

ACCIDENT ANALYSIS

BAE SAMLESBURY

CONTENTS

	Chapter	Page
1.	INTRODUCTION	1
2.	ACCIDENT OVERVIEW	4
3.	AREA 1	6
4.	AREA 2	10
5.	AREA 3	15
6.	CONCLUSION	23

APPENDICES

A	Accident records
---	------------------

Chapter 1

Introduction

- 1.1 The most recently available accident data were purchased from the Lancashire Constabulary in February 2006, for the area around the BAE Samlesbury Site. The identified 'accident data window' is shown on Figure 1.1
- 1.2 The records are for the 5 year period from 1st April 2000 to 31st March 2005
- 1.3 Analysis of the accident data is undertaken and reported herein. The objective is to help identify the (if any) underlying threats to road users inherent in the current highway network layout operation. Accidents involving 'peculiar' events or unusual circumstances, for which the same type of accident is unlikely to be repeated are identified and discounted from requiring further detailed analysis. For example 'A Veh1 driver losing control after attempting to avoid an object in the road and colliding with Veh2' would be regarded as a 'peculiar' event, ie not a regular occurring event and unlikely to be repeated.
- 1.4 Due to the large area to be analysed, the accident window in Figure 1.1 is divided into three areas. These are indicated on Figure 1.2, comprising:
- **Area 1:** The 'Swallow' junction. (A59 Preston New Road/ A59 Whalley Road/ A677 Preston New Road/ B6230 Cuerdale Lane),
 - **Area 2:** A59 Whalley Road from approx 60m beyond the 'Swallow' junction to the A59 Myerscough Smithy Road/ Myerscough Smithy Road/ A59 Longsight Road Roundabout,
 - **Area 3:** A677 Preston New Road from approx 60m beyond the Swallow Junction to approximately 500m beyond the Further Lane Junction.
- 1.5 Each of the above Areas is analysed and reported separately, in Chapters 3, 4 & 5 respectively.

