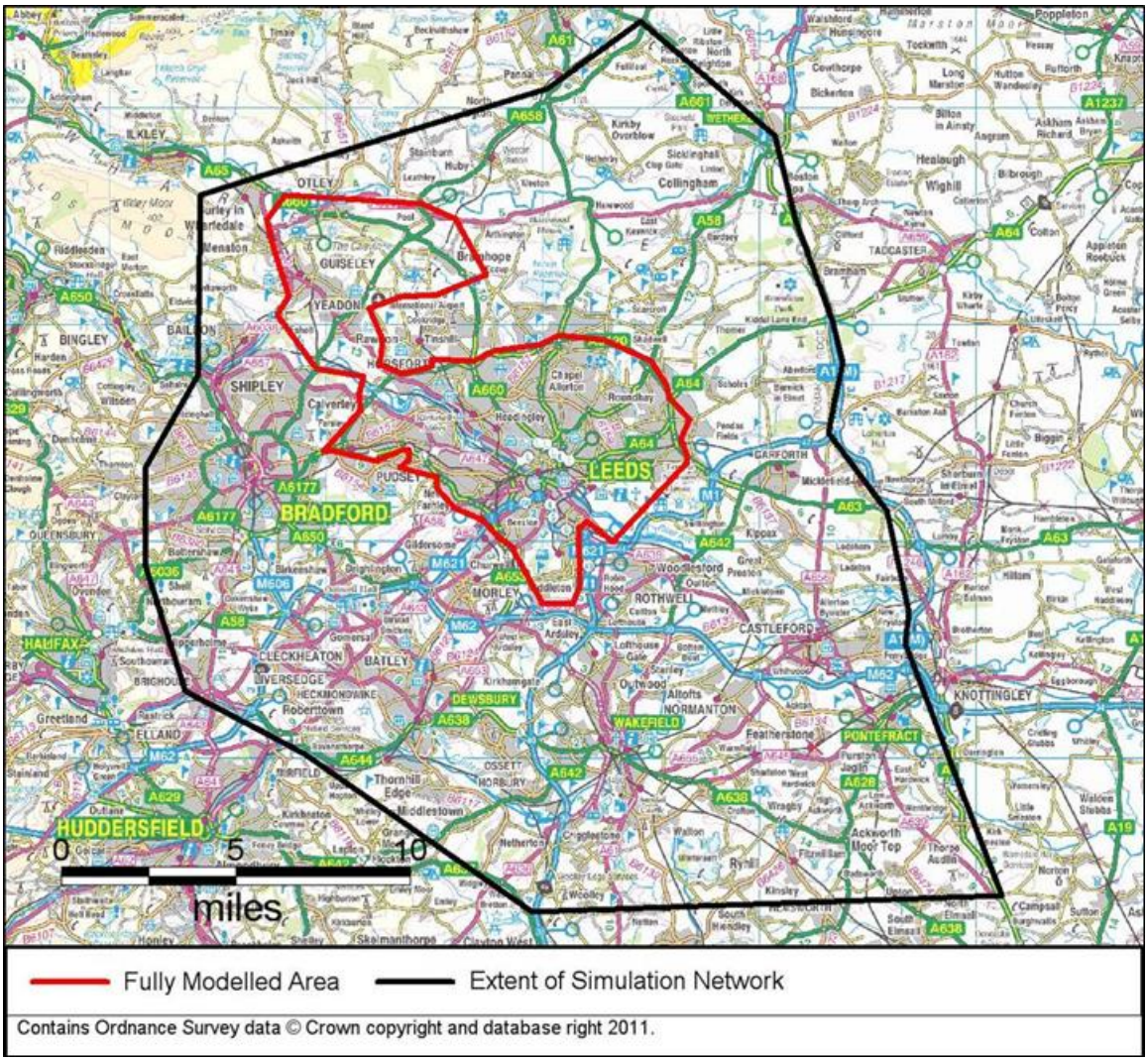
Leeds Clean Air Zone – Technical Summary of Transport Modelling (Revised FINAL 23/08/18)

1. This note provides a summary of the approach taken to forecast future year traffic levels for use in the air quality modelling. It covers the methodology and summarises the results for the original (first round) and final (second round) tests carried out in 2017 and spring 2018 respectively.

