The Rollout and Impacts of Permanent Average Speed Cameras in Lancashire

Version 2.2

Lancashire Road Safety Partnership

July 2021

Contents

Background

Road traffic collisions (RTCs) have been reducing in Lancashire since the mid-1980s, despite significant increases in traffic volumes; a picture that is mirrored in many other counties across England and Wales. The numbers of the resultant casualties of RTCs have also been slowly but steadily reducing during this period. A blend of safer vehicles, better highways engineering, more targeted enforcement activity and significant improvements in post-crash trauma care have all contributed to reductions in RTCs.

The last decade, however, has witnessed a relative stagnation in the reductions of RTC casualties. During this time, councils and police forces have been forced to manage substantial reductions in budgets, creating conflict between proven and evidence-based road safety initiatives and what is financially achievable. The correlations between the enforced reductions in dedicated roads policing officers and injury collisions continues to be strongly debated although a lazy hypothesis would suggest there are strong links.

Advancements in technology, however, have continued at a seemingly exponential rate. The financial costs associated with the procurement of technology intended to reduce RTCs have reduced to the extent that solutions once deemed as unviable are now realistic options to police forces and road safety partnerships. Average speed camera solutions certainly fall into this category and there have been significant increases in the lengths of roads across Great Britain on which speed limits are enforced using such technology.

In 2016 the decision was made by the Executive Board of the Lancashire Road Safety Partnership (LRSP) and Lancashire Police to use average speed cameras as a tactic to combat excessive and unlawful speed with a view to reducing road traffic collisions resulting in personal injury. A total of eight routes were subsequently identified in Lancashire that would hypothetically benefit from the installation of average speed cameras. A combination of high-level analysis, professional judgment and personal experiences were used to identify these routes with higher-than-average speed-related collisions. Other factors, such as identifying road layouts that prevent other forms of speed enforcement, were also considered during the identification process.

Following a tender process in the autumn of 2016, *Jenoptik* (previously called *Vysionics*) were awarded the contract for the installation and five-year maintenance of a first wave of average speed cameras in Lancashire. These eight systems, all operating a route-based strategy, would become the first permanent average speed cameras in Lancashire.

Between March 2017 and August 2018, all eight average speed camera routes went live with average speed camera enforcement.

Does Speed Kill?

Before this report begins to unpick the impacts of average speed cameras as identified and evidenced in Lancashire, it is pertinent to firstly address a crucial and frequently contested question; does speed kill? Whilst there are numerous motoring clubs and associations that support the idea of raising or even abolishing speed limits on certain roads and who question the links between speed and road traffic collisions, there is an ever-growing evidence-base from experienced and impartial research bodies that suggest that speed does indeed kill.

A new, large scale, international report confirms what safety experts around the globe have long known: that speed has a direct influence on the occurrence and severity of traffic crashes, and that lower speeds make roads safer and result in fewer deaths.

Inappropriate speed is responsible for 20 to 30 % of all fatal road crashes, according to "Speed and Crash Risk," which examined how the road safety performance in ten countries improved after they changed speed limits or introduced automatic speed cameras on a large scale.

International Transport Forum (2018)

Greater speeds have significant effects on stopping distances; the combined thinking time of the driver and the time taken for the vehicle to physically come to a halt. And thinking time should not just include the time lapsed before applying the brakes but also afford a wider assessment of the unfolding scenario and environment prior to doing so. Coming to a complete straight-line stop may not necessarily offer the best nor safest option in avoiding every collision; a greater thinking and braking time may offer the driver a greater steering time in avoiding contact with another road user or an object.

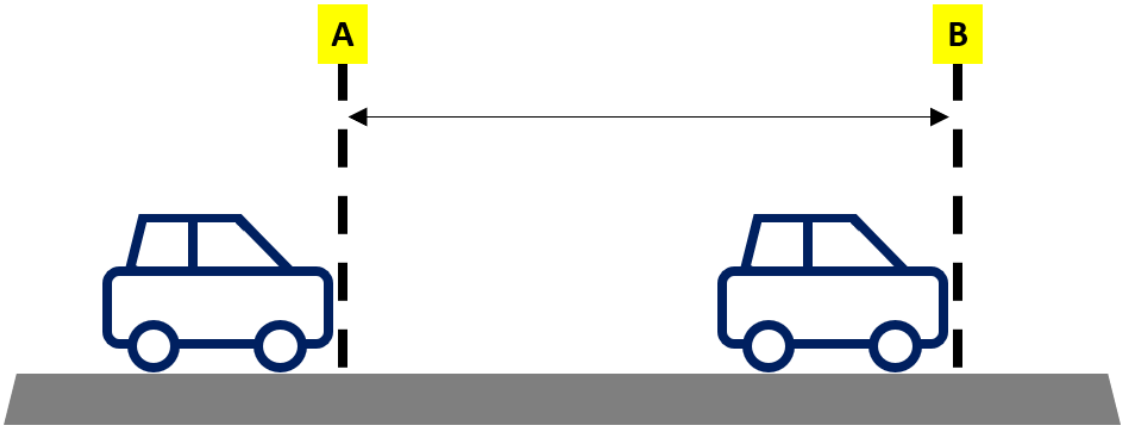
The correlations between vehicle speed and casualty trauma are widely reported and accepted. The chances, or *risk*, of casualties of road traffic collisions receiving serious or life-threatening injuries increases significantly as vehicle speeds increase, especially in collisions involving more vulnerable road users such as pedestrians and cyclists.

