4/3	Ahead	U	H		1	23	-	271	2120	565	47.9%	-	-	-	2.5	33.9	6.1
4/5+4/4	Right	U	G		1	8	-	324	2120:2120	212+212	76.4 : 76.4%	-	-	-	5.1	56.9	5.5
C1 - Frank Whittle junction					PRC for Signalled Lanes (%):		13.5	Total Delay for Signalled Lanes (pcuHr):		43.66	Cycle Time (s):		90				
					PRC Over All Lanes (%):		13.5	Total Delay Over All Lanes(pcuHr):		43.66							





Car Park

Club

El Sub Sta

A423 LOWER LEICESTER ROAD

Pol Sta

Court Ho

GILMORTON ROAD

Ambulance Station

Hall

Gas Gov

Fire Station

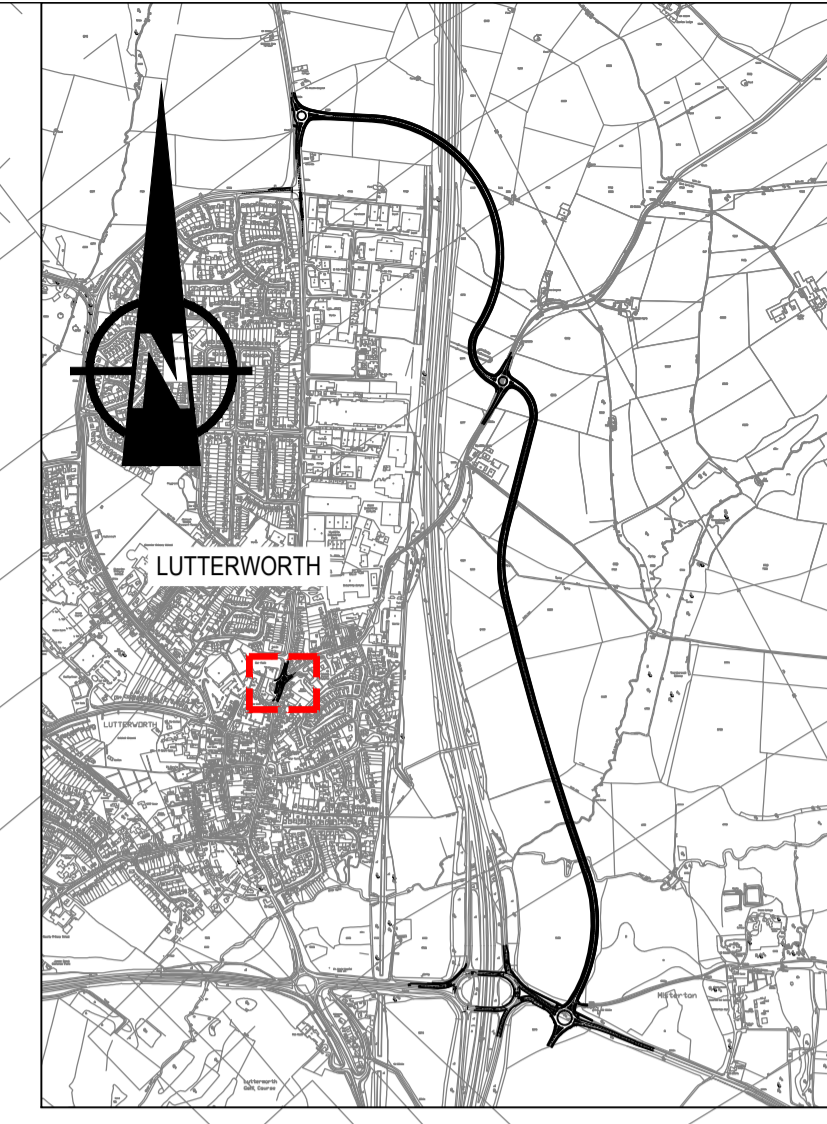
Club

25.3m

Car Park

PH

PLAN  
(1:250)



LOCATION PLAN  
(1:20,000)

IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.

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Revision Details	By	Date	Suffix

Purpose of issue  
**PRELIMINARY**

Client  
**LEICESTERSHIRE COUNTY COUNCIL**

Project Title  
**LUTTERWORTH EAST**

DRAFT  
**JUNCTION E  
GENERAL ARRANGEMENT**  
WORK IN PROGRESS

Designed	Drawn	Checked	Approved	Date
KB	KB	DTB		

AECOM Internal Project No.  
47074731

Scale @ A1  
AS SHOWN

Suitability  
-

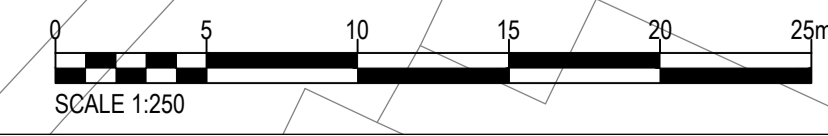
Zone  
-

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Drawing Number  
**LWE-AEC-EJ-GF-DR-CE-00001**

Rev  
**P1**



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File Name: LWE-AEC-EJ-GF-DR-CE-00001 - JUNCTION E GENERAL ARRANGEMENT  
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