



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

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**KNOWLEDGE AND INFORMATION MANAGEMENT DEPARTMENT**

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## Document Control

### Amendment History

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### Sign-Off List

Name	Position
John Moorcroft	Director of Community Safety

### Distribution List

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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 the Director of Community Safety on November 2006.

The Manager<sup>1</sup> 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 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.

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<sup>1</sup> John L Curtis

## *2. Summary*

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

- This report only analyses incidents that have occurred within the Knowsley Local Authority district.
- The quantity of incidents rose from 185 in 2005 to 284 in 2006, an increase in proportion of 54%.
- The station grounds of: Kirby (112%), Huyton (48%), Speke (30%) and Belle Value (13%) all experienced an increase in percentage of incidents from 2005 to 2006.
- The station ground of Whitson experienced a decline of incidents from 2005 to 2006 of 21% and Aintree had no change.
- Peak periods of bonfire activity occurred between 18.00hrs and 22.00hrs with the 3rd, 4th, 5th and 6th of November being the busiest dates for incidents.
- There were hotspots within Kirkby which included the Northwood Ward, Whitefield Ward and Kirkby Central Ward. The hotspots within Huyton fell within Stockbridge Ward, Longview Ward and Page Moss Ward.

### ***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 for 2005. The period under scrutiny dates from the 20<sup>th</sup> October until the 7<sup>th</sup> 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 20<sup>th</sup> October 2006 until 09:00hrs on the 7<sup>th</sup> November 2006. For a comparative analysis, incidents for the same period in 2005 were reviewed.
- The types of incidents 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.
- The station areas of Huyton, Whiston, Kirkby, Aintree, Croxteth, Speke, Old Swan and Belle Vale are analysed within this report.
- 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 Knowsley 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 grouped by Ward.
- Incidents during the bonfire period ordered by date.
- Incidents grouped 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	185
2006	284

Table one clearly illustrates that overall the quantity of incidents rose from 185 in 2005 to 284 incidents in 2006, an increase of 99 incidents or 54%.

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

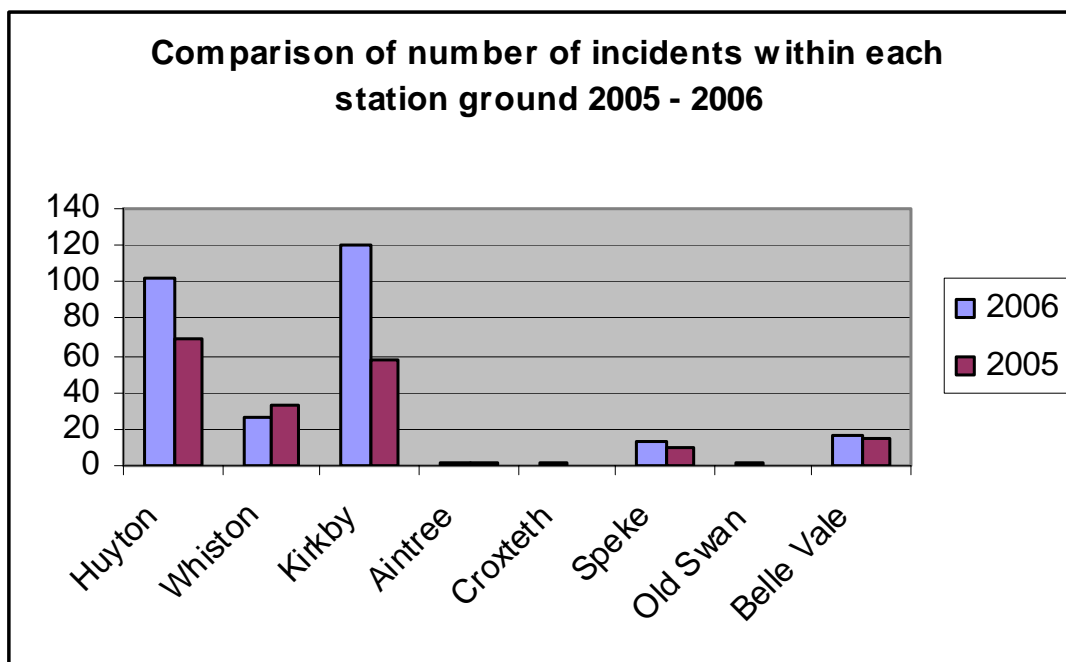


Table 2: Comparison of incidents by station ground for the Knowsley District.

