NOTTINGHAMSHIRE
Fire & Rescue Service
Creating Safer Communities

Nottinghamshire and City of Nottingham
Fire and Rescue Authority
Community Safety Committee

TARGETED RESPONSE VEHICLES

Report of the Chief Fire Officer

Agenda Item No:

Date: 12 April 2013

Purpose of Report:

To update Members on the outcome of further work undertaken with regard to targeted response vehicles as a concept.

CONTACT OFFICER

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1. BACKGROUND

1.1 As part of the outcomes of the Fire Cover Review (FCR) undertaken in 2010, Officers explored the concept of smaller, more mobile units, crewed with less personnel, to target those incidents that occur frequently but do not physically demand the presence of a full fire appliance and crew to resolve.

1.2 Given the term 'targeted response vehicles' (TRVs), the impact was explored within the analysis undertaken, and an entire appendix was dedicated to the rationale behind the concept (appended again to this report).

1.3 Within the original report from the Chief Fire Officer (CFO) submitted on 24 June 2011, there were three options and all included the use of the TRV concept. In option one, two TRVs based at Mansfield and Highfields, in option two, two TRVs based at Arnold and West Bridgford (and potentially a third at Mansfield) and in option three, one TRV based at Highfields.

1.4 In considering the recommendations of the CFO, the Fire Authority observed that the concept of the TRV was a new one and that although there were examples nationally, there was no clear model to view as 'best practice'. Equally, the impact on the Service's resilience and fleet management programme had to be considered.

1.5 As a consequence, the Fire Authority unanimously accepted option two of the FCR with amendments so that the introduction of TRV was not adopted. However, the CFO was tasked with further work to explore the issues raised and to look at the concept in cost/benefit terms. This report details the initial findings of the work and presents information regarding further appliance development nationally.

2. REPORT

2.1 There is no more important piece of kit for a fire and rescue service than the vehicles used to transport fire fighters and equipment quickly and safely to an incident. Nottinghamshire Fire and Rescue Service (NFRS) is no different to other fire and rescue services in that a wide variety of vehicles are employed but the core work-horse of the Service is the standard fire engine.

2.2 Over the years, NFRS has moved towards the standardisation of these vehicles with the obvious benefits from procurement, interchangeability, familiarity and servicing contracts to name but a few.

2.3 However, as the need to get more from less and the need to reduce operating costs further continues, NFRS like other Services across the country may need to move away from or vary its established model. Whatever decisions are taken, NFRS will need to demonstrate that they have received best value for money in the vehicles and equipment used to deliver the tasks required.

Equally it will be important for the Service to meet the requirements of its statutory duty.

2.4 In 2010 when the FCR took place, NFRS attended an average of 5900 calls per annum to grass fires, rubbish fires and special service calls such as lift car release, making vehicles safe, spills and leaks, and effecting entry. This list is not exhaustive but gives the Fire Authority a flavour of the broad range of incident type, not associated with fires and road traffic collisions.

2.5 The 2012 figures presented to Fire Authority in February 2013 show that although there was a drop in secondary fires (largely due to the impact of a wet summer) figures relating to these types of incidents remain fairly consistent.

2.6 Incidents of this nature normally attract an initial attendance of one fire appliance with a minimum crew of four personnel. The incidents require a lesser degree of control, and can be dealt with employing limited equipment, and often small quantities of water. Dealing with this type of incident with a major pumping appliance could therefore be considered an over provision.

2.7 Additionally, there is also a correlation between hours of the day and the level of activity. In relation to secondary fires, the activity levels peak at 19:00hrs, and are at their low point around 03:00hrs. Equally, the rates can vary on a seasonal basis with July/August being the busiest period.

2.8 From a geographical perspective the busiest area for dealing with these types of incident is the conurbation, with Mansfield being second for activity levels. Therefore if an amended concept of delivering intervention is to be progressed, then these two areas would have to remain key to any delivery model.

2.9 With all of the above considered, it is therefore reasonable to make an outline assessment that the rationale of utilising a smaller, mobile unit with less crew is feasible. Therefore an outline cost assessment of comparing existing arrangements to deal with such incidents and the alternative option of TRV type vehicles can be done.

2.10 A fire appliance of standard design of the type currently employed by NFRS requires a capital outlay of circa £250k when all equipment is included. The appliance remains in service for approximately 10-12 years. The majority remain available constantly for 24 hours per day 365 days per year. Along with this there are maintenance requirements and equipment upgrades which have to be adopted during the lifetime of the appliance.

2.11 To crew an appliance of this type with four personnel constantly, requires approximately 20 fire fighters. (The figure for a crew of five is 28). These figures are based upon a contract availability of 1674 hours per person minus 60 hours average training time, which gives 1614 ‘rider’ hours per annum.

2.12 This costs NFRS approximately £600k per annum exclusive of on-costs which for uniform posts are circa 40%. In addition there are ancillary costs such as PPE, expenses for travelling etc., training and development costs and general support as an employer.

2.13 A vehicle such as a TRV would attract much reduced costs if applied in a targeted fashion.

2.14 Initially there is the vehicle cost. A TRV type vehicle varies, but Devon and Somerset are deploying a 'light rescue pump' concept akin to a TRV type approach and the vehicle cost is circa £100-120k capital outlay. This equates to 50% of a full appliance cost.

2.15 The equipment costs are less as the incident types attended are reduced. For example removing items of equipment reduces training costs, maintenance costs and potentially fuel costs as appliances are light and more economical.

2.16 The real savings however, are in staffing costs. Given the profile and range of incidents it would not be prudent to operate such vehicles 24/7. The key times would be between peak activity hours (14:00 – 22:00) to reduce the impact on the main fleet and workforce. Additionally, due to the type of incident responding in place, a crew of less than four could be employed. Examples nationally vary between two and three staff.

2.17 This has a real and significant impact in the salary bill, but only if these appliances replaced existing vehicles and associated staffing levels were reduced.

2.18 On this basis it appears straightforward in that the data on incident type is clear and the costs of vehicle and staff are clear. However, there are a number of 'unknowns' at this stage which must be factored in. Firstly these vehicles are not interchangeable with the rest of the fleet. They are busy and therefore carry the burden solely.

2.19 Being unable to rotate these vehicles will reduce their lifetime, and therefore then cost savings. If the vehicle has to be replaced every six years, for example, then any cost benefit is lost. As this concept is relatively new to the fire and rescue service nationally, there is limited evidence to support this impact either way.

2.20 The same applies to the equipment provided. Less equipment required will reduce cost, however increased usage may increase maintenance and replacement. Again there is no 'standard' approach across the UK and each Service is designing a bespoke concept. New technology such as CAFS (compressed air foam systems) is being used and this may alleviate some issues, but deployment time for true measures are limited.

2.21 In terms of staffing, there is no doubt that a new 'shift' system would have to be integrated into the existing self-rostering concept, or the use of overtime deployed and posts deleted.

2.22 Also important is the fact that the Service must look at the current provision and demand placed upon it. As an outcome of the FCR, the CFO advised the Fire Authority that he felt, based upon current activity levels, that the Service could safely reduce to 30 front line pumping appliances before the Service would have to re-assess its delivery model and service could be at threat of being compromised. Currently there are 34 front line appliances in service and this shows that there is still some capacity within the existing arrangements.

2.23 Taking all of this into account, it is therefore recommended that the Fire Authority note the research work undertaken, but monitor TRV type development, rather than implement an approach at this stage. If, to meet operational need and budgetary pressures, the front line fleet is eventually reduced to 30 appliances, the Fire Authority should then re-look at the concept to help continue to meet its operational duties and help meet its financial constraints.

3. FINANCIAL IMPLICATIONS

The main financial implications are detailed within the report. The Fire Authority does maintain a capital programme for the replacement of its fleet, so if a decision is taken to change a standard appliance for a TRV type appliance, the process would be relatively straightforward.

4. HUMAN RESOURCES AND LEARNING AND DEVELOPMENT IMPLICATIONS

The introduction of a TRV concept would have both human resources and learning and development implications. From a human resources perspective, the implementation of a hybrid ‘shift’ would be likely to cover peak-time demand. Additionally, if the TRV were to include new equipment development, as well as different vehicle types, then there would be training implications.

5. EQUALITIES IMPLICATIONS

There are no specific equalities implications arising from this report.

6. CRIME AND DISORDER IMPLICATIONS

There are no specific crime and disorder implications arising from this report.

7. LEGAL IMPLICATIONS

The introduction of a TRV concept would not affect the Fire Authority statutory duty to deliver a fire and rescue service under the appropriate sections of the Fire and Rescue Services Act 2004.

8. RISK MANAGEMENT IMPLICATIONS

The Fire Authority has a local duty to provide, equip, train and maintain a Fire and Rescue Service. How that provision is provided emanates from the integrated risk management planning process. The ongoing monitoring of operational incidents, levels of resources, cost etc., all form part of that process.

9. RECOMMENDATIONS

That Members note the research work done to date and monitor the implementation of the TRV concept around the country and receive a further report from the Chief Fire Officer at a future date.

10. BACKGROUND PAPERS FOR INSPECTION (OTHER THAN PUBLISHED DOCUMENTS)

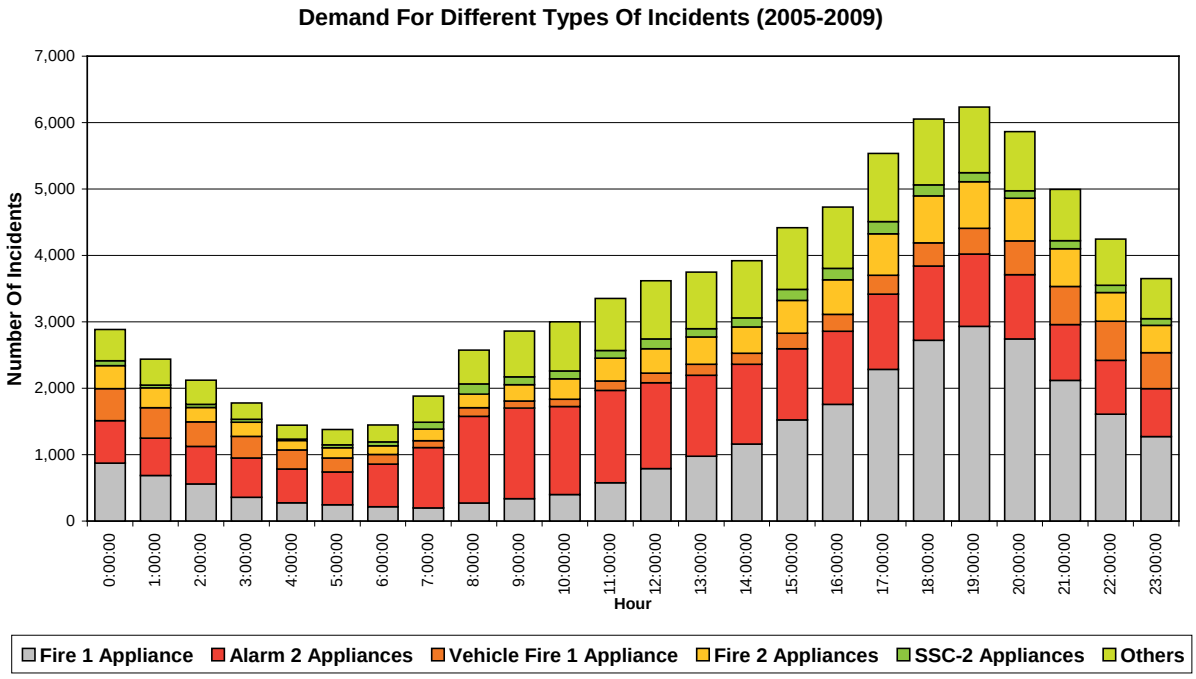
None.

Frank Swann
CHIEF FIRE OFFICER

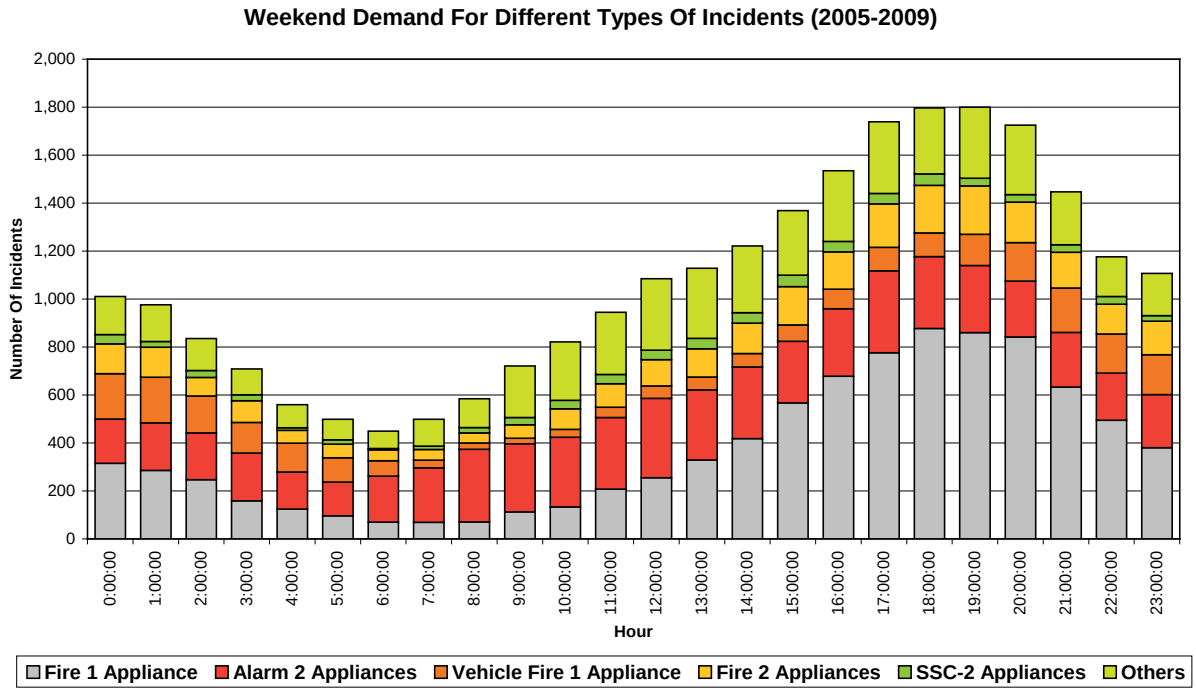
TRV Appendix

Incident Activity- The following graphs show the activity of the service in relation to incidents attended. On the following three charts the grey section shows the response NFRS sent to smaller incidents, the orange section is the response sent to a vehicle fire, both require a single pump and have the potential to be resolved using a TRV.

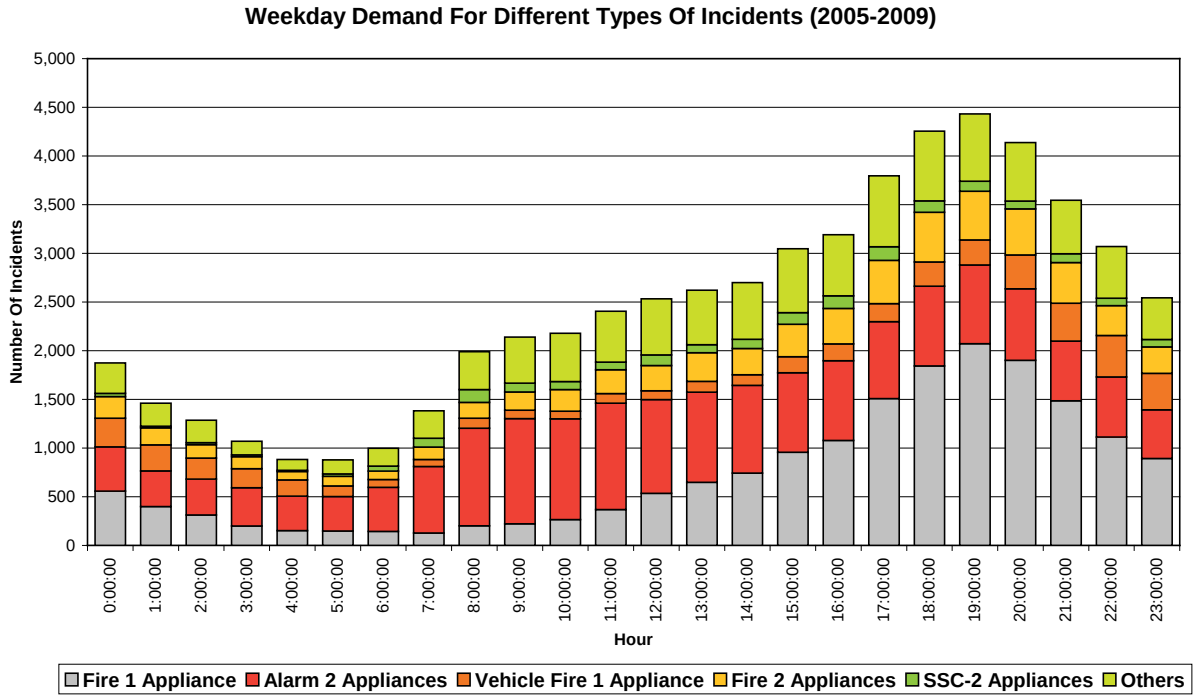
Each day activity peaks at 1900 hrs and is at a low overnight at around 0500 hrs.



Weekend demand for single pump incidents peaks at 1800 hrs with a low at 0600 hrs.



Weekday demand again peaks at 1900 hrs and a low at 0400/0500 hrs.



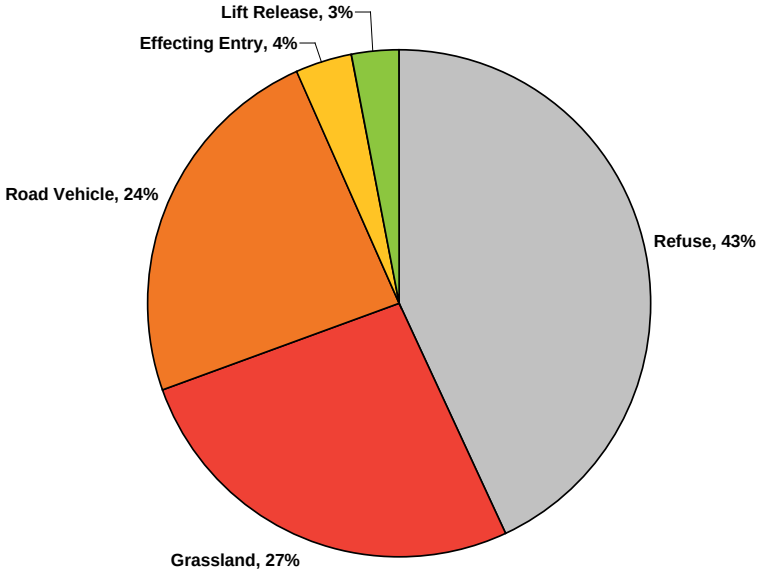
One Appliance Incidents - Incidents attended by a TRV can be broken down into categories (see table above) these incidents require a single appliance to be mobilised and generally can be looked at as one appliance fires (F1 mobilising codes) and vehicles. The following section looks at these incidents in detail. The information is supplied via the MIS, which records incident data. This information produced enables a picture to be developed of the potential use of the TRV and looks at combinations of data to draw conclusions on incident types; times spent at incidents and frequency of incidents, the whole of the county as well as a north and south divide of the county.

Combined; Grass Fires, Vehicle Fires, Rubbish Fires and Special Services - Incidents suitable for the attendance of a TRV are those that have an initial attendance of one appliance such as grass fires, vehicle fires, rubbish fires and some special service calls. These incidents usually require a lesser degree of control and can be extinguished with smaller amounts of water.

