



A COMPARATIVE ANALYSIS OF BONFIRES WITHIN WIRRAL METROPOLITAN BOROUGH COUNCIL (MBC) AREA FOR THE PERIOD 20th OCTOBER TO 7th NOVEMBER 2005 AND 2006

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Distribution List

Name	Position	I / R
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Related Documents

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1. Agreement

For the purpose of this report the following agreement was made between the client and the Knowledge & Information Management Department.

This work was requested by CFOA – Chief Fire Officers Association and received on November 2006.

The Manager¹ has approved this report/ piece of work can be undertaken by the Knowledge & Information Management Department.

If the scope of the work changes, authorisation must be again obtained and would be noted within the version control document sheet.

It was agreed that this report would be produced in draft format by January 2007, and would be sent electronically to the Knowledge Manager/ Director of Knowledge & Information Management and Client for comment.

The Manager / Client agreed that their comments would be received back by January 2007.

The final report, which will always be in PDF format, would be produced by January 2007, subject to receiving comments.

¹ John L Curtis

2. *Summary*

This report presents a comparison of the bonfire period for 2005 and 2006 for the Wirral district. This report focuses on the number and distribution of incidents throughout the Wirral by station ground, as well as identifying high risk dates, times and incident types. The key points of the report can be summarised as follows:

- The quantity of incidents rose from 167 in 2005 to 283 in 2006, an increase of 69%.
- Within the Wirral district all of the station grounds witnessed an increase in incidents during the 2006 bonfire period.
- Peak periods of bonfire activity occurred between 14.00hrs and 22.00hrs with the 4th until the 6th of November being the busiest dates for incidents.
- There was a major hotspot of activity within Birkenhead town centre which spread to Bidston and Tranmere.
- There was a reduction in the amount of waste collected by the local authority compared to the same period for 2005.

3. Introduction

Traditionally the seasonal bonfire period has led to a rise in bonfires and antisocial behaviour related incidents. The role of this report is to analyse the bonfire period of 2006 and compare it to the same period from 2005. The period under scrutiny dates from the 20th October until the 7th November 2006.

4. Methodology

To assess bonfires and antisocial behaviour within the period, the following methodologies were used:

- The period under analysis is from 09:00hrs on 20th October 2006 until 09:00hrs on the 7th November 2006. For a comparative analysis, statistics were for the same period in 2005.
- The types of incident reviewed include: all deliberate bonfires and other types of fire associated with anti social behaviour.
- Blue8 was used to map and pinpoint where all incidents took place. This allowed for hotspots to be identified within the Local Authority District.
- Crystal reports was utilised to gather the raw data and Microsoft Excel was used to interpret these figures.

5. Results

In analysing the bonfire period of 2006 within the Wirral district of Merseyside the following aspects will be analysed:

- The total number of incidents for 2005 and 2006 within each station ground.
- Incidents broken down according to type.
- Quantity of incidents broken down per 10,000 head of population.
- Incidents during the bonfire period sorted by Ward.
- Incidents during the bonfire period ordered by date.
- Incidents sorted by time of day.
- Hotspot analysis.

5.1 Total Incidents by station ground for 2005 and 2006

Table 1: Total Incidents for the bonfire period for 2005 and 2006.

Year	Number of Incidents
2005	147
2006	283

From the table above it is evident that overall the quantity of incidents rose from 147 in 2005 to 283 incidents in 2006, an increase of 116 incidents. As a percentage this represents an increase of 69%.

Chart 1: Comparison of incidents by station ground for the Wirral district.

