TECHNICAL NOTE

Job Name: Crawley Transport Study

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Subject: Task 1: Comparison of Existing and NTEM TEMPro V8.0 Derived Tripends

1. Introduction

1.1. Stantec has been assisting Crawley Borough Council (CBC) with the transport modelling to inform the transport evidence base for the Crawley Local Plan Review (LPR). Stantec has been commissioned by CBC on a number of tasks to further inform the transport evidence.

1.2. This note provides a comparative analysis of the number of trips within matrices, between the existing 2037 Reference Case models used to inform the Crawley Local Plan Review (LPR) transport evidence base and trips within new matrices created using DfT's National Trip End Model (NTEM) TEMPro version 8.0 database derived tripends to 2040. The comparison is provided for both TEMPro v8.0 Core growth and High growth scenarios.

1.3. The purpose of the task is to demonstrate whether the forecast assumptions, based on the previous version of TEMPro can still be deemed to be robust. The forecasting up to 2037 was based on TEMPro version 7.2 NTEM dataset version 7.2, which generally has higher growth rates than the updated version. For the purposes of the comparison the data from TEMPro V8.0 dataset was taken for a forecast year of 2040, to reflect the end of the plan period.

1.4. It should be noted that the forecasts reported within the transport evidence base were actually based on 2035 NTEM dataset version 7.2 forecast tripends. These were used as a proxy for 2037 when the Local Plan period was extended. For the purposes of clarity, this model is called the 2037 model in the remainder of this note.

2. Methodology

2.1. Comparisons of trip numbers within matrices have been made for the modelled AM peak hour (08:00 – 09:00) and PM peak hour (17:00 – 18:00).

2.2. Five user and/or vehicle classes have been considered: - namely car commute, car other, car business trips, Light Goods Vehicles (LGV) trips, and Heavy Goods Vehicle (HGV).

2.3. For the comparison, 2040 Core and High growth matrices were created using the same approach as used for 2037 Reference Case matrices, with NTEM TEMPro version 8.0 being used to inform adjusted growth factors applied to neighbouring authorities after taking into account any specific committed and Local and Neighbourhood Plan developments.

2.4. As per the modelling to inform the transport assessment for the Local Plan (included within the Local Plan Evidence Base), growth within Crawley borough included any development that has been delivered between 2015 and 2020, all committed developments and growth associated with the adopted 2030 Local Plan. No background growth was applied to Crawley zones.

2.5. LGV and HGV forecast growth for the 2037 forecasts were created using growth derived from Road Traffic Forecast (RTF18). For the 2040 forecasts, LGV and HGV growth factors were derived from National Road Transport Projections (NRTP2022) in accordance with current Department for Transport (DfT) web-based Transport Analysis Guidance (TAG).

2.6. The extension of the new Crawley Local Plan period to 2040 was not considered to require any re-modelling of the Local Plan scenarios 1-3 as the overall quantum of housing development planned to be allocated over the Plan period has remained the same as was previously modelled, but will be delivered over the revised Plan period. This means that the scope of this document is confined to comparison of the reference case assumptions.

3. Analysis

3.1. The task requires the comparison of the number of trips in the 2037reference case forecast models against an estimate of external tripends for 2040 equivalent forecasts, produced using TEMPro v8.0 and NRTP2022. The comparison was undertaken for Core growth and High growth.

3.2. Comprehensive comparisons were made by user or vehicle class for the following matrix components:

(i) Total Trips

(ii) Internal to Internal Trips

(iii) Internal to External Trips

(iv) External to Internal Trips

(v) External to External Trips.

3.3. The results are presented as absolute and as % differences.

4. Results

4.1. Table 1 provides a summary of the AM peak hour trip comparison by matrix component. Detailed tables showing changes by user or vehicle class can be found in Appendix A.