How Do Average Speed Cameras Work?

The primary objective of average speed cameras is not to 'catch' speeding motorists but to act as a significant deterrent in the first place. As already determined earlier in this report, speeding is a key contributory factor in road traffic collisions and average speed cameras are intended to reduce speeds and thus reduce the potential for *harm* on our roads.

In a practical sense, and when drivers fail to adhere to speed limits, average speed cameras work by measuring the time it takes for a vehicle to travel between two set points. It is then possible to calculate an average of the speed travelled between these points and determine whether that speed was lawful. As each registered vehicle in the UK has a unique identifying number, the number plate – or vehicle registration number (VRN) – it is relatively easy to identify and track vehicles through average speed camera systems. In the event of speeding offences being detected, the registered keeper of the vehicle is contacted in order to declare who was driving at the time of the offence taking place. The driver is later prosecuted for the detected offence(s).

The following diagram and accompanying calculation offer a high-level explanation into how average speed cameras operate.



The distance between points A and B is one mile and the entire route subject to a speed limit of 30 miles per hour; mph. If a vehicle takes 90 seconds to travel between these two points, then the average speed can be calculated using the formula;

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

In this case, it is determined that the vehicle was travelling at an *average* speed of 40.0mph and the driver is therefore potentially subject to prosecution.

It is worthy of note that all equipment used in Great Britain is subject to rigorous testing prior to being given Home Office Type Approval ('HOTA status') and used for enforcement purposes.

The Routes

In order of go-live dates, these are the eight identified routes installed with average speed cameras in Lancashire:

A6, Preston and Walton le Dale
London Road, from the junction with Victoria Road (S) to south of Primrose Hill (N).
0.621 miles (1.000 km) in length.
Went live 23rd March 2017.

A675, Abbey Village and Belmont
A675, incorporating Bolton Road, Belmont Road and High Street (Belmont), from the junction with Scout Road (S) to junction 3 of the M65 (N)
7.819 miles (12.583 km) in length.
Went live 9th June 2017 (northern sections) and 24th November 2017 (southern sections).

A565, Tarleton, Mere Brow and Banks
Southport New Road, from west of Tarleton crossroads (E) to east of Banks roundabout (W).
3.698 miles (5.951 km) in length.
Went live 10th August 2017.

A588, Pilling
Head Dyke Lane from west of Skate Pool (E) to east of the junction with Sandy Lane (W).
1.791 miles (2.882 km) in length.
Went live 27th October 2017.

B6232, Belthorn, Rushy Hill, Nab Hill and Haslingden
Grane Road and Elton Road from west of the junction with A56 (E) to junction 5 of the M65 (W).
4.928 miles (7.931 km) in length.
Went live 6th November 2017.

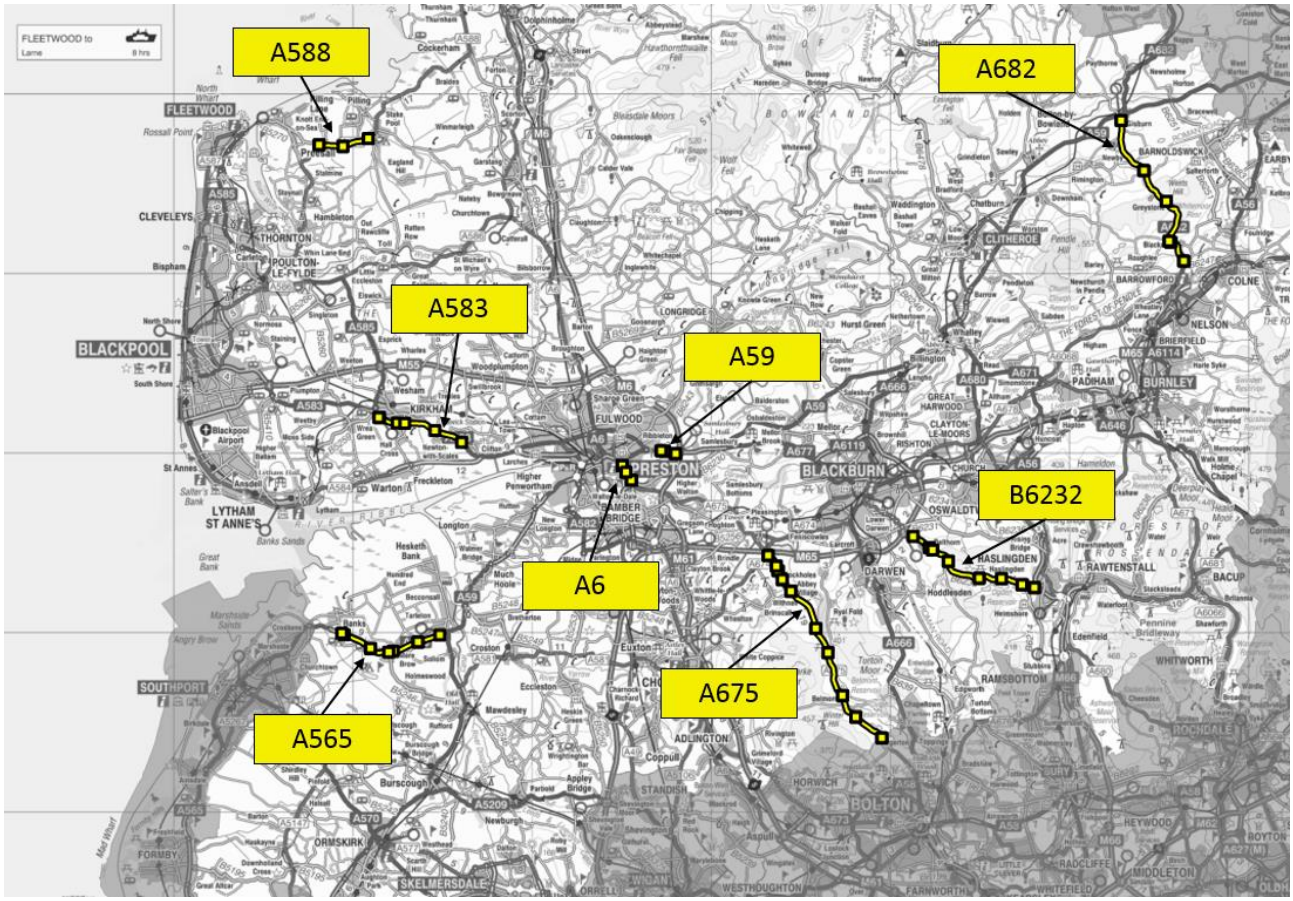
A59, Preston
Brockholes Brow and Preston New Road from the Tickled Trout roundabout (E) to east of Glenluce Drive (W).
0.496 miles (0.799km) in length.
Went live 14h December 2017.

