

CHAPTER 13: TRANSPORT AND ACCESS

Introduction

- 13.1 This chapter examines the baseline environment for Transport and Access and the potential effects of trips forecast during the construction and operational phases of the development. It also considers pedestrian delay, amenity and severance; accidents and safety and hazardous loads.
- 13.2 This chapter is supported by a Transport Assessment (Appendix 13.1) and a Travel Plan Framework (13.2).

Planning Policy Context

National Planning Policy

National Planning Policy Frameworkⁱ

- 13.3 Paragraph 29 of the NPPF sets out that transport policies have an important role to play in facilitating sustainable development, but also in contributing to wider sustainability and health objectives. The NPPF confirms that development should only be prevented or refused on transport grounds where the residual impacts of development are severe.
- 13.4 The NPPF goes on to state, at paragraph 35, that Local Plans should protect and exploit opportunities for the use of sustainable transport modes for the movement of goods or people. Therefore developments should be located and designed where practical to; amongst other things; create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians.

Local Planning Policy

Staffordshire Moorlands Core Strategyⁱⁱ

- 13.5 The Core Strategy is the key LDF document. It is a strategic District wide plan which influences how and where the Staffordshire Moorlands will develop in the future. It sets out what the District Council would like to achieve in each of the main towns and the rural areas outside the Peak District National Park.
- 13.6 Policy T1 – Development and Sustainable Transport states “The Council will promote and support development which reduces reliance on the private car for travel journeys, reduces the need to travel generally and helps deliver the priorities of the Staffordshire Local Transport Plans, where this is consistent with other policies.”
- Ensuring that all new development is located where the highway network can satisfactorily accommodate traffic generated by the development or can be improved as part of the development.
- 13.7 Development which generates significant demand for travel or is likely to have significant transport implications (as identified within a Transport Assessment) will, where appropriate; amongst other things; provide and actively promote travel plans.

13.8 Policy T2 – Other Sustainable Transport Measures states “the Council will encourage and support measures which promote better accessibility, create safer roads, reduce the impact of traffic, or facilitate highway improvements”. In relation to the development proposals: *“Support and promote the development of a network of safe walking, horse riding and cycling routes (including the National Cycle Network), connecting to transport interchanges, linking communities and recreational/tourist areas.”*

Churnet Valley Masterplan SPD ⁱⁱⁱ

13.9 Eight local character areas have been identified in Churnet Valley Masterplan (CVM) that reflect the distinctiveness of areas of the Churnet Valley and the role these individual character areas will play in achieving the vision. Moneystone (Kingsley Holt, Oakamoor) is one of eight local character areas.

13.10 In the Concept Statement for the Moneystone Quarry opportunity site, the CVM states: “Quarrying activity recently ceased at Moneystone Quarry. Condition 35 of the quarry permission (planning permission ref: SM.96/935) requires the restoration of the site within 2 years from the completion of working and for the management and aftercare of the restored site for a period of five years from the completion of its restoration. The new owners, Laver Leisure, submitted amendments to the approved Restoration Plan. Laver Leisure withdrew their submission in January 2014 and replaced it with a Revised Restoration Plan. This was approved by Staffordshire County Council on the 13 March 2014.

13.11 In the Accessibility and Connectivity statement the CVM states:

- Ensure development does not generate unacceptable volumes of traffic on existing road network and that major highway works are avoided;
- Incorporate measures to create off road links to be used by cyclists, walkers and horse riders to reach other attractions.
- Promote the use of sustainable modes of transport to reach the site and once at the site to explore the surrounding area
- Ensure highway/junction improvements to support development subject to minimising environmental impact.”

Approach

Assessment Methodology

13.12 The Transport Assessment (TA) in Appendix 13.1 prepared for the development identifies, as far as reasonably possible, the nature of the transport changes within the area of the proposed development. The assessment includes consideration of traffic impacts during construction as well as the impacts forecast during the operation of the proposed development. The detailed assessment is contained in the TA and Travel Plan Framework (TPF).

