Information Note

Project Title:	FETA Cable Replacement Study
MVA Project Number:	C34918/22
Subject:	Forth Bridge - HGV Ban
Note Number:	1 Version: 4
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1 Introduction

1.1 MVA Consultancy undertook a test of the Forth Road Bridge (FRB) with an HGV ban in place using the TMfS:05 transport model, as part of the FETA Forth Road Bridge Cable Replacement Study.

1.2 The test used the standard TMfS 2012 Reference Case networks, which includes the new Upper Forth Crossing at Kincardine and current tolls on the FRB.

2 Results

2.1 The only response to the HGV ban which is available to goods vehicles in the TMfS:05 model is to reroute to avoid the FRB.

2.2 Comparison of the 2012 Reference Case and the Banned HGV test shows that the majority (around 75%) of the rerouted cross-Forth HGV's switch to the existing Kincardine Bridge or the new Upper Forth Crossing, with a small number of longer distance cross-Forth HGV trips switching to the A9 Stirling/ Dunblane/ Perth route. The patterns of HGV rerouting are broadly similar in both directions across the Forth estuary and are very similar in all three modelled time periods (AM Peak, Inter Peak and PM Peak).

2.3 As a result of this HGV rerouting, a number of roads experience significant changes in HGV flows. Increases occur in particular on the M9 and the A801 in West Lothian, the A91 through Dollar and the A985 through Torryburn. Decreases can be seen on the M90 North of the Forth Road Bridge as far as Perth and on most roads around Cowdenbeath, Kirkcaldy and Glenrothes (A92 and A921).

2.4 There are no significant route changes outwith the Forth Estuary area and there are no significant impacts on any other modes. In particular, the model predicts little change in the number of cars crossing the Forth Road Bridge with the HGV ban in place.

2.5 Figure 1 below shows increases and decreases in HGV flow in the Forth Estuary area in the AM Peak as a result of the HGV ban on the Forth Bridge. The red bandwidths show increases, whilst the blue bandwidths show where decreases occur. Inter Peak and PM Peak time periods have a very similar pattern.

2.6 Table 1 shows the actual flows over the Forth Crossings in the Reference Case and the Test along with the absolute and percentage differences.

2.7 As noted in the introduction, the networks used here assumed the current tolls remain on the Forth Road Bridge. If these tolls were removed in both the Reference and HGV_Ban scenarios, it is likely that the number of HGVS on the FRB would increase in the Reference Case, leading to increased diversionary effects in the HGV_Ban scenario.

2.8 Furthermore, HGV assignment within TMfS:05 uses a fixed HGV demand matrix, so that HGV demand in the model does not consider mode, destination choice or trip frequency. It is possible that freight operators may make alternative arrangements under these circumstances, for example to make increased use of alternative freight modes (eg rail and sea) and/or amend their road-based distribution networks.

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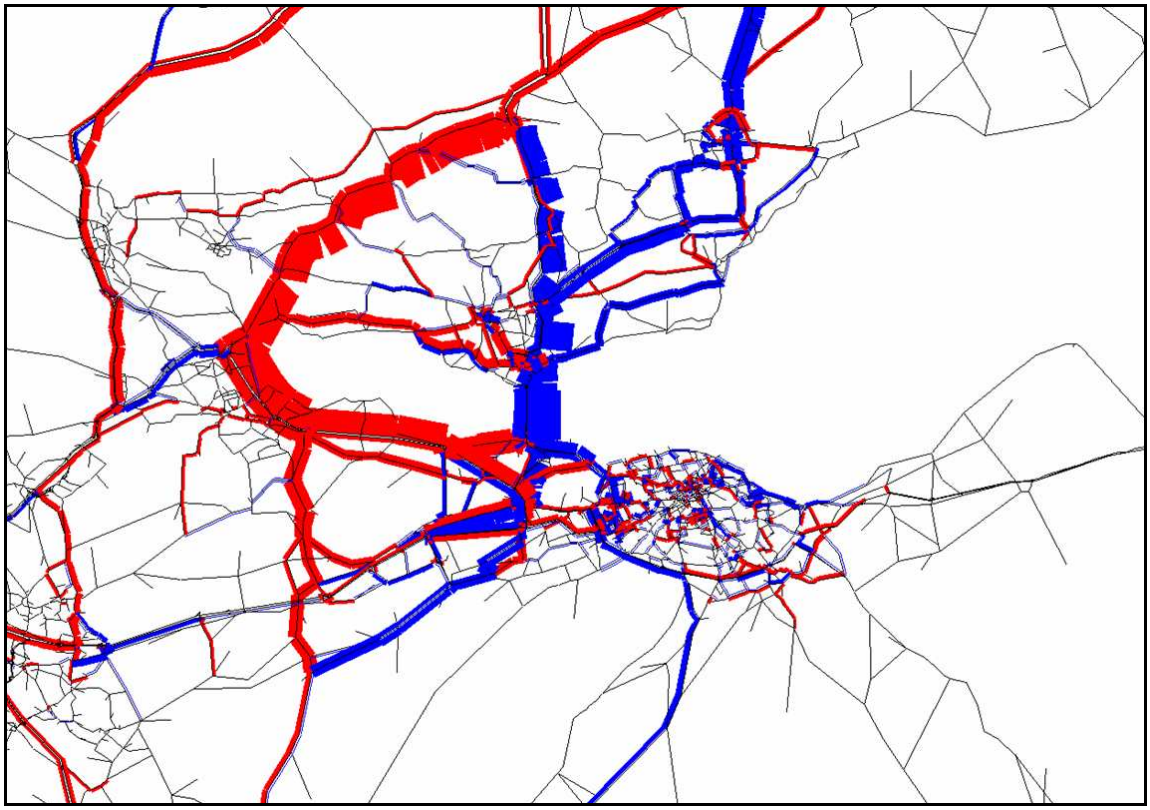

Figure 1 – AM Peak Changes in HGV Flow

		AM				Inter Peak				PM Peak			
Location	**Direction**	**Ref**	**Test**	**Diff**	**% Diff**	**Ref**	**Test**	**Diff**	**% Diff**	**Ref**	**Test**	**Diff**	**% Diff**
Forth Road Bridge	N	197	0	-197	-100%	225	0	-225	-100%	208	0	-208	-100%
Forth Road Bridge	S	248	0	-248	-100%	196	0	-196	-100%	263	0	-263	-100%
A9 Dunblane	N	195	214	19	10%	105	136	31	30%	91	104	13	14%
A9 Dunblane	S	108	133	25	23%	115	143	28	24%	73	113	39	54%
A91 Stirling Forth Crossing	S	195	195	0	0%	117	117	0	0%	79	79	0	0%
A91 Stirling Forth Crossing	N	72	73	1	2%	82	82	0	0%	82	82	0	0%
A876 Kincardine Bridge	W	69	170	101	146%	56	156	100	177%	41	84	43	105%
A876 Kincardine Bridge	E	72	164	92	128%	54	164	110	204%	40	129	89	219%
Kincardine 2nd Forth Crossing	W	46	170	124	267%	60	128	67	112%	27	207	179	659%
Kincardine 2nd Forth Crossing	E	88	173	85	97%	63	146	83	132%	31	137	106	344%

Table 1 – HGV Flows (in vehicles)