A583, Newton-with-Scales and Kirkham

Blackpool Road and Kirkham Bypass, from Clifton (E) to east of Ribby Hall roundabout (W).
3.085 miles (4.964 km) in length.
Went live 6th March 2018.

A682, Higherford, Blacko, Widow Hill and Gisburn

Gisburn Road from north of Higherford (S) to south of the junction with A59 at Gisburn (N).
6.159 miles (9.910 km) in length.
Went live 22nd August 2018.



The map above highlights the locations and lengths of each of the eight average speed camera routes in Lancashire. The Lancashire police force boundary is denoted by the grey shading of neighbouring force areas.

Media and Engagement

Whilst the average speed camera project was still very much in its infancy, much emphasis and consideration was given to engagement with residents, business owners and route users. The whole premise of the introduction of average speed cameras was to reduce collisions and casualties; to make roads safer.

Due to the oft-negative press coverage associated with speed enforcement in general, the LRSP was keen to avoid such negativity. Revenue and cost-recovery were not priorities. To that end, a broad and detailed communications plan was formulated and implemented prior to any physical work being undertaken. All residential and business properties along the eight routes, as well as adjoining roads, were leaflet-dropped with outlines of the project, proposed timescales and contact details. The average speed camera project coincided with the relaunching of the LRSP website which quickly became the go-to place for updates and general information about average speed cameras. Radio interviews were broadcast across the county and social media platforms were effectively and frequently used throughout the whole project.

The families of the victims of fatal collisions were contacted individually by letter; every effort was made to contact these twelve families in order to sensitively and appropriately explain the average speed camera project to them. There was overwhelming support for the project from the families affected by fatal collisions.

It was inevitable and expected that the rollout of average speed cameras was not to be without negative press and comment. However, what was both unexpected and welcome was the 'self-policing' that quickly occurred during media campaigns. That is to say that when a negative or critical comment was made or posted, many other people were quick to challenge and offer support for the project. It became rare for the LRSP to intervene or challenge negative or inaccurate press.

Through various social media platforms, especially *Facebook* and *Twitter*, the LRSP continues to reach out to the public in order to communicate casualty reduction messages. But recognising that there are large swathes of the Lancashire and north-west region population who don't use nor engage with social media, more traditional forms of media are also effectively used, such as local newspapers and radio for interviews.

Installation and Implementation

Whilst not without unforeseeable issues, the processes associated with installing, testing, commissioning and maintaining the eight average speed camera systems have to date proven to be relatively smooth; the detailed and thorough planning for such a large-scale project paying dividends.

It was during the planning and installation phases that the three most pertinent issues arose:

- The entrance to the now abandoned shale gas fracking site along the A583 Preston New Road at Little Plumpton attracted significant numbers of protesters and policing activity from the latter half of 2017. A temporary speed limit order (SLO) of 20mph was introduced in order to protect all parties. This necessitated the shortening of the originally proposed A583 route as at that point in time it was unknown for how long fracking would continue.
- The discovery of a suspected rare plant species, Moonwort, at a location on the B6232 Grane Road required further investigation and research. The species was later found to be not protected nor endangered[1] although every effort was made to re-site the found plant species near where it was originally found. An Ecologist was consulted upon the discovery of Moonwort and advised the LRSP and *Jenoptik* in how to best deal with the situation.
- Overcrowded sub-terra utilities forced the relocation of some infrastructure on the A675 Belmont Road south of Abbey Village. The issues were only identified once groundworks contractors had excavated the camera site due to existing utility maps being outdated. A slight system redesign was undertaken.

Far less impactive teething problems, all of which occurred after camera installation, include a small number of signs being incorrectly installed as well as some system power-outages along the A565 Southport New Road route. These were quickly addressed, although all setbacks have been documented with the intention of learning from such issues for future average speed camera initiatives.

