

PROPOSED RESIDENTIAL DEVELOPMENT SITE, CROMWELL LANE, COVENTRY

HIGHWAYS AND TRANSPORTATION TECHNICAL REPORT

NOVEMBER 2016

REPORT REF: 22407/11-16/4599



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REPORT REF: 22407/11-16/4599

CLIENT: IM Properties PLC

ENGINEER: Mewies Engineering Consultants

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1.0 INTRODUCTION

- 1.1 Mewies Engineering Consultants Ltd (M-EC) has been commissioned by IM Properties PLC to produce a Technical Report to support a proposed residential development of up to 130 dwellings at Cromwell Lane, Coventry. A site location plan is contained in Appendix A.
- 1.2 This note has been produced to examine the suitability of the site to be removed from the Green Belt and allocated/safe-guarded in the Warwick District Local Plan. This report will deal with matters raised in Warwickshire County Councils (WCC) Final Strategic Transport Assessment and also includes an assessment of the potential traffic generated by the development proposal and its distribution on the local highway network.
- 1.3 M-EC has completed this report for the benefit of the individuals referred to in paragraph 1.1 and any relevant statutory authority which may be require reference in relation to approvals for the proposed development. Other third parties should not use or rely upon the contents of this report unless explicit written approval has been gained from M-EC.
- 1.4 M-EC accepts no responsibility or liability for:
 - a) The consequence of this documentation being used for any purpose or project other than that for which it was commissioned;
 - b) The issue of this document to any third party with whom approval for use has not been agreed.

2.0 SITE DESCRIPTION

- 2.1 The development site is currently greenfield land and is located approximately 1.2km north-east of Burton Green village centre, and approximately 6.5km south-west of Coventry City centre. The site is located adjacent to the rear of existing residential properties on Cromwell Lane to the west and Westwood Heath Road to the north. Land to the eastern and southern boundary of the site comprises arable land. The site location can be found in Figure 1.
- 2.2 There is an existing field access into the site from Cromwell Lane. Public Right Of Way (PROW) W168 runs through the centre of the site, with PROW W168b running parallel to the eastern boundary.
- 2.3 The Cromwell Lane site sits adjacent to a proposed Housing Allocation known as Westwood Heath (H42).
- 2.4 The proposed development will comprise up to 130 dwellings with access taken from Cromwell Road.

3.0 STRATEGIC TRANSPORT ASSESSMENT

- 3.1 WCC have prepared a number of Strategic Transport Assessments (STA), during the progression of the Warwick District Local Plan process, assessing initially multiple options for allocating housing across the District, and in latter phases more detailed modelling of preferred options.
- 3.2 This culminated in the Final Phase STA being submitted, February 2016, as an Assessment of Additional Housing Allocations, specifically the Westwood Heath and Kings Hill areas.
- 3.3 In previous iterations of the STA microsimulation modelling has been used to inform the assessments. The existing Wide Area Paramics models do not cover the areas of Westwood Heath or Kings Hill, therefore a supplementary analysis had been undertaken for the area using the best available information.
- 3.4 Appendix A of the 2016 STA provides a supplementary analysis of the likely impact the sites, currently proposed in Westwood Heath and Kings Hill, will have on the highway network. The site in Westwood Heath is adjacent to the proposed development site with access onto Westwood Heath Road. Discussions with WCC have indicated a generic development area was assessed with no consideration to different access points such as Cromwell Road and how this would impact distribution across the network.
- 3.5 Twelve highway link locations were identified in close proximity to the sites, to offer comparisons of how links, around the surrounding network, may be affected as a result of the developments. The links identified included Westwood Heath Road, Crackley Lane, Cromwell Lane, Kirby Corner Road and Gibbet Hill Road. Figure 2 below identifies the 12 highway link locations.
- 3.6 Four separate development scenarios were used, using an incremental development quantum, in an effort to test an acceptable level of development before major mitigation would be required on the network. The development scenarios can be found in Table 1.

Table 1: Additional Assessment Dwelling Scenarios

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Westwood Heath	425	850	1175	1500
Kings Hill	1050	2100	3050	4000

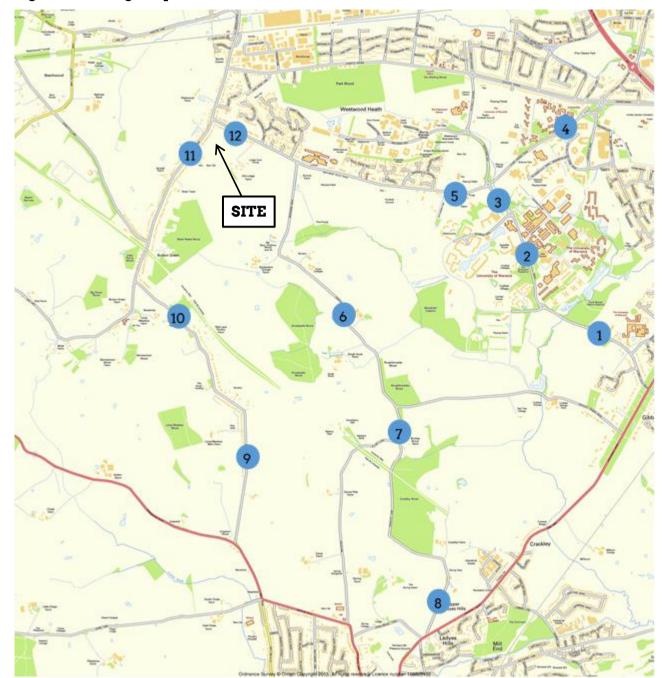


Figure 2: STA Highway Link Locations

- 3.7 The STA uses three methods of assessing the impact of traffic flows on the surrounding network:
 - 1) Absolute value measuring increases of flows on the individual links;
 - 2) GEH statistics to measure the significance of the increase; and
 - 3) Link capacity.

