



Traffic Survey Analysis

Hoby with Rotherby Parish Council

Edwards & Edwards Consultancy Ltd
v1.2 15 March 2019

Findings Summary

Summary

- ▶ A comprehensive collection of traffic surveys (traffic counts, junction turning counts, speed data & Automatic Number Plate Recognition (ANPR) surveys) was undertaken in September/October 2018 in order to gain an understanding of the traffic issues facing the Parish
- ▶ A detailed analysis of these Traffic Surveys is contained within this report which in summary shows that:
 - ▶ Traffic volumes on roads within the Parish are low (numerically and in road capacity terms) at all times of day
 - ▶ Around 95% of movements are by Car and LGV
 - ▶ Around 72% of movements are related to residents, businesses, education or activity requiring access to the Parish (such as deliveries)
 - ▶ Traffic speed was observed to be higher than the 30mph speed limit within the villages of the Parish

Insight

- ▶ Traffic within the Parish was low, but with a very high proportion of movements undertaken by Car or Light Goods Vehicle (LGV). The Majority of the movements were undertaken by residents or people with specific business within the Parish
- ▶ The Rural location of the parish may limit the opportunities for promoting sustainable travel in order to reduce reliance on car travel beyond the continued promotion of walking/cycling and bus use within businesses, college and residents
- ▶ Speeding was observed to be an issue within the parish. Given that around 70% of vehicles were driven by people associated with the parish then behavioural change measures (posters, articles in parish magazine) etc may be an appropriate method of encouraging drivers to be aware of their speed.

Transport related policy areas that could be considered by the parish

Speed reduction in villages:

Infrastructure and other measures that could be considered by the parish in combinations or separately include:

- Behavioural change measures (posters, articles in parish magazine)
- Community Speed Watch
- Liaison with Police to discuss enforcement
- Traffic calming – Village 'gateway' and entry features
- Traffic calming – Vertical features such as speed humps or speed cushions
- Traffic calming – Horizontal alignment features such as chicanes or formalising on-street parking bays to provide 'regular' chicanes and passing places
- Site specific speed cameras or possibly average speed cameras. It should be noted however that general traffic levels, the associated approval process, the cost of implementation and maintenance may make the speed camera option difficult to deliver and ultimately unattractive to the Parish

Reducing severance:

Providing excellent crossing facilities in areas where the Parish's community suffers severance due to high volumes of traffic (i.e A607, Brooksby College campuses, new residential development, leisure activities including equestrian, cyclists, pedestrians, etc). Infrastructure and other measures that could be considered by the parish include:

- Signal crossings including facilities for pedestrians, cyclists, equestrian and people with disabilities
- Fully signalisation of junction including the crossing facilities as above
- Speed limit reduction on main road (e.g. A607). Please note that this will require extensive discussions with Highway Authority and Police including the provision of traffic / crossing data to support and justify. In addition, the parish should consider whether a fully signalised junction may result in undesirable vehicle rerouting through the parish villages
- Geometric reassessment of junction area, excluding full signalisation, to ascertain whether safety improvements, widen refuges, bus stop location, etc can improve crossing, thereby reduce severance, and provide a safer environment. An analysis of accident/collision statistics, liaison with Highway Authority and police will be required. This can be a lengthy process

Sustainability: Future proofing and embracing new technology

Electric vehicles are likely to form a key technological change. There are several potentially very low cost initiatives that could be considered for future proofing new development

- Provide the wiring from the substation to the property to allow a 3-phase electricity supply to be delivered to each property. Whilst only one phase may initially be activated the policy would ensure minimal disruption should the household have a larger power requirement to supply a higher power electric vehicle charger.
- Provide wiring within new properties from the fuse box to a charge point on the property to allow up to 22kW charging. This would entail adding additional wiring during the building construction.

Next Steps

- ▶ The meeting on 26 February 2019 noted that there was no immediate consensus on the best way forward regarding Speeding or Severance.
- ▶ In pursuing potential solutions Edwards & Edwards Consultancy Ltd (EAE Consultancy) would recommend that the Parish consult with the County Highways department. This will help to develop deliverable solutions and minimise aborted work and inappropriate solutions
- ▶ It should also be noted that any potential solutions will need to be supported by appropriate evidence such as volumes of traffic, congestion, pedestrian surveys, accident data, etc. and appropriate analysis to meet the requirements of the Highway Authority's.-County Highways are unlikely to prioritise the funding of any measures identified within the Parish until this supporting evidence is provided.
- ▶ EAE Consultancy would be delighted to work with the Parish to develop any highway related concepts. Budget estimates for developing these initial concepts are difficult to predict at this stage, however working with the Parish to develop a concept for speed reduction in a village is likely to cost somewhere between £2000 and £5000 for example depending on the extent of the study and the detail required.
- ▶ EAE Consultancy suggest that all work is phased to minimise the risk to the Parish of abortive work