[1] Moonwort – *Botrychium lunaria* – is not a protected species and therefore does not appear on the list of such species under Schedule 8 of the Wildlife and Countryside Act. Moonwort does, however, appear on The International Union for Conservation and Nature (IUCN) list of threatened species.

Evaluation of Impacts

A thorough and broad evaluation of the average speed camera project was always the intention of the LRSP. Establishing the overall impacts of installing and using permanent average speed cameras in Lancashire, whether they be positive or negative, was deemed a top priority, even during the very early stages of design and consultation.

Early Days

Shortly after each route had been commissioned, interim reports highlighting vehicle speeds were supplied to the LRSP by both Lancashire County Council (LCC) and *Jenoptik*. LCC concentrated on data capture via physical methods; 'tubes' temporarily laid in the highway, connected to a data receiver. *Jenoptik* utilised anonymised vehicle data captured by the average speed camera systems[2]. When compared to vehicle speed data captured prior to the commencement of camera installation, notable reductions in vehicle speeds was evident along all eight routes.

Methodology

In terms of methodology, a ninety-fifth percentile [95th%ile] of vehicles was included in this initial analysis. That is, the top five percent of vehicle speeds captured were omitted from the analysis and for two reasons; 1. the unknown counts of emergency services vehicles responding to incidents and legitimately travelling above the speed limit; 2. There are incidents involving vehicles that are travelling substantially above the speed limit. With these two key points comes a significant scope for statistical skew, especially when studying roads with lower speed limits or routes with a relatively small number of vehicles passing through the average speed cameras at excessive speeds. Using a 95th%ile is a commonly used and widely accepted method.

Only after a much longer period of camera operation would it be possible to better and more broadly evaluate the *impact* of the average speed cameras in Lancashire. Bar the A682, all routes have, as of May 2021, been 'live' for over three years. Alongside a five-year baseline average of collisions and casualties pre-go-live dates, the partnership has been afforded an opportunity to learn of the medium- to long-term impacts of average speed cameras.

In order to study each of the average speed camera routes individually, a five-year baseline-average was calculated for each of the eight routes. The baseline average includes collisions and casualties, by severity of injury, and the contributory factor(s) associated with each collision.

[2] No vehicle registration marks (VRMs) are retained at any point other than for the purpose of prosecution, should unlawful speed(s) be detected by the average speed cameras systems.

Collisions

By comparing and contrasting the first three years of camera operation to the five-year baseline averages for each of the average speed camera routes, changes in collision numbers and patterns can be detected. By adopting this approach, it can be reported that on each of the eight routes collisions have reduced since the installation of average speed cameras. All percentage reductions are significantly above the reductions in collisions that have been recorded across Lancashire during the same periods. In other words, collisions have reduced well above what would otherwise have been expected. Overall, collisions have reduced by between 24.2% (A59) and 86.1% (A588).

On all routes bar the A583 there has also been a statistically significant reduction in KSI collisions. Whilst collisions overall have reduced by some 52% on the A583, KSI collisions have increased by almost 43%. The three-year baseline for average speed camera operation on the A583 equates to 2.0 KSI collisions per annum, versus 1.4 collisions across the five-year baseline average pre average speed cameras.

Six of the eight routes have been without a fatal collision during the first three years of average speed camera operation. The A583 and B6232 have both sadly experienced fatalities since average speed cameras were installed; 1 and 2 fatalities respectively.

Due to the complexities of road traffic collisions and the contributory factors associated in the lead-up to a collision occurring, it was never realistic to totally 'eradicate' collisions along all routes. Mechanical failure, meteorological conditions and those few drivers who wish to break the law at any cost may never be totally mitigated against.

Findings to date, however, are highlighting substantial reductions in collisions and it is likely that these positive shifts in collision rates shall continue.

Casualties

Casualty reduction underpins the whole purpose and ethos of average speed cameras and it is encouraging to report some *significant* reductions in RTC casualty numbers, alongside the significantly positive statistics associated with collisions. Reductions in both the counts of RTC casualties, as well the severity of injury / trauma, can be reported since average speed cameras went live.

Casualty numbers have reduced along all eight routes. In fact, overall, there has been a slightly greater reduction in casualty numbers than collisions and this is also reflected along the A6, A565 and A588 routes.