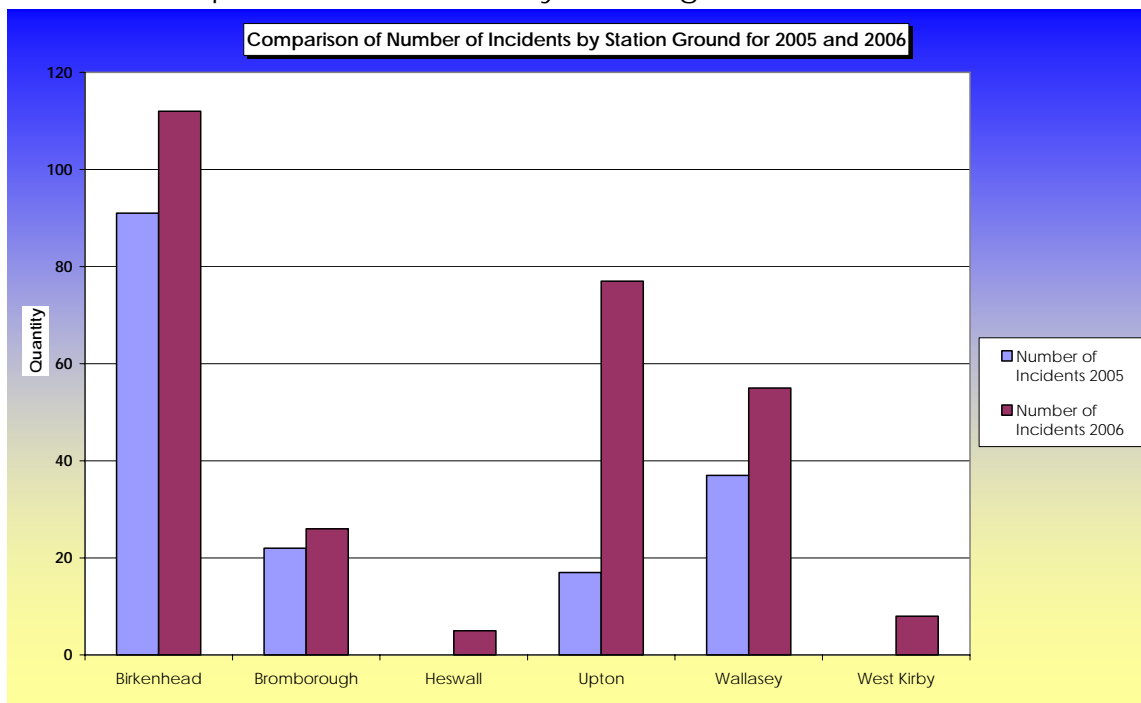


Table 2: Comparison of incidents by station ground for the Wirral district.

Station Ground	Number of Incidents 2005	Number of Incidents 2006	% Change
Birkenhead	91	112	23%
Bromborough	22	26	18%
Heswall	0	5	0%
Upton	17	77	353%
Wallasey	37	55	49%
West Kirby	0	8	0%
Total	137	175	

When individual station grounds were analysed all of the station grounds witnessed increases in incidents between 2005 and 2006. Within "Upton's" station ground, "Upton" witnessed the largest increase in incidents of 353%.

5.2 Incidents by type

Table 3: Incident types during the bonfire period.

Incident Type	Number of Incidents 2005	% 2005	Number of Incidents 2006	% 2006
Derelict Building	7	4%	9	3%
Grassland	10	6%	10	4%
Intentional Burning / Bonfires	51	31%	100	35%
Outdoor Structure	5	3%	3	1%
Refuse, refuse container	93	56%	159	56%
Derelict Vehicle	1	1%	2	1%
Total	167	100%	283	100%

The above table illustrates a breakdown of the incidents attended by MF&RS personnel during the 2005 and 2006 bonfire periods. What is immediately apparent is that in both years the majority of incidents dealt with were associated with "Refuse/Refuse Containers" fires which accounted for 56% of incidents in both years. Following this the second most common type of incident involved "Intentional Burning/Bonfires" accounting for 31% in 2005 and 35% in 2006.

There were minor increases for incidents associated with: "Derelict Building" and "Derelict Vehicles" with "Grassland" incidents remaining constant and "Outdoor Structure" seeing a reduction from 5 incidents in 2005 to 3 incidents in 2006.

5.3 Number of incidents per 10,000 population.

Table 4: population and incidents per 10,000 population for Wirral.