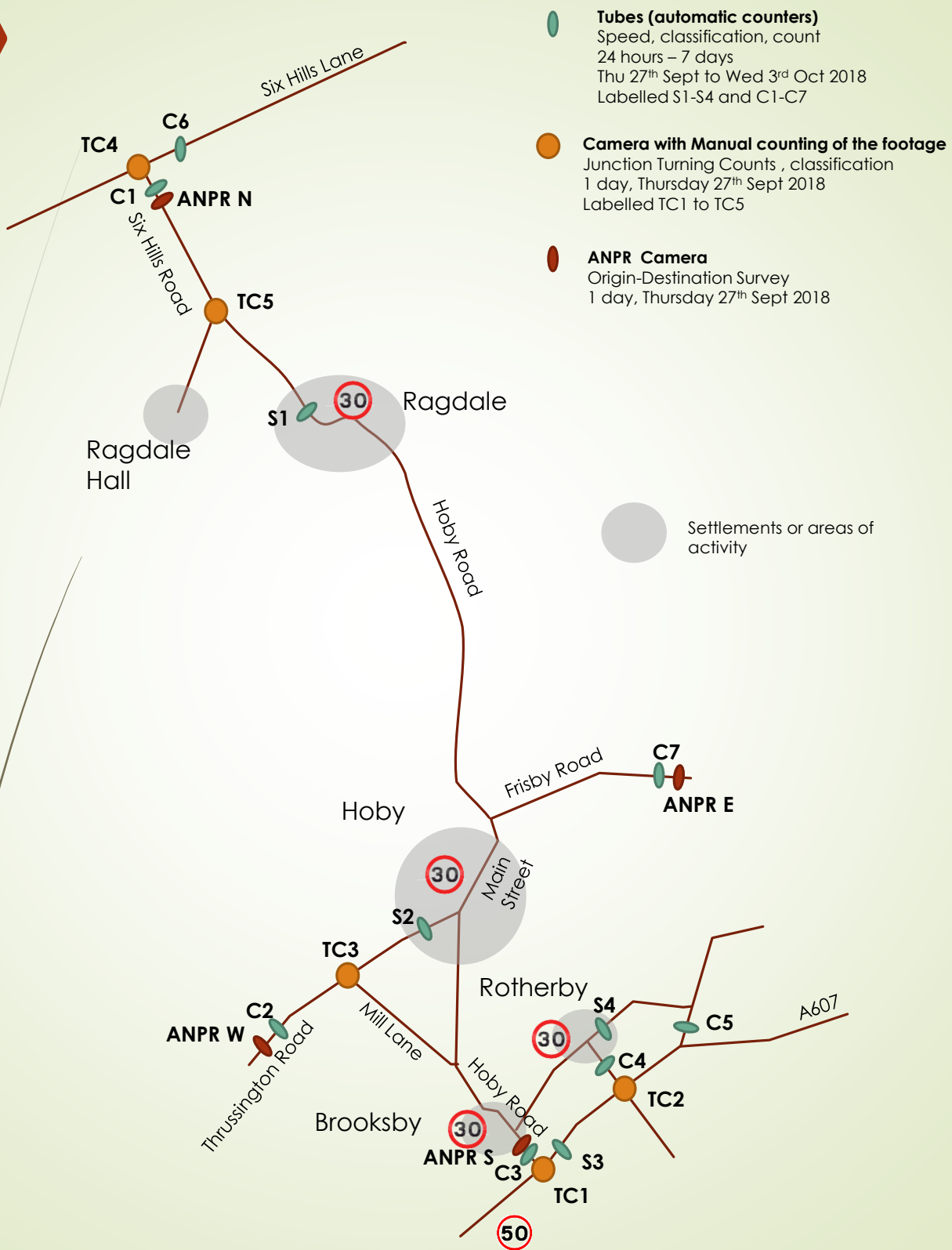
Findings from the Traffic Survey

- ▶ **This report provides insights that is obtained from combining information from the various traffic surveys undertaken in September 2018**
- ▶ **Volumes of Movement into and out of the Parish**
- ▶ **Proportions on each of the entry/exit roads**
- ▶ **Mode Share**
- ▶ **Turning in and out of Parish**
- ▶ **Local and Through Traffic**
- ▶ **Traffic Speeds**

Summary of Insight obtained from the Traffic Survey

- **Traffic Volumes in the Parish are not high, and in Rotherby they are very low**
- **Access to the Parish**
 - Throughout the day (07:00 to 19:00)
 - ~30% of vehicles use Six Hills Road (Ragdale)
 - ~30% of vehicles use Hoby Road (Brooksby)
 - ~20% of vehicles use Frisby Road (Hoby)
 - ~20% of vehicles use Thrussington Road (Hoby)
 - 95% of movements are by car or LGV from 0700 to 1900
 - 8% (91) cycles observed at Mill Lane/Thrussington Road (small volumes spread throughout the day. 29 Cyclists used Six Hills Road (including a group of 11 between 0845 and 1900)
 - Larger Lorries (>4 axles) recorded on Six Hills Road (21) and Hoby Road (Brooksby) (6)
 - 23 Public Service Vehicles (PSVs) recorded on Hoby Road (Brooksby), 10 PSVs at the Mill Lane/Thrussington Road junction (not using Mill Lane)
 - At Six Hills Road entry approx. 67% of vehicles travelled to/from the direction of the A46
 - ~50% of the daily traffic on the Six Hills Road was for Ragdale Hall
 - At the Hoby Road /A607 junction approx. 63% of daily movements were to/from Leicester direction. This rose to 72% in the morning (0800 to 0900) peak
- **Patterns of movement**
 - At least 72% of vehicles were local or had business within the parish
 - A large volume (262 all day) of vehicles entered and exited from the Six Hills Road (Ragdale Hall)
 - A large volume (257 all day) of vehicles entered and exited from the Hoby Road/A607 junction
 - Through Traffic movements were observed in both directions between
 - Frisby Road and Thrussington Road (Hoby): 352 vehicles all day
 - Six Hills Road (Ragdale) and Frisby Road (Hoby): 96 vehicles all day
 - Hoby Road (Brooksby) Road and Thrussington Road (Hoby): 74 vehicles all day
- **Speed**
 - The 85th percentile observed speed was above the speed limit at all locations (except counters of Thrussington Road (Hoby) and Frisby Road (Hoby))
 - A607: 85th percentile speed 53.9mph. 323 vehicles observed travelling over 70mph
 - Six Hills Lane: 85th percentile speed 61.4mph. 1364 vehicles travelling over 70mph
 - Within the settlements all sites recorded 85th percentile speeds in excess of 32mph

The Traffic Survey



The Types and locations of the different sensors was designed to allow a comprehensive assessment of traffic within the Parish and for all the settlements