- 3.8 The assessments indicated that Crackley Lane and Gibbet Hill Road are the most congested roads during the AM peak. Even in Scenario 1 of the assessment, Crackley Lane is over capacity on links 6 and 7 and by Scenario 2, Crackley Lane is overcapacity on all links, 6, 7 and 8.
- 3.9 Therefore, it was considered by WCC that no more than 425 dwellings could be accommodated on Westwood Heath Road, without exceeding the capacity of Crackley Lane, unless significant mitigation measures could be delivered. WCC have indicated through further discussions that these significant highway improvements will take the form of an A46 Link Road which will eventually link the A46 to either the A45 or A452 across 3 implementation phases. A note prepared by WCC and submitted to the Local Plan examination can be found in Appendix B of this report.

4.0 PROPOSED SITE IMPACT

- 4.1 This section considers the number of vehicular trips the proposed development will generate during the AM and PM peak hour and how this will impact the local highway network and the sensitive receptors identified within the STA.
- 4.2 An analysis of the trip rates from the TRICS7 database has been undertaken with trips obtained for 'Residential Houses Privately Owned' (03/A). The TRICS assessment has been agreed with WCC.
- 4.3 A summary of the trip rates are provided in Table 2 below with a summary of the TRICS7 results provided within Appendix C.

Table 2: Trip Rate Analysis for the Proposed Development

		AM	Peak	PM Peak		
TRICS Land Use ((08:00	- 09:00)	(17:00 – 18:00)			
	Arrivals	Departures	Arrivals	Departures		
Proposed	Trip Rates per unit	0.183	0.464	0.424	0.226	
Development: Residential/Houses Privately Owned	130 Dwellings	24 trips	60 trips	55 trips	29 trips	
	Total trips	84	trips	84 trips		

- 4.4 The proposed development will generate approximately 84 vehicular trips during the AM and PM peak hours. This equates to an additional 1.4 vehicular trips being generated approximately every minute, during the peak hours.
- 4.5 Census data has been used to assess the direction that vehicles will travel to/from the development site with access taken from Cromwell Lane. Appendix D provides a full copy of the vehicle distribution results, which have been agreed with WCC. Table 3 below provides the results of the vehicle distribution assessment, in line with the STA Highway Link Locations (Figure 2). The STA Highway Link Locations 6, 7 and 8 are the Crackley Lane route.

Table 3: Vehicle Distribution Results in connection with STA Highway Link Locations

		AM Peak		PM Peak			
Number	Arrivals	Departures	Two-	Arrivals	Departures	Two-	
	711111413	Departures	Way	711117413	Departures	Way	
1	7	18	25	16	8	24	
2	7	18	25	16	8	24	
3	7	18	25	16	8	24	
4	1	2	3	2	1	3	
5	8	21	29	19	9	28	
6	0	1	1	1	1	2	
7	0	1	1	1	1	2	
8	0	1	1	1	1	2	
9	4	10	14	9	5	14	
10	4	10	14	9	5	14	
11	24	60	84	55	29	84	
12	8	22	30	20	10	30	

- 4.6 The results demonstrate that during the AM peak hour, 1 additional vehicular trip will be generated along Crackley Lane as a result of the proposed development. During the PM peak hour, 2 additional vehicular trips will be generated along Crackley Lane.
- 4.7 On the basis of the above, the number of additional vehicular trips generated along Crackley Lane as a result of the proposed development cannot be considered to be significant or severe and will have a negligible impact on the capacity and operation of Crackley Lane.

5.0 CONCLUSIONS

- 5.1 This report has reviewed the most recent Strategic Transport Assessment work completed by WCC for Warwick Local Plan and considered the impact of the proposed development off Cromwell Road on key receptors identified within the STA.
- 5.2 The key link with the STA is Crackley Lane where highway capacity is limited and WCC have identified a cap on development numbers in the local area to 425 dwellings prior to the implementation of significant highway infrastructure. This infrastructure is likely to take the form of an A46 Link Road.
- A detailed assessment of the likely distribution patterns from the proposed development shows the development will have a negligible impact on Crackley Lane within only 1 additional vehicle in the AM peak and 2 movements in the PM Peak.
- 5.3 The positioning of the site access onto Cromwell Lane, rather than Westwood Heath Road has a positive impact on the distribution of the traffic as with the exception of 1 additional AM peak and 2 PM peak movements no further traffic is expected to use Westwood Heath Road.
- 5.4 The evidence put forward in this report shows that the ceiling of 425 dwellings on land to the south of Coventry is overly conservation and is not sufficiently detailed. On that basis M-EC feel there is no reason why the Cromwell Lane Site could not be added to the draft local plan site allocations proposed in the Westwood Heath Area, as it would have minimal impact on the surrounding Highway Network and would contribute to WCC's mitigation strategies for the area.

