

Performance and Resources Scrutiny Programme 2017/18

Report to: the Office of the Police, Fire and Crime Commissioner for Essex

Title of Report:	108/16 Update on Part-Night Lighting v.2.4
Chief Officer	Dr. Victoria Harrington
Report from:	Essex Police
Date of Meeting:	30 November 2017
Author on behalf of Chief Officer:	Matt Robbins
Date of Approval:	16 November 2017

1.0 Purpose of Report

To provide an updated analysis on the effect that part-night lighting (PNL) may have had on crime, anti-social behaviour (ASB) and the number of killed and seriously injured (KSI) road traffic collisions (RTCs) in Essex.

2.0 Recommendations

There are no recommendations. This report is for the board to note.

3.0 Executive Summary

There is no evidence of a relationship between PNL and levels of crime, ASB or KSIs in areas where PNL was adopted, when compared with control areas that never took up the initiative. The findings from this report support previous research conducted by Essex Police, as well as that of a national, independent study.

Although crime has increased in PNL districts between the hours of 1am and 5am, the rate is in line with the increases experienced at other times in the same districts. A concomitant increase was also experienced in non-PNL districts. It must further be noted that crime has risen in Essex, and nationally.

ASB decreased at similar rates in PNL districts when compared to non-PNL districts.

With regards KSI RTCs, the rate of increase was greater in non-PNL districts. However, it should be noted that small numbers of incidents skew percentage comparisons.

4.0 Introduction/Background

Introduction

Part-night lighting (PNL) refers to the switching off of street lights between the hours of 1am and 5am. Piloting began in 2007 throughout the 12 districts in Essex County Council (ECC) between the hours of midnight and 5am hours. PNL between the hours of 1am and 5am was officially introduced on 30th March 2015.

Background

During the lead-up to the switch-off, Essex Police engaged with the ECC. They also held regular meetings to discuss the issues surrounding PNL, and conducted an analysis of crime and ASB data to establish possible links between crime levels and lighting.

Initial Analysis on Crime and ASB by Essex Police

Analysis previously conducted by Essex Police in July 2014 concluded that there were no apparent links between PNL and either crime or ASB. When comparing the 87 days after switch off to the same 87 day period the previous year, both crime¹ and ASB committed between the hours of midnight and 0500 hours reduced. Crime increased in three districts; it decreased in seven. ASB increased in five districts; it decreased in six.

Lanterns Project

“The effect of reduced street lighting on road casualties and crime in England and Wales: controlled interrupted time series and analysis” was a paper published in July 2015. The paper was a collaborative effort between local authorities in England and Wales and the University of London. Essex Police was one of the forces which contributed data.

The project concluded that there was little evidence of the harmful effects of switch off, part-night lighting, dimming, or changes to white light/LEDs on road collisions or crime in England and Wales.

Safer Essex Roads Partnership Report

In August 2017, Safer Essex Roads Partnership produced a document reviewing recorded road traffic collisions (RTCs) after the period in late 2013 and early 2014 when 10 districts adopted PNL. The paper concluded that PNL appeared to be related to an increase in collisions between cars and pedestrians, which are more likely to result in serious or fatal injury than those involving cars only. “A

¹ Crimes excluded: Domestic Abuse, Abstracting electricity, Theft from dwelling, Theft of mail, Theft from employer, Cannabis cultivation, Shoplifting, Making off without payment, Witness intimidation. Crimes that spanned either before and after midnight and 0500 hours were also excluded, as it was not certain if they were committed in the relevant period.

corresponding decrease in slight-injury collisions in PNL areas means there was no net effect on the overall collision rate, but an increase in KSI collisions.”

5.0 Current Work and Performance

In order to determine what – if any – effect PNL has had on crime, ASB or KSI RTCs, the volumes of each were compared for two different periods:

- 30/03/2014-25/06/2014 (87 day period in the year prior to switch-off on 30th March 2015) to the same period in 2017. This updates the analysis previously conducted by Essex Police in 2014.
- 30/03/2014-29/03/2015 (12 months prior to switch-off) to the same period in 2016/17. This provides a comparison over a longer period to that which was previously conducted by Essex Police.

Comparisons were made with the districts of Southend and Thurrock, where PNL has not been implemented. Comparisons have also been made to crimes/incidents reported at any other time.

Crime

The exact times at which many crimes were committed is unknown. Criminal damage to a vehicle, for example, may have been committed at 3am, but the recorded time would have been from when the owner last saw the vehicle to when the victim discovered the damage. Only instances when the time is definitively known as having occurred between 1am and 5am have been included.

