

Essex County Council

Joint Monitoring Group Report on Part-Night Lighting Pilot in Maldon and Uttlesford Districts

Environment, Sustainability and Highways

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1. Introduction

Following on from the Cabinet decision in July 2006, a pilot took place of part night lighting on Essex County Council (ECC) owned and maintained street lights, in accordance with the agreed exception criteria. This involved 68% in Uttlesford and 76% in Maldon of the street lights being converted. The pilot did not include illuminated signs, bollards, beacons, underpasses and subways.

This work was carried out over the period between February 2007 and August 2007. It involved the replacement of the existing photocell control with a part night photocell control which identifies the middle of the night to turn the light off and 5 hours later to turn the light on again (light levels permitting).

A new type of remote monitoring system became available manufactured by Telensa; an Essex based company, based on the car tracker system, which reduces the cost for this type of system. ECC have piloted this system in the parish of Great Chesterford as an alternative to the part night photocell.

12-5am Greenwich Mean Time (GMT) was the standard time used for the pilot but during British Summer Time (BST) this became 1-6am. ECC also piloted 1-5am GMT in Great Dunmow and Stebbing.

ECC also installed part night lighting on Great Chesterford Parish Council owned lights at their request.

A group was set up to monitor the progress of the part night pilot. The group which includes representatives from the emergency services, District Councils and ECC looks at the effect part night lighting has on crime and road traffic accidents statistics. These statistics were base-lined before the start of the pilot. They also consider correspondence received from members of the public and parish and town councils. It was agreed that the outcome of the quarterly meetings would be a report and recommendation on the progress of the pilot, to be undertaken after a year. These monitoring arrangements were seen as a strengthening of the mitigation measures proposed in the risk assessment of the original executive decision and should enable sufficient data and experience to be obtained fully to inform any further decisions on whether to extend the arrangements to the rest of Essex.

Uttlesford District Council and Essex Ambulance representatives did not attend any of the joint monitoring group meetings. However, the Ambulance service engaged in regular correspondence.

2. Background

In 2005 ECC revised its street lighting policy to reflect growing environmental concerns. Measures included the introduction of 'whiter light' (SON) lighting with downward reflectors for all new schemes and for replacement lighting (as opposed to the old undirected 'yellow light' (SOX) lighting) and a more rigorous approach to evaluating whether street lights are required at all on new developments.

This policy will not deliver the significant reductions in energy consumption in the short term as the replacement programme will take many years to accomplish. Consequently further changes in practice are urgently required.

ECC funds the majority of street lights across Essex, which totals about 120,000 lights and the current ECC street lighting practice, is to keep street lights on throughout the hours of darkness, regardless of where they are located. The revised street lighting practice will introduce alternative technology which will enable the light source to be switched off for part of the night.

3. Benefits

The proposals have significant environmental benefits in reducing the level of light pollution attributed to street lighting and saving energy. The annual energy consumption of the 120,000 street lights is 44 million kilowatt hours of electricity which equates to 19,000 tonnes of carbon emissions. The proposals also have sound economic benefits. Because of rising energy prices, the cost of supplying electricity for the ECC's street lights rose by 147% over 2006 levels compared to the reference price for 2009/10. There should also be benefits in the long term associated with savings in maintenance costs.

The proposal also constitutes a core component and significant contributor to the County Council corporate carbon reduction target of 10% CO₂ reduction across our estate by 2010/11. This project will enable a 5% reduction in our corporate footprint over the next 5 years, directly contributing over two thirds of the CO₂ savings required to meet the 10% corporate carbon reduction target.

The inclusion of NI 186 'per capita CO₂ reduction in the local authority area' within LAA2 signifies the need for and importance of ECC leading by example in reducing our emissions across our estate (within our core footprint components of buildings, transport and street lighting). These core components are defined in both National Indicator 185 and the Carbon Reduction Commitment (to commence in January 2010).

The complexity surrounding carbon reduction in terms of phasing, financial planning and service priorities will require progress to be achieved across all components of the footprint. Sustainable reduction and ultimately the achievement of corporate targets will not rest on one element, but on ECC's success in making progress across all areas of our carbon footprint.

4. Potential Risks

It was recognised at the outset that there were potential risks associated with the proposals which if not carefully considered and mitigated could detract from the benefits outlined above. The most significant of these was deemed to be road safety and the following measures were taken at the outset to reduce these risks.

- Only street lights will be considered for part night control. Signs, bollards, beacons and underpasses/subways will continue as full night lighting.
- At traffic accident sites, where improved lighting has been chosen as the preferred method for accident reduction, consideration will also be given to leaving these areas as full night operation.

In addition, it is generally accepted that street lighting has an important role to play in deterring crime and in ameliorating fear of crime by the public. ECC has a duty under Section 17 of the Crime and Disorder Act to exercise its functions with due regard to their effect on crime and disorder and to do all it reasonably can to prevent crime and disorder in its area. With this in mind, it was proposed at the outset that further exceptions to the general principle would be determined in consultation with the District/Borough Councils and the police on a district by district basis taking into account the views of Parish Councils and local organisations.

5. Public Reaction

The profile shows a majority of the correspondence was received before and during the installation, this has since decreased steadily (Table 1 page 18). There was a noticeable increase in December 2007 and January 2008 in the Uttlesford district due to a request by ECC to the parishes for their views on part night lighting. One of the parishes then forwarded this on to its residents for them to reply directly.

Whilst a number of letters, e-mails and phone calls were received, the percentage of residents corresponding about part night lighting in both districts was very low. A majority of them were complaints but compliments were received along with general enquires.

	Totals
Letters	121
E-Mails	44
Telephone	209
Total	374

The correspondence showed the main concerns were around road safety, personal safety, crime and fear of crime. This was followed by alternative suggestions for the part night pilot with the use of 1 in 2 lights being turned off being the most popular.

	%
Road & Personal Safety	25.12
Crime/Fear of Crime	23.72
Alternative Suggestions	14.42
Achieve Energy Savings	5.58
Concerns for the Elderly	6.05
Consultation Process	5.12
Selective Street	5.12
Value for Money	6.98
Other	7.89

Another major concern mentioned was the irregularity of the photocell switching times. These can range from 11:30 to 12:30 as the middle of the night is not at a permanent time in relation to GMT. It was clear from the correspondence, whether in support or against the pilot, that if ECC are saying 12 to 5 GMT then this should mean 12 to 5 GMT. This view was endorsed by the police.

In the autumns of 2007 and 2008, ECC received calls regarding the lights not coming on until 6am due to BST with day break occurring after this time. Many people who live in the Uttlesford district work at Stansted airport with the general shift pattern starting at 6am which means that they were leaving for work in the dark.

In November 2007, ECC wrote to the 54 Parish Council involved for their views of the part night pilot. ECC received feedback from 17 parishes with 11 having reservations about the pilot (Table 2 page 20).

ECC received a number of complaints as an exception was not made for New Years Eve as a number of residents were out after midnight.

6. Crime Statistics

The crime statistics were provided on a monthly basis by Essex Police. These showed the month by month crime statistics compared to the baseline data. These were broken down by police operational areas with an overall summary for each district.

Table 3 page 22 shows the total of offences for the years for both districts between 23:30 and 05:30. As Uttlesford pilot started later than Maldon, there is not a full year's data for 2008/9. However the October to March, year on year data, is shown.

Overall:

- There has been no significant change on crime statistics due to the installation of part night lighting in Uttlesford and Maldon
- Total recorded offences in Maldon for 2006/7 was 3113. This has decreased to 2661 (-14.52%) in 2007/8 and 2531 (-18.7%) in 2008/9 since part night lighting started with offences occurring between 23:30 and 05:30 decreasing from 397 to 314 (-20.97%) in 2007/8 and 288 (-27.46%) in 2008/9
- Total recorded offences in Uttlesford for 2006/7 was 2967. This has decreased to 2909 (-1.95%) in 2007/8 since part night lighting started with offences occurring between 23:30 and 05:30 decreasing from 396 to 346 (-12.63%) in 2007/8
- Total recorded offences in the control district (Braintree), where the street lighting has not been changed to part night; in 2006/7 was 8094. This has decreased to 7570 (-6.47%) in 2007/8 and 7605 (-6.04%) in 2008/9 with offences occurring between 23:30 and 05:30 decreasing from 1135 to 1017 (-10.4%) in 2007/8 and 1055 (-7.05%) in 2008/9
- Total recorded offences in Essex as a whole (including Southend-on-Sea and Thurrock) in 2006/7 was 127862. This has decreased to 122459 (-4.23%) in 2007/8 and 117881 (-7.81%) in 2008/9 since part night lighting started with offences occurring between 23:30 and 05:30 decreasing from 18095 to 15833 (-12.5%) in 2007/8 and 15726 (-13.09%) in 2008/9

Table 4 page 24 shows the year on year trend for both pilot districts, the control district (Braintree) and Essex as a whole which includes Southend-on-Sea and Thurrock. As Uttlesford pilot started later than Maldon, there is not a full year's data for 2008/9. However the October to March, year on year data, is shown.

Overall:

- Total recorded offences in Maldon for 2006/7 was 1544. This has decreased to 1238 (-19.82%) in 2007/8 and 1191 (-22.86%) in 2008/9 since part night lighting started with offences occurring between 23:30 and 05:30 decreasing from 199 to 127 (-36.18%) in 2007/8 and 124 (-37.69%) in 2008/9
- Total recorded offences in Uttlesford for 2006/7 was 1441. This has increased to 1485 (3.05%) in 2007/8 and 1272 (-11.73%) in 2008/9 since part night lighting started with offences occurring between 23:30 and 05:30 decreasing from 230 to 198 (-13.91%) in 2007/8 and 151 (-34.35%) in 2008/9
- Total recorded offences in the control district (Braintree) where the street lighting has not been changed to part night; in 2006/7 was 3832. This has decreased to 3775 (-1.49%) in 2007/8 and 3580 (-6.58%) in 2008/9 since part night lighting started with offences occurring between 23:30 and 05:30 decreasing from 561 to 444 (-20.86%) in 2007/8 and 512 (-8.73%) in 2008/9
- Total recorded offences in Essex as a whole (including Southend-on-Sea and Thurrock) in 2006/7 was 63463. This has decreased to 59866 (-5.67%) in 2007/8 and 56605 (-10.81%) in 2008/9 since part night lighting started with offences occurring between 23:30 and 05:30 decreasing from 8813 to 7331 (-16.82%) in 2007/8 and 7384 (-16.21%) in 2008/9

The crime statistics provided for Maldon and Uttlesford districts were broken down to a level where recorded crime on a part night, all night lit or a non lit street could be assessed. As stated previously Uttlesford pilot started later than Maldon so there is not a full year's data for 2008/9. However, the following also compares the October to March year on year data.

Overall:

- Total recorded offences in Maldon, occurring on roads subject to part night lighting between 23:30 and 05:30, for 2006/7 was 183. This has decreased to 104 (-43.17%) in 2007/8 and 114 (-37.7%) in 2008/9. For October to March, offences decreased from 89 to 37 (-58.43%) in 2007/8 and 50 (-43.82%) in 2008/9
- Total recorded offences in Uttlesford, occurring on roads subject to part night lighting between 23:30 and 05:30, for 2006/7 was 93. This has decreased to 87 (-6.45%) in 2007/8. For October to March, offences decreased from 56 to 46 (-17.86%) in 2007/8 and 39 (-30.36%) in 2008/9

Table 5 page 26 shows the year on year trend for Maldon and the October to March, year on year trend, for both pilot districts.

It is the general consensus of the Essex Police District Commanders, involved in the pilot, that part night lighting has not caused any significant impact on crime.

7. Fear of Crime

The information is provided by LI 29 - People who feel safe outside after dark (LAA Pr7 7.2) formerly ECC 289/LAA. This information is collected every December and is broken down by district (Table 6 page 29).

The information shows that the percentage of people who “feel safe after dark” in 2006 for Maldon was 57%, Uttlesford 64% and the control district (Braintree) 54%. Essex, overall, was 48%. In 2007 all 3 districts and Essex, overall, saw a percentage decrease compared to the baseline data (2006). Maldon was 51%, Uttlesford 62%, Braintree 45% and Essex, overall, 45%. For 2008 all 3 districts and Essex, overall, showed an increase on the previous year data and the baseline data. Maldon was 61%, Uttlesford 67%, Braintree 57% and Essex, overall, 54%.

8. Traffic Accidents

The statistics provided to the joint monitoring group were from the Traffic and Road Safety team at County Hall. The data comes from the Essex database (ACCSMAP) of all personal injury collisions as provided by Essex Police.

The information provided showed that there has been no indication that part night lighting was a causation factor in the cause of any road collision and there have been no reported personal injury collisions on part night lit roads during the period when lights have been switched off (Table 7 page 30).

9. Emergency Services

No major operational difficulties were reported by the emergency services

10. Pilot Savings

The percentage savings, financial and CO₂, based on actual energy consumption values compared to the baseline data for the street lighting energy budget for each district were:

- Maldon 23%
- Uttlesford 18%

If this was applied across Essex it would provide a significant saving on the total street lighting energy budget which is, as previously stated, estimated for 2009/10 to be £5.3million.

11. Technology

Photocells

Photocells are factory set as standard 12-5 GMT. Other times can be factory set but due to the requirements of the unmetered supply agreements for energy procurement, other settings would still be charged at the all night rate.

The switching times relate to the middle of the night not 12:00 GMT. This means that the actual off/on times compared to GMT can vary by +/-30minutes.

