

Technical Note 10 – Review of Previous Local Plan Evidence Base

PROJECT	Calderdale Local Plan Transport Evidence Base	PRODUCED	Ben Handley/Tom Randall
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1. INTRODUCTION

- 1.1. WSP have been appointed by Calderdale Metropolitan Borough Council (CMBC) to provide evidence on transport-related issues in respect of the Local Plan.
- 1.2. WSP previously produced the following transport documentation on behalf of CMBC to support the draft local plan consultation in 2017. These demonstrate the implications that site allocations may have and have been used to inform the policies within the Plan.
 - Technical Note 1: Future Network Baseline [TN1] (June 2016);
 - Technical Note 2: Implications of Settlement Growth [TN2] (July 2016);
 - Technical Note 3: Preferred Spatial Strategy [TN3] (April 2017);
 - Technical Note 4: Assessment of Cumulative Impact [TN4] (May 2017);
 - Technical Note 5: Hipperholme Sensitivity Test [TN5] (March 2017);
 - Technical Note 6: Site Apportionment [TN6] (July 2017);
 - Technical Note 7: Air Quality Constraints Assessment [TN7] (August 2016); and
 - Technical Note 8: Strategic Vision for South East Calderdale [TN8] (October 2016).
- 1.3. Within these technical notes, the Calderdale Strategic Transport Model [CSTM] has been used, with an updated base year of 2014, to assess the implications to the road network.
- 1.4. The eight Technical Notes set out above, demonstrate that a thorough approach has already been undertaken when analysing the allocation of development sites. The approach covers the future network baseline in TN1 through to the site apportionment in TN6. The process undertaken identifies the location of the allocated parcels of land and subsequently its level of sustainability in terms of its proximity to surrounding urban areas and facilities.
- 1.5. This Technical Note provides a review of the previous modelling methodology in terms of trip rates, distribution and modal split used in Technical Note 4. It also reviews the robustness of the model as a tool for assessing the plan, addresses comments prepared by Highways England (HE) and correlates the evidence base to the National Planning Policy Framework (NPPF).
- 1.6. This Technical Note consists of the following sections:
 - Sections 2, 3, and 4 review the 2014 CSTM and the methodology used in previous forecast modelling work for the trip rates, distribution and modal share to ensure that the evidence provided is valid and defensible.



- Section 5, 6 and 7 review the trip rate calculations, distribution of these trips and modal split assumptions used previously against other examples.
- In response to the original WSP Technical Notes 1-8, CMBC and HE provided a comprehensive and detailed critique of the information provided, which raised a number of outstanding issues. These points are replicated in Section 8, with a response from WSP to address the Local Authority and Highway Authority concerns (providing additional data where necessary).
- Section 9 relates the evidence base to the current NPPF guidance.
- Section 10 provides a summary of the report findings and conclusions drawn from the Technical Note.

2. REVIEW OF 2014 CALDERDALE STRATEGIC TRANSPORT MODEL

- 2.1. The previous 2014 CSTM was produced by updating the original 2008 CSTM, and then again at a later date in 2016 to expand the network into Kirklees, Bradford and the surrounding West Yorkshire authorities.
- 2.2. The models robustness for five key locations in the district, related to the local plan, has been reviewed, based on the Local Model Validation Report (LMVR). These are as follows;
 - Halifax Town Centre
 - Brighouse
 - Elland
 - Hipperholme
 - North Halifax
- 2.3. A strategic model like the CSTM is inevitably more robust in certain geographical areas than others but should provide a good overall representation of traffic movements, volumes on key routes and journey times for vehicles on key routes through the network.



MODEL NETWORK COVERAGE

2.4. The coverage of the modelled network is generally good. The fully modelled area covers the Calderdale borough and northern Kirklees in simulated detail, providing realistic assumptions and conditions experienced around the areas of impact of the Local Plan. Within the simulated area, all key highway links and junctions are modelled with minor road network detail around the urbanised area of the district, including Halifax Town Centre, Elland and Brighouse. Other West Yorkshire Authorities are modelled in Buffer network – a fixed speed network facilitating route choice across the area for traffic feeding into Calderdale.