2. Leeds City Council uses a computer transport model (Leeds Transport Model – LTM) to forecast future traffic conditions. In the past this has been used to help support business cases for major transport schemes and to assess the impact of the Site Allocations Plan. The highway network element of the LTM uses the Saturn modelling suite.

3. The model covers the whole of Leeds District, together with neighbouring local authorities and national road and rail links. Figure 1 shows the coverage of the Saturn simulation network which extends to the Leeds District boundary or beyond. The 'fully modelled area' shown in the figure relates to the area where the bulk of model calibration has been carried out. Network coding beyond the simulation boundary is represented as buffer network.

Figure 1 : Leeds Transport Model Highway Network



4. Seven time periods, representing an average weekday, are modelled covering three hours during the morning peak period, three in the evening peak period and an average inter peak hour.

5. The model includes both roads and public transport (bus and rail) and can also model park and ride.

6. Cars, light goods vehicles (LGVs) and heavy goods vehicles (HGVs) are included as separate user classes within the model and the model can forecast route choices by these vehicles in response to changes in the highway network. Buses are also modelled as fixed flows, representing existing bus routes.

7. The model has recently been updated to a new 2015 Base Year. Tests have been undertaken to ensure that the model represents an acceptable match against observed traffic levels and journey times (see Appendix A : Local Model Validation Report).

8. For the Clean Air Zone (CAZ) modelling the 2015 Base Model was modified to separate out cars, LGVs and HGVs into compliant and non-compliant vehicles based on local fleet information derived from ANPR surveys.

9. Future year traffic levels in 2020 and 2022 were forecast based on assumptions about the overall level of traffic and development growth in Leeds. This included adding in planned new developments and Department for Transport (DfT) forecasts[1].

10. A number of transport interventions were also added to the model, representing schemes either delivered since the 2015 Base Year or planned to be completed by 2020. The principal schemes are listed in Table 1 below.

11. The resulting level of forecast local traffic growth (in veh-kms) between 2015 and 2020 is 8.7%, with LGVs traffic rising by 14.2% and HGVs by 4.0%. This represents a continuation of previous trends in traffic levels, with LGVs rising much faster than general traffic – see Figure 2.

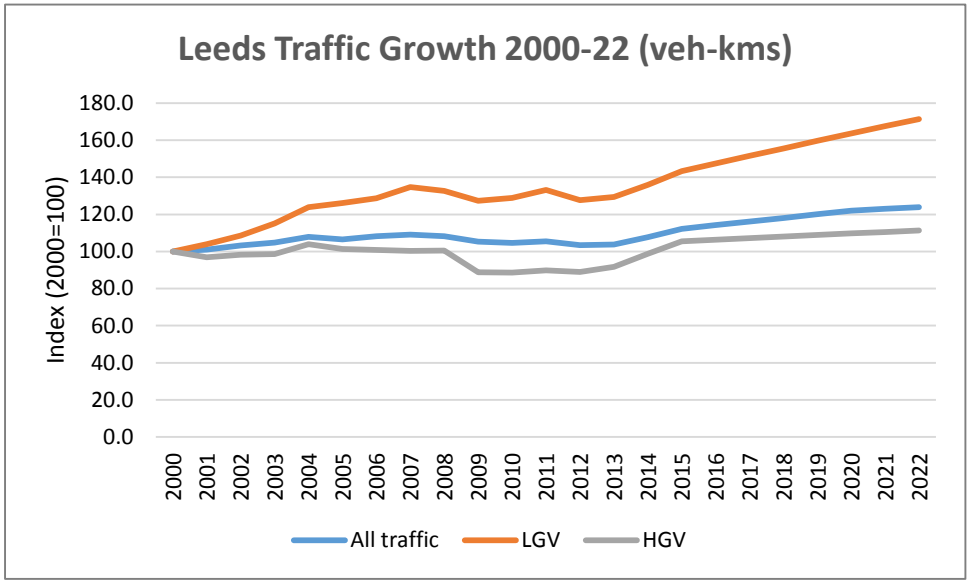
12. Although traffic levels since 2008 have fallen or remained static, there is evidence that growth has returned, with traffic volumes rising since the low point around 2011. This reflects evidence from the National Travel Survey that indicates that during the recession and the subsequent period of high fuel prices West Yorkshire residents made fewer journeys, but that this trend has now reversed.