Once the cell is installed changes can not be made without visiting site and changing the cell. During the pilot there were a number of cell failures which required replacements to be fitted.

Remote monitoring

Due to changes in the procedure for settlement of unmetered energy supplies as agreed by Elexon, the Balancing and Settlement Code Company (BSCCo) for Great Britain, remote monitoring systems can now be used to record the switching times of street lights. This has allowed flexibility in the programming and allows different switching times to be used. ECC would be able to change times remotely without the need to visit site. With this and the flexibility in programming a remote monitoring system would provide a more intelligent approach to part night lighting.

Other additional benefits with a remote monitoring system include:

- Additional energy savings
- Instant fault reporting – system informs the user if the light is not working, this speeds up the response times etc
- Different switching on and off times in relation to light levels (trimming) which allows additional energy savings (approximately 20-30 minutes compared to a standard photocell)

- Savings on scouting costs
- Increase interval between routine lamp changes
- Any change to lighting times would be a desktop exercise

With the system's ability to automatically detect street lights which have failed and raise these faults within the street lighting asset management system, there will be additional savings for ECC in street lighting administration costs. This automatic detection will improve the public perceived response times that ECC take to effect repairs

Over a 10 year period, the remote monitoring system is expected to generate a better return over its capital outlay per district. This is due to the additional benefits it provides compared to district savings using photocells.

The remote monitoring system future development will also allow for the control of signs, bollards, beacons and underpasses/subways and the additional benefits stated above could be realised on these lights.

The remote monitoring system will also accommodate any future changes in street lighting policy.

12. Energy

The procurement of energy on the open market is undertaken by ECC central procurement through LASER, the London and South East region central buying consortium. This enable ECC to benefit from off peak rates which will mask any additional tariff applied for part night lighting.

There has been recent interest from OFGEM for using metered tariffs in street lighting instead the unmetered tariffs currently used. Metered tariffs are often significantly lower than unmetered tariffs. Using a remote monitoring system would facilitate this requirement for future use. Photocells do not provide this option.

13. Exception Criteria

Based on the results from the pilot there is no requirement for the existing exception criteria to be changed from the original listed below:

The general presumption will be that all street lights will be altered to part night operation unless covered by these exemptions.

1. Major lit inter urban dual carriageway traffic routes
2. Conflict sites e.g. roundabouts, lit by columns greater than 6m high.
3. Sites where street lights installed for accident remedial measures

4. Town Centre type development where there is one or more of the following features:
 - a) CCTV sites
 - b) High proportion of high security premises e.g. banks, jewellers etc.
 - c) High crime risk
 - d) High concentration of people at night such as - Transport interchanges, nightclubs etc.
5. Main approaches to areas defined in 4 above where there is a mix of development between residential and commercial/industrial i.e. not exclusively residential
6. Sites where the police can demonstrate that there will be an increase in crime if the lights are switched off.
7. Remote footpaths and alleys linking residential streets
8. Where there is a statutory requirement.
9. Where the configuration of street lighting columns is considered excessive consideration is to be given to removing 1 in 2 lights with the remaining lights left on full night operation.

During the pilot there have been 2 occasions where the requirements of the exception criteria allowed the change from part night back to all night lighting to occur. These were:

- Woodlands Park Drive, Great Dunmow where road humps were installed (exception criteria 8)
- King Street, Maldon where 8 street lights were returned to all night lighting at the request of the police (exception criteria 6). The police are continuing to monitor the street to see if turning the lights back on had an effect on the crime which was occurring.

Both occasions required replacement photocells to be installed.

14. Summary

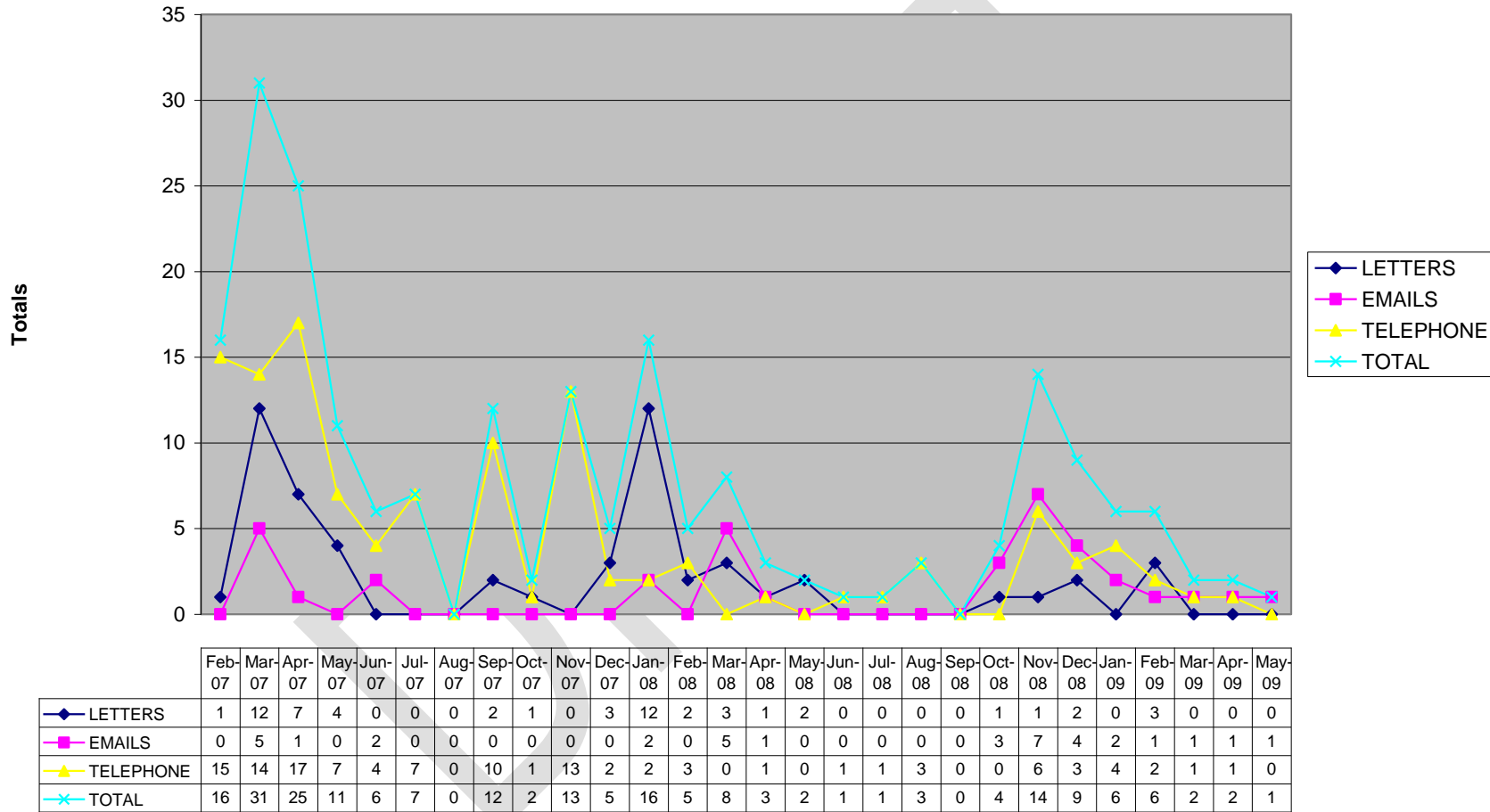
The representations of the Joint Monitoring Group agree that the introducing of part night lighting in Maldon and Uttlesford has not seen any increase in crime levels, accident statistics or any operational difficulties for the emergency services. The group did record a reduction in people who “feel safe after dark” in 2007 but this reduction was in line with results across the whole County.

Joint Monitoring Group representatives:

ECC County Road Manager	Lawrence McKeogh
ECC Principal Engineer Street Lighting	Keith Tovee
ECC Traffic & Safety Engineering Manager	Vicky Duff
Maldon DC Committee Services Manager	Stuart Jennings
Essex Police District Commander	Nick Lee
Essex Police District Commander	Joe Wrigley
Essex Fire & Rescue	Mick Osborne
Essex Fire & Rescue	Bill Seccombe
Essex Ambulance Service	Stuart Berlyn

TABLE 1

Maldon Part Night Lighting Correspondence



Uttlesford Part Night Lighting Correspondence

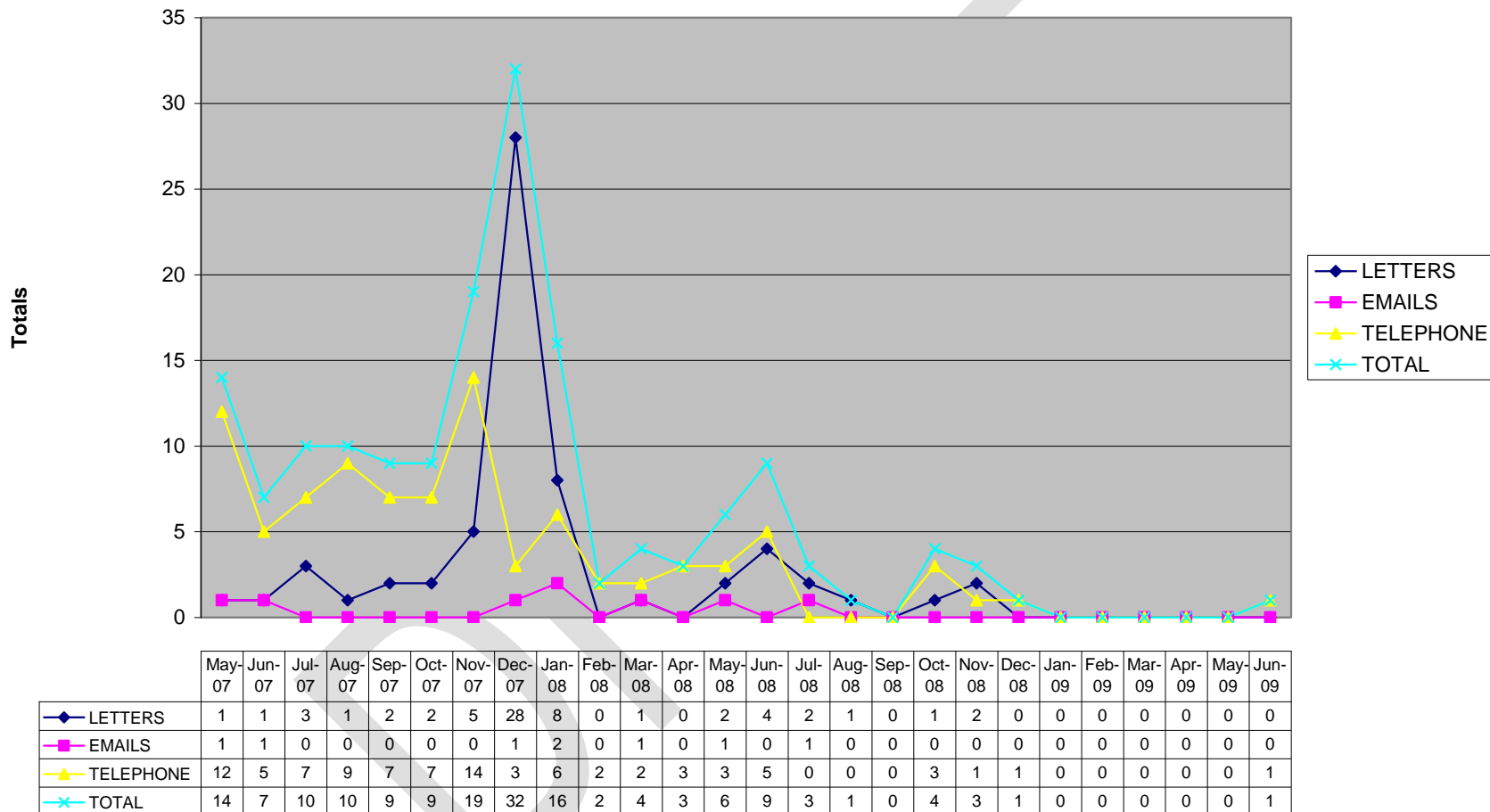


TABLE 2

**RESPONSES FROM LETTER TO PARISH COUNCILS
DATED 19TH NOVEMBER 2007**

MALDON DISTRICT

PARISH	COMMENT
Ms Michelle Curtis Tollesbury PC	East of England Ambulance Trust and Community First Responders. Difficulty in locating houses in the dark. Do carry flashlights but can cause distress.
Mrs S Welham Tillingham PC	Elderly residents of Chancel Close upset. Originally asked for these three lights to be left on. In the circumstances only a few people affected.
Mrs Rackham Mayland PC	1. The lights are on at some junctions and not others. They need to be consistent. 2. Inconsistency between times. Some lights go out at 11.45 others stay on until 12.30. 3. All lights need to stay on until 1.00am to allow residents to walk home when the local bars and pubs close at 12.30.
Mrs Cheatle Althorne PC	No objection to the current trial
Miss V Banyard Tolleshunt Knights PC	Complaints from residents about pitch darkness in the village. Suggests: Knights Close should be left on. Elderly and disabled residents. Hawthorns to be left on until 1.00 am – densely populated area. Why are Brook Close lights left on as not necessary.
Clive Potter Great Totham PC	Not aware of any problems with 'part night'.