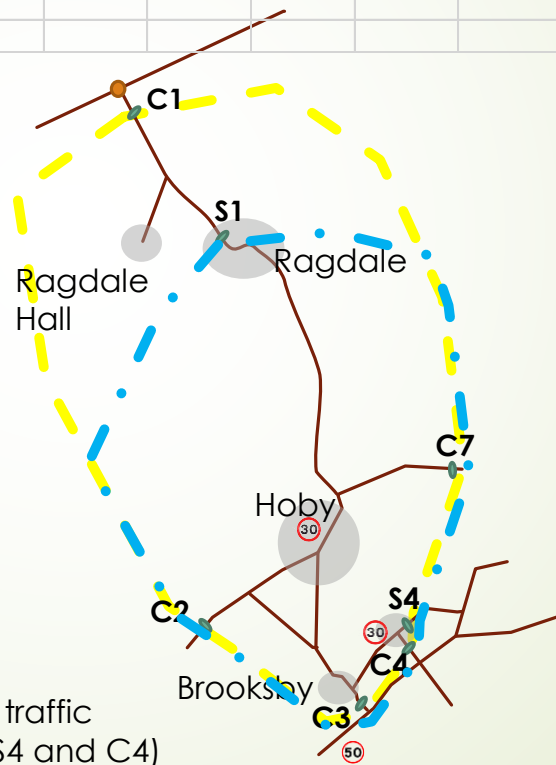
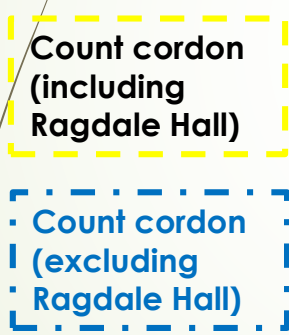
Number of vehicles entering and exiting the Parish

Using tube data at C1, S1, C2, C3, C4, C7 and S4

	0800 to 0900			1700 to 1800			0700 to 1900		
	Into Parish	out of Parish	Both	Into Parish	out of Parish	Both	Into Parish	out of Parish	Both
C1 North - Six Hills Road (North of Ragdale)	126	38	164	64	87	151	771	761	1,532
S1 North - Six Hills road (Ragdale)	29	37	66	50	22	72	338	324	662
C7 East - Frisby Road (Hoby)	74	29	103	38	90	128	503	590	1,093
C3 South - Hoby Road (Brooksby)	99	51	150	59	56	115	805	805	1,610
C2 West - Thrussington Road (Hoby)	47	74	121	84	45	129	641	593	1,234
C4 Rotherby (Gaddesby Lane)	5	7	12	11	1	12	87	47	134
S4 Rotherby (Main Street)	4	10	14	5	7	12	64	79	143
Total Movements (including Ragdale Hall)	355	209	564	261	286	547	2,871	2,875	5,746
Total Movements (excluding Ragdale Hall)	258	208	466	247	221	468	2,438	2,438	4,876

	EB	WB	both	EB	WB	both	EB	WB	both
S3 A607	512	598	1,110	667	473	1,140	6,908	7,100	14,008
C6 Six Hills Lane	319	442	761	426	332	758	4,047	4,099	8,146

EB - Eastbound
WB - Westbound



Very low volume of traffic through Rotherby (S4 and C4)

Hourly and Daily Volumes of movements on any of the roads within the Parish are not high

In the

- AM Peak more vehicles enter than exit the parish
- PM Peak more vehicles exit than enter (if Ragdale hall is included)
- All Day – Approx equal number of movements in and out

For one hour, the two directional maximum is 164 vehicles at C1 (Six Hills Road)

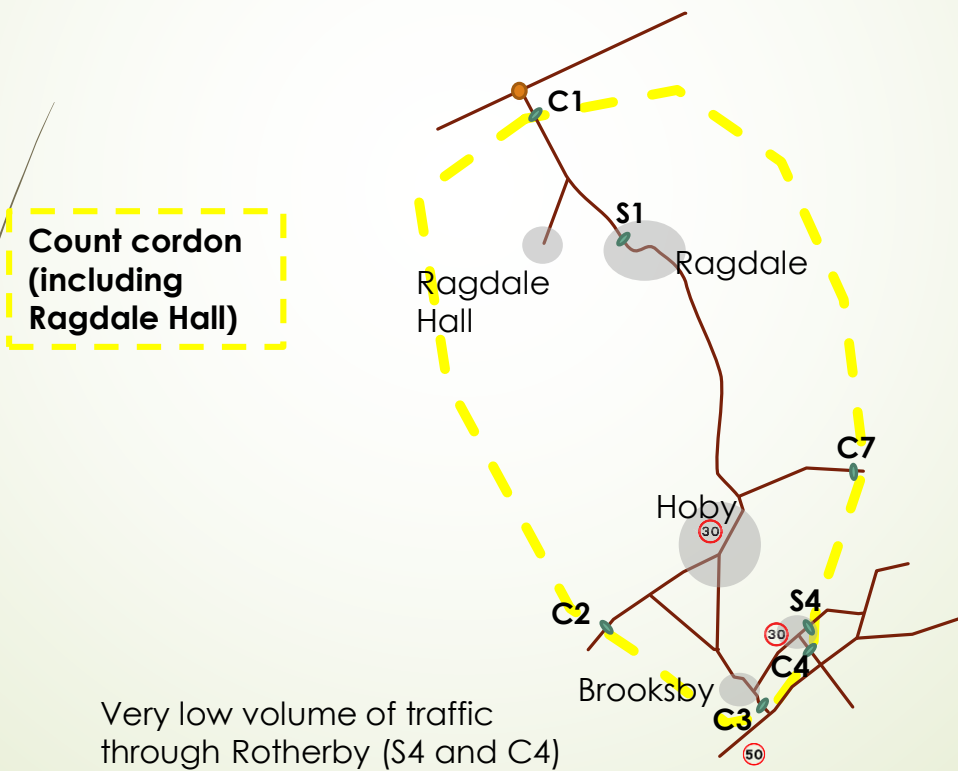
This compares to 1,100 vehicles on the A607 and 761 on the Six Hills lane. There is about 70% more traffic on the A607 compared to Six Hills Lane

Proportions of vehicles on each road entering and exiting the Parish

Using tube data at C1,C2,C3,C4, C7 and S4

The traffic proportions for site S1 are also included in a grey font. The counts from this site are not used in the calculation of the total traffic volumes from which the traffic proportions are calculated.