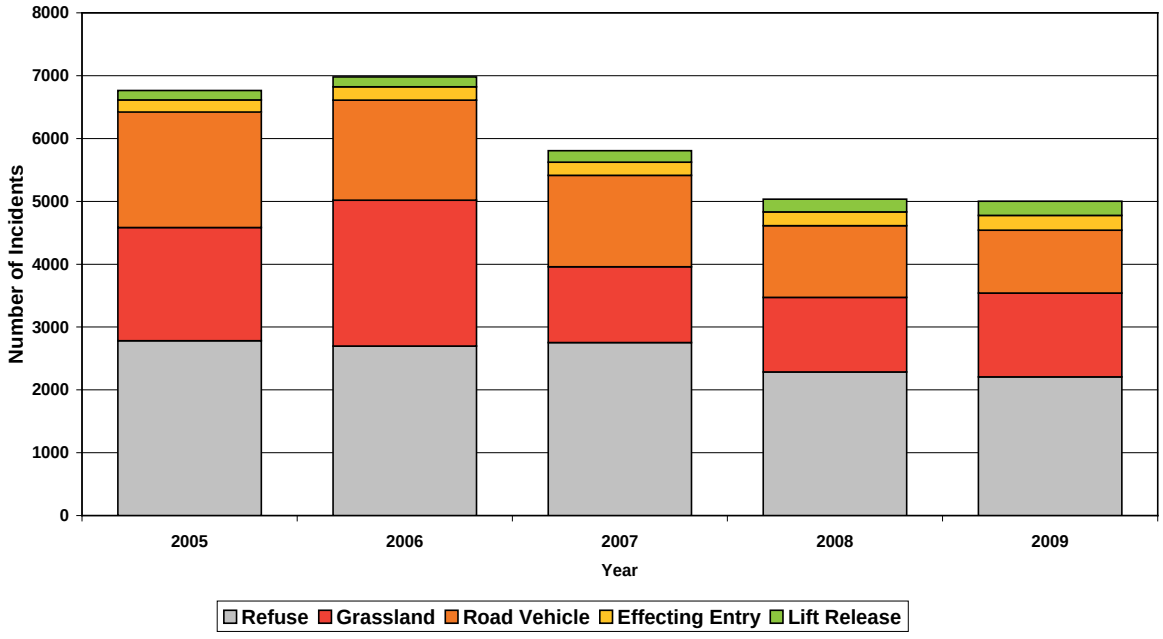
8.1 Each year NFRS attend on average over 5,900 of these combined calls. The largest number of these calls being to refuse fires followed by vehicle fires and then grass fires

Year	Refuse	Grassland	Road Vehicle	Effecting Entry	Lift Release	Grand Total
2005	2782	1802	1836	193	152	6765
2006	2698	2322	1591	211	158	6980
2007	2752	1207	1455	210	181	5805
2008	2285	1186	1141	221	202	5035
2009	2207	1334	999	236	225	5001

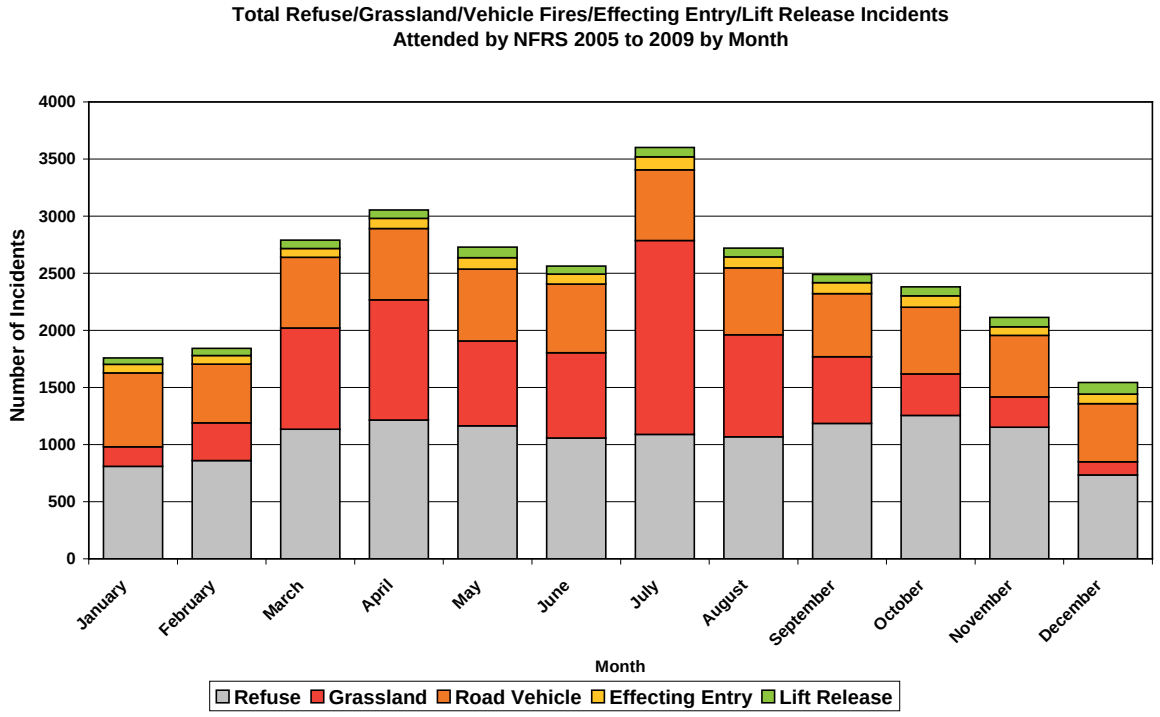
Breakdown of TRV Incidents

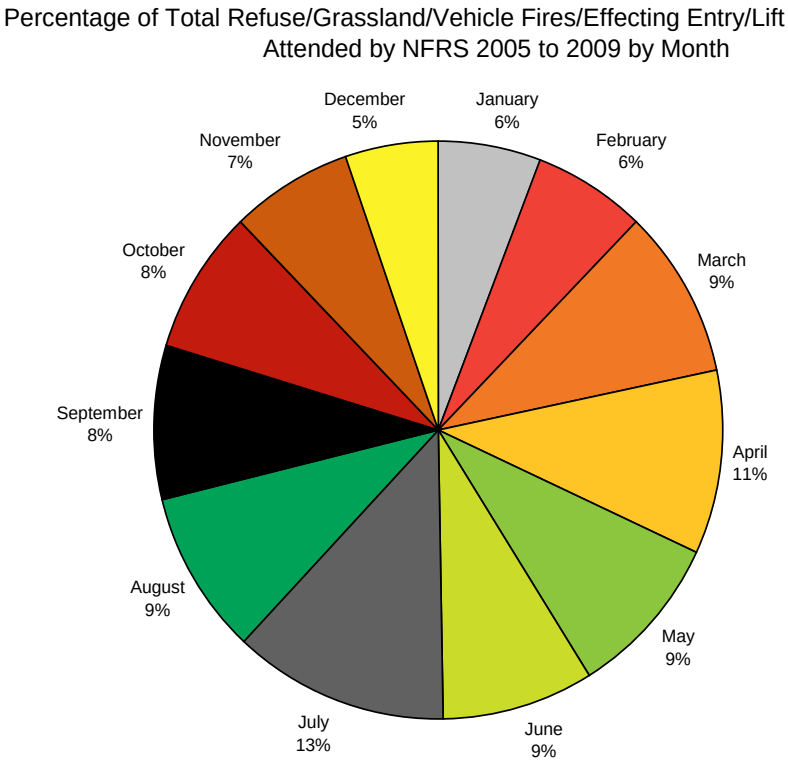


Total Refuse/Grassland/Vehicle Fires/Effecting Entry/Lift Release Incidents Attended by NFRS 2005 to 2009



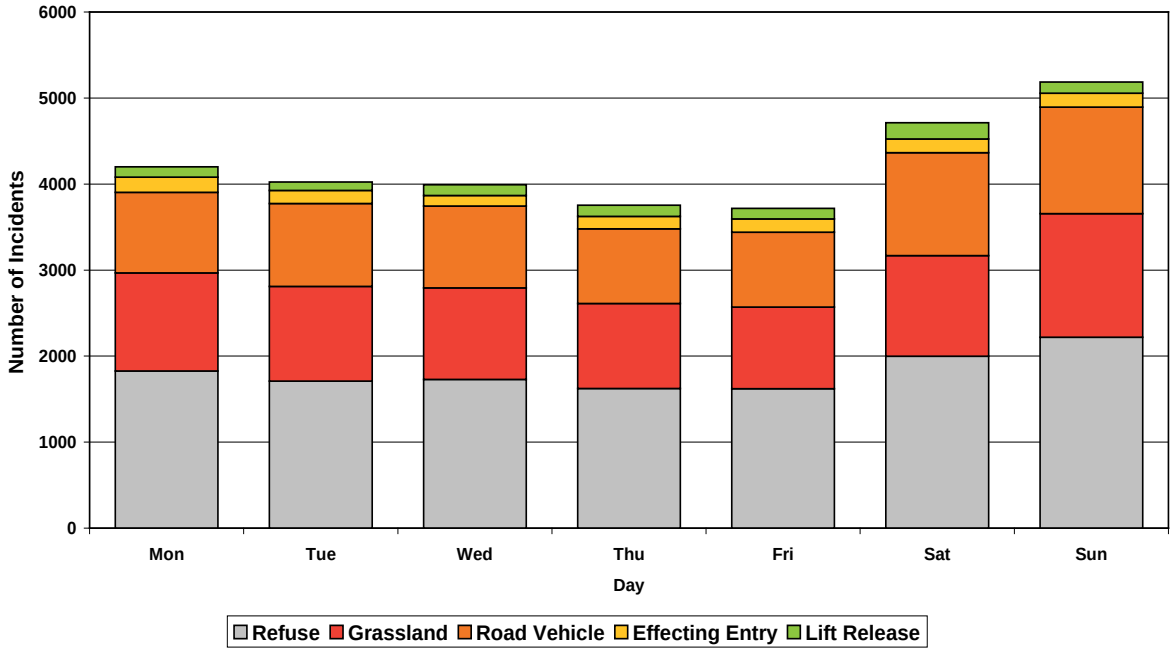
These combined incidents show a peak in July (12%) and April (11%) month on month with grass fires being the main contributing factor in July (5.74% of these calls) and April (5.56% of these calls).



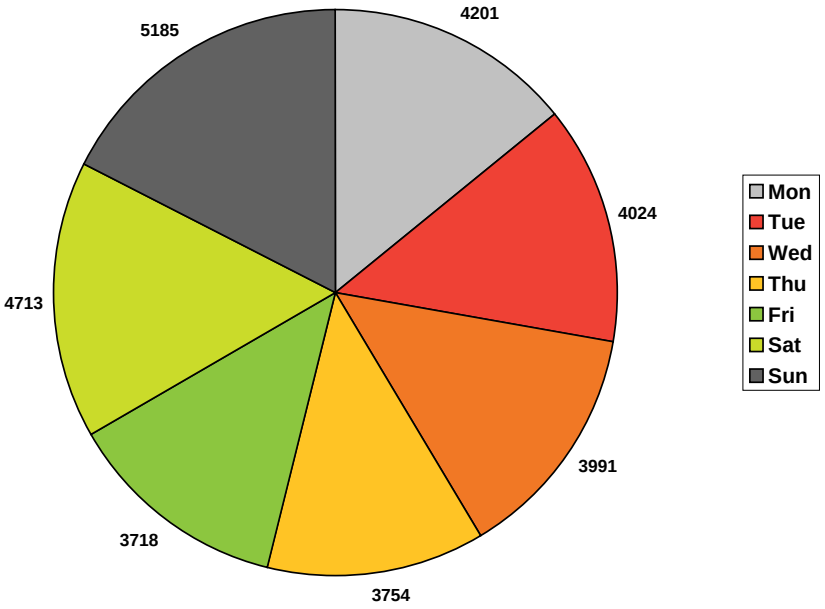


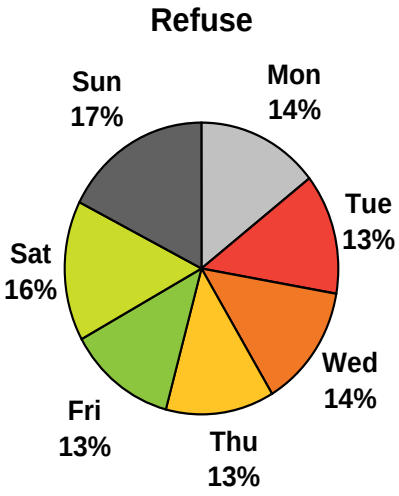
Weekends are the busiest time for these combined incidents peaking Saturday and Sunday, activity then decreases until Friday (which is the least busy day).

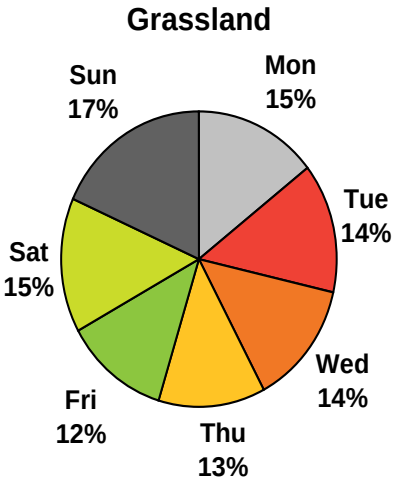
Total Refuse/Grassland/Vehicle Fires/Effecting Entry/Lift Release Incidents Attended by NFRS 2005 to 2009 by Day

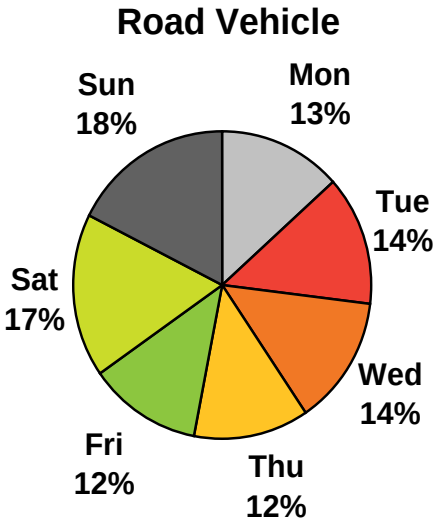


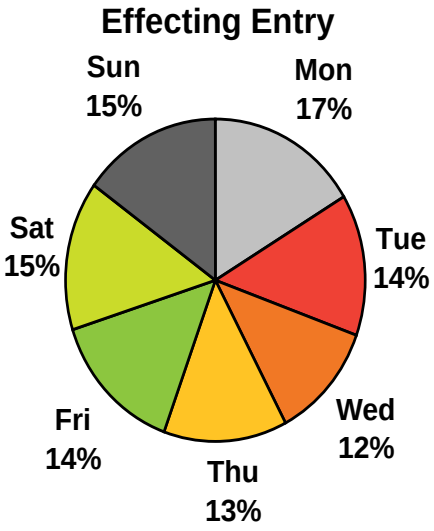
Number of Total Refuse/Grassland/Vehicle Fires/Effecting Entry/Lift Release Incidents Attended by NFRS 2005 to 2009 by Day

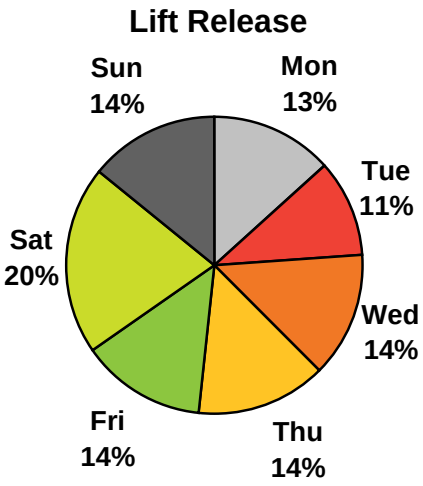



Refuse
Sun
17%
Mon
14%
Tue
13%
Wed
14%
Thu
13%
Fri
13%
Sat
16%

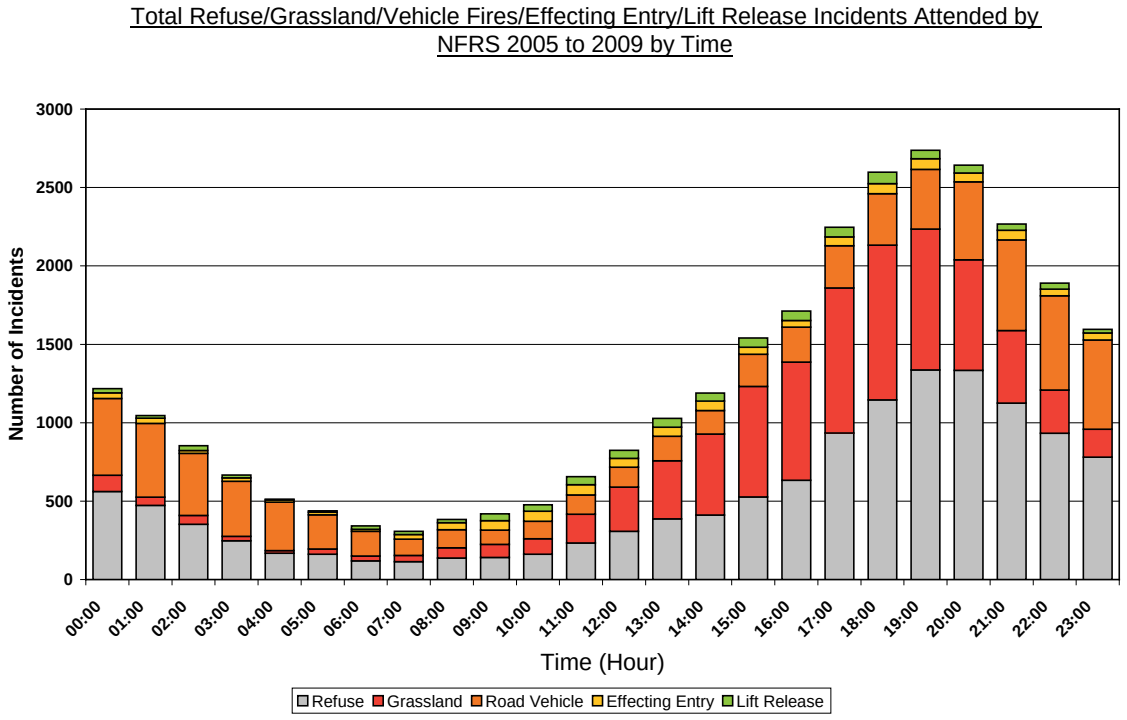

Grassland
Sun
17%
Mon
15%
Tue
14%
Wed
14%
Thu
13%
Fri
12%
Sat
15%


Road Vehicle
Sun
18%
Mon
13%
Tue
14%
Wed
14%
Thu
12%
Fri
12%
Sat
17%


Effecting Entry
Sun
15%
Mon
17%
Tue
14%
Wed
12%
Thu
13%
Fri
14%
Sat
15%

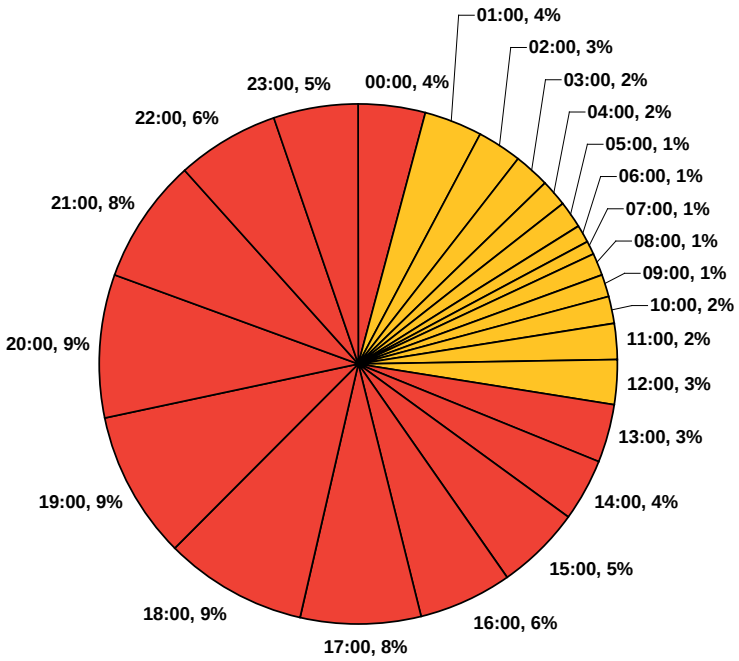


These incidents mirror the all incident activity peaking at around 19:00 hrs however the time of least activity is at 07:00 hrs.



