

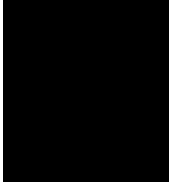
M20 DIVERSION ROUTE

Technical Note

MAY 2021



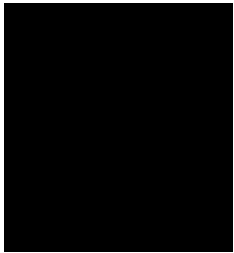
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Webtris Data Analysis – Electronic Version Only

1 Introduction

1.1 Background

Overview

At the request of Folkestone and Hythe District Council, Arcadis Consulting (UK) Ltd (Arcadis) is providing support to the District Council for their Core Strategy Review. The support being provided as described in this note relates to the Statement of Common Ground between Folkestone and Hythe District Council and Highways England and, specifically, the submission made to the examination by Highways England in a letter dated 3rd July 2020.

Arcadis held a meeting with Folkestone and Hythe District Council and Highways England on Monday the 14th of September to discuss the scope of work required to work towards a Statement of Common Ground between Folkestone and Hythe District Council and Highways England.

Several technical meetings took place since September 2020 to discuss progress towards the agreement of the scope, data sources and assumptions. The requested additional outputs were confirmed by Highways England in an e-mail sent to Folkestone and Hythe on the 12th of March 2021.

M20 Junction 11 Closure

On the M20 eastbound toward Eurotunnel and Dover, Junction 11 off-ramp sometimes has to be closed for safety reasons due to blocking back queues from Eurotunnel (and occasionally Dover). Highways England, responsible for the traffic management of incidents on the M20 requested this note to assess whether there is sufficient capacity on the wider network during such an event.

1.2 Purpose

The purpose of the study is to present:

- Available information on historical incidents on the M20; and
- The assessment of the potential impact of incidents.

1.3 Content

This report is composed of:

- Part 2 describing the M20 incidents;
- Part 3 presenting the known information about existing A20/M20 traffic management measures;
- Part 4 assessing spare capacity on alternative routings; and
- Part 5 presenting conclusions and recommendations.

2 M20 Incident Description

2.1 Eurotunnel Incident Description

The Eurotunnel facility has been developed at a location constrained physically, and the processing gates have a limited ability to:

- Accommodate queuing traffic beyond normal operations; and
- Generate spare capacity during processing time.

As a consequence, operational incidents at the Eurotunnel terminal can result in blocking back queues on the M20. As seen in Image 1, lorries have during these incidents used the hard shoulder as a temporary parking facility. Such an incident is characterised by:

- Queuing in the hard shoulder where vehicles travel at very slow speed; and
- Free-flowing traffic conditions eastbound on the M20 mainline.

Image 1 November 2020 Eurotunnel Traffic Queues



2.2 Incident Statistics

Information is available on Highways England Webtris website regarding travelling speeds on the M20, immediately downstream of M20 Junction 11. Image 2 shows the location of count 30360416 East.