Station Ground	Number of Incidents 2005	Number of Incidents 2006
Aintree	1	1
Belle Vale	15	17
Croxteth	0	2
Huyton	69	102
Kirkby	57	121
Old Swan	0	2
Speke	10	13
Whiston	33	26

The station grounds of: Kirby (112%), Huyton (48%), Speke (30%) and Belle Value (13%) all experienced an increase in percentage of incidents from 2005 to 2006. The station ground of Whiston experienced a decline of incidents from 2005 to 2006 of 21% and Aintree had no change.

## 5.2 Incidents by type

Table 3: Incident types during the bonfire period.

Incident Type	Number of Incidents 2005	%	Number of Incidents 2006	%
Derelict Building	16	9%	2	1%
Grassland	17	9%	16	6%
Intentional Burning / Bonfire	45	24%	114	40%
Outdoor Structure	3	2%	8	3%
Refuse, Refuse Container	104	56%	144	51%

The above table displays a breakdown of the incidents attended by MF&RS personnel during the 2005 and 2006 bonfire periods. In both years the majority of incidents dealt with were associated with "Refuse/Refuse Containers" fires which accounted for 56% of incidents in 2005 and 51% of incidents in 2006.

The second most common type of incident involved "Intentional Burning/Bonfires" which accounted for 24% in 2005 and 40% in 2006. Between 2005 and 2006 there were reductions in incidents categorised as "Derelict Building", and "Grassland".

### 5.3 Number of incidents per 10,000 population.

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

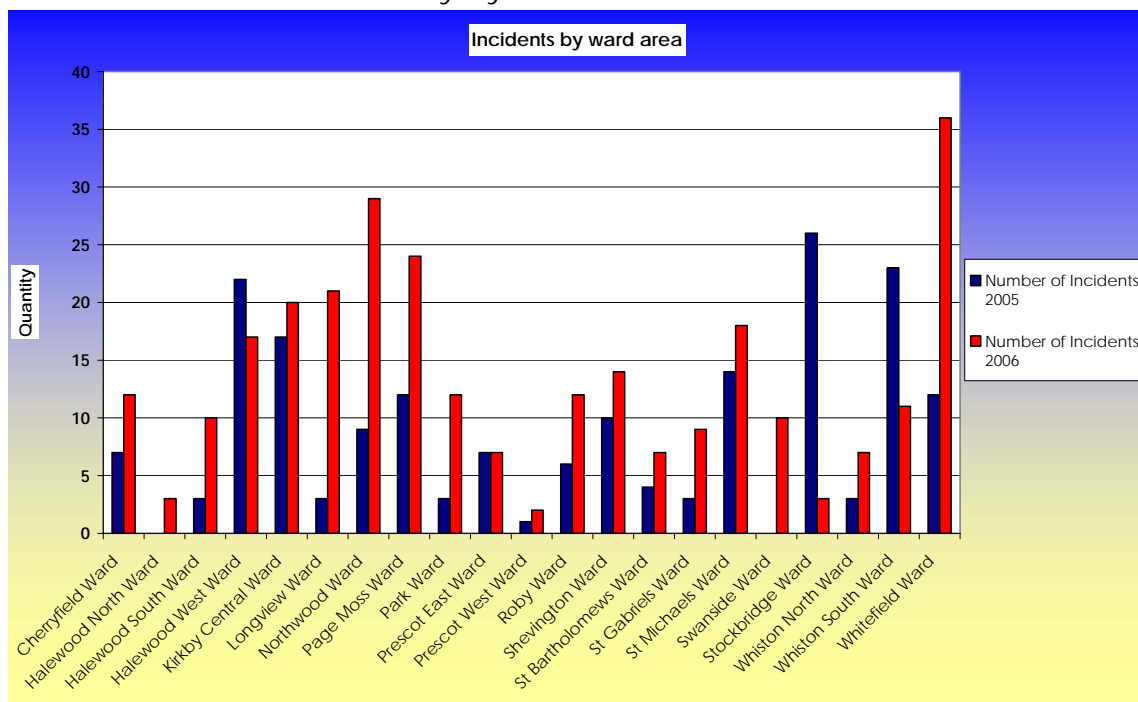
Year	Population	Incidents	Population / 10,000
2005	150445	185	12.30
2006	150445	284	18.88

The above table clearly displays that in 2006 there was an increase from the previous year in the quantity of incidents during the bonfire period of 6.58% 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 Knowsley by Ward



The above chart graphically displays the incidents by ward for Knowsley. What is clear is that there have been large increases in incidents for the majority of wards within Knowsley.