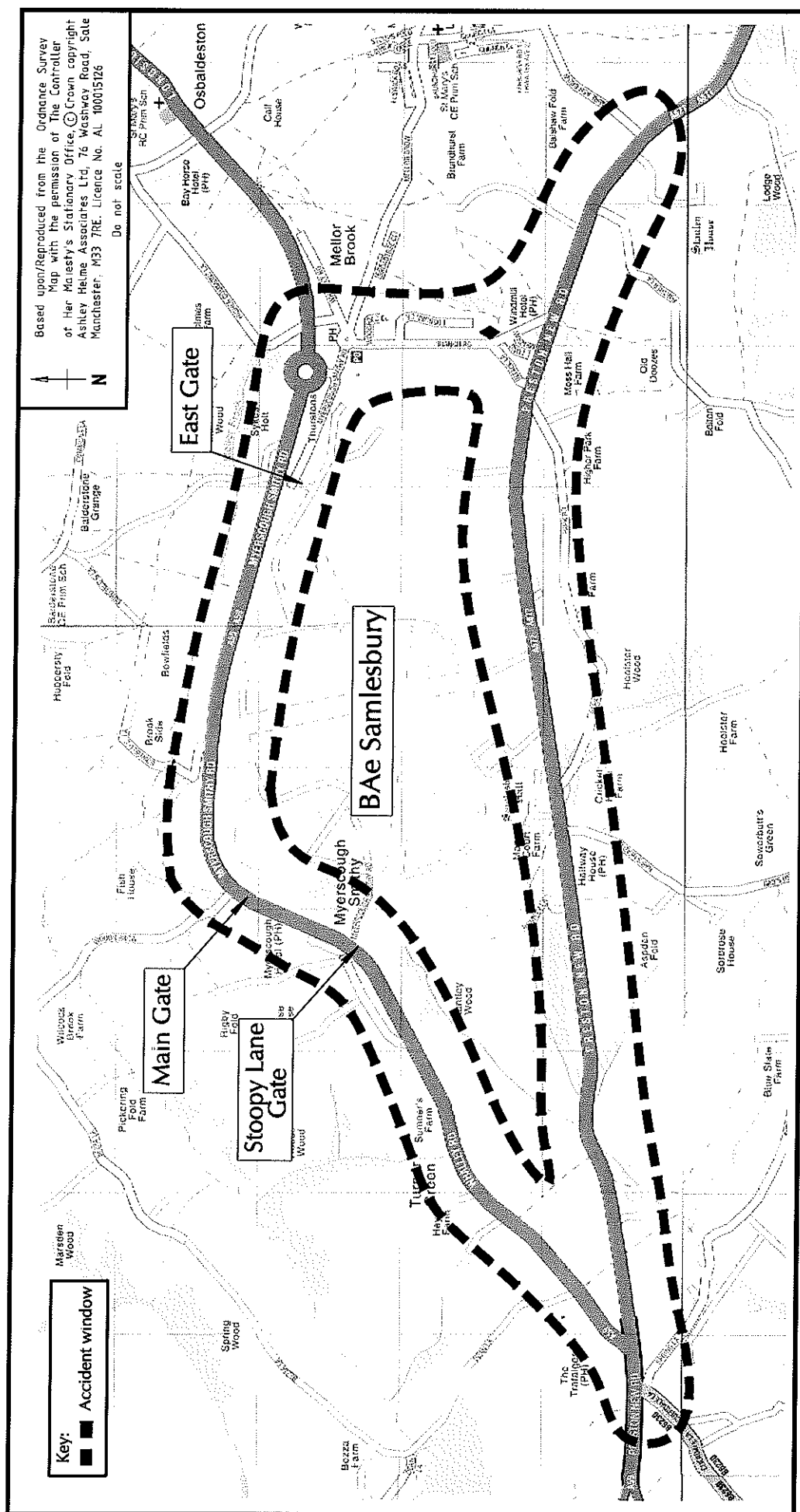


FIGURE 1.1



**ASHLEY ♦ HELME
ASSOCIATES LTD**

886 Washway Road SALE Manchester M33 7RE Tel: 0161 972 0552

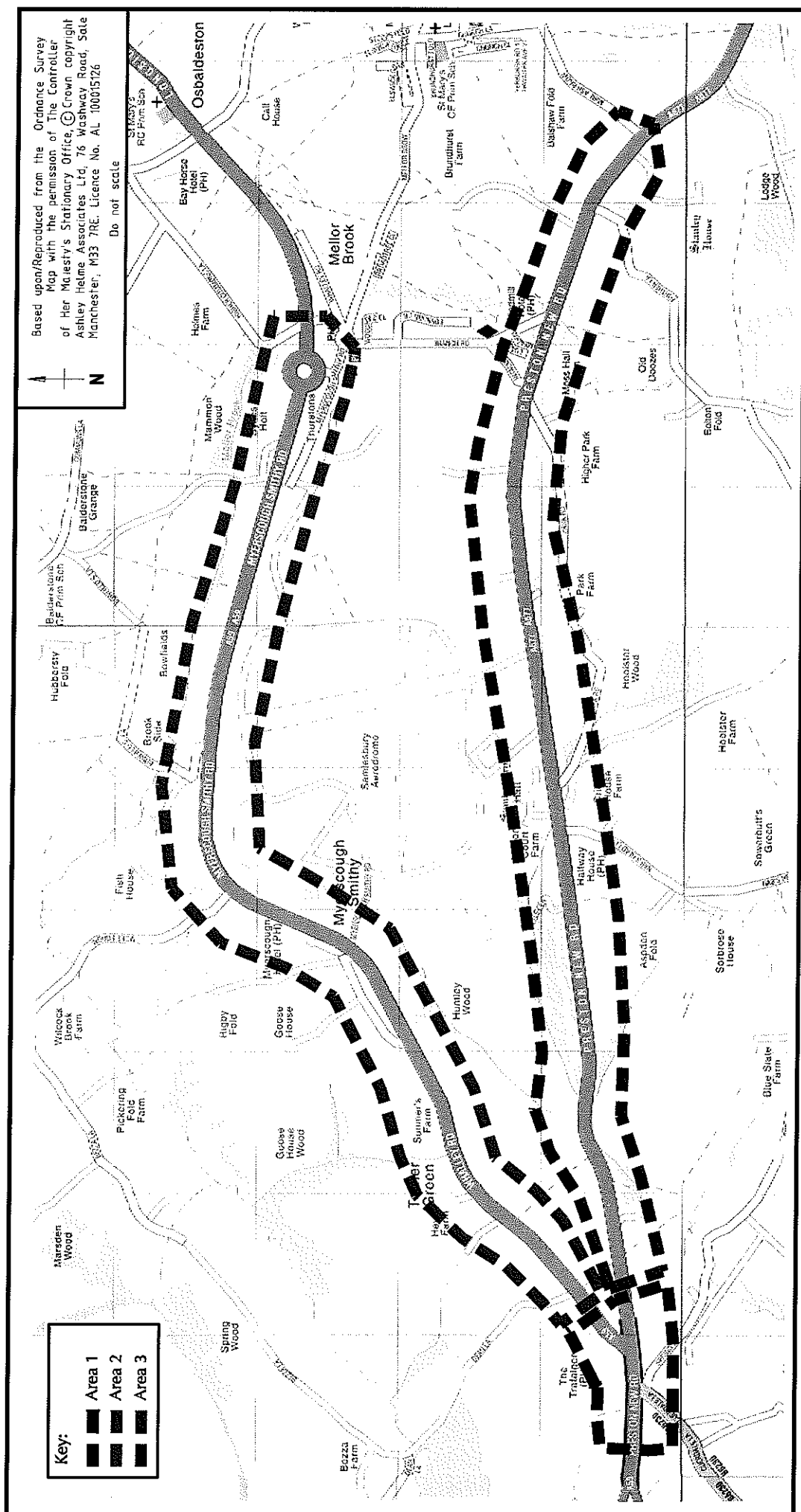


FIGURE 1.2

AREA BOUNDARIES

**ASHLEY ♦ HELME
ASSOCIATES LTD**

76 Washway Road SALE Manchester M33 7RE Tel: 0161 972 0552

Chapter 2

Accident Overview

- 2.1 Table 2.1 summarises the recorded accidents by 'Area' and year. Accidents are recorded by the police as Slight, Serious or Fatal depending upon the extent of the injuries received by the vehicle driver and/or passengers.
- 2.2 There is a total of 57 accidents. This represents an average of 11.4 accidents per year.
- 2.3 The highest number of accidents recorded over the 5 year period was in the second year of the records, April 2001 – March 2002. Although the number of accidents reduced in the following two years, this increased again in April 2004-March 2005.
- 2.4 Of the total 5 year recorded accidents, 52% occurred in Area 3 (A677) and 29% in Area 2 (A59). The AHA 'Traffic Flows' (report ref 987/1/A) identifies that the A677 carries approximately double the traffic that is on the A59. This is a likely contributory causal explanation of why there is circa twice as many accidents recorded on the A677 (Area 3) as on the A59 (Area 2).
- 2.5 Further analysis of each area is undertaken to identify any 'accident clusters' where several accidents occurred in relatively close proximity. This is reported in Chapter 3, 4 & 5.