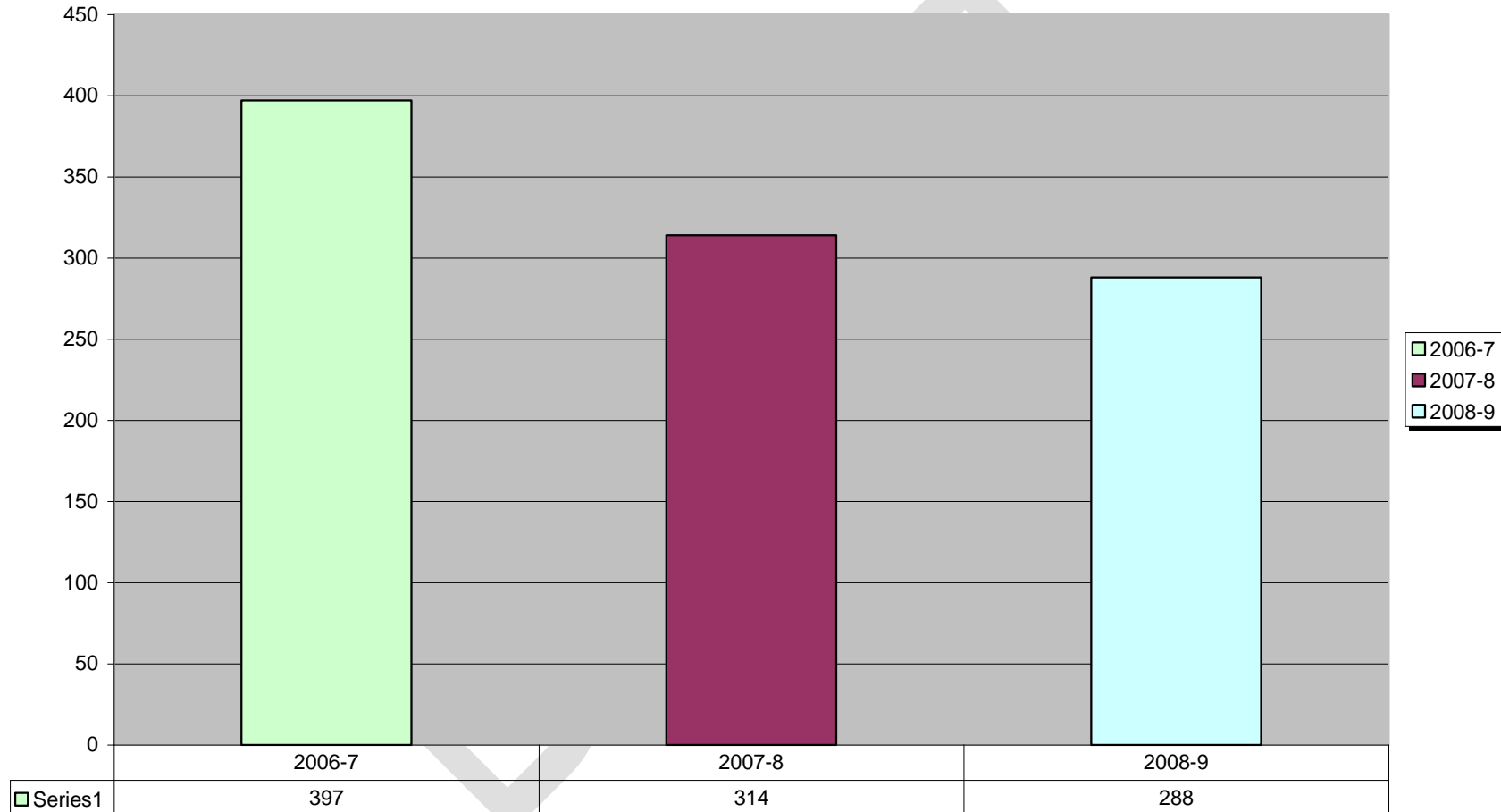
UTTLESFORD DISTRICT

Mrs C Smith Thaxted PC	Complaint regarding lights switched off at 11.35 pm. Difficulties for residents coming home from restaurants and pubs etc. PC under the impression lights were to be switched off at 1.00 am
Mr C Bartram Manuden PC	General feeling – no problems associated with the trial. No member of the public has expressed an opinion. Therefore successful in this village.
Marion McDonald Vice Chairman Wendens Ambo PC	Small village – few lights. Happy that lights on Station Road junction remain on all night operation.
Mrs R Shelley Little Canfield PC	Only lights are on roundabout over the A120. Effect on village small.
Email from Delyse Jackaman Barnston PC	PC all in favour of project. No adverse effects on the Parish as a result of lights being turned

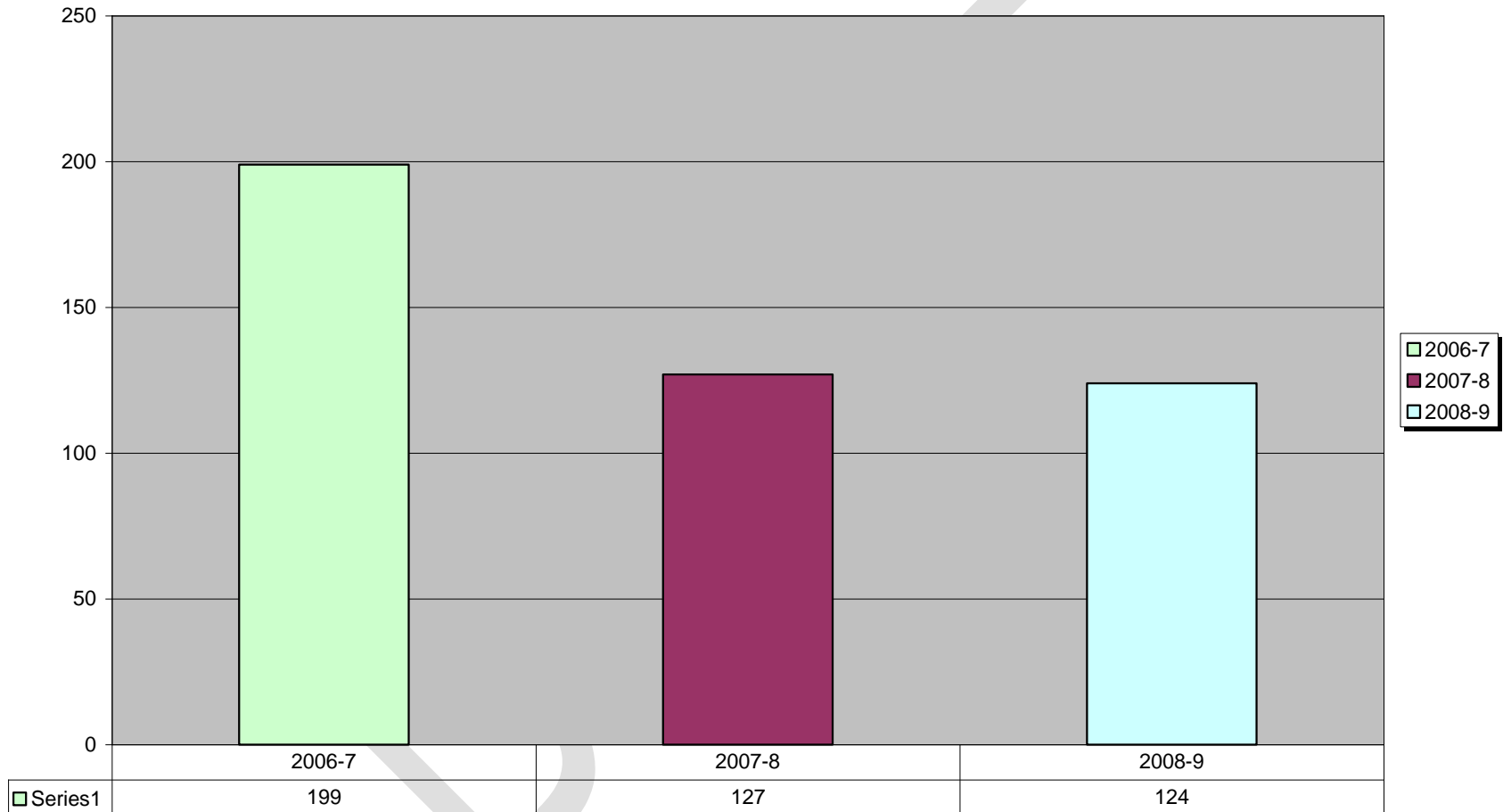
	off.
Mr M White Safron Walden Town Council	Difficult to comment as at 13 th December 07. Request for crime figures and personal injury accidents to enable TC to comment. Provided 23 January 08.
Angela Balcombe Little Dunmow PC	Main entrance road to village Baynards Ave in Oakwood Park. PC feel as main route with many parked cars the road is difficult to negotiate at night. Also, residents working shift hours feel unsafe. PC would like these lights turned back on.
Ruth Clifford Stansted PC	75% of residents opposed to the scheme. Part night scheme does nothing to allay the fear of crime. Fear of and risk of accidents high due to lack of footway maintenance. PC believes that village is irrelevant to scheme given the % of lights owned by the PC. Reiterate request to be excluded from the scheme. Renew request to take over ownership and maintenance of the ECC owned street lights in Stansted Moutfitchet excluding those on the B1383 Cambridge Road and Silver Street. With new appointment of Member for Localism, nothing more local than this.
Mrs B A Williams Elsenham PC	Concerned about lights switching off at 11.45 pm. Earlier than expected.
Mrs C Griffen Newport PC	London Road, Newport. Problems for people arriving on later trains. Suggestion for variation in switch off times or say 01.30 am. Similarly in the morning say 05.15am. Cherry Garden Lane. Problems for the Emergency Services unable to locate house to which they had been called. Also an increase in petty crime in Cherry Garden Lane estate since lighting changes were made. Confusion about GMT and BST with lights going off earlier than expected. Suggestion to use sensors to detect movement and so use as little power as possible.
Mr Owen Williams Great Dunmow TC	Request that street lighting be adjusted to ensure no lights go off before midnight. Especially at seasonal festivals (Christmas etc).

TABLE 3

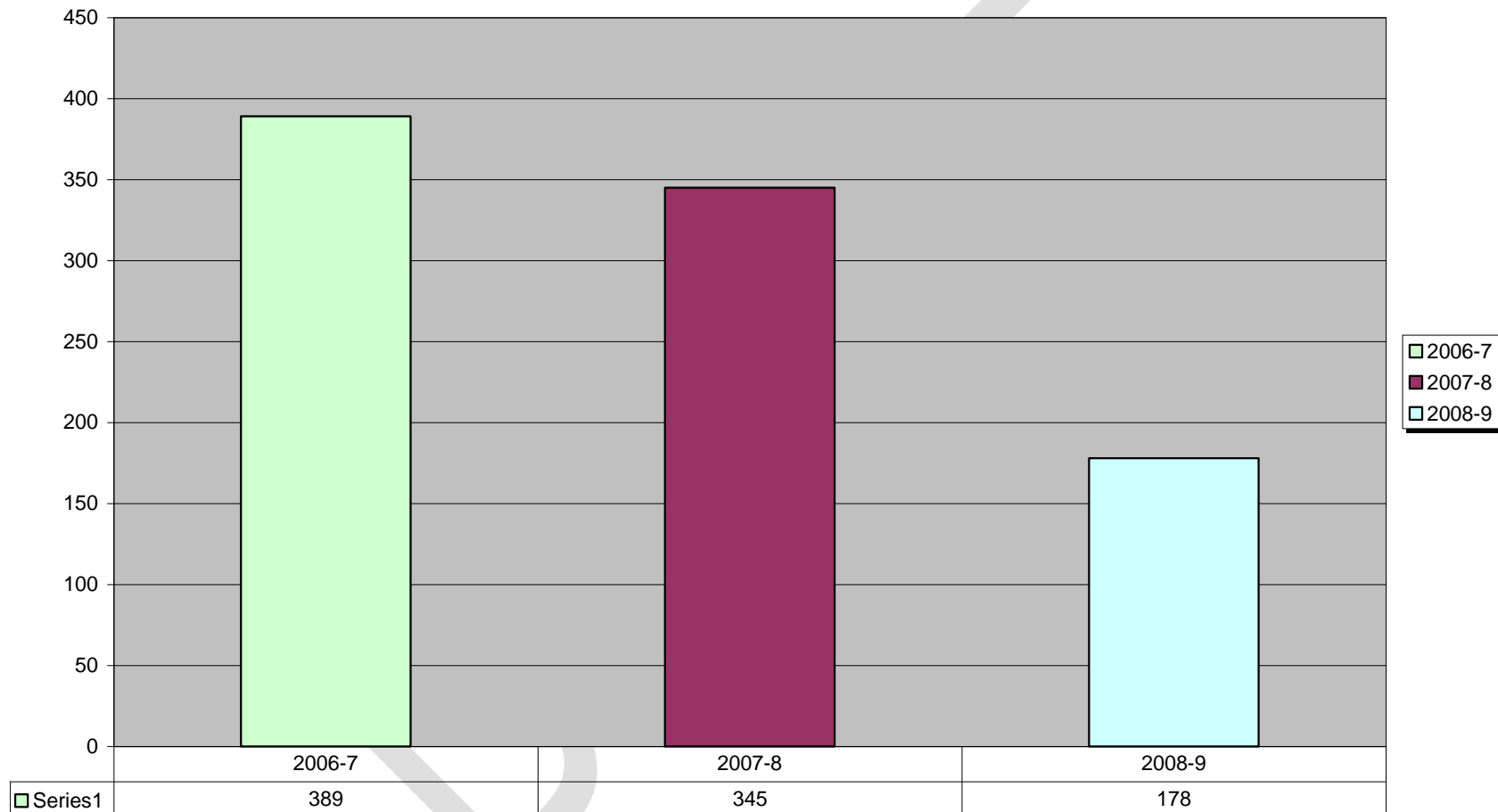
Offences in Maldon District occurring between 23:30 and 05:30