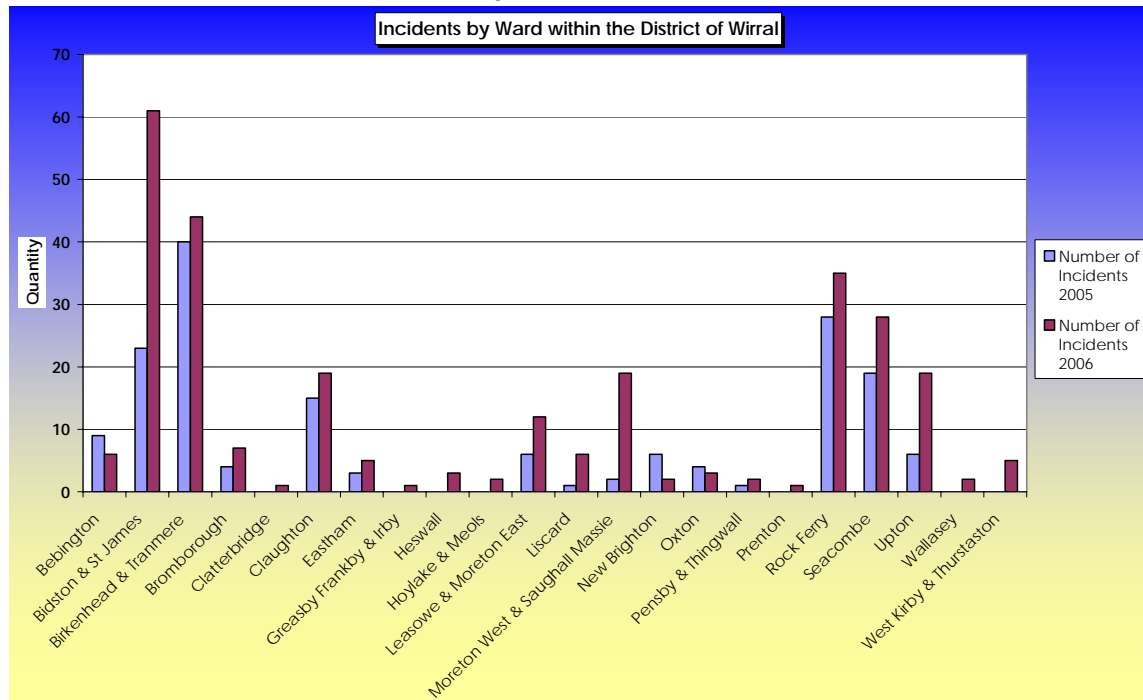
Year	Population	Incidents	Population / 10000
2005	312184	167	5.35
2006	312184	283	9.07

The above table illustrates that in 2006 there was a considerable increase in the quantity of incidents during the bonfire period and resultant increase of 4 incidents per 10,000 head of population.

For figures involving individual station grounds reference should be made to the Merseyside wide report.

