CHAPTER 8: TRANSPORT

Introduction

8.1 This Chapter of the Environmental Statement examines the transport impact of the development on the roads in Barnsley and also how accessible the site is to staff and visitors by public transport, cycle and on foot. The requirements for servicing the development and also for the construction of the Barnsley Markets Site are also considered.

8.2 Full details of the assessment that has been undertaken are contained within the 'Barnsley Markets Transport Assessment' and accompanying Appendices. These documents are included as Appendix 8.1 in Volume 3 of the Environmental Statement.

Methodology

8.3 This section provides detail on the methodology used to assess the transport impact of the development on the roads in Barnsley.

8.4 The scope and technical methodologies used within the Transport Assessment were subject to early discussions and subsequent agreement with Barnsley Metropolitan Borough Council. This included the production of a Transport Scoping Note and an early stage Access Strategy Note, from which 'in principal' agreement of the proposed access arrangements was agreed.

8.5 It was agreed during the scoping exercise to assess the impact of the development on the highway network in the weekday evening peak hour (identified as 1600 to 1700 hours) and the Saturday peak hour (1200 to 1300 hours). An 'Area of Impact' was agreed with BMBC, with all junctions within the area forecast to experience increases in traffic of more than 5% as a result of the redevelopment requiring detailed capacity assessments. Capacity assessments were to be undertaken for the year that the first phase of the development is forecast to open (2013) and a design year of 2023. It was also agreed that background / baseline traffic flows should be

factored to the relevant future year using local TEMPRO growth factors, published by the Department for Transport. (DfT).

8.6 The approach used to forecast the vehicle trips generated by the redeveloped site was originally summarised in a Scoping Note, which was agreed with BMBC in early 2011. The methodology required one approach to account for the retail element of the scheme and a separate approach to account for the cinema element.

8.7 In summary, trip generation for the retail element of the development has been based on factoring existing car park demand to account for the proposed increase in retail floorspace. It was also assumed that the increase in retail floorspace resulting from the proposed development would not create new trips at the same ratio as the increase in floorspace. Instead, based on work undertaken on a previous town centre redevelopment project and adopted in the Transport Assessment for the previous Barnsley Markets scheme, it is assumed that the proposed redevelopment of the town centre would result in shoppers staying longer and thus derived traffic forecasts for increases in retail and market floorspaces would be factored down by 50%.

8.8 Trip generation for the cinema land-use was forecast using average person trip rates obtained by the TRICS 2011(a) database. These trip rates are used to forecast the total number of persons using the cinema. Car mode split percentages and average car occupancies were also obtained from TRICS survey data and applied to the person trip rates in order to calculate the total number of vehicles generated by the cinema.

8.9 Based on the methodologies outlined above, forecast vehicle trips generations were calculated. The number of vehicles forecast to be generated by the redeveloped site is presented in the 'Impact of Development' section of this Chapter.

Planning Policy Context

8.10 There are several bodies that have published policies that relate to the transport aspects of proposed developments.

National Policy

8.11 At a national policy level, 'Planning Policy Guidance: Transport' (PPG13) provides recommendations aimed at integrating planning and transport policies. The location of the Markets Site in the heart of Barnsley and in such close proximity to new Interchange complies with the three key objectives to:

- Promote more sustainable transport choices;
- Promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling; and
- Reduce the need to travel, especially by car.

Regional Policy

The Yorkshire and Humber Plan (2008)

8.12 Policy T1 relates to personal travel reduction and seeks to, inter alia, reduce travel demand.

Sheffield City Region Transport Strategy (2011-2026)

8.13 At the regional and sub-regional level, Barnsley is identified as being located within both the Sheffield City Region and the Leeds City Region. As part of the new Transport Strategy for the Sheffield City Region, the vision for Barnsley is for the town to become "a borough with strong economic links to both City Regions, which regenerates itself as a 21st-Century Market Town and focuses on improving skills and offering high quality housing." The Strategy also identifies a plan to "work with partners to improve the public realm in Barnsley linking the transport interchange, market and surrounding area".

Local Policy

Barnsley Unitary Development Plan (2000)

8.14 Policy T2 seeks to ensure that new development will only be allowed if the additional demand for travel generated can be accommodated on the highway network without significant detriment.

8.15 Policy T14 requires development proposals to include measures to facilitate access to, and where appropriate, by public transport services.

8.16 Policy T17 seeks to ensure the provision of appropriate car parking measures.

8.17 Also at the local level, the Barnsley Core Strategy document, which forms part of the emerging Local Development Framework, and that highlights the importance of sustainability and how this can be achieved through a coherent spatial plan. Barnsley's plan has the town centre as the focus for shopping, indoor leisure, culture and business creating 'a 21st century market town'. Development should be accessible and inclusive, which means focusing it in urban Barnsley and the principal towns.