Image 2 Webtris Count Location ID 30360416 East of M20 J11

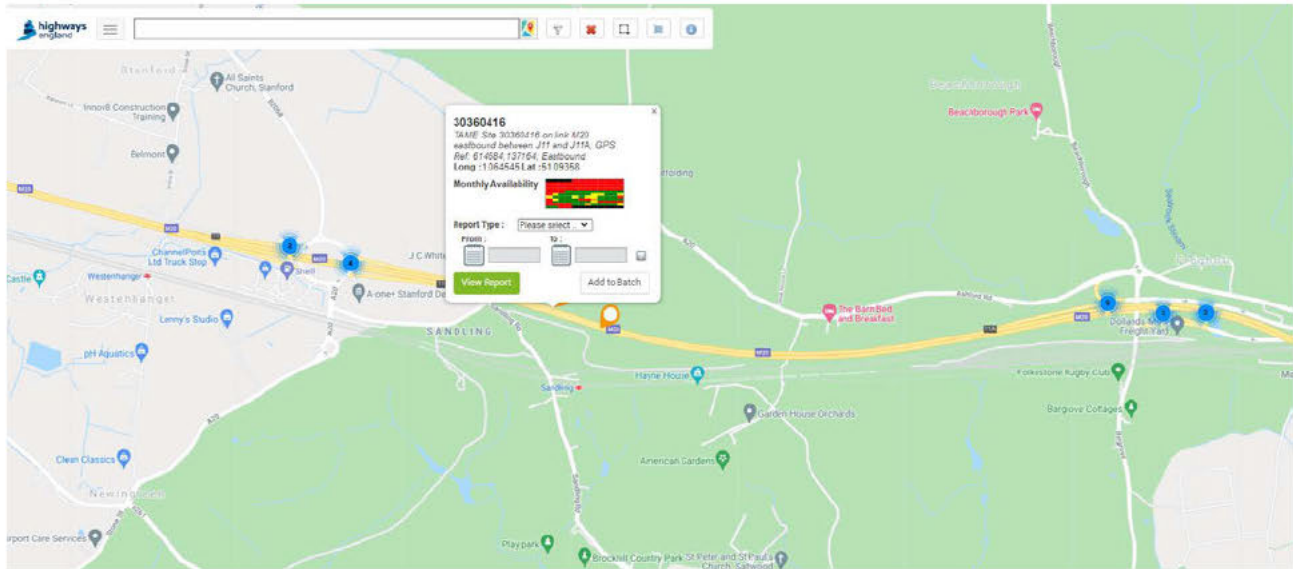


Table 1 presents the number of incidents on the network between 2017 and 2019. Year 2020 was not considered representative of a typical operation due to the specific circumstances in late 2020 associated with the new Brexit operations. An incident was described as “a period of time with more than 6 vehicles travelling below 35mph”.

Moreover, the frequency of incidents is indicated per year as the data was missing for some months.

Table 1 Historical Incident Frequency

Year	Average Duration (Hrs)	Standard Deviation (Hrs)	Minimum (Hrs)	Maximum (Hrs)	Number of Incidents Over 2 Hours per Year	Number of Days with Incidents per Year
2019	1.8	1.92	0.25	6.00	6	18
2018	1.8	2.63	0.25	9.75	6	27
2017	0.6	0.85	0.25	3.00	2	17

Table 1 shows that between 2017 and 2019:

- The average duration of an incident was relatively short, typically below two hours. It would be assumed that during very short incidents, the impact on diversion routes might be limited;
- The number of incidents above two hours varied between years, but it occurred on average once every two to three months; and
- Incidents are not linked to general traffic volumes and have been found to occur at all time periods. The likelihood of such incidents to occur during the afternoon peak for developments in the Local Plan, such as when residents would come back to Otterpool Park, is less than 50%. In

the 2017 to 2019 periods, lengthy incidents impacting the peak hour occurred approximately two to three times per year only.

2.3 Source of Change in Incidents

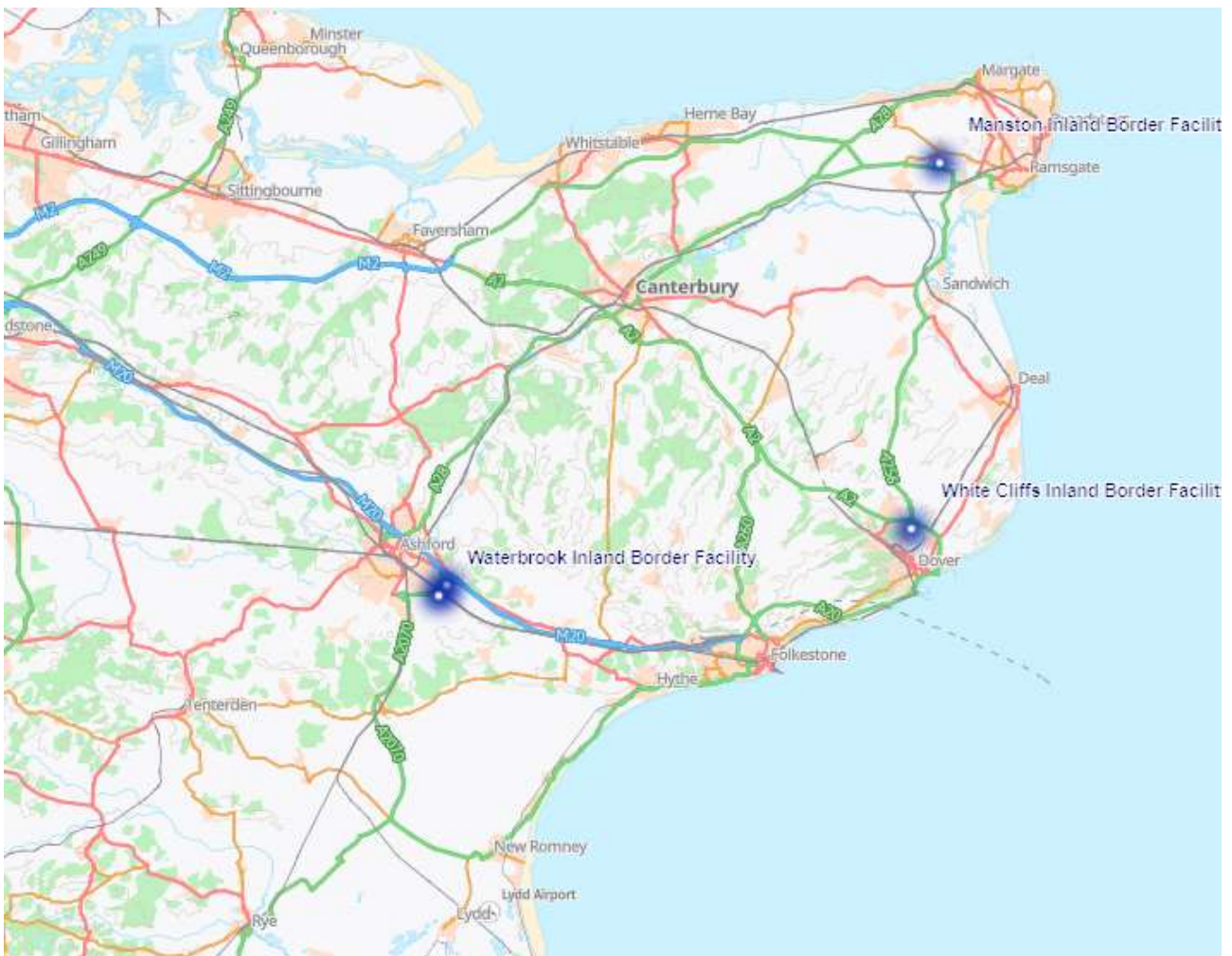
It is our understanding that blocking back incidents are caused by:

- Extreme weather-related to the ferry crossing; and
- Technical incidents at the Eurotunnel terminal.

The cause of incidents at the Eurotunnel and Ferry terminal has not changed, however the custom checks that are now relocated to lorry parks which have been recently constructed. The custom facilities are designated Inland Border Facilities <https://inlandborderfacilities.uk>. Image 3 presents the location at:

- Manston (near Margate);
- White Cliffs (near Dover);
- Sevington (near Ashford);
- Waterbrook (near Ashford).

Image 3 Inland Border Facilities



2.4 Incident Conclusion

In conclusion, whilst incidents at the Channel Crossing Terminal happened with some regularity, long incidents during the PM peak hour only took place every four to six months between 2017 and 2019.

Moreover, traffic management measures are changing, and the presence of lorry parks positively impact the operation of the terminals. With custom checks happening at remote locations, incidents that used to be triggered by custom systems should no longer impact the M20. When there is an incident, lorries will be able to be held back in the lorry park and not join the queue on the motorway.

3 M20 Traffic Management

3.1 Current Traffic Management Measures

Several complex traffic management measures are in place on the M20 corridor. For example, operation Fennel (<https://www.bbc.co.uk/news/uk-england-kent-55278947> and <https://www.gov.uk/guidance/kent-traffic-management-on-m20-motorway-to-dover-and-eurotunnel>) is “a series of escalating traffic systems designed to cope with up to 7,000 HGVs in Kent. The overall plan includes:

- TAP 20 which can hold 500 HGVs on the A20
- Operation Brock under which 2,000 trucks can queue on the M20
- Brock Manston which would see 4,000 lorries park in Thanet
- TAP 256 which can hold up to 450 HGVs on the A256
- The Sevington inland border facility near Ashford which holds 1,200 lorries
- Further car parks at Ebbsfleet and Waterbrook
- Operation Stack, which would bring M20 closures, can be used but would be implemented as a last resort” (<https://www.eurotunnel.com/uk/travelling-with-us/latest/operation-stack/>).

From the description of the various traffic management schemes, it is evident that lorry queueing on the M20 is a monitored and controlled event. Some measures even include the relocation of traffic queues upstream, between junction 7 and 9. Such an event could prevent blocking back queues into M20 Junction 11.

Traffic management measures on the M20, however, have been subject to numerous adjustments due to the new Brexit situation. The long-term traffic management measures on the M20 corridor are not known at this stage but it would be assumed that during the Local Plan period, the range of measures will provide the opportunity to alleviate the specific issue associated with Junction 11.

3.2 Future Lorry Parks

Based on the official documentation in the link below:

- Lorry parks are expected to be a long-term component of the operation of the Channel Crossing;
- A scenario with multiple lorry parks is more likely than one large facility.

<https://democracy.kent.gov.uk/mgAi.aspx?ID=28718>

Based on the above, it is clear that lorry parks have now re-located customs checks for lorries away from the Eurotunnel and ferry terminals. Such infrastructure provision would all be located less than one hour drive from the Terminals, providing a new opportunity to:

- Inform drivers of significant queuing on the M20; and
- Potentially regulate customs checks in line with the Terminals capability, thus preventing the unnecessary clearance of excess vehicles.