Proportions entering/exiting the Parish (including Ragdale Hall)	0800 to 0900			1700 to 1800			0700 to 1900		
	Into Parish	out of Parish	Both	Into Parish	out of Parish	Both	Into Parish	out of Parish	Both
C1 North - Six Hills Road (North of Ragdale)	35%	18%	29%	25%	30%	28%	27%	26%	27%
S1 North - Six Hills Road (Ragdale)	8%	18%	12%	19%	8%	13%	12%	11%	12%
C7 East - Frisby Road (Hoby)	21%	14%	18%	15%	31%	23%	18%	21%	19%
C3 South - Hoby Road (Brooksby)	28%	24%	27%	23%	20%	21%	28%	28%	28%
C2 West - Thrussington Road (Hoby)	13%	35%	21%	32%	16%	24%	22%	21%	21%
C4 Rotherby (Gaddesby Lane)	1%	3%	2%	4%	0%	2%	3%	2%	2%
S4 Rotherby (Main Street)	1%	5%	2%	2%	2%	2%	2%	3%	2%
	EB	WB	both	EB	WB	both	EB	WB	both
S3 A607	46%	54%		59%	41%		49%	51%	
C6 Six Hills Lane	42%	58%		56%	44%		50%	50%	



AM Peak (08:00 to 09:00):

- Higher proportion of vehicles enter the Parish than exit
- Approx 35% of inbound vehicles to the parish are accessing from Six Hills Road
- Approx 35% of vehicles exit the parish via Thrussington Road towards the West

PM Peak (17:00 to 18:00):

- Higher proportion of vehicles entering the parish is from Thrussington Road
- Highest Proportion of vehicles is exiting the parish on the Frisby Road and Six Hills Road

24 Hour

- Inbound and Outbound balance
- Approx 30% on each North and South Access and 20% on the East and West Access

What Mode?

Using Turning Count data from TC1, TC3 and TC4

Car



LGV

Light Goods Vehicle



OGV1

Other Goods Vehicle



OGV2

Other Goods Vehicle



PSV

Public Service Vehicle



Type 1
Rigid 2 or 3
axle

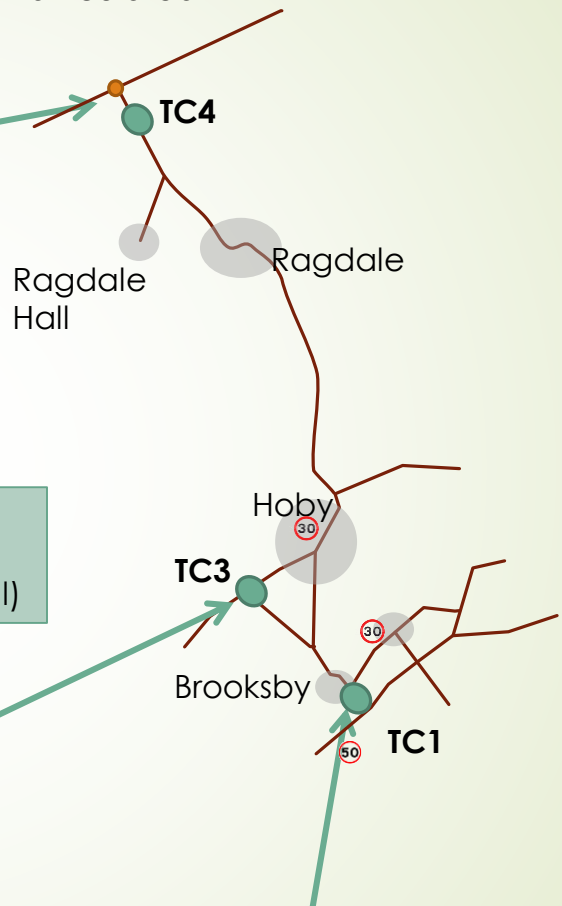
Type 2
>4 axle or
articulated

>16 seats

Both directions at Six Hills Road

	08:00 to 09:00	17:00 to 18:00	All Day
Cycle	1%	2%	2%
Motorcycle	0%	1%	0%
Car	90%	93%	85%
LGV	7%	4%	10%
OGV1	2%	0%	1%
OGV2	1%	0%	2%
PSV	0%	0%	0%
Total	100%	100%	100%

- >95% car and LGV.
- 11 cycles between 18:45 and 19:00
- 21 OGV2 vehicles (not to/from Ragdale Hall)



All movements through the junction

	08:00 to 09:00	17:00 to 18:00	All Day
Cycle	1%	5%	8%
Motorcycle	1%	1%	1%
Car	91%	82%	77%
LGV	6%	12%	12%
OGV1	0%	0%	1%
OGV2	1%	0%	0%
PSV	0%	0%	1%
Total	100%	100%	100%

- 89% car and LGV
- 8% (91) cyclists spread throughout day
- 10 PSVs Thrusington Road (not Mill Lane)

Both directions on Hoby Road (Brooksby)

	08:00 to 09:00	17:00 to 18:00	All Day
Cycle	0%	0%	0%
Motorcycle	0%	0%	1%
Car	86%	95%	86%
LGV	9%	5%	10%
OGV1	2%	1%	2%
OGV2	2%	0%	0%
PSV	2%	0%	2%
Total	100%	100%	100%

- >96% car and LGV.
- 1 cycles recorded all day
- 23 PSV vehicles



Access to the Parish from Six
Hills Lane and A607.