[1] NTEM 7.2 (Tempro)

Table 1 : Principal Schemes Coded in 2020 Do Minimum scenario

Scheme	Notes
Seacroft Hospital development	Signalisation of priority junction
Victoria Gate	New access arrangement to multi-storey car park
Rodley Roundabout	New junction layout and signalisation
Manston Lane Link Road	New link road from M1 J46 to Manston Lane
Horsforth Roundabout	New Signalised Roundabout
M1 Jn 45 improvement	Improvement to existing junction
M1 Jn 39-42 Smart motorway	Smart motorway with additional lanes
Aire Valley (Temple Green)	New Park & Ride Site
Apperley Bridge Station	New Park & Ride Site and rail station
Kirkstall Forge Station	New Park & Ride Site and rail station

Figure 2 : Historic and forecast traffic growth (veh-kms)



13. For more information of the model forecasting process see Appendix B : Forecasting Methodology and Results.

14. Two rounds of modelling were undertaken. The first round was based on some initial assumptions and used two versions of the model (a freight and a car version, with the former capable of modelling CAZ B and C scenarios and the latter CAZ B, C and D); subsequently the starting assumptions were revised and the second round of tests utilised a modified version of the car model[2].

15. The first round tests were constrained to Tempro (NTEM 7.0) housing and employment growth; the second round was updated to utilise NTEM 7.2 – see Table 2.

[2] Subsequent to the first round tests various network coding changes in the main LTM had been undertaken and these were incorporated in the second round CAZ test networks.

Table 2 – Tempro NTEM Planning Forecasts

District	First round tests NTEM 7.0		Second round tests NTEM 7.2	
	Households	Jobs	Households	Jobs
Bradford	8,095	4,961	7,897	4,956
Calderdale	3,089	2,421	3,870	2,348
Kirklees	6,072	3,877	6,209	3,896
Leeds	14,217	8,734	14,580	8,651
Wakefield	8,614	3,756	8,905	3,673

16. The future year forecasts have included assumptions about how the vehicle fleet will change in terms of compliant and non-compliant vehicles. The first round of transport modelling used national fleet projections, while the second round was based on local fleet information (obtained from ANPR sites) and projections. See Tables 3 to 6.

Table 3 – Assumed vehicle proportions 2020 (UK fleet) (First round tests)

2020	Non-compliant %	Compliant %
Petrol car <Euro 4	3%	97%
Diesel Car <Euro 6	40%	60%
Petrol LGV <Euro 4	5%	95%
Diesel LGV <Euro 6	40%	60%
Rigid HGV <EuroVI	23%	77%
Artic HGV <Euro VI	10%	90%
Bus <Euro VI	34%	66%
Coach < Euro VI	34%	66%

Table 4 – Assumed vehicle proportions 2022 (UK fleet) (First round tests)

2020	Non-compliant %	Compliant %
Petrol car <Euro 4	1%	99%
Diesel Car <Euro 6	28%	72%
Petrol LGV <Euro 4	2%	98%
Diesel LGV <Euro 6	24%	76%
Rigid HGV <EuroVI	13%	87%
Artic HGV <Euro VI	4%	96%
Bus <Euro VI	21%	79%
Coach < Euro VI	21%	79%

Table 5 – Assumed vehicle proportions 2020 (Local fleet) (Second round tests)

2020	Non-compliant %	Compliant %
Petrol car <Euro 4	5%	95%
Diesel Car <Euro 6	47%	53%
Petrol LGV <Euro 4	5%	95%
Diesel LGV <Euro 6	39%	61%
Rigid HGV <EuroVI	39%	61%
Artic HGV <Euro VI	20%	80%
Bus <Euro VI	61%	39%
Coach < Euro VI	61%	39%

Table 6 – Assumed vehicle proportions 2022 (Local fleet) (Second round tests)

2020	Non-compliant %	Compliant %
Petrol car <Euro 4	1%	99%
Diesel Car <Euro 6	34%	66%
Petrol LGV <Euro 4	2%	98%
Diesel LGV <Euro 6	33%	67%
Rigid HGV <EuroVI	26%	74%
Artic HGV <Euro VI	10%	90%
Bus <Euro VI	43%	57%
Coach < Euro VI	43%	57%

17. In both the first and second round tests the assumed proportion of petrol LGVs was the same at 1.89% (Webtag). This fell to 1.60% for the 2022 tests.

18. The proportion of rigid HGVs was derived from an analysis of local DfT traffic census data. The first round tests used a value of 75.0% and this was subsequently revised downwards to 72.1%[3] for the second round. This was also applied to the 2022 tests.