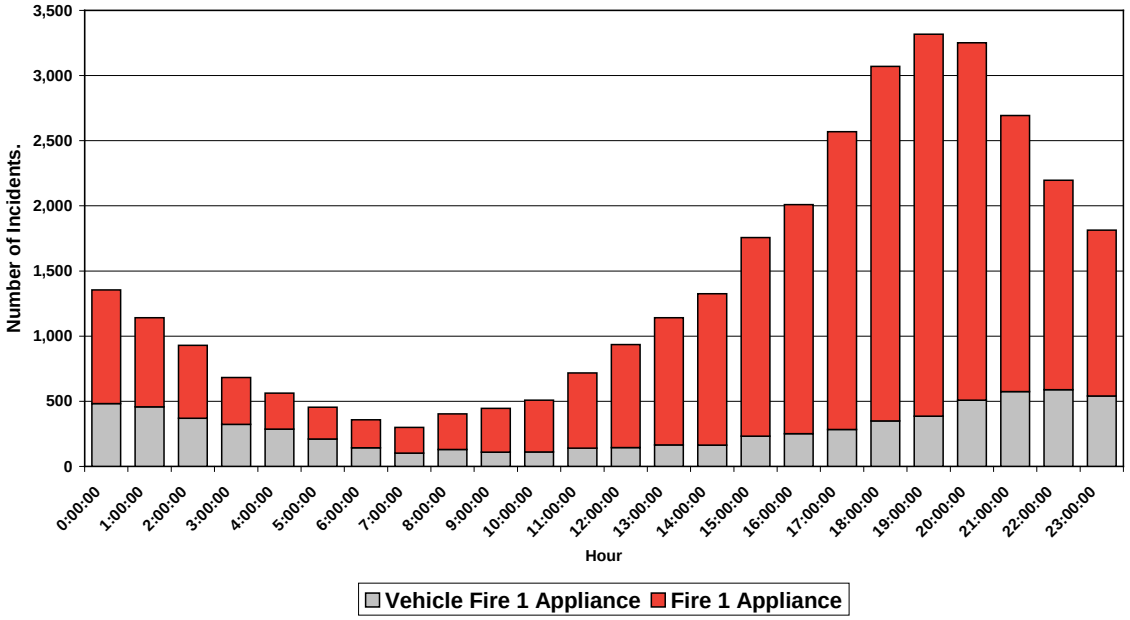
75% of the incidents occur between 12:00 hrs and 00:00 hrs, 72% between 11:00 hrs and 23:00 hrs.

Percentage of Total Refuse/Grassland/Vehicle Fires and Lift Release Incidents Attended by NFRS 2005 to 2009 by Time

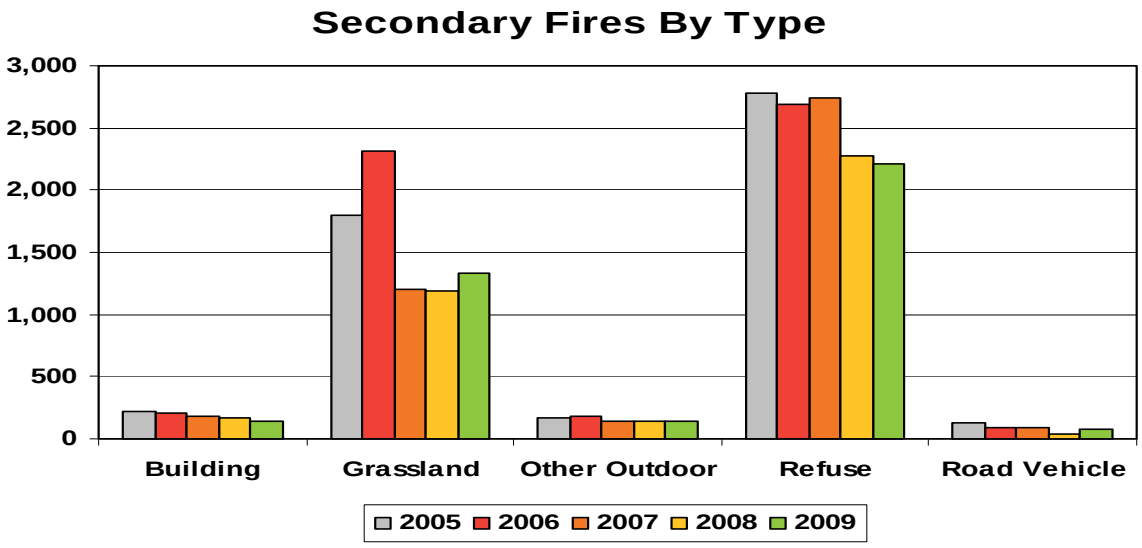


One Appliance Fires and Vehicle Fires Combined - One appliance fires and vehicle fires combined peak at 1900 hrs and have a low at 0700 hrs. This is in contrast to all incident data, which peaks at 1900 hrs and has a low at 0400 hrs, when examined this is because the number of vehicle fires is disproportionably large overnight. The TRV's will not be available overnight as station activity is low.

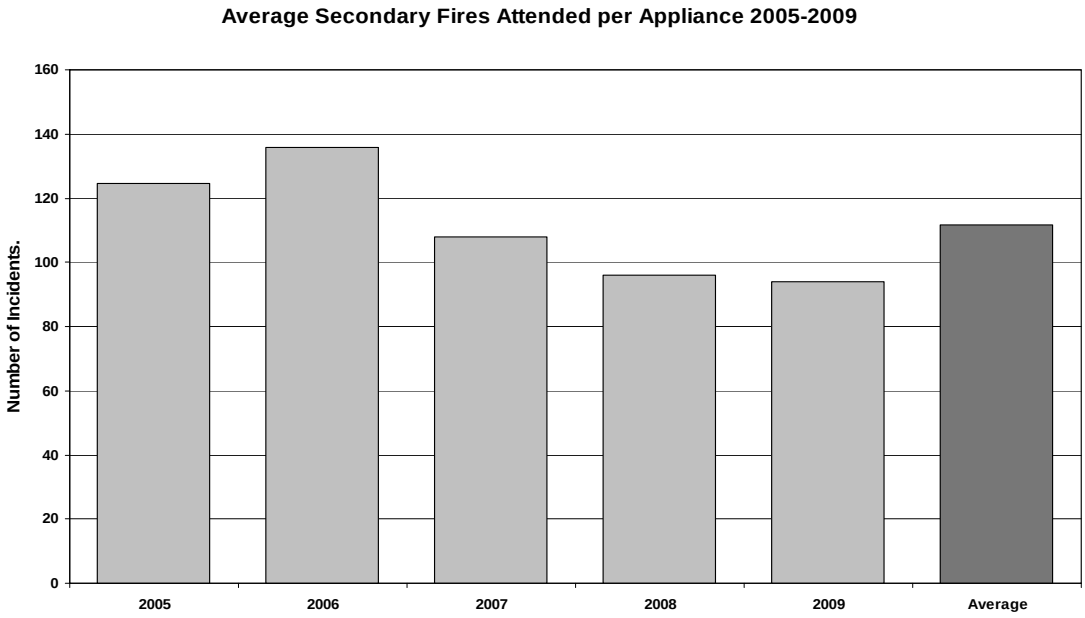
Average 1 Appliance Fires and Vehicle Fires 2005-2009



Secondary Fires - Secondary fires, is a term used to describe a group of incidents that usually require an initial attendance of one appliance; they include rubbish fires, grass fires and abandoned vehicles fires. (Figures used for incident numbers are for one pump in attendance and excluding multi pump incidents.)

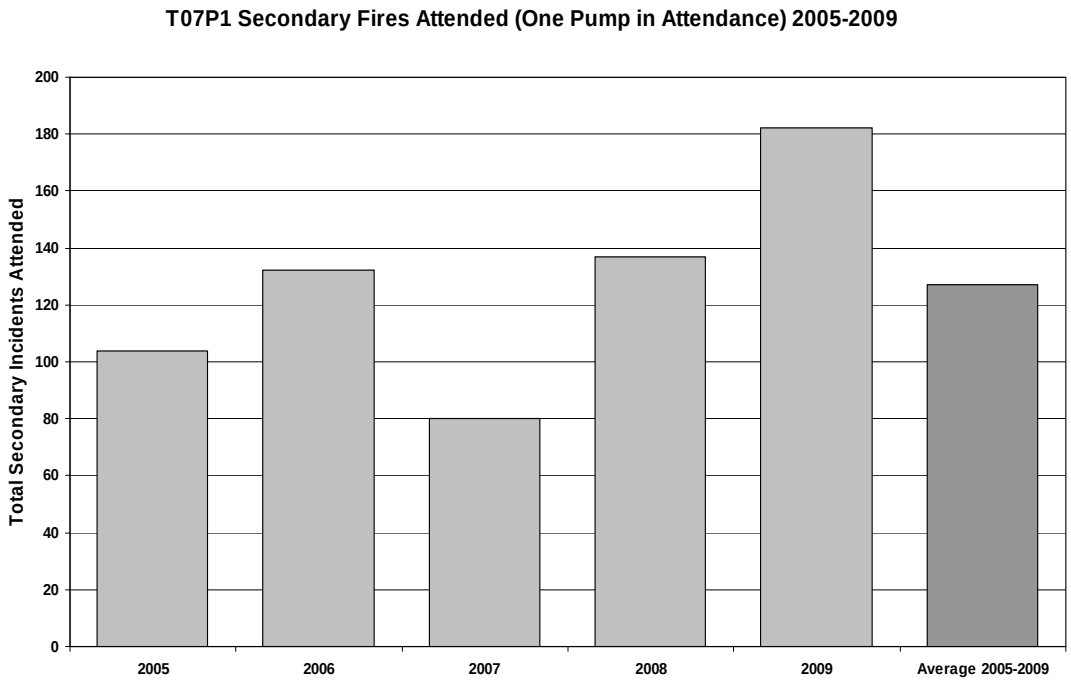


The two groups of incidents, grass fires and refuse fires account for by far the largest numbers of secondary fires, these incidents have a Pre Determined Attendance (PDA) or the number and type of appliances sent to an incident following the initial call) of 1 appliance. Secondary fires generally throughout the county have been decreasing since 2006 however; this is not the picture throughout all station areas (see appendix. All stations Secondary and Vehicle fire charts.)

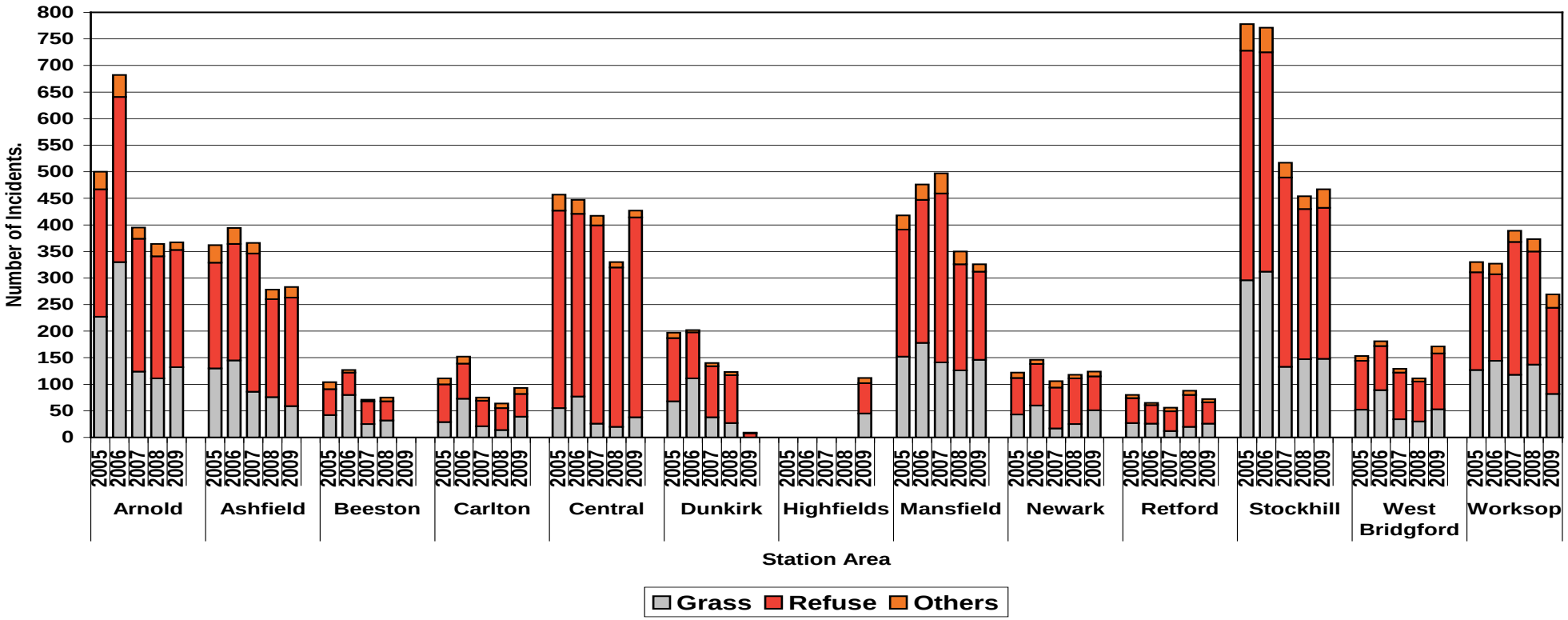


For example, for T07P1 secondary fires increased in 2006 reduced during 2007, but have continued to increase in 2008 and 2009.

The average number of secondary fires each appliance attends is 111 each year however there are huge differences, for example, one appliance attending on average 4 (T27P2) secondary fires and another 467 (T20P1).

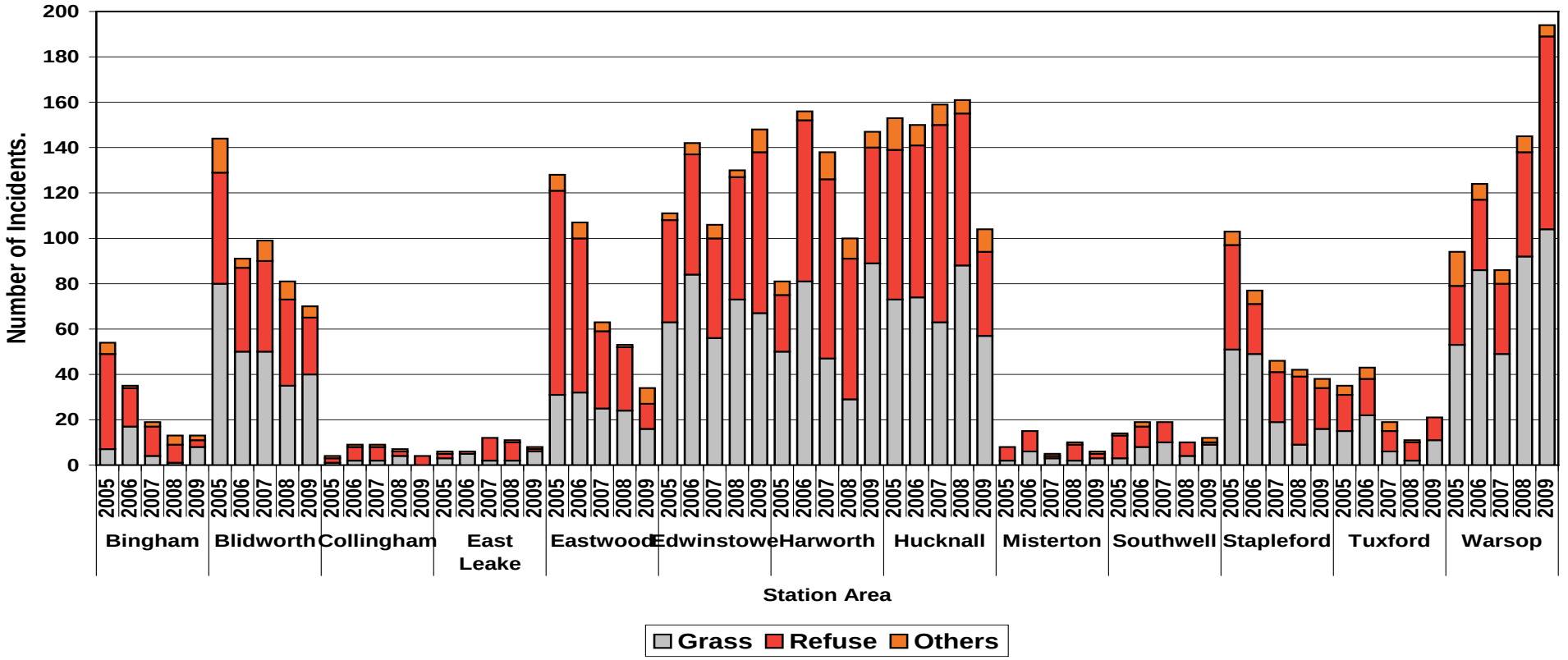


Secondary Fires Attended By A Single Appliance (Grouped by Station WDS)



- North of the County Worksop, Ashfield and Mansfield are the busiest stations for secondary fires.
- South of the County Stockhill, Arnold and Central are the busiest for secondary fires and are the busiest in the County.