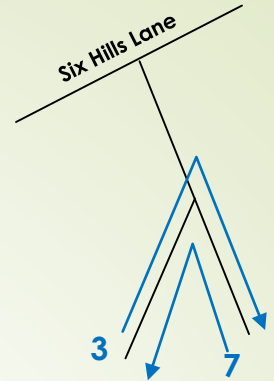
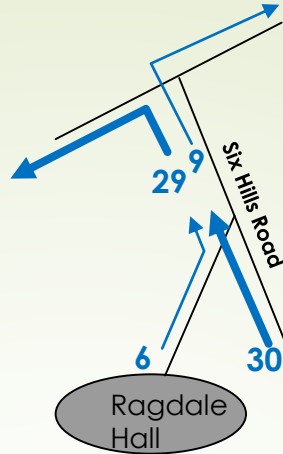
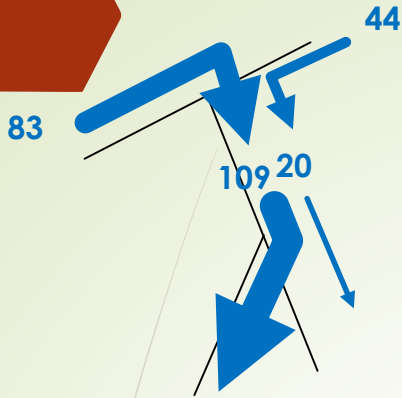
Six Hills Road Access

Width of arrow proportional to volume

Inbound

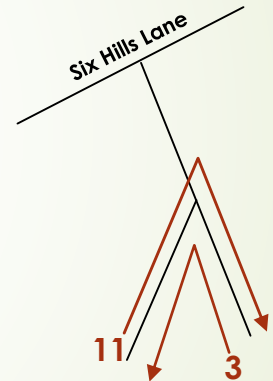
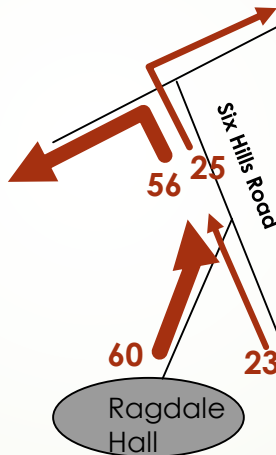
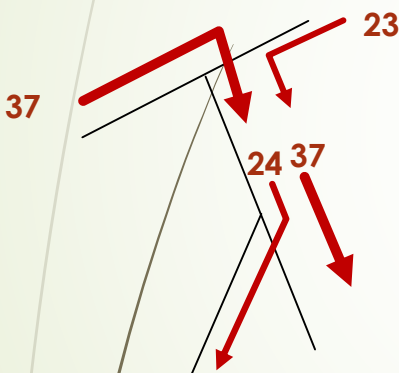
Outbound

Ragdale Hall to/from Ragdale



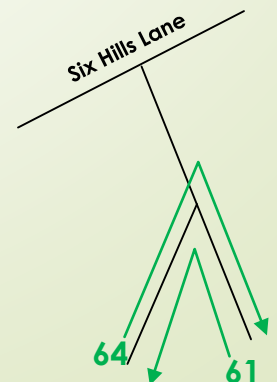
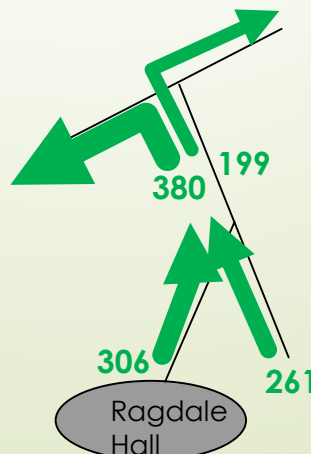
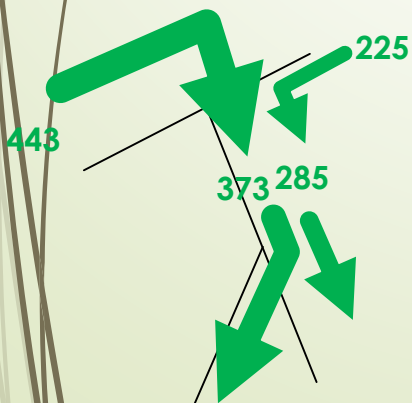
08:00 to 09:00

68% to/from directions of A46.
70% to/from Ragdale Hall



17:00 to 18:00

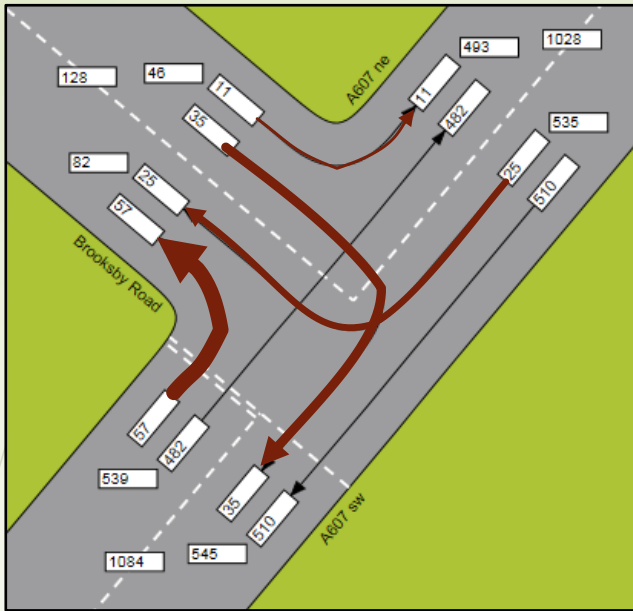
66% to/from directions of A46.
62% to/from Ragdale Hall