19. The assumed proportion of diesel cars[4] in 2020 was 55.8% in the first round tests and 55.2% in the second round. For 2022 this fell to 55.2% and 54.8% respectively.

20. A number of CAZ options have been tested. In each case the transport model was modified to apply a charge to relevant non-compliant vehicles travelling within the CAZ boundary. These were based on the planned charges for the Ultra Low Emission Zone (ULEZ) in London – see Table 7 – and were applied in all modelled time periods.

Table 7 – Modelled daily charge for travel within CAZ

2020	Car/taxi	LGV	HGV/Bus
Daily charge	£12.50	£12.50	£100.00

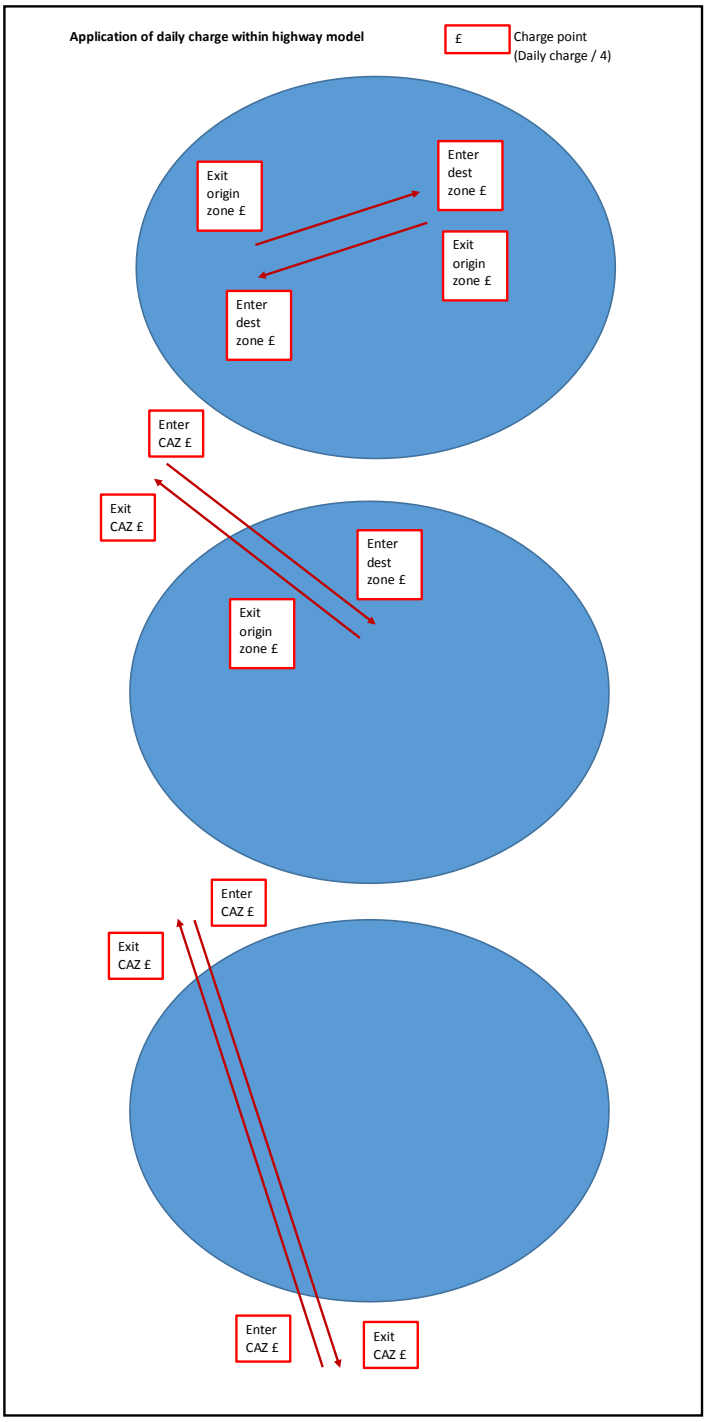
21. The application of the charges in the highway model was done on the basis of assuming each trip is part of a return journey and that one quarter of the charge is applied at four points during that journey – see Figure 3 below. This process ensures that the relevant daily charge is applied to all four journey types:

    - Vehicles starting and ending their journey within the CAZ

[3] Leeds district non-motorway major roads, 2015.
[4] Forecast using DEFRA/JAQU local fleet projection method supplied 28 July 2017