APPENDIX A

M-EC Wellington House Leicester Road Ibstock Leicestershire LE67 6HP



SITE LOCATION PLAN

Project: CROMWELL LANE, COVENTRY

File Ref: 22407

O.S. Grid Ref: 427460, 276625

Postcode: CV4 8AN



APPENDIX B

Warwick District Council Local Plan Examination

Matter 7c: Proposed housing site allocations, safeguarded land and direction for growth (Edge of Coventry)

Written Statement by Warwickshire County Council A46 Link Road

November 2016



1. Purpose of the Statement

The purpose of this statement is to provide the Local Plan Inspector and those attending the Examination in relation to Matter 7c with details of the proposed A46 Link Road. It is not designed to form a rebuttal to any individual representations which have been made in response to the questions posed by the Inspector on Matter 7c.

2. Context

Warwickshire County Council, in conjunction with Coventry City Council and Warwick District Council, is exploring ambitious proposals to ensure that the sub-region and its economy continues to benefit from a high quality transport network which supports access to jobs, improved business to business connectivity and sustainable housing and employment growth. Solihull Metropolitan Borough Council is joining with its Coventry and Warwickshire partners to explore these proposals.

Coventry and Warwickshire has the fastest growing economy within the West Midlands. Infrastructure investment is needed in key corridors such as the A45 and A46 to provide the conditions for businesses to continue to invest in the area. An efficient transport network with sufficient capacity and resilience is key to maintaining and supporting future growth.

The current major investment at Tollbar End near Coventry on the A45/A46 along with committed improvements at Binley (A46/A428) and Stanks near Warwick (A46/A425/A4177) demonstrate the importance of this corridor to the sub-regional economy. There is also an aspiration over time to see the A46 become an 'Expressway' between the M6/M69, M40 and M5.

In response to the need for sustained investment in the corridor Warwickshire County Council, Coventry City Council and Warwick District Council are promoting, and discussing with Solihull Metropolitan Borough Council, a three-stage scheme known as the A46 Link Road. This has in principle support from a number of stakeholders including the Coventry and Warwickshire Local Enterprise Partnership, Highways England, the University of Warwick, Stoneleigh Park and the West Midlands Combined Authority.

3. The Scheme

The A46 Link Road proposal consists of three phases:

Phase 1 of the Link Road will see a major improvement implemented at the Stoneleigh junction on the A46 between Coventry and Kenilworth to form a gyratory layout with two bridge roundabout. This will involve installing a new bridge to the east of the existing junction and realigning Stoneleigh Road and Dalehouse Lane. These revised arrangements will help address existing congestion and safety issues at the junction whilst also improving access to the University of Warwick and Stoneleigh Park. As noted earlier, the scheme will also bring benefits to local communities during the construction of HS2.

Phase 1 of the scheme is currently in the process of being designed, with planned delivery by mid-2019 ahead of the anticipated peak of HS2 construction activity in the Kenilworth and Stoneleigh area around 2019/20. A planning application is due to be submitted for Phase 1 in 2017/18, with public consultation to follow later that year. The majority of the funding required for Phase 1 is due to come through Growth Deal monies which were originally secured to fund a major improvement at the A45/Kenilworth Road junction. The County Council and Coventry City Council are in discussion with DfT to formally agree the reallocation of this funding to deliver the improvements at the A46 Stoneleigh junction. This process is expected to conclude early in 2017. Any balance of funding which is required for the scheme is expected to be met from \$106/CIL monies or locally held capital funds. A contribution from HS2 Ltd may also be sought.

Appendix A shows the emerging design for Phase 1 of the Link Road. This should be treated as work in progress at this stage.

Phase 2 would deliver a step-change in accessibility to the University of Warwick and the surrounding Business Parks and other employment areas through the provision of a new road linking the A46 at Stoneleigh with Westwood Heath via the A429 Kenilworth Road. This infrastructure will support the University of Warwick's emerging revised masterplan along with any longer term housing and employment proposals for the area (including the land identified under Policy DSNEW2 – Site S1 (South of Coventry) within the Local Plan). It will also help reduce the inappropriate use of minor roads within the area (e.g. Crackley Lane) for traffic wishing to access the University and its environs. Discussions are progressing well to secure funding from national/regional transport funds and contributions from other stakeholders. This includes a bid to the Department for Transport which has been made for development funding to progress Phase 2 of the scheme, an announcement on which is due to be made in November 2016 as part of the Chancellor's Autumn Statement.

Phase 2 is at an earlier stage of development than Phase 1, with no firm date for its implementation. Work undertaken to date has focussed on initial optioneering, modelling and feasibility design. The current aspiration is to see Phase 2 delivered around 2022/23. This will be dependent on funding, land acquisition and other statutory processes.

Phase 3 This phase would fall in Solihull Metropolitan Borough Council's area, with a link from Phase 2 of the scheme towards either the A45 or A452. This element of the project is currently at an early exploratory stage. The aim of Phase 3 will be to enhance connectivity between the Coventry and Warwickshire sub-region and the economic opportunities afforded by UK Central in Solihull. It would necessarily be dependent on successful delivery of Phases 1 and 2. Like Phase 2, there is no firm date for the implementation of Phase 3, but the aspiration at present is to see this come forward around 2026 or soon after.

Funding for this element of the project could come from a number of sources, including WMCA Devolution Deal monies, Highways England/Road Investment Strategy and whatever funding mechanisms are put in place to help deliver the Midlands Connect Strategy.