Table 1: AM Summary of trip comparison by Matrix Component

Matrix Component	2037 Reference	2040 Core	2040 High	Core Diff	High Diff	Core %	High %
Total Matrix	90,517.8	89,196.3	92,321.7	-1,321.6	1,803.9	-1.5%	2.0%
Internal to Internal	13,625.5	13,728.6	13,472.0	103.1	-153.6	0.8%	-1.1%
Internal to External	10,443.6	10,304.9	10,524.9	-138.7	81.3	-1.3%	0.8%

External to Internal	18,748.2	18,677.2	18,997.4	-71.0	249.2	-0.4%	1.3%
External to External	47,700.5	46,485.6	49,327.5	-1,214.9	1,627.0	-2.5%	3.4%

4.2. The AM peak hour results can be summarised as follows when compared to the 2037 Reference Case:

- When looking at the Total Matrix, the Core growth shows a 1.5% reduction in trip numbers while the High growth shows a 2% increase;
- Internal to External trips are 1.3% lower in the Core growth and 0.8% higher in the High growth;
- External to Internal trips are 0.4% lower in the Core growth and 1.3% higher in the High growth;
- External to External trips are 2.5% lower in the Core growth and 3.4% higher in the High growth;
- The minor changes in Internal to Internal trips, likely reflect changes in trips as a result of rounding off in the matrix building process;

4.3. Table 2 provides a summary of the PM peak hour trips comparison by matrix component. Detailed tables showing changes by user or vehicle class can be found in Appendix B for the PM peak hour.

Table 2: PM Summary of trip comparison by Matrix Component

Matrix Component	2037 Reference	2040 Core	2040 High	Core Diff	High Diff	Core %	High %
Total Matrix	90,961.2	89,807.7	92,817.5	-1,153.5	1,856.3	-1.3%	2.0%
Internal to Internal	9,649.8	9,731.9	9,498.2	82.1	-151.7	0.9%	-1.6%
Internal to External	18,385.3	18,341.4	18,612.9	-44.0	227.5	-0.2%	1.2%
External to Internal	13,872.8	13,760.7	13,972.2	-112.1	99.4	-0.8%	0.7%
External to External	49,053.2	47,973.8	50,734.3	-1,079.4	1,681.1	-2.2%	3.4%

4.4. The PM peak hour results can be summarised as follows when compared to the 2035 Reference Case:

- When looking at the Total Matrix, the Core growth shows a 1.3% reduction in trip numbers while the High growth shows a 2% increase;
- Internal to External trips are 0.2% lower in the Core growth and 1.2% higher in the High growth;
- External to Internal trips are 0.8% lower in the Core growth and 0.7% higher in the High growth;
- External to External trips are 2.2% lower in the Core growth and 3.4% higher in the High growth;
- The minor changes in Internal to Internal trips likely reflect changes in trips as a result of rounding off in the matrix building process;

4.5. Overall, it can be seen that both the AM and PM peak 2037 Reference Case trips are comparable to the 2040 Core growth and 2040 High growth trips. This indicates that the transport evidence base used to inform impacts of the Local Plan is deemed to be robust.

5. Summary and Conclusions

5.1. This note has provided a comparative analysis of tripends between the existing 2037 Reference Case models used to inform the Crawley Local Plan Review (LPR) transport evidence base versus NTEM TEMPro version 8.0 derived tripends to 2040.

5.2. The analysis has shown that in both the AM and PM peak hours, the 2037 Reference Case trips are comparable to the Core growth and High growth trip numbers derived using NTEM TEMPro version 7.8 across all user classes and vehicle types.

5.3. Therefore, it is concluded that evidence presented in this note indicates that the transport evidence base used to inform impacts of the Local Plan can be deemed to be robust.

APPENDIX A: RESULTS - AM

Table A.1 Comparison of forecasts tripends for all trips in the AM peak hour 08:00 – 09:00.