YEAR	AREA ⁽¹⁾												TOTAL
	1				2				3				
	S	Se	F	Total	S	Se	F	Total	S	Se	F	Total	
1st Apr 00-31st Mar 01	2	0	0	2	2	0	1	3	1	2	0	3	8
1st Apr 01-31st Mar 02	2	0	0	2	3	1	0	4	7	1	1	9	15
1st Apr 02-31st Mar 03	1	1	0	2	3	1	0	4	2	0	2	4	10
1st Apr 03-31st Mar 04	0	0	0	0	3	0	0	3	5	2	0	7	10
1st Apr 04-31st Mar 05	3	2	0	5	2	1	0	3	4	1	1	6	14
TOTAL	11				17				29				57
AVERAGE/ YEAR	2.2				3.4				5.8				11.4

Notes:

- 1 Refer Figure 1.2
 2 S = Slight Injury
 Se = Serious Injury
 F = Fatal Injury

TABLE 2.1

ACCIDENTS BY AREA & YEAR

Chapter 3

Area 1 : The Swallow Junction

- 3.1 There are 11 recorded accidents within Area 1. The location of these is indicated on Figure 3.1. This represents an average of 2.2 accidents per year.
- 3.2 There appears to be a cluster of 10 accidents concentrated on the A59 Whalley Road/A677 Preston New Road section of the Swallow junction. These are all 'Slight' injury accidents, except for 1 'Serious'. Table 3.1 presents a summary of this accident cluster, referred to as 'Cluster 1'.
- 3.3 Review of Table 3.1 identifies that 50% of the Cluster 1 accidents are recorded as involving a vehicle turning right across the path of an oncoming vehicle. Unfortunately, the accident record data provided by Lancashire Constabulary includes no further information about the right-turn manoeuvre involved in the accidents. Review of Figure 3.1 does not suggest any clear explanation of the right-turn manoeuvre referred to in the accident record, and thus no firm conclusions can be drawn about the causal explanation for these accidents; (the Figure 3.1 plots the location of the accidents using the OS coordinates in the Constabulary accident records).
- 3.4 A further 30% of the Cluster 1 accidents involve a 'shunt' type collision whilst a vehicle is waiting at the traffic signals. This may indicate that approaching vehicle speed and visibility are factors to be considered at the junction in terms of identifying accident mitigation works.
- 3.5 Within the Cluster 1, accidents occurring during the early part of the recorded data (Years 2000 /2000 /2002) tend to involve vehicles attempting to turn right across the path of oncoming cars. However accidents occurring during the latter part of the recorded data (Years 2003-2005) tend to involve a greater proportion of shunt type accidents. This may suggest that the right-turn accident problem has been resolved/remediated, and the shunt problem has not. This can be considered further with the development proposals for improving the junction, which should resolve the problem.

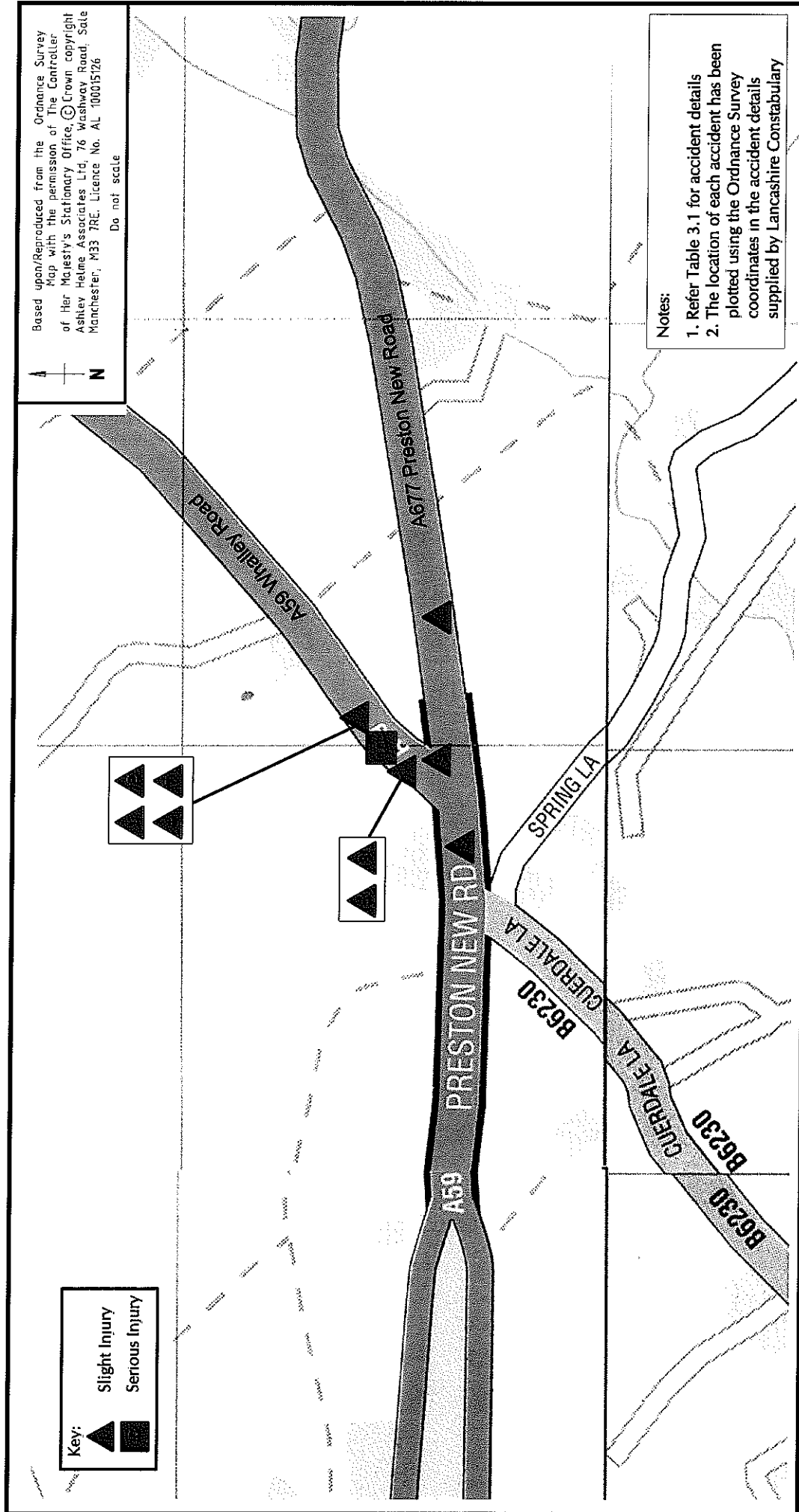
- 3.6 There is one additional accident, outside the Cluster 1 accidents summarised in Table 3.1. Accident No 11 (refer Figure 3.1) involved 2 vehicles travelling eastbound on the A677. Vehicle 2 attempts to overtake Vehicle 1 before the carriageway returns to one lane. Vehicle 2 fails to complete the manoeuvre and collides with Vehicle 1. This appears to be an isolated incident type that has not been repeated.

