Land to the East of Leeds Road and Land at Heybeck Lane, Chidswell, Dewsbury.

Review of Transport Assessment

Date
1st October 2020

1. Introduction

AECOM has been commissioned by Kirklees Council to provide Highways and Transport support to the proposals to develop land at Chidswell, Dewsbury.

By way of background a draft Transport Assessment (TA) version F1 dated 23/4/2020 was submitted by the applicants for review in advance of a formal planning application being made. Comments on the draft TA were provided on 30/6/2020.

A planning application was subsequently submitted by the applicant on 21/7/2020 which included the TA. TA version F2 dated 15/5/2020 ref: A13398/VAA is the basis of this review.

The purpose of this technical note is to provide a review of the TA in the context of the following criteria:

- previous pre-application discussions with the applicant;
- current Highways Development Management policy and guidance;
- Pell Frischmann TA methodology, content, analysis and the mitigation.

The following sections of this technical note will provide the context of previous discussions with the applicant before presenting the findings of our review of the TA. Issues and areas where more information and explanation are required is summarised in highlighted text boxes.

2. Context

AECOM was commissioned by Kirklees Council in November 2018 to provide support to pre-application discussions on this site. Specifically, at that time, our commission was to review the Transport Assessment (TA) and Framework Travel Plan (FTP) Scoping Note – Version No. Final 1 dated 4/10/2018.

Several meetings and e-mail exchanges were held in the period up to the end of April 2019 which modified the TA scope but found it to be broadly acceptable. The major outstanding issue was the use of the Kirklees SATURN model as the basis for deriving future year flows for assessment.

It is acknowledged that considerable work was undertaken to support this site through the local plan and site allocation process by both Kirklees Council and the applicant which culminated in the allocation of this site in the Local Plan which was adopted in February 2019.

The site is identified within the Allocations and Designations section of the Local Plan as Site ref: MXS6 and has an indicative capacity of 1,535 dwellings and 122,500m2 of employment space.

The Kirklees SATURN model was part of the evidence base for the Local Plan and was used to test the site allocations. While acceptable for the Local Plan process, caution has been expressed by Kirklees Council regarding the use of the model for highways development management purposes because the model is calibrated and validated at a district wide level and because the level of accuracy at the local level regarding assignment and the coding of junctions could be a concern.

On this basis, an alternative methodology for deriving future and intermediate base plus committed flows was recommended.

3. The Proposed Development

The TA is prepared by Pell Frischmann on behalf of their client, the Church Commissioners for England.

The development proposal is split into two. Site A is land at Heybeck Lane and comprises:

- 181 residential dwellings.

Site B is land east of Leeds Road and comprises:

- Up to 35 hectares / 122,500m2 employment space;
- Up to 1,354 residential dwellings;
- 2 form entry primary school;
- Local centre.

Site A and Site B will be subject to separate outline planning applications but the TA has been prepared to assess the cumulative impacts of both developments.

4. Transport Assessment Review

The TA is structured into the following sections:

1. Introduction;
2. Existing Transport Conditions;
3. Policy Considerations;
4. Development Proposals;
5. Trip Generation;
6. Highway Impact Assessment;
7. Mitigation Measures;
8. Sustainable Transport Strategy;
9. Summary and Conclusions.

Each section will be reviewed in turn below.

4.1 Introduction

The introduction section provides a brief overview of the applicant, the development proposal and identifies the key transport stakeholders. It also provides a brief history of the progression of the site through the local plan process and the subsequent scoping with various authorities.

It is noted that only the most recent scoping exercise between Pell Frischmann and Highways England is included in Appendix A of the TA. Greater context and ease of reference would be provided by including all key scoping documents.

4.2 Existing Transport Conditions

A factual description of the surrounding highway network and a broad outline of the data collection exercise is provided. It is noted that 11 manual traffic counts at junctions and 12 automatic traffic counts on links were undertaken in March 2019 but that the survey raw data has not been made available.

The raw traffic count data should be provided to enable review and validation. This data has not been provided.

It is noted that, as part of the traffic data collection exercise, queue length and delay information has been collected. It would aid the interpretation of the existing baseline if a section on current operating conditions was provided which identified and quantify where current congestion and / or delays occur on the network supported by queue length data.