AM	2037 Reference	2040 Core	2040 High	Core Diff	High Diff	Core %	High %
Commute	29,491.4	29,511.7	30,262.5	20.3	771	0.1%	2.6%
Other	34,487.9	33,685.1	34,691.6	-802.7	204	-2.3%	0.6%
Business	9,366.4	9,360.3	9,708.5	-6.1	342	-0.1%	3.7%
LGV	9,044.4	8,853.7	9,572.7	-190.7	528	-2.1%	5.8%
HGV	8,127.8	7,785.5	8,086.4	-342.3	-41	-4.2%	-0.5%
TOTAL	90,517.8	89,196.3	92,321.7	-1,321.6	1,804	-1.5%	2.0%

Table A.2 Comparison of forecasts tripends for internal-to-internal trips in the AM peak hour 08:00 – 09:00

AM	2037 Reference	2040 Core	2040 High	Core Diff	High Diff	Core %	High %
Commute	4,937.9	4,936.1	4,849.8	-1.8	-88.1	0.0%	-1.8%
Other	6,747.7	6,822.8	6,733.4	75.1	-14.3	1.1%	-0.2%
Business	910.3	911.8	887.5	1.5	-22.8	0.2%	-2.5%
LGV	694.3	706.1	664.1	11.8	-30.2	1.7%	-4.4%
HGV	335.2	351.7	337.1	16.4	1.9	4.9%	0.6%
TOTAL	13,625.5	13,728.6	13,472.0	103.1	-153.6	0.8%	-1.1%

Table A.3 Comparison of forecasts tripends for internal to external trips in the AM peak hour 08:00 – 09:00

AM	2037 Reference	2040 Core	2040 High	Core Diff	High Diff	Core %	High %
Commute	3,096.8	3,080.6	3,139.6	-16.2	42.9	-0.5%	1.4%
Other	3,813.1	3,722.3	3,809.4	-90.9	-3.7	-2.4%	-0.1%
Business	1,203.4	1,198.2	1,221.0	-5.2	17.7	-0.4%	1.5%
LGV	1,060.4	1,050.1	1,086.7	-10.3	26.3	-1.0%	2.5%
HGV	1,269.9	1,253.7	1,268.1	-16.3	-1.8	-1.3%	-0.1%
TOTAL	10,443.6	10,304.9	10,524.9	-138.7	81.3	-1.3%	0.8%

Table A.4 Comparison of forecasts tripends for external to internal trips in the AM peak hour 08:00 – 09:00

AM	2037 Reference	2040 Core	2040 High	Core Diff	High Diff	Core %	High %
Commute	7,853.5	7,876.6	8,006.1	23.2	152.6	0.3%	1.9%
Other	5,853.7	5,790.9	5,887.8	-62.8	34.1	-1.1%	0.6%
Business	1,863.6	1,866.4	1,893.0	2.8	29.4	0.2%	1.6%
LGV	1,761.8	1,747.9	1,797.2	-13.9	35.4	-0.8%	2.0%
HGV	1,415.6	1,395.3	1,413.3	-20.3	-2.3	-1.4%	-0.2%
TOTAL	18,748.2	18,677.2	18,997.4	-71.0	249.2	-0.4%	1.3%

Table A.5 Comparison of forecasts tripends for external-to-external trips in the AM peak hour 08:00 – 09:00

AM	2037 Reference	2040 Core	2040 High	Core Diff	High Diff	Core %	High %
Commute	13,603.3	13,618.4	14,267.0	15.1	663.7	0.1%	4.9%
Other	18,073.3	17,349.1	18,261.0	-724.2	187.7	-4.0%	1.0%
Business	5,389.1	5,383.8	5,706.9	-5.3	317.7	-0.1%	5.9%
LGV	5,527.9	5,349.5	6,024.7	-178.4	496.8	-3.2%	9.0%
HGV	5,107.0	4,784.8	5,067.9	-322.1	-39.0	-6.3%	-0.8%
TOTAL	47,700.5	46,485.6	49,327.5	-1,214.9	1,627.0	-2.5%	3.4%

APPENDIX B: RESULTS - PM

Table B.1 Comparison of forecasts tripends for all trips in the PM peak hour 08:00 – 09:00