5.4 Number of incidents by ward

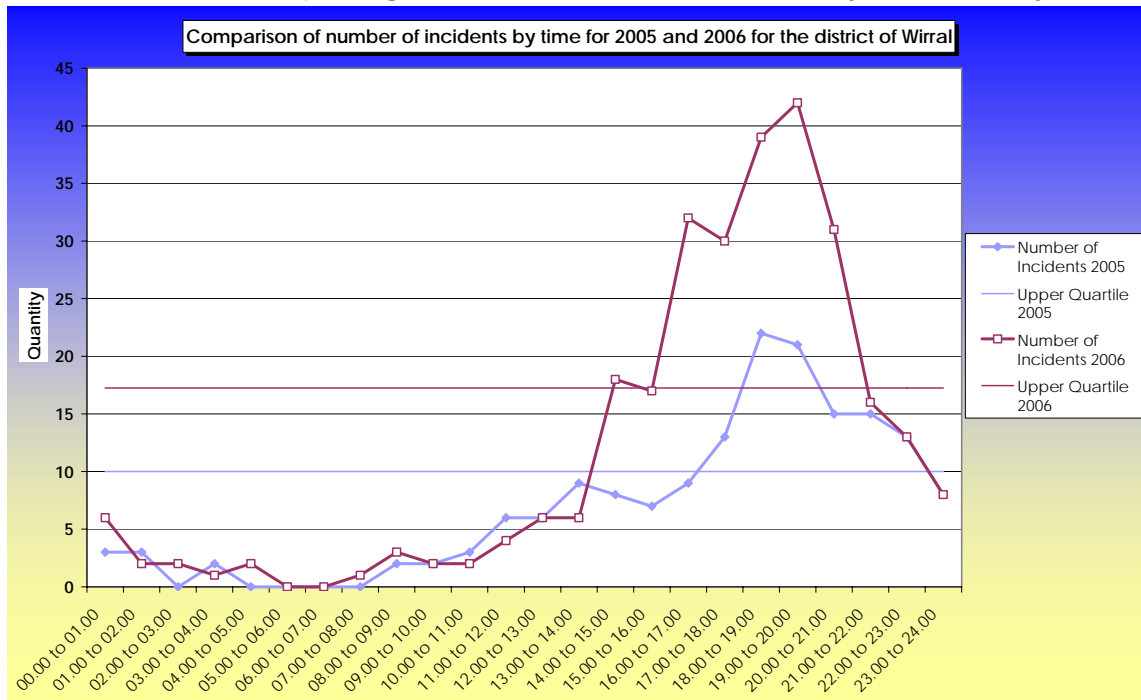
Chart 2: Incidents in the Wirral by Ward



The above chart graphically displays the incidents by ward for the Wirral District. What is immediately apparent is that there have been large increases in incidents for the "Bidston & St James" ward (increasing from 21 incidents in 2005 to 63 in 2006, an increase of 181%) and the "Morton West and Saughall Massie" ward (increasing from 2 incidents in 2005 to 19 incidents in 2006, an increase of 850%).

5.5 Incidents by time

Chart 3: Chart comparing incidents in 2005 and 2006 by time of day



The above chart clearly highlights a large difference between 2005 and 2006. In 2005 the peak period of incident ranged from 18.00hrs until 21.00hrs by comparison in 2006 the peak period began after 14.00hrs and lasted until 22.00hrs. Prior to the peak periods the trends between the two years were very similar.

By identifying the top quartiles for both 2005 and 2006 it is apparent that in 2006 the number of incidents during peak periods had increased.