13.13 The scope of these documents was agreed with the Local Highway Authority (LHA); and the method within accords with:

- The Design Manual for Roads and Bridges, Department for Transport (various dates).
- The Manual for Streets, Department for Transport (2007);
- The Manual for Streets 2, Chartered Institution of Highways and Transportation (2010);

- Good Practice Guidelines: 'Delivering travel plans through the planning system', Department for Transport (2009).
- Transport Assessments and Travel Plans Guide, Staffordshire County Council (January 2008).

13.14 The analysis in this chapter also considers the following document:

- Institute for Environmental Assessment (IEA) guidance note 'Guidelines for the Environmental Assessment of Road Traffic'

13.15 The highway study area is shown in **Plan 2** in the TA and includes the following roads; the A52, Eaves Lane, Carr Bank, Blakeley Lane and the B5417.

Assessment Criteria

13.1 The IEA guidelines recommend that the environmental effects listed in Table 2.1 of the guidance may be considered important when considering traffic from an individual development. Those considered in this chapter are:

- **Driver delay** – This has been based on the operational assessment of key junctions on highway links where traffic flows will increase by 10% or more (see the Highway Operation and Driver Delay section below).
- **Pedestrian delay and amenity** – the delay caused to pedestrians and the relative pleasantness of a journey.
- **Pedestrian Severance** – a division that can occur within a community. The Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3, Part 8, Chapter 6 provides a set of measures to identify severance within a community in terms of the 2-way AADT flow on a link. **Table 13.1** summarises these thresholds.

Table 13.1: Pedestrian Severance Levels (DMRB)

Severance Level	Traffic (AADT)	Flow
Slight	<8,000	
Moderate	8000 – 16,000	
Severe	>16,000	

- **Accidents and safety** – the guidelines suggests that "Professional judgement will be needed to assess the implications of local circumstances, or factors, which may elevate or lessen risks of accidents, e.g. junction conflicts".
- **Hazardous loads** – the necessity for the delivery and process of hazardous material.

13.2 With regard to the these effects the guidelines states assessment should be based on:

- ...highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%);
- ...any other specifically sensitive areas where traffic flows have increased by 10%, or more; or
- Heavy Goods Vehicle (HGV) traffic flows have increased significantly.

Magnitude of Impact Criteria

- 13.16 The TA considers the impact on capacity and quantifies the likely traffic impact of the development proposals on highway operational capacity during a busiest weekday morning and evening, and a busiest Saturday peak hour period. All other periods will operate with lower background traffic than these peak hour periods. The calculation of traffic impact enables the need for mitigation works to be identified and in turn, allows the design of any mitigation works to be established.
- 13.17 The Local Highway Network Study Area has been assessed to establish the areas where a material traffic impact may accrue as a result of increases in traffic flows resulting from the development.
- 13.18 For consistency with the Environmental Statement, in the TA the following thresholds summarised in **Table 13.2** have been established to identify the significance of the With-Development impact in comparison to the 2020 Background traffic flows:

Table 13.2 Traffic Capacity Impact Criteria

Level	Scale of Change
High	> 10% net increase in traffic flows on Local Roads
	> 10% net increase in traffic flows on Strategic Roads
Medium	Between 5% and 10% net increase in traffic flows on Local Roads
	Between 1% and 10% net increase in traffic flows on Strategic Roads
Low	Between 1% and 5% net increase in traffic flows on Local Roads
	Between 0.5% and 1% net increase in traffic flows on Strategic Roads
Negligible	< 1% net increase in traffic flows on Local Roads
	< 0.5% net increase in traffic flows on Strategic Roads
Beneficial	Any decrease in traffic flows

- 13.19 Where the percentage impacts exceed the aforementioned 10% threshold (depending on the sensitivity of the junction to operational problems), then the junction has been assessed further to consider the highway operational capacity in detail. This is the second stage of assessment required to establish the forecast level of operational performance under the With-Development flow scenario.
- 13.20 For these junctions the following terms have been used to quantify the forecast level of operation of each junction.
- 13.21 A degree of saturation or ratio of flow to capacity of over 100% (or greater than 1.00), indicates a link which will become overloaded above its absolute capacity during the period of assessment, i.e. during the peak hours.
- 13.22 The forecast queue lengths indicate where queue length may become problematic, e.g. if a queue was to stretch back to create a danger on the highway, or near a bend in the road etc. then this issue should also be assessed and considered.
- 13.23 Pedestrian delay and amenity; pedestrian severance; accidents and safety and hazardous loads have been considered based on the significance criteria definitions described below.