07:00 to 19:00

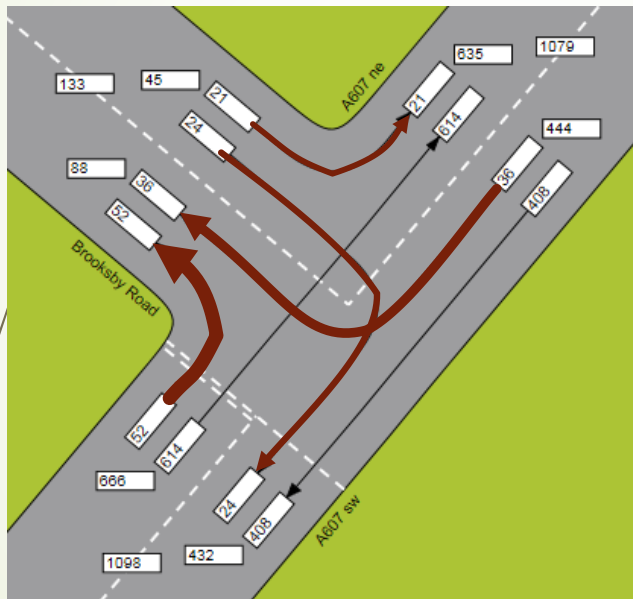
66% to/from directions of A46.
60% to/from Ragdale Hall

A607/Hoby Road (Brooksby) Junction



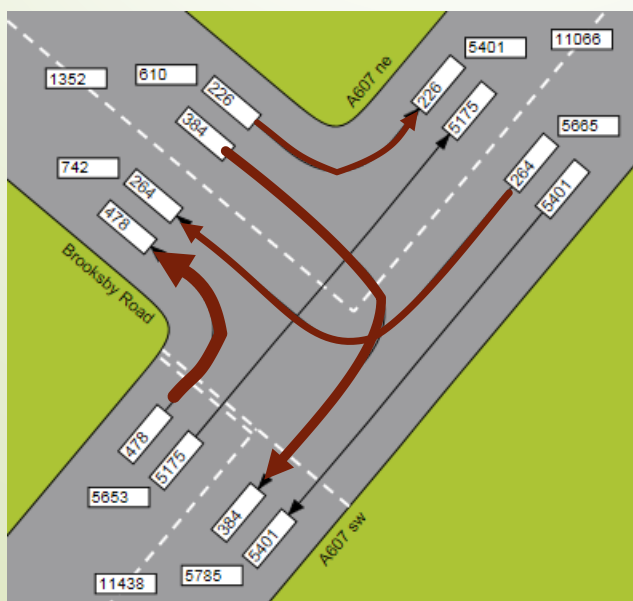
08:00 to 09:00

Hoby Road
~72% to/from Leicester
~28% to/from Melton



17:00 to 18:00

Hoby Road
~57% to/from Leicester
~43% to/from Melton

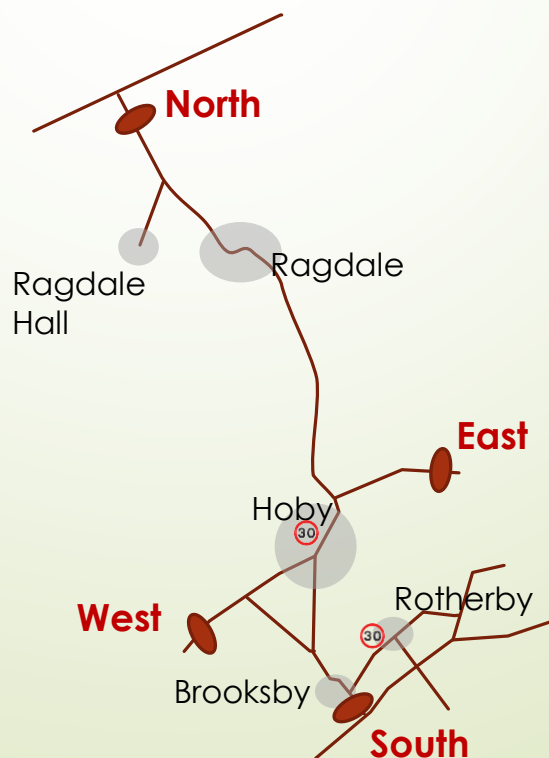


07:00 to 19:00

Hoby Road
~63% to/from Leicester
~37% to/from Melton

Patterns of Movement through the Parish

- ▶ This uses the Number Plate (ANPR) Survey.
- ▶ The original processing was very limited and was primarily focussed on the trips into and out of the Parish. **It did not explicitly identify trips by residents or people with business within the Parish.**
- ▶ The data has been reanalysed by Edwards & Edwards in order to identify trips:
 - ▶ starting and finishing within the Parish,
 - ▶ in which there was likely to have been some business undertaken in the parish (this was determined by 'through trips' taking longer than 15 minutes)
- ▶ The first part of a trip is observed in the specified time period. Where there is a second part to the movement then the trip may occur in a different time period



Location of the ANPR sites

Patterns of Movement

AM Peak (08:00 to 09:00)	Origin	Destination						
		North	East	South	West	Parish	Unknowr	Total
Parish Trips	North	98	7	1	1	18	0	125
	East	2	12	2	0	17	0	33
	South	0	2	32	2	28	0	64
	West	3	0	2	3	14	0	22
	Parish Total	118	34	56	37	77	0	322
Through Trips	North	4	0	2	0	0	0	6
	East	11	0	3	35	0	0	49
	South	1	1	13	3	0	1	19
	West	0	13	4	1	0	1	19
	Through Total	16	16	23	39	0	2	96
Unknown	unknown	0	2	1	0	0	0	3
	Total	134	50	79	76	77	2	418