To ensure consistency with the 2014 analysis conducted by Essex Police, those PNL offence types which were previously excluded were also excluded in this report.

87 day period comparison: 30/03/2014-25/06/2014 v. 30/03/2017-25/06/2017

Crime committed between 1am and 5am increased in all but three districts. The biggest rise in volume was experienced in Thurrock (a non-PNL district). However, crime also increased outside the PNL hours in all districts.

Table 1

Crime Between 0100-0500 Hours					Crime Between 0501 Hours to 0059 Hours				
District	30/03/2014 - 25/06/2014	30/03/2017 - 25/06/2017	#	%	District	30/03/2014 - 25/06/2014	30/03/2017 - 25/06/2017	#	%
Basildon	157	148	-9	-5.7%	Basildon	2618	3512	894	34.1%
Braintree	61	73	12	19.7%	Braintree	1340	1874	534	39.9%
Brentwood	55	66	11	20.0%	Brentwood	755	1015	260	34.4%
Castle Point	29	42	13	44.8%	Castle Point	824	1068	244	29.6%
Chelmsford	155	144	-11	-7.1%	Chelmsford	1996	2764	768	38.5%
Colchester	185	185	0	0.0%	Colchester	2361	3319	958	40.6%
Epping	97	112	15	15.5%	Epping	1516	2058	542	35.8%
Harlow	84	55	-29	-34.5%	Harlow	1527	1780	253	16.6%
Maldon	22	28	6	27.3%	Maldon	532	597	65	12.2%
Rochford	33	44	11	33.3%	Rochford	600	795	195	32.5%
Southend	217	235	18	8.3%	Southend	2901	3426	525	18.1%
Tendring	98	127	29	29.6%	Tendring	2177	2918	741	34.0%
Thurrock	115	158	43	37.4%	Thurrock	2474	3178	704	28.5%
Uttlesford	27	55	28	103.7%	Uttlesford	643	1184	541	84.1%
PNL District Total (Excluding Maldon, Uttlesford, Southend, Thurrock and Harlow)	870	941	71	8.2%	PNL District Total (Excluding Maldon, Uttlesford, Southend, Thurrock and Harlow)	14187	19323	5136	36.2%
Non-PNL District Total (Southend and Thurrock)	332	393	61	18.4%	Non-PNL District Total (Southend and Thurrock)	5375	6604	1229	22.9%

* Please note that combining the PNL District and Non-PNL District totals in Table 1 will not add up to the total for all districts. This is because Harlow (which abandoned PNL), and Maldon and Uttlesford (pilot PNL districts) were not included in either total.

Key	
	PNL District
	Comparison non-PNL district (Southend and Thurrock)
	Non-comparison district: Harlow (abandoned PNL in October 2015)
	Non-comparison district: Maldon and Uttlesford (had PNL since 2007)

Annual period: 30/03/2014-29/03/2015 v. 30/03/2016-29/03/2017

Every district – with the exception of Harlow – experienced an increase in crime committed between 1am and 5am. While Southend experienced only a 2.9% increase, Thurrock (the other control District) experienced a 27.2% increase, and had the second highest volume rise.

Crime committed at any other time period also rose, but at a higher rate overall. It is of note that there has been a rise in crime, both in Essex and nationally.

Table 2

Crime Between 0100-0500 Hours					Crime Between 0501 Hours to 0059 Hours				
District	Year Prior to Switch Off (30/03/2014-29/03/2015)	Same Period 2016-17 (30/03/2016-29/03/2017)	#	%	District	Year Prior to Switch Off (30/03/2014-29/03/2015)	Same Period 2016-17 (30/03/2016-29/03/2017)	#	%
Basildon	616	900	284	46.1%	Basildon	11121	14356	3235	29.1%
Braintree	240	345	105	43.8%	Braintree	5447	6901	1454	26.7%
Brentwood	203	227	24	11.8%	Brentwood	3164	4161	997	31.5%
Castle Point	126	200	74	58.7%	Castle Point	3072	4068	996	32.4%
Chelmsford	594	604	10	1.7%	Chelmsford	7932	10476	2544	32.1%
Colchester	745	756	11	1.5%	Colchester	9809	11580	1771	18.1%
Epping Forest	347	367	20	5.8%	Epping Forest	6088	8004	1916	31.5%
Harlow	329	260	-69	-21.0%	Harlow	6209	6763	554	8.9%
Maldon	82	87	5	6.1%	Maldon	2114	2307	193	9.1%
Rochford	142	210	68	47.9%	Rochford	2429	3041	612	25.2%
Southend-on-Sea	902	928	26	2.9%	Southend-on-Sea	11566	13764	2198	19.0%
Tendring	426	465	39	9.2%	Tendring	8404	10548	2144	25.5%
Thurrock	393	500	107	27.2%	Thurrock	10179	12367	2188	21.5%
Uttlesford	106	143	37	34.9%	Uttlesford	2447	4118	1671	68.3%
PNL District Total (Excluding Maldon, Uttlesford, Southend, Thurrock and Harlow)	3439	4074	635	18.5%	PNL District Total (Excluding Maldon, Uttlesford, Southend, Thurrock and Harlow)	57466	73135	15669	27.3%
Non-PNL District Total (Southend and Thurrock)	1295	1428	133	10.3%	Non-PNL District Total (Southend and Thurrock)	21745	26131	4386	20.2%

