

M54 to M6 Link Road
TR010054
8.17 HGV Flows on Existing A460

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**M54 to M6 Link Road
Development Consent Order 2020**

8.17 HGV Flows on Existing A460

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1 Introduction

1.1 Terms of Reference

- 1.1.1 This Technical Note ('TN') has been prepared in respect of an application ('the Application') for a Development Consent Order ('DCO') under section 37 of the Planning Act 2008 for the proposed M54 to M6 Link Road ('the Scheme') made by Highways England Company Limited ('Highways England' or 'HE') to the Secretary of State for Transport.
- 1.1.2 The Application for the Scheme was submitted on 30 January 2020 and accepted for Examination on 28 February 2020. Relevant representations ('RRs') were received from Interested Parties in Spring 2020 and published on the Planning Inspectorate website on 11 June 2020.
- 1.1.3 A number of RRs related to the number of HGVs expected to use the A460 post-opening of the Scheme, including RR-011 from M6 Diesel Ltd. This TN provides further information on the forecasted HGV flows on the existing A460 and sensitivity analysis undertaken by HE to consider counted HGV turning flows into and out of the M6 Diesel site.
- 1.1.4 Concerns over the number of vehicles using the existing A460 to access M6 Diesel post construction of the Scheme have also been raised by Rt Hon Gavin Williamson CBE MP, Staffordshire County Council and Cllr Robert Cope in their Written Representations submitted to the Examining Authority (ExA) on 3 November 2020 [REP1-070, REP1-005 and REP1-077 respectively]. The issue has also been raised by South Staffordshire Council in their Local Impact Report submitted to the ExA on 3 November 2020 [REP1-097].

2 Traffic Data

2.1 Initial count data used to develop traffic model

- 2.1.1 The traffic data used to develop the traffic model was from two main sources. Firstly, use was made of existing count observations from various traffic counter sites over the period from April 2014 to November 2016 (refer to the Transport Assessment chapter 3.4 [TR010054/APP/7.4] for further details). Secondly, some new traffic counts were commissioned specifically to support the Scheme and the building of its traffic model. The traffic survey and data collection tasks were commissioned by Highways England and carried out in June 2017.
- 2.1.2 A Base Year ('BY') traffic model was built to represent the traffic conditions in 2015, the HGV flows on the A460 are indicated in Table 1 and Figure 1 in this TN. From this BY traffic model, future year models were constructed so that the Scheme could be tested and appraised.
- 2.1.3 To validate the BY model, the assigned hourly traffic flows and journey-time delays were compared to observed traffic data collected in 2015 and 2017. The expanded 12-hour weekday link flows extracted from the BY traffic models consistently overestimated the number of HGV trips observed on the A460 between M54 J1 and M6 J11. The link flows predicted by the model were within the DfT's Transport Appraisal Guidance (TAG) validation guidelines and it was considered that the traffic model was sufficiently accurate to use for the appraisal of the Scheme.
- 2.1.4 The HGV flow information for the 2024 'Do-Something' ('DS') forecast year model with the Scheme is summarised in Table 1 and Figure 2. With the Scheme, the section of the A460 linking M54 J1 and M6 J11 would be bypassed. As a result of the Scheme, the forecast traffic model indicates that the number of HGVs would reduce significantly compared with the observed 2015 HGV flows on the A460.

Table 1: Selected 12-hour weekday HGV Flows

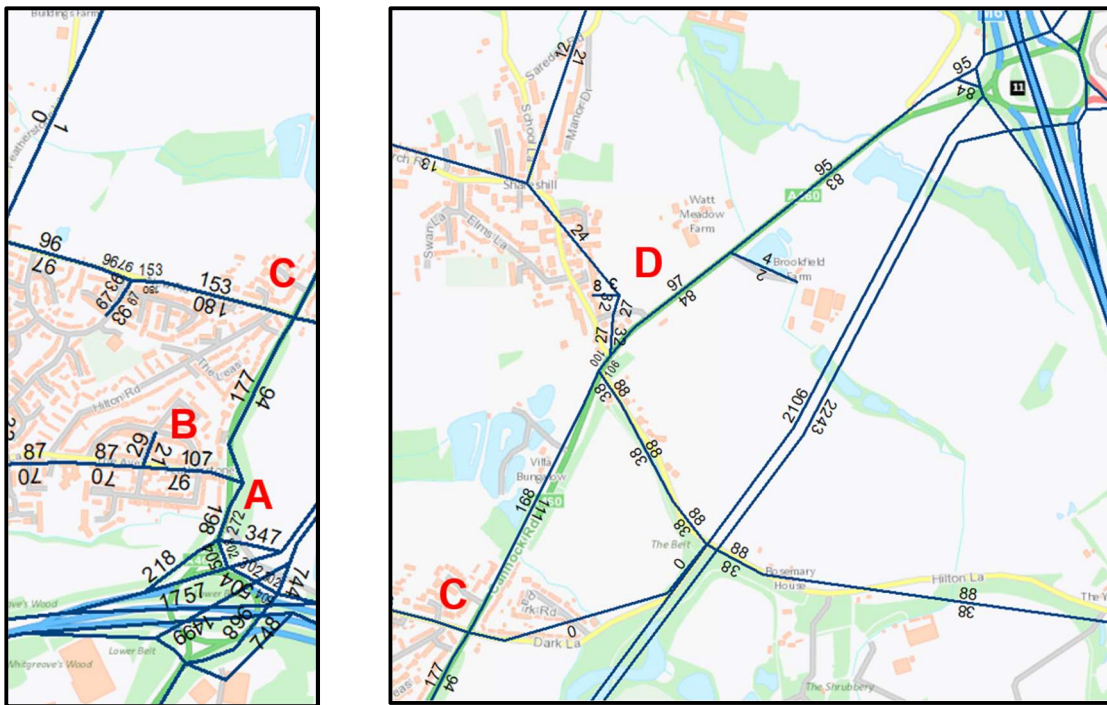
Location Description		BY Model (2015 conditions HGV flows)	2024 Forecast With-Scheme (DS)	Two-way Reduction 2024 DS – 2015 BY % reduction on existing A460	
A	A460 @M54J1 northbound	1,537	272	-2,733	85%
	A460 @M54J1 southbound	1,666	198		
C - D	A460 N of New Rd NB	1,522	168	-2,835	91%
	A460 N of New Rd SB	1,592	111		
D	A460 N of Church Rd NB	1,503	97	-2,916	94%
	A460 N of Church Rd SB	1,594	84		

