



## Rolleston on Dove - Former College Playing Fields

Transport Assessment

Report





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## Contents

1	INTRODUCTION & BACKGROUND.....	1
	Structure of the TA.....	1
2	POLICY.....	2
	Introduction.....	2
	National policy.....	2
	Local Policy.....	3
3	EXISTING SITE.....	4
	Site Location.....	4
	Local Amenities.....	4
	Public Transport.....	5
	Cycling and Walking.....	7
	Local Highway Network.....	7
	Junction Modelling Results.....	8
	Accidents & Safety.....	13
4	PROPOSED DEVELOPMENT.....	16
	Introduction.....	16
	Trip Rates.....	17
	Trip Generation.....	17
	Trip Distribution & Assignment.....	18
	Impact on Local Highway Network.....	18
5	SUMMARY & CONCLUSIONS.....	24
	Summary.....	24
	Conclusion.....	24

## Tables and Figures

Table 3-1	Services from nearest bus stop on Station Road.....	5
Table 3-2	Services from Tutbury and Hatton Rail Station.....	6
Table 3-3	Services from Burton upon Trent Rail Station.....	6
Table 3-4	AM Site Access 2012 PICADY Results.....	8
Table 3-5	PM Site Access 2012 PICADY Results.....	9
Table 3-6	AM Site Access 2016 PICADY Results.....	9
Table 3-7	PM Site Access 2016 PICADY Results.....	9
Table 3-8	AM Station Road / School Lane 2012 PICADY Results.....	9
Table 3-9	PM Station Road / School Lane 2012 PICADY Results.....	9
Table 3-10	AM Station Road / School Lane 2016 PICADY Results.....	10
Table 3-11	PM Station Road / School Lane 2016 PICADY Results.....	10
Table 3-12	AM Station Road / Knowles Hill 2012 PICADY Results.....	10
Table 3-13	PM Station Road / Knowles Hill 2012 PICADY Results.....	10
Table 3-14	AM Station Road / Knowles Hill 2016 PICADY Results.....	10
Table 3-15	PM Station Road / Knowles Hill 2016 PICADY Results.....	11
Table 3-16	AM Harehedge Lane / Bitham Lane / Rolleston Road 2012 PICADY Results.....	11

Table 3-17 PM Harehedge Lane / Bitham Lane / Rolleston Road 2012 PICADY Results .....	11
Table 3-18 AM Harehedge Lane / Bitham Lane / Rolleston Road 2016 PICADY Results .....	11
Table 3-19 PM Harehedge Lane / Bitham Lane / Rolleston Road 2016 PICADY Results .....	12
Table 3-20 AM Dovecliff Road / Claymills Road / Church Road 2012 PICADY Results .....	12
Table 3-21 PM Station Dovecliff Road / Claymills Road / Church Road 2012 PICADY Results .....	12
Table 3-22 AM Dovecliff Road / Claymills Road / Church Road 2016 PICADY Results .....	13
Table 3-23 PM Dovecliff Road / Claymills Road / Church Road 2016 PICADY Results .....	13
Table 3-24 Station Road Accidents .....	14
Table 4-1 Breakdown of Dwelling Types .....	16
Table 4-2 Saturn Model Residential Vehicular Trip Rates .....	17
Table 4-3 Vehicular Trip Generation for 120 dwelling development .....	17
Table 4-4 AM Site Access 2012 + Development PICADY Results .....	18
Table 4-5 PM Site Access 2012 + Development PICADY Results .....	18
Table 4-6 AM Site Access 2016 + Development PICADY Results .....	18
Table 4-7 PM Site Access 2016 + Development PICADY Results .....	19
Table 4-8 AM Station Road / School Lane 2012 + Development PICADY Results .....	19
Table 4-9 PM Station Road / School Lane 2012 + Development PICADY Results .....	19
Table 4-10 AM Station Road / School Lane 2016 + Development PICADY Results .....	19
Table 4-11 PM Station Road / School Lane 2016 + Development PICADY Results .....	19
Table 4-12 AM Station Road / Knowles Hill 2012 + Development PICADY Results .....	20
Table 4-13 PM Station Road / Knowles Hill 2012 + Development PICADY Results .....	20
Table 4-14 AM Station Road / Knowles Hill 2016 + Development PICADY Results .....	20
Table 4-15 PM Station Road / Knowles Hill 2016 + Development PICADY Results .....	20
Table 4-16 AM Harehedge Lane / Bitham Lane / Rolleston Road 2012 + Development PICADY Results .....	21
Table 4-17 PM Harehedge Lane / Bitham Lane / Rolleston Road 2012 + Development PICADY Results .....	21
Table 4-18 AM Harehedge Lane / Bitham Lane / Rolleston Road 2016 + Development PICADY Results .....	21
Table 4-19 PM Harehedge Lane / Bitham Lane / Rolleston Road 2016 + Development PICADY Results .....	22
Table 4-20 AM Dovecliff Road / Claymills Road / Church Road 2012 + Development PICADY Results .....	22
Table 4-21 PM Station Dovecliff Road / Claymills Road / Church Road 2012 + Development PICADY Results .....	22
Table 4-22 AM Dovecliff Road / Claymills Road / Church Road 2016 + Development PICADY Results .....	23
Table 4-23 PM Dovecliff Road / Claymills Road / Church Road 2016 + Development PICADY Results .....	23
Figure 3-1 Site Location .....	4
Figure 3-2 Bus Stop Locations and Walking Distances .....	6
Figure 3-3 Accident Data Plot .....	14
Figure 4-1 Proposed Site Layout .....	16