Significance Criteria

- 13.24 The impacts of the development have been measured against the significance criteria below:
- **Major Beneficial** - Where there is a major improvement compared to the current situation as a result of the proposals associated with the development.
 - **Moderate Beneficial** - Where there is a moderate improvement compared to the current situation as a result of the proposals associated with the development.
 - **Minor Beneficial** - Where there is a small improvement compared to the current situation as a result of the proposals associated with the development.
 - **Negligible** - Where there is not a noticeable impact.
 - **Minor Adverse** - Where there is a minor impact but no mitigation measures are required.
 - **Moderate Adverse** - Where the impact leads to a moderate impact and some specific mitigation measures are considered necessary.
 - **Major Adverse** - Where there is a major impact requiring major mitigation.

Assumptions/Limitations

- 13.25 The TA demonstrates that the daily total vehicle flows generated by the proposed leisure park on a busiest weekend day (i.e. a Saturday in August) is significantly higher than the generated daily flows on a busiest weekday. It should be noted that in order to provide a robust assessment, the daily traffic flows generated by the proposals on a Saturday have been used in the percentage impact assessment. This is also the case for the other assessments.

Baseline Conditions

Surveyed Traffic Flows

- 13.26 A set of baseline traffic data was previously agreed with the Local Highway Authority (LHA) for the previous 2014 TA and Transport Access and Design Chapter of the EIA for this site. It was agreed with SCC that the 2010 and 2011 surveys used in the 2012 Transport Assessment would still be acceptable to be used for the purpose to derive the baseline traffic flows for the 2014 planning application. In order to provide an assessment based on current baseline traffic flows, the same traffic surveys have been repeated in May 2016 using the same agreed scope.
- 13.27 Automatic Traffic Count (ATC) surveys were carried out at seven different locations in the vicinity of the site. Plan 12 of the TA shows the location and type of surveys. The ATC classified link volume surveys were carried out from Wednesday 18 to Tuesday 24 May 2016. The results of the surveys are provided in Appendix B of the TA.
- 13.28 It is acknowledged that the May 2016 survey data represents relatively stable conditions in a neutral month, i.e. a month that could be taken as representative

of typical conditions throughout the year. Alton Towers, a major leisure development located to the south of the site, attracts significantly more traffic into the study area in the summer months during school holidays compared with a neutral month of May. It has therefore been necessary to apply a factor to the May 2016 survey to represent a peak holiday August period.

13.29 In order to calculate a suitable factor to apply to the neutral May surveys, selected May 2016 surveyed ATC Links have therefore been compared with the same Links surveyed in August 2011, which was included within the 2014 TA. The following links have been compared:

- Link 1 – A52, west of Whiston Eaves Lane;
- Link 2 – A52, east of Whiston Eaves Lane;
- Link 5 – Eaves Lane, south of Blakely Lane;
- Link 6 – B5417, west of Carr Bank; and
- Link 7 – Carr Bank, north of junction with A5417.

13.30 A comparison of the surveyed Links is summarised in **Table 13.3**.

Table 13.3: Baseline Data Variation

Link/Year	1	2	5	6	7
August 2011	2502	2303	257	3313	813
May 2016	1974	1707	181	2719	650
Factor	1.27	1.35	1.42	1.25	1.22

13.31 As it can be seen from **Table 13.3**, the August 2011 surveyed traffic flows were higher in comparison with all Links surveyed in 2016, ranging from a factor of 1.22 to 1.42. In order to provide a robust assessment to reflect the peak August holiday season, the May 2016 surveyed traffic flows have therefore been increased by a factor of 1.5, which also takes account of traffic growth from 2011 to 2016.