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Figure 1: HGV 12-hour Flows extracted from the BY Traffic Model



Figure 2: 2024 DS 12-Hour HGV Flows in the area of the Scheme



2.1.5 'With the Scheme' (i.e. in the DS case) the forecast HGV trips between the M54 J1 and the M6 J11 would reroute along the new link road, as evidenced by the assignment route choice algorithm in the traffic model. On the length of the A460 between the Hilton Lane / Church Lane junction and the New Road / Dark Lane junction, the traffic forecasts of HGV flows show a large reduction with the Scheme. The two-way flow of HGV would reduce by 2,835 HGV over the 12-hour weekday period with the Scheme. The Scheme in 2024 would remove 91% of the 3,114 HGV on the A460 in the 2015 BY case.

2.2 M6 Diesel turning count data

2.2.1 M6 Diesel filling station has not been modelled as a specific local model zone for two reasons:

1. It is standard traffic modelling practice to assume that all trips to fuel filling station businesses are 'passing trips' because it would be unusual for a fuel filling station to have a large enough business draw to 'generate' its own trips over the long-term.
2. The number of vehicles using the filling station was surveyed by Staffordshire County Council as being approximately 680 vehicles (note this includes HGVs and non-HGVs) over a 24-hour period, which, when converted to the one-hour modelled periods, is equivalent to 28 vehicles per hour. This is far too low to be considered as a zone in its own right in the Scheme's BY traffic model. The Department for Transport's latest (May 2020) transport appraisal guidance ('TAG') suggests that smallest zones in the Detailed Model Area should represent about 200 to 300 vehicles per hour. This means that the M6 Diesel site might have been allocated its own zone if it had been 10 times bigger and if it had not already been excluded by consideration 1 above.

2.2.2 Figure 3 indicates observed HGV turning movements into and out of the M6 Diesel site. These turning movements were observed in April 2019 (this data was supplied by Staffordshire County Council and Highways England has used the data as supplied).

2.2.3 From Figure 3, 134 HGV per (24-hour) weekday traveling northbound along the A460 enter the M6 Diesel site. In the southbound direction, 239 HGV per (24-hour) weekday leave the M6 Diesel site travel along the A460 towards M54 J1. In combination, the total number of HGV trips to/from M6 Diesel (on the A460 to the South of M6 Diesel) is 373 HGV per day (rounded to 375 for reporting purposes as there is a very minor discrepancy between the total number of HGVs entering and exiting the M6 Diesel site). This equates to 34% of all HGV trips (accessing M6 Diesel) on the section of the A460 to the south of M6 Diesel per day.

2.2.4 Table 2 indicates the total turning HGV flows into and out of M6 Diesel from the data in Figure 3.

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Figure 3: M6 Diesel 24 Hour Turning Movements