- Vehicles travelling from outside the CAZ to a destination within the CAZ
- Vehicles travelling from inside the CAZ to a destination outside the CAZ
- Vehicles travelling across the CAZ but with no destination within it

Figure 3 : Application of daily charge in highway model



22. It is acknowledged that for one way journeys this process will result in vehicles being charged only half the daily charge. Because there is no link within the model between the charge and the level of behavioural change this only impacts upon reassignment effects and

these only apply to vehicles passing through the CAZ. Due to the relative scale of the proposed charge compared with vehicle values of time it is considered that this process is unlikely to significantly affect the resulting reassignment as the additional journey time cost is substantially less than the daily charge.

23. An assumption was also made that a proportion of non-compliant vehicles would be replaced by their owners to a cleaner vehicle in response to the introduction of the CAZ. This was based upon information supplied by DEFRA[5] (Table 8) and produced the compliance levels in Tables 9 and 10. These were used in all the first round model tests.

Table 8 – Assumed proportion of non-compliant trips being replaced in 2020 and 2022 (%) (First round tests)

2020	Car	LGV	HGV
Replacing vehicle	65.0	70.0	87.0

Table 9 – Modelled compliance levels in 2020 (%) (First round tests)

2020	Car	LGV	HGV
Within CAZ	91.7	88.2	97.4
Outside CAZ	76.4	60.7	80.3

Table 10 – Modelled compliance levels in 2022 (%) (First round tests)

2020	Car	LGV	HGV
Within CAZ	94.4	92.9	98.6
Outside CAZ	84.1	76.4	89.3

24. Subsequently, DEFRA supplied some revised behavioural assumptions[6] and these were used for the second round of tests – see Tables 11 to 13 – for both 2020 and 2022.

Table 11 – Assumed proportion of non-compliant trips being replaced in 2020 and 2022 (%) (Second round tests)

2020	Car	LGV	HGV
Replacing vehicle	64.0	64.0	83.0

[5] 15 Feb 2017.
[6] OBC Economic Modelling Guidance. Aug 2017.

Table 12 – Modelled compliance levels in 2020 (%) (Second round tests)

2020	Car	LGV	HGV
Within CAZ	89.85	86.19	94.27
Outside CAZ	71.82	61.64	66.30

Table 13 – Modelled compliance levels in 2022 (%) (Second round tests)

2020	Car	LGV	HGV
Within CAZ	93.13	88.30	96.34
Outside CAZ	80.92	67.50	78.46

25. The transport model forecasts how traffic will respond to the charges applied to travel within the CAZ. Where non-compliant vehicles are passing through the CAZ and there is an alternative route that allows them to avoid the charge, the model forecasts the volumes of traffic doing this and the resulting changes in congestion. This may, in turn result in other trips re-routing onto other routes.

26. For LGV and HGV trips the response to the CAZ was limited to either vehicle replacement, re-routing or paying the charge. Modal shift was not considered to be a valid response while trip suppression was assumed not to occur. For CAZ D tests, the LTM demand model is able to reflect modal shift, trip suppression or trip re-location and so these responses have been covered.

27. The outputs from each of the modelled weekday time periods were combined together using factors from local traffic surveys to derive estimates of annual average daily traffic levels (AADT) for each of the modelled CAZ tests. This is the average amount of traffic on an average day (including weekends and holidays). These flows were broken down into four time periods to provide the inputs to the air quality modelling:

    - annual average am peak (0700-1000);
    - annual average inter peak (1000-1600);
    - annual average pm peak (1600-1900);
    - annual average off peak (1900-2400 and 0000-0700).

28. This process started with the outputs from the highway model by time period and then applied factors to estimate the annual average am peak period, inter peak and pm peak period flows. The off peak flows were estimated by subtracting the resulting total from an estimate of annual average daily traffic.

29. Table 10 shows the factors used to estimate the AADT flows. These have been derived from a combination of local permanent ATC sites and ANPR surveys[7].