Future Background Traffic Growth

13.32 As previously agreed with SCC, TEMPRO growth rates adjusted by NTM have been used to derive the growthed surveyed flows for the assessment year. The resulting derived background traffic growth rates from a base year of 2016 forwards to 2020 opening year for roads within the rural Staffordshire Moorlands geographic area are summarised in **Table 13.4** below, using the TEMPRO 6.2 and NTM AF09 datasets.

Table 13.4: 2016 Saturday Daily Surveyed, Factored and Background Two-Way Traffic Flows

Link No.	Link Name	Saturday Daily Two-Way Traffic Flows		
		2016 Surveyed	2016 Factored	2020 Background
1	A52 (West of Eaves Ln)	1974	2961	3086
2	A52 (East of Eaves Ln)	1707	2561	2668
3	Whiston Eaves Ln (South of the junction with A52)*	595	893	934
4	Blakeley Ln	47	71	74
5	Eaves Ln (South of Blakeley Ln)	181	272	284
6	Carr Bank (in Oakamoor)	650	975	1019
7	B5417 (West of Carr Bank)	2719	4079	4263
8	B5417 (East of Carr Bank)	2586	3879	4055

Note:
 *Based on 2014 Survey Data, TEMPRO Growth Factor used to growth up the two-way traffic flows at this location to 2016 surveyed traffic flows for minor roads within the rural Staffordshire Moorlands geographic area.

TEMPRO Growth Factors Used:

Growth Factor (2014-2016)
 Minor Road = 1.0142

Growth Factor (2014-2020)
 Minor Road = 1.0603

Growth Factor (2016-2020)
 Principle Road = 1.0421
 Minor Road = 1.0453

Committed Development

- 13.33 It is understood that there are no committed development (i.e. current planning applications that have been decided, but not built) should be taken account of in this assessment.
- 13.34 In order to provide a robust assessment however, the Bolton Copperwork site in Froghall, which has been identified in the Churnet Valley Masterplan for future development, has been taken account of as a committed development. The Bolton Copperworks site is located approximately 1.2km west of Whiston and is accessed directly from the A52. The Churnet Valley Masterplan identifies the Bolton Copperworks site for creation of a Rural Centre comprising of mixed use development.
- 13.35 The Bolton Copperworks site was subject to an EIA scoping request in October 2014. Although no planning application has been submitted for the site at this stage, further to discussion with Staffordshire Moorlands District Council, it is envisaged that the maximum quantum of development could comprise based on the masterplan areas shown in the submitted EIA scoping report:

- 215 residential dwellings;
- Employment park, circa 2,250sqm gross floor area;
- Visitor centre, circa 2,500sqm gross floor area;
- 50 bedroom hotel; and
- Outdoor activity centre.

13.36 The Trip Rate Information Computer System (TRICS) database has been interrogated, where possible, to calculate the potential trip generation associated with a Rural Centre during Saturday, the results of which are included as **Appendix C** of the TA. At this stage however it is not known what the Outdoor Activity Centre could comprise of and there is no site in the TRICS database to provide trip rates for this type of land use. For the purposes of this assessment, the same trip generation calculated for Day Visitors to the proposed Moneystone Park site has therefore been applied to the Bolton Copperworks site. **Table 13.5** summarises the forecast Bolton Copperworks Committed Development Saturday daily Trip Generation.

Table 13.5: Committed Development Saturday Daily Trip Generation Derivation

	Arrivals	Departures	Totals
Residential Development	879	900	1779
Employment Park	0	0	0
Visitor Centre	1284	1272	2556
Hotel	202	203	405
Outdoor Activity Centre	200	200	400
Total	2565	2576	5141

13.37 The Bolton Copperworks site would be accessed directly from the A52. It is also understood that any development traffic associated with the Bolton Copperworks site would be discouraged from using Whiston Eaves Lane to visit the site. On this basis the surveyed Saturday two-way traffic flow on the A52, west of the Whiston Eaves Lane junction, has been used to derive trip distribution to the proposed Bolton Copperworks site, which is 50% westbound and 50% eastbound.