No.	DATE	DESCRIPTION	CONDITIONS	SEVERITY
1	7 May 00	Veh1 turns right collides with oncoming Veh2	Fine/ Dry/ Daylight	Slight
2	1 Jul 00	Veh1 making right turn at lights pulls into path of oncoming Veh2 travelling straight ahead	Fine/ Dry/ Daylight	Slight
3	3 Jun 01	Cyclist at lights, Veh1 also at lights. Veh1 moves off colliding with Cyclist	Fine/ Dry/ Daylight	Slight
4	30 Mar 02	Veh1 turns right across path of Veh2 approaching, collision occurs	Fine/ Dry/ Night	Slight
5	5 Dec 02	Veh1, Veh2 & Veh3 collide in shunt type accident	Fine/ Wet/ Night	Slight
6	21 Jan 04	Veh3 slows for lights, causes Veh1 to shunt Veh2 which then shunts Veh3	Fine/ Wet/ Night	Slight
7	2 Jul 04	Veh1 turns right across path of Veh2 at traffic lights	Fine/ Dry/ Daylight	Slight
8	20 Feb 05	Veh1 fails to observe Veh2 & Veh3 held at lights, collides into rear of Veh2 at speed	Fine/ Dry/ Daylight	Slight
9	13 Mar 05	Veh2 attempts 'U' turn in side road. Veh1 already in side road overtakes Veh2 and collision occurs	Fine/ Wet/ Night	Slight
10	28 Mar 05	Veh1 makes right turn across path of Veh2 and collides	Fine/ Dry/ Daylight	Serious

TABLE 3.1

AREA 1

ACCIDENTS IN CLUSTER 1



ACCIDENTS IN AREA 1

FIGURE 3.1



**ASHLEY HELME
ASSOCIATES LTD**

76 Washway Road SALE Manchester M33 7RE Tel: 0161 972 0552

Chapter 4

Area 2: A59 Whalley Road/ A59 Myerscough Smithy Road

4.1 There are 17 recorded accidents in Area 2. The location of these is indicated on Figure 4.1.

4.2 There are two identified accident clusters, referenced as :

- Cluster 2: 9 accidents,
- Cluster 3: 6 accidents

4.3 Tables 4.1 & 4.2 present a summary of the accidents within Clusters 2 & 3.

4.4 CLUSTER 2

4.4.1 Two of the entrances to the BAE site are located within Cluster 2: Main Gate and Stoop Lane Gate. Three accidents occurred at Stoop Lane Gate, 2 of which involved a rear end shunt when a vehicle was slowing down. There are no recorded accidents at Main Gate.

4.4.2 A recurring factor in many of the Cluster 2 accidents is failure to reduce speed and misjudgement of the driver.

4.4.3 Of the 9 Cluster 2 accidents, 6 occurred with the first 2 years of the recorded data, and 3 within the last 3 years. This indicates a decline in accidents within the Area 2 Cluster 2. This may suggest that driver speed management and control is improving.

4.5 CLUSTER 3

Three of the 6 Cluster 3 accidents involve overtaking manoeuvres, representing only 0.5 accidents per year of this type. There is in total, an average of 1.2 accidents per year, which does not represent an occurrence for which mitigation works would usually be sought.

4.6 OTHER

There are no recorded accidents at the A59 Myerscough Smithy Road/A59 Longsight Road roundabout

No.	DATE	DESCRIPTION	CONDITIONS	SEVERITY
1	11 Aug 01	Veh1 strikes nearside kerbs spinning into Veh 2 which then strikes Veh 3	Rain/ Wet/ Daylight	Slight
2	18 Oct 01	Veh1 Shunts Veh2 waiting to turn right	Fine/ Wet/ Daylight	Slight
3	07 Nov 01	Veh1 follows Veh2 too closely and shunts Veh2 when it turns left	Rain/ Wet/ Daylight	Slight
4	10 Nov 01	Veh1 crosses carriageway and collides with Veh2 travelling opposite direction	Fine/ Wet/ Night	Serious
5	22 May 02	Veh1 loses control on sweeping left hand bend, leaves road, comes to rest in field	Rain/ Wet/ Night	Slight
6	20 Aug 02	Veh1 HGV turns right into major road causes Veh2 to brake sharply and collide	Fine / Dry/ Daylight	Slight
7	12 Apr 04	Veh2 slows for RA, Veh1 shunts into back after failing to brake	Fine/ Dry/ Daylight	Slight
8	20 May 04	Veh1 loses control on left hand bend, leaves road, comes to rest in field	Fine/ Dry/ Daylight	Slight
9	16 Sep 04	In traffic Veh1 attempts to turn around in near side junction, fails to see LGV in junction and collides	Fine/ Dry/ Daylight	Serious

TABLE 4.1

AREA 2

ACCIDENTS IN CLUSTER 2

No	DATE	DESCRIPTION	CONDITIONS	SEVERITY
10	22 Sep 02	Veh1 overtakes Veh2 as Veh2 is overtaking Veh3 Veh1 loses control and hits Armco barrier on nearside	Fine / Dry/ Daylight	Slight
11	12 Feb 04	Veh1 moves off from layby into path of Veh2 travelling same direction	Fine / Dry/ Daylight	Slight
12	28 Dec 03	Veh2 overtaking line of traffic Veh1 pulls out of line of traffic and tries to pull in again and fails, braking sharply, causing Veh2 to lose control.	Fine/ Wet/ Daylight	Slight
13	20 Mar 05	Veh1 overtaking Veh3, collides with Veh2 causing Veh3 to swerve to avoid and leaves carriageway	Fine / Dry/ Daylight	Slight
14	10 May 00	Driver loses control whilst negotiating bend, leaves carriageway	Fine / Wet/ Night	Slight
15	29 Jan 02	Cyclist fails to see parked artic and collides with rear.	Fine / Wet/ Night	Slight