Offences in Maldon District occurring between 23:30 and 05:30 (October to March)



Offences in the Uttlesford District occurring between 23:30 and 05:30



Offences in the Uttlesford District occurring between 23:30 and 05:30 (October to March)

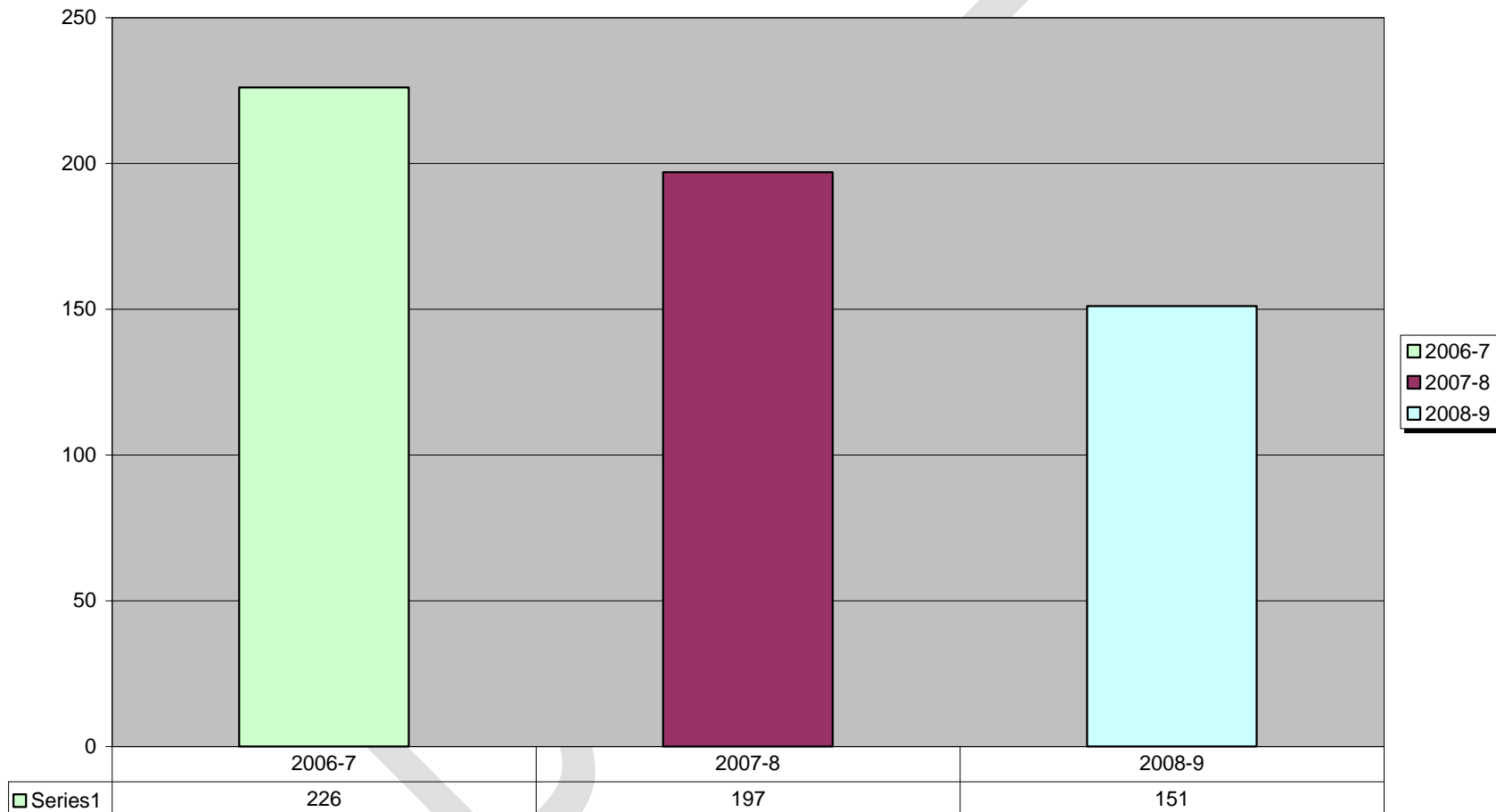
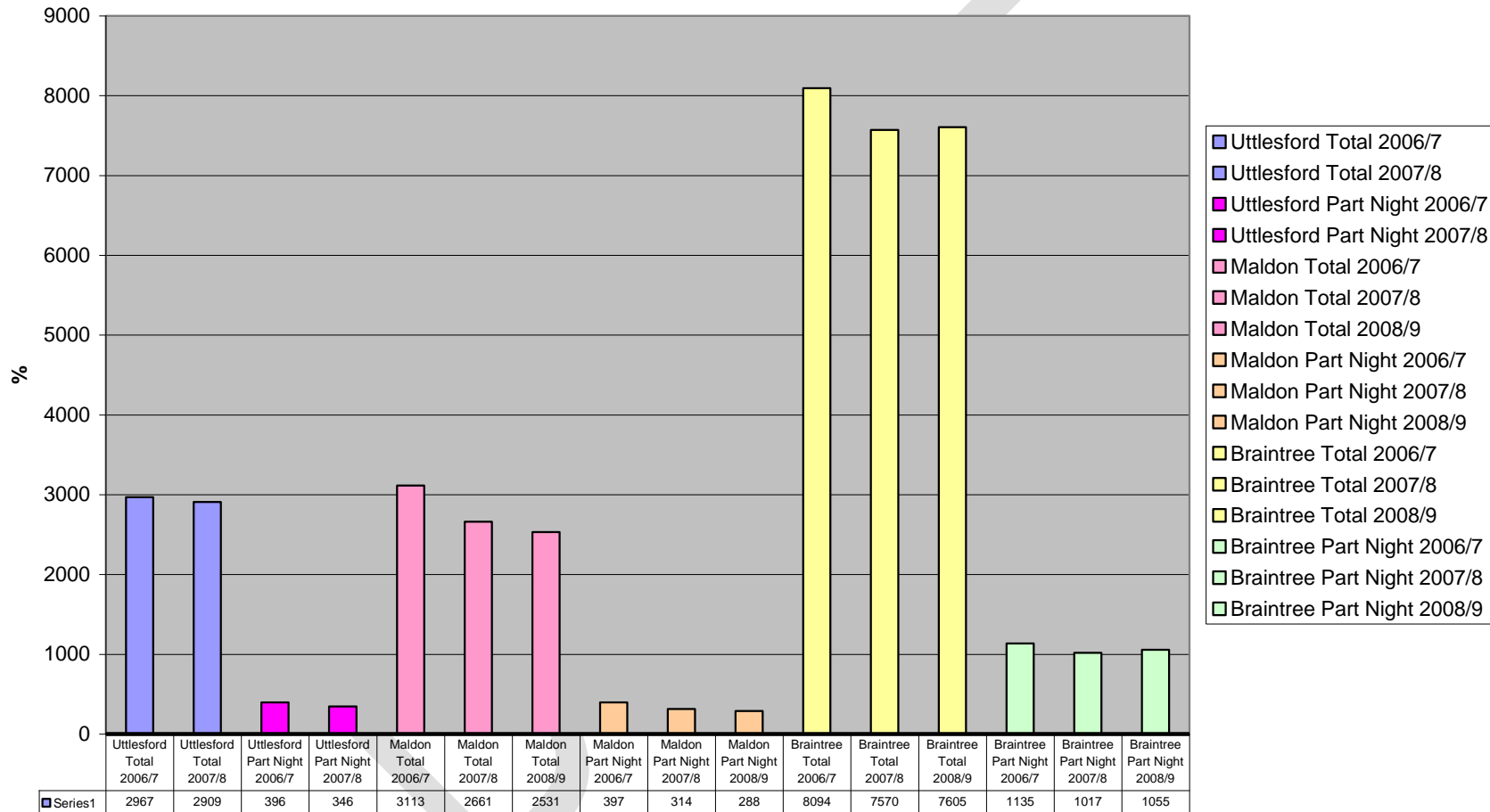
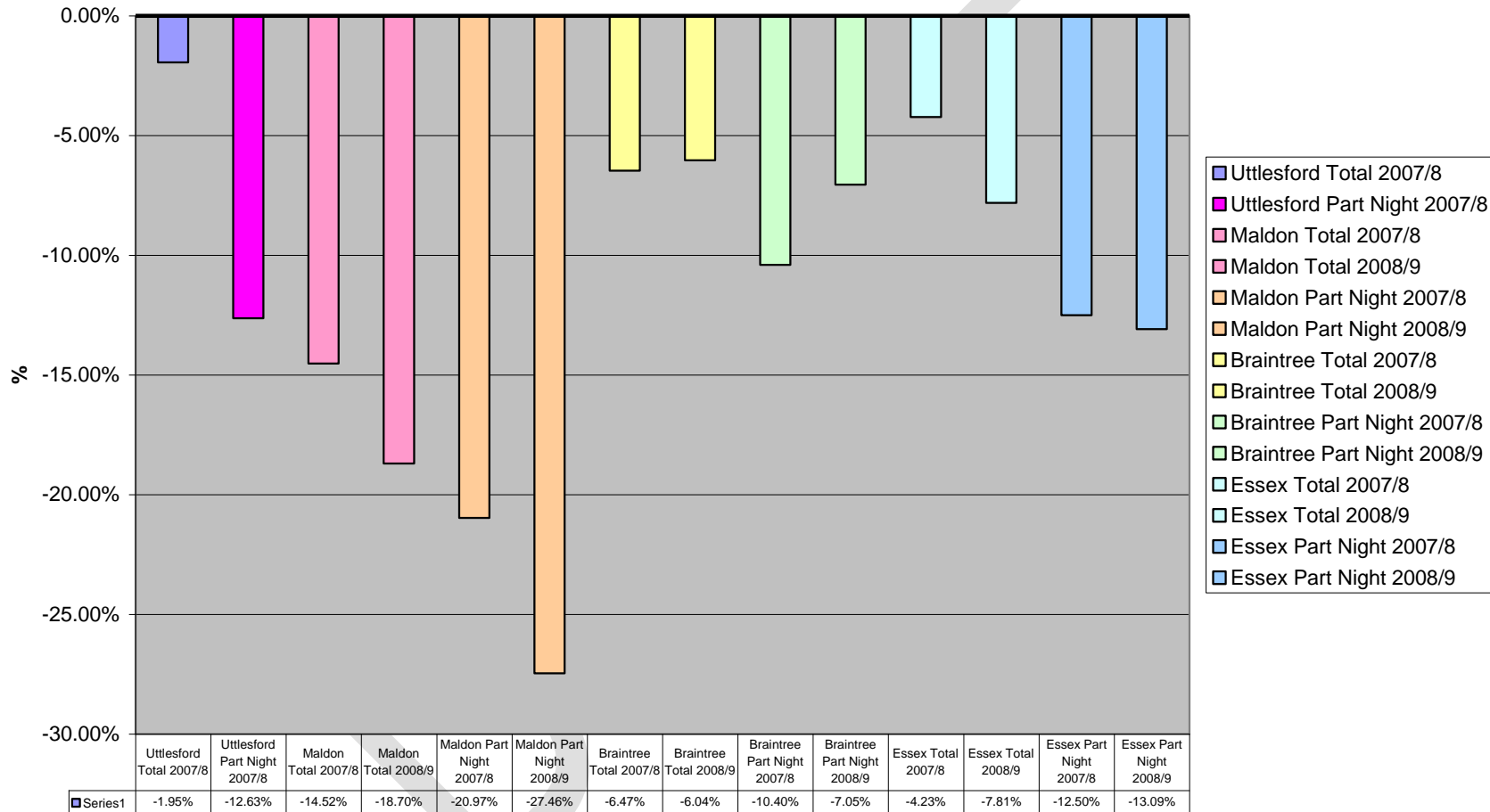