## Appendices

- APPENDIX A Trip Distribution and Assignment
- APPENDIX B Saturn Model Outputs
- APPENDIX C Clay Mills Flows
- APPENDIX D PICADY Model Outputs
- APPENDIX E Accident Data
- APPENDIX F TEMPRO Outputs
- APPENDIX G Traffic Survey Results



# 1 Introduction & Background

- 1.1 JMP has been commissioned by Peter Diffey Associates Ltd to prepare a Transport Assessment and Travel Plan on behalf of Burton and South Derbyshire College for the proposed redevelopment of playing fields into 120 residential dwellings in the village of Rolleston on Dove.
- 1.2 The development is a logical extension of the existing residential development, which occupies the site of the former college buildings to the north of the development site.
- 1.3 Scoping discussions have been undertaken with Geoff Evenson of Staffordshire County Council (SCC), the Highway Authority for the district of East Staffordshire. It was recommended that the development impact should be modelled through the use of SCC's Saturn strategic model of the Burton upon Trent area. JMP has adopted this approach to the modelling work undertaken and Saturn modelling was undertaken by Jon Jarvis of SCC on JMPs behalf.
- 1.4 The Highways Agency has also confirmed that the Saturn model approach is acceptable for the assessment of the A38 Clay Mills Junction, and model flows were provided to the Highways Agency for consideration.
- 1.5 Further junctions within Rolleston on Dove, but not contained within the SCC Saturn model have also been considered, as agreed with SCC.

## Structure of the TA

- 1.6 The structure and scope of the TA is set out below
  - Chapter 2 provides a review of the policy context of the development, setting out the relevant national, regional and local transportation and planning policies;
  - Chapter 3 provides a description of the location and characteristics of the site and provides details of the current level of sustainable transport provision in the site locale;
  - Chapter 4 provides an introduction to the proposed development and estimates the likely trip generation of the development by various modes of transport. This chapter also contains details on the likely distribution of those trips onto the highway network in the vicinity of the site. An assessment of the suitability of the sustainable transport networks when the trips from the proposed development are added is also included; and
  - Chapter 5 provides a summary and conclusion to the analysis which has been undertaken as part of the Transport Assessment.

## 2 Policy

### Introduction

- 2.1 JMP has undertaken a review of the key transport and planning policy documents at a national, regional and local level. A commentary of these documents and relevant policies are provided below.

### National policy

#### Background

- 2.2 The current agenda for providing transport access is moving away from one of providing significant new highway capacity. Instead, policies have been adopted and progressively confirmed from the 1998 Transport White Paper onwards that seek to encourage more sustainable modes than the private car. The recently published National Planning Policy Framework reaffirms this position.

#### National Planning Policy Framework

- 2.3 The National Planning Policy Framework was published and came into effect on March 27<sup>th</sup> 2012. The document constitutes guidance for local planning authorities and decision takers both in drawing up plans and as a material consideration in determining planning applications. The document sets out the Government's planning policies for England and how these are expected to be applied. The transport policies within the document supersede previous planning policies and guidance including PPG13.
- 2.4 The document reaffirms the status of local development plans as the starting point for decision making.
- 2.5 The document states that "all developments that generate significant amounts of movement should be supported by a Transport Assessment or a Travel Plan". Planning decisions should take account of:
- Whether the opportunities for sustainable travel have been taken up;
  - If safe and sustainable access to the site can be achieved for all people; and
  - If any significant impacts of the development can be cost effectively limited.
- 2.6 The document states that development should only be prevented or refused on transport grounds where the residual cumulative impacts are severe.

#### Transport White Paper

- 2.7 'Creating Growth, Cutting Carbon: Making Sustainable Local Transport Happen', the Government's White Paper on the future of transport was published in January 2011. The White Paper actively promotes the Government's commitment to a future of building economic growth and a low carbon transport system in the UK.
- 2.8 The document stresses the importance of reducing congestion and promoting sustainable transport to create and develop active and healthy lifestyles and communities. The paper identifies that it is the role of local authorities, communities, companies, employees and individuals to actively engage in identifying transport needs and transport choices.

## Department for Transport Guidance

### *Guidance on Transport Assessment (GTA)*

- 2.9 The Guidance on Transport Assessment (GTA), published in March 2007, is designed to assist in determining if a Transport Assessment is required, and the level and scope that the assessment should cover. It also provides guidance on the nature of the data that is required when undertaking a Transport Assessment or Transport Statement for a site.
- 2.10 This document has been prepared as a Transport Assessment, within an agreed scope, in order to meet the requirements of the guidance.