Existing Situation

Summary of Existing Site Usage

8.18 The existing buildings on the Markets site are a combination of the existing markets complex, Metropolitan Shopping Centre and associated 600 space multi-storey car park. The car park is accessible from both Lambra Road and Kendray Street, though the vast majority of users access the site from Lambra Road to the south. Exit from the car park is only possible to the south.

8.19 In addition, there are several currently disused buildings within the development site. The first of these buildings is the six storeys of former Council offices, which was provided with associated car parking. There is a further 1,500 sq.m. of disused retail floor space within the site at 1 Lambra Road. Finally, the CEAG building, which previously housed the CEAG Lighting Company, is a disused building located to the east of the railway line.

8.20 The current market has a 'lock-up store' facility which enables some of the smaller dry good traders to keep their stock on site and only undertake servicing once per week. Servicing for the markets occurs from several locations:

- an area to the side of the Kendray Street car park access;
- an upper level area above the market; and

- from the elevated link road between Kendray Street and Lambra Road.

Existing Demand and Baseline Traffic Conditions

8.21 Data identifying the demand for the existing car park was obtained from new traffic counts. An Automatic Traffic Count (ATC) was undertaken for a full week period on the southern access ramp to the car park and Manual Classified Counts (MCC) were undertaken for a weekday and a Saturday at the Jumble Lane level crossing to identify vehicles entering and exiting the site from the north. A summary of existing demand for the Markets car park is provided in the 'Impact of Development' section of this Chapter.

8.22 Local baseline traffic conditions were obtained from existing traffic counts, which have been supplemented by new surveys. This included the use of permanent and temporary ATC and MCC data provided by Barnsley Metropolitan Borough Council and new MCC surveys at three local junctions. Detail on the local baseline traffic conditions is provided in the Transport Assessment and its Appendices, both of which are included in Appendix 8.1 of Volume 3 of the Environmental Statement.

Accessibility by Non-Car Modes

8.23 The location of the site results in exceptional public transport accessibility, with the town's rail station and bus hub within metres of the developments entrance. The new development will offer excellent pedestrian permeability from all areas of the town, in particular the Barnsley Interchange. Consideration has also been given for accessibility by cyclists. Further details can be found in the Transport Assessment, included in Volume 3 of the Environmental Statement.

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Impact of Development

Trip Generation

8.25 The approach used to forecast the vehicle trips generated by the redeveloped site has been summarised in the 'Methodology' section of this Chapter, with further detail also available within the Transport Assessment.

8.26 Based on the methodologies outlined above, forecast vehicle trips generations were calculated. The number of vehicles forecast to be generated by the redeveloped site is presented in Table 8.1 below, together with observed existing usage.

Table 8.1: Trip Generation Impact of Development

	Existing		**Development**		**Impact**	
Period	**Arrs.**	**Deps.**	**Arrs.**	**Deps.**	**Arrs.**	**Deps.**
PM Peak	31	114	64	166	+33	+52

8.27 It can be seen that the redevelopment is not forecast to generate a significant increase in evening peak traffic. This is because retail developments traditionally attract most of its traffic outside of weekday peak hours.

8.28 There is a greater increase in vehicle trips in the Saturday peak hour as a result of the development. Again, this is a result of the retail elements of the development generating more traffic on a Saturday.

Trip Impact Assessment

8.29 As mentioned previously, it was agreed with BMBC to undertake detailed capacity assessments of junctions within a defined 'Area of Impact' that are forecast to experience at least a 5% increase in traffic as a result of the redevelopment. Before identifying these junctions, it was necessary to distribute existing development traffic, and then remove it from the network, before finally distributing and adding the traffic generated from the redeveloped site. These processes were undertaken manually by using the existing traffic flow patterns as they approach and leave the site. Further detail of this process is provided in the Transport Assessment and its

accompanying figures included in Volume 3 of the Environmental Statement. The following junctions were identified as requiring detailed capacity assessments using 2013 and 2023 traffic flow scenarios:

- Wesley Street/Lambra Road (and proposed access to MSCP);
- Schwabisch Gmund Way/Kendray Street/Pontefract Road (and proposed access to MSCP);
- Sheffield Road (Alhambra) roundabout; and
- Lambra Road/Pontefract Road

8.30 The full details of the individual assessments are contained within the Transport Assessment, but a summary of the findings is discussed in the following paragraphs.

8.31 In order to provide access to the new market's multi-storey car park, it is proposed to signalise the Wesley Street / Lambra Road junction and provide a fourth arm from which the car park will be accessed. Although pedestrian activity in this area is very low, a signalised pedestrian crossing will be provided to enable pedestrians cross the Wesley Street arm of the junction. The results of our assessments indicate that the junction will operate within its reserve capacity in all 'with development' scenarios, except for in the 2023 Saturday peak when it is forecast to slightly exceed its reserve capacity but will operate within its absolute capacity. These results assume an 'all-red' pedestrian stage (ie all traffic is stopped as pedestrians cross) would be called every other cycle, which is likely to result in the vehicle capacity being underestimated. Importantly, queues on the short Wesley Street approach are forecast to be accommodated within the storage capacity of the link in all 'with development' scenarios. On the occasions that the queue begins to encroach on the Alhambra Roundabout, it will be possible to provide the Wesley Street approach with a period of unopposed green time in order to clear the vehicle queue. The ability to control queues on this link is unavailable in the current give-way layout.