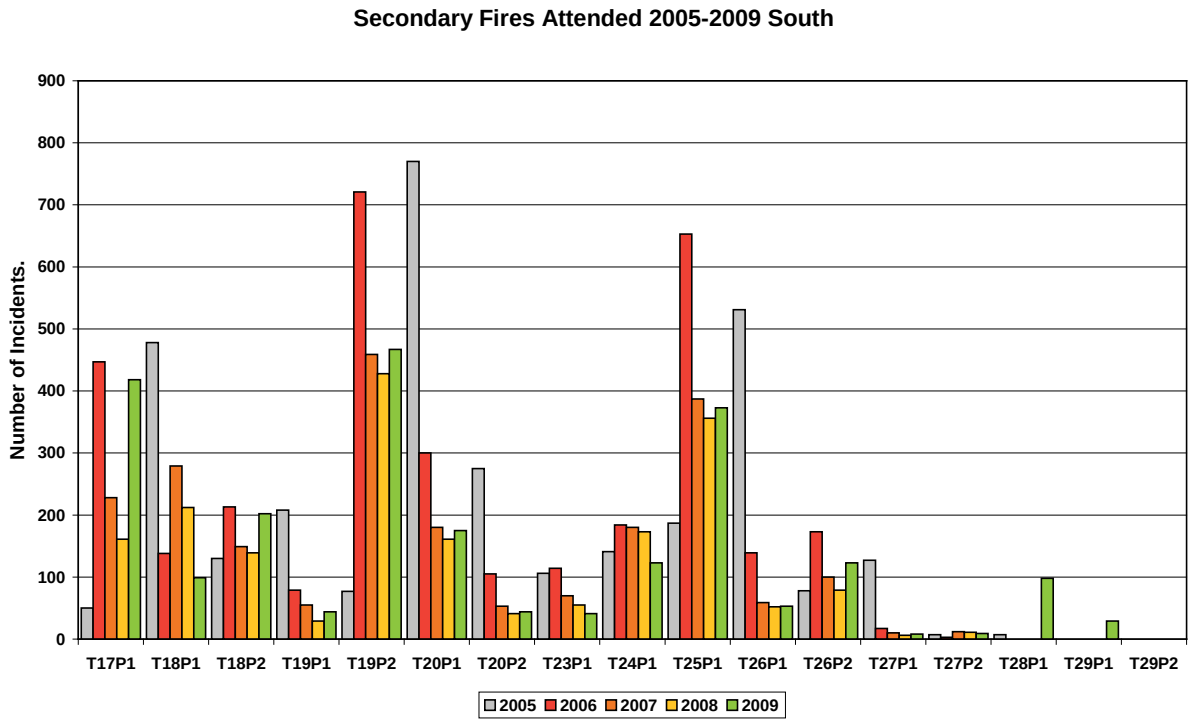
Secondary Fires Attended By A Single Appliance (Grouped by Station RDS)

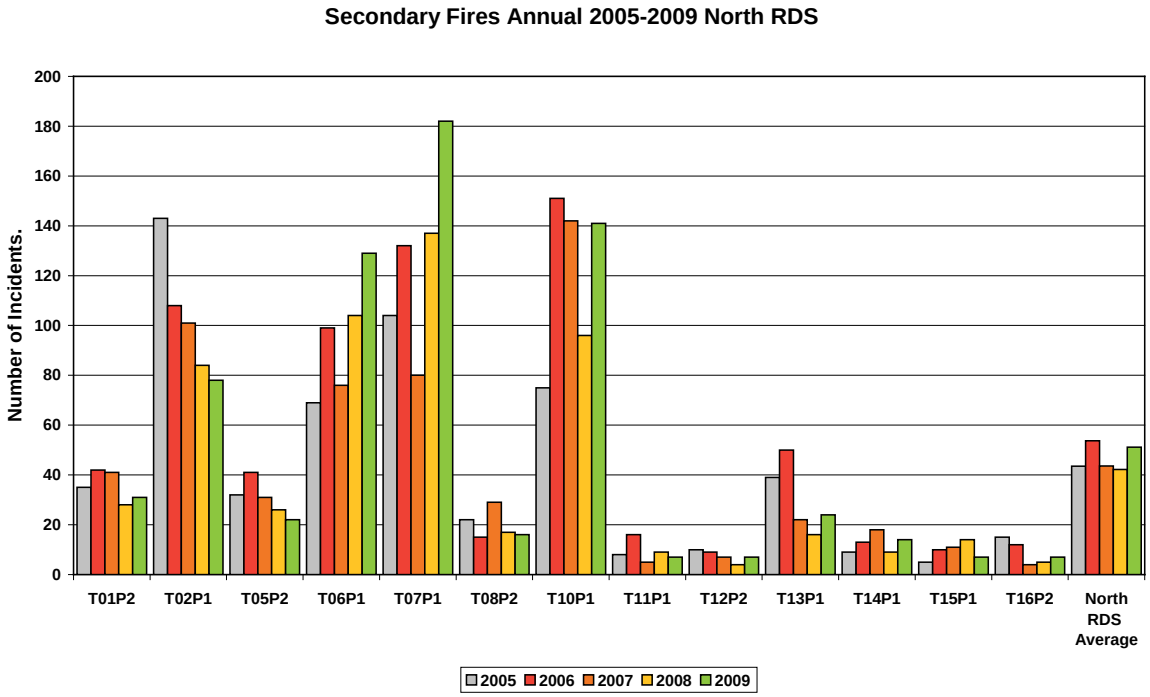


- Most stations are showing a reduction year on year, with the exception of Warsop and Edwinstowe.

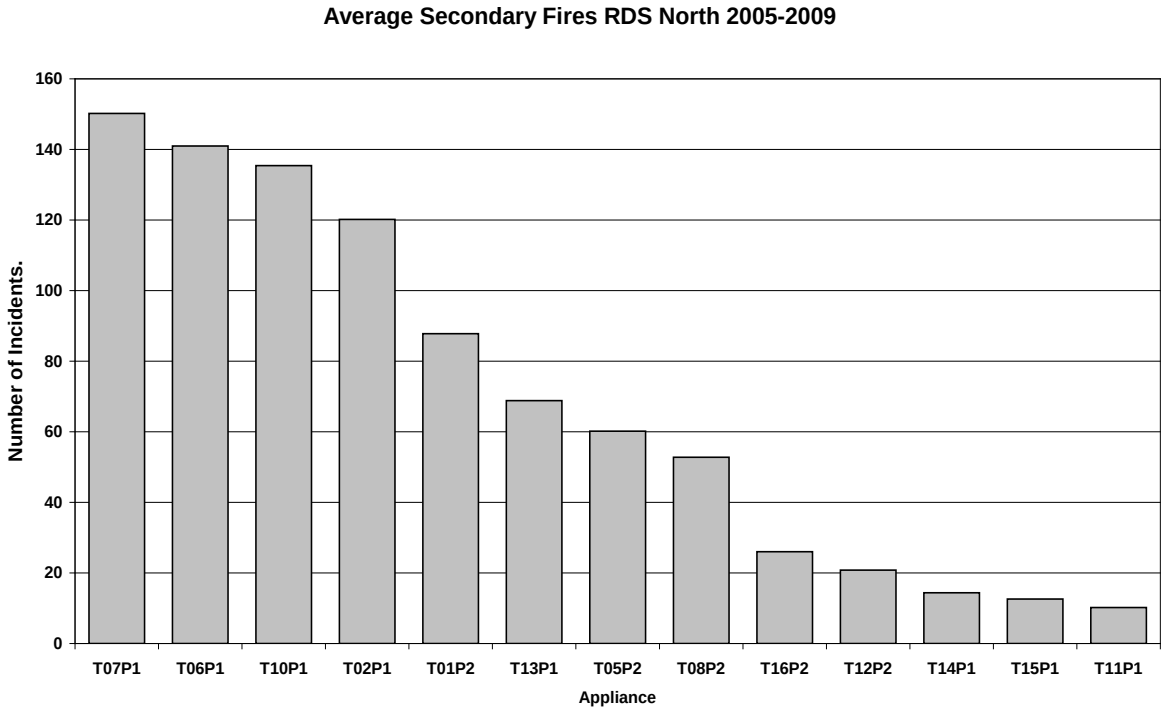
The trend with Northern RDS appliances is generally down except at Harworth (Station 10) and Warsop (Station 7) which has had an increase of 228% 2007-2009. (80 in 2007 to 182 in 2009).

In the South of the county the picture is varied with Bingham (Station 17), Central (Station 18), West Bridgford (Station 19) and Arnold (Station 26) showing an increase in secondary fires. A peak is shown at all stations in 2006 except for Stockhill (Station 20) and Arnold (Station 26). (Highfields figures are incomplete as the station had only been operational from 2009).

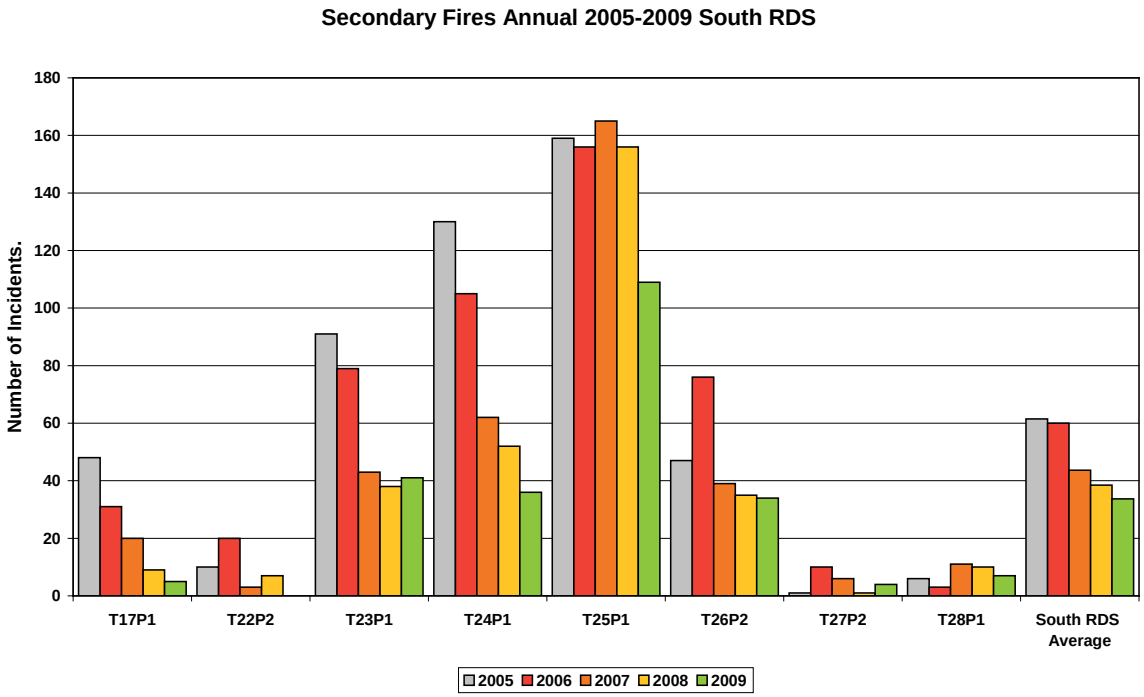




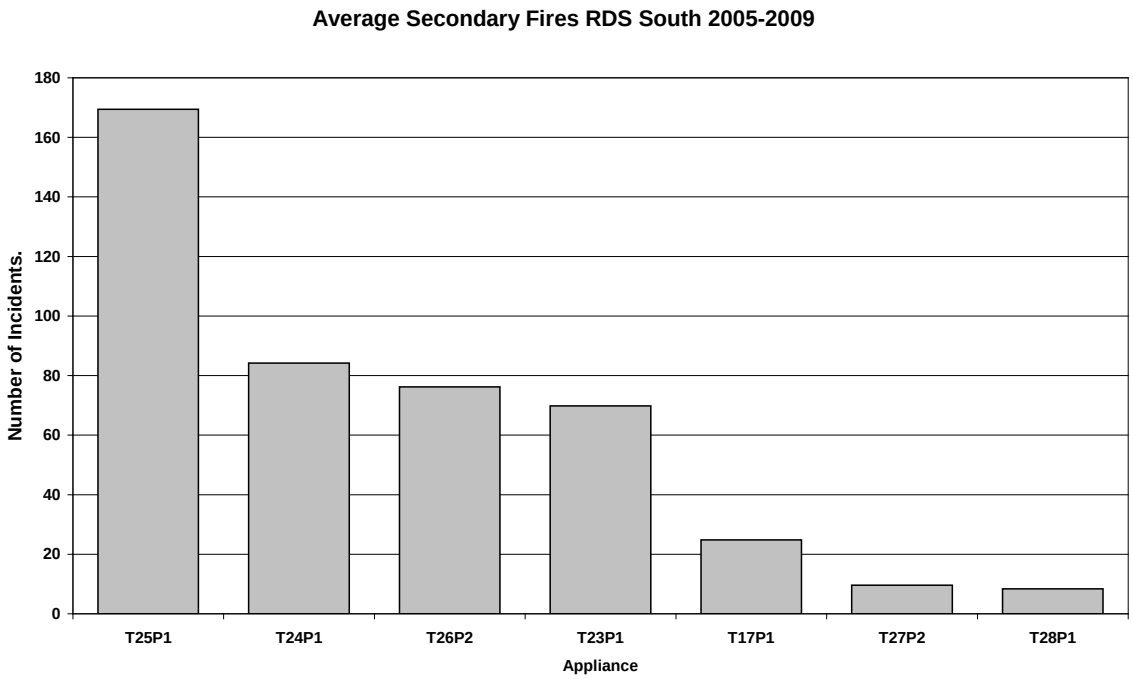
The busiest RDS stations in the North are Warsop (Station 7) and Edwinstowe (Station 6), both located in the centre of the county and neighbouring stations to Mansfield.



All southern RDS stations showed a reduction in secondary fires with the exception of Stapleford (Station 23) which had an increase of 3 secondary fires between 2008(38)-2009(41).

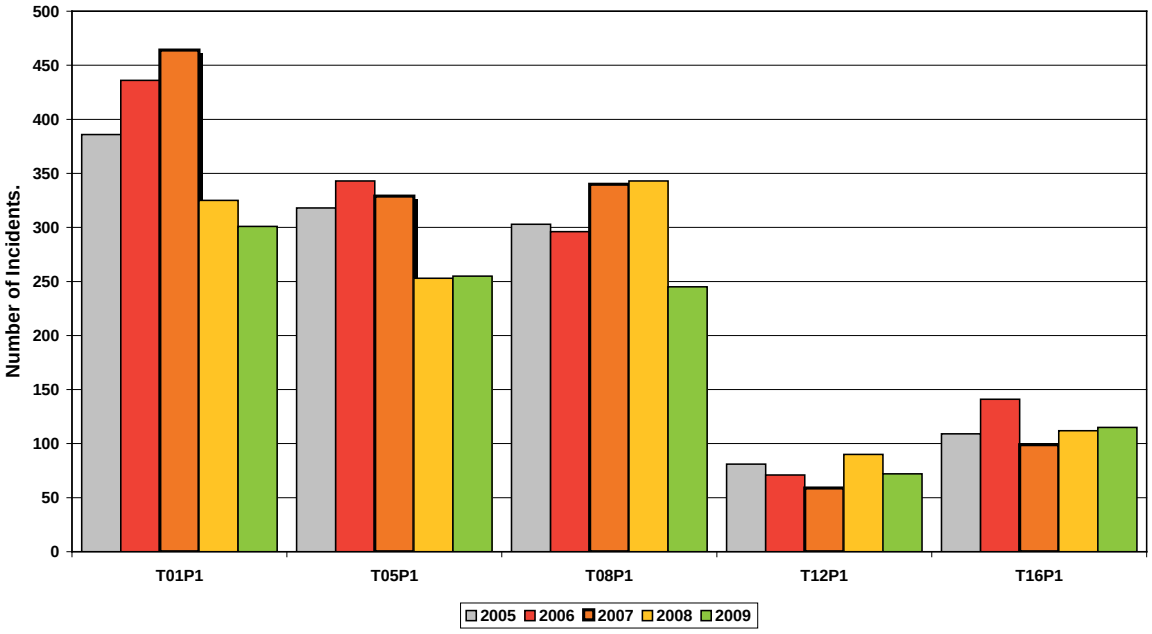


The busiest southern RDS station is Hucknall (Station 25) with nearly twice as many secondary incidents as the next busiest Eastwood (Station 24). The three busiest stations for secondary fires are situated in the North West of Greater Nottingham.

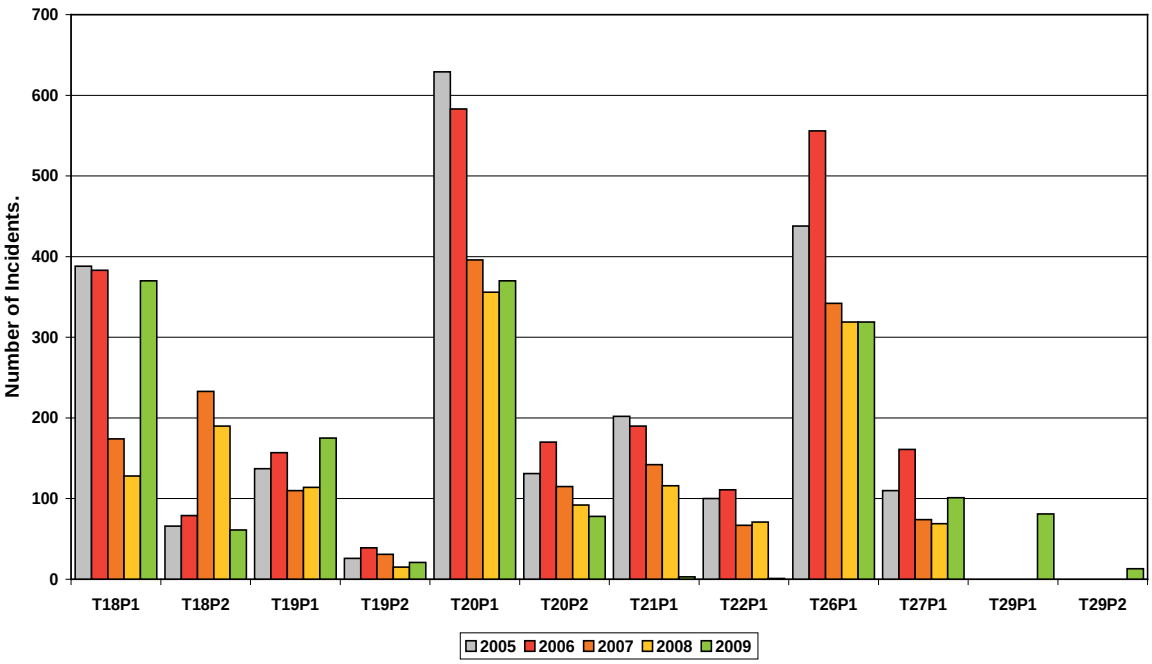


WDS stations show a clear pattern North and South with secondary fires decreasing over the last four years from 4894 during 2006 to a low in 2009 (3482). North and South of the County shows two distinct areas where secondary fires occur centred on the Stockhill area in the South and Mansfield in the North.