### *Smarter Choices*

- 2.11 In July 2004 the DfT published the “Smarter Choices – Changing the Way We Travel” report. This report has further reinforced the stature of soft factors within the overall context of transport planning. These soft factors encompass workplace and school travel plans, as well as other initiatives such as car sharing schemes, car clubs, personalised journey planning, teleconferencing, information and marketing, and home shopping.

## Local Policy

### Staffordshire County Council

#### *Staffordshire LTP3*

- 2.12 SCC developed their third Local Transport Plan in September 2010, which covers the period 2011 to 2026. The plan focuses on providing a transport system which supports the region’s economy and provides access to services and jobs in a sustainable way.

### East Staffordshire District Council

#### *Local Development Framework*

- 2.13 The most recent East Staffordshire Borough Council Local Development Framework (LDF) was introduced in June 2010. The plan’s aims and objectives are to ensure that East Staffordshire is a “leading sub-regional business location, with a growing diversified economy that succeeds in a step change in the boroughs housing and employment mix”. The plan emphasises the need to work with the private sector to ensure that new developments are both sustainable and of high design.

#### *Saved Local Plan*

- 2.14 The Borough Council will encourage the use of more sustainable modes of transport by imposing maximum car parking levels for proposed developments
- 2.15 For residential developments, such as the development in question here, the maximum parking standards are:
- 1 Bedroom dwelling – 1 space + 1 space per 3 dwellings for visitors;
  - 2 or 3 Bedroom dwelling – 2 spaces; and
  - 4 or more Bedrooms – 3 spaces.

### 3 Existing Site

#### Site Location

- 3.1 The proposed development is located in Rolleston on Dove is a village situated approximately 3 miles to the North West of Burton-upon-Trent. The proposed development is to be situated on playing fields of around 6ha owned by Burton and South Derbyshire College. Figure 3-1 shows the location of the proposed development.
- 3.2 Rolleston on Dove is located within the District of East Staffordshire.

**Figure 3-1 Site Location**



#### Local Amenities

- 3.3 The area enjoys good public amenities with three primary schools and one secondary school all within 1.5miles of the development. The Queens Hospital with a 24hours Accident and Emergency department and Maternity suite is approximately 3 miles away and there are several doctors and dentists surgeries accessible by public transport.
- 3.4 The area enjoys good public amenities. John of Rolleston Primary School is located within 1km of the site and as such is within easy walking distance of the proposed development which is beneficial in encouraging parents to walk their children to school.
- 3.5 The De Ferrers Academy is also situated in Burton and is also just over 2km from the site.
- 3.6 The Queens Hospital which includes a 24hours Accident and Emergency department and Maternity suite, is situated approximately 5km away from the proposed development. Although not

in Rolleston itself, there are also several doctors and dentists surgeries within the areas of Horninglow and Stretton, approximately 2.5km from the site. The Dove River Practice and The Tutbury Practice are both located in Tutbury and although not accessible on foot, Tutbury is accessible by the V1 bus service. The nearest pharmacy is located in Stretton which again is not within walking distance of the site however it is also accessible via the V1 service which connects Stretton, Tutbury, Hilton, Etwall, Willington and Repton with Derby city centre and Burton on Trent.

3.7 The village of Rolleston provides a number of services and facilities for residents, including:

- A general store;
- A newsagents (within which the post office is situated);
- Two butchers;
- Two pubs;
- A post box on Station Road, close to the development site;
- A hotel;
- Two churches;
- Village club;
- Other facilities include a cricket club and scout hut. The Craythorne Golf Club is also located approximately 5 minutes walk or drive from the development site.

## Public Transport

### Bus

3.8 The site is served by an hourly bus service operating between Derby and Burton, the details of which are shown in Table 3.1 below.

**Table 3-1 Services from nearest bus stop on Station Road**

Service	Route	Operator	Frequency	First Bus	Last Bus
V1 (The Villager)	Derby-Hilton-Stretton-Burton	Trent Barton	Hourly (Every two hours on Sundays)	06:35	21:43

3.9 The Villager (V1) bus stops adjacent to the Needwood Avenue / Station Road junction. The service runs between Derby and Burton on Trent, calling at Hilton, Hatton, Tutbury, Rolleston and Stretton on roughly an hourly timetable during weekdays and Saturdays, and a two hourly timetable on Sundays.

3.10 Figure 3-2 shows the location of nearby bus stops in the vicinity of the site in relation to a 400 metre and 800 metre buffer around the development site. It can be seen that there are several bus stops located within 400 metres of the development.

**Figure 3-2 Bus Stop Locations and Walking Distances**



**Rail**

3.11 There are two rail stations less than 5km of the site, which is within the IHT recommended cycling distance. These stations are Tutbury and Hatton and Burton-on-Trent. Tutbury and Hatton is the nearest of the stations (approximately 3.8km) and Burton-on-Trent is approximately 4.5km from the site. The tables below detail the train services that serve each of the two stations. Both of these stations are accessible by the V1 bus service.