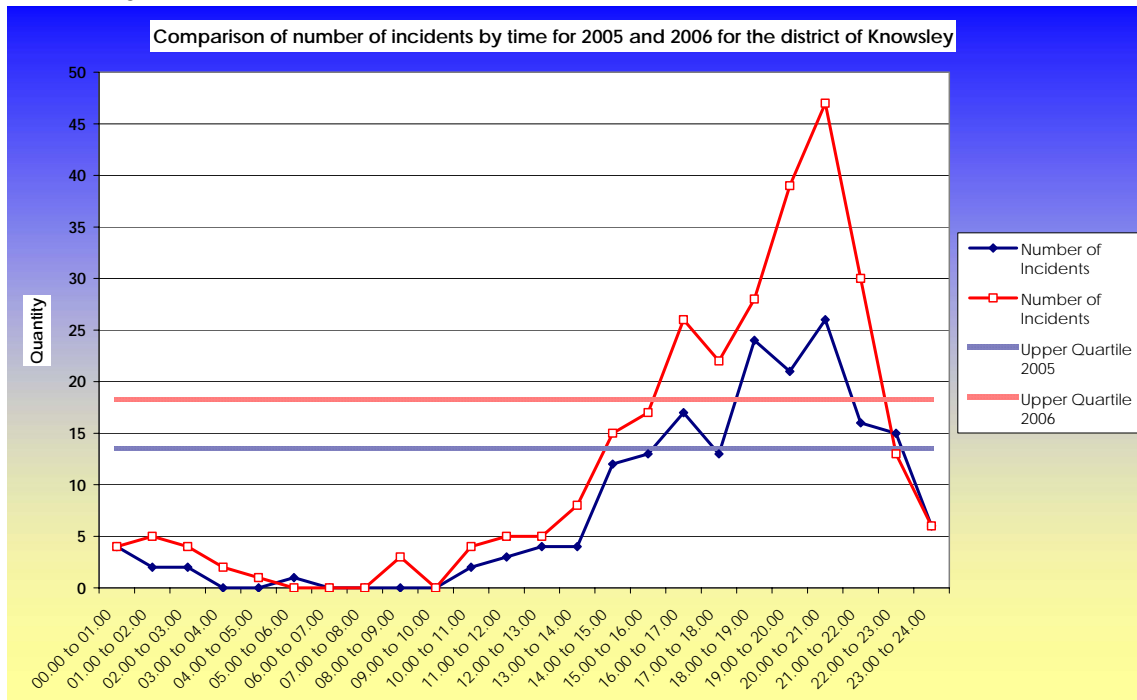
In particular the following wards have experienced significant increases when compared to the same period for 2005.

- Whitefield increase of 24 incidents.
- Northwood increase of 20 incidents.
- Longview increase of 18 incidents.
- Page Moss increase of 12 incidents.

There were also some significant decreases within stockbridge and whiston south wards experiencing a reduction of 23 and 12 incidents when compared to 2005.

### 5.5 Incidents by time

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



During peak periods from 18.00hrs to 22.00hrs it is clear that the actual peak time of incidents has remained within the same period of 20:00hrs – 21:00hrs, but that the number of incidents within this time period has significantly increased from 26 incidents to 47. Outside of the peak incident period the rate of incidents recorded fluctuates slightly at each time measurement.

By identifying the top quartiles for both 2005 and 2006 it is apparent that there were more incidents occurring during peak periods in 2006 than in the previous year.