It is requested that additional commentary is added into the Existing Conditions section that describes existing network operating conditions and identifies and quantifies existing congestion and queuing hotspots. This additional information has not been provided.

The existing transport conditions section also provides a high-level assessment of the accessibility of key services by walking cycling and public transport. While the traditional theoretical walking and cycling isochrones are presented together with public transport services and points served, the section does not provide any commentary on the quality of the existing non-car infrastructure including any missing or sub-standard provision.

Given the importance of demonstrating a sustainable development in policy terms, it is important that a user audit of existing cycling and walking facilities is provided in the TA.

Also, while bus stops are identified and routes quantified, the quality of the current provision is not reported and therefore a baseline is not established regarding the suitability of existing facilities to encourage the use of these modes.

It is recommended that an audit of existing cycling walking and public transport facilities within the relevant catchments is provided. This will provide a quantified and evidenced basis upon which to judge the current accessibility of the site and adequacy of existing provision.

Collision data is provided for the period 2014 – 2018. This should be updated if 2019 data is now available. Also, a calculation sheet should be provided to support Table 2-2 so that it can be validated.

It is recommended that the collision data is updated with 2019 data and that a support calculation is provided for Table 2-2 to allow checking. This information has not been provided.

4.3 Policy Considerations

The policy section of the draft TA sets out the relevant Highways Development Management national, regional and local policy that will be used to assess this development proposal.

We do not disagree with the policy documents set out but would add that there are relevant guidance documents that will also be referred to in determining this application including the Government Planning Practice Portal document titled ‘Travel Plans, Transport Assessments and Statements’ (Ministry of Housing, Communities & Local Government – March 2014).

4.4 Development Proposals

The development proposals seem to be reasonably consistent with those set out at scoping. The TA is based on residential numbers at 1,535 which is consistent with the local plan allocation and the employment floorspace of 122,500m2 which is also consistent with the local plan allocation.

The biggest variable is the mix of employment uses. The TA assumes:

- B1(a) 18,375m2;
- B1(c) 12,250m2;
- B2 30,625m2; and
- B8 61,250m2.

The split between these employment land uses is flexible except for the B1(a) office use which is capped as a maximum in the masterplan and in the TA for assessment purposes.

It is recommended that a condition is applied to limit the amount of B1(a) floorspace to a maximum of 18,375m2. A further TA may be required if this B1(a) total is exceeded or the overall mix varies greatly.

Alternatively, a formula could be applied which controls the overall amount of vehicle trip generation whilst allowing flexible amount of floorspace.

Five points of vehicular access into the site have been identified and outline designs provided. The access layouts have been reviewed by the Kirklees Council S38/S278 team and the following comments have been made:

- Junction 1 - 39 Heybeck Lane
  - What are the proposals for restricting on-street parking to maintain the required sight lines;
  - Stage 1 Road Safety Audit is required.
- Junction 2 - 1062 Leeds Road
  - Stage 1 Road Safety Audit is required.
- Junction 3 - 1010 - 1016 Leeds Road
  - Stage 1 Road Safety Audit is required.
- Junction 4 - 97 Chidswell Lane
  - Stage 1 Road Safety Audit is required.
- Junction 5 – Owl Lane
  - How will this be delivered if the Barratt David Wilson scheme does not progress.

It is required that a Stage 1 Road Safety Audit is provided for site access junctions 1 – 4.

As the applications are to be in outline, the consideration of issues such as parking provision and internal road designs are to be dealt with at reserved matters.

Bus access is briefly discussed in this section. It is considered that more commitment to introducing public transport into the site is needed at this time and that evidence of an in-principle agreement and a costed delivery plan should be presented with this outline application so that the future sustainable accessibility of the site is established at this early stage.

It is recommended that an in-principle agreement and a costed delivery plan for introducing a public transport service into the site is established at this stage to ensure that appropriate opportunities to promote sustainable transport modes have been taken up.

4.5 Trip Generation

Traffic generation during construction has not been addressed.

A person trip approach has been adopted by the applicant to which 2011 journey to work mode splits have been applied to arrive at trips per mode.

Trip rates used for assessment are those presented in an earlier version of the TA, prepared to support the site allocation through the Local Plan in 2016.