ZONING SYSTEM

2.5. The model zones that load traffic on the network are based on census output areas and are therefore realistic to the way that traffic is loaded onto the network. Less populated rural areas of the model are based around the Mid-Level Super Output Area. It is expected that standalone zones should be added for large developments that are based around greenfield sites such as the Thornhills and Clifton developments. This will give a better representation of how the site will affect the immediate network.

ROADSIDE INTERVIEW SITES

- 2.6. Roadside Interview (RSI) sites used to create traffic demand cover key movements into and out of Calderdale. However, a 'hole' in the coverage appears to be present on the A641 north of Wyke Lion; this may affect traffic into and out of Hipperholme and Bradford. The routes west of Elland also lack an RSI site to pick up traffic from this direction, however this probably has a minimal impact and therefore is acceptable.
- 2.7. Probably due to the impracticality of stopping traffic at Ainley Top and on the M62, these two points have not been directly observed via RSI. Movements into Elland and Brighouse from Ainley Top are therefore entirely synthetic.
- 2.8. It should also be noted that the North Halifax traffic movements are outside the RSI cordon and therefore not directly observed.

COVERAGE OF DATA USED IN CALIBRATION/VALIDATION

- 2.9. Traffic count calibration screen lines show that movements to/from Kirklees and to/from Halifax are covered well. However, validation screen lines do not cover Ainley Top and the A629 Elland bypass. Validation counts exclude Cooper Bridge, some Brighouse movements and Hipperholme. The counts used for validation are concentrated on Halifax and Elland.
- 2.10. Journey time routes show coverage across the Calderdale area and are sufficient for validation purposes.

MATRIX INFILLING

2.11. Any movements not observed via RSI have been infilled using information from the previous model matrix with origins from 2008. Although this data could be deemed as being out of date, there have been relatively few changes in land use and transport infrastructure in Calderdale over the last 10 years, and therefore it is assumed that changes to the patterns of travel demand in Calderdale have been minimal..

CALIBRATION/VALIDATION SCREEN LINE PERFORMANCE

2.12. The screen line east of Elland used in the calibration of the model shows a poor performance in the AM peak only.



2.13. For validation the Brighouse screen line shows a poor match southbound in the AM (with the model being higher than observed), the screen line east of Halifax is also poorly matched (with the model being lower than observed). However, both of these routes are relatively low flow movements.

VALIDATION LINK FLOW PERFORMANCE

- 2.14. In the AM peak the counts to the west of Elland show a number of high GEH values, otherwise the sites which do not meet the DfT criteria set out in WebTAG are very close to passing.
- 2.15. In the PM peak, a similar pattern is shown with most failures against the DfT criteria showing a GEH of less than 10. A few counts show higher GEH values in central Elland.

JOURNEY TIME PERFORMANCE

- 2.16. Comparisons of modelled journey times against those observed show that 94% of routes used pass in the AM. Those that fail to meet the DfT WebTAG criteria are Elland to Ripponden in both directions and Hipperholme to Liversedge towards Hipperholme.
- 2.17. In the Interpeak the model performs well with routes north and south of the main towns showing only slight differences between modelled and observed values. The southern route uses Huddersfield to Elland via the A640 and is too quick northbound, whereas the second route Halifax to Mixenden is too slow southbound. The LMVR reports the incorrect route. There is a 94% pass overall for all routes.
- 2.18. In the PM peak, two routes fail. Halifax to J25 via Brighouse runs slightly too fast and Sowerby Bridge to Halifax Town Centre is too slow. As with the other time periods, 94% of routes pass.

CONCLUSIONS ON MODEL COVERAGE AND PERFORMANCE

2.19. From the review above it is concluded that the model is a valid tool for use with an exercise related to assessing the local plan. Although there are points where the model is weaker, there is no distinct pattern to these which shows a particular weakness in a single geographical area which would be a concern to the local plan assessment.