## 5.6 Incidents by date

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

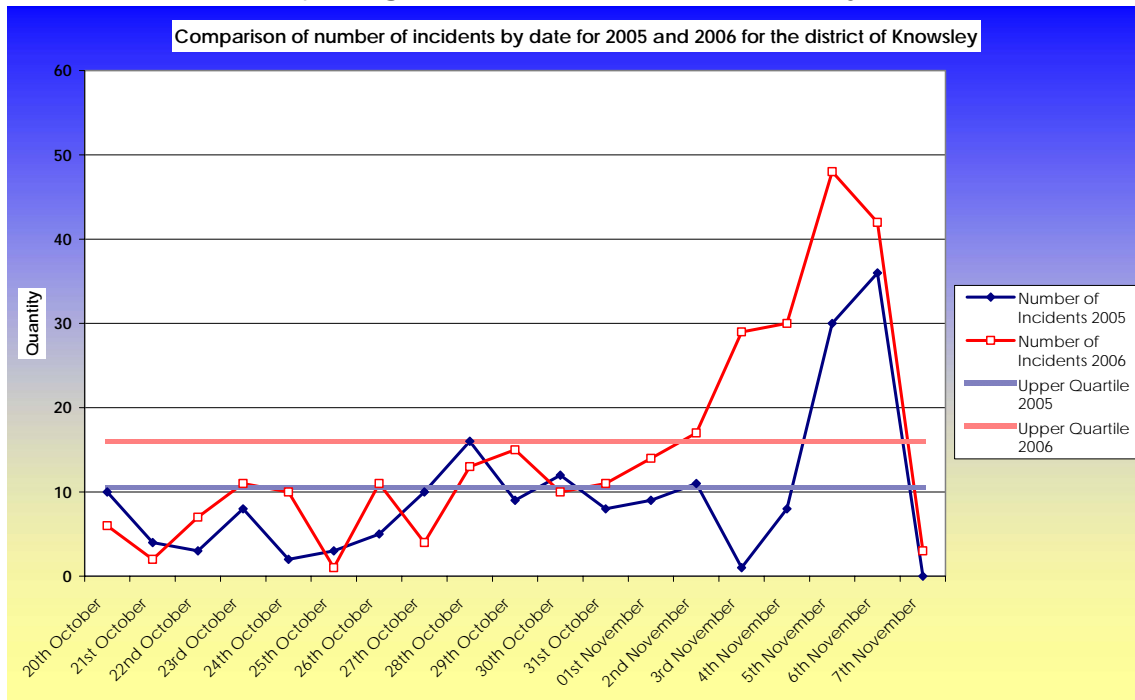


Chart 4 (above) highlights trends between reported incidents during the bonfire periods of 2005 and 2006.

Prior to the 2<sup>nd</sup> November the rate of incidents remained at a relatively low level though the actual figures did fluctuate slightly from day to day. From the 2<sup>nd</sup> November 2006 the number of incidents increased to 17 and continued to increase until the 7<sup>th</sup> November when there was a significant fall from 42 incidents for the 6<sup>th</sup> November to 3 incidents. The peak occurred on 5<sup>th</sup> November with 48 incidents.

In comparison 2005 did not have this initial peak and the rate of incidents did not rapidly increase until the 5<sup>th</sup> of November, which continued to peak on the 6<sup>th</sup> November with 36 incidents, until the 7<sup>th</sup> November where no incidents were recorded.

By identifying the top quartiles for both 2005 and 2006 it is apparent that there were more incidents occurring during peak periods in 2006 than in the previous year.