Table 10 – Annualisation factors from weekday to annual average day

2020	All day factor	Am peak period	Inter peak period	Pm peak period
All traffic	1.140	0.775	0.979	0.870
LGV	0.907	0.753	0.814	0.787
HGV	0.923	0.744	0.765	0.771
PSV	1.071	0.811	0.915	0.850

30. Average annual vehicle speeds were estimated from the modelled weekday speeds. For the peak periods these were based on an 85:15 weighted average of the modelled weekday peak period speeds and inter peak speeds. This weighting was derived from ATC cordon count data that shows that on the approaches to the city centre weekend am peak period traffic is 15% of weekday am peak traffic. The same factor was applied to the pm peak. Weekend am and pm peak speeds are assumed to be similar therefore to weekday inter peak speeds. Modelled weekday inter peak speeds were assumed to directly represent daily inter peak and off peak speeds.

[7] All day traffic from 20 ATC sites covering 2015-16; LGV, HGV and PSV from 8 ANPR sites April/July 2016.

Analysis of CAZ Impacts on Traffic

31. In addition to providing inputs to the air quality modelling, the model outputs have been used to understand the likely levels of re-routing that could occur with each of the CAZ options. This is summarised below.

32. The summary contains the results of both the first and second round model tests for 2020 along with a further assessment of conditions in 2022 with the City Centre Package (CCP) in place.

33. The CCP is a major proposed transport scheme for Leeds city centre that would include the closure of City Square to general traffic, a reallocation of roadspace within the South Bank area and the provision of additional orbital capacity on the Inner Ring Road at Armley Gyratory and on the M621 (delivered by Highways England). The principal impact of the scheme in terms of traffic is to increase traffic levels on the IRR and M621 and reduce levels within the city centre.

34. Full details of the traffic displacement effects of all the CAZ options are included in Appendices C to J.

Summary of modelled trip diversion by CAZ option 2020 (first round tests)

Inner Ring Road CAZ B

- The major impact of the IRR CAZ B is to divert non-compliant vehicles away from the IRR onto the minor road network and into highly populated residential areas.

- Overall traffic levels on the roads to the north and west of the city centre are only forecast change marginally, however, the rise in HGVs is forecast at 70-170%. The change in non-compliant vehicles is forecast to be several times greater than this.

- Within the CAZ, overall traffic volumes are not forecast to change, but the reduction in HGVs is forecast at around 15% on the IRR. Non-compliant HGVs are forecast to fall by over 90%.

Inner Ring Road CAZ C

- The major impact of the IRR CAZ C is to divert non-compliant vehicles away from the IRR onto the minor road network and into highly populated residential areas.

- Overall traffic levels on the roads to the north and west of the city centre are forecast to increase by 10-20%, however, the rise in LGVs is forecast at 90-270% and HGVs at 60-160%. The change in non-compliant vehicles is forecast to be several times greater than this.

- Within the CAZ, overall traffic volumes are forecast to fall only modestly (1-3%) on the IRR, but the reduction in LGVs is forecast at 20-30% and HGVs by 8-17%. Non-compliant LGVs and HGVs are forecast to fall by over 90%.

Outer Ring Road CAZ B

- An ORR CAZ B would avoid the significant level of traffic diversion associated with an IRR CAZ, in particular there would be no diversion of non-compliant vehicles from the IRR onto unsuitable minor roads to the north and west of the city centre.

- Outside the ORR, the model tests indicate that there would be some diversion of both compliant and non-compliant vehicles, although the volumes concerned are significantly less than with an IRR CAZ – between 5% and 14% additional HGVs on routes to the south west of the A6110.

- However, given that the A6110 would not be within the CAZ it is considered that this level of diversion is unlikely to occur in practise.

Outer Ring Road CAZ C

- An ORR CAZ C would avoid the significant level of traffic re-assignment associated with an IRR CAZ, in particular there would be no diversion of non-compliant vehicles from the IRR onto unsuitable minor roads to the north and west of the city centre.

- Outside the ORR, the model tests indicate that there would be some diversion of both compliant and non-compliant vehicles, although the volumes concerned are significantly less than with an IRR CAZ – between 9% and 20% additional LGVs and between 5% and 13% additional HGVs on routes to the south west of the A6110.

- However, given that the A6110 would not be within the CAZ it is considered that this level of diversion is unlikely to occur in practise.

Outer Ring Road CAZ D

- In summary, an ORR CAZ D would avoid the significant level of traffic re-assignment associated with an IRR CAZ, in particular there would be no diversion of non-compliant vehicles from the IRR onto unsuitable minor roads to the north and west of the city centre.