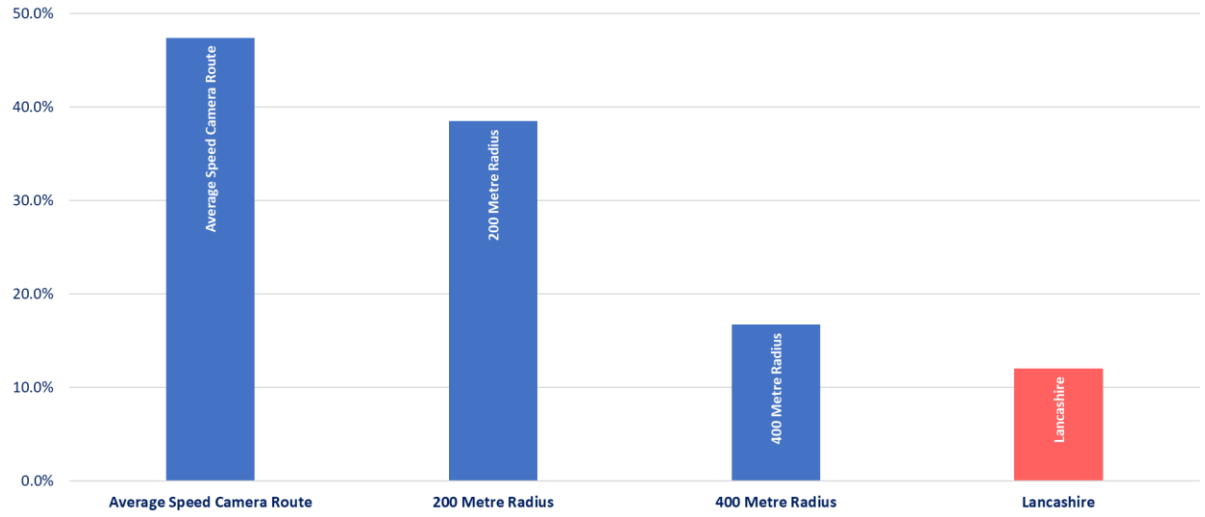
In line with what has been reported in the 'Collisions' section of this report, the A583 has witnessed increases in KSI casualties as well as collisions. Fatalities have also increased along the

B6232 with a fatality recorded in both years 2 and 3 of average speed camera operation, against a five-year baseline average of 0.6.

How Far do Average Speed Cameras have an Effect?

Analysis to underpin this report has not only been centred on the eight routes but also at varying distances from the camera infrastructure. There is strong evidence to support the hypothesis that driver behaviour is also positively affected away from the average speed camera routes and the A6 London Road is a good example of this. 'Buffer zones' of 200 and 400 metres were created and mapped from the road centre-line of the average speed camera route. Whilst there was evidence of a diminishing effect as distance increased, the percent reductions in collisions were still significantly higher than what would otherwise have been expected. There were no identified changes in road layout, roadworks, traffic calming measures nor other enforcement activities to skew this finding by adding external influence.

The chart below visualises the percentage reductions in collisions at varying distances – 200 and 400 metre radii – from the average speed camera route on the A6, London Road, during the first two years of operation. The Lancashire county percentage reduction for the same period is charted to add context and reference.



This effect has been detected on all routes that bisect built-up areas, namely the A6, A59 and A675.

Value of Prevention

Financial savings, or at least reducing the costs associated with attending and managing road traffic collisions, were never the purpose of adopting average speed cameras in Lancashire. However, a change in the counts and severity of RTCs inevitably alters the financial landscape associated with collision attendance.

Annually, the Department for Transport (DfT) calculate and publish the overall financial costs of road traffic collisions, broken down by severity of collision (based on the most severely injured casualty) and by road type (motorways, built-up and non-built-up roads). Rather than costs, the DfT refer to such financial impacts as Values of Prevention; the financial savings associated with reductions in RTCs. In reality, no such savings are ever realised but rather such costs are never accrued by the emergency services, the NHS and in some cases Coronial and court services.

When compared to the five-year baseline average, the first full three years of camera operation (two years in the case of the A682) have yielded a Value of Prevention of £14.6m. This represents a significant reduction in the financial consequences of dealing with road traffic collisions and enables public money to be diverted elsewhere.

The Diffusion of Benefits

A hypothesis following the introduction of the average speed camera systems was that crime and disorder would reduce as a result of the cameras being installed. Whilst the *Vector* cameras installed by *Jenoptik* are not configured in Lancashire to record as CCTV cameras (although capable of being so), it is inferred that their presence acts as a deterrent effect and thus reduces incidents of crime and disorder. After all, would likely criminal offenders really commit an offence under a bright yellow camera, irrespective of the purpose or capabilities of it?

Anonymised crimes and disorder details were exported from *Connect*, the police crime and incidents recording system. The mapping and analysis of these crime and disorder incidents has failed to identify any real or tangible changes in crimes and incidents between the one year before the average speed cameras went live and the first year of camera operation. It would appear that in terms of crime and disorder, average speed cameras make little, if no, difference. This is disappointing, of course, but it was prudent to test and examine this hypothesised benefit of a camera infrastructure, irrespective of purpose.

Public Perception and Acceptance

Tackling excessive speeds on our roads through police-led enforcement activity, whilst maintaining good working relationships with our communities, is a political tightrope negotiated often by chief police officers and especially by Police and Crime Commissioners. Whilst it is not possible to have a universally accepted balance between the two, there has been a far greater level of acceptance of average speed cameras than first envisaged and hoped. Though not yet formally quantified through market research and surveys, the high levels of positive correspondence sent to the LRSP and the self-policing aspects of social media posts, it is inferred that there is a relatively high-level of acceptance of average speed cameras. This is a stark contrast to more traditional methods of speed enforcement such as static cameras and mobile camera enforcement. Many road users consider average speed cameras as 'fair' and far less of a 'sneaky income generator' as is so often the perception of speed cameras in general.

Even though 40-60% of drivers (depending on the road type) admit to speeding, half of motorists support the use of average-speed cameras on high and medium speed roads rather than fixed cameras.

RAC Foundation (2020)

Long Term Evaluation

This report is only the start of what should and will be a broad and thorough study into the medium- and long-term impacts of average speed cameras in Lancashire. Annual revisions of this report will be published alongside the continuance of regular social media feeds and updates.