TABLE 4.2

AREA 2

ACCIDENTS IN CLUSTER 3

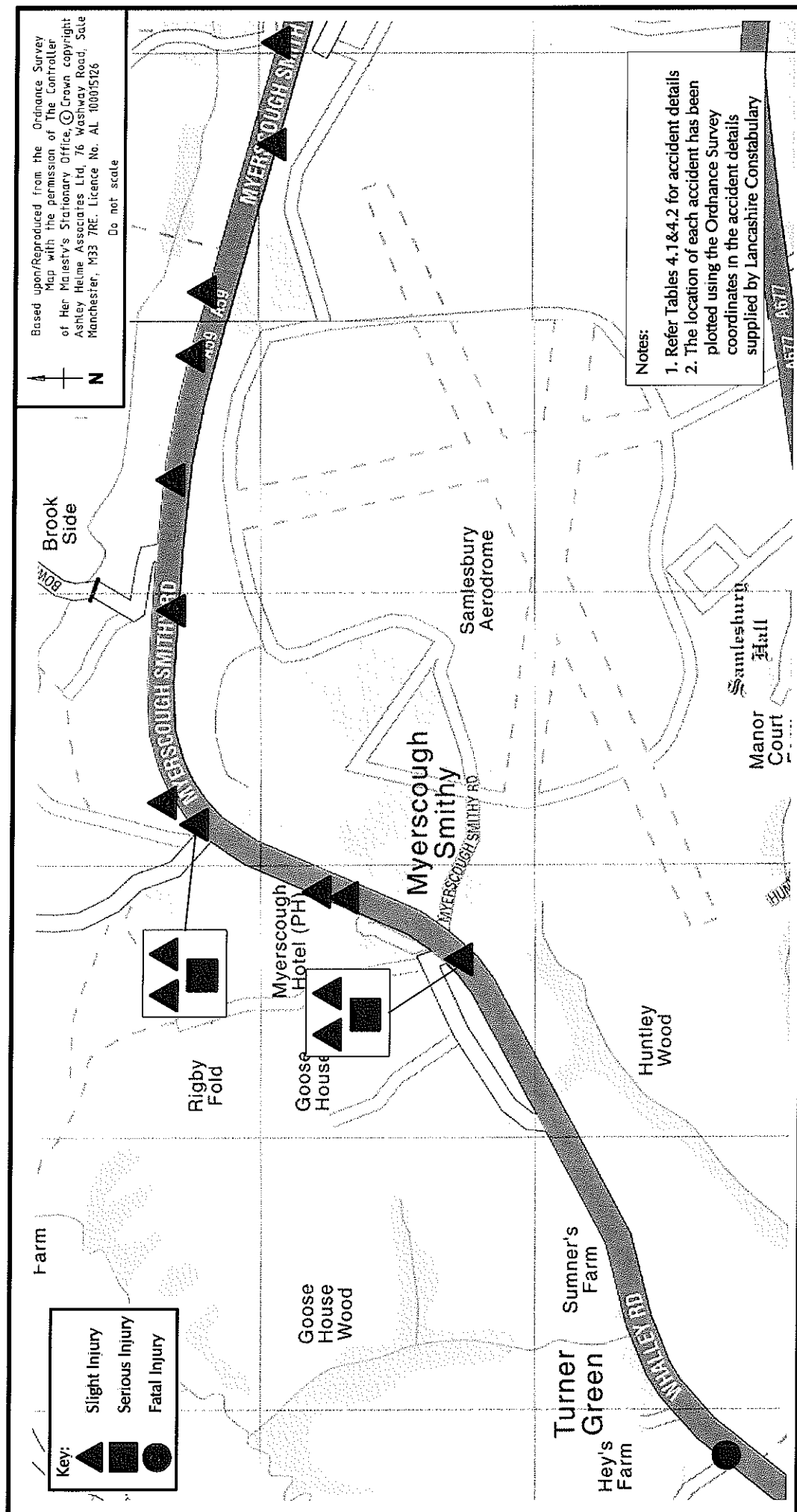


FIGURE 4.1

ACCIDENTS IN AREA 2



**ASHLEY HELME
ASSOCIATES LTD**

76 Washway Road, Sale, Manchester M33 7RE Tel: 0161 972 0552

Chapter 5

Area 3 : A677 Preston New Road

5.1 There are 29 recorded accidents in Area 3. The locations of these are indicated on Figures 5.1 & 5.2.

5.2 There are four identified 'clusters' of accidents in Area 3, referred to as:

- Cluster 4, 3 accidents
- Cluster 5, 9 accidents
- Cluster 6, 8 accidents
- Cluster 7, 6 accidents.

Tables 5.1-5.4 present summaries of the accidents in each of the Clusters.

5.3 **CLUSTER 4**

5.3.1 In each of the three Cluster 4 accidents, the driver lost control of the vehicle. This is likely to be due to the speed of travel.

5.3.2 The most recent accident in the Cluster 4 area was in July 2003. As there has been no accident in the past circa 3 years, it is concluded that there is no current accident problem in this locale.

5.4 **CLUSTER 5**

5.4.1 There are 9 accidents in Cluster 5.

5.4.2 As indicated on Figure 5.1, within Cluster 5 there are 2 priority (give-way) control junctions on the A677: at Nab's Head Lane and at Park Road. Samlesbury Hall and the Halfway House Pub are also located within close proximity of these two junctions. It seems likely that there will be vehicles slowing to turn into either Nab's Head Lane, Park Road or into Samlesbury Hall or the Halfway House Pub. This is also indicated in the data; 30% of the accidents involve shunt type accidents, and 30% of the accidents involve vehicles attempting to overtake.