8.32 The markets surface level car park, located on the existing CEAG site, will be accessed from the junction of Schwäbisch Gmünd Way and Kendray Street junction, which is adjacent to the Jumble Lane level crossing. Some minor modifications to the junction are proposed in order to allow traffic to access the surface car park from all directions except from over the level crossing. All traffic will also be prohibited

from travelling westbound over the level crossing. The assessments have shown that this junction will operate well within capacity in all scenarios.

8.33 The Alhambra (Sheffield Road) Roundabout is known to be operating at, or close to, its capacity in the current year. Therefore, once background traffic has been factored up to the assessment future years (2013 and 2023), the roundabout is predicted to exceed capacity. However, it is the result of the increase in background traffic demand (approximately 11% by 2023) that causes these capacity issues with the development traffic having a negligible impact on capacity. It should be noted that the assessments were based on the junction in its non-signalised form. Therefore, the junction can be expected to operate more efficiently, and with more control over the locations of queues, once the traffic signal metering scheme is in operation.

8.34 Finally, the Lambra Road / Pontefract Road give-way junction was forecast to operate within capacity in all assessment scenarios.

Construction

8.35 A development of this size is a by its nature going to require significant volumes of materials to be brought to the site and waste removed. However in comparison to both existing and forecast traffic flows, they will not constitute a congestion issue.

8.36 The impact of construction traffic can be easily mitigated by the selection of appropriate traffic routeing when coupled with an effective monitoring and enforcement programme. The associated Traffic Management Plan will also contain a methodology to phase and undertake the construction whilst maintaining existing car parking levels and continued access to the neighbouring Alhambra Mall.

8.37 With a town centre site such as this it will be important to consider the layout of the site accesses from a pedestrian's point of view. Prior to construction a more detailed risk assessment and Construction Strategy will need to be prepared and agreed with the contractor and BMBC.

Mitigation Measures

8.38 Whilst the assessment has shown that the traffic impact from the development will be minimal, it is still recognised that there is the need to make some changes to facilitate access to the site and to ensure its impact will be minimised. These are as follows:

- Introduce proposed access junction layouts, presented in outline form in Figures 4.1 and 4.2 of the Transport Assessment;

- Implement a 'control strategy' (including VMS signage to instruct drivers so to avoid busier car parks and routes), with precise requirements to be finalised as part of subsequent S278 agreements between the developer and BMBC;

- Introduce a Travel Plan and implement its proposals to encourage access by non-car modes and promote the use of existing public transport options. An Outline Travel Plan has been produced and forms an Appendix to the Transport Assessment; and

- Implement Traffic Management Plans and a Construction Strategy to mitigate impacts during the construction phase.

Monitoring Programme

8.39 Any monitoring programme, which may include analysis of traffic flows and delays, should be agreed with BMBC.

Robustness of Analysis

8.40 The Traffic Impact Assessment has been based on manually distributing the traffic impact of the development onto the background traffic flows. In reality, the addition of traffic, and therefore delays, may result in wider re-routing of background traffic as it seeks to avoid increased delays. In order to include for this re-routing effect an area-wide transport model would be required. However, the SATURN model of Barnsley is understood to be in the process of updating and was considered unfit for purpose at this time. The adopted methodology is, however, likely to overstate the

impact of the development on local junctions as it does not account for traffic finding alternative routes or in travelling at different times of the day.

8.41 The application of full TEMPRO growth rates to background traffic also adds robustness to the methodology used to assess the impact of the development. DfT TEMPRO growth rates already include an allowance for proposed new developments and therefore the approach of factoring background traffic and then also adding the development traffic manually provides a robust approach.

8.42 The approach was fully agreed with Barnsley Metropolitan Borough Council officers following the Transport Assessment Scoping Exercise.

Summary and Conclusions

8.43 The Barnsley Markets site is located in the optimum location to meet the objectives and ambitions laid out in key National and Regional Transport Policies. This relates to encouraging linked trips and proving high quality shopping experiences locally in locations with high quality and sustainable transport links.

8.44 The assessment of the trip generation from the development shows that it will only account for a minimal increase during the evening peak period. Detailed capacity assessments undertaken at junctions forecast to experience an increase in traffic of greater than 5% as a result of the redevelopment has demonstrated that the proposals will not result in additional congestion on the highway network surrounding the site.

8.45 Construction work can also be undertaken without significant disruption to other town centre destinations.