**Table 3-2 Services from Tutbury and Hatton Rail Station**

Destination	Operator	Frequency
Derby	East Midlands Trains	Hourly
Crewe	East Midlands Trains	Hourly
Stoke on Trent	East Midlands Trains	Hourly

**Table 3-3 Services from Burton upon Trent Rail Station**

Destination	Operator	Frequency
Birmingham New Street	Cross Country Trains	Every 30 minutes
Nottingham	Cross Country Trains	Every 30 minutes
Derby	Cross Country Trains	Every 20 -25 minutes
Crewe (with changes at Derby or Birmingham New Street)	Cross country Trains	Every 25-30 minutes

Cardiff	Cross Country Trains	Every 30 minutes/Direct services hourly
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## Cycling and Walking

- 3.12 The residential area adjacent to the site provides a welcoming and attractive environment for pedestrians. Footpaths are of good width and well lit. The route to the nearest bus stops, pass through this residential area along Forest School Street and Garrett Square.
- 3.13 To the east of the development, access onto Station Road will also be possible through a pedestrian access through Fairfield Avenue. Station Road has a footpath which runs on the nearside to the development.
- 3.14 The nearest National Cycle Route is that of Route 54 which lies to the east of the site, near Stretton. National Route 54 is open between Walsall and Derby via Lichfield and Burton upon Trent and forms part of the West Midlands Cycle Route.
- 3.15 There are no shared cycleways / footways in the vicinity of the site however the roads have fairly light traffic and are suitable for cyclists.

## Local Highway Network

- 3.16 Station Road is subject to a 30mph speed limit and has traffic calming in the form of speed cushions along Station Road. On Station Road to the west is Rolleston village centre, and to the east through Dovecliff Road, is Burton on Trent, via the Clay Mills junction which also provides access to the A38 trunk road.
- 3.17 SCC has ownership of a Saturn model of Burton upon Trent and the surrounding area. SCC has modelled this development using the Saturn model and provided background flows for relevant junctions. The model has assessment years of 2016 and 2026. Upon examination of the Saturn modelled flows, SCC requested that the development impact for two junctions be modelled using the Saturn flows provided. Background plus committed development and development flows were provided to JMP by SCC for assessment for the following two junctions. These are:
- Dovecliff Road / Claymills Road / Church Road priority junction
  - Harehedge Lane / Beacon Road / Rolleston Road priority junction
- In addition to these junctions, SCC has advised JMP that the following junctions within Rolleston, but outside the scope of the Saturn model will also require assessment:
- Site Access (Needwood Avenue) / Station Road Junction
  - Station Road / School Lane Junction
  - Station Road / Knowles Hill Junction
- 3.18 JMP commissioned traffic surveys to obtain background traffic flows for these junctions. These surveys were undertaken on Tuesday, March 6th 2012.
- 3.19 All of the above junctions are priority T junctions, apart from the Harehedge Lane / Beacon Road / Rolleston Road which is a staggered cross roads. The junctions will be assessed with TRL PICADY modelling software.

- 3.20 In addition to this assessment, traffic flows for the nearest strategic road network junction, Clay Mills have also been assessed using SCC's Saturn traffic model. Traffic flows from this model were provided to the Highways Agency by JMP, and it was agreed that due to the low volume of flows a detailed assessment of this junction was not required.

#### **Modelling Years and Growth Factors**

- 3.21 For the purposes of the Transport Assessment, assessment years of 2012 and 2016 have been selected. The future year of 2016 accords with the Saturn model.

#### **Assessment Years**

- 3.22 SCC has agreed that the assessment years will be 2012 and 2016, to align with the Saturn model year.

#### **TEMPRO Growth Factors**

- 3.23 For growing the 2007 base year Saturn Model flows to 2012, the following TEMPRO rates were used:

- 2007 – 2012 AM: 1.016
- 2007 – 2012 PM: 1.025

For growing 2012 observed flows to 2016 future year flows the following factors were used:

- 2012 – 2016 AM: 1.044
- 2012 – 2016 PM: 1.047

## **Junction Modelling Results**

### **Site Access: Needwood Avenue / Station Road Junction**

- 3.24 Vehicular access to the site from the main highway network will be gained through Needwood Avenue and Forest School Street, which form part of a development built by Westbury Homes in the last decade. It was the intention that the playing fields to the south of this development would later be developed and accessed accordingly.
- 3.25 Access to Needwood Avenue is gained from Station Road. There is good visibility in both directions onto Station Road. The suitability of the residential access was agreed as part of the outline planning application for the existing development and has the required visibility splay of 4.5 by 90 metres.
- 3.26 The site access currently operates with no queuing or delay as the modelling results demonstrate.