3. KIRKLEES MODEL COMPARISON

- 3.1. To further establish the validity of the CSTM as a suitable tool for assessing the impacts of the local plan a comparison has been made against the Kirklees Transport Model. The Kirklees model has a base year of 2015, with demand based on 2014 mobile phone data and is therefore a comparable age to the CSTM base year representing 2014.
- 3.2. The key routes across the boundary between Kirklees and Calderdale have been examined for modelled flow in either model. The points examined are shown in Figure 1:





Figure 1 - Key routes examined between Kirklees and Calderdale

3.3. The modelled flows from both models are shown in Table 1 and Table 2 below: Table 1 – Kirklees Model Actual Flows (PCU per hr)

		Inbound			Outbound		
	AM	IP	PM	AM	IP	PM	
A649	768	497	673	839	489	848	
Blake Law Lane	446	237	273	371	238	489	
A644	502	327	406	501	359	655	
A641	877	569	894	969	513	894	
Clough Lane	608	420	568	664	514	771	
A643	404	260	484	400	281	348	
A629	768	454	620	754	707	1148	
Lindley Road	505	442	420	178	78	174	
Stainland Road	413	144	300	264	159	284	
Total	5291	3351	4637	4939	3339	5611	



		Inbound			Outbound		
	AM	IP	PM	AM	IP	PM	
A649	638	484	763	746	442	728	
Blake Law Lane	140	38	56	50	45	136	
A644	847	880	611	676	505	926	
A641	795	594	884	1029	699	1032	
Clough Lane	597	395	584	710	398	702	
A643	670	297	393	631	340	427	
A629	1396	1110	1393	1021	1253	1081	
Lindley Road	311	202	427	595	205	462	
Stainland Road	123	98	227	161	91	158	
Total	5518	4098	5338	5621	3979	5652	

Table 2 - Calderdale Model Actual Flows (PCU per hr)

3.4. The absolute differences in flows between the models are shown in Table 3.

Table 3 - Absolute flow differences between models (Calderdale minus Kirklees)

		Inbound			Outbound		
	AM	IP	PM	AM	IP	PM	
A649	-131	-13	90	-92	-47	-120	
Blake Law Lane	-306	-199	-217	-320	-193	-353	
A644	345	553	205	175	146	270	
A641	-82	24	-10	60	185	138	
Clough Lane	-10	-25	17	47	-116	-68	
A643	266	37	-91	231	59	79	
A629	628	656	774	267	547	-67	
Lindley Road	-195	-240	7	417	127	288	
Stainland Road	-290	-46	-73	-102	-68	-127	

3.5. It can be seen that there are some cross boundary routes with significant differences in flow, notably Blake Law Lane, the A644, A643 and A629. A further comparison has been made using the GEH statistic which is used for the validation of base year traffic models with a value of 5 being acceptable from Department for Transport guidance. These comparisons can be seen in Table 4.

Table 4 - GEH statistic for comparison of modelled flows

		Inbound			Outbound		
	AM	IP	PM	AM	IP	PM	
A649	4.9	0.6	3.4	3.3	2.2	4.3	
Blake Law Lane	17.8	17.0	17.0	22.1	16.3	20.0	
A644	13.3	22.5	9.1	7.2	7.0	9.6	
A641	2.8	1.0	0.3	1.9	7.5	4.5	
Clough Lane	0.4	1.2	0.7	1.8	5.4	2.5	
A643	11.5	2.2	4.4	10.2	3.4	4.0	
A629	19.1	23.4	24.4	8.9	17.5	2.0	
Lindley Road	9.6	13.4	0.3	21.2	10.7	16.2	
Stainland Road	17.7	4.2	4.5	7.0	6.1	8.5	



- 3.6. For those links with GEH above 5, further investigation has been made as to the quality of the flow validation in the CSTM model. The results of these are shown below:
 - Blake Law Lane Passes or close to validation criteria in all time periods
 - A644 Passes or close to validation criteria in all time periods
 - A641 Generally GEH less than 5
 - Clough Lane Generally GEH less than 5
 - A643 Generally GEH less than 5
 - A629 AM and IP passes validation criteria in both directions. PM model passes outbound.
 - Lindley Road AM and IP passes validation criteria in both directions. PM is close to passing.
 - Stainland Road GEH is generally less than 10 and therefore acceptable considering the nature of the link.
- **3.7.** In summary, it can be seen that the comparison of both models either shows very similar flows or where there is a discrepancy that the CSTM is validating well at these points and therefore more accurate than the Kirklees model. It can be concluded that the CSTM is a valid representation of conditions in 2014 and therefore can be used with confidence to forecast future conditions.