* Please note that combining the PNL District and Non-PNL District totals in Table 2 will not add up to the total for all districts. This is because Harlow (which abandoned PNL), and Maldon and Uttlesford (pilot PNL districts) were not included in either total.

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Anti-Social Behaviour (ASB)

87 day period comparison: 30/03/2014-25/06/2014 v. 30/03/2017-25/06/2017

ASB decreased in all districts other than Brentwood, Harlow (which abandoned PNL) and Rochford.

Table 3

ASB Between 0100-0500 Hours					ASB Between 0501 Hours to 0059 Hours				
District	30/03/2014 - 25/06/2014	30/03/2017 - 25/06/2017	#	%	District	30/03/2014 - 25/06/2014	30/03/2017 - 25/06/2017	#	%
Basildon	122	108	-14	-11.5%	Basildon	1526	1528	2	0.1%
Braintree	49	45	-4	-8.2%	Braintree	903	767	-136	-15.1%
Brentwood	35	38	3	8.6%	Brentwood	421	398	-23	-5.5%
Castle Point	35	24	-11	-31.4%	Castle Point	557	480	-77	-13.8%
Chelmsford	123	91	-32	-26.0%	Chelmsford	993	949	-44	-4.4%
Colchester	182	124	-58	-31.9%	Colchester	1329	1335	6	0.5%
Epping	63	50	-13	-20.6%	Epping	857	819	-38	-4.4%
Harlow	71	73	2	2.8%	Harlow	998	752	-246	-24.6%
Maldon	21	20	-1	-4.8%	Maldon	265	227	-38	-14.3%
Rochford	25	27	2	8.0%	Rochford	371	361	-10	-2.7%
Southend	194	138	-56	-28.9%	Southend	1788	1571	-217	-12.1%
Tendring	91	91	0	0.0%	Tendring	1220	1052	-168	-13.8%
Thurrock	102	84	-18	-17.6%	Thurrock	1320	1237	-83	-6.3%
Uttlesford	20	20	0	0.0%	Uttlesford	321	290	-31	-9.7%
PNL District Total (Excluding Maldon, Uttlesford, Southend, Thurrock and Harlow)	725	598	-127	-17.5%	PNL District Total (Excluding Maldon, Uttlesford, Southend, Thurrock and Harlow)	8177	7689	-488	-6.0%
Non-PNL District Total (Southend and Thurrock)	296	222	-74	-25.0%	Non-PNL District Total (Southend and Thurrock)	3108	2808	-300	-9.7%

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Annual period: 30/03/2014-29/03/2015 v. 30/03/2016-29/03/2017

Every district – with the exception of Castle Point – experienced a reduction in ASB. A bigger percentage decrease was experienced in PNL districts, however.