TABLE 4

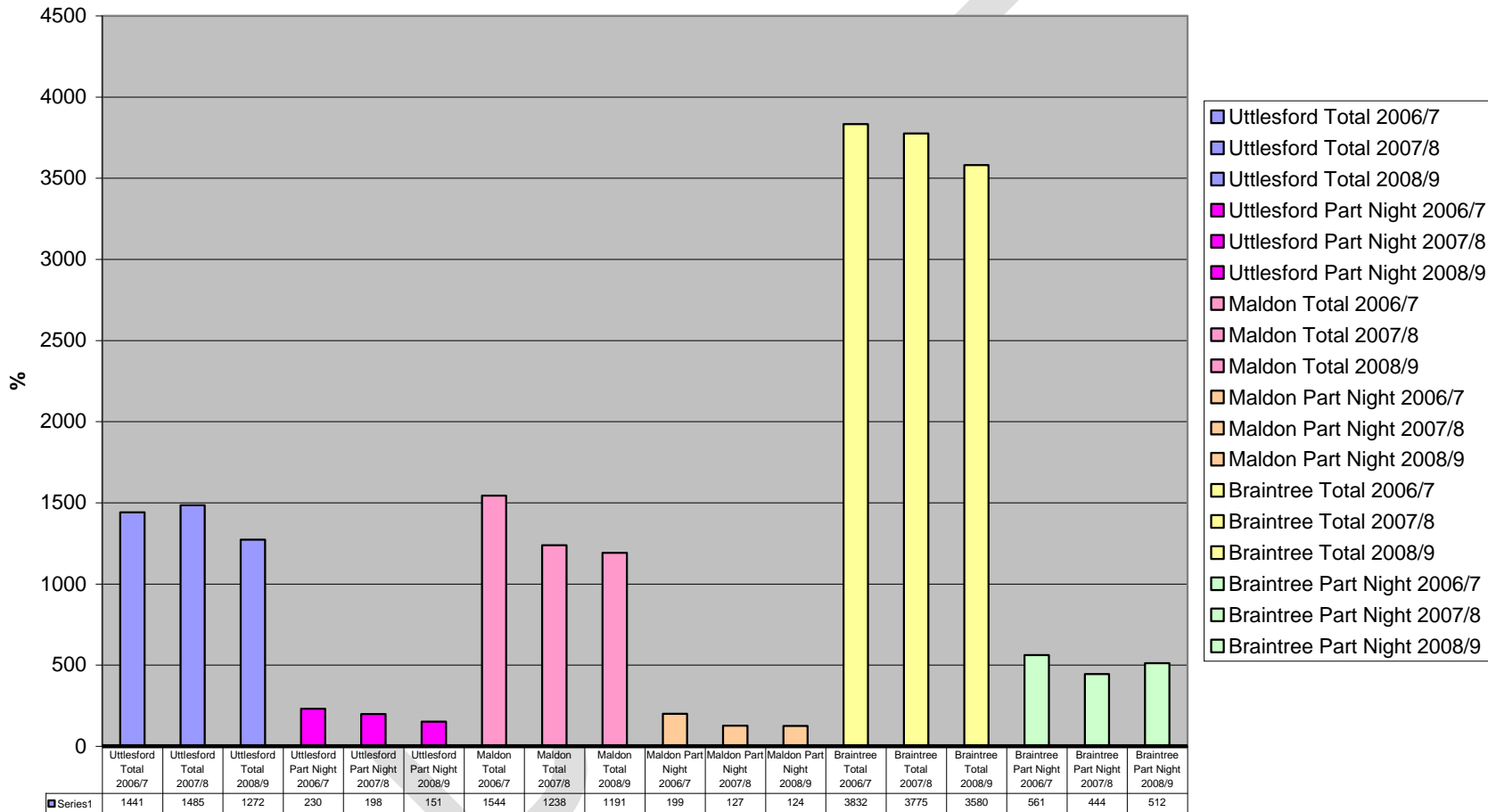
Overall Crime Year on Year for Uttlesford, Maldon and Braintree



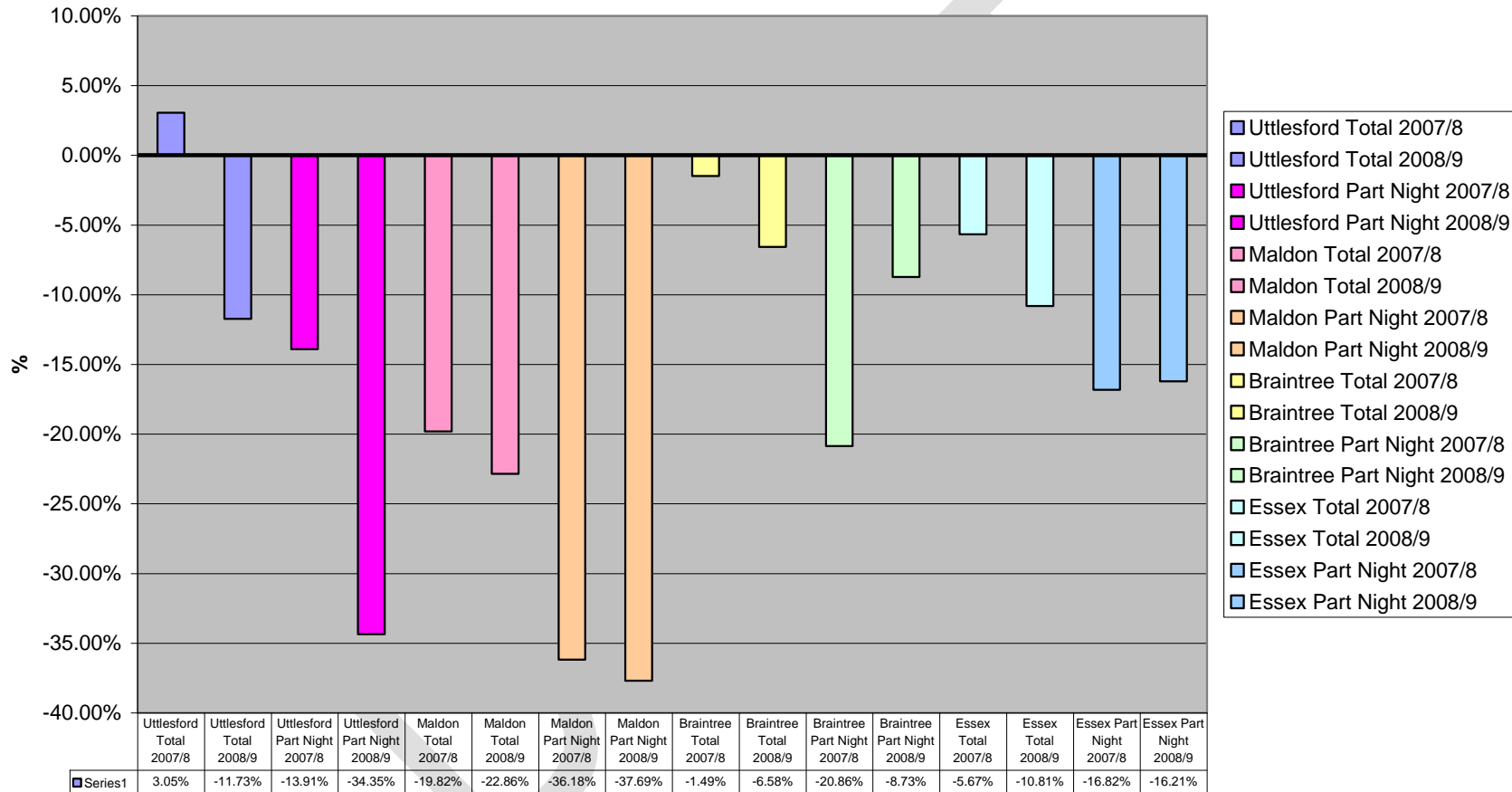
% of Overall Crime Increase Year on Year



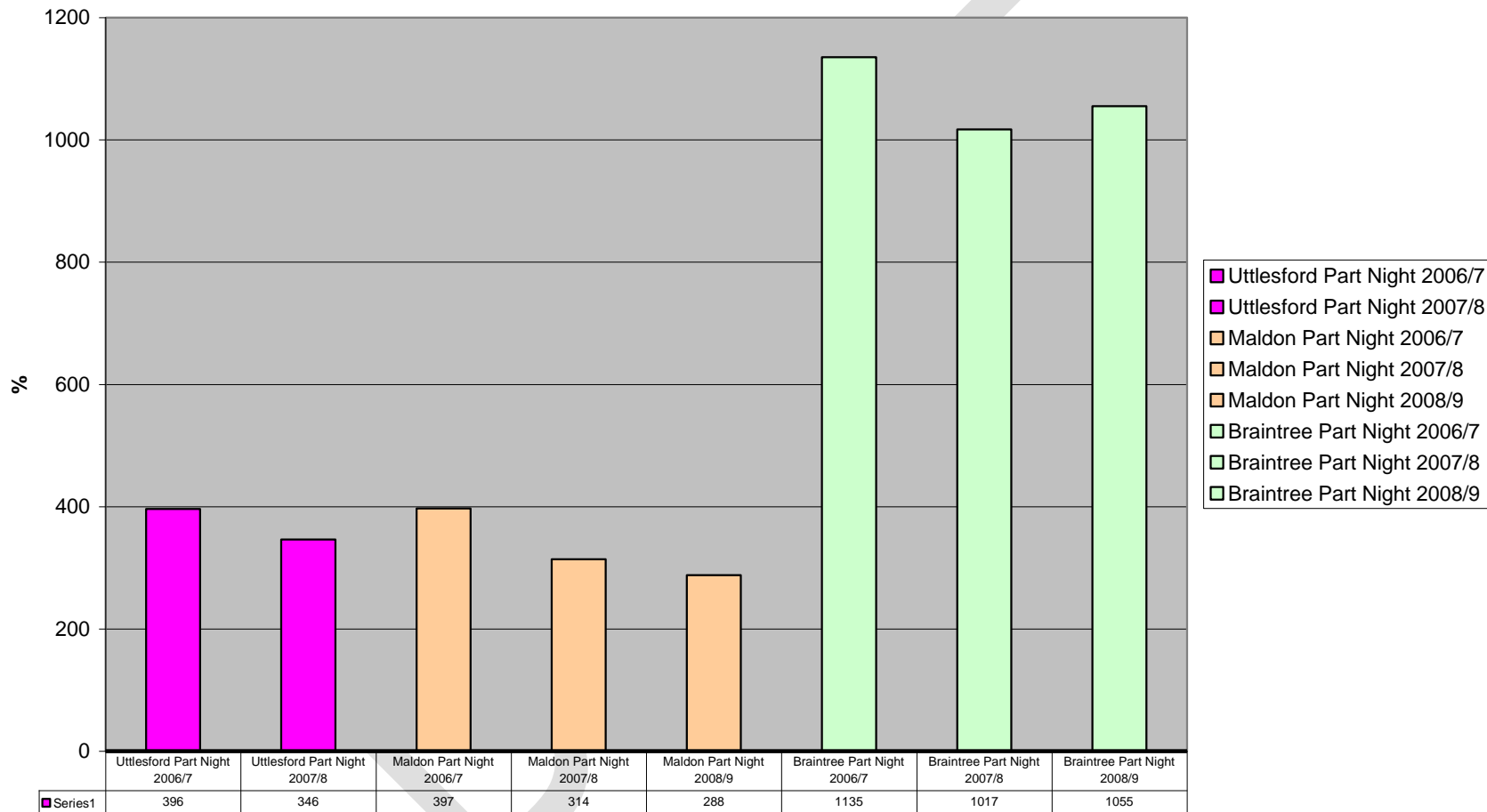
Overall Crime Year on Year for Uttlesford, Maldon and Braintree (October to March)



% of Overall Crime Increase Year on Year (October to March)



Overall Crime, Year on Year, occuring between 23:30 and 05:30 for Uttlesford, Maldon and Braintree



**Overall Crime, Year on Year, occuring between 23:30 and 05:30 for Uttlesford, Maldon and Braintree
(October to March)**