Through trips are assumed to take less than 15minutes

	Number	Proportion
Parish	322	77%
Through	91	22%
Unknown	5	1%
Total	418	100%

Vehicles which were not identified by the ANPR camera are shown as unknown

PM Peak (17:00 to 18:00)	Origin	Destination						
		North	East	South	West	Parish	Unknowr	Total
Parish Trips	North	3	2	0	0	36	0	41
	East	0	1	0	0	17	0	18
	South	0	2	8	2	62	0	74
	West	0	0	0	7	32	0	39
	Parish Total	20	19	16	20	147	0	222
Through Trips	North	4	13	1	2	0	1	21
	East	2	1	0	12	0	1	16
	South	1	3	5	7	0	0	16
	West	1	52	3	1	0	0	57
	Through Total	8	74	9	23	0	2	116
Unknown	Unknown	0	5	0	1	0	0	6
	Total	28	93	25	43	147	2	338

Through trips are assumed to take less than 15minutes

	Number	Proportion
Parish	222	66%
Through	108	32%
Unknown	8	2%
Total	338	100%

All Day (07:00 to 19:00)	Origin	Destination						
		North	East	South	West	Parish	Unknowr	Total
Parish Trips	North	232	18	9	4	285	0	548
	East	11	37	10	4	152	0	214
	South	8	9	142	10	365	0	534
	West	7	6	14	36	213	0	276
	Parish Total	457	210	381	240	1015	0	2303
Through Trips	North	33	57	8	4	0	4	106
	East	39	8	13	152	0	4	216
	South	11	14	115	40	0	21	201
	West	12	200	34	11	0	5	262
	Through Total	99	299	219	232	0	34	883
Unknown	Unknown	4	20	49	25	0	0	98
	Total	556	509	600	472	1015	34	3186

Through trips are assumed to take less than 15minutes

	Number	Proportion
Parish	2303	72%
Through	751	24%
Unknown	132	4%
Total	3186	100%

Parish Trips: Where a trip takes more than 15 minutes to traverse the parish, then it has been assumed that the trip will have had business within the parish. This is a generous limit, and thus may over estimate through trips

Through Trips: Where a trip does not start or finish within the Parish or where the journey time between entry and exit is less than 15minutes

These movements
are visualised on
the following slides



AM Peak

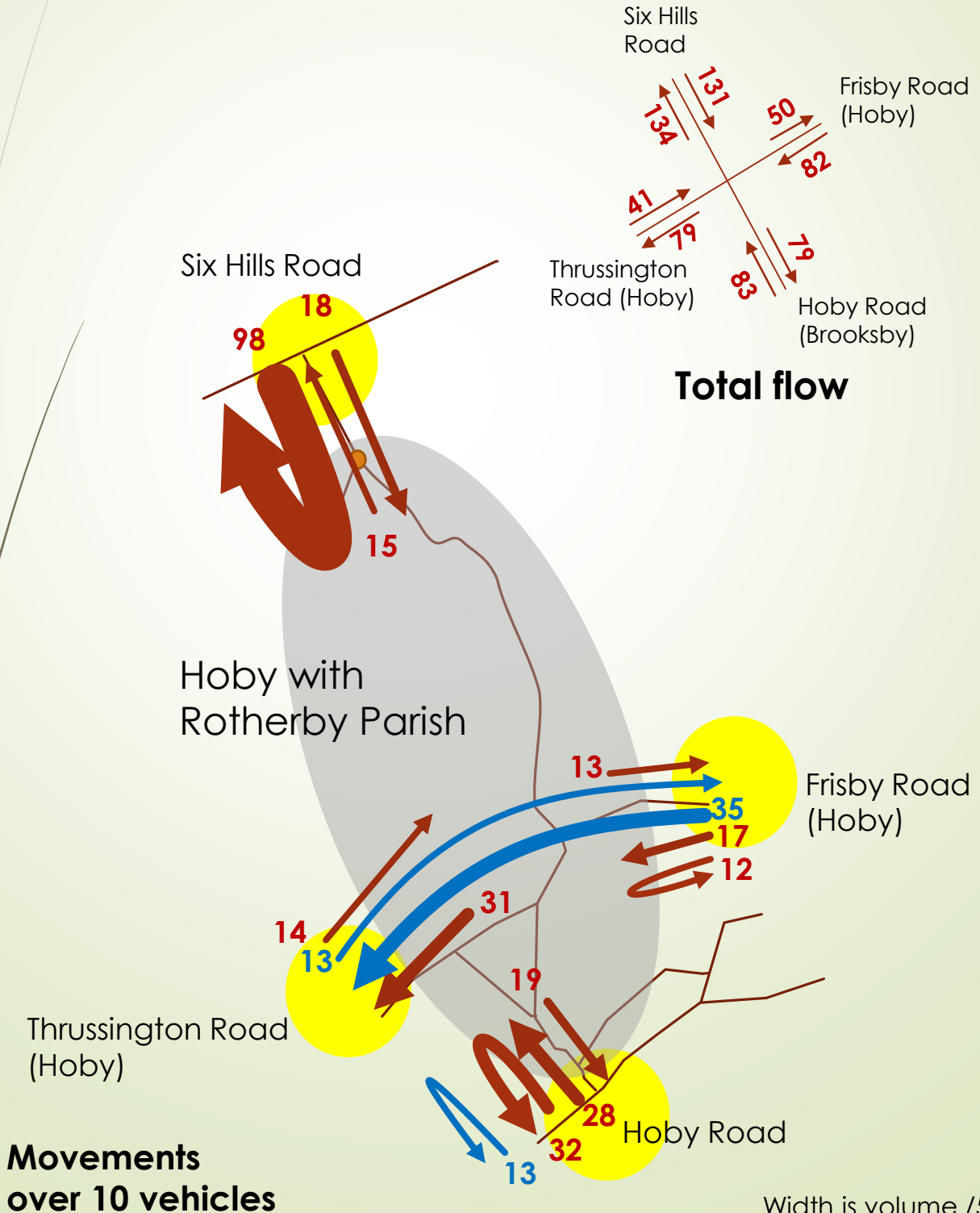
Vehicles that are first detected between 08:00 to 09:00