#### **2012 Results**

**Table 3-4 AM Site Access 2012 PICADY Results**

	<b>RFC</b>	<b>Queue (PCU)</b>	<b>Delay (minutes per vehicle)</b>
<b>Needwood Avenue</b>	0.056	0.06	0.15
<b>Station Road</b>	0.019	0.02	0.10



**Table 3-5 PM Site Access 2012 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Needwood Avenue	0.012	0.01	0.13
Station Road	0.018	0.02	0.11

*2016 Results***Table 3-6 AM Site Access 2016 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Needwood Avenue	0.059	0.06	0.16
Station Road	0.019	0.02	0.10

**Table 3-7 PM Site Access 2016 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Needwood Avenue	0.012	0.01	0.13
Station Road	0.018	0.02	0.11

**Station Road / School Lane Junction**

- 3.27 The junction of Station Road / School Lane currently operates with little queuing as the PICADY outputs below show. School Lane is a fairly narrow residential road, which becomes Beacon Road to the south, which joins to Knowles Hill.

*2012 Results***Table 3-8 AM Station Road / School Lane 2012 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
School Lane	0.208	0.26	0.19
Station Road	0.032	0.04	0.11

**Table 3-9 PM Station Road / School Lane 2012 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
School Lane	0.200	0.25	0.19
Station Road	0.015	0.02	0.11

*2016 Results*

**Table 3-10 AM Station Road / School Lane 2016 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
School Lane	0.194	0.24	0.19
Station Road	0.034	0.05	0.11

**Table 3-11 PM Station Road / School Lane 2016 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
School Lane	0.146	0.17	0.18
Station Road	0.015	0.02	0.11

**Station Road / Knowles Hill Junction**

- 3.28 The PICADY modelling for this junction indicates that the junction currently operates within capacity and will continue to operate within capacity in 2016.

*2012 Results*

**Table 3-12 AM Station Road / Knowles Hill 2012 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
School Lane	0.294	0.41	0.19
Station Road	0.264	0.46	0.14

**Table 3-13 PM Station Road / Knowles Hill 2012 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
School Lane	0.206	0.26	0.16
Station Road	0.160	0.23	0.12

*2016 Results*

**Table 3-14 AM Station Road / Knowles Hill 2016 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
School Lane	0.309	0.44	0.20

Station Road	0.279	0.50	0.14
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**Table 3-15 PM Station Road / Knowles Hill 2016 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
School Lane	0.216	0.27	0.17
Station Road	0.169	0.25	0.13

**Harehedge Lane / Bitham Lane / Rolleston Road Junction**

3.29 The modelling shows that this junction currently operates with some queuing on the Harehedge Lane arm which is more severe during the PM peak. The unexpected disparity between the 2012 and 2016 results are due to the 2016 model being based on modelled flows, whereas the 2012 results are base flows plus TEMPRO growth.

*2012 Results*

**Table 3-16 AM Harehedge Lane / Bitham Lane / Rolleston Road 2012 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Rolleston Rd South	0.057	0.09	0.08
Harehedge Lane	0.573	1.31	0.36
Rolleston Rd North	0.045	0.07	0.10
Bitham Lane	0.591	1.40	0.37

**Table 3-17 PM Harehedge Lane / Bitham Lane / Rolleston Road 2012 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Rolleston Rd South	0.100	0.21	0.10
Harehedge Lane	1.165	41.00	5.19
Rolleston Rd North	0.065	0.11	0.10
Bitham Lane	0.362	0.52	0.28

*2016 Results*

**Table 3-18 AM Harehedge Lane / Bitham Lane / Rolleston Road 2016 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Rolleston Rd South	0.080	0.15	0.09

Harehedge Lane	0.824	4.04	0.90
Rolleston Rd North	0.059	0.10	0.08
Bitham Lane	0.687	2.08	0.55

**Table 3-19 PM Harehedge Lane / Bitham Lane / Rolleston Road 2016 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Rolleston Rd South	0.109	0.24	0.09
Harehedge Lane	1.108	28.28	4.03
Rolleston Rd North	0.015	0.02	0.09
Bitham Lane	0.013	0.01	0.14

**Dovecliff Road / Claymills Road / Church Road priority Junction**

- 3.30 The PICADY modelling for this junction is based on the SCC Saturn model flows. The modelling indicates that the junction is operating within capacity, but above the ideal RFC of 0.85 on the Church Road arm in 2012.
- 3.31 In 2016 the modelling indicates that the operation of this junction will significantly deteriorate. However, JMP believes that the predicted queue of 400 vehicles and delay of 1 hour on the minor arm of this junction in the AM peak is unrealistic, and that this is a function of the elevated synthetic modelled flows upon which this junction modelling work is based.