5.6 Incidents by date

Chart 4: Chart comparing incidents in 2005 and 2006 by date

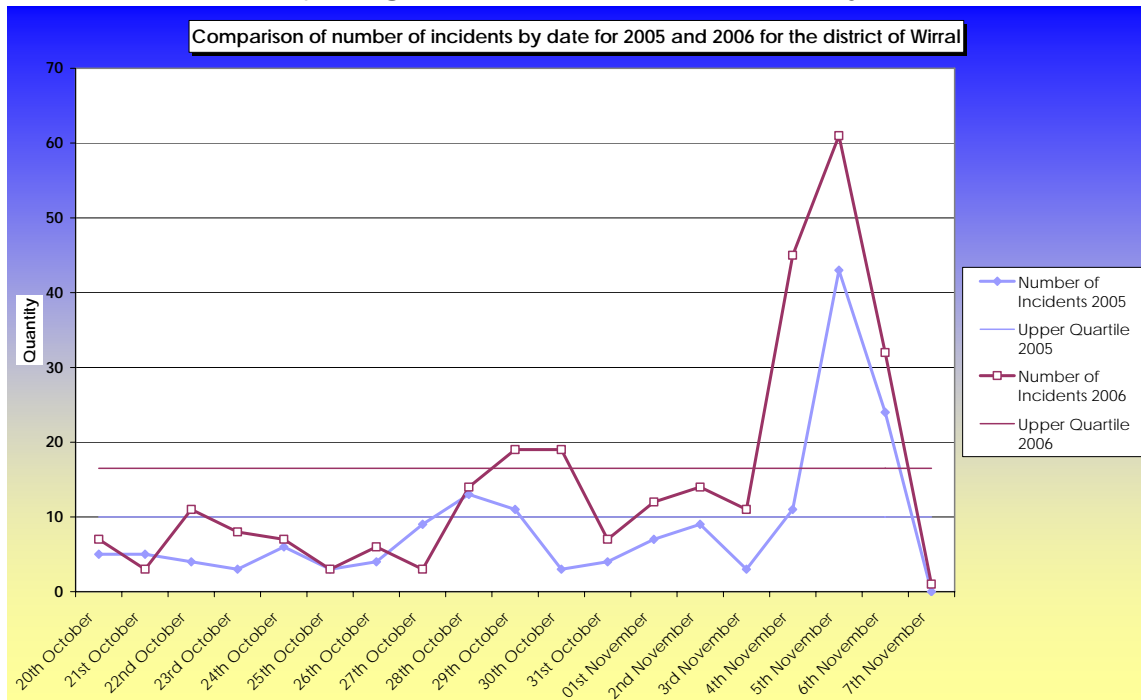


Chart 4 (above) highlights trends between reported incidents during the bonfire periods of 2005 and 2006.

What is apparent is the trend of increased activity between 2005 and 2006. In addition the period of peak incidents in 2006 lasts from the 4th November until the 6th November, whereas in 2005 this period ran from the 5th November until the 6th November. In addition there is a small peak of incidents in 2006 between the 29th and the 31st October, where Merseyside Fire and Rescue Service dealt with incidents concerning the Halloween period.

Chart 5: Chart comparing the cumulative effect of incidents during the bonfire period

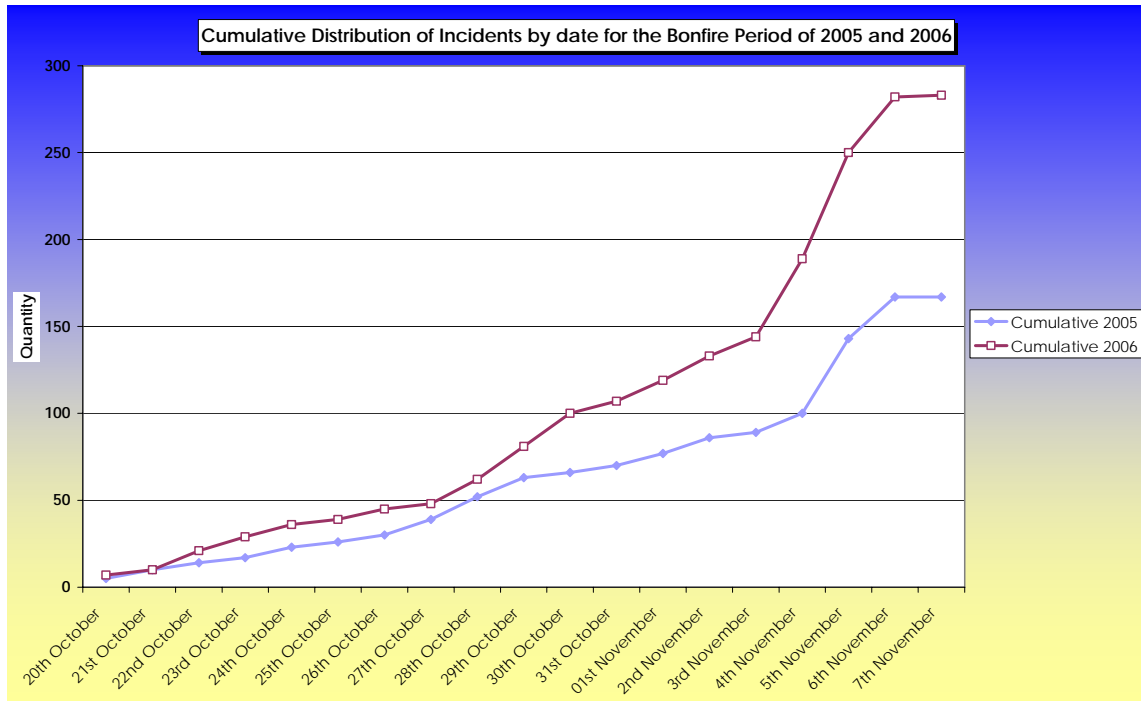


Chart 5 (above) displays the cumulative effect of incidents throughout the Wirral for 2005 and 2006. What is apparent is that the frequency of incidents throughout the entire bonfire period of 2006 was higher than in the previous year.