- Outside the ORR, the model tests indicate that there would be some diversion of both compliant and non-compliant vehicles, although the volumes concerned are significantly less than with an IRR CAZ – between 6% and 18% additional LGVs and between 5% and 10% additional HGVs on routes to the south west of the A6110. In combination with some additional cars, this results in an overall traffic increase of between 5% and 9%.

- However, given that the A6110 would not be within the CAZ it is considered that this level of diversion is unlikely to occur in practise.

Summary of modelled trip diversion by CAZ option 2022 with City Centre Package (first round tests)

Inner Ring Road CAZ B

- In summary, the impact of the City Centre Package (CCP) alongside the IRR CAZ B is to continue divert non-compliant vehicles away from the IRR onto the minor road network and through highly populated residential areas. Although trends in levels of compliance are partly balanced against increased traffic levels, the impact remains substantial.

- Traffic levels within the City Centre are forecast to reduce significantly, however, this results in additional traffic on both the M621 and western IRR, in particular A643 Ingram Distributor which is forecast to attract an additional 39% traffic (compared with the 2022 DM) , together with more LGVs and HGVs. The volume of non-compliant HGVs, however, is forecast to fall by around 90%.

- The M621 is not part of the IRR CAZ, consequently the CCP impact here not only increases the overall volume of traffic (by 16% between Jn 2 and 2a) but the fall in non-compliant HGVs is markedly less – 20% fewer compared with the 2022 DM – while non-compliant LGVs are forecast to increase by 13%.

Inner Ring Road CAZ C

- In summary, the impact of the City Centre Package (CCP) alongside the IRR CAZ is to continue divert non-compliant vehicles away from the IRR onto the minor road network and through highly populated residential areas. Although trends in levels of compliance are balanced against increased traffic levels and the effect of the CCP, the impact remains substantial.

- Traffic levels within the City Centre are forecast to reduce significantly, however, this results in additional traffic on both the M621 and western IRR, in particular A643 Ingram Distributor which is forecast to attract an additional 38% traffic (compared with the 2022 DM) , together with more LGVs and HGVs. The volume of non-compliant LGVs/HGVs, however, is forecast to fall by around 90%.

- The M621 is not part of the IRR CAZ, consequently the CCP impact here not only increases the overall volume of traffic (by 16% between Jn 2 and 2a) but the fall in non-compliant vehicles is markedly less – 4% fewer LGV and 20% fewer HGV (compared with the 2022 DM).

Outer Ring Road CAZ B

- In summary, the impact of the City Centre Package (CCP) alongside the ORR CAZ B is marginal on the minor road network to the north and west of the city centre.

- Traffic levels within the City Centre are forecast to reduce significantly, however, this results in additional traffic on both the M621 and western IRR, in particular A643 Ingram Distributor which is forecast to attract an additional 39% traffic (compared with the

2022 DM) , together with more LGVs and HGVs. The volume of non-compliant HGVs, however, is forecast to fall by around 80%.

- Traffic levels on A58 Wellington St, M621 Jn 2-2a and East Street are forecast to rise by around 15%, although the volumes of non-compliant HGVs is forecast to fall by 85% to 90%.

Outer Ring Road CAZ C

- A test of this option with the CCP has not been carried out, however, the results are expected to be similar to that for the ORR CAZ B in terms of overall traffic levels. The volume of non-compliant vehicles is anticipated to fall significantly on both the IRR and M621.

Outer Ring Road CAZ D

- A test of this option with the CCP has not been carried out, however, the results are expected to be similar to that for the ORR CAZ B in terms of overall traffic levels. The volume of non-compliant vehicles is anticipated to fall significantly on both the IRR and M621.

Summary of modelled trip diversion by CAZ option 2020 (second round tests)

Outer Ring Road CAZ B

- An ORR CAZ B would avoid the significant level of traffic re-assignment associated with an IRR CAZ, in particular there would be no diversion of non-compliant vehicles from the IRR onto unsuitable minor roads to the north and west of the city centre.

- Outside the ORR, the model tests indicate that there would be some diversion of both compliant and non-compliant vehicles, although the volumes concerned are significantly less than with an IRR CAZ – 10% additional HGVs on Tong Rd to the south west of the A6110, 16% on Richardshaw La and 32% on Gildersome La.

- However, given that the A6110 would not be within the CAZ it is considered that this level of diversion is unlikely to occur in practise and changes in all vehicles flows on these roads are forecast to be marginal.