4. CSTM MODEL USAGE

- 4.1. The CSTM has been used to support the assessment and appraisal of a number of transport improvements with Calderdale. The model has been used to provide evidence for the West Yorkshire Combined Authority to approve the progression of the following schemes:
 - A629 Phases 1a and 1b
 - A629 Phase 2 (to inform localised modelling in Halifax town centre)
 - A641 feasibility

5. TRIP RATES – SURVEYS AND BASELINE ASSUMPTIONS

- 5.1. In order to assess the cumulative impact of the planned allocations promoted in the Local Plan there is a need to relate the number of residential units or area of employment land to the expected trips that would be expected to be produced by each development.
- 5.2. To review the feasibility of the trip rates WSP previously used, a benchmarking exercise has been carried out using trip rates from the following sources:
 - Beech Hill Transport Assessment (TA submitted to CMBC);
 - Crosslee Site, Hipperholme (TA submitted to CMBC);
 - Sedgemoor Local Plan;
 - Royal Borough of Windsor and Maidenhead Local Plan; and
 - Harrogate Local Plan.
- 5.3. The results of which are set out below.
- 5.4. The Trip Rate Information Computer System (TRICS) is a database of observed trip rates produced by developments in the UK. Interrogation of the database is the industry-recognised approach for estimating the likely trip generation rates for new developments.



Previous Methodology - Housing

5.5. Using information from the TRICS database, trip rates for residential development in the following categories were sourced:

- Affordable Local Authority;
- Local Authority Flats;
- Mixed affordable;
- Mixed Private;
- Mixed private/affordable;
- Private Flats; and
- Private Houses.
- 5.6. The data was filtered by the removal of data from London, Wales, Scotland, Northern Ireland and Ireland. This is a typical approach to remove areas felt to show different trip rates to those expected in a location such as Calderdale.
- 5.7. In order to provide trips to be modelled from the housing sites, a number of calculations were needed. Trip rates for housing and employment were taken from the TRICS database and agreed by CMBC officers as an appropriate average figure for the assessment of the Local Plan. The trip rates as applied are shown in Table 5 and outlined in TN4.

Table 5 – Residential Trip Rates

	AM	AM	IP	IP	PM	PM
	Arrival	Departure	Arrival	Departure	Arrival	Departure
Trips per dwelling	0.11	0.31	0.14	0.14	0.27	0.16

Employment

5.8. In order to provide trips to be modelled from the employment sites, a number of calculations were needed. Trip rates for employment were taken from the TRICS database and agreed by CMBC officers as an appropriate average figure for the assessment of the Local Plan. For employment sites the TRICS database with the same filtering of site location as the housing sites, to give average rates for B1, B2 and B8. The trip rates as applied are shown in Table 6 and outlined in TN4.

Table 6 – Employment Trip Rates

	AM Arrival	AM Departure	IP Arrival	IP Departure	PM Arrival	PM Departure
B1	1.42	0.21	0.30	0.34	0.16	1.21
B2	0.57	0.16	0.20	0.21	0.08	0.48
B8	0.10	0.07	0.09	0.09	0.05	0.10



- 5.9. In some cases, the employment site data included an accurate figure for the floor area which could be used with the rates above. Where only a site area was given, a standard factor of 0.4 has been used to calculate floor area based on recommendations from CMBC officers.
- 5.10. The suitable scales and types of employment development CMBC believe to be representative of the options under consideration in each settlement assume many town centre sites to be classified as mixed use. These have been designated as B1 office. This is a robust assumption as a mix of leisure/retail and office would be likely to have a lower trip rate.
- 5.11. Individual trip rates have been calculated for the Clifton business park site and the Garden Suburb sites. More detailed assessments have been undertaken for these sites and these therefore represent a more accurate source of trip rate information. The trip rates used for these sites are shown in Table 7 and 8 and are generally higher than the generic trip rates shown above in Tables 5 and 6.

Table 7 – Garden Suburb Residential Trip Rates

	AM	AM	IP	IP	PM	PM
	Arrival	Departure	Arrival	Departure	Arrival	Departure
Trips per dwelling	0.159	0.589	0.227	0.198	0.417	0.257

Table 8 – Clifton Employment Site Trip Rates (Per 100m2 GFA)

	AM Arrival	AM Departure	IP Arrival	IP Departure	PM Arrival	PM Departure
B2	0.483	0.256	0.286	0.288	0.277	0.405
B8	0.327	0.036	0.035	0.041	0.256	0.213

5.12. Table 9 shows examples of the residential trip rates used within recent TA's submitted to CMBC. Beech Hill is an example of a development that lies just outside Halifax Town Centre, with good public transport provision. Crosslee Site is an example of a development in Hipperholme.