There are several factors that must be considered during the expected lifespan of the eight average speed camera routes in Lancashire and the most notable are as follows;

- The advent of semi- and fully autonomous vehicles is likely to affect driving behaviours and change collision patterns and trends considerably.
- The Coronavirus pandemic of 2020-21 is highly likely to have affected travelling and working habits forever. We may never witness a full return to rush-hour style commuting as homeworking becomes the norm and preferred option for many.

It is therefore crucial that this live document remains as such and there never becomes a time when the LRSP and Lancashire Police are satisfied that all the impacts of average speed cameras are considered established and reported.

A plan to broaden the scope of evaluating the impacts of permanent average speed cameras in Lancashire even further is already underway. It is intended for future studies and publications to include the following;

- Surveys of residents, business owners and road users. Previous survey plans have been slightly curtailed due to the Coronavirus pandemic but will take place once it is socially responsible to do so and once travelling habits have re-normalised. Surveys will aim to establish pre-installation perceptions of average speed cameras versus the reality of living with them for several years, as well as probing into any perceived changes in vehicle speeds and driver behaviour.
- Levels of noxious vehicle emissions may well have changed and reduced given the reductions in vehicle speeds and the improvements in vehicle flows. The 'gaps' between vehicles have increased and this often reflects traffic that is 'flowing'. 'Stop-start driving' inevitably increases the acceleration and braking of vehicles and is a very inefficient way of driving. Work to better understand this hypothesised positive impact of average speed cameras is already underway.
- Slower vehicles and traffic flows are highly likely to be quieter and any change in both the rolling and mechanical noise of vehicles must feature as a future learning.
- Road closures due to RTCs can often create havoc and significant disruption to individuals and businesses. Whilst very much second to the impact of collisions on casualties and their families, it is another hypothesised positive impact that road closures (full and partial) will have reduced during the lifetime of average speed cameras. By working alongside local authorities and the police it is hoped that any changes in road closures can be identified and analysed for impact.
- Using anonymised data, it is hoped to establish the residencies of drivers who are still failing to adhere to the speed limits along the average speed camera routes in order to better target media campaigns. The single purpose of this section of work and analysis is to better engage with road users in order to 'warn and inform'.

Summary of Evaluation and The Future of Average Speed Cameras in Lancashire

The positive impacts of permanent average speed cameras on road users and the wider communities of Lancashire have been identified and proven to outweigh the financial and resourcing costs of installing, operating and maintaining them.

Overall, collisions and casualties have reduced; both in numbers and in severity (levels of trauma).

There is a greater acceptance of average speed cameras over more traditional methods of speed enforcement, such as spot-speed (static) cameras and mobile speed enforcement.

Based upon the strong evidence bases and the experiences of operating average speed cameras in Lancashire, it is highly likely that average speed cameras will continue to be used to reduce road traffic collisions and casualties through the automated enforcement of speed limits.

Appendices

Route					Administration		
Road Network		Go-Live Date	Details	Length; Miles	Length; Kilometres	Police BCU(s)	District Council(s)	Highways
A6	London Road	23/03/2017 Q1 2017	London Road, from the junction with Vicoria Road (S) to south of Primrose Hill (N)	0.621	1.000	South	Preston South Ribble	Lancashire County Council
A675	Belmont	09/06/2017 Q2 2017	A675 (incorporating various road names) from the junction with Scout Road (S) to junction 3 of the M65 (N)	7.819	12.583	East South	Blackburn with Darwen Chorley	Lancashire County Council
A565	Southport New Road	10/08/2017 Q3 2017	Southport New Road, from west of Tarleton crossroads (E) to east of Banks roundabout (W)	3.698	5.951	South	West Lancashire	Lancashire County Council
A588	Head Dyke Lane	27/10/2017 Q4 2017	Head Dyke Lane from west of Skate Pool (E) to east of the junction with Sandy Lane (W)	1.791	2.882	West	Wyre	Lancashire County Council
B6232	Grane Road	06/11/2017 Q4 2017	B6232 Grane Road and Elton Road from west of the junction with A56 (E) to junction 5 of the M65 (W)	4.928	7.931	East	Blackburn with Darwen Hyndburn Rossendale	Lancashire County Council
A59	Brockholes Brow	14/12/2017 Q4 2017	Brockholes Brow and Preston New Road from the Tickled Trout roundabout (E) to east of Glenluce Drive (W)	0.496	0.799	South	Preston South Ribble	Lancashire County Council
A583	Preston New Road	06/03/2018 Q1 2018	Blackpool Road and Kirkham Bypass, from Clifton (E) to east of Ribby Hall roundabout (W)	3.085	4.964	West	Fylde	Lancashire County Council
A682	Gisburn Road	22/08/2018 Q3 2018	Gisburn Road from north of Higherford (S) to south of the junction with A59 at Gisburn (N)	6.158	9.910	East	Pendle Ribble Valley	Lancashire County Council
				28.596	**46.020**	**East South West**	**Blackburn with Darwen, Chorley, Fydle, Hyndburn, Pendle, Preston, Ribble Valley, Rossendale, South Ribble, West Lancashire, Wyre**	**Lancashire County Council**