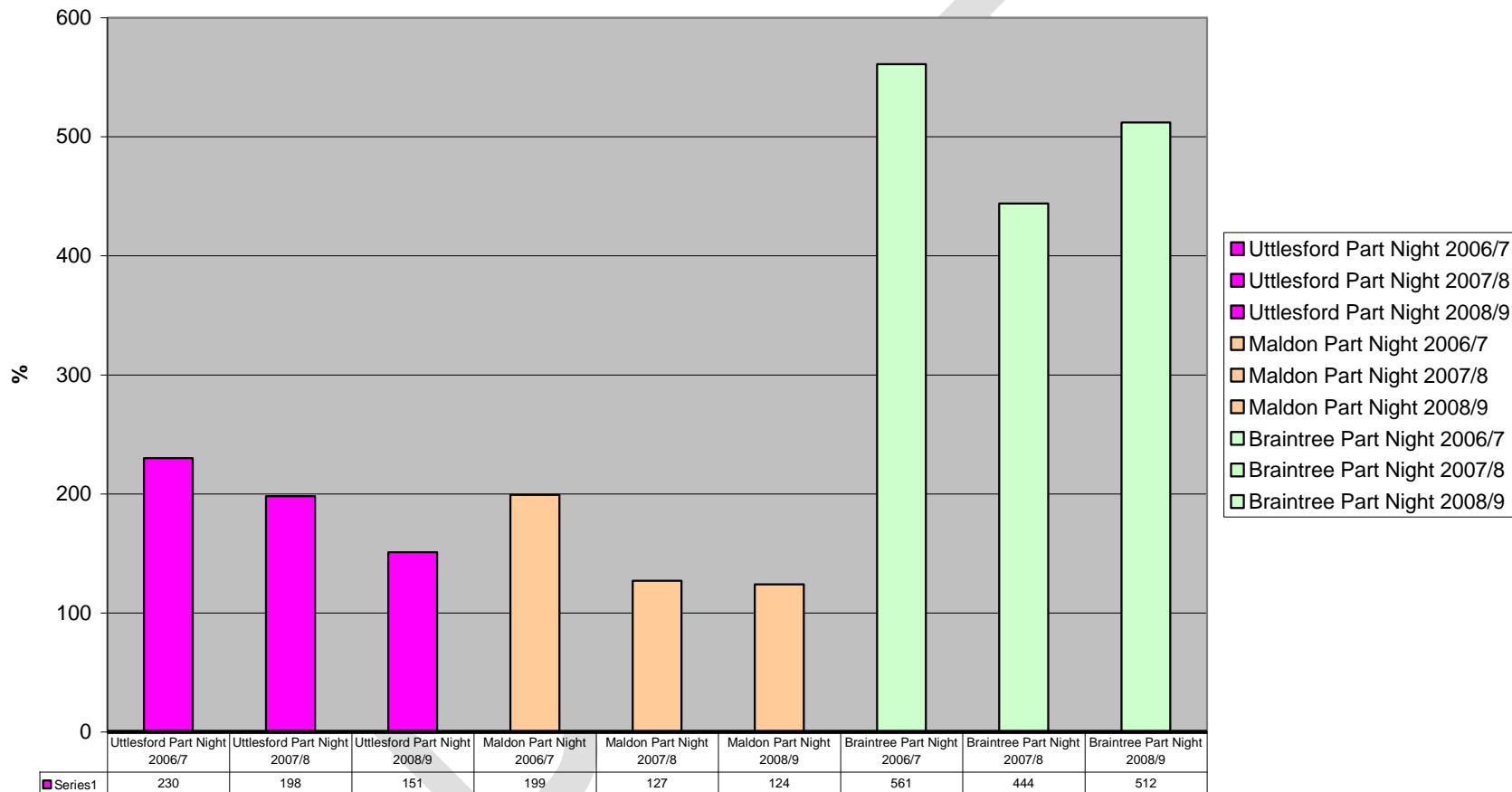
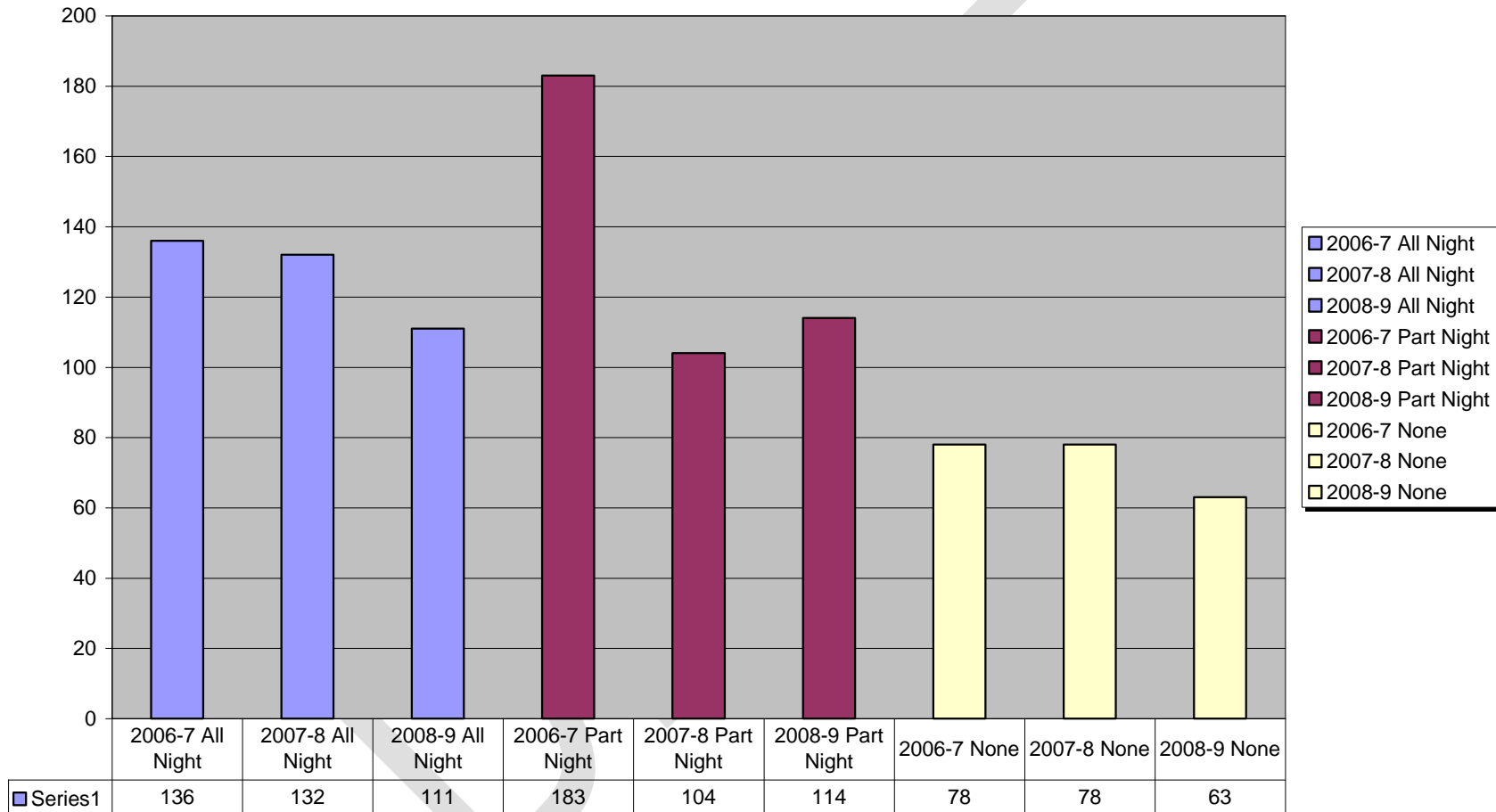
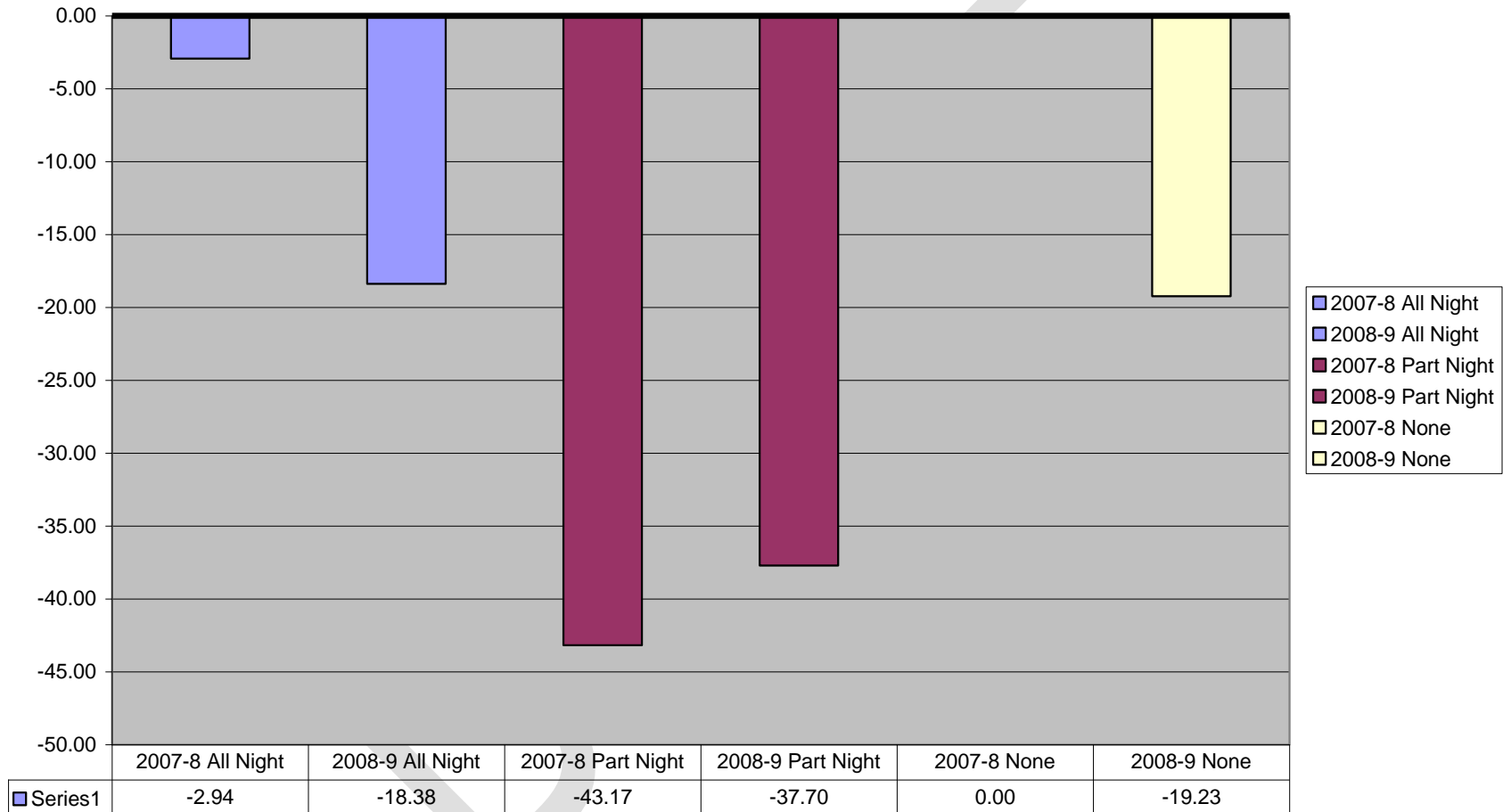


TABLE 5

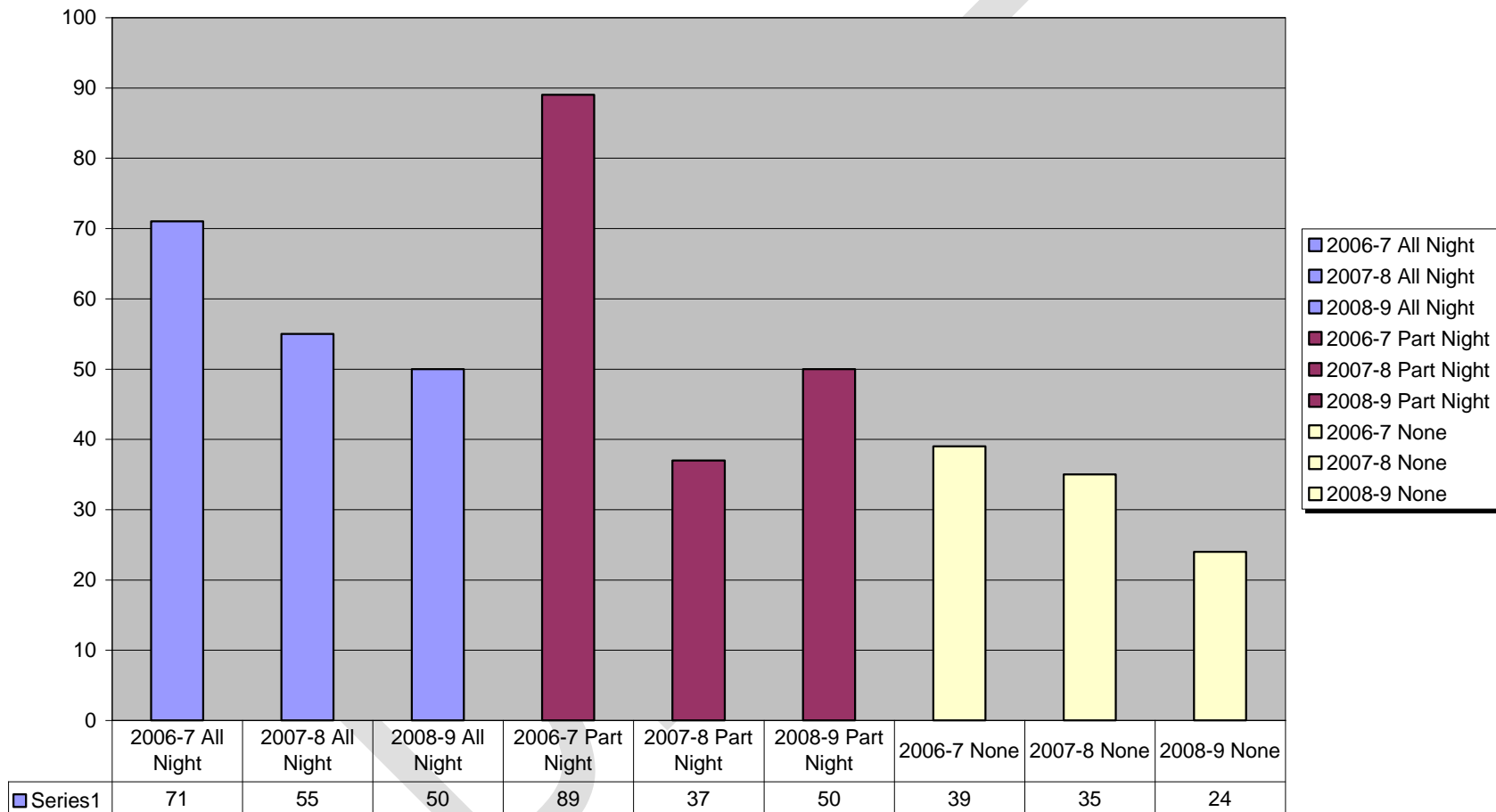
Offences in Maldon District by Lighting Type occurring between 23:30 and 05:30



