

‘INTELLIGENT ROAD SPACE MANAGEMENT FOR FREIGHT’ (IROMF)

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Introduction

Understanding how a systems management approach to Heavy Goods Vehicles (HGV's) travelling toward Dover and Eurotunnel can reduce the need for on highway queueing and increase the resilience of operations. Developing into a platform for future semi and autonomous HGV management.

Method

Up to 5,000 HGV's travel through the Port of Dover and Eurotunnel to France each day. This represents 80 per cent of all roll on roll off HGV's traveling between Britain and Europe.(1)

In times of disruption this volume, accentuated by a peaked pattern of travel, results in HGV's being parked on public roads in Kent, Operations TAP and BROCK.(2)

The University wanted to understand the potential for a systems approach to proactive management of HGV's throughout their journey. In effect to 'hold' trucks at many locations and release them as capacity recovers. A Virtual Queue (VQ).

We analysed data from the Highways England Webtris system of traffic on the A2 , 1 mile from the Port of Dover.(3) see opposite.

We combined this with economic data to simulate the origin of and travel time to the Port. This would indicate our ability to influence or manage HGV's flows.

Results

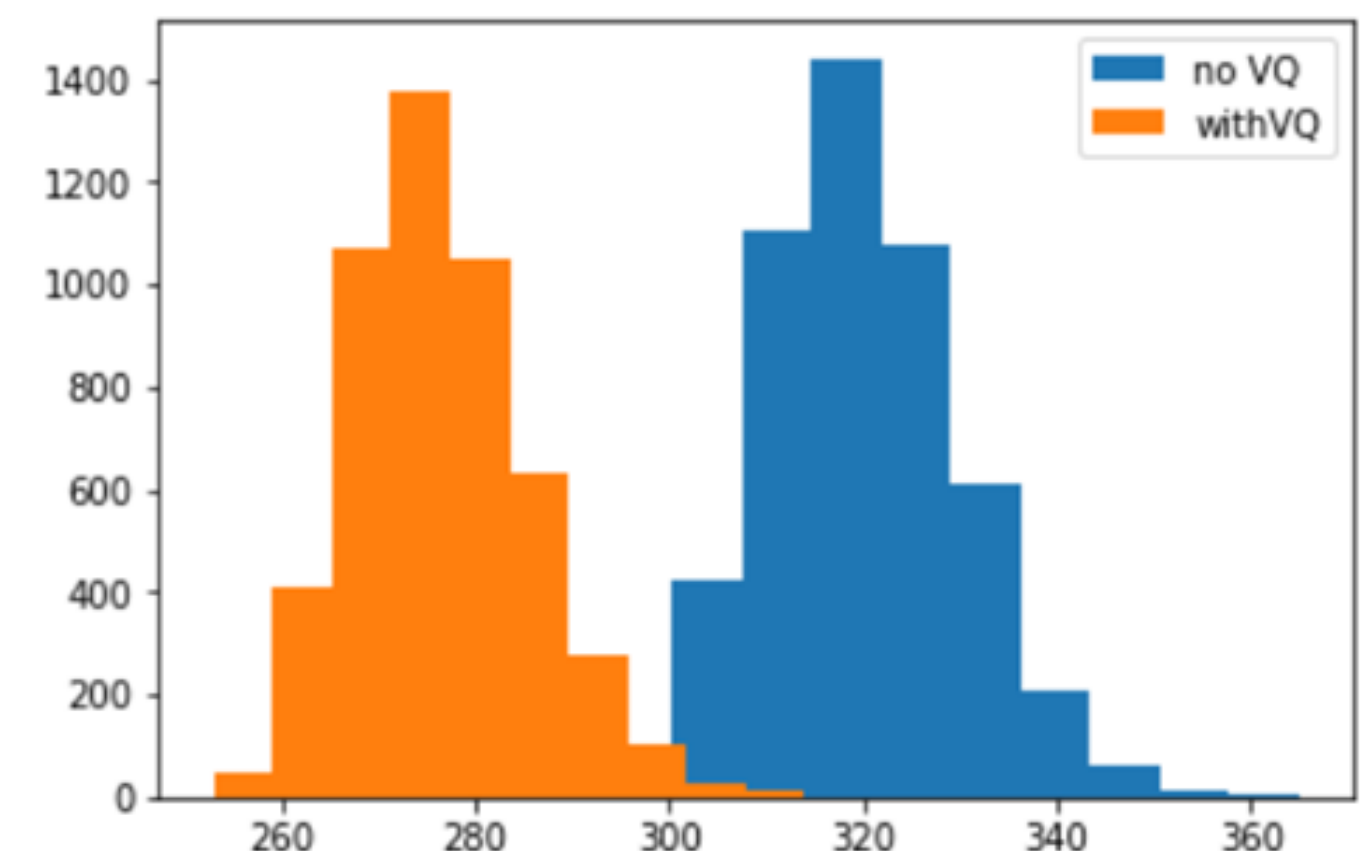
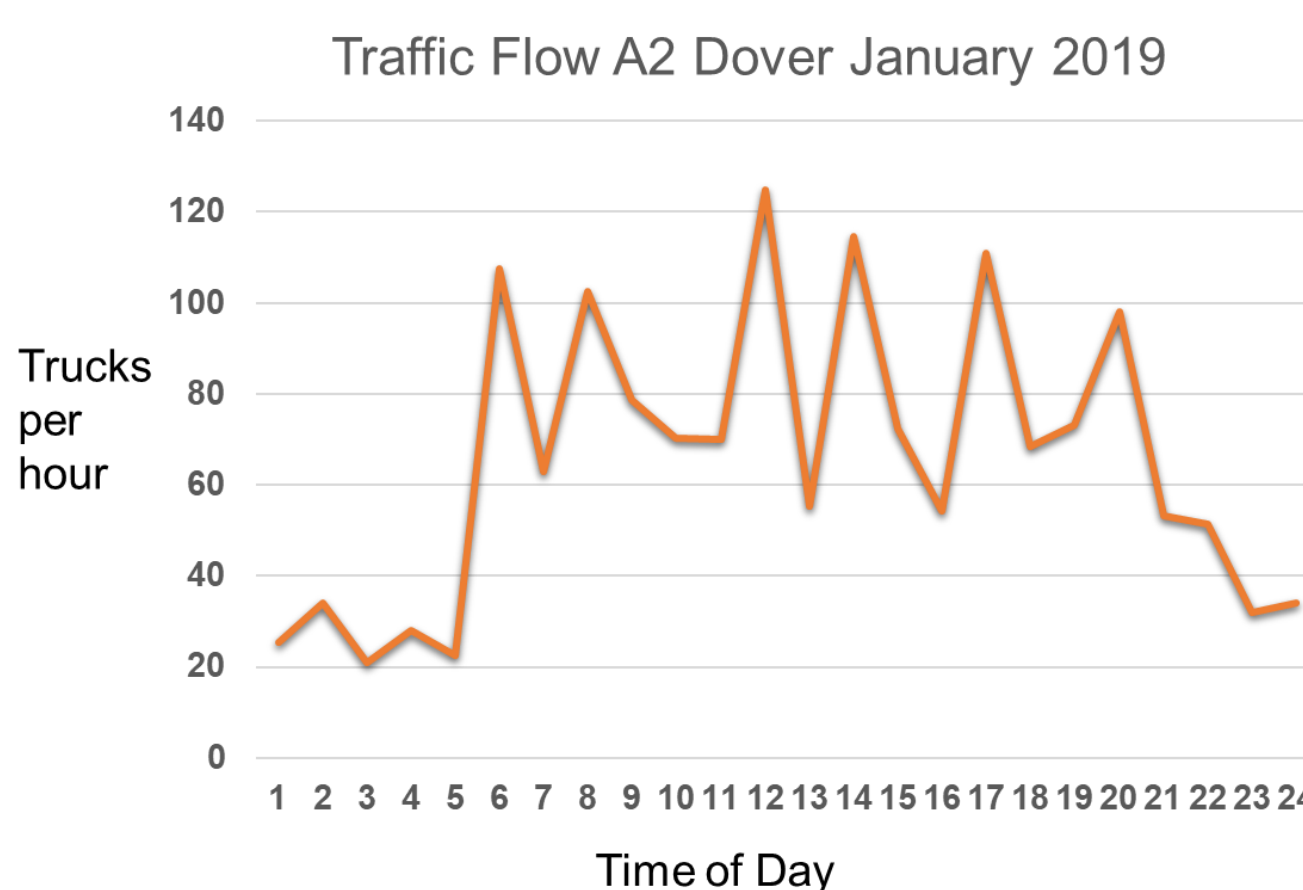
Our simulation estimated the current parking spaces for HGV's at the Port of Dover and our opportunity to manage their arrival at the Port.