4. Strategic Case

The strategic case for the A46 Link Road project aims to address seven key imperatives:

(i) Improved access to the University of Warwick and Stoneleigh Park

There is an emerging need to improve local and strategic connectivity from the Coventry and Warwickshire sub-region to the University of Warwick and the key employment sites in its vicinity, in order to support the substantial committed and planned growth of this area over the next 10-15 years. Current access is constrained by the need to travel through already congested networks and residential areas within south west Coventry and parts of Warwickshire. A number of important research facilities such as the National Automotive Innovation Centre (NAIC) are located at the University which have strong links to the priority sectors identified within the Coventry and Warwickshire Strategic Economic Plan. The success of the recent South West Coventry Local Pinch Point scheme improvements, particularly at the junction of A429 Kenilworth Road/C32 Stoneleigh Road have put increasing pressure on the A46 at Stoneleigh, which further supports the need to progress Phase 1 of the project in conjunction with the development proposals contained within the Local Plan.

The improvements to the A46 Stoneleigh junction will also support the ongoing delivery of the Stoneleigh Park masterplan through a substantial improvement in access to/from the strategic road network.

(ii) Delivering wider A46 Corridor Growth

Major employment growth is either committed or planned more widely along the A46 corridor, including Fen End, Whitley South, Coventry Airport, Ryton and Ansty. There are also a number of significant housing developments proposed within the Warwick District Local Plan around Kenilworth and parts of south west Coventry, which based on the evidence provided within the County Council's Strategic Transport Assessment will require Phase 1 of the Link Road to be delivered within the Plan period.

The A46 provides the glue which links these various areas together both locally and more widely across the sub-region, providing key business to business connectivity for companies such as Jaguar Land Rover and its supply chain. Within this context, it is vital that key junctions such as Stoneleigh are fit for purpose.

(iii) A45 Corridor Congestion Reduction and Growth

Coventry City Council has recently delivered a comprehensive package of Local Pinch Point capacity improvements at key junctions along and in the vicinity of the A45 corridor. In the case of the A45/A429 Kenilworth Road junction, the Pinch Point improvements were originally only envisaged to provide short term relief, with grade separation of the junction expected to be necessary in the future in order to provide continuing long term congestion and growth benefits to this area of the city and wider sub-region.

The proposed A46 Link Road will reduce the need for any further major improvements to A45/A429 Kenilworth Road for the foreseeable future, as Phases 1 and 2 of the A46 Link Road are expected to deliver similar or greater benefits in terms of congestion reduction and growth to the A45 corridor. This will allow sustainable growth to come forward in future Local Plans in both the city and adjoining area of Warwick District.

(iv) Improved access to HS2 and UK Central

Delivery of the A46 Link Road will provide an opportunity to significantly improve east-west connectivity to/from the Coventry and Warwickshire area, by enabling growth sites improved access to the A46 and the wider strategic road network. Good links with the substantial economic opportunities which will arise from the opening of the HS2 interchange in 2026 and the wider UK Central proposals are vital if the sub-regional economy is to maximise the benefits from these developments. Good connections to Birmingham Airport and the National Exhibition Centre along with other key existing employment sites such as Jaguar Land Rover's plant in Solihull are also important given the interactions these have with similar business activities which take place within Coventry and Warwickshire at Whitley, Gaydon and Fen End.

(v) Delivering the A46 'Expressway'

The Expressway concept promoted through the Government's 'Road Investment Strategy 2015/16 – 2019/20' (RIS1)¹ for certain sections of the trunk road network envisages a motorway standard experience for users, with dual carriageway provision and grade-separated junctions.

Major capital investment in the A46 has taken place over the last 10 years, including improvements at M40 Junction 15 (Longbridge) and A45/A46 Tollbar End/Stivichall. Further works are committed in RIS1 at A46/A428 Binley and A46/B4082 Walsgrave, and at A46/A425/A4177 Stanks as a result of Growth Deal monies and other local funding. These improvements will all contribute towards the delivery of the A46 as an Expressway between the M6/M69, M40 and M5. The proposed improvements to the A46/C32 Stoneleigh junction (Phase 1 of the A46 Link Road) are consistent with the Expressway concept. As such, Highways England is supportive and engaged in this element of the overall scheme.

(vi) Maintaining Network Performance during HS2 Construction

Phase 1 of the A46 Link Road will provide resilience and flexibility to this part of the network during the construction of HS2, thereby helping to maintain the performance of the local and sub-regional economy. Assurances with HS2 Ltd have been secured by the County Council through the Hybrid Bill process to ensure that Phase 1 of the project can progress in parallel with HS2 construction activity in this area.

¹ Department for Transport 'Road Investment Strategy for the 2015-16 – 2019/20 Road Period' (March 2015) https://www.gov.uk/government/uploads/system/uploads/attachment data/file/408514/ris-for-2015-16-road-period-web-version.pdf

(vii) Delivering Strategic Resilience to the Midlands Motorway Hub

There is an emerging recognition of the need to look at the medium/long term interventions which will be required to support the strategic resilience of the Midlands Motorway Hub (M5/M6/M42). The recent Midlands Connect 'Picking up the Pace' report and emerging Midlands Connect Strategy refers to the role which a substantially improved A5 and A46 could play in achieving this. Delivery of Phases 1, 2 and 3 of the A46 Link Road will provide a significant new east-west route which could potentially help complement and provide resilience to the M40, M42 and M6 within the Coventry/Warwickshire/Solihull area.

5. Governance

It is vital for a project of this scale and nature to be underpinned by clear governance to oversee the development and delivery of the scheme and make key decisions in a timely fashion.