Moreover, queuing on the M20 is not a comfortable nor a safe option for lorry drivers. It is assumed that fully equipped car parks will be more attractive than hard-shoulder queuing.

3.3 Traffic Management Conclusion

Overall, future traffic management measures on the M20 are likely to be subject to change. The permanent introduction of lorry parks, however;

- Removes one source of incidents for queueing at the terminal (custom checks); and
- Provides a safe and convenient location for lorry drivers to wait for long incidents to clear.

The occurrence of queues blocking back into M20 Junction 11 is expected to decrease in the future. Considering 2 hours or longer incidents during the PM peak hour are infrequent (every 4 to 6 months), such a decrease is difficult to quantify.

4 Local Roads Re-routing

4.1 Routes Identification

Whilst the issues experienced at the M20 Junction 11 are anticipated to diminish in future, we have analysed the potential impact on alternative routes should this occur.

Image 4 shows the M20 Junction 11 ramp closure location in red as well as suitable diversion routes. Other road corridors are available within the local road network but are not included because:

- These corridors are not suitable for the diversion of large volumes of traffic. They tend to have local carriageway narrow sections and/or poor visibility junctions; and
- We have not been able to identify any corridor improvement projects currently planned.

Image 4 M20 Diversion Route Options



4.2 Kent Traffic Management Measures

The two corridors are not official diversion routes in case of M20 incidents. They provide the only suitable options.

The western network pinch point identified in Image 4 near the village of Sellindge is a traffic signal junction providing a crossing point to the M20. This junction does have a traffic signal setting to help clearing excessive traffic queues eastbound.

4.3 Capacity Analysis

Table 2 below shows the traffic analysis in 2019 and 2037. Spare capacity has been extracted from junction models developed as part of Folkestone and Hythe Local Plan Core Strategy Review work as well as Otterpool Park Transport Assessment.

Table 2 Traffic Routing Flows and Route Capacity

Approach	Flows					
	Base		2037 DM		2037 DS	
	AM	PM	AM	PM	AM	PM
J11 Eastbound Off-slip (rerouted traffic)	373	636	609	1003	845	1441
A20 Barrow Hill Pinch SB	272	288	494	538	617	563
M20 J13 Eastbound Offslip	872	600	549	871	587	881
Junction Spare Capacity						
A20 Barrow Hill Pinch SB	49%	50%	0%	0%	0%	0%
M20 J13 Eastbound Offslip	35%	43%	0%	7%	2%	10%
Reroutable Traffic						
A20 Barrow Hill Pinch SB	418	462	0	0	0	0
M20 J13 Eastbound Offslip	305	258	0	95	25	140

Table 2 shows:

- In 2019 base, the re-routing corridors appear to have sufficient capacity to accommodate traffic re-routing. The proportion of traffic splitting between the two routes, however, would need to match precisely the available spare capacity, which is unlikely to happen in practice; and
- By 2037, there is little spare capacity available on the network to accommodate diverting traffic.

4.4 Diversion Conclusion

In conclusion, the number of diversion route is currently limited due to the current standard of the local road network. No known corridor improvement projects have been identified, and therefore such projects have not been taken into account.

For the two suitable diversion routes, spare capacity appears to exist in the current situation to accommodate traffic incidents. By 2037, there is no longer any significant space capacity on the two identified diversion routes.

5 Conclusions and Recommendations

5.1 Conclusions

In conclusion, whilst incidents at the Channel Crossing Terminal happened with some regularity, long incidents during the PM peak hour only took place every four to six months between 2017 and 2019.

Such incidents can be considered exceptional.

Nevertheless, traffic management measures are changing, and the presence of lorry parks is transforming the operation of the terminals. With custom checks happening at remote locations, incidents that used to be triggered by custom checks system issues should no longer impact the M20, lowering the risk of major incidents.

Furthermore, traffic management measures on the M20 are likely to change. The permanent introduction of lorry parks should improve the situation by;

- Removing one source of incidents for queueing at the terminal (custom checks); and
- Providing a safe and convenient location for lorry drivers to wait for long incidents to clear.

Unfortunately, the number of diversion routes is currently limited due to the current standard of the local road network. Available diversion routes, currently have spare and can accommodate traffic incidents on the M20. However, by 2037, there will be no longer any significant space capacity on the two identified diversion routes.

5.2 Recommendations

Traffic management measures on the M20 are in the process of adapting to the new custom reality. It is too early to identify the necessary remedial actions required to mitigate issues with the M20 corridor but it would be assumed that during the Local Plan period, the range of measures available will provide the opportunity to alleviate the specific issue associated with Junction 11. The new lorry park system may resolve the situation and the current network spare capacity makes it possible to monitor and manage the situation.

APPENDIX A

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