Table 4

ASB Between 0100-0500 Hours					ASB Between 0501 Hours to 0059 Hours				
District	Year Prior to Switch Off (30/03/2014-29/03/2015)	Same Period 2016-17 (30/03/2016-29/03/2017)	#	%	District	Year Prior to Switch Off (30/03/2014-29/03/2015)	Same Period 2016-17 (30/03/2016-29/03/2017)	#	%
Basildon	464	432	-32	-6.9%	Basildon	6012	6297	285	4.7%
Braintree	233	192	-41	-17.6%	Braintree	3558	3008	-550	-15.5%
Brentwood	191	140	-51	-26.7%	Brentwood	1745	1590	-155	-8.9%
Castle Point	146	153	7	4.8%	Castle Point	2163	1760	-403	-18.6%
Chelmsford	448	411	-37	-8.3%	Chelmsford	4105	3721	-384	-9.4%
Colchester	680	526	-154	-22.6%	Colchester	5328	4915	-413	-7.8%
Epping	291	276	-15	-5.2%	Epping	3459	3453	-6	-0.2%
Harlow	336	275	-61	-18.2%	Harlow	4034	3495	-539	-13.4%
Maldon	68	58	-10	-14.7%	Maldon	1076	946	-130	-12.1%
Rochford	120	101	-19	-15.8%	Rochford	1601	1471	-130	-8.1%
Southend	880	772	-108	-12.3%	Southend	7075	6336	-739	-10.4%
Tendring	377	335	-42	-11.1%	Tendring	4513	4326	-187	-4.1%
Thurrock	402	346	-56	-13.9%	Thurrock	5494	5093	-401	-7.3%
Uttlesford	103	55	-48	-46.6%	Uttlesford	1268	1083	-185	-14.6%
PNL District Total (Excluding Maldon, Uttlesford, Southend, Thurrock and Harlow)	2950	2566	-384	-13.0%	PNL District Total (Excluding Maldon, Uttlesford, Southend, Thurrock and Harlow)	32484	30541	-1943	-6.0%
Non-PNL District Total (Southend and Thurrock)	1282	1118	-164	-12.8%	Non-PNL District Total (Southend and Thurrock)	12569	11429	-1140	-9.1%

* Please note that combining the PNL District and Non-PNL District totals in Table 4 will not add up to the total for all districts. This is because Harlow (which abandoned PNL), and Maldon and Uttlesford (pilot PNL districts) were not included in either total.

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Killed and Seriously Injured (KSI) Road Traffic Collisions (RTCs)

87 day period comparison: 30/03/2014-25/06/2014 v. 30/03/2016-25/06/2016

The percentage increase in KSI RTCs was the same for both non-PNL and PNL districts. It should be noted, however, that low numbers skew percentage comparisons.

Table 5

KSI RTCs Between 0100-0500 Hours					KSI RTCs Between 0501 Hours to 0059 Hours				
District	30/03/2014 - 25/06/2014	30/03/2016 - 25/06/2016	#	%	District	30/03/2014 - 25/06/2014	30/03/2016 - 25/06/2016	#	%
Basildon	1	1	0	0.0%	Basildon	18	17	-1	-5.6%
Braintree		1	1		Braintree	13	20	7	53.8%
Brentwood			0		Brentwood	13	9	-4	-30.8%
Castle Point			0		Castle Point	7	11	4	57.1%
Chelmsford	1	1	0	0.0%	Chelmsford	8	22	14	175.0%
Colchester		2	2		Colchester	11	24	13	118.2%
Epping		1	1		Epping	17	25	8	47.1%
Harlow			0		Harlow	4	5	1	25.0%
Maldon		1	1		Maldon	6	14	8	133.3%
Rochford			0		Rochford	6	10	4	66.7%
Southend	1	2	1	100.0%	Southend	18	18	0	0.0%
Tendring			0		Tendring	11	18	7	63.6%
Thurrock		1	1		Thurrock	6	16	10	166.7%
Uttlesford			0		Uttlesford	8	6	-2	-25.0%
PNL District Total (Excluding Maldon, Uttlesford, Southend, Thurrock and Harlow)	2	6	4	200.0%	PNL District Total (Excluding Maldon, Uttlesford, Southend, Thurrock and Harlow)	104	156	52	50.0%
Non-PNL District Total (Southend and Thurrock)	1	3	2	200.0%	Non-PNL District Total (Southend and Thurrock)	24	34	10	41.7%

* Please note that combining the PNL District and Non-PNL District totals in Table 5 will not add up to the total for all districts. This is because Harlow (which abandoned PNL), and Maldon and Uttlesford (pilot PNL districts) were not included in either total.

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Annual period: 30/03/2014-29/03/2015 v. 30/03/2016-29/03/2017

A higher percentage of KSI RTCs occurred in non-PNL districts than PNL districts. It should again be noted that low numbers skew percentage comparisons.