To provide an indication of the scale of the development proposal, the following AM and PM peak person trips are forecast for the development:

Time Period / Trip Type	Residential (Two-Way)	Employment (Two-Way)	Total (wo-Way)
AM Peak (08:00-09:00)	1,587	1,192	2,779
PM Peak (17:00-18:00)	1,505	1,101	2,606

Discussions between the applicant and Kirklees Council at the TA scoping stage have confirmed that Kirklees Council agree in principle to this approach and that the subsequent trip generation rates are regarded as appropriate for assessment purposes.

To add further confidence to the suitability of the vehicle trip rates used for assessment, AECOM have undertaken a comparison using the current TRICS database (v 7.7.1). The following comparison results:

Residential – Privately Owned (Trips per Dwelling)

AECOM Derived	Arrivals	Departures	Total
AM Peak (08:00-09:00)	0.165	0.689	0.854
PM Peak (17:00-18:00)	0.591	0.244	0.835
Used in Pell Frischmann TA	**Arrivals**	**Departures**	**Total**
AM Peak (08:00-09:00)	0.233	0.818	1.051
PM Peak (17:00-18:00)	0.605	0.390	0.995

The rates used in the TA are higher than the AECOM derived TRICS version 7.7.1 rates and therefore produces a more robust assessment.

Residential – Affordable (Trips per Dwelling)

AECOM Derived	Arrivals	Departures	Total
AM Peak (08:00-09:00)	0.323	1.020	1.343
PM Peak (17:00-18:00)	0.667	0.394	1.061
Used in Pell Frischmann TA	**Arrivals**	**Departures**	**Total**
AM Peak (08:00-09:00)	0.211	0.669	0.880
PM Peak (17:00-18:00)	0.477	0.373	0.850

The rates used in the TA are lower than the AECOM derived TRICS version 7.7.1 rates. However, given that affordable accounts for a small proportion (10%) of the housing stock and given the robustness of the privately owned rates, they are regarded as acceptable.

Business (Office) – B1 Office Park (Trips per 100m2 GFA)

AECOM	Arrivals	Departures	Total
AM Peak (08:00-09:00)	2.128	0.196	2.324
PM Peak (17:00-18:00)	0.190	1.730	1.920
Used in Pell Frischmann TA	Arrivals	Departures	Total
AM Peak (08:00-09:00)	1.970	0.268	2.238
PM Peak (17:00-18:00)	0.218	1.627	1.845

The rates used in the TA are lower than the AECOM derived TRICS version 7.7.1 rates. However, following a check that quantifies that the difference in AM peak inbound and PM peak outbound vehicle trips is just 23 and 1 respectively when applied to the 18,375m2, they are regarded as acceptable in this instance.

Business – B2 Industrial Estate (Trips per 100m2 GFA)

AECOM	Arrivals	Departures	Total
AM Peak (08:00-09:00)	0.504	0.170	0.674
PM Peak (17:00-18:00)	0.158	0.531	0.689
Used in Pell Frischmann TA	Arrivals	Departures	Total
AM Peak (08:00-09:00)	0.747	0.263	1.010
PM Peak (17:00-18:00)	0.321	0.869	1.190

The rates used in the TA are higher than the AECOM derived TRICS version 7.7.1 rates and therefore produces a more robust assessment.

Employment – B8 Storage / Distribution - (Trips per 100m2 GFA)

AECOM	Arrivals	Departures	Total
AM Peak (08:00-09:00)	0.227	0.066	0.293
PM Peak (17:00-18:00)	0.024	0.156	0.180
Used in Pell Frischmann TA	Arrivals	Departures	Total
AM Peak (08:00-09:00)	0.438	0.085	0.568
PM Peak (17:00-18:00)	0.022	0.389	0.411

The rates used in the TA are higher than the AECOM derived TRICS version 7.7.1 rates and therefore produces a more robust assessment.

The person trip rates have been checked against TRICS v. 7.7.1 and are found to be acceptable. It is noted that the supporting Appendix C is in .pdf format. Presentation could be improved by the inclusion of information notes and a clear explanation of the method of calculation to aid the reader. Electronic versions are required to aid checking.