With this in mind, a Strategic Programme Board for the A46 Link Road project has been established with officer representation at a senior level from Warwickshire County Council, Coventry City Council and Warwick District Council. Solihull Metropolitan Borough Council is also attending these meetings with a watching brief. A Senior Member Board is in the process of being set up in line with the wider governance arrangements for the project.

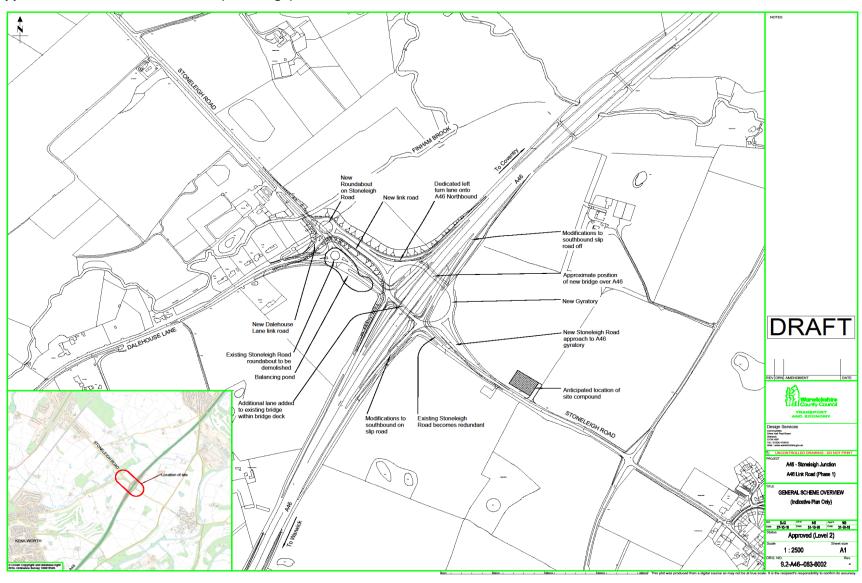
Adrian Hart

Team Leader – Strategic Transport Policy and Projects

Warwickshire County Council

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Appendix A - A46 Link Road Phase 1 (Stoneleigh)



APPENDIX C

Calculation Reference: AUDIT-350901-160822-0815

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL

Category : A - HOUSES PRIVATELY OWNED

VEHIČLES

Selected regions and areas:

SOUTH EAST ΕX **ESSEX** 1 days SC **SURREY** 1 days SOUTH WEST 03 DC DORSET 1 days **EAST ANGLIA** 04 **SUFFOLK** 1 days 06 WEST MIDLANDS SH **SHROPSHIRE** 1 days YORKSHIRE & NORTH LINCOLNSHIRE 07 SY SOUTH YORKSHIRE 1 days **NORTH WEST** 80 СН CHESHIRE 2 days **GREATER MANCHESTER** 1 days GM MS **MERSEYSIDE** 1 days 09 NORTH **CUMBRIA** CB 1 days 10 WALES PS **POWYS** 1 days **SCOTLAND** 11 EAST AYRSHIRE 1 days

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

Filtering Stage 2 selection:

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

Parameter: Number of dwellings Actual Range: 15 to 237 (units:) Range Selected by User: 15 to 400 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/08 to 12/11/15

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

Selected survey days:

Monday 2 days
Tuesday 2 days
Wednesday 4 days
Thursday 4 days
Friday 1 days

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

Selected survey types:

Manual count 13 days
Directional ATC Count 0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre) 5 Edge of Town 8

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

Selected Location Sub Categories:

Residential Zone 12 No Sub Category 1

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

Filtering Stage 3 selection:

Use Class:

C3 13 days

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

Population within 1 mile:

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

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

Population within 5 miles:

5,001 to 25,000	1 days
50,001 to 75,000	1 days
75,001 to 100,000	4 days
100,001 to 125,000	2 days
125,001 to 250,000	1 days
250,001 to 500,000	3 days
500,001 or More	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	4 days
1.1 to 1.5	9 days

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

Travel Plan:

No 13 days

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

LIST OF SITES relevant to selection parameters

1 CB-03-A-03 SEMI DETACHED CUMBRIA

HAWKSHEAD AVENUE

WORKINGTON Edge of Town Residential Zone

Total Number of dwellings: 40

Survey date: THURSDAY 20/11/08 Survey Type: MANUAL

2 CH-03-A-05 DETACHED CHESHIRE

SYDNEY ROAD SYDNEY CREWE Edge of Town Residential Zone

Total Number of dwellings: 17

Survey date: TUESDAY 14/10/08 Survey Type: MANUAL

3 CH-03-A-09 TERRACED HOUSES CHESHIRE

GREYSTOKE ROAD
HURDSFIELD
MACCLESFIELD
Edge of Town
Residential Zone

Total Number of dwellings: 24

Survey date: MONDAY 24/11/14 Survey Type: MANUAL

4 DC-03-A-01 DETACHED DORSET

ISAACS CLOSE

POOLE

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings: 51

Survey date: WEDNESDAY 16/07/08 Survey Type: MANUAL

5 EA-03-A-01 DETATCHED EAST AYRSHIRE

TALISKER AVENUE

KILMARNOCK Edge of Town Residential Zone

Total Number of dwellings: 39

Survey date: THURSDAY 05/06/08 Survey Type: MANUAL

6 EX-03-A-01 SEMI-DET. ESSEX

MILTON ROAD CORRINGHAM STANFORD-LE-HOPE Edge of Town Residential Zone

Total Number of dwellings: 237

Survey date: TUESDAY 13/05/08 Survey Type: MANUAL GM-03-A-10 DETACHED/SEMI GREATER MANCHESTER