Incidents for the 4th, 5th and 6th of November

Table 5: below displays the quantity of incidents and proportion of incidents to have occurred on the 4th, 5th and the 6th of November, the peak days of bonfire activity during the period.

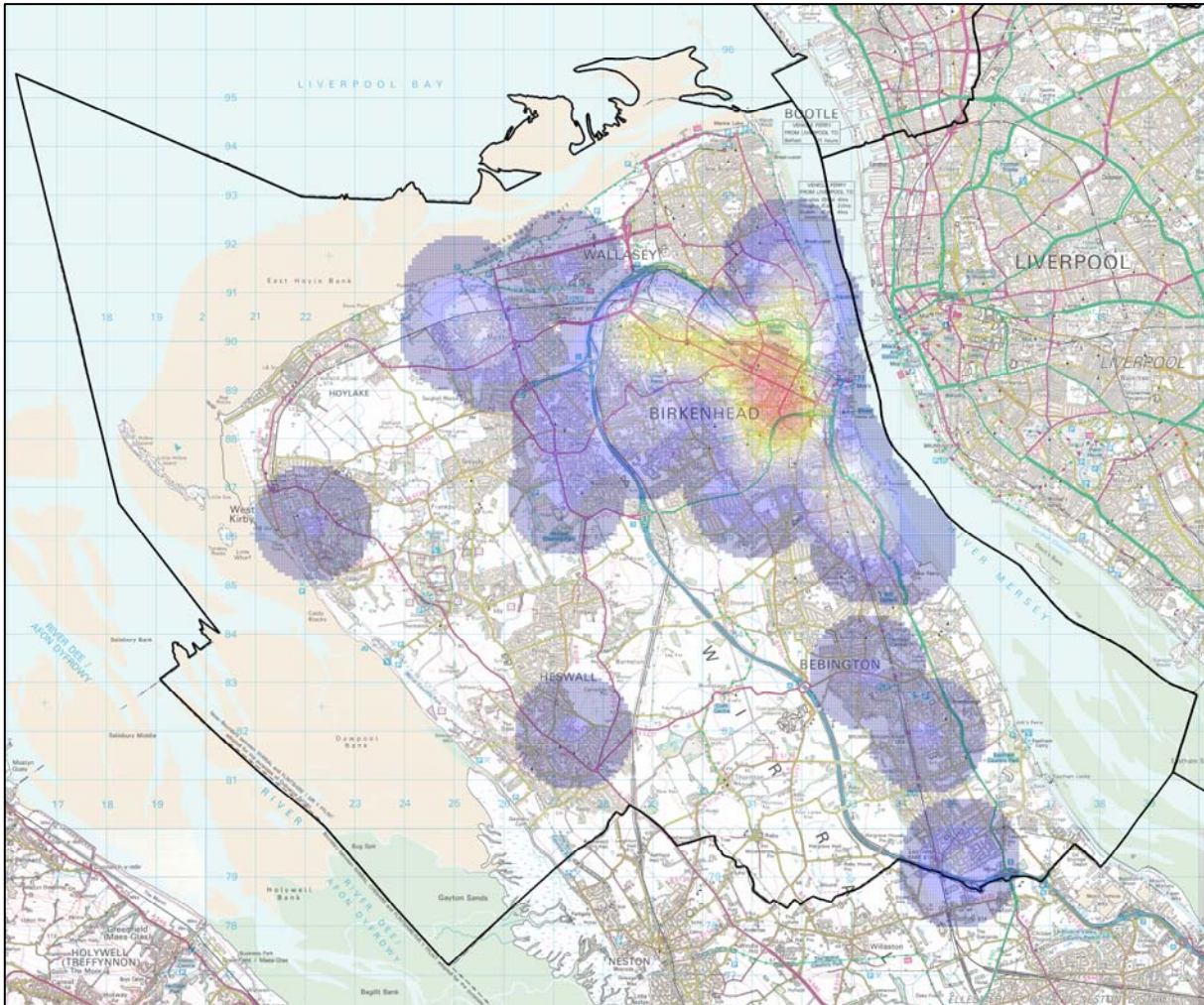
Date	Number of Incidents 2005	Number of Incidents 2006	% Change
4th November	11	45	309%
5th November	43	61	42%
6th November	24	32	33%