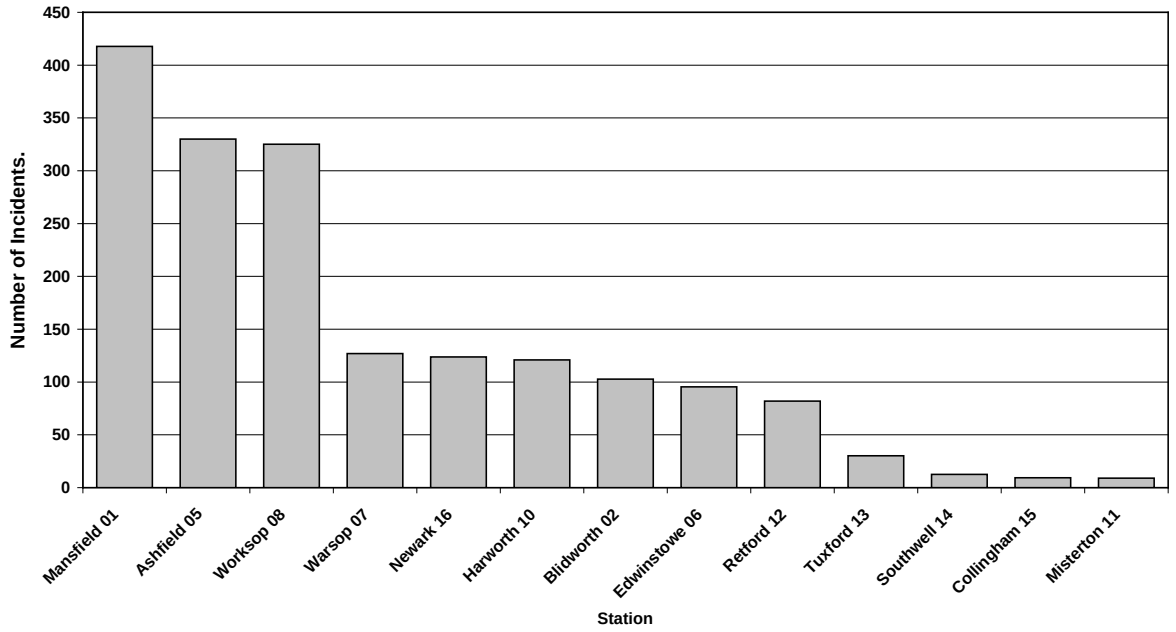
Secondary Fires Annual 2005-2009 North WDS



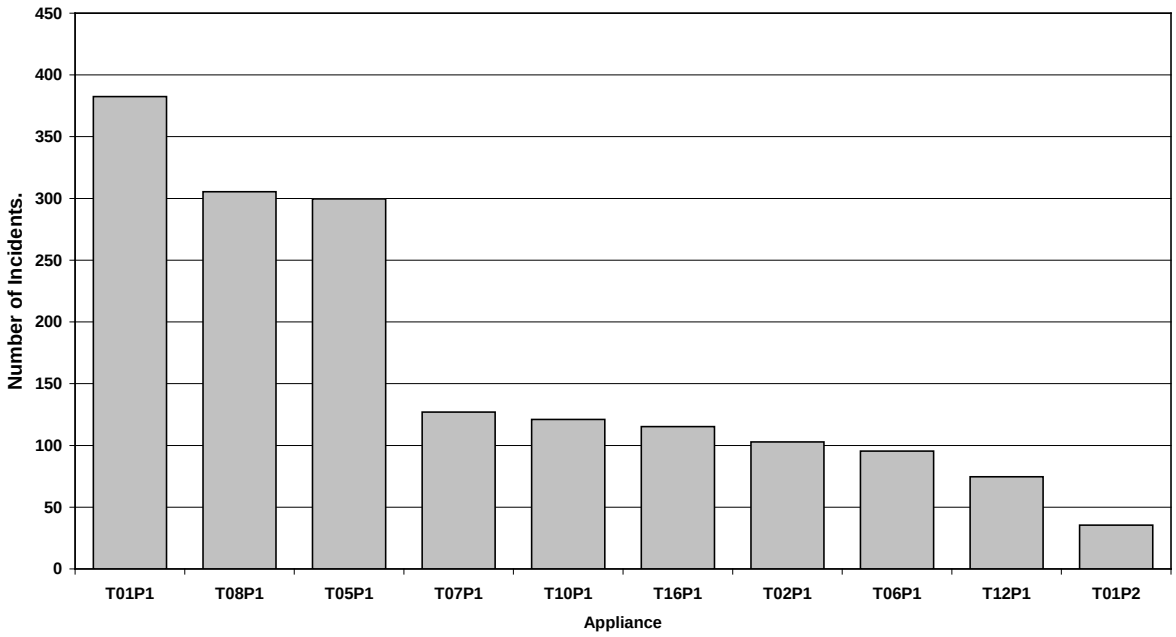
Secondary Fires Annual 2005-2009 South WDS



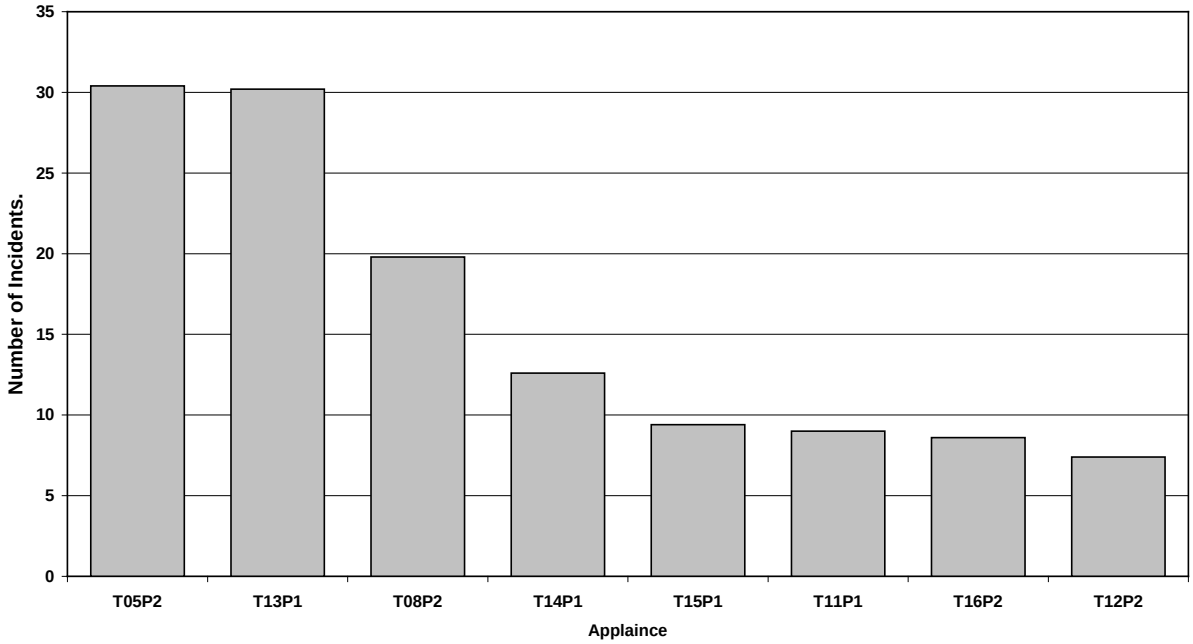
Secondary Fires North Stations (Average) 2005-2009



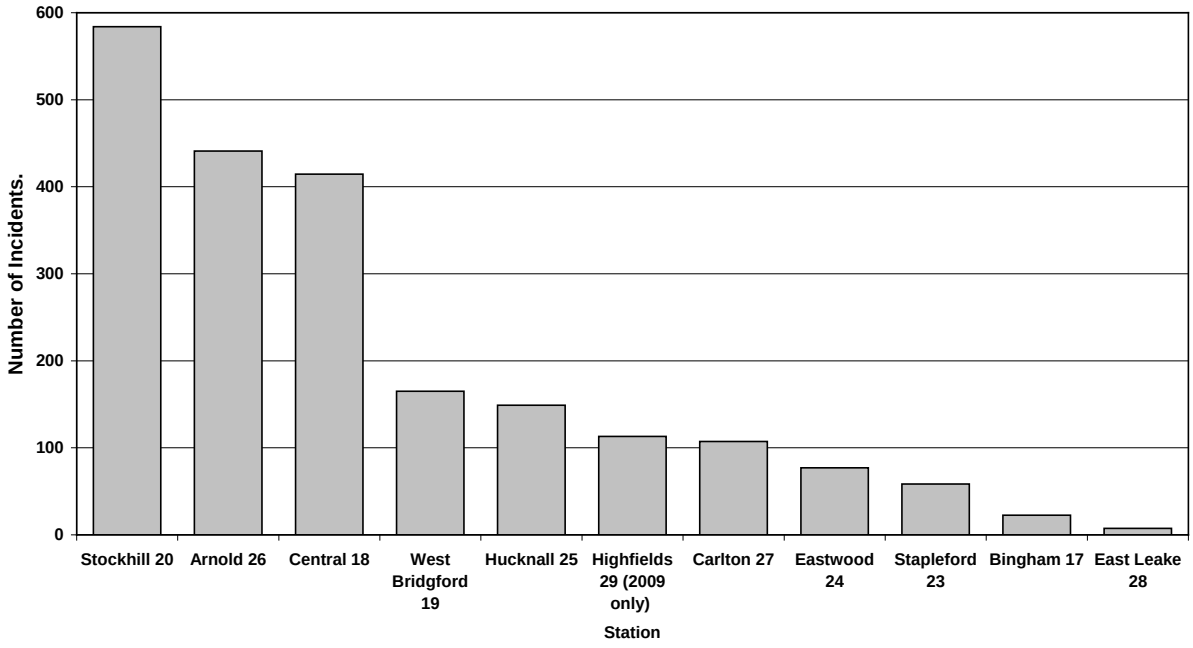
North Appliances Most Activity Secondary Fires (Average) 2005-2009



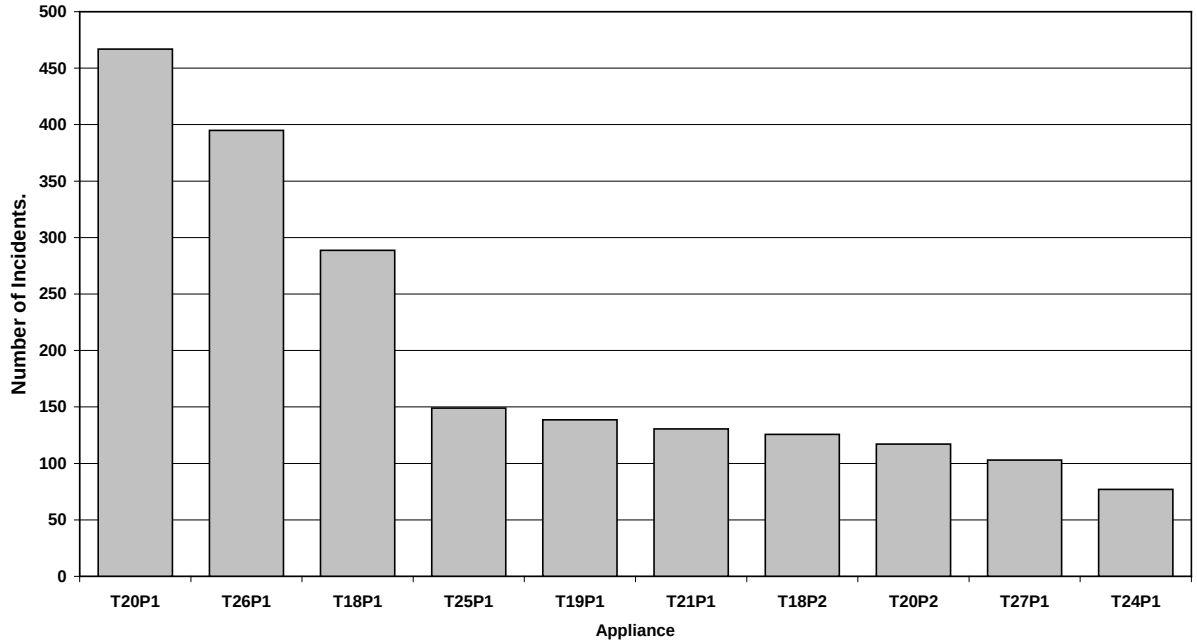
North Appliances Least Activity Secondary Fires RDS (Average) 2005-2009



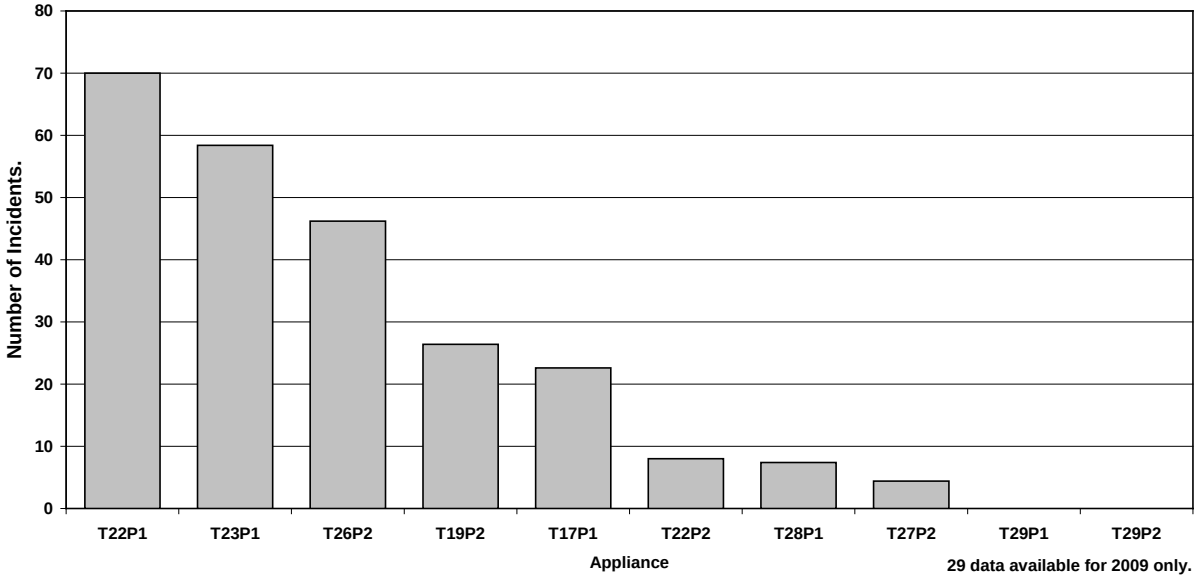
Secondary Fires South Stations (Average) 2005-2009



South Appliances Most Activity Secondary Fires (Average) 2005-2009



South Appliances Least Activity Secondary Fires (Average) 2005-2009



Secondary Fires Hours - The following guidance is drawn from the Fire Damage Report (FDR) system and is provided here for the purpose of defining Primary and Secondary. These definitions are now used in the Incident Reporting System (IRS).

Primary fire locations / properties are:

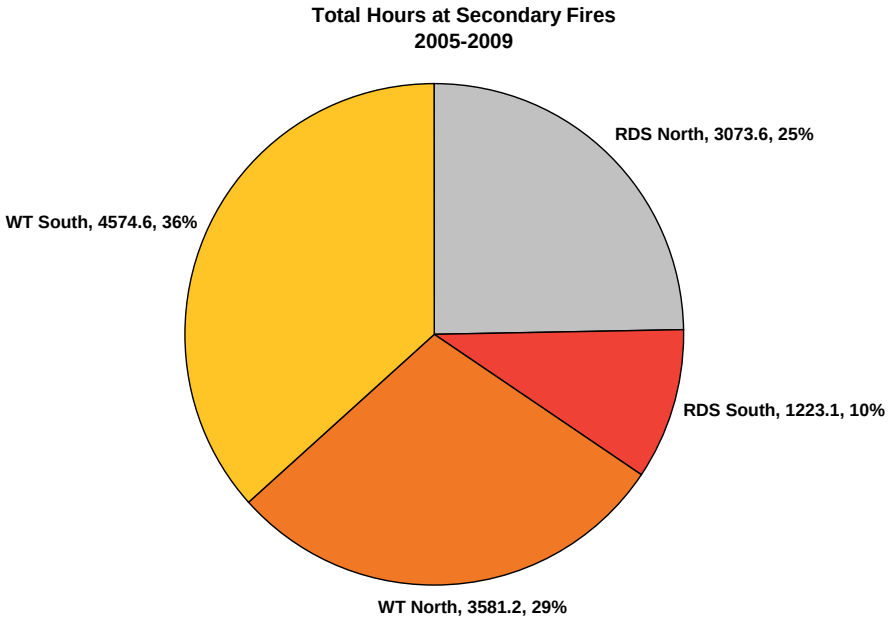
- Buildings including mobile homes fit for occupation (i.e. not wholly derelict), and those under construction.
- Caravans, trailers etc.
- Vehicles and other methods of transport (not derelict unless associated with business e.g scrap metal)
- Outdoor storage, plant and machinery
- Agricultural and forestry premises and property
- Other outdoor structures including post boxes, tunnels, bridges etc

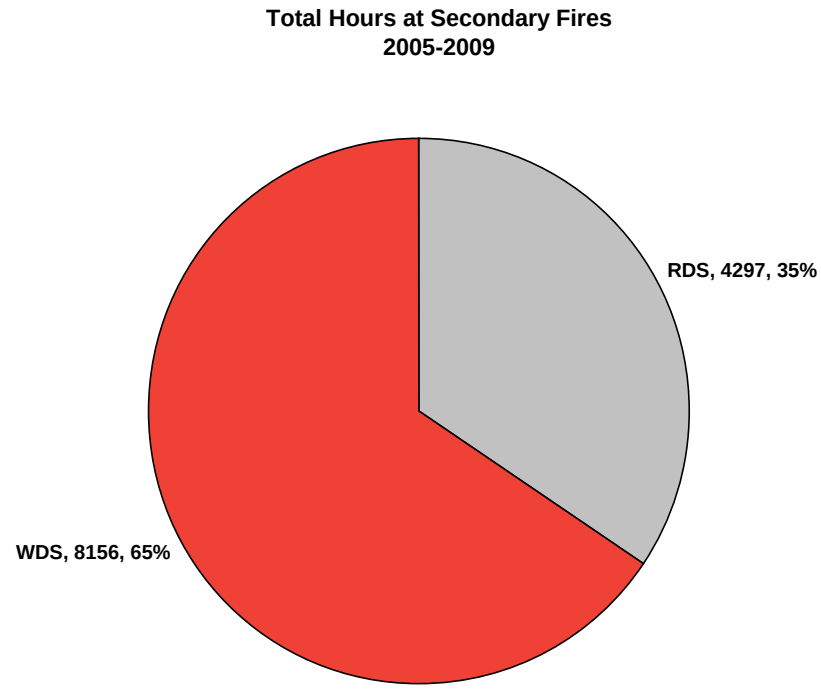
Secondary fire locations / properties are those that fall in the following categories:

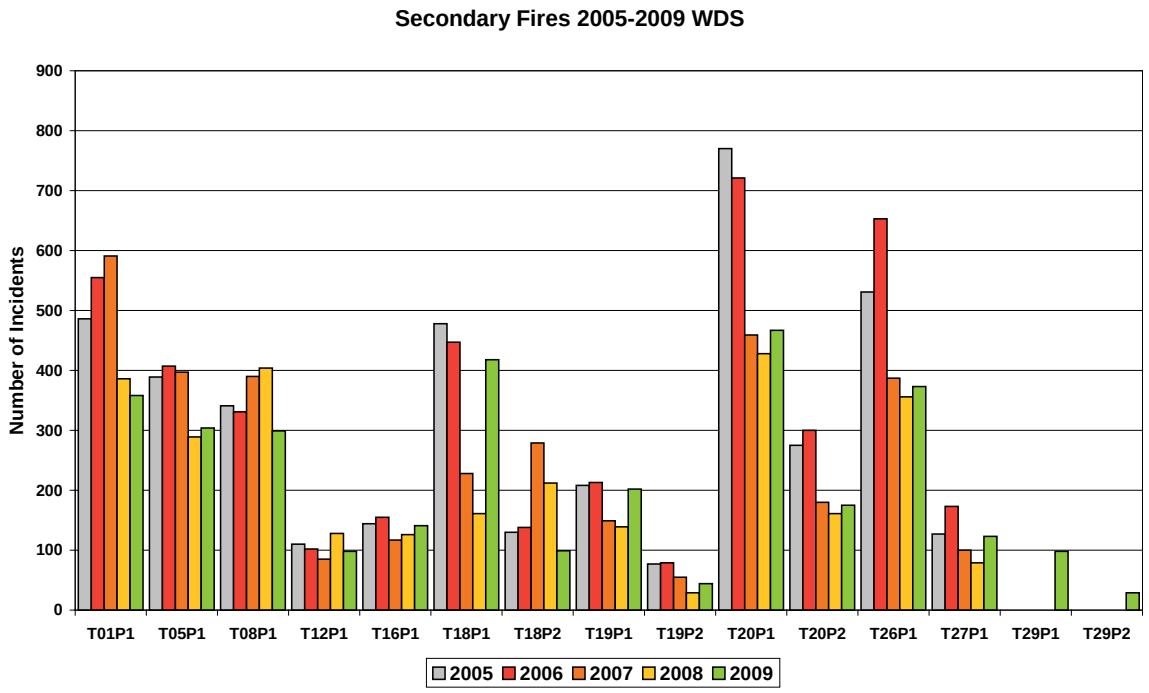
- ***Single derelict building*** - Includes single building under demolition.
- ***Grassland etc*** - Includes grassland, heathland, peatland, scrub, hedge, open land, railway embankment/cutting, road verge, singletree, straw/stubble incidents other than where `intentional' (see below).
- ***Intentional straw/stubble burning*** - Includes solely incidents where there was a deliberate act by the agricultural community to burn straw or stubble. (**N.B.** Excludes any other deliberate ignition of straw/stubble, which should be recorded in `grassland').