Collisions

All Eight	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	10	0	10	2	0	2	1	-100.0%
Serious	45	2	61	12.2	6	5	3	-50.8%
KSI	**55**	**2**	**71**	14.2	**6**	**7**	**4**	**-57.7%**
Slight	177	3	212	42.4	33	12	12	-22.2%
TOTAL	**232**	**5**	**283**	56.6	**39**	**19**	**16**	**-31.1%**

A6	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	0	0	1	0.2	0	0	0	-100.0%
Serious	3	0	4	0.8	1	0	0	25.0%
KSI	**3**	**0**	**5**	1	**1**	**0**	**0**	**0.0%**
Slight	27	2	33	6.6	4	3	3	-39.4%
TOTAL	**30**	**2**	**38**	7.6	**5**	**3**	**3**	**-34.2%**

A675	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	2	0	1	0.2	0	0	0	-100.0%
Serious	8	0	13	2.6	1	0	1	-61.5%
KSI	**10**	**0**	**14**	2.8	**1**	**0**	**1**	**-64.3%**
Slight	24	0	23	4.6	4	3	0	-13.0%
TOTAL	**34**	**0**	**37**	7.4	**5**	**3**	**1**	**-32.4%**

A565	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	2	0	1	0.2	0	0	0	-100.0%
Serious	12	1	10	2	0	0	0	-100.0%
KSI	**14**	**1**	**11**	2.2	**0**	**0**	**0**	**-100.0%**
Slight	21	1	28	5.6	8	2	0	42.9%
TOTAL	**35**	**2**	**39**	7.8	**8**	**2**	**0**	**2.6%**

A588	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	0	0	1	0.2	0	0	0	-100.0%
Serious	2	0	2	0.4	0	0	0	-100.0%
KSI	**2**	**0**	**3**	0.6	**0**	**0**	**0**	**-100.0%**
Slight	4	0	9	1.8	1	0	0	-44.4%
TOTAL	**6**	**0**	**12**	2.4	**1**	**0**	**0**	**-58.3%**

B6232	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	2	0	3	0.6	0	1	1	-100.0%
Serious	4	0	14	2.8	1	1	0	-64.3%
KSI	**6**	**0**	**17**	3.4	**1**	**2**	**1**	**-70.6%**
Slight	33	0	66	13.2	4	2	5	-69.7%
TOTAL	**39**	**0**	**83**	16.6	**5**	**4**	**6**	**-69.9%**

A59	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	0	0	1	0.2	0	0	0	-100.0%
Serious	13	0	1	0.2	0	1	0	-100.0%
KSI	**13**	**0**	**2**	0.4	**0**	**1**	**0**	**-100.0%**
Slight	16	0	9	1.8	3	0	1	66.7%
TOTAL	**29**	**0**	**11**	2.2	**3**	**1**	**1**	**36.4%**

A583	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	1	0	1	0.2	0	1	0	-100.0%
Serious	5	0	6	1.2	2	1	2	66.7%
KSI	**6**	**0**	**7**	1.4	**2**	**2**	**2**	**42.9%**
Slight	35	0	28	5.6	5	2	1	-10.7%
TOTAL	**41**	**0**	**35**	7	**7**	**4**	**3**	**0.0%**

A682	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	3	0	1	0.2	0	0	0	-100.0%
Serious	8	1	11	2.2	1	2	0	-54.5%
KSI	**11**	**1**	**12**	2.4	**1**	**2**	**0**	**-58.3%**
Slight	17	0	16	3.2	4	1	0	25.0%
TOTAL	**28**	**1**	**28**	5.6	**5**	**3**	**0**	**-10.7%**

Casualties

All Eight	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	11	0	11	2.2	0	2	1	-100.0%
Serious	54	2	77	15.4	6	8	3	-61.0%
KSI	**65**	**2**	**88**	17.6	**6**	**10**	**4**	**-65.9%**
Slight	325	3	338	67.6	53	20	18	-21.6%
TOTAL	**390**	**5**	**426**	**85.2**	**59**	**30**	**22**	**-30.8%**

A6	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	0	0	1	0.2	0	0	0	-100.0%
Serious	3	0	5	1	1	0	0	0.0%
KSI	**3**	**0**	**6**	**1.2**	**1**	**0**	**0**	**-16.7%**
Slight	40	2	45	9	5	6	3	-44.4%
TOTAL	**43**	**2**	**51**	**10.2**	**6**	**6**	**3**	**-41.2%**

A675	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	2	0	1	0.2	0	0	0	-100.0%
Serious	13	0	15	3	1	0	1	-66.7%
KSI	**15**	**0**	**16**	**3.2**	**1**	**0**	**1**	**-68.8%**
Slight	45	0	33	6.6	7	4	0	6.1%
TOTAL	**60**	**0**	**49**	**9.8**	**8**	**4**	**1**	**-18.4%**

A565	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	2	0	1	0.2	0	0	0	-100.0%
Serious	12	1	11	2.2	0	0	0	-100.0%
KSI	**14**	**1**	**12**	**2.4**	**0**	**0**	**0**	**-100.0%**
Slight	47	1	59	11.8	12	0	2	1.7%
TOTAL	**61**	**2**	**71**	**14.2**	**12**	**0**	**2**	**-15.5%**

A588	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	0	0	1	0.2	0	0	0	-100.0%
Serious	3	0	2	0.4	0	0	0	-100.0%
KSI	**3**	**0**	**3**	**0.6**	**0**	**0**	**0**	**-100.0%**
Slight	8	0	11	2.2	1	0	0	-54.5%
TOTAL	**11**	**0**	**14**	**2.8**	**1**	**0**	**0**	**-64.3%**