**2012 Results**

**Table 3-20 AM Dovecliff Road / Claymills Road / Church Road 2012 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Church Road	0.874	5.37	1.19
Claymills Road / Dovecliff Road	0.047	0.07	0.08

**Table 3-21 PM Station Dovecliff Road / Claymills Road / Church Road 2012 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Church Road	0.855	4.90	0.98
Claymills Road / Dovecliff Road	0.033	0.04	0.09

## 2016 Results

**Table 3-22 AM Dovecliff Road / Claymills Road / Church Road 2016 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Church Road	2.313	394.94	62.20
Claymills Road / Dovecliff Road	0.187	0.46	0.08

**Table 3-23 PM Dovecliff Road / Claymills Road / Church Road 2016 PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Church Road	1.303	63.70	10.19
Claymills Road / Dovecliff Road	0.082	0.15	0.10

### Clay Mills Junction

- 3.32 Clay Mills is a Highways Agency maintained junction located to the North of Burton on the A38.
- 3.33 There are known to be historical problems with vehicles queuing on the A38 southbound off slip at this junction. Vehicles have been observed to queue back to the A38 mainline carriageway; however, queuing appears generally only in the left lane of a two lane off slip. Additional right turners at this junction would therefore not affect the length of the queue. Amey (the Managing Agent Contractors) believe the queuing is a result of congestion on the A5121 Derby Road.

### Accidents & Safety

- 3.34 In accordance with the Guidance on Transport Assessment, this section of the report has identifies any significant highway safety issues relevant to the development and provides an analysis of the most recent 5 year period of accident history. PIA accident data has been obtained from the DfT website Road Casualties Online (<https://roadcasualtiesonline.dft.gov.uk>) for the period of 01/01/2006 to 31/12/2010.
- 3.35 Relevant accidents near to the site have been identified and assessed with regards to if the proposed development is likely to worsen any safety issues. **Error! Reference source not found.** shows the location of relevant accidents within a defined boundary which have been identified.

**Figure 3-3 Accident Data Plot**



3.36 In total on Station Road, between School Lane and Church Road there were a total of 6 accidents during the period which equate to just over one accident per year. All of these accidents were slight and involved no more than 2 vehicles. Table 3-24 shows the details of these accidents:

**Table 3-24 Station Road Accidents**

Reference	Date	Time	Vehicles	Casualties	Accident Severity	Day of Week	Road Surface
19861342	03/08/2008	15:15:00	2	3	Slight	Sunday	Dry
20395833	19/07/2009	14:30:00	2	1	Slight	Sunday	Dry
20410040	06/11/2009	19:09:00	2	1	Slight	Friday	Wet or damp
21937672	02/11/2010	09:00:00	1	1	Slight	Tuesday	Wet or damp
21951378	22/05/2010	11:30:00	2	1	Slight	Saturday	Dry
22038727	01/02/2010	09:45:00	2	2	Slight	Monday	Frost or ice

3.37 The nearest collision to the site occurred several metres to the west of Needwood Avenue. It involved a slight collision between two cars, and occurred at 7:09 pm on a Friday evening in November 2009. Conditions were recorded as wet or damp. One of the vehicles was overtaking and the collision occurred on the offside of the vehicle. A male driver suffered slight injuries. It is not considered that this collision indicates that there would be a safety problem exacerbated by the development.

3.38 Station Road has relatively low traffic speeds (approx 20 mph) due to traffic calming measures along the route. It is therefore predictable that there are very few accidents along this stretch of

road. It is not considered that there would be any particular safety issues that would be exacerbated by traffic from this development.

# 4 Proposed Development

## Introduction

4.1 The development will consist of approx 120 dwellings comprising around 25 dwellings per hectare. The development will consist of a mix of two, three, four and five bed properties. It is proposed that the type of dwellings on the site will be broken down as follows:

**Table 4-1 Breakdown of Dwelling Types**

Dwelling Type	Dwellings Proposed
Two Bed with Street Parking	21
Three Bed with Garaging	52
Four Bed with Garaging	42
Five Bed with Garaging	5
<b>Total</b>	<b>120</b>

4.2 It is proposed that up to 20% of the land will be retained as public open space. The figure below shows the proposed layout of the site and how this joins to the existing highway network. The development will join onto the turning head of Forest School Street.

**Figure 4-1 Proposed Site Layout**



4.3 A residential Travel Plan has been prepared and will be implemented for this development.



## Trip Rates

- 4.4 Residential trip rates, which have been supplied by and agreed with SCC and the Highways Agency which were used to model LDF growth were used as shown in Table 4-2 below.

**Table 4-2 Saturn Model Residential Vehicular Trip Rates**

	Arrivals	Departures	Total
08:00-09:00	0.133	0.444	0.577
17:00-18:00	0.420	0.213	0.633

## Trip Generation

### Vehicular Trip Generation

- 4.5 For a residential development of 120 dwellings, the following vehicular trip generation is derived from the above trip rates:

**Table 4-3 Vehicular Trip Generation for 120 dwelling development**

	Arrivals	Departures	Total
08:00-09:00	16	53	69
17:00-18:00	50	26	76

### Multimodal Trip Generation

- 4.6 The following multimodal trip generation has been derived by applying proportions derived from the existing modal split taken from the 2001 Census, Method of Travel to Work (Rolleston On Dove Ward).