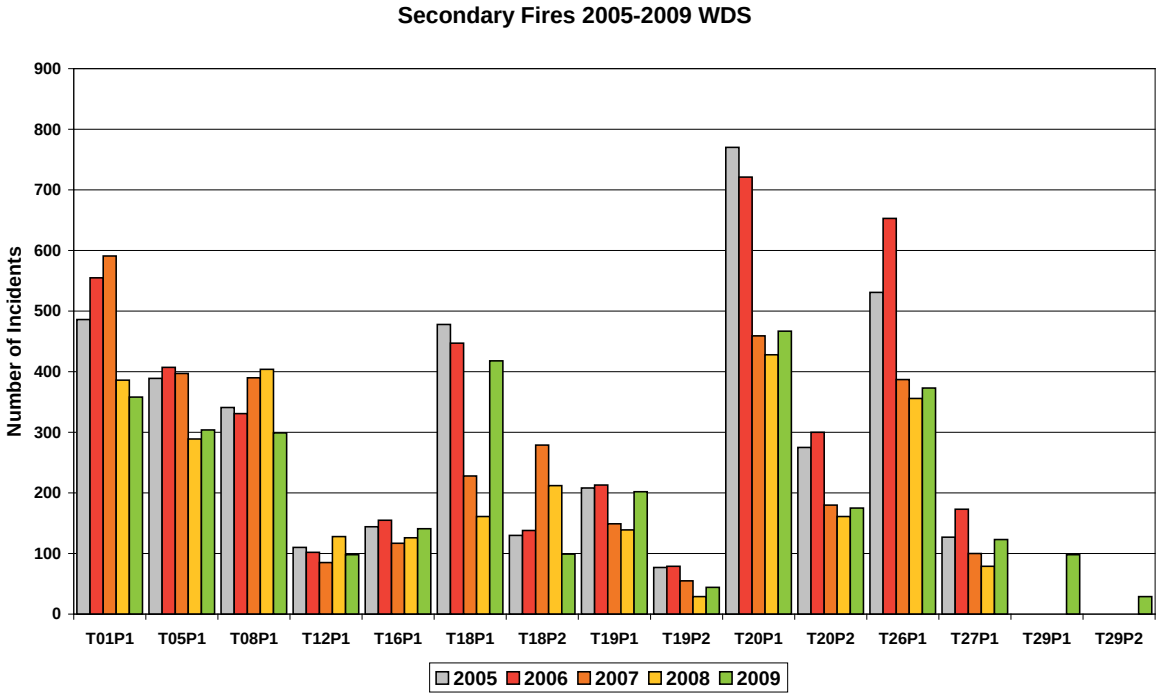
- ***Outdoor structure*** - Road furniture, lamp standard, traffic sign, traffic light, control box, telegraph pole, pylon (but not electricity pylons – these are a Primary location), transformer on pole, hoarding, fence, stand-alone sign (including estate agents'), outdoor cable - on, above or below ground, park furniture, playground furniture, railway furniture, private outdoor furniture including barbecue, tree house, play house, hutch, kennel, coal bunker, road surface, drain, scaffolding, wall, gate, yard door, cattle grid, single gas cylinder, derelict property/structure other than building or vehicle (including caravan), vagrant accommodation e.g tarpaulin, cardboard shelter, other simple outdoor structures.
- ***Refuse, refuse container*** - Includes loose rubbish, dustbin, `wheelie bin', skip, and bonfire/refuse burning out of control, fires at Primary locations involving solely incendiary devices or inflammable liquids.
- ***Derelict vehicle -*** Includes derelict cars, Lorries, buses, trains, boats, aircraft etc.

Each year since 2005 NFRS has spent on average over 2,400 hours at secondary fires with a low in 2006 of 1955 hours and a high in 2008 of 3011 hrs. WDS are attending these incidents for more than 1633 hours (average 2005-2009) each year, time that could be used on other core activities. RDS are at secondary fires for over 850 hours each year (average 2005-2009).

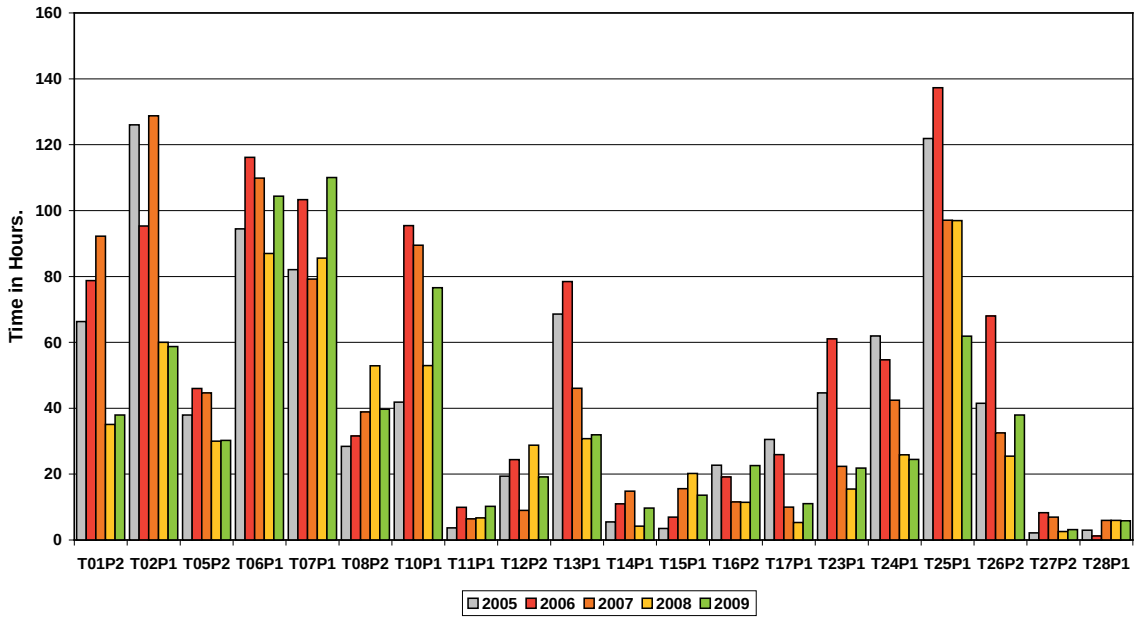




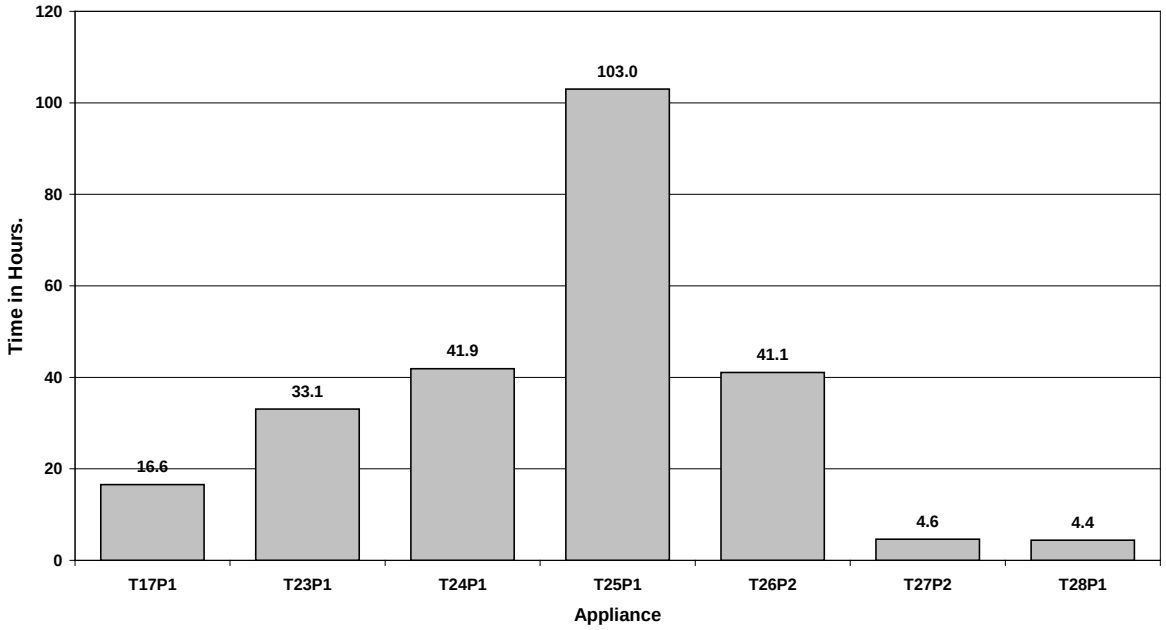




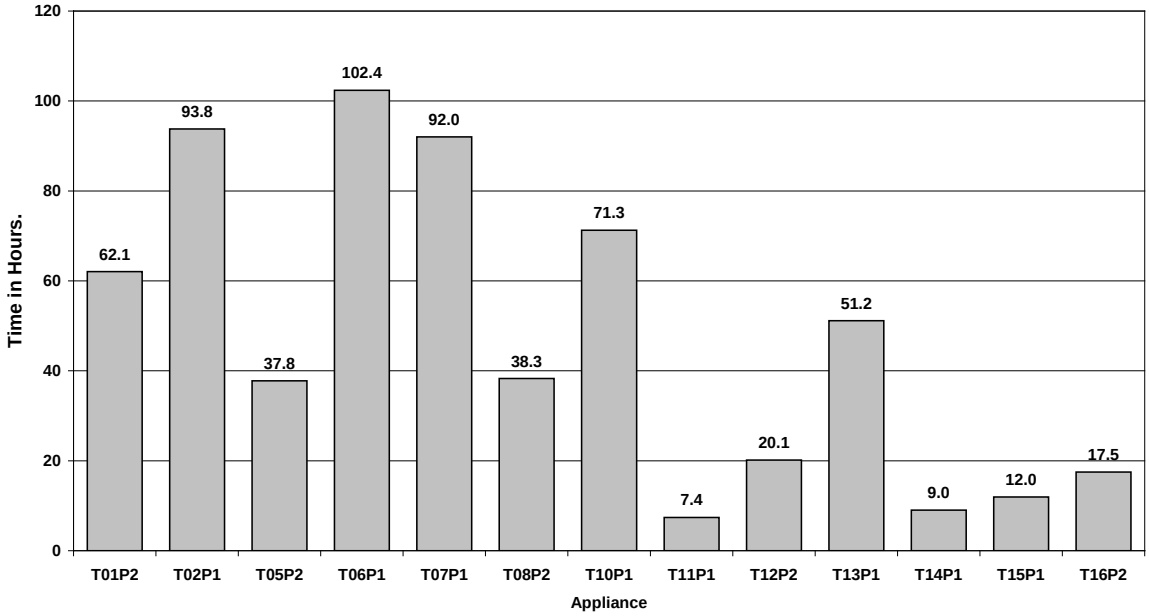
Hours Spent At Secondary Fires 2005-2009. RDS



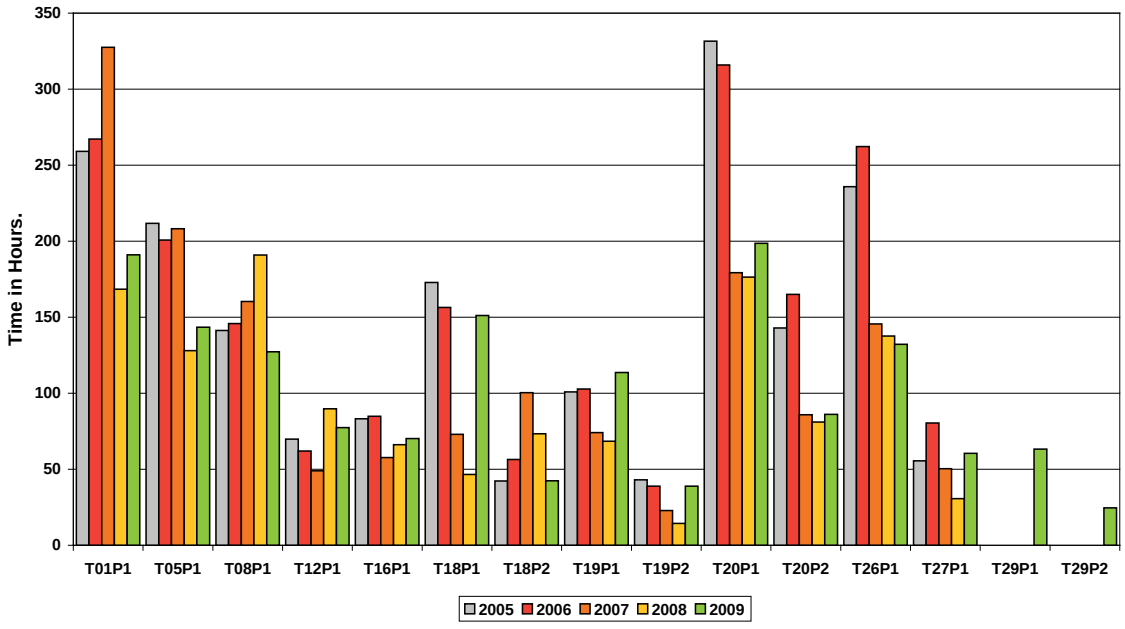
Average Hours per year 2005-2009. Secondary Fires. RDS South.



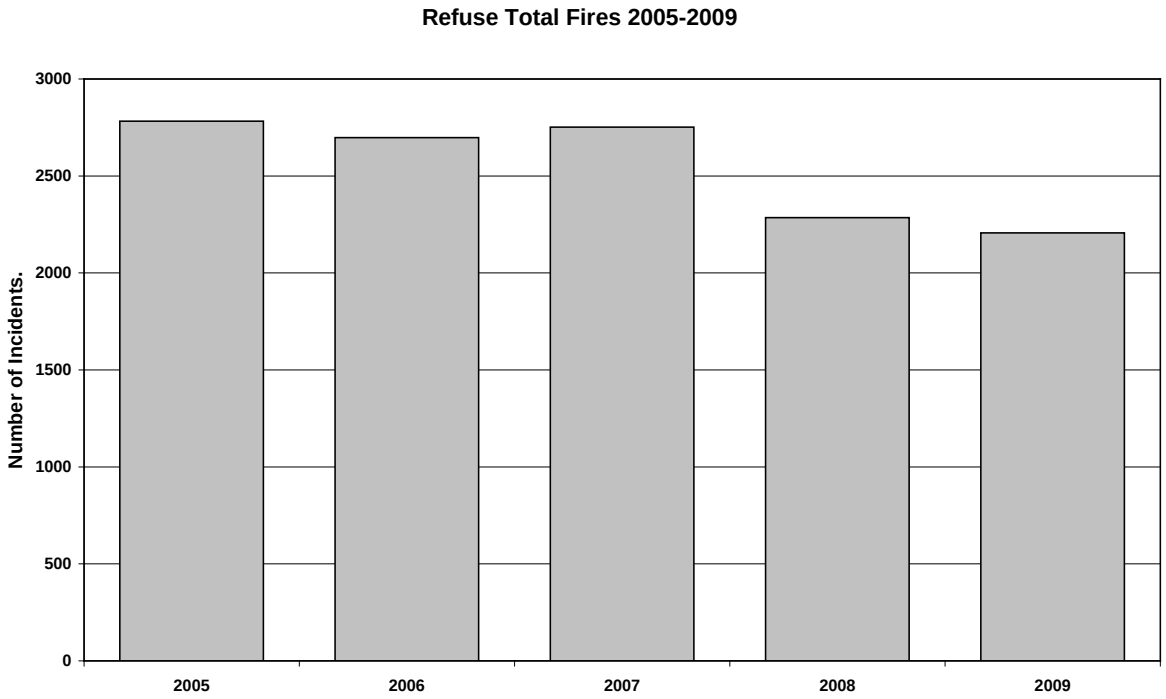
Average Hours per year 2005-2009 Secondary Fires. RDS North.

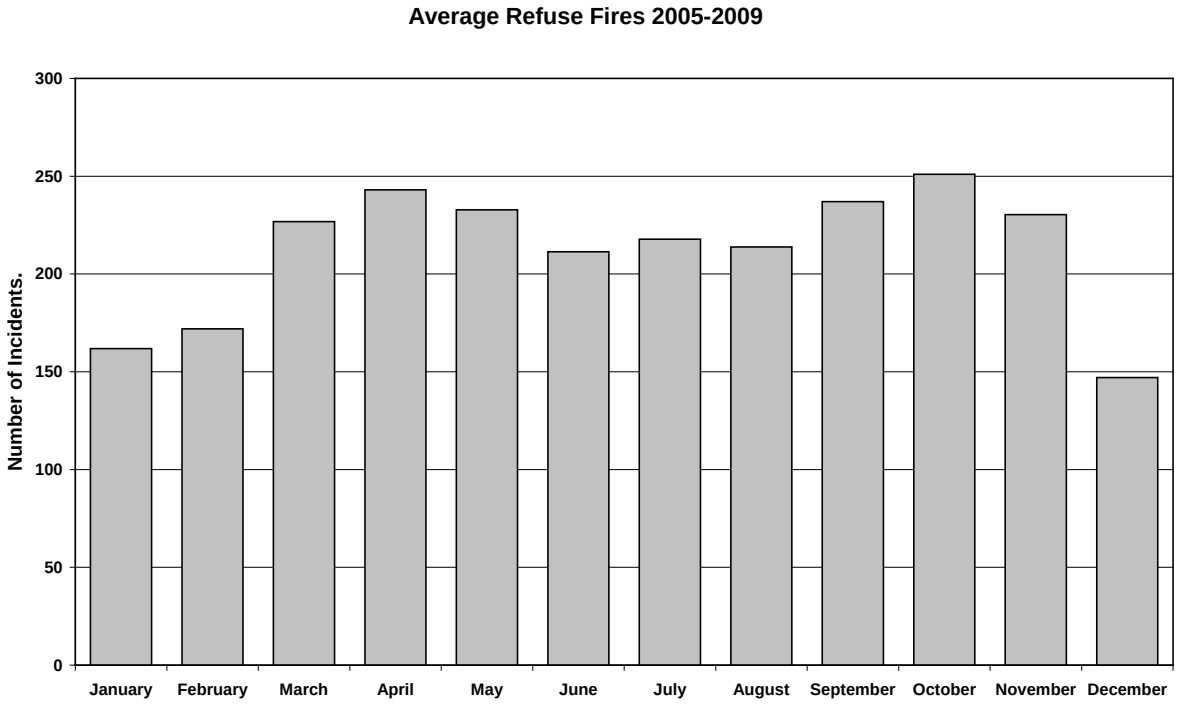


Hours Spent At Secondary Fires 2005-2009. WDS

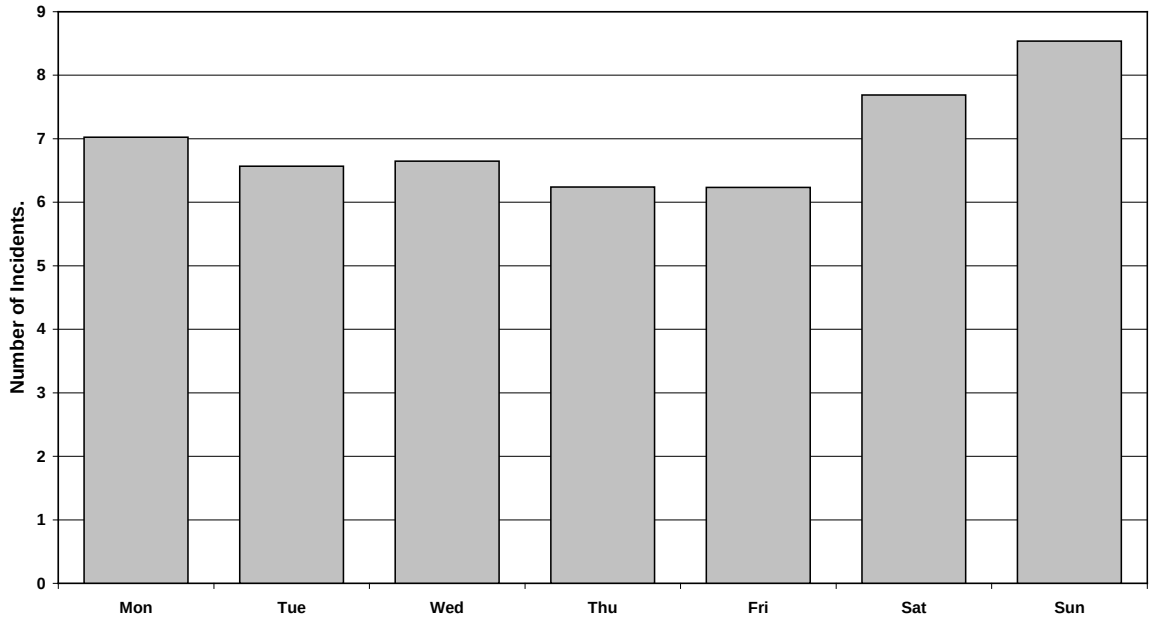


Refuse Fires - Refuse fires have decreased since a peak during 2005. There are peaks in April and October and a low in December. Sunday is the busiest day of the week and peak time of day is at 1900 hrs with a low at 0700 hrs.