Movements with an origin or destination within the Parish or through trips that take more than 15 minutes



Movements that occur in less than 15 minutes



PM Peak

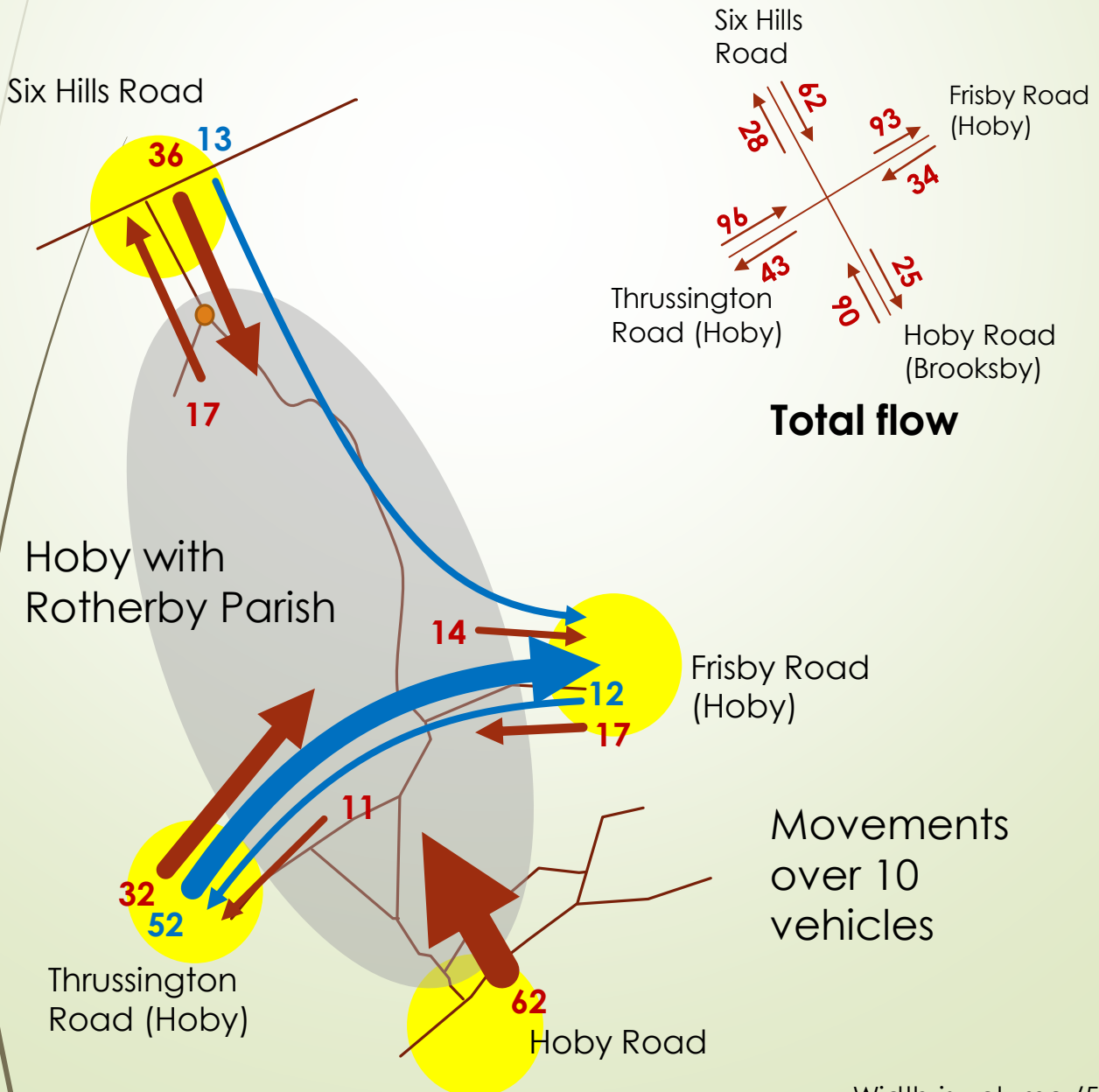
Vehicles that are first detected between 17:00 to 18:00



Movements with an origin or destination within the Parish or through trips that take more than 15 minutes



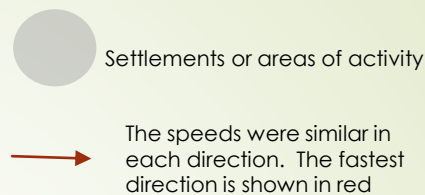
Movements that occur in less than 15 minutes



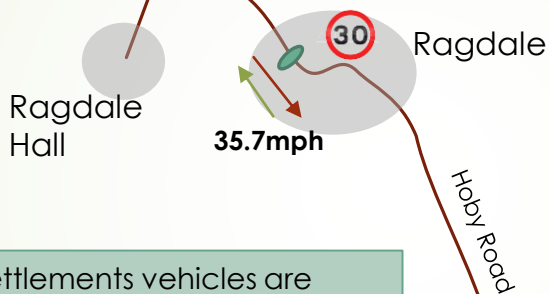
85th Percentile Speed

85% of vehicles travel below this speed

It is used by the police and transport professionals to indicate the actual speed below which the majority of drivers are travelling



From the tubes C1 to C7, S1 to S4



Within the Parish settlements vehicles are travelling in excess of 30mph

On the main roads north and south of the Parish the vehicle speeds are slightly above the speed limit

- 61.4mph on Six Hills Lane
- 53.9mph on A607