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

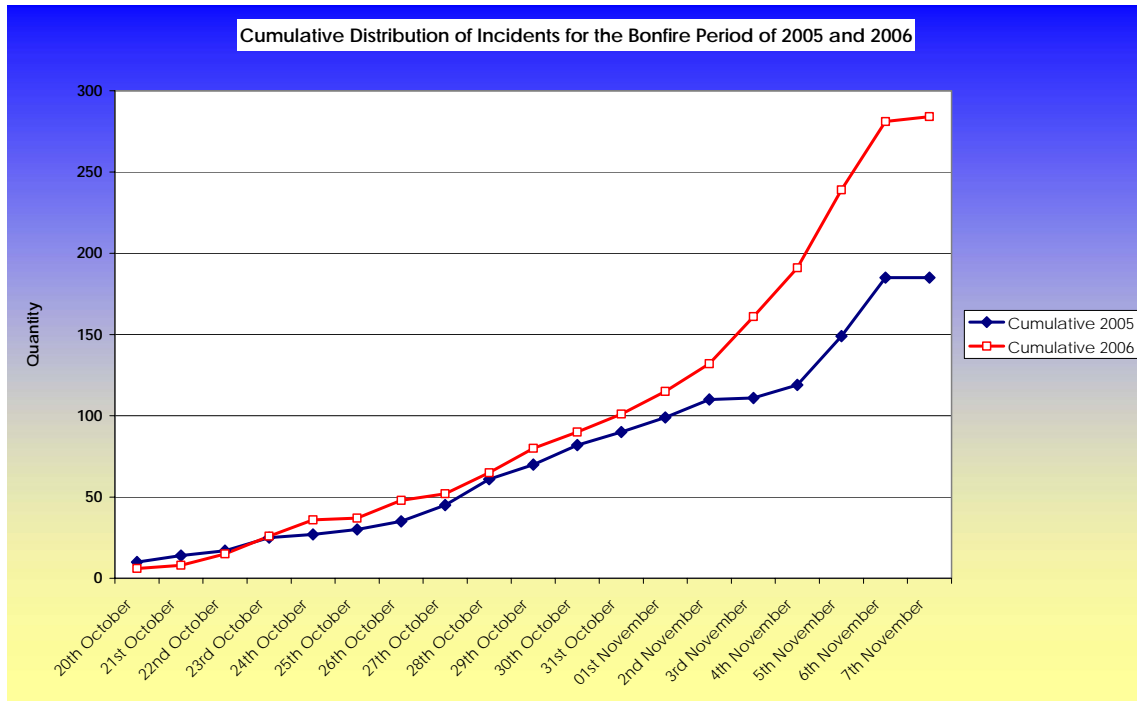


Chart 5 (above) displays the cumulative effect of incidents over the bonfire period under investigation. What is clear is that cumulatively the numbers of incidents for 2006 were initially lower than 2005 until the 22<sup>nd</sup> October. From that date onwards incidents for 2006 were consistently higher and significantly increased as a cumulative figure from 1<sup>st</sup> November until the bonfire period. Following this date the rate of incidents increased as the bonfire period progressed.

### Incidents for the 4<sup>th</sup>, 5<sup>th</sup> of November

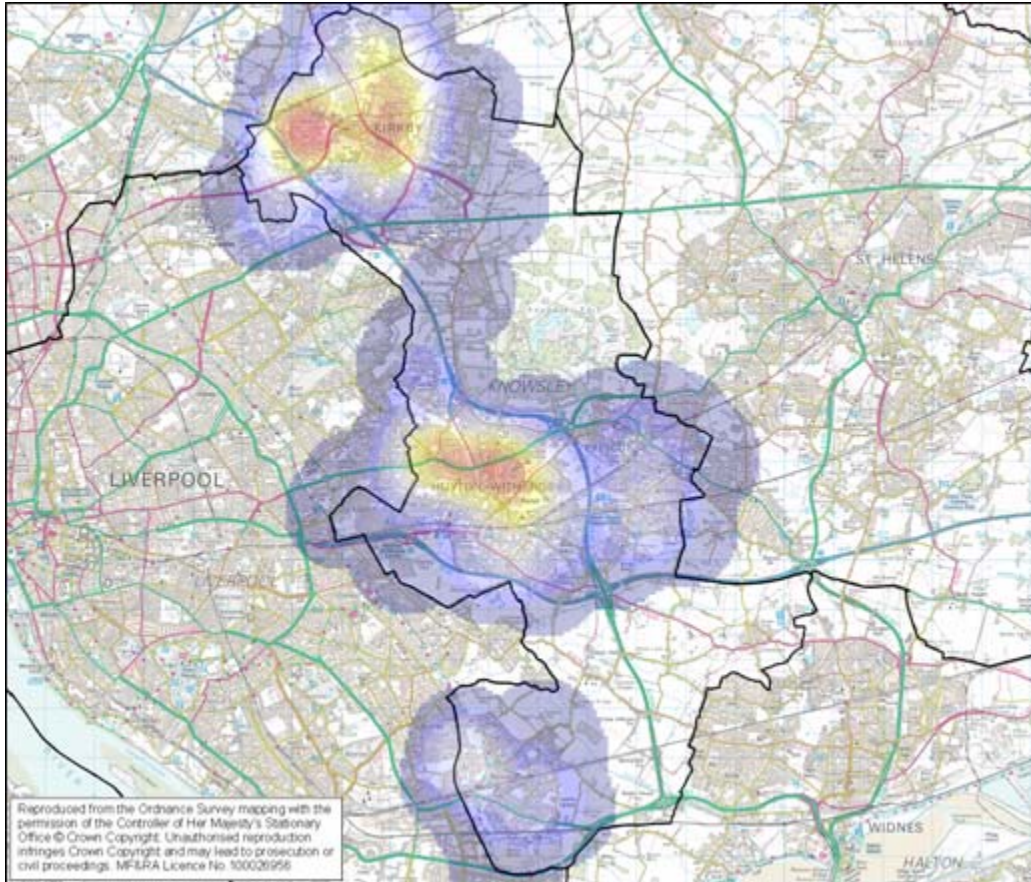
Table 5: below displays the quantity of incidents and proportion of incidents to have occurred on the 4<sup>th</sup>, and 5<sup>th</sup> of November, the peak days of bonfire activity during the period.