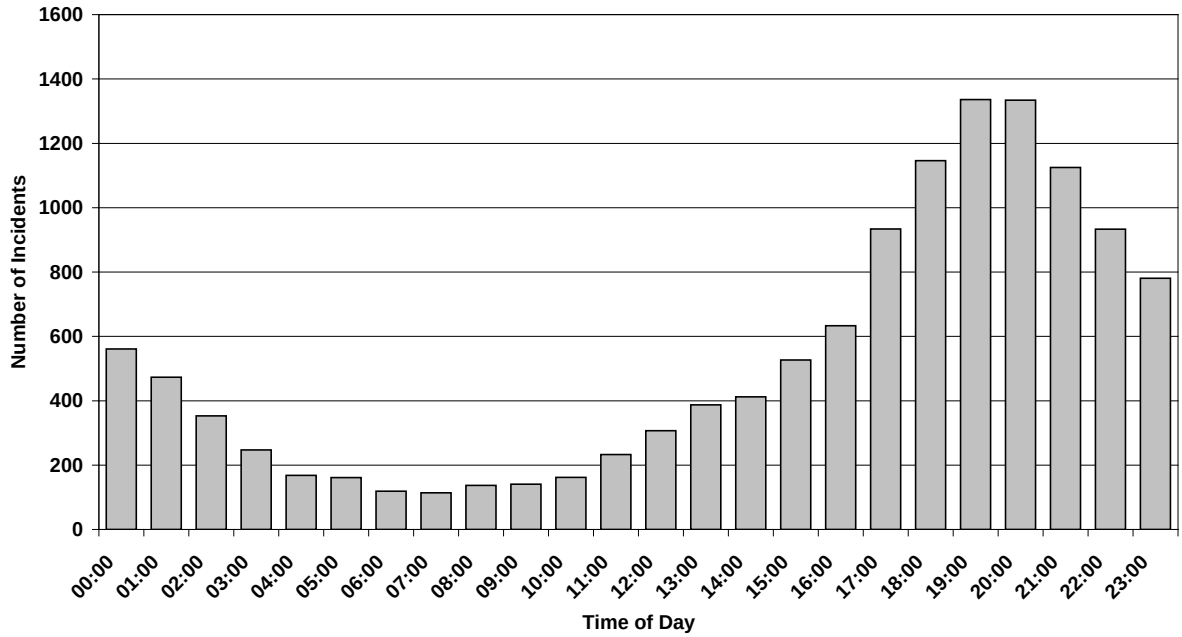




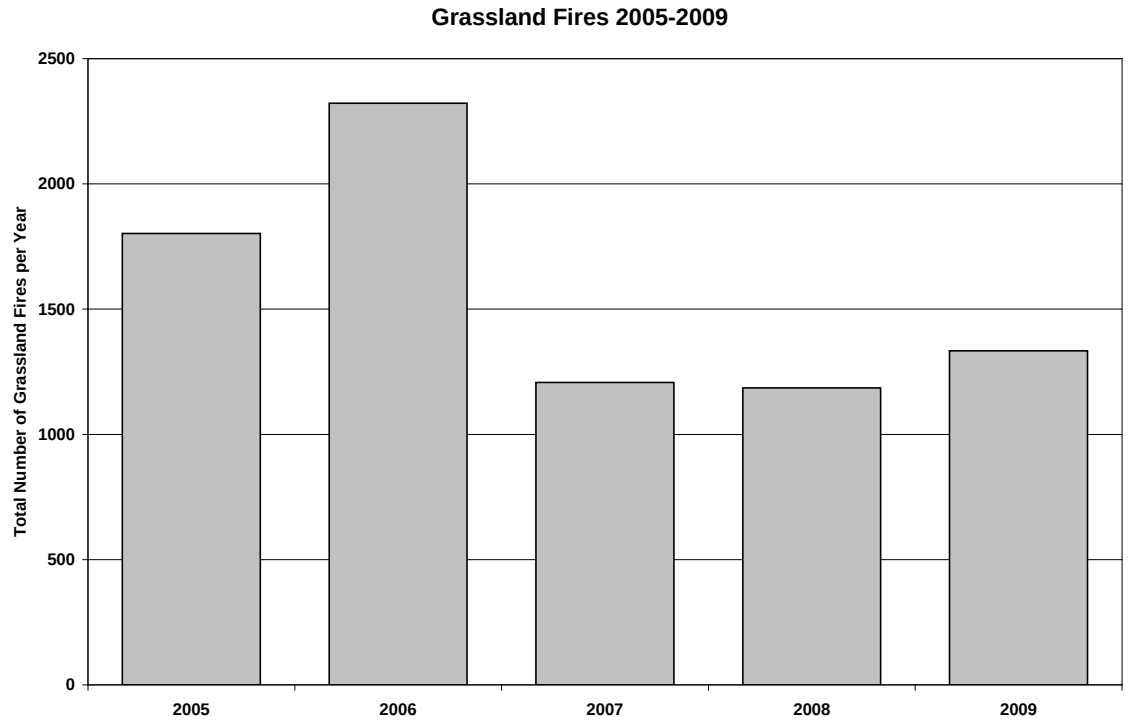
Average Refuse Fires Each Day 2005-2009

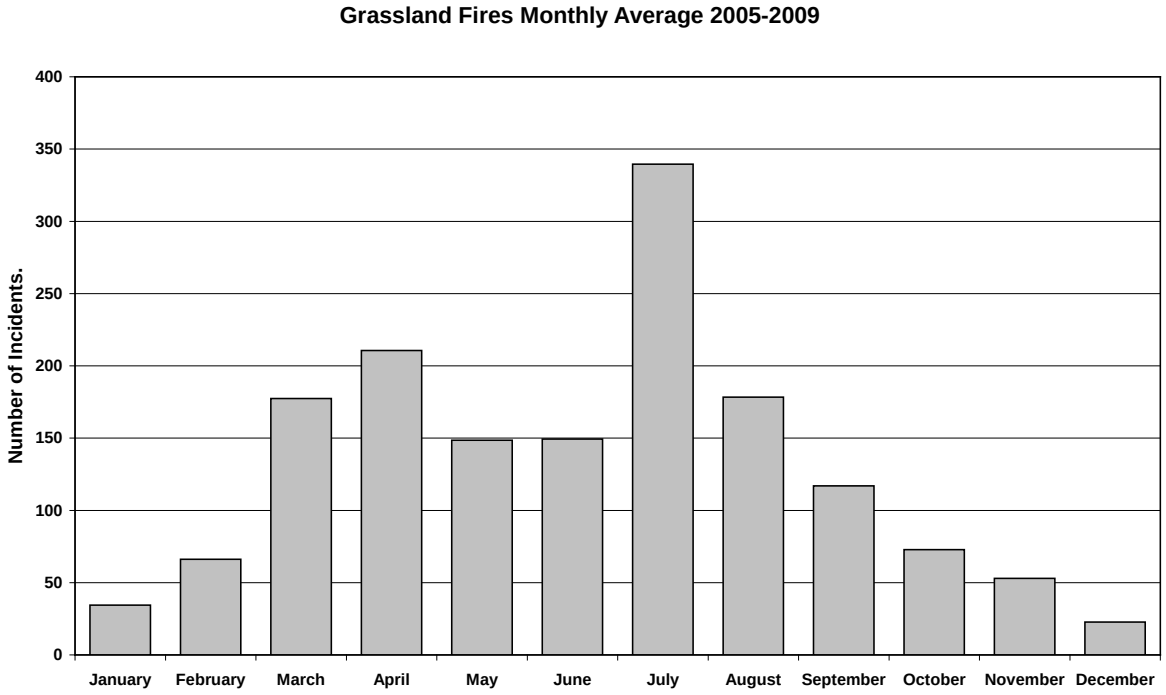


Refuse Fires Hourly Activity (Average 2005-2009).

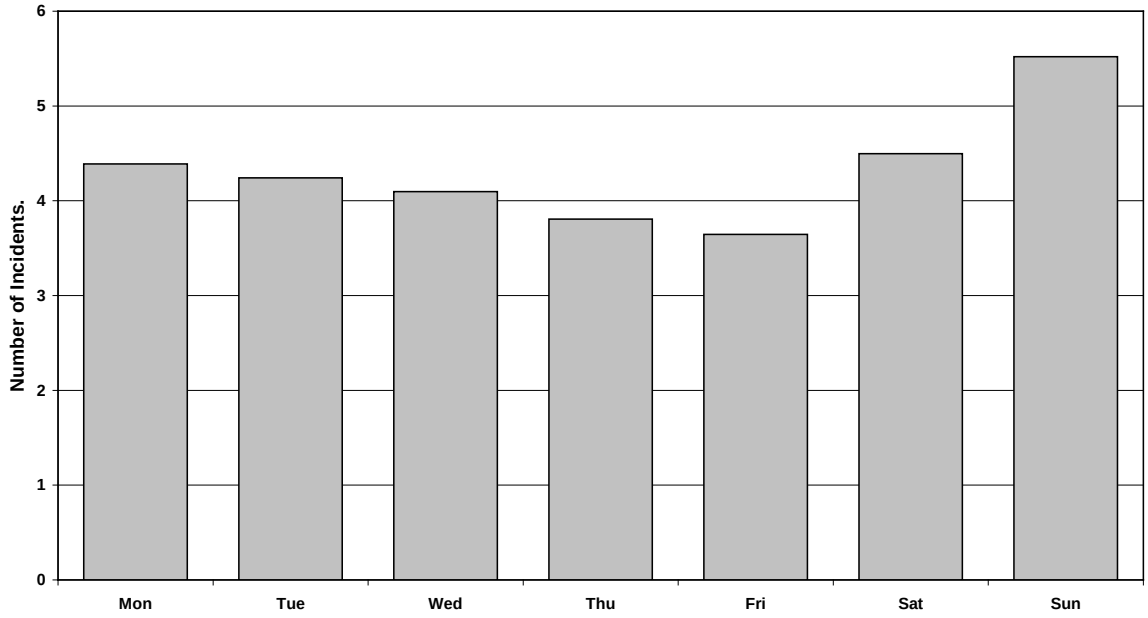


Grassland Fires - Grass fires peaked in 2006 (2333, hot summer) to a low in 2008 (1186). July on average is the peak month, followed by April. The weekend has the most incidents and Sunday is busier than Saturday. Peak time of day is 1800 hrs and a low at 04.00 hrs.

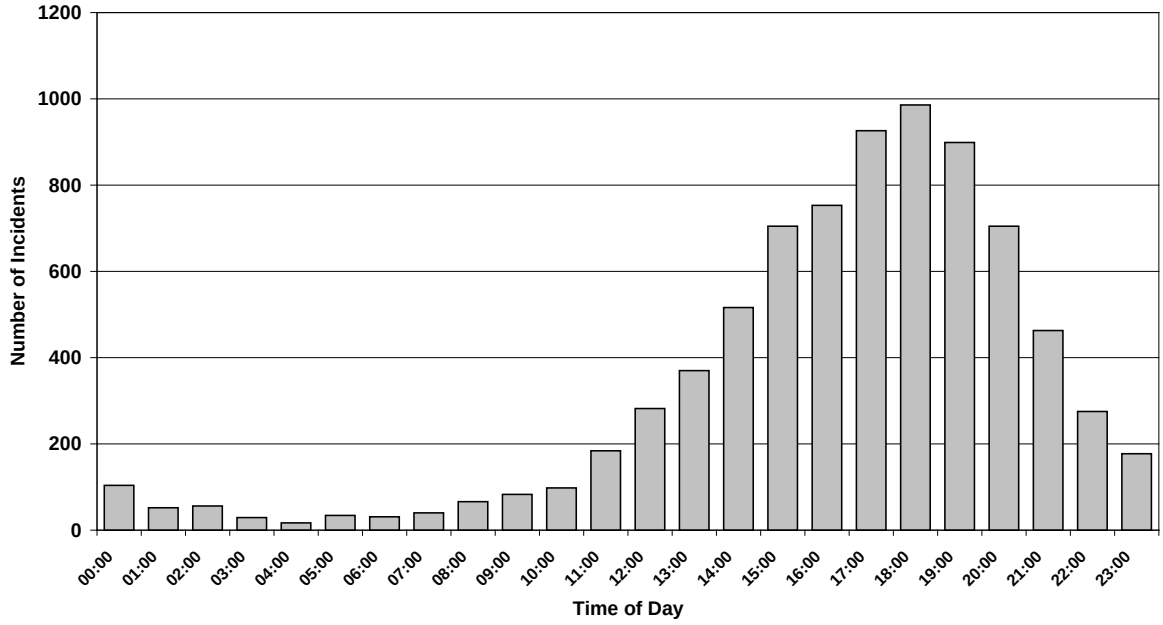




Grassland Fires Average Each Day 2005-2009

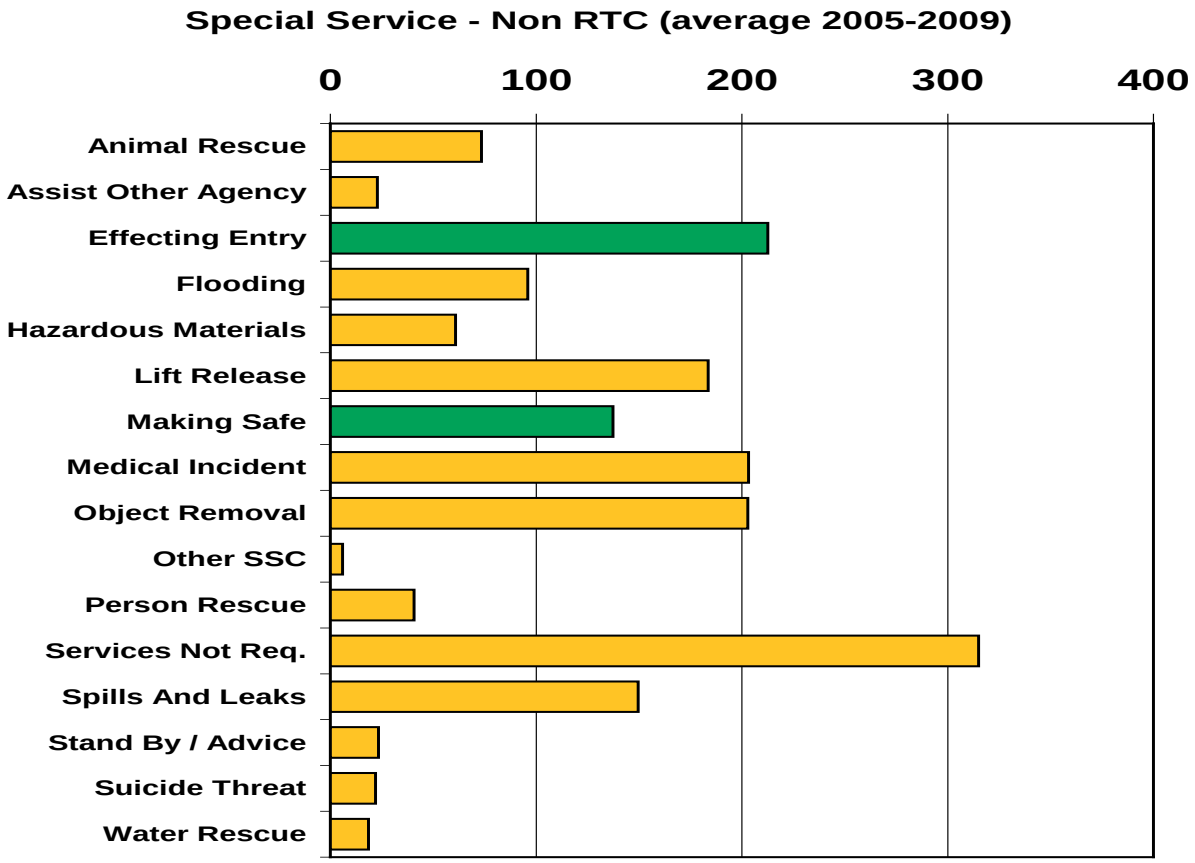


Grassland Fires Hourly Activity (Average 2005-2009).



Chargeable Special Service Calls – NFRS attend on average over 2,500 calls to Special Service Calls (SSC), these incidents may be life threatening such as road traffic collisions or major flooding, however amongst those incidents attended are calls that have the potential to escalate and cause harm but if dealt with promptly pose little threat to life or property, for example effecting entry and lift release.

Each year on average NFRS are asked to gain entry to a property 216 times, (2009/10) by the occupier if they have become locked in or out and there is a consideration that a fire may develop in the property or a lesser able person (such as a young child) is locked in. As initial steps to gain entry may not require a full crew a TRV will be able to resolve these incidents and only if necessary request additional resources.



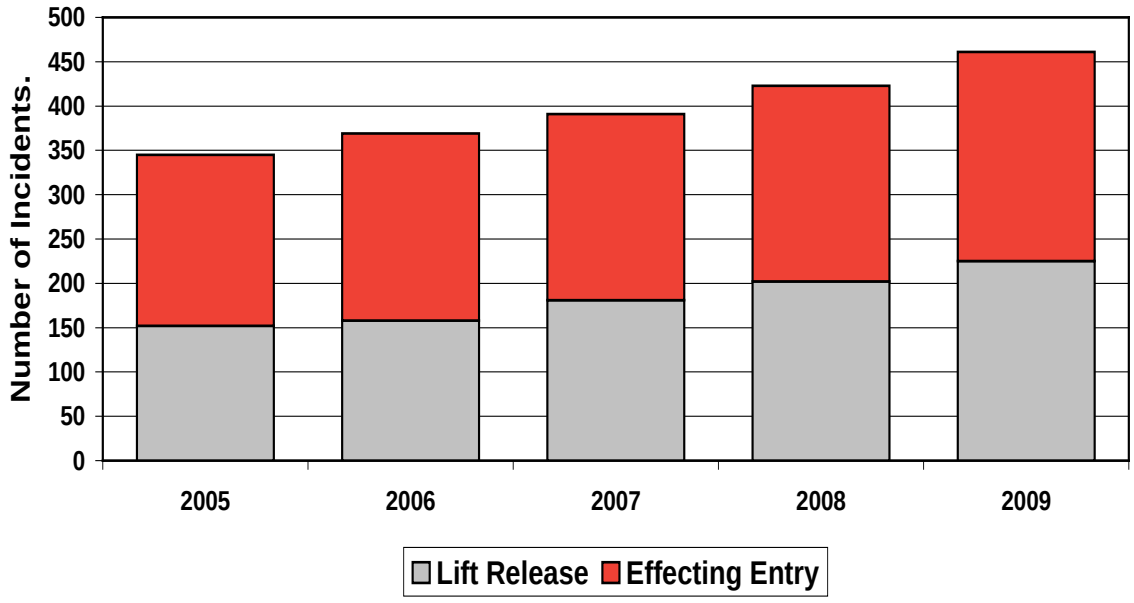
N.B. If these incidents did not pose a danger to property or life, a charge could be considered.