Outer Ring Road CAZ B Sensitivity

- A reduced level of behavioural change produces results broadly similar to the ORR CAZ B (above).

- The level of reassigned HGVs onto the minor road network to the south west of the A6110 is greater, but again it is considered that this is unlikely to occur in practise.

Reduced Area Outer Ring Road CAZ B

- A reduced area ORR CAZ B would avoid the significant level of traffic re-assignment associated with an IRR CAZ, in particular there would be no diversion of non-compliant

vehicles from the IRR onto unsuitable minor roads to the north and west of the city centre.

- Outside the ORR, there is no evidence of any significant traffic diversion, however, the boundary routes of the A6120, A6110, M621 and the eastern section of the inner ring road are forecast to attract some additional HGV traffic.

- The changes on most of these routes are small, however, the A6120 at Farsley is forecast to attract an additional 24% HGVs primarily due to an increase in non-compliant vehicles.

Reduced Area Outer Ring Road CAZ D

- A reduced area ORR CAZ D would avoid the significant level of traffic re-assignment associated with an IRR CAZ, in particular there would be no diversion of non-compliant vehicles from the IRR onto unsuitable minor roads to the north and west of the city centre.

- Outside the ORR, there is no evidence of any significant traffic diversion, however, the boundary routes of the A6120, A6110, M621 and the M1 are forecast to attract some additional traffic.

- The changes on most of these routes are small, however, the A6120 at Farsley is forecast to attract an additional 5% traffic including an increase of 22% in HGVs primarily due to an increase in non-compliant vehicles.

Summary of modelled trip diversion by CAZ option 2022 with City Centre Package (second round tests)

Outer Ring Road CAZ B

- The impact of the City Centre Package (CCP) alongside the ORR CAZ B is marginal on the minor road network to the north and west of the city centre.

- Traffic levels within the City Centre are forecast to reduce significantly, however, this results in additional traffic on both the M621 and western IRR, in particular A643 Ingram Distributor which is forecast to attract an additional 38% traffic (compared with the 2022 DM) , together with more LGVs and HGVs. The volume of non-compliant HGVs, however, is forecast to fall by around 80%.

- Traffic levels on A58 Wellington St, the IRR to the north of the city centre, M621 Jn 2-2a and East Street are forecast to rise by around 10-15%, although the volumes of non-compliant HGVs are forecast to fall by around 80%.

Reduced Area Outer Ring Road CAZ B

- The impact of the City Centre Package (CCP) alongside the reduced area ORR CAZ B is marginal on the minor road network to the north and west of the city centre.

- Traffic levels within the City Centre are forecast to reduce significantly, however, this results in additional traffic on both the M621 and western IRR, in particular A643 Ingram Distributor which is forecast to attract an additional 38% traffic (compared with the 2022 DM) , together with more LGVs and HGVs. The volume of non-compliant HGVs, however, is forecast to fall by around 80%.

- Traffic levels on A58 Wellington St, the IRR to the north of the city centre, M621 Jn 2-2a and East Street are forecast to rise by around 10-15%, although the volumes of non-compliant HGVs are forecast to fall by around 80% (40% on M621).

<u>Reduced Area Outer Ring Road CAZ D</u>

- A test of this option with the CCP has not been carried out, however, the results are expected to be similar to that for the reduced area ORR CAZ B in terms of overall traffic levels. The volume of non-compliant vehicles is anticipated to fall significantly on the IRR.

Appendix A

Local Model Validation Report: Highway Assignment Transport Model Car, LGV and HGV

Appendix B

Forecasting Methodology and Results

First round tests (2017)

Appendix C

Summary of Traffic Changes Arising from IRR CAZ B 2020 and 2022

Appendix D

Summary of Traffic Changes Arising from IRR CAZ C in 2020 and 2022

Appendix E

Summary of Traffic Changes Arising from ORR CAZ B in 2020 and 2022

Appendix F

Summary of Traffic Changes Arising from ORR CAZ C in 2020

Appendix G

Summary of Traffic Changes Arising from ORR CAZ D in 2020

Second round tests (2018)

Appendix H

Summary of Traffic Changes Arising from ORR CAZ B in 2020 and 2022 (includes sensitivity test)

Appendix I

Summary of Traffic Changes Arising from Reduced Area ORR CAZ B in 2020 and 2022

Appendix J

Summary of Traffic Changes Arising from Reduced Area ORR CAZ D in 2020