 Table 9 – Residential Trip Rates from Calderdale Transport Assessments

Assessment Period	Bee	ch Hill	Crosslee Site, Hipperholme		
	Trip Rate				
	Inbound	Outbound	Inbound	Outbound	
08:00-09:00	0.164	0.307	0.154	0.408	
17:00-18:00	0.249	0.206	0.351	0.202	

CMBC



- 5.13. Compared to the average rates used for the Local Plan exercise, the AM two-way rates used in the TA's are slightly higher than our standard residential rates as shown in Table 5; however they are also lower than the rates used for Garden Suburbs outlined in Table 7. The PM two-way rates used in the TA's are slightly higher than our standard residential rate as shown in Table 5; however they are also lower than the rates used for Garden Suburbs outlined in Table 7.
- 5.14. It should be noted that in this benchmarking exercise the lower "average" trip rates adopted in the development of Local Plan policies reflect the broader range of possible end users across all of the different sites, whereas the methodology adopted within an individual TA for a detailed planning application is more likely to reflect the demand likely to be generated by the specific form of development being applied for (and also the envisaged travel characteristics of the end occupants). Therefore, the average rates used for the Local Plan exercise are considered acceptable and robust for a wider area assessment.
- 5.15. As part of the supporting evidence base for the Sedgemoor Local Plan, WSP was commissioned to produce a Forecast Report which assessed the current traffic conditions in the town and tested the impact of various potential development options both individually and cumulatively. The trip rates used are set out below in Table 10.

Description	Units		Trip F	lates		
		Weekday AM Rate		Weekday	PM Rate	
		Origins	Destinations	Origins	Destinations	
Housing – Light Vehicles	Per Dwelling	0.413	0.144	0.223	0.378	
B1 Office – Light Vehicles	Per 100m ² GFA	0.162	1.450	1.145	0.171	
B1c/B2 Industrial – Light Vehicles	Per 100m ² GFA	0.227	0.453	0.389	0.104	
B8 Warehousing – Light Vehicles	Per 100m ² GFA	0.044	0.082	0.084	0.031	

 Table 10 – Bridgwater Transport Options – Forecast Report

- 5.16. Compared to the average rates used for the Local Plan exercise, the residential AM and PM twoway rates used in the Forecast report are higher. However, the average rates used for employment land uses are lower.
- 5.17. The individual trip rates which have been calculated for the Clifton business park site and Garden Suburbs are more detailed site assessments and therefore represent a more accurate source of trip rate information, as demonstrated in Table 7 where both the AM and PM two-way trip rates are higher than the trip rates presented in Table 10.
- 5.18. As part of the supporting evidence base for the Royal Borough of Windsor and Maidenhead Local Plan, WSP produced a Strategic Highway Model report which assesses the impact that the emerging Borough Local Plan growth is likely to have on the highway network. The trip rates used in this exercise are set out below in Table 11.

Description	Units	Trip Rates					
		Weekday	AM Rate	Weekday	PM Rate		
		Arrival	Departure	Arrival	Departure		
C3 Dwelling Houses	Per Dwelling	0.15	0.39	0.36	0.22		
B1 Business	Per 100m ² GFA	1.25	0.20	0.16	1.08		
B2 General Industry	Per 100m ² GFA	0.45	0.20	0.11	0.38		
B8 Storage	Per 100m ² GFA	0.11	0.07	0.06	0.11		

Table 11 - Royal Borough of Windsor and Maidenhead Local Plan, TRICS Development Trip Rates, Car and LGV (Vehicles)

- 5.19. Compared to the average rates used for the Local Plan exercise, the residential AM and PM twoway rates used in the Royal Borough of Windsor and Maidenhead Local Plan are higher. However, with the exception of B8 land use, the average rates used for employment land uses are lower.
- 5.20. The individual trip rates which have been calculated for the Clifton business park site and Garden Suburbs are more detailed site assessments and therefore represent a more accurate source of trip rate information, as demonstrated in Table 7 where both the AM and PM two-way trip rates are higher than the trip rates presented in Table 11.
- 5.21. As part of the supporting evidence base for the Harrogate Local Plan, a Transport Model report was produced which assesses the impacts of two high level Local Plan development tests for a 2035 future year scenario. The trip rates used are set out below in Table 12.