Lift releases occur on average over 180 times a year with 88% in the South of the County (Central crews attend over 50% of all lift releases), these have increased year on year over the last five years (152 during 2005 to 225 during 2009). A lift release occurs because a lift car will not allow the passengers to exit, this may be because it has stopped between floors or has developed a fault with the controlling mechanism.

Although NFRS attend a large number of lift releases, many properties have their own staff trained to resolve these incidents or alternatively a service engineer is called. It is not unusual to receive repeat calls to properties that have not rectified problems or to poorly maintained lifts.

When a lift engineer is called to resolve these problems they complete this action either alone or with two people, NFRS has always sent an appliance with a crew of four or more to carry out similar actions a lift engineer may complete on their own.

Lift Release and Effecting Entry 2005-2009



Lift release is usually carried out because of a faulty or poorly maintained lift not because the call is life threatening. If the occupier calls an engineer, a charge may be levied and there may be a delay in the release, because of these options some occupiers will use NFRS rather than attract a charge. (Present procedure is for Control to inform the premises of the need to call a service engineer in addition to NFRS response, the response of the engineer may take several hours.)

Although unpleasant to spend time in a lift car, it is rarely a medical issue which prompts the call, however if this was identified at the time of call, for example someone suffering breathing difficulties, then the nearest appliance would be

mobilised. The TRV will not be able to attend all the lift releases or effecting entry, however a revenue stream may be created by the implementation of charges for these incidents and a TRV will be able to support this.

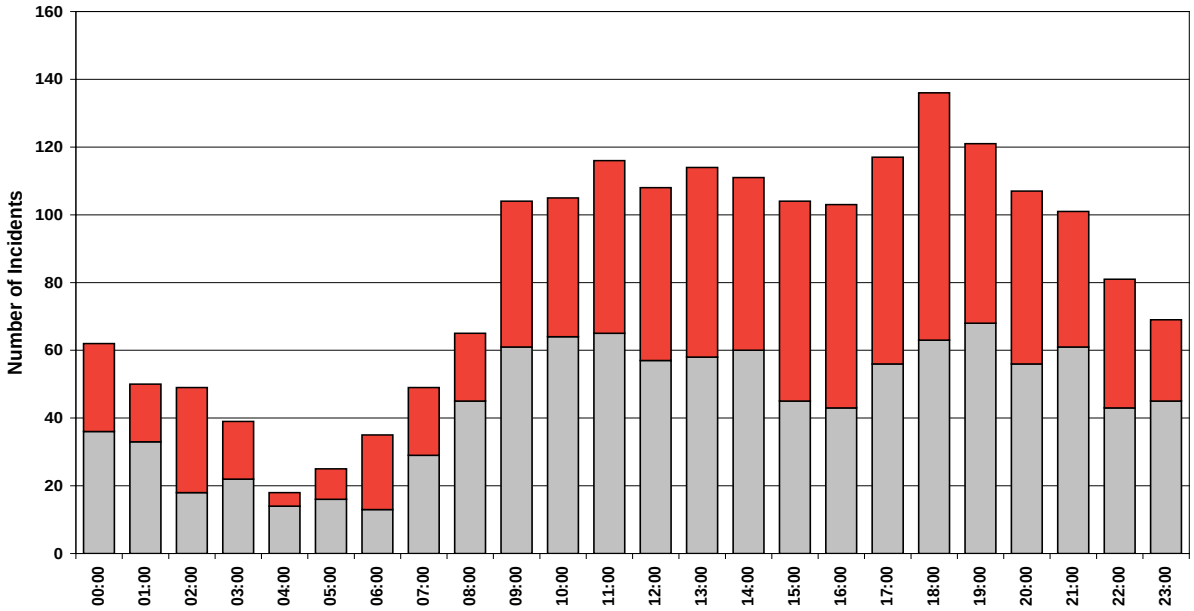
The present figures used to calculate chargeable special service call would be £126.60 per hour (costs have not been updated since 2001);

Crew Manager……£25.74
Fire fighter (X) ……£22.82 (£45.64)
Appliance under 6 Tonne £55.22
Total/hour……£126.60

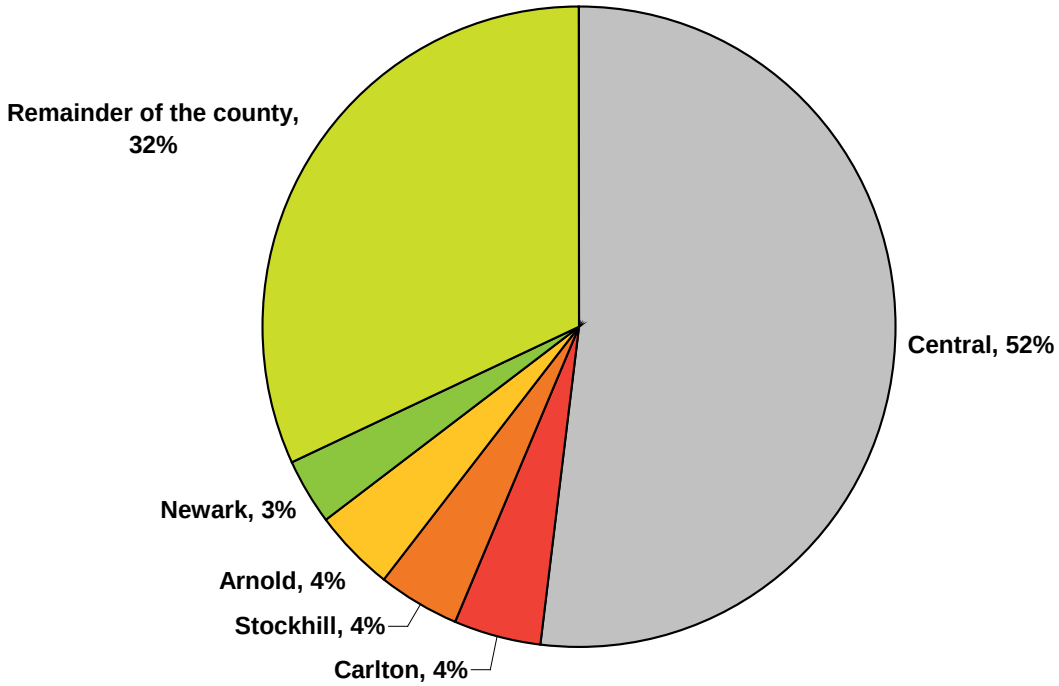
Between 2005 and 2009 we attend on average' 214 effecting entry calls, 183 lift releases. If the service charged for all these calls, a potential income of (Total 397 X £126.60) = £**50,361.48** could be achieved, however, discretion needs to be applied, full guidance will be issued following the release of this report.

Ave 2005-2009	Incidents	Incidents x £126.60
Lift Release	183.6	£23,243.76
Effecting Entry	214.2	£27,117.72
Total (X £126.60)	**397.8**	**£50,361.48**

Effecting Entry and Lift Release SSC. Average Calls per Hour. 2005-2009



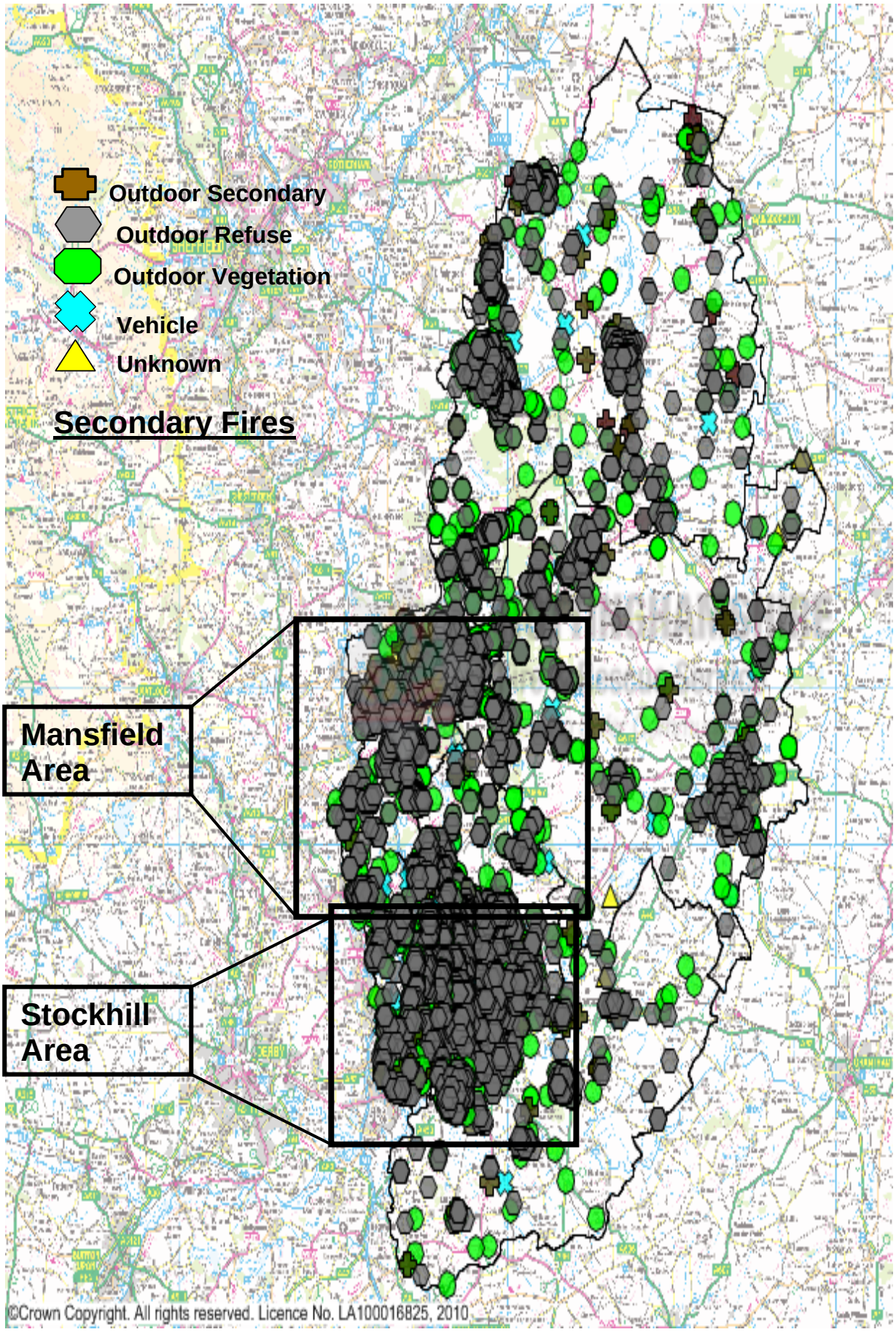
Lift Release
5 Busiest Stations
2005-2009



TRV Base Station - The evidence shows that the provision of a TRV has the potential to release substantial amounts of time for existing crews to attend larger incidents and provide savings throughout NFRS through the reduction of calls to RDS sections and charges to non-emergency SSC's. Although the TRV's will require a base station, the vehicle will be a resource available over a greater geographical footprint than its base station area. Secondary fires and vehicle fires occur in the largest numbers in the West of the County, centred on Stockhill Fire station in the South and Mansfield in the North.

The base location for the TRV's has been considered and a range of factors have been taken into account, these include the type and location of incidents and the ability of a base to provide support for the vehicle and crew.

With these considerations Mansfield and Highfields are the locations most appropriate. Although the turnout area will be a geographical, north and south of the County, a 20-minute footprint around the vehicle will be used for secondary fires. This 'footprint' will allow Control to mobilise the TRV to secondary fires, appliances closer to the incident will not be mobilised to smaller fires regardless of their proximity to the incident.


Outdoor Secondary
Outdoor Refuse
Outdoor Vegetation
Vehicle
Unknown
Secondary Fires
Mansfield Area
Stockhill Area
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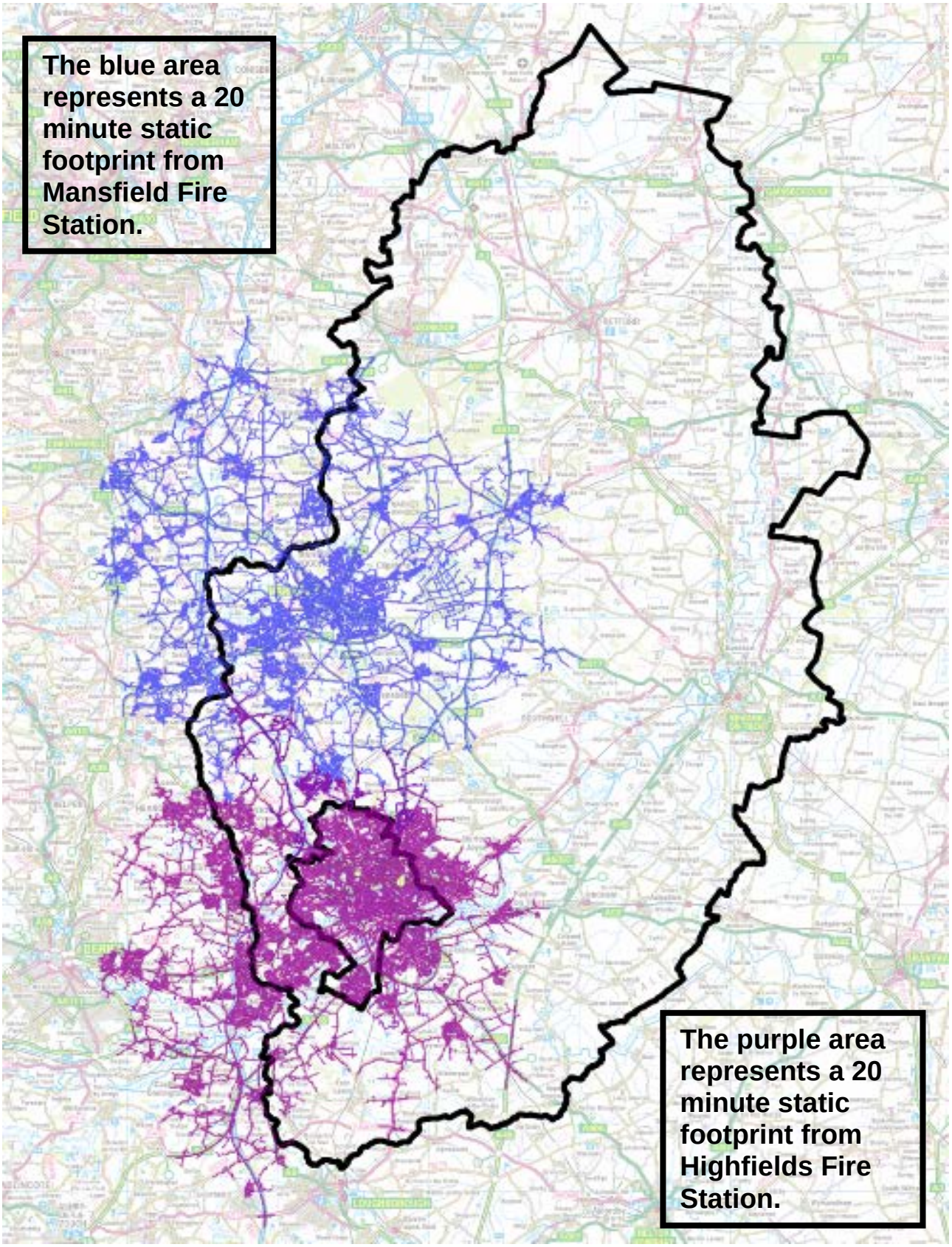
N.B. The map below illustrates a 20-minute travel time from Mansfield Fire Station (blue) and Highfields Fire Station (purple), when considered with the map showing secondary calls it can be seen that these incidents will be accessible to the TRV from its base station within 20 minute



Crewing the TRV

(SM A Bettison)
Standard Calculations For Rider Positions

In making the following calculations NFRS have included an average "training / courses" time of 60 hrs per person. This figure includes a "weighting" that reflects the general usage across the organisation regardless of whether stations are two pumps or stand-alone. Within the 1,674 hrs of contractual availability per person, therefore, approximately 1,614 are rider hours, with the remainder allocated to training and other "social" aspects of usage.

By representing these figures as percentage values we are able to arrive at a factor which can be applied to every "Rider Hour" required;
i.e. 60 / 1,614 = 0.03717

Thus, for every rider hour required we need to multiply it by 1.0372 to arrive at the total hours that need replacing;

- An example would be where 1 appliance is needed to be crewed by 5 riders for 24 hours per day and 365.25 days per annum (taking into account leap years) the calculation is now:

1 x 5 x 24 x 365.25 = 43,830.

In order to know how may posts will be required to cover these positions we now apply the nominal ridership factor of 1.0372 which shows that we need ;

43,830 x 1.0372 = 45,451 hrs cover.

- We now divide this by 1674 (the standard hours availability per rider post);

45,451 / 1674 = 27.15 posts

- ***It also follows therefore that any standard rider hour would require (8,0352 divided by 78,894) 1.0372 hrs to cover training and rider hours.***
- ***This figure can be applied to any known number of required rider hours in order to identify the number of total hours (and therefore posts) required.***

See below for Station 29 Pump and TRV calculations
E.g. Crewing station 29 with 1 x whole time pump crew of 5 plus 1 x 12 hr daily crew of 3 for the TRV.

Pump requires: 5 (riders) x 24 (hours) x 365.25 (days) = 43,830

TRV requires 3 x 12 x 365.25 = 13,149+

Basic Total Hours for both appliances 56,979

Adjusted for training etc = 56,979 x 1.0372 = 59,099
Which requires = (59,099 / 1,674 =) 35 (35.3) posts.

Conclusion

Targeted Response Vehicles (TRV) are a proven positive addition to Fire Services' resources. A TRV increases the capacity larger appliances have to respond to life threatening incidents by tackling fires that traditionally have required the attendance of an appliance crewed by between four and six personnel. This reduction in the number of smaller incidents attended by larger appliances will allow NFRS to offer an increased response due to improved availability.

TRVs will also provide a reduction in mobilisation costs for RDS stations, each mobilisation attracts a payment of £158 (average) for wages alone.
This report has shown a clear picture that the incidents attended by one appliance are a huge drain on the resources of NFRS. On average we attend 6,000 smaller fires (secondary and vehicle), we spend on average over 2,490 hours per year at secondary fires alone (average/year 2005-2009, 1631hrs WDS, 859hrs RDS).

The TRV base is less important than an understanding of the principles of its operation, the turnout area will cover a large geographic area that includes several stations and will be available to assist at community safety events, for example open days and fetes as well as removing the need for WDS to leave other core activities such as training.

Predicted TRV used will be predominantly in the Ashfield, Mansfield and Worksop areas (North East of the County) and Stockhill, Arnold and Central (South East of the County) and would operate between 1100hrs and 2300hrs when the largest number of single appliance incidents occur.

The workload modeller (see section 6) has shown that the worst (busiest hour) scenario over the years 2005-2009 would be that two TRVs would be available to attend 63% of the incidents during that hour, the majority of the time they would be able to attend virtually all 'TRV incidents'.

Past Activity Busiest Time. TRV Incidents, TRV v Appliances. 2005-2009