Date	Number of Incidents 2005	Number of Incidents 2006	% change
04th November	8	30	275%
05th November	30	48	60%

The above table outlines that there was a significant increase of 275% incidents on the 4<sup>th</sup> of November with and a 60% increase in incidents on the 5<sup>th</sup> of November, when compare to 2005.

## 5.7 Hotspot Analysis

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



The above map displays the hotspots for incidents during the 2006 bonfire period for the Knowsley Local Authority district. What is immediately obvious is that there are two primary hotspot areas within the Kirby and Huyton areas. These included the wards of Northwood, Whitefield and Kirby Central. Within the Huyton area the wards of Stockbridge, Longview and Page Moss were within the hotspot.

## 5.8 Threat Response

During the 2006 bonfire period the local authority of Knowsley MBC 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 hotspot areas from previous years to identify "Risk materials" like cylinders and typical bonfire materials like wood and papers.
- School visits have been conducted through the area in wards where activity over previous years has been high.
- During the bonfire period, Knowsley Metropolitan Borough Council operated a rubbish collection scheme whereby materials suitable for the burning in bonfires, as well as hazardous materials were removed. At this point in time there are currently no figures available as to the success of this scheme, however it is thought that the quantities collected by the collection teams is down on 2005.
- Intelligence sharing with Neighbourhood Police Officers and F.I.R.S.T on illegal sales on fireworks.

## ***6. Conclusion***

The total number of incidents saw an increase between 2005 and 2006. In 2005 there were 185 incidents, while in 2006 there were 284, an increase of 99 incidents or 54%.

### **Spatial Analysis**

The station grounds of: Kirby (112%), Huyton (48%), Speke (30%) and Belle Value (13%) all experienced an increase in percentage of incidents from 2005 to 2006. The station ground of Whitson experienced a decline of incidents from 2005 to 2006 of 21% and Aintree had no change.

In particular the following wards have experienced significant increases when compared to the same period for 2005.

- Whitefield increase of 24 incidents.
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There were also some significant decreases within Stockbridge and Whiston south wards experiencing a reduction of 23 and 12 incidents when compared to 2005.

### **Type of incidents**

In both years the majority of incidents dealt with were associated with "Refuse/Refuse Containers" fires which accounted for 56% of incidents in 2005 and 51% of incidents in 2006.

The second most common type of incident involved "Intentional Burning/Bonfires" which accounted for 24% in 2005 and 40% in 2006. Between 2005 and 2006 there were reductions in incidents categorised as "Derelict Building", and "Grassland".

Incidents per 10,000 population saw an increase from 2005 to 2006 during the bonfire period of 6.58% per 10,000 head of population.

### **Temporal Analysis**

Prior to the 2<sup>nd</sup> November the rate of incidents remained at a relatively low level though the figures did fluctuate slightly from day to day. From the 2<sup>nd</sup> November 2006 the number of incidents increased to 17 and continued to increase until the 7<sup>th</sup> November when there was a significant

fall from 42 for the 6<sup>th</sup> November to 3 incidents. The peak occurred on 5<sup>th</sup> November with 48 incidents.

During peak periods from 18.00hrs to 22.00hrs it is clear that the actual peak time of incidents has remained within the same period of 20:00hrs – 21:00hrs, but that the number of incidents within this time period has significantly increased from 26 incidents to 47.

The collection of waste suitable for the burning of bonfires is down on 2005. It is possible that this reduction in collected material that could be used for Bonfires 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 Knowsley Local Authority district were dry in comparison to the period from 2005. This fact is very likely to have affected the rate of incident throughout the district and thus reducing the impact of the various initiatives undertaken by Knowsley Metropolitan Borough Council and Merseyside Fire and Rescue Service.