5.4.3 It appears that accidents are not decreasing in the locale of Cluster 5, as 80% of the accidents occurred during 2003 and 2004.

5.5 **CLUSTER 6**

5.5.1 There are 8 accidents in Cluster 6: 5 slight, 1 serious and 2 fatalities. This is a predominately residential area with many direct driveway accesses on the A677 Preston New Road, although only 1 accident is due to vehicles emerging from a driveway.

5.5.2 Four of the recorded accidents (Nos 14,19, 20 & 21) are due to drivers losing control, 3 of which occurred at night, and all in wet conditions. There has typically been 1 accident per year of this type

5.5.3 As with Cluster 4, the main contributory factor to the accidents seems to be vehicle speed.

5.5.4 Similar to Cluster 5, there are 3 priority junctions within Cluster 6: Park Road, Intack Lane and Branch Road. There is a shunt type accident recorded at the Park Road junction and another recorded at the Intack Lane junction. There is no recorded accident at the Branch Road/A677 junction.

5.6 **CLUSTER 7**

5.6.1 There are 6 accidents in Cluster 7: 3 slight and 3 serious

5.6.2 Within Cluster 7, 50% of the accidents have a common cause. It appears that drivers travelling westbound on the A677 experience difficulty following the path of the road as it turns to the left, resulting in collision with an oncoming vehicle. Speed may be a contributory factor but this is hypothesis, as there is no information available to inform this.

5.6.3 The majority of the recorded accidents in Cluster 7 occurred early in the accident records. This would suggest that accidents are decreasing in this location, and at the very least not increasing.

No.	DATE	DESCRIPTION	CONDITIONS	SEVERITY
1	16 Mar 03	Veh1 attempt to overtake on a series of bends and driver loses control	Fine/ Dry/ Night	Fatal
2	20 Jul 03	Motorcycle travelling in convoy enters a series of bends and loses control	Fine/ Dry/ Day	Serious
3	16 Dec 01	Veh1 overturns on bend on isolated section of A677	Rain/ Wet/ Night	Slight

TABLE 5.1

AREA 3

ACCIDENTS IN CLUSTER 4

No	DATE	DESCRIPTION	CONDITIONS	SEVERITY
4	14 Feb 03	Veh1 collides into rear of Veh2 in shunt type accident	Fine/ Dry/ Day	Slight
5	02 Apr 04	Veh1 collides head on with Veh2 at speed	Fine/ Dry/ Day	Fatal
6	2 May 03	Veh1 and Veh2 involved in rear end shunt.	Rain/ Wet/ Day	Slight
7	18 Apr 04	Veh1 leaves carriageway after overtaking slower moving Veh2	Fine/ Dry/ Day	Slight
8	01 Jun 03	Veh2 swerves to avoid Veh2 turning right, leaves carriageway	Fine/ Dry/ Night	Slight
9	16 Jul 04	Veh1 stationary waiting to turn right, signalling, Veh2 misjudges clearance and collides into rear of Veh1	Rain/ Wet/ Day	Serious
10	04 Sep 04	Veh1 loses control after Veh2 overtakes Veh1	Fine/ Dry/ Day	Slight
11	04 Sep 01	Veh2 right turning collides with Veh1 overtaking	Fine/ Dry/ Day	Slight
12	06 Feb 01	Veh2 slows due to Veh3 turning right ahead Veh1 fails to stop in time and hits Veh2 in rear.	Wet/ Night	Slight
13	03 Sep 03	Veh1 attempts to cross traffic but collides with Veh2 travelling straight ahead in slow moving traffic	Fine/ Dry/ Day	Slight

TABLE 5.2

AREA 3

ACCIDENTS IN CLUSTER 5

No.	DATE	DESCRIPTION	CONDITIONS	SEVERITY
14	12 Jan 02	Veh1 fails to negotiate left hand bend and collides head on with oncoming Veh2	Fine/ Wet/ Night	Fatal
15	27 Mar 03	Veh1 attempts to overtake and collides head on with oncoming Veh2	Fine/ Dry/ Night	Fatal
16	12 Jul 03	Veh1 emerges from side road into path of Veh2	Fine/ Dry/ Night	Slight
17	26 Aug 01	3Veh shunt type accident.	Fine/ Dry/ Day	Slight
18	05 Sep 01	Veh3 slows to allow Veh4 to turn left Veh1 collides into rear of Veh2 which collides into rear of Veh3	Rain/ Oil/ Day	Slight
19	07 Nov 04	Veh1 attempts to negotiate right turn bend at speed and loses control	Rain/ Wet/ Night	Slight
20	17 May 03	Veh1 loses control and leaves road colliding with lamp post, comes to rest in field	Rain/ Wet/ Night	Serious
21	05 Oct 02	Veh1 fails to negotiate left hand bend and collides head on with Veh2 and Veh3	Fine/ Wet/ Day	Slight