Table 12 - Harrogate District – Transport Model: Trip Rates Used from the TRICS Database

Description	Units	Trip Rates			
		Weekday AM Rate		Weekday PM Rate	
		Inbound	Outbound	Inbound	Outbound
Housing – Light Vehicles	Per Dwelling	0.159	0.420	0.391	0.191
B1 Office – Light Vehicles	Per 100m ² GFA	1.819	0.242	0.195	1.463
B1c/B2 Industrial – Light Vehicles	Per 100m ² GFA	0.714	0.351	0.153	0.506
B8 Warehousing – Light Vehicles	Per 100m ² GFA	0.301	0.192	0.125	0.250

Harrogate District Council



- 5.22. Compared to the average rates used for the Local Plan exercise, both the residential and employment AM and PM two-way rates used in the Harrogate Local Plan are higher.
- 5.23. The individual trip rates which have been calculated for the Clifton business park site and Garden Suburbs are more detailed site assessments and therefore represent a more accurate source of trip rate information, as demonstrated in Table 7. The trip rates used for Garden Suburbs are higher than those used for the Harrogate Local Plan, however the trip rates used for the Clifton business park site are lower in the AM and higher in the PM when compared to the Harrogate Local Plan.
- 5.24. To conclude, the lower "average" trip rates adopted in the development of Local Plan policies often reflect the range of possible end users across all of the different sites and subsequent variation in trip rates, whereas the methodology adopted within an individual TA for a detailed planning application is more likely to reflect the worst case demand likely to be generated by the specific form of development being applied for (and also the envisaged travel characteristics of the end occupants).
- 5.25. However, when compared with trip rates adopted in the development of other Local Plans, it is considered that the trip rates WSP previously provided are acceptable for assessing the Local Plan. The benchmarking exercise above demonstrated that the trip rates are consistent to those in different Local Plans albeit slightly lower due to the characteristics of the district. Additional amendments to modal split, which will also affect the trip rates, are outlined in Section 7.

6. **DISTRIBUTION**

- 6.1. The previous modelling exercise utilised the underlying distribution of trips between areas of Calderdale (model zones) from the 2014 base year model. This distribution was assumed to be valid for future trips associated with the local plan development.
- 6.2. A review of the studies that supported other local plans, described in Section 5, has been undertaken and it has been concluded that this approach is robust based on these examples. Given that the assessment exercise is intended to give a high level overview of the cumulative impact of all promoted sites, the approach of extrapolating the validated traffic movements into the future is proportionate for the scale of exercise being undertaken.
- 6.3. More sophisticated calculations of distribution, for example using gravity models, can be applied at planning application stage for assessment of an individual development scheme.

7. MODAL SPLIT

- 7.1. Existing patterns of commuting in terms of destinations and mode of travel used are assumed to be carried forward into the future and have been used to predict the future patterns related to new developments.
- 7.2. A TRICS approach based on observed levels of use at similar facilities is more reliable than making a series of 'assumptions', with no underlying evidence base. The modal split for future developments currently uses 'Car Only' TRICS evidence (as shown in Table 5/ Table 6). However, the approach to calculating trip rates for the Clifton business park site and Garden Suburbs has been calculated using a more detailed approach, utilising multi-modal trip rates from TRICS and applying a car mode split calculated from local 2011 Census data.
- 7.3. In order to provide a more robust modelling methodology it is recommended that the trip rates for all residential and employment developments are calculated using the same methodology as has been undertaken for the Garden Suburb sites and Clifton Business Park. This will reflect local car usage for different areas within Calderdale rather than a generic mode split from sites around the country.