BUTT HILL DRIVE PRESTWICH MANCHESTER Edge of Town Residential Zone

Total Number of dwellings: 29

Survey date: WEDNESDAY 12/10/11 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8 MS-03-A-03 DETACHED MERSEYSIDE

BEMPTON ROAD OTTERSPOOL LIVERPOOL

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings: 15

Survey date: FRIDAY 21/06/13 Survey Type: MANUAL

9 PS-03-A-02 DETACHED/SEMI-DETACHED POWYS

GUNROG ROAD

WELSHPOOL

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings: 28

Survey date: MONDAY 11/05/15 Survey Type: MANUAL

10 SC-03-A-04 DETACHED & TERRACED SURREY

HIGH ROAD

BYFLEET Edge of Town Residential Zone

Total Number of dwellings: 71

Survey date: THURSDAY 23/01/14 Survey Type: MANUAL

11 SF-03-A-05 DETACHED HOUSES SUFFOLK

VALE LANE

BURY ST EDMUNDS Edge of Town Residential Zone

Total Number of dwellings: 18

Survey date: WEDNESDAY 09/09/15 Survey Type: MANUAL

12 SH-03-A-04 TERRACED SHROPSHIRE

ST MICHAEL'S STREET

SHREWSBURY

Suburban Area (PPS6 Out of Centre)

No Sub Category

Total Number of dwellings: 108

Survey date: THURSDAY 11/06/09 Survey Type: MANUAL 13 SY-03-A-01 SEMI DETACHED HOUSES SOUTH YORKSHIRE

A19 BENTLEY ROAD BENTLEY RISE DONCASTER

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings: 54

Survey date: WEDNESDAY 18/09/13 Survey Type: MANUAL

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
CB-03-A-04	HOUSING
CH-03-A-02	FLATS
CH-03-A-06	BUNGALOWS
DC-03-A-08	BUNGALOWS
DV-03-A-01	HOUSING
DV-03-A-02	BUNGALOWS
DV-03-A-03	HOUSING
ES-03-A-02	BUNGALOWS
FA-03-A-01	HOUSING

MANUALLY DESELECTED SITES (Cont.)

Site Ref	Reason for Deselection
FA-03-A-02	BUNGALOWS
HC-03-A-17	FLATS
LN-03-A-03	HOUSING
NF-03-A-01	BUNGALOWS
NF-03-A-02	FLATS
NY-03-A-06	BUNGALOWS
NY-03-A-07	HOUSING
NY-03-A-08	HOUSING
NY-03-A-09	BUNGALOWS
NY-03-A-10	FLATS
NY-03-A-11	BUNGALOWS
PK-03-A-01	BUNGALOWS
SH-03-A-05	HOUSING
SH-03-A-06	BUNGALOWS
SM-03-A-01	HOUSING
TW-03-A-02	HOUSING
WK-03-A-02	BUNGALOWS
WS-03-A-04	BUNGALOWS
WS-03-A-05	FLATS

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

	ARRIVALS		[DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	13	56	0.090	13	56	0.334	13	56	0.424
08:00 - 09:00	13	56	0.183	13	56	0.464	13	56	0.647
09:00 - 10:00	13	56	0.149	13	56	0.189	13	56	0.338
10:00 - 11:00	13	56	0.141	13	56	0.186	13	56	0.327
11:00 - 12:00	13	56	0.148	13	56	0.159	13	56	0.307
12:00 - 13:00	13	56	0.176	13	56	0.166	13	56	0.342
13:00 - 14:00	13	56	0.190	13	56	0.168	13	56	0.358
14:00 - 15:00	13	56	0.175	13	56	0.175	13	56	0.350
15:00 - 16:00	13	56	0.338	13	56	0.239	13	56	0.577
16:00 - 17:00	13	56	0.321	13	56	0.186	13	56	0.507
17:00 - 18:00	13	56	0.424	13	56	0.226	13	56	0.650
18:00 - 19:00	13	56	0.265	13	56	0.160	13	56	0.425
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00	<u> </u>		<u> </u>						·
23:00 - 24:00									<u> </u>
Total Rates:									

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

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

Parameter summary

Trip rate parameter range selected: 15 - 237 (units:)
Survey date date range: 01/01/08 - 12/11/15

Number of weekdays (Monday-Friday): 13
Number of Saturdays: 0
Number of Sundays: 0
Surveys automatically removed from selection: 1
Surveys manually removed from selection: 28

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

Calculation factor: 1 DWELLS BOLD print indicates peak (busiest) period

	ARRIVALS		[DEPARTURES	ò	TOTALS			
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	13	56	0.004	13	56	0.011	13	56	0.015
08:00 - 09:00	13	56	0.000	13	56	0.019	13	56	0.019
09:00 - 10:00	13	56	0.001	13	56	0.003	13	56	0.004
10:00 - 11:00	13	56	0.001	13	56	0.004	13	56	0.005
11:00 - 12:00	13	56	0.005	13	56	0.005	13	56	0.010
12:00 - 13:00	13	56	0.007	13	56	0.003	13	56	0.010
13:00 - 14:00	13	56	0.004	13	56	0.005	13	56	0.009
14:00 - 15:00	13	56	0.003	13	56	0.003	13	56	0.006
15:00 - 16:00	13	56	0.016	13	56	0.010	13	56	0.026
16:00 - 17:00	13	56	0.010	13	56	0.003	13	56	0.013
17:00 - 18:00	13	56	0.015	13	56	0.012	13	56	0.027
18:00 - 19:00	13	56	0.019	13	56	0.010	13	56	0.029
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.085			0.088			0.173