TABLE 5.3

AREA 3

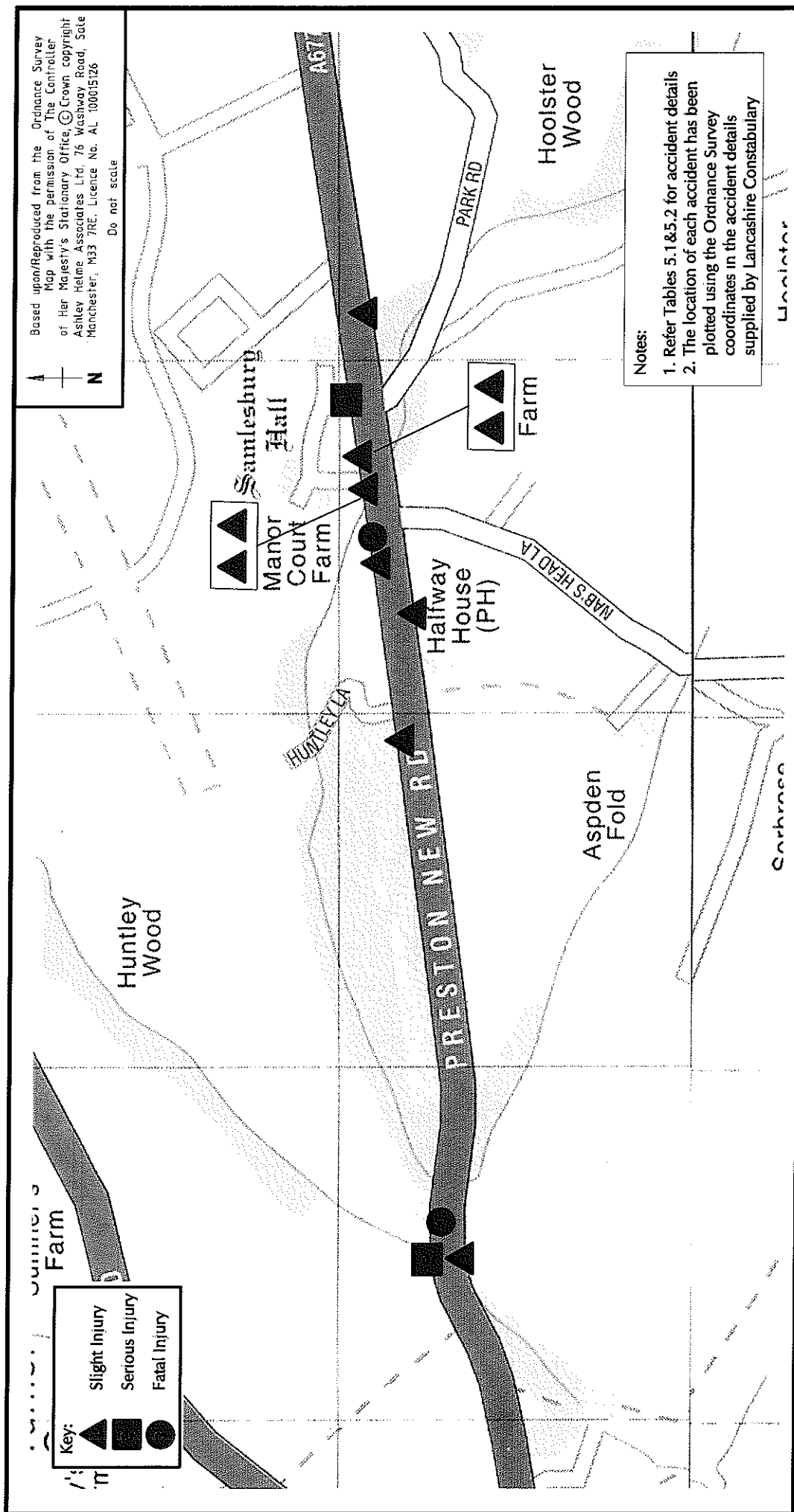
ACCIDENTS IN CLUSTER 6

No	DATE	DESCRIPTION	CONDITIONS	SEVERITY
22	07 Mar 01	Veh1 attempts to overtakes Veh2, collides with offside kerb and rebounds into wall	Rain/ Wet/ Night	Serious
23	18 Mar 02	Veh1 emerging from side road collides with Veh2 on major road	Fine/ Dry/ Day	Slight
24	01 Jul 03	Veh1 loses control following left hand bend, crosses carriageway, overturns into field	Rain/ Wet/ Day	Slight
25	01 Jul 00	Veh1 loses control on left hand bend and collides with HGV	Fine/ Dry/ Day	Serious
26	05 Sep 00	Veh1 fails to negotiate left hand bend at speed, crosses carriageway and rolls into adjacent field	Rain/ Wet/ Day	Serious
27	22 Sep 00	4 Veh shunt type accident	Fine/ Wet/ Day	Slight