While acknowledging the importance of sustainable modes of transport, the Highway Authority needs to be satisfied that the vehicle trip rates used for assessment are robust to ensure as far as possible that mitigation provided is effective. We have therefore undertaken an alternative TRICS assessment based on vehicle trip rates rather than person trip rates. The table below presents the Pell Frischmann TA vehicle trips (derived from person trip rates with journey to work by car percentage applied) against the AECOM check vehicle trips (derived from TRICS v. 7.7.1).

Land Use Type	Pell Frischmann TA			AECOM Check Generations		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Private Residential						
AM Peak	225	791	1016	145	464	609
PM Peak	585	377	963	442	200	643
Affordable Residential						
AM Peak	22	71	95	25	48	73
PM Peak	51	40	91	29	20	49
Office						
AM Peak	257	35	292	280	29	310
PM Peak	28	212	241	24	211	235
Light Industry						
AM Peak	65	23	88	41	16	58
PM Peak	28	75	104	12	41	53
General Industry						
AM Peak	163	58	219	103	41	144
PM Peak	70	189	258	30	103	134
Warehouse						
AM Peak	210	37	247	88	31	118
PM Peak	9	169	179	10	58	68
TOTAL						
AM Peak	**943**	**1014**	**1957**	**682**	**630**	**1312**
PM Peak	**771**	**1063**	**1835**	**548**	**634**	**1182**

This analysis shows a large difference in vehicle trip generation estimates with the Pell Frischmann method of calculation returning flows that are higher in both the AM and PM than the AECOM check method.

The vehicle trip rates have been checked against TRICS v. 7.7.1 and are found to be robust and therefore acceptable for assessment purposes.

Mode split estimates based on Office of National Statistics journey to work data from the 2011 Census based on the Kirklees 014 MSOA is standard methodology and is accepted.

The mode split methodology is found to be acceptable.

Trip distribution and assignment of trips to the highway network adopted in the TA relies heavily on spreadsheets presented in Appendix E. It is difficult to interpret how the data has been used without explanatory text. For example, 23 routes are referred to and 5 access points but without explanation it is not possible at this stage to confirm that the assignment of trips to the network is agreed. It is suggested that a high-level distribution of trips is presented and then a justification of what routes will be utilised for the origin and destination of trips.

There is not enough detail provided to allow us to fully review the distribution and assignment of vehicle trips to the highway network. It is requested that a high-level distribution plan is provided, a justification for the routes used between the site and the origin / destination of trips and network diagrams to quantify the quantum of development trips per route. Electronic versions of the spreadsheets will be needed in due course to aid checking.

4.6 Highway Impact Assessment

The TA methodology adopted by Pell Frischmann for establishing baseline flows is presented in paragraphs 6.11 – 6.37. It is established that 2019 base year flows are based on actual traffic counts. Future year baseline flows are based on individual turning movement growth rates derived from the Kirklees SATURN model applied to the 2019 baseline.

While deriving future year baseline flows for assessment is not an exact science, it is an area of the TA with which Kirklees Council need to be satisfied that the future year baseline flow estimates are as representative as possible of the future year conditions.

The derivation of future year flows from or based on the Kirklees SATURN model was identified during TA scoping as an area of concern by Kirklees Council. There are various reasons for this including the validation of the model at a district wide basis, the location of the site at the very edge of the modelled area and the course nature of junction coding and validation. To overcome these concerns, it was suggested in TA scoping that a parallel exercise of a more traditional approach of counted base plus TEMPRO growth should be undertaken for comparison purposes.

While a comparison of SATURN derived growth versus TEMPRO growth has been presented for a cordon area at Table 6.1, much more analysis is required to provide the necessary confidence that the flows are representative. It is requested that a turn by turn comparison is presented at each junction for the 2030 future baseline scenario.

There is not enough detail provided to allow us to be confident that future year baseline flows derived from the Kirklees SATURN model are representative of future year conditions. We require a turn by turn network diagram for the 2030 baseline comparing the SATURN derived baseline flows against the more traditional counted base plus TEMPRO growth.

It is also requested that a comparison of the 2019 counted baseline with the SATURN model 2019 baseline (factored from 2020 model output) is provided to provide a basic comparison and identify any significant differences.