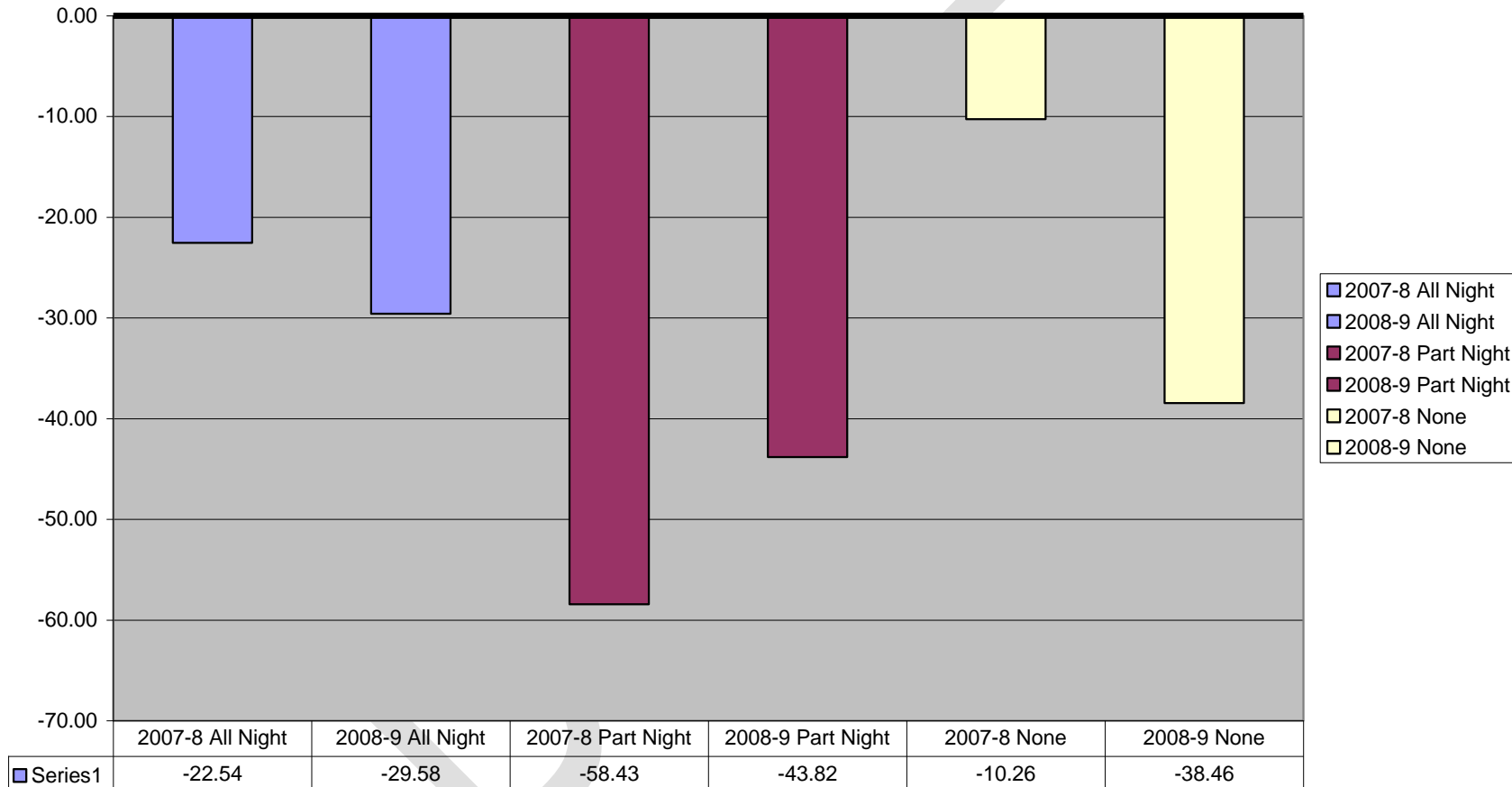
% of Offences in the Maldon District by Lighting Type occurring between 23:30 and 05:30



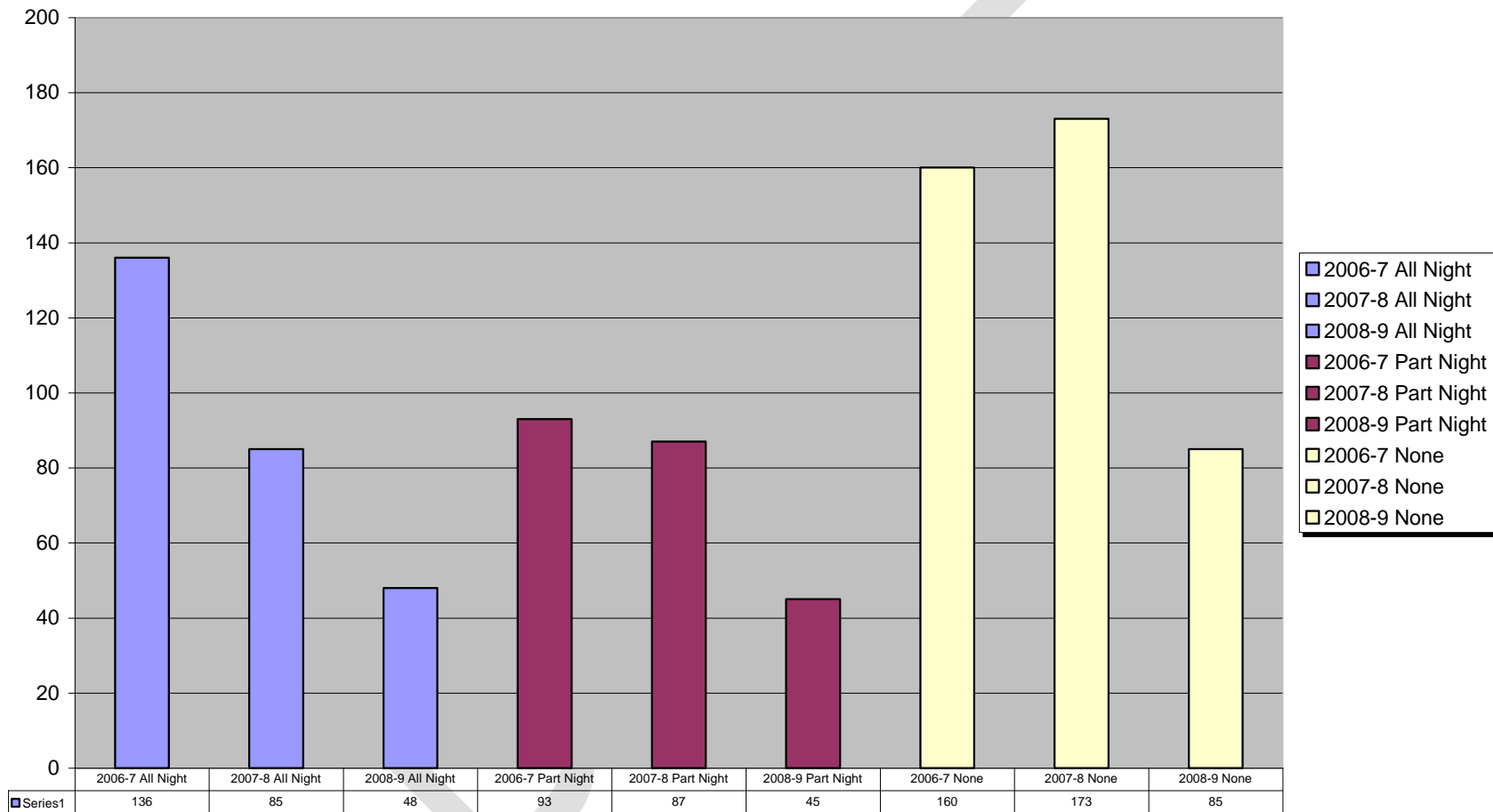
Offences in Maldon District by Lighting Type occurring between 23:30 and 05:30 (October to March)



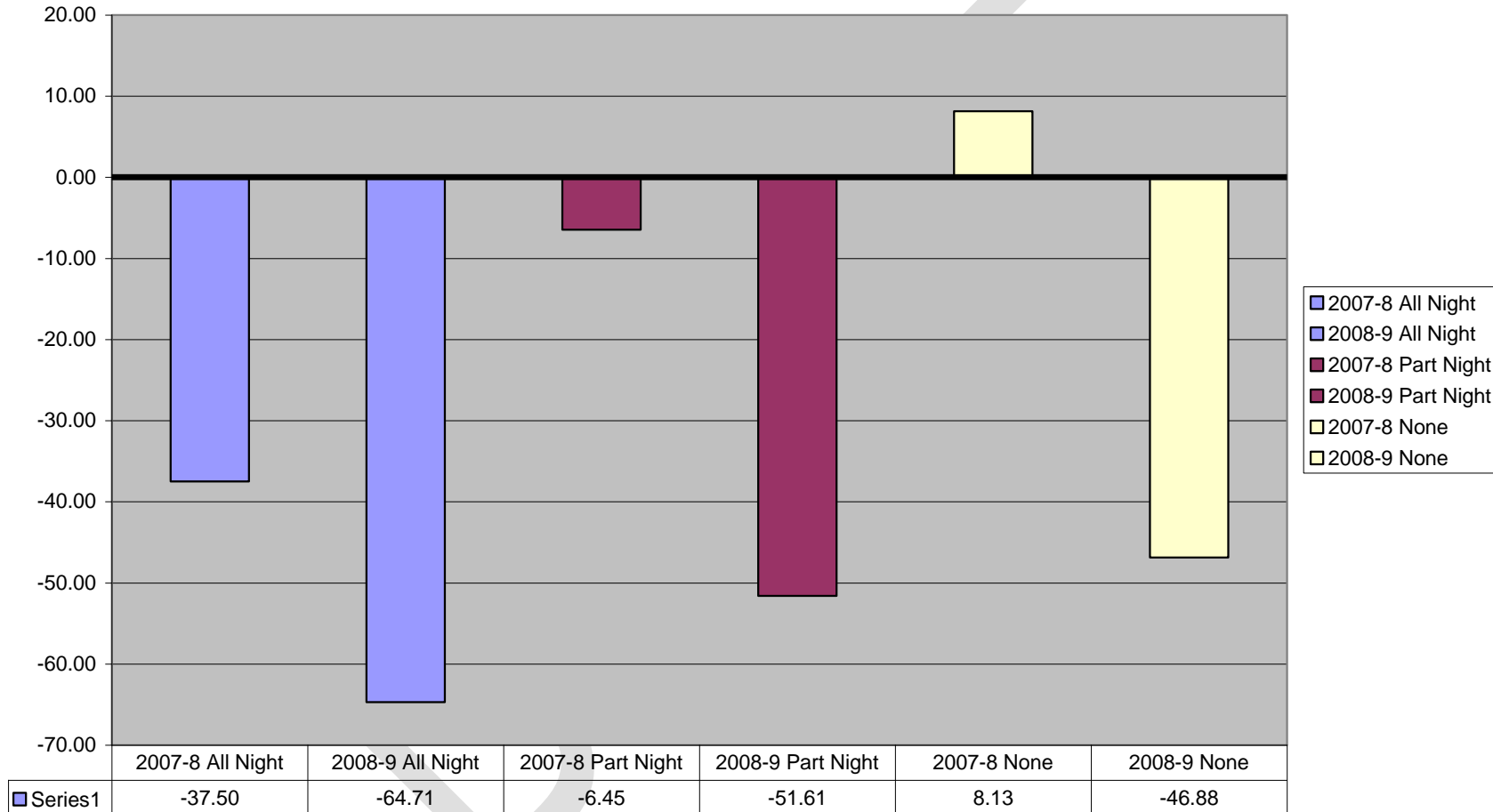
**% of Offences in the Maldon District by Lighting Type occurring between 23:30 and 05:30
(October to March)**



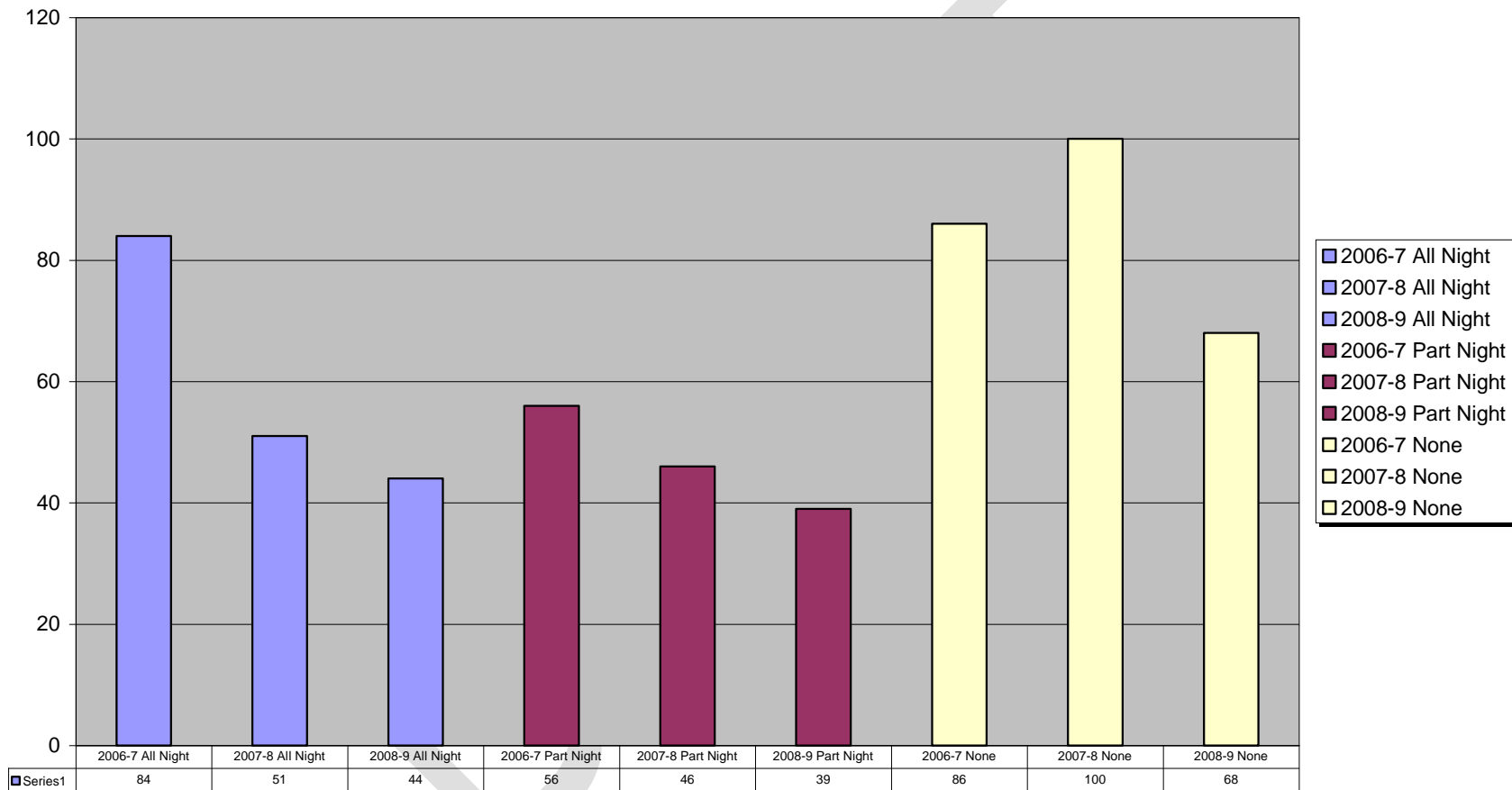
Offences in the Uttlesford District by Lighting Type occurring between 23:30 and 05:30