PM	2037 Reference	2040 Core	2040 High	Core Diff	High Diff	Core %	High %
Commute	28,500.5	28,546.5	29,288.0	45.9	787.4	0.2%	2.8%
Other	42,969.2	42,141.7	43,474.3	-827.4	505.1	-1.9%	1.2%
Business	5,975.6	5,971.8	6,141.7	-3.7	166.2	-0.1%	2.8%
LGV	7,877.4	7,724.5	8,301.0	-152.9	423.6	-1.9%	5.4%
HGV	5,638.5	5,423.1	5,612.5	-215.3	-26.0	-3.8%	-0.5%
TOTAL	90,961.2	89,807.7	92,817.5	-1,153.5	1,856.3	-1.3%	2.0%

Table B.2 Comparison of forecasts tripends for internal-to-internal trips in the PM peak hour 08:00 – 09:00

PM	2037 Reference	2040 Core	2040 High	Core Diff	High Diff	Core %	High %
Commute	3,750.7	3,749.0	3,671.2	-1.6	-79.5	0.0%	-2.1%
Other	3,193.5	3,255.7	3,164.6	62.2	-28.9	1.9%	-0.9%
Business	1,493.6	1,495.6	1,479.2	1.9	-14.5	0.1%	-1.0%
LGV	949.4	960.5	919.7	11.2	-29.7	1.2%	-3.1%
HGV	262.7	271.0	263.6	8.4	0.9	3.2%	0.4%
TOTAL	9,649.8	9,731.9	9,498.2	82.1	-151.7	0.9%	-1.6%

Table B.3 Comparison of forecasts tripends for internal to external trips in the PM peak hour 08:00 – 09:00

PM	2037 Reference	2040 Core	2040 High	Core Diff	High Diff	Core %	High %
Commute	6,906.8	6,935.5	7,049.6	28.7	142.8	0.4%	2.1%
Other	8,392.0	8,336.7	8,429.4	-55.2	37.4	-0.7%	0.4%
Business	1,037.2	1,038.0	1,055.9	0.7	18.6	0.1%	1.8%
LGV	1,167.7	1,156.6	1,197.2	-11.1	29.5	-0.9%	2.5%
HGV	881.7	874.6	880.9	-7.1	-0.8	-0.8%	-0.1%
TOTAL	18,385.3	18,341.4	18,612.9	-44.0	227.5	-0.2%	1.2%

Table B.4 Comparison of forecasts tripends for external to internal trips in the PM peak hour 08:00 – 09:00

PM	2037 Reference	2040 Core	2040 High	Core Diff	High Diff	Core %	High %
Commute	4,314.3	4,298.3	4,352.8	-16.0	38.5	-0.4%	0.9%
Other	6,726.5	6,656.9	6,747.9	-69.6	21.4	-1.0%	0.3%
Business	803.3	799.0	815.7	-4.3	12.3	-0.5%	1.5%
LGV	1,085.4	1,074.0	1,113.7	-11.4	28.3	-1.0%	2.6%
HGV	943.3	932.6	942.1	-10.7	-1.2	-1.1%	-0.1%
TOTAL	13,872.8	13,760.7	13,972.2	-112.1	99.4	-0.8%	0.7%

Table B.5 Comparison of forecasts tripends for external-to-external trips in the PM peak hour 08:00 – 09:00

PM	2037Reference	2040 Core	2040 High	Core Diff	High Diff	Core %	High %
Commute	13,528.8	13,563.6	14,214.5	34.9	685.7	0.3%	5.1%
Other	24,657.3	23,892.4	25,132.5	-764.9	475.2	-3.1%	1.9%
Business	2,641.4	2,639.3	2,791.0	-2.0	149.7	-0.1%	5.7%
LGV	4,675.0	4,533.5	5,070.5	-141.6	395.4	-3.0%	8.5%
HGV	3,550.8	3,344.9	3,525.8	-205.8	-24.9	-5.8%	-0.7%
TOTAL	49,053.2	47,973.8	50,734.3	-1,079.4	1,681.1	-2.2%	3.4%