It is noted that the future year selected for assessment is 2030. It is questioned whether this is achievable given the total site allocation of up to 1,535 homes which would require a build out rate of almost 200 per year assuming first delivery in 2022.

The applicant is asked to comment on the likelihood of all units being built out by 2030 and the implications of this on the selection of 2030 as the year for assessment.

The junction models have been reviewed to assess that geometry and flows have been entered correctly. Our review reveals that most are accurate but we would encourage you to undertake a check of input flows for junctions 4, 12 and 15 and geometry for junctions 5b, 7 and 10.

Until agreement is reached on the traffic growth rates to be applied to the 2019 baseline counts and the assignment of vehicle trips to the road network, the junction modelling assessment cannot be reviewed.

It is noted that no assumptions have been made in the TA regarding diverted traffic. The proposed link road through the site connecting Leeds Road and Owl Lane is likely to result in existing traffic on Leeds Road diverting through the site in order to avoid the A653 / B6128 signalised junction at Shawcross.

It is recommended that junction sensitivity testing is undertaken. Using the turning count flows at the Shawcross junction, it is suggested that sensitivity testing is undertaken whereby 50%, 75% and 100% of vehicle flows (cars / vans) turning left from A653 Leeds Road onto B6128 John Ormsby VC Way and right from John Ormsby VC Way onto Leeds Road are diverted onto the internal access road instead.

Sensitivity testing is required to account for the likelihood that existing traffic on Leeds Road and Owl Lane will divert onto the proposed internal link road to avoid the Shawcross junction.

4.7 Mitigation Measures

Paragraph 56 of NPPF sets out the tests that need to be satisfied when considering required mitigation to make development proposals acceptable as follows:

a) necessary to make the development acceptable in planning terms;

b) directly related to the development; and

c) fairly and reasonably related in scale and kind to the development.

The mitigation measures section of the Pell Frischmann TA identifies that junctions 3, 4, 5, 6, 7, 9, 10, 11 and 13 on the local highway network are operating above their capacity in 2030 with development traffic added. Although this will clearly need to be reviewed following agreement of the methodology to derive future base traffic flows, as well as our comments above regarding junction geometry.

The general conclusion put forward by Pell Frischmann is 'when Proposed Development traffic is added to junctions already at or over capacity, existing issues are exacerbated, and traffic levels at a number of the considered junctions are taken beyond the point of capacity/operability that is usually considered acceptable' (para. 7.25).

Clearly, the development is having an impact and does need to propose works that mitigate the impacts caused by the development. This has not been done and further information is required on the proposed works to these junctions. Pell Frischmann seem to suggest that they are willing to discuss mitigation works for junctions 5, 6, 7, 9 and 10 only. It should be noted that Kirklees Council have a scheme drawn up and costed for Junction 5 and would be looking for the applicant to contribute to the implementation of this scheme.

Mitigation measures at affected junctions have not been included in the TA. Where mitigation works are not proposed, a full reasoned justification will need to be presented.

4.8 Sustainable Transport Strategy

The approach taken by the applicant is that the site is in a sustainable location and that the only works needed are on-site to link to the existing facilities. However, it has not been demonstrated what the existing cycling and walking facilities are and that they are adequate to encourage and accommodate new users from the proposed development. A user audit of both cycling and walking facilities linking the site to key destinations should be presented which identifies where enhancements and improvements are needed.

It is requested that an audit of cycling and walking facilities linking the site to key destinations should be presented. A costed delivery plan for enhancements and improvements to cycling and walking infrastructure is also requested at this stage to ensure that appropriate opportunities to promote sustainable transport modes have been taken up.

Existing public transport provision passing the site has been adequately described. However, given the scale of the development, it is anticipated that public transport will need to be introduced into the site. The TA suggests that market forces will determine if and when a bus service is introduced into the site. It is considered that more commitment to introducing public transport into the site is needed at this time and that evidence of an in-principle agreement and a costed delivery plan should be presented with this outline application so that the future sustainable accessibility of the site is established at this early stage.

It is recommended that an in-principle agreement and a costed delivery plan for introducing a public transport service into the site is established at this stage to ensure that appropriate opportunities to promote sustainable transport modes have been taken up.

5. Conclusions

While trip rates and mode split have been confirmed as acceptable, further information is required prior to any agreement, as indicated in the comments above.