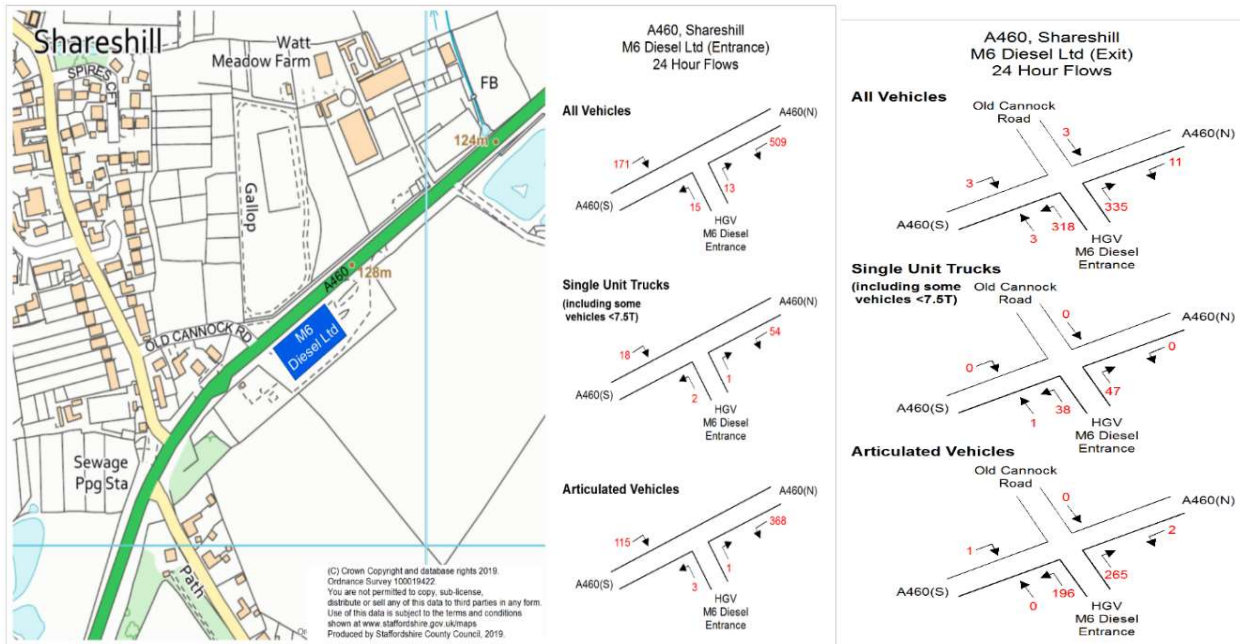


Table 2: M6 Diesel 24 Hour Turning Movements

Turning Movement	Single unit trucks (northern entrance)	Articulated vehicles (northern entrance)	Single unit trucks (southern entrance)	Articulated vehicles (southern entrance)	TOTAL
Total in from South	18	115	0	1	134
Total out to South	2	3	38	196	239
Total in from North	54	368	0	2	424
Total out to North	1	1	47	265	314
Total HGVs in					558
Total HGVs out					553
Total two-way HGV flows on A460 to north of M6 Diesel				738	66%
Total two-way HGV flows on A460 to south of M6 Diesel				373 (reported 375)	34%

3 HGV sensitivity testing

3.1.1 As explained in paragraph 2.2.1, the M6 Diesel site was not modelled as a specific local model zone, therefore, it is possible as a worst case (assuming none of the counted HGVs are allowed for in the traffic model, which is highly unlikely) that the 2024 forecast HGV flows on the A460 south of M6 Diesel could be under-represented by up to maximum of 375 HGV per 24-hour weekday. This upper-bound value is based upon the observations of HGV flows at the 'M6 Diesel' site that turn to and from the A460 South. From the 2024 traffic forecasting model, the HGV flow on the length of the A460 between the Church Road / Hilton Lane junction and the New Road/Dark Lane traffic signal junction would be 279 HGV over 12-hours but this value could be up to 375 higher (noting that this 24-hour weekday value was added to a 12-hour weekday flow), which sums to an upper-bound value of 654 HGV over the 12-hour average weekday period. Therefore, as indicated in Table 3, the Scheme would remove 79% of HGVs along the A460 in this worst outcome analysis.

Table 3: Selected 12-hour weekday HGV Flows

Location Description		BY Model (2015 conditions HGV flows)	2024 Forecast With-Scheme (DS)	Upper-bound HGV	Two-way Reduction 2024 DS – 2015 BY % reduction on existing A460
C - D	A460 N of New Rd NB	1,522	168	654	-2,460 79%
	A460 N of New Rd SB	1,592	111		

3.1.2 The proportion of HGV within the forecast vehicle flows on the bypassed A460 in the 'With Scheme' (DS) case is summarised in Table 4.

Table 4: Forecast HGV flows on the existing A460, With Scheme

With Scheme case	All-vehicle daily flow (2-way, 2024 forecast)	HGV (12-hr, 2-way 2024 forecast)	% HGV
A460 forecast	9,600	279	3%
A460 worst outcome analysis	10,000	654	7%

3.1.3 In this upper-bound case, the HGV content on the bypassed A460 would be 7% as indicated in Table 4. The bypassed A460 would be reclassified from a principal A-road to an un-numbered C-road (i.e. a similar road type as New Road) for which road type the HGV content might typically be expected to be 10%. Even in this upper-bound calculated case, the number of and proportion of heavy goods vehicles on the bypassed A460 would be low.

3.1.4 In either the forecast case or the worst outcome analysis, the Scheme would achieve its objectives as the volume of traffic and HGV would be significantly reduced. Highways England is therefore satisfied that it is not necessary to provide a weight restriction on the A460 and that such a weight restriction is not required as part of the Scheme.