TABLE 5 4

AREA 3

ACCIDENTS IN CLUSTER 7



ACCIDENTS IN AREA 3 CLUSTERS 4 & 5

FIGURE 5.1



**ASHLEY HELME
ASSOCIATES LTD**

76 Washway Road SALE Manchester M33 7RE Tel: 0161 972 0552

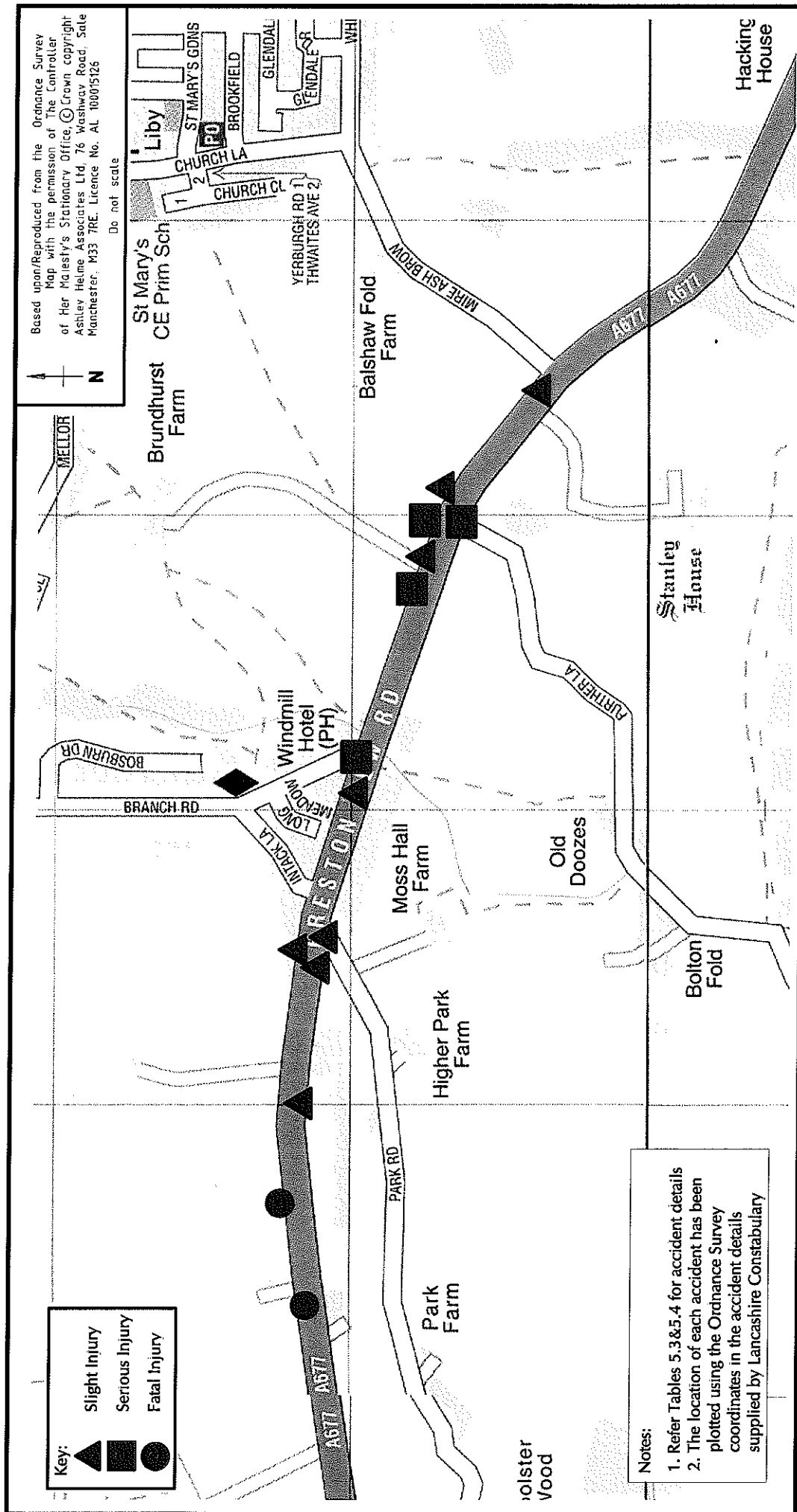


FIGURE 5.2

ASHLEY HELME
ASSOCIATES LTD



76 Washway Road SALE Manchester M33 7RE Tel: 0161 972 0552

ACCIDENTS IN AREA 3 CLUSTERS 6 & 7

Chapter 6

Conclusions

6.1 A 'cluster' analysis methodology is adopted for this report, due to the large number of accidents occurring over a large area. The identified clusters often cover an extensive length of highway, rather than the specific locations used in the usual cluster methodology, (such as a junction). The methodology adopted allows identification of patterns of accidents

6.2 SWALLOW JUNCTION

6.2.1 There are 11 recorded accidents in the vicinity of the Swallow Junction, representing an average of 2.2 per year. This is the highest average occurrence of accidents of all the study 'cluster' locations identified on the study network. Improvement of the junction can contribute to addressing the accident problem(s) and reducing the future occurrence of accidents

6.3 A59

6.3.1 There are 16 recorded accidents in Clusters 2 & 3. The average for each is 1.8 & 1.2 accidents per year respectively.

6.3.2 It appears that a contributory factor to the number of accidents is likely to be vehicle speed. Another associated factor is likely to be the horizontal alignment of the A59, specifically the 'bend' of the road. A reduction in the speed limit from the current unrestricted, to say 50mph, is likely to be beneficial in contributing to a reduction in accidents.

6.4 A677

6.4.1 There are 26 recorded accidents in Clusters 4, 5, 6 & 7. The average no of accidents per year is 0.6, 1.8, 1.6 & 1.2 respectively

6.4.2 Cluster 4

As there has been no recorded accidents since July 2003, there appears not to be a current accident problem in this area.

6.4.3 Cluster 5

6.4.3.1 There are two junctions and additionally the accesses to Samlesbury Hall and the Halfway House Pub located in close proximity to each other. Rear end shunt type accidents represent 30% of the recorded accidents. These are likely to be due to vehicles slowing for one of the two junctions or for one of the two accesses. Another 30% of accidents involve vehicles overtaking along this section.

6.4.3.2 Accidents are not decreasing in the locale of Cluster 5. This indicates that the contributory factors to these accidents have not been resolved.

6.4.3.3 A reduction in the speed limit from the current 50mph, to say 40mph, is likely to be beneficial in contributing to a reduction in accidents.

6.4.4 Cluster 6

6.4.4.1 This section of the A677 is predominately residential, with private driveway accesses. Notwithstanding this, there is only one recorded accident due to a vehicle emerging from a driveway.

6.4.4.2 There are only 2 recorded shunt type accidents in 5 years, each at a different junction. This is despite there being three junctions close to each other. Thus, as distinct from the Cluster 5 locale, the proximity of junctions in Cluster 6 does not give rise to a recurring and/or statistically significant occurrence of shunt-type accidents.

6.4.4.3 There has been typically one accident per year involving a driver losing control of the vehicle, at various locations along the length of Cluster 6.

6.4.4.4 There is one recorded accident due to vehicles overtaking.

6.4.4.5 Whilst there appears to be a consistent level of occurrence of accidents, there is no identifiable cause of a recurring accident problem. The conclusion is that perhaps a reduction in the speed limit may be beneficial and/or worthy of further consideration.

6.4.5 Cluster 7

There is an average of only 1.2 accidents per year, and accidents appear to be decreasing. Whilst this would not tend to indicate a recurring accident problem to be targeted for accident remedial works, a common cause of accidents is vehicles failing to follow the horizontal alignment of the road. Thus, a reduction in the speed limit from the current 50mph, to say 40mph, may be beneficial in contributing to a further reduction in accidents.