		08:00 - 09:00		17:00 - 18:00	
		Arrivals	Departures	Arrivals	Departures
Car or Van (Driver)	81%	16	53	50	26
Train	1%	0	1	1	0
Bus	3%	1	2	2	1
Motorcycle	1%	0	1	1	0
Car or Van (Passenger)	5%	1	3	3	2
Taxi	1%	0	1	1	0
Bicycle	3%	1	2	2	1
Foot	5%	1	3	3	2

## Trip Distribution & Assignment

- 4.7 In accordance with scoping discussions with SCC two different trip distribution and assignment methodologies have been employed.
- 4.8 Trips impacting on the two SCC junctions and the A38 Clay Mills junction contained within the SCC Saturn model have been distributed and assigned using the Burton upon Trent Saturn model.
- 4.9 A separate distribution and assignment methodology has been employed for the junctions which are not contained within the Saturn model, based on census journey to work data and using an internet journey planning system for most likely routing. This distribution and assignment has been agreed with SCC. The detail of this distribution and assignment is contained within Appendix A.

## Impact on Local Highway Network

### Site Access: (Needwood Avenue) / Station Road Junction

- 4.10 In 2016 the total development traffic equates to an additional 14.8% in the AM peak and 20.9% in the PM peak. Despite this increase, the junction will continue to operate without queuing or delay on Station Road.
- 4.11 The PICADY modelling results show that the site access will continue to operate well within capacity in the with development scenario in both 2012 and 2016.

### 2012 Results

**Table 4-4 AM Site Access 2012 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Needwood Avenue	0.187	0.23	0.17
Station Road	0.046	0.07	0.10

**Table 4-5 PM Site Access 2012 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Needwood Avenue	0.072	0.08	0.14
Station Road	0.095	0.14	0.12

### 2016 Results

**Table 4-6 AM Site Access 2016 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Needwood Avenue	0.189	0.23	0.17
Station Road	0.046	0.07	0.10

**Table 4-7 PM Site Access 2016 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Needwood Avenue	0.072	0.08	0.14
Station Road	0.096	0.15	0.12

**Station Road / School Lane Junction**

- 4.12 In 2016 the development adds an additional 8.5% traffic flows to the junction in the AM peak, and 12.5% traffic in the PM peak.
- 4.13 The modelling results show that this junction continues to operate well within capacity during the AM and PM peak in 2012 and 2016.

**2012 Results****Table 4-8 AM Station Road / School Lane 2012 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
School Lane	0.208	0.26	0.19
Station Road	0.032	0.04	0.11

**Table 4-9 PM Station Road / School Lane 2012 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
School Lane	0.200	0.25	0.19
Station Road	0.015	0.02	0.11

**2016 Results****Table 4-10 AM Station Road / School Lane 2016 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
School Lane	0.215	0.27	0.20
Station Road	0.035	0.05	0.11

**Table 4-11 PM Station Road / School Lane 2016 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
School Lane	0.210	0.26	0.20

Station Road	0.015	0.02	0.11
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#### Station Road / Knowles Hill Junction

- 4.14 In 2016 the development would account for an additional 2.3% of traffic in the AM peak and 3.8% of traffic in the PM peak at this junction. The modelling results show that the junction would continue to operate well within capacity in 2012 and 2016.

#### 2012 Results

**Table 4-12 AM Station Road / Knowles Hill 2012 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
School Lane	0.296	0.42	0.20
Station Road	0.265	0.47	0.14

**Table 4-13 PM Station Road / Knowles Hill 2012 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
School Lane	0.207	0.26	0.17
Station Road	0.162	0.24	0.12

#### 2016 Results

**Table 4-14 AM Station Road / Knowles Hill 2016 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
School Lane	0.311	0.45	0.20
Station Road	0.281	0.51	0.14

**Table 4-15 PM Station Road / Knowles Hill 2016 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
School Lane	0.217	0.27	0.17
Station Road	0.170	0.25	0.12

#### Harehedge Lane / Bitham Lane / Rolleston Road Junction

- 4.15 In 2016 the total additional traffic attributable to this development would represent a 3.0% increase in traffic flows at this junction in the AM peak, and 3.8% in the PM peak.

- 4.16 As discussed in 3.29, the Junction is forecast to be over capacity on the Harehedge lane arm of this junction without the development. Because committed development traffic takes the junction over capacity in 2016, the development traffic increases the queue on the Harehedge lane arm by 14 vehicles during the PM peak in 2016 leading to a predicted queue of up to 42 vehicles in the PM peak.
- 4.17 Given that this junction will already be operating over capacity on this arm, and that the development only adds an additional 3.8% traffic, it is not considered that mitigation would be warranted by the development at this location.
- 4.18 It should be noted that the discrepancy between 2012 and 2016 years is due to the 2016 flows being modelled flows, whereas the 2012 flows are based on 2008 observed flows with TEMPRO growth applied.