We found that combining data of origin point and volumes, through proactive management we would be able to reduce the HGV's parked by 14 per cent. (graph on left)

This considered that the opportunity to manage a truck with origin London or Kent is less than one for Peterborough or Swindon.

Further the impact of delay can be reduced and resilience improved by providing real time information of traffic volumes to drivers, haulage companies, shippers, port and tunnel operators. In effect avoiding the current peaking patterns we found that arise as a result of the 'turn up and go' model.

Further we can use the knowledge, information and platforms of VQ to develop semi-autonomous and autonomous management systems that will be needed to optimise road space use.



Conclusions

Our challenge is to establish a method to enable us to proactively manage HGV's.

We think a commercial platform is the first stage. Linking up with SNAPaccount, a current platform provider to 40,000 trucks, we can access over 7,500 parking spaces to 'hold' trucks. The initial commercial platform, which is cashless, is managed through Automatic Number Plate Recognition (ANPR) integrating a range of services. VQ would be included as part of this package. VQ will save drivers time and stress.

Subsequently we will investigate how to integrate VQ into Trusted Trader schemes as will be required through Border Force management systems. This is a post transition scenario.

Better information and proactive management will increase resilience and reduce the impact of Kent's public road space reducing the need for on highway parking of HGV's. Operation TAP has been is used up to 200 times per year. (4)

When the impact of Operation Stack was last quantified the immediate impact on the local economy of Kent and Medway been estimated at £1.4 million per day. If this is extended to include the impact outside Kent and Medway this increases to £2.0 million per day (5)

Therefore the cost benefit of this program has the opportunity to be significant.

References

- 1 House of Commons, Transport Committee, Operation Stack, First Report of Session 2016–17 – Dover and the Channel Tunnel
- 2 Photograph of Operation TAP in 2019, Dover, March 2019, Storm Gareth – Sunday Times
- 3 Highways England Webtris Data – Roadside cameras
- 4 Source: Website of Charlie Elphick MP for Dover, 2017
- 5 Source: Kent County Council (OPP 021), Kent County Council (OPP 055)