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

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

Parameter summary

Trip rate parameter range selected: 15 - 237 (units:) Survey date date range: 01/01/08 - 12/11/15

Number of weekdays (Monday-Friday): 13
Number of Saturdays: 0
Number of Sundays: 0
Surveys automatically removed from selection: 1
Surveys manually removed from selection: 28

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

APPENDIX D



CROMWELL LANE, BURTON GREEN TRAFFIC GENERATION

Proposed Development Traffic Generation

Proposed Development & Trip Rates

Proposed No of Dwellings: 130

The resultant trip rates and traffic generation are presented in the following table:

Land -Use: C3 Residential (Private)	AM Peak			PM Peak			
Land -Ose. C5 Residential (Private)	ARR	DEP	2-WAY	ARR	DEP	2-WAY	
TRICS 7 Flows	0.183	0.464	0.647	0.424	0.226	0.650	
Trip Generation	24	60	84	55	29	84	

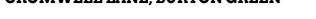
*Internal Lin

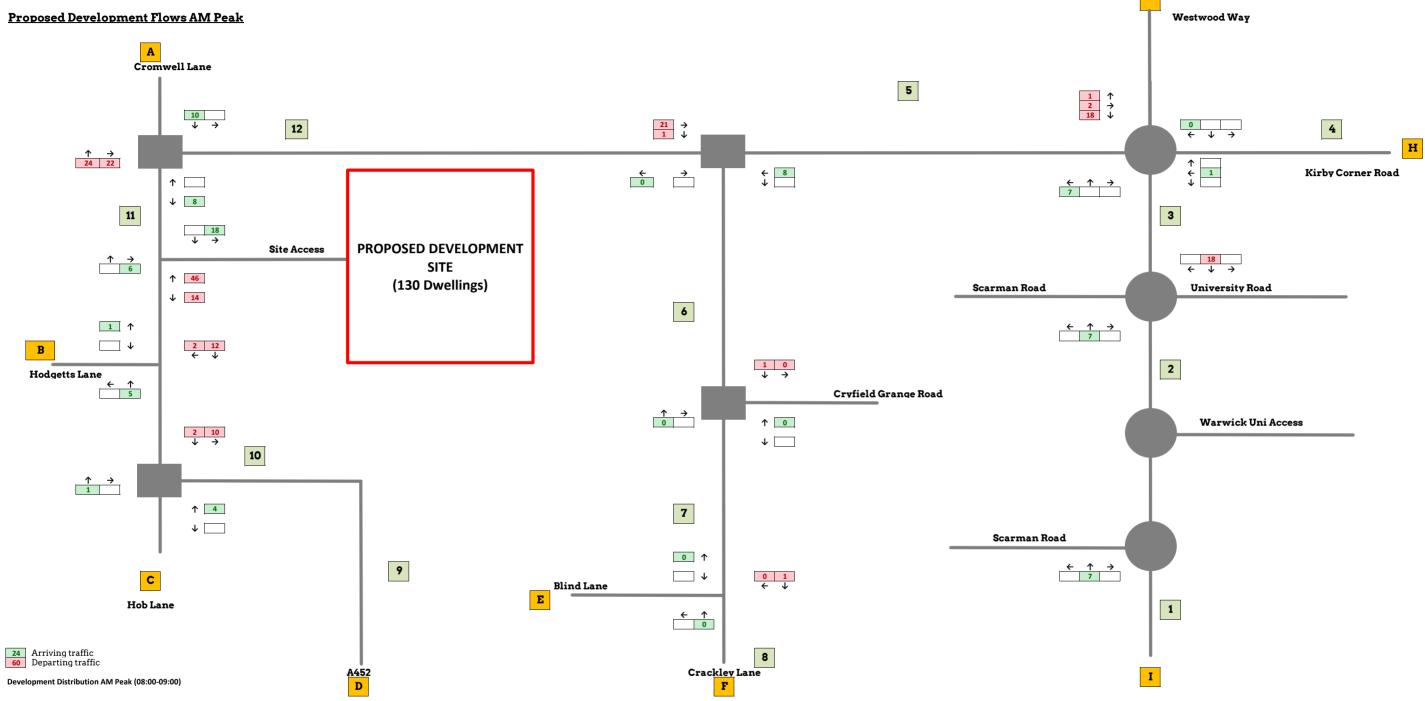
area of workplace: pre-2009 local authority: district / unitary (2004 lo A B C D E T G M I TOTAL