B6232	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	2	0	3	0.6	0	1	1	-100.0%
Serious	5	0	21	4.2	1	4	0	-76.2%
KSI	**7**	**0**	**24**	**4.8**	**1**	**5**	**1**	**-79.2%**
Slight	65	0	111	22.2	8	3	11	-64.0%
TOTAL	**72**	**0**	**135**	**27**	**9**	**8**	**12**	**-66.7%**

A59	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	0	0	2	0.4	0	0	0	-100.0%
Serious	3	0	2	0.4	0	1	0	-100.0%
KSI	**3**	**0**	**4**	**0.8**	**0**	**1**	**0**	**-100.0%**
Slight	35	0	15	3	5	2	1	66.7%
TOTAL	**38**	**0**	**19**	**3.8**	**5**	**3**	**1**	**31.6%**

A583	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	1	0	1	0.2	0	1	0	-100.0%
Serious	5	0	7	1.4	2	1	2	42.9%
KSI	**6**	**0**	**8**	**1.6**	**2**	**2**	**2**	**25.0%**
Slight	54	0	40	8	10	4	1	25.0%
TOTAL	**60**	**0**	**48**	**9.6**	**12**	**6**	**3**	**25.0%**

A682	PreBLA	PartYear	BLA5	BLA	Year1	Year2	Year3	Year 1 vs BLA
Fatal	4	0	1	0.2	0	0	0	-100.0%
Serious	10	1	14	2.8	1	2	0	-64.3%
KSI	**14**	**1**	**15**	**3**	**1**	**2**	**0**	**-66.7%**
Slight	31	0	24	4.8	5	1	0	4.2%
TOTAL	**45**	**1**	**39**	**7.8**	**6**	**3**	**0**	**-23.1%**

Value of Prevention

All Eight	BLA-Year1	BLA-Year2	Saving
Fatal	2	0	£ 4,580,690.10
Serious	6.2	7.2	£ 3,804,441.12
KSI			£ 8,385,131.22
Slight	9.4	30.4	£ 1,172,406.98
TOTAL			£ 9,557,538.21

A6	BLA-Year1	BLA-Year2	Saving
Fatal	0.2	0.2	£ 883,684.82
Serious	-0.2	0.8	£ 151,308.33
KSI			£ 1,034,993.15
Slight	2.6	3.6	£ 157,756.21
TOTAL			£ 1,192,749.36

A675	BLA-Year1	BLA-Year2	Saving
Fatal	0.2	0.2	£ 924,251.32
Serious	1.6	2.6	£ 1,198,684.20
KSI			£ 2,122,935.52
Slight	0.6	1.6	£ 68,473.36
TOTAL			£ 2,191,408.88

A565	BLA-Year1	BLA-Year2	Saving
Fatal	0.2	0.2	£ 924,251.32
Serious	2	2	£ 1,141,604.00
KSI			£ 2,065,855.32
Slight	-2.4	3.6	£ 37,349.11
TOTAL			£ 2,103,204.43

A588	BLA-Year1	BLA-Year2	Saving
Fatal	0.2	0.2	£ 924,251.32
Serious	0.4	0.4	£ 228,320.80
KSI			£ 1,152,572.12
Slight	0.8	1.8	£ 80,923.07
TOTAL			£ 1,233,495.19

B6232	BLA-Year1	BLA-Year2	Saving
Fatal	0.6	-0.4	£ 462,125.66
Serious	1.8	1.8	£ 1,027,443.60
KSI			£ 1,489,569.26
Slight	9.2	11.2	£ 634,934.84
TOTAL			£ 2,124,504.10

A59	BLA-Year1	BLA-Year2	Saving
Fatal	0.2	0.2	£ 924,251.32
Serious	0.2	-0.8	-£ 171,240.60
KSI			£ 753,010.72
Slight	-1.2	1.8	£ 18,674.55
TOTAL			£ 771,685.28

A583	BLA-Year1	BLA-Year2	Saving
Fatal	0.2	-0.8	-£ 1,386,376.98
Serious	-0.8	0.2	-£ 171,240.60
KSI			-£ 1,557,617.58
Slight	0.6	3.6	£ 130,721.88
TOTAL			-£ 1,426,895.70

A682	BLA-Year1	BLA-Year2	Saving
Fatal	0.2	0.2	£ 924,251.32
Serious	1.2	0.2	£ 399,561.40
KSI			£ 1,323,812.72
Slight	-0.8	2.2	£ 43,573.96
TOTAL			£ 1,367,386.68

Acknowledgements

James Boston of Lancashire Police (Crime data)

Lancashire County Council (Speed count data)

Nathan Birdsall of the University of Central Lancashire (Statistics)

Rhiannon Leeds of the Lancashire Road Safety Partnership (Media and Engagement)

Roger Whittle & Richard Hall of *Jenoptik* (Speed count data and project management information)

Disclaimer

This report has been prepared for the Lancashire Road Safety Partnership and Lancashire Police by Andrew Wright. Any errors or omissions are the authors' sole responsibility. The report content reflects the views of the author and not necessarily those of the LRSP nor Lancashire Police.

The author of this report intends to stay in post for some time to come and it is hoped that this will offer both a high level of continuity of study and consistency in reporting.