8. HIGHWAYS ENGLAND POLICY COMMENTS

- 8.1. HE is generally supportive of the aspirations of the Local Plan and the delivery of new housing and employment development to meet the identified level of need in Calderdale and to support the overall delivery of sustainable economic growth. In particular, HE are supportive of a number of policies in the Local Plan, which support the delivery of sustainable development, new and improved transport infrastructure, as well as sustainable transport services and facilities and other demand management measures.
- 8.2. Nevertheless, having reviewed the Local Plan and the available evidence HE have identified a number of key points both within the accompanying policy schedule and the evidence base review, which require further consideration. This predominantly relates to the evidence base as it stands currently, and the request for further work to be carried out in order to fully understand the implications of the Local Plan in terms of its impact on the SRN and the potential requirements for any mitigation measures. The following comments are made on policies that HE has specific concern with and are addressed with a WSP response.
- 8.3. HE Comment The finalised distribution of the housing allocations, as stated in Policy SD7 is required. The total number of residential dwellings proposed within Policy SD7 should match the required number of dwellings stated in Policy SD3.
- 8.4. WSP Response CMBC to update accordingly.
- 8.5. HE Comment The employment allocations detailed in Policy SD5 require finalisation; currently 76.66ha of land is allocated. The total net employment land allocated should meet the employment land target as set out in Policy SD4 (currently stated as "up to 60ha") which has been accepted by CH2M. Paragraph 7.1, in the Plan, states "it is likely that a total of around 50ha (net)...will be allocated". Consistency in the total net employment land stated is required.
- 8.6. WSP Response CMBC to update accordingly.
- 8.7. HE Comment The principle of delivering mixed use development sites can generally be supported by Highways England, however from our consideration of the current transport evidence base there appears to have been no consideration of the mixed-use development sites proposed in this policy which may impact on the SRN. Further detailed comment is provided in the accompanying Transport Evidence Base Review.
- 8.8. WSP Response WSP will work to ensure clarity when modelling the re-run, by double checking the figures with CMBC before commencing.
- 8.9. *HE* Comment Sight of a model including the finalised housing, employment and mixed-use land allocations is necessary. The model should demonstrate the cumulative impact of all development within the Plan and meet the following criteria:

a. Include all sites (including residential sites with less than 50 dwellings) and therefore reflect the housing target and employment target policies;

b. Incorporate two-way trips in the morning and evening peaks;

c. Includes all specific developments set out in the Local Plans (or suitable alternative) of neighbouring districts (both Kirklees and Bradford) and apply growth caps accordingly; and

d. Highlight any congested nodes outside of Calderdale District (including on the SRN) which are as a result of cross-boundary development traffic resulting from the Plan.

8.10. WSP Response – The following points are addressed below:



- a. All sites will be included this time around, including those under 50 dwellings. The employment target needs clarifying with CMBC.
- b. No change The cumulative modelling does this already.

c. WSP must make clear that this is not possible, due to the characteristics of the model in these areas. Growth caps are to be checked. There is a need to adjust TEMPro growth caps based on comparisons against the two authorities Local Plan totals for Housing/Employment.

- d. To be added to outputs Select Link Analysis on cross boundary movements to be carried out.
- 8.11. HE Comment Only intervention/mitigation schemes which have secured funding can be considered within the Plan at this point. However, it is considered acceptable to discuss additional mitigation schemes provided that clear and realistic funding streams are identified within the Plan. Therefore, at present, M62 Junction 24A should not be assumed to mitigate the impacts of the additional Plan traffic, until further evidence is presented and further investigation of funding sources is established.
- 8.12. WSP Response Make clear that J24a is a separate exercise.
- 8.13. HE Comment It is necessary for intervention/mitigation schemes to be modelled in order to demonstrate their suitability to be considered as mitigation.
- 8.14. WSP Response It is not considered necessary to model all the possible mitigation schemes which are suggested, as they are generally concepts only at this stage.

9. GUIDANCE IN THE NATIONAL PLANNING POLICY FRAMEWORK

- 9.1. In March 2012 the current NPPF was published, which set out central Government's planning policies for England and how these are expected to be applied. The NPPF revoked and replaced a number of documents, including Planning Policy Guidance Note 13: Transport (January 2011). This TN reviews the current evidence base against the guidance set out in the NPPF, which defines what is considered a proportionate evidence base for Local Plans.
- 9.2. The NPPF requires local authorities to prepare Local Plans to identify planning policies and the most suitable development and infrastructure sites based on the objectives, principles and policies outlined in the framework.
- 9.3. In order to identify the most sustainable sites a 'sequential' approach has been adopted that prioritises brownfield sites in the urban area, only using the most sensitive Green Belt when all alternative sites were used. This approach accords with the recommended NPPF guidelines where green belts should only be altered in exceptional circumstances to ensure that urban sprawl is prevented.
- 9.4. A core planning principle set out within NPPF states the requirement to 'actively manage patterns of growth to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable'. TN3 analyses the location of the proposed residential/employment sites and states whether they are considered sustainable or not. This proactive approach is consistent with that set out within the framework and supports the need for sustainable economic development across the authority.
- 9.5. A review of the eight Technical Notes demonstrated that the findings from CMBC's Local Plan are in accordance with the recommended guidelines set out in the NPPF for sustainable development. It is therefore concluded that the allocated developments are considered to be located in sustainable areas with minimal impact on the local network with beneficial impacts to the local economy. The Local Plan is therefore considered not to be of demonstrable harm.