% of Offences in the Uttlesford District by Lighting Type occurring between 23:30 and 05:30



Offences in the Uttlesford District by Lighting Type occurring between 23:30 and 05:30 (October to March)



**% of Offences in the Uttlesford District by Lighting Type occurring between 23:30 and 05:30
(October to March)**

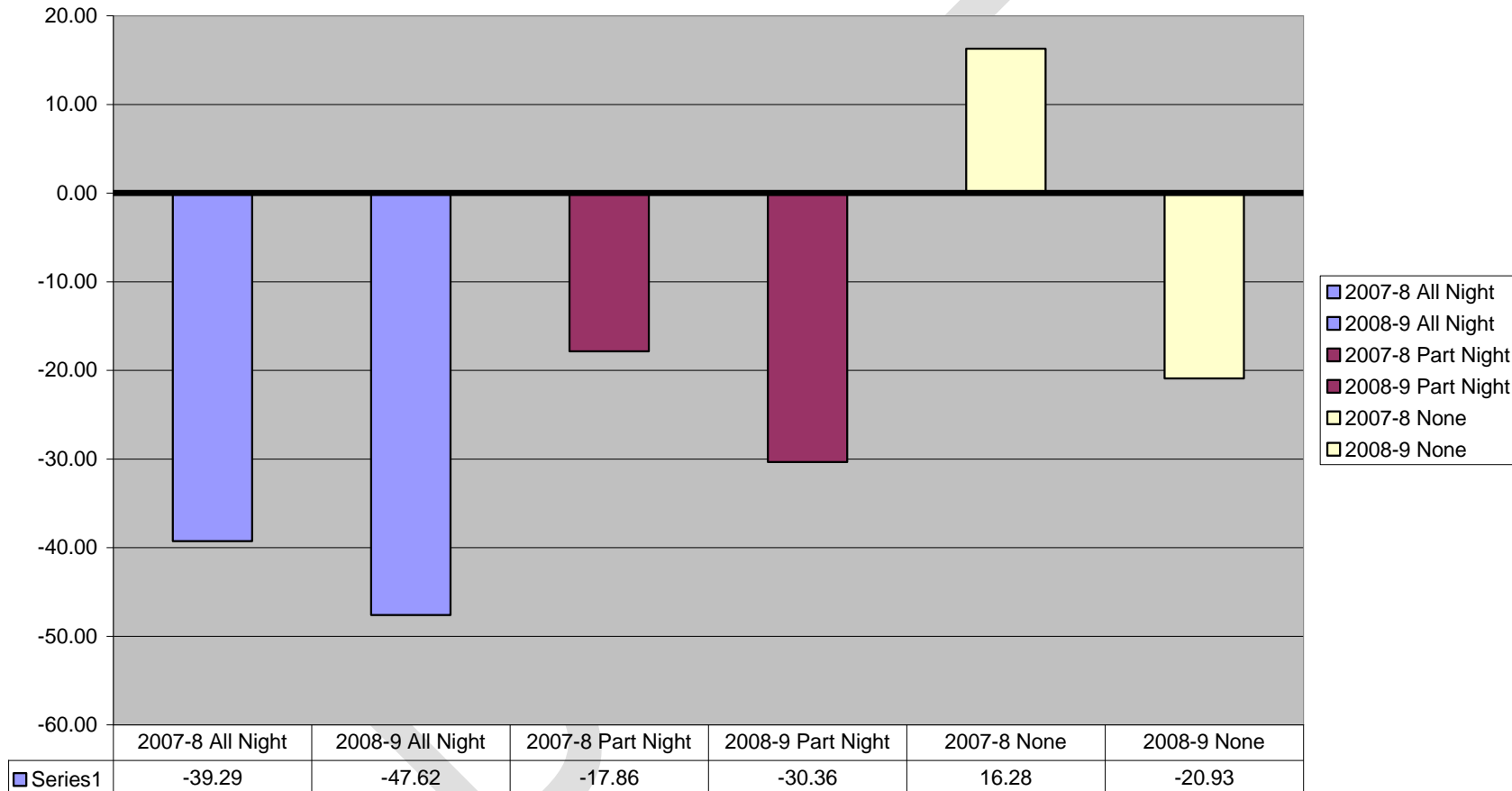


TABLE 6

Fear of Crime - % who feel safe after dark - LAA Pr7 7.2 (previously ECC289/LAA)

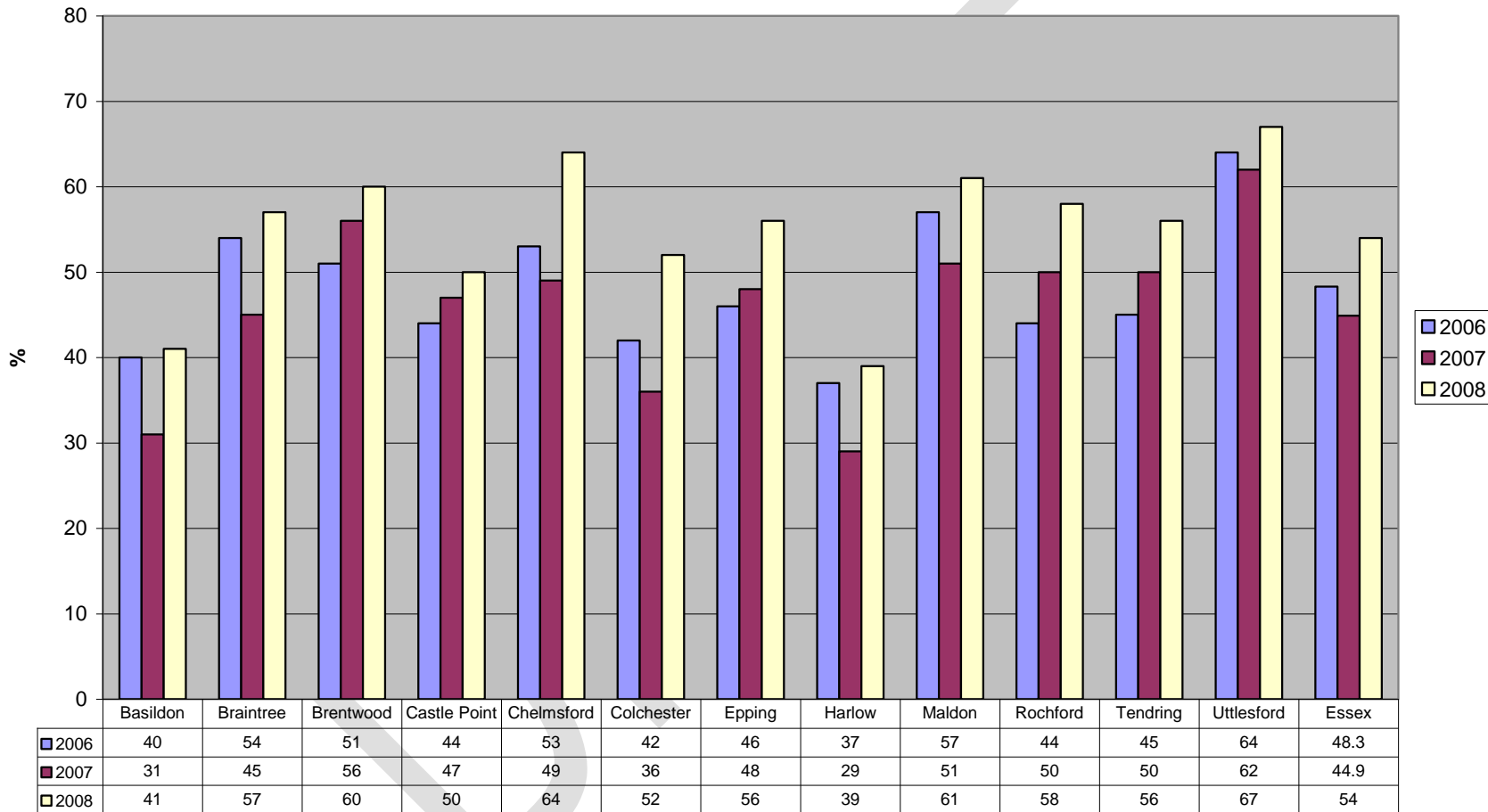
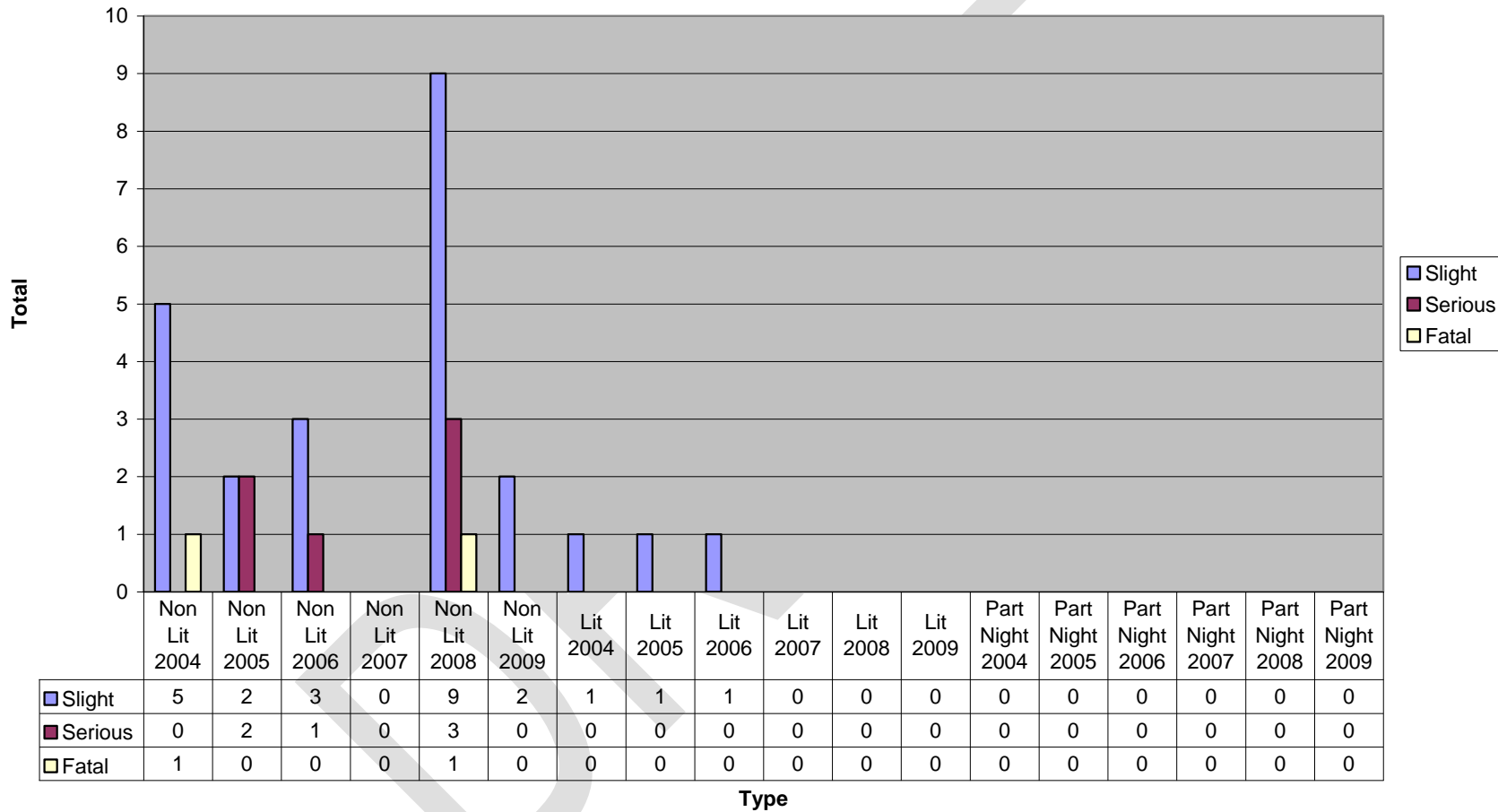


TABLE 7

Recorded Accidents in Maldon between 12-5am (1st April to 31st March)



Recorded Accidents in Uttlesford between 12-5am (1st April to 31st March)