The above table describes that there was a significant increase of 309% concerning incidents on the 4th of November with a 42% increase in

incident number on the 5th of November. While on the 6th there was a 33% increase in 2006.

5.7 Hotspot Analysis

Map 1: Map showing the Wirral district and the hot spot areas within the district for the 2006 bonfire period.



Using the above map it is clear that there is a large primary hotspot within Birkenhead town centre which spreads to Bidston and Tranmere. There are a number of isolated hotspots throughout the Wirral, but not enough to indicate any kind of trend.

5.8 Threat Response

During the 2006 bonfire period the local authority of Wirral in conjunction with the Arson taskforce of Merseyside Fire and Rescue Service worked together to formulate the following action plans during and preceding the bonfire period:

- Visits to local schools within the Wirral district where the risk of incidents was highest.
- During the bonfire period, Wirral Metropolitan Council operated a rubbish collection scheme whereby materials suitable for the burning in bonfires, as well as hazardous materials were collected. At this point in time there are currently no figures available as to the success of this scheme, however it is believed that the quantities collected by the collection teams is down on 2005.

6. Conclusion

The total number of incidents increased between 2005 and 2006. In 2005 there were 167 incidents, while in 2006 there were 283, an increase of 116 incidents or 69%.

Spatial Analysis

Taking into account incidents which occurred only in the Wirral district all of the station grounds witnessed an increase in reported incidents.

The types of incident witnessed in Wirral, "Intentional Burning / Bonfires" (with 31% of incidents in 2005 and 35% in 2006) and the burning of "Refuse/Refuse Container" (with 56% of incidents in both years) were the most common incident type being dealt with by Merseyside Fire and Rescue Service.

Wards within Wirral, with the exception of "Bebington", "New Brighton" and "Oxton" all saw increases in incidents. There were particularly large increases in incidents for the: "Bidston & St James" and "Moreton West and Saughall Massie" wards possibly as a result of dispersal of offenders from neighbouring wards.

Incidents per 10,000 population saw a significant increase from 5.35 incidents in 2005 to 9.07 in 2006 an increase of 3.72 incidents per 10,000 head of population.

Temporal Analysis

During peak periods from 14.00hrs to 22.00hrs it is apparent that the actual peak time of incidents had shifted from between 18.00hrs – 19.00hrs in 2005 to an hour later (from 19.00hrs – 20.00hrs) in 2006.

The peak dates for recorded incidents was the 4th until the 6th of November, which witnessed a large increase in proportion 309% on the 4th of November or in real terms an increase of 34 incidents from 11 to 45 incidents. On the 5th of November the Wirral experienced an increase of 11% or in real terms an increase of 12 incidents from 43 to 61 incidents for the bonfire periods of 2005 and 2006. For the 6th November there was an increase of 33%, in real terms a rise from 24 incidents in 2005 to 32 incidents in 2006.

The collection of waste suitable for the burning of bonfires is down on 2005. It is possible in principle that this reduction increased the quantity of fires which had to be dealt with by Merseyside Fire and Rescue service.

It should be noted that weather conditions within the Wirral district were dry in comparison to 2005; this fact is very likely to have affected the rate of incident throughout the district and thus reducing the impact of the various schemes which Wirral Metropolitan Borough Council and Merseyside Fire and Rescue Service can put into action.