Cromwell Hedgets Lane Lane Hob Lane A462 Blind Creckley Westwood Kirby Gibbet Corner Road Way Road Will Road ALL TOTAL. ALL | Road | 100% | 60% | 20% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 10 77 8 3 25 11 65 95 34 14 6 10% 9 6 2 2 25 6 5 12 1 1 1 25 0.1997 - Covertry 040
001998 - Covertry 041
001999 - Covertry 042
001999 - Covertry 043
001999 - Covertry 044
001999 - Covertry 045
001999 - Covertry 045 null 02089 - Solibul 009 02091 : Solibul 011 02092 : Solibul 012 02096 : Solibul 015 02097 : Solibul 017 20% 10 Nuneaton and Bedworth North Warwickshire 70% 12 15% 17 10 3 100% 10 100% 80% 100% 9 6 8 20% 2 100% 6 6 6 1 1 5 5 5 5 5 4 4 4 4 4 3 3 3 1 1 3 1 1 Wolverhamnton North West I einestershire Lichfield Bromsarove 4 70% 1 4 i 1 3 2 3 80% 100% 10% 100% 80% 100% 80% 100% 100% 100% Ameorth
Norcester
Cambridge
South Cambridgeshire
Daconum
Richmond upon Thames Carriff Carrien Southwark Telford and Wrekin Reading 1 0 0.0% 1 0 0.0% 1 0 0.0% 3,023 2,244 100% 128 98 95.7% 861 83 84 364 0 42 28 77 629 2,166 39.7% 3.8% 3.9% 16.8% 0.0% 1.9% 11% 3.6% 29.0% 100.0%



PROPOSED RESIDENTIAL DEVELOPMENT CROMWELL LANE, BURTON GREEN

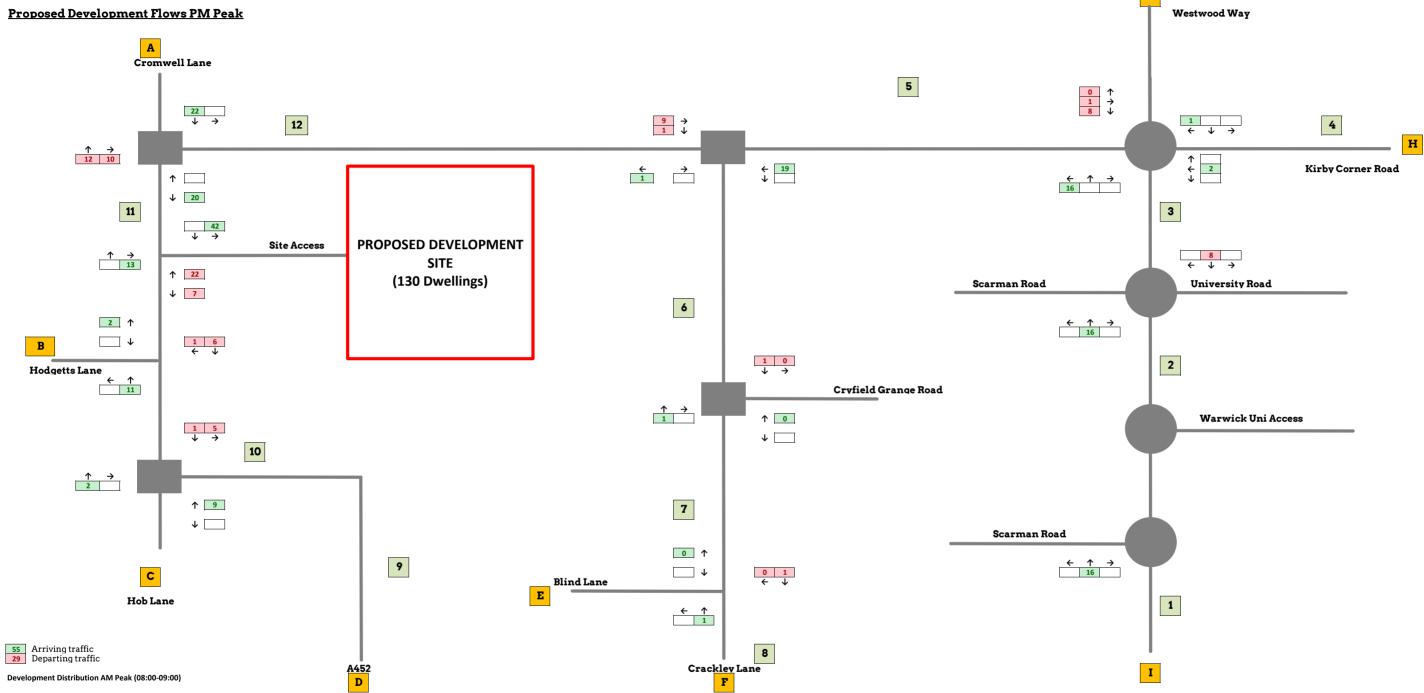




		% DIST	ARR	DEP	TOTAL	
•	Α	39.7%	10	24	34	
	В	3.9%	1	2	3	
	С	3.9%	1	2	3	
	D	16.8%	4	10	14	
	E	0.0%	0	0	0	
	F	1.9%	0	1	1	
	G	1.1%	0	1	1	
	н	3.6%	1	2	3	
	- 1	29.0%	7	18	25	
	ALL	100.09/	24	60	0.4	



PROPOSED RESIDENTIAL DEVELOPMENT CROMWELL LANE, BURTON GREEN



	76 DIST	ANN	DEP	IUIAL	
Α	39.7%	22	12	34	
В	3.9%	2	1	3	
С	3.9%	2	1	3	
D	16.8%	9	5	14	
E	0.0%	0	0	0	
F	1.9%	1	1	2	
G	1.1%	1	0	1	
Н	3.6%	2	1	3	
- 1	29.0%	16	8	24	
ALL	100.0%	55	29	84	
*Rounding has occurred					

Civil Engineering

Drainage

Flood Risk

Transport

Highways

Structures

Geotechnics

Contamination

Sustainability

Environment

Services

Surveying



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