- 9.6. The Section of the NPPF, entitled 'Using a Proportionate Evidence Base', covering paragraphs 158 to 177, and outlines the Government's planning policies to ensure that the development of the Local Plan is viable and deliverable.
- 9.7. A significant amount of viability work was undertaken by WSP to inform and support the policies within the Core Strategy to ensure that it does not adversely affect the viability of development or the implementation of the plan.
- 9.8. NPPF establishes at paragraphs 182 and 216 broad guidance that relates to the examination of Local Plans:

182) "The Local Plan will be examined by an independent inspector whose role is to assess whether the plan has been prepared in accordance with the Duty to Cooperate, legal and procedural requirements, and whether it is sound. A local planning authority should submit a plan for examination which it considers is "sound" – namely that it is:

- Positively prepared the plan should be prepared based on a strategy which seeks to meet objectively assessed development and infrastructure requirements, including unmet requirements from neighbouring authorities where it is reasonable to do so and consistent with achieving sustainable development;
- Justified the plan should be the most appropriate strategy, when considered against the reasonable alternatives, based on proportionate evidence;
- Effective the plan should be deliverable over its period and based on effective joint working on cross-boundary strategic priorities; and
- Consistent with national policy the plan should enable the delivery of sustainable development in accordance with the policies in the Framework."

216) "From the day of publication, decision-takers may also give weight to relevant policies in emerging plans according to:

- the stage of preparation of the emerging plan (the more advanced the preparation, the greater the weight that may be given);
- the extent to which there are unresolved objections to relevant policies(the less significant the unresolved objections, the greater the weight that may be given); and
- the degree of consistency of the relevant policies in the emerging plan to the policies in this Framework (the closer the policies in the emerging plan to the policies in the Framework, the greater the weight that may be given)."
- 9.9. From the review of this guidance, the evidence base provided is robust and accords with Government aims and objectives set out in the existing NPPF. On the 1st March 2018, the Government published its draft revision of the NPPF, which at the time of writing has just finished the consultation period. The proposed changes to the document do not appear to affect the conclusions above.

10. CONCLUSION

- 10.1. In summary, this Technical Note has provided information requested by CMBC to examine the robustness of the current transport evidence which lends support to the decisions made on future development in the Calderdale district.
- 10.2. The additional details and information provided within this Technical Note provide sufficient information for the Local Authority to assess the robustness of the evidence base.



- 10.3. It can be concluded from Sections 2 to 4:
 - Model review;

That the Calderdale Strategic Model is a robust tool for the assessment of the local plan based on the validation results, comparison to Kirklees model and previous usage.

- 10.4. It can be concluded from Section 5:
 - Trip rates Surveys and Baseline Assumptions;

That the average rates used for the Local Plan exercise should be accepted as they are most suitable for a high level assessment of this nature.

- 10.5. It can be concluded from Section 6:
 - Distribution;

That the use of the modelled distribution provides a reasonable approach to assessing the impacts of the developments outlined within the Local Plan, given the high level nature of the assessment.

- 10.6. It can be concluded from Section 7:
 - Modal Split;

That the methodology WSP used previously should be adapted to take into account local car usage from census data rather than UK wide modal split.

- 10.7. It can be concluded from Section 8:
 - Highways England Policy Comments;

That after a review of the comments, WSP have addressed and determined responsibility for each of the comments provided, which will provide clarity for HE. Some minor amendments to the methodology have been proposed.

- 10.8. It can be concluded from Section 9:
 - Guidance in the National Planning Policy Framework;

That the evidence base provided by WSP is robust and accords with Government aims and objectives set out in the NPPF.