Table 6

KSI RTCs Between 0100-0500 Hours					KSI RTCs Between 0501 Hours to 0059 Hours				
District	Year Prior to Switch Off (30/03/2014-29/03/2015)	Same Period 2016-17 (30/03/2016-29/03/2017)	#	%	District	Year Prior to Switch Off (30/03/2014-29/03/2015)	Same Period 2016-17 (30/03/2016-29/03/2017)	#	%
Basildon	7	3	-4	-57.1%	Basildon	56	57	1	1.8%
Braintree	3	4	1	33.3%	Braintree	69	78	9	13.0%
Brentwood		1	1		Brentwood	38	42	4	10.5%
Castle Point		2	2		Castle Point	30	40	10	33.3%
Chelmsford	2	9	7	350.0%	Chelmsford	52	77	25	48.1%
Colchester	4	3	-1	-25.0%	Colchester	60	90	30	50.0%
Epping	7	7	0	0.0%	Epping	74	90	16	21.6%
Harlow			0		Harlow	17	26	9	52.9%
Maldon	1	2	1	100.0%	Maldon	25	40	15	60.0%
Rochford	1	1	0	0.0%	Rochford	32	36	4	12.5%
Southend	3	4	1	33.3%	Southend	73	84	11	15.1%
Tendring	2	2	0	0.0%	Tendring	36	74	38	105.6%
Thurrock		5	5		Thurrock	52	74	22	42.3%
Uttlesford		2	2		Uttlesford	40	40	0	0.0%
PNL District Total (Excluding Maldon, Uttlesford, Southend, Thurrock and Harlow)	26	32	6	23.1%	PNL District Total (Excluding Maldon, Uttlesford, Southend, Thurrock and Harlow)	447	584	137	30.6%
Non-PNL District Total (Southend and Thurrock)	3	9	6	200.0%	Non-PNL District Total (Southend and Thurrock)	125	158	33	26.4%

* Please note that combining the PNL District and Non-PNL District totals in Table 6 will not add up to the total for all districts. This is because Harlow (which abandoned PNL), and Maldon and Uttlesford (pilot PNL districts) were not included in either total.

Key	
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Of the 32 KSI RTCs that occurred in the PNL districts in the most recent period, seven occurred where streetlights were present but not lit. In the majority of instances, there were either no streetlights (13), or the streetlights were present and lit (10); in one instance it was unknown and in another the lighting was unknown.

By comparison, of the 26 KSI RTCs that occurred in the year prior to the switch-off in PNL areas, lights were present but not lit in five instances.

Table 7

Visibility	Year Prior to Switch Off (30/03/2014-29/03/2015)	Same Period 2016-17 (30/03/2016-29/03/2017)	#	%
6. Darkness: no street lighting	11	13	2	18.2%
4. Darkness: street lights present and lit	8	10	2	25.0%
5. Darkness: street lights present but unlit	5	7	2	40.0%
7. Darkness: street lighting unknown	2	1	-1	-50.0%
1. Daylight	0	1	1	
Total	26	32	2	18.2%

6.0 Implications (Issues)

The below details the caveats relating to the analysis:

- The initial PNL trials were between the hours of midnight and 5am in late 2013 and early 2014. PNL between the hours of 1am and 5am was introduced on 30th March 2015 (an hour difference).
- Harlow district ceased PNL operation on 25th October 2015. Maldon and Uttlesford Districts adopted PNL in 2007. These districts have therefore been excluded from comparisons.
- No information is available as to the streets/areas in which PNL was implemented. It is therefore unclear whether the offences identified were committed in town centres, for example, where lights would be on all day (offences committed in illuminated areas, and part of the night-time economy will therefore have been included the analysis).
- Crime committed in the period when PNL was introduced was recorded on Crime File (the crime system used before Athena).
- Further to the above, it is not possible to determine from Athena which offences were committed outdoors. This information was formerly available in the Crime File system. Many offences included in the analysis may therefore have been committed within premises.

6.1 Risks/Mitigation

No risks were identified during the course of this analysis.

6.2 Equality and/or Human Rights Implications

There is no identified impact on equality, diversity or human rights.

6.3 Health and Safety Implications

There are no identified implications with regards health and safety.

7.0 Consultation/Engagement

Papers reviewed and referenced:

- Initial Analysis on Crime and ASB by Essex Police – July 2014
- Lanterns Project: “The effect of reduced street lighting on road casualties and crime in England and Wales: controlled interrupted time series and analysis” by local authorities in England and Wales and the University of London – July 2015
- Part Night Lighting Review by Safer Essex Roads Partnership Report – August 2017

8.0 Actions for Improvement

No actions for improvement have been taken.

9.0 Future Work/Development

There are no current plans for future analysis in this area given the findings from multiple analyses over different time periods

10.0 Decisions Required by the Police, Fire and Crime Commissioner

This report is purely for the information of the Police, Fire and Crime Commissioner.