#### 2012 Results

**Table 4-16 AM Harehedge Lane / Bitham Lane / Rolleston Road 2012 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Rolleston Rd South	0.063	0.10	0.08
Harehedge Lane	0.602	1.47	0.39
Rolleston Rd North	0.045	0.07	0.10
Bitham Lane	0.671	1.95	0.46

**Table 4-17 PM Harehedge Lane / Bitham Lane / Rolleston Road 2012 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Rolleston Rd South	0.121	0.26	0.10
Harehedge Lane	1.237	56.03	6.92
Rolleston Rd North	0.066	0.11	0.10
Bitham Lane	0.426	0.72	0.32

#### 2016 Results

**Table 4-18 AM Harehedge Lane / Bitham Lane / Rolleston Road 2016 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Rolleston Rd South	0.083	0.16	0.09
Harehedge Lane	0.871	5.30	1.13

Rolleston Rd North	0.045	0.07	0.08
Bitham Lane	0.773	3.07	0.74

**Table 4-19 PM Harehedge Lane / Bitham Lane / Rolleston Road 2016 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Rolleston Rd South	0.128	0.31	0.09
Harehedge Lane	1.186	41.92	5.68
Rolleston Rd North	0.015	0.02	0.09
Bitham Lane	0.492	0.93	0.38

**Dovecliff Road / Claymills Road / Church Road priority Junction**

- 4.19 In 2016 the percentage impact of the development proposals on this junction is 1.8% additional traffic in the AM and PM peak hours.
- 4.20 The results of the with development traffic flow modelling are presented in the following tables. Although the development traffic increases queuing at this junction, the proportion of additional traffic added by the development is very low. The development traffic increases queuing by a small amount compared to the queuing issues caused by committed development at this junction. As noted previously, the forecast queuing is unrealistically high at this junction and is based on the modelled flows provided by SCC.

**2012 Results**

**Table 4-20 AM Dovecliff Road / Claymills Road / Church Road 2012 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Church Road	0.867	5.25	1.05
Claymills Road / Dovecliff Road	0.039	0.05	0.09

**Table 4-21 PM Station Dovecliff Road / Claymills Road / Church Road 2012 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Church Road	0.891	5.97	1.32
Claymills Road /	0.078	0.14	0.08

Dovecliff Road			
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**2016 Results**

**Table 4-22 AM Dovecliff Road / Claymills Road / Church Road 2016 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Church Road	2.379	409.56	65.18
Claymills Road / Dovecliff Road	0.218	0.54	0.08

**Table 4-23 PM Dovecliff Road / Claymills Road / Church Road 2016 + Development PICADY Results**

	RFC	Queue (PCU)	Delay (minutes per vehicle)
Church Road	1.305	63.01	10.18
Claymills Road / Dovecliff Road	0.074	0.13	0.09

**A38 Clay Mills Junction**

- 4.21 The Clay Mills development flows obtained from the SCC Burton on Trent Saturn model are provided in Appendix B.
- 4.22 The development is forecast to increase flows by just 1.1% on the Clay Mills road arm of the junction in the AM peak, and 2.2% in the PM peak in 2026.
- 4.23 As previously noted, there is an existing queuing problem on the southbound off slip during the AM peak. However, the development flows will not impact on the queuing during this period as there is only a single additional vehicle on this slip road which is a right turner into Clay Mills road. The development does not add any additional vehicles onto the A5121 Derby road in the AM peak period.
- 4.24 Given that there is no significant traffic impact at this junction, as agreed with the HA the development traffic has not been modelled in detail at this location.

## 5 Summary & Conclusions

### Summary

- 5.1 This Transport Assessment has been prepared for the proposed redevelopment of playing fields into 120 residential dwellings in the village of Rolleston on Dove. The development is a logical extension of the existing residential development, which occupies the site of the former college buildings to the north of the site.
- 5.2 Following scoping discussions with SCC, a total of five junctions in and around Rolleston have been modelled using the TRL PICADY software.
- 5.3 Three junctions have been modelled using observed traffic counts, and two using model flows provided by SCC. The only junctions forecast to operate with capacity issues are the two where SCC Saturn model flows have been used, however the development contributes an insignificant amount of traffic to these junctions. The Saturn model flows lead to a high level of modelled junction delay, which JMP considers would be unrealistic in practice.
- 5.4 This document has reviewed the policy context of the development, including relevant national, regional and local transportation and planning policies. The location and characteristics of the site have been considered, alongside details of the current level of sustainable transport provision to the site.
- 5.5 It is considered that the development offers good opportunities for the use of sustainable travel and that the development will achieve safe and suitable access for all people.
- 5.6 The likely trip generation of the development by various modes of transport has been considered. Vehicular trips have been distributed onto the highway network in the vicinity of the site by use of the SCC Burton upon Trent Saturn model and an agreed manual distribution using Journey to Work data.
- 5.7 An assessment of the suitability of the sustainable transport networks when the trips from the proposed development are added has also been made. The development traffic does not lead to a severe highway impact at any of the locations considered. Where there is an increase in queuing because of existing capacity issues due to committed development, the small volume of additional traffic could not be cost effectively mitigated by this development.

### Conclusion

- 5.8 In conclusion, it is recommended that SCC highways department approve this development as access to the site is safe and suitable for all people and the development will not lead to a significantly detrimental effect on the local highway network.