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13.38 Total Committed Development Saturday trip generation shown in **Table 13.5** has been applied to 50%/50% trip distribution to derive Bolton Copperworks Development Saturday Daily Trip Generation on Links shown in **Table 13.6**.

Table 13.6: Committed Development Saturday Daily Trip Generation on Links

Link No.	Link Name	Saturday Daily Two-Way Traffic Flows
1	A52 (West of Eaves Ln)	2570
2	A52 (East of Eaves Ln)	2570
3	Whiston Eaves Ln (South of the junction with A52)*	0
4	Blakeley Ln	0
5	Eaves Ln (South of Blakeley Ln)	0
6	Carr Bank (in Oakamoor)	0
7	B5417 (West of Carr Bank)	0
8	B5417 (East of Carr Bank)	0

13.39 2020 Base Saturday Daily Traffic Flows are shown in **Table 13.9** which have been derived by adding 2020 Background Saturday Traffic Flows shown in **Table 13.4** to Bolton Copperworks Development Saturday Daily Trip Generation on Links shown in **Table 13.6**.

Baseline Pedestrian Delay and Amenity

13.40 For the study area considered in this chapter pedestrian delay comes from any issues crossing the road; pedestrian severance is discussed in more detail below but traffic levels as demonstrated by the ATC surveys are low along Whiston Eaves Lane, Eaves Lane and Carr Bank.

13.41 Pedestrian amenity (‘the relative pleasantness of a journey’) is affected by traffic flows and composition, footway width and the degree of segregation. Generally the roads in the study area have limited footways and pedestrians walk on the carriageway, although this may be considered quite pleasant on the relatively quiet rural roads.

Baseline Pedestrian Severance

13.42 **Table 13.7** provides a summary of the existing levels of severance on the local road network.

Table 13.7: 2016 Baseline Severance Levels

Link No.	Link Name	2016 AADT	Severance Level
1	A52 (West of Eaves Ln)	1974	Slight
2	A52 (East of Eaves Ln)	1707	Slight
3	Whiston Eaves Ln (South of the junction with A52)*	595	Slight
4	Blakeley Ln	47	Slight
5	Eaves Ln (South of Blakeley Ln)	181	Slight
6	Carr Bank (in Oakamoor)	650	Slight
7	B5417 (West of Carr Bank)	2719	Slight
8	B5417 (East of Carr Bank)	2586	Slight

Baseline Accidents and Safety

13.43 For the 2014 TA, PIA data for the local highway network surrounding the Application Site was obtained from Staffordshire County Council for the latest five-year period in 2104, which was between 1 April 2009 and 31 March 2014, see **Table 13.8**.

13.44 The Crashmap website has been interrogated, which includes all PIAs occurring on all roads in Great Britain up to the end of 2014, has identified that no further accidents have occurred within the study area in 2014.

Table 13.8: Existing Accident Frequency

Location	Slight	Serious	Fatal
A52/Blakely Lane	2	0	0
Eaves Lane	1	0	0
Blakely Lane	0	1	0
Carr Bank	1	0	0
Farley Road	1	0	0
Church Bank	0	1	0
Ashbourne Road	1	0	0

13.45 In total, eight accidents occurred on the local highway network surrounding the Application site; one on Eaves Lane, one on Blakeley Lane, two at the A52/Blakeley Lane junction, one on Carr Bank and one on Farley Road. Of the eight accidents, six resulted in slight injury and two resulted in serious. Although it should be noted for the serious accidents, the contributory factors noted were "Impaired by alcohol" and "Travelling too fast for conditions."

13.46 In summary, it is not considered that there is a significant accident problem on the highway network in the study area. No cluster sites have been identified and therefore it can be concluded that there are no areas that should be identified as sensitive to changes in traffic.

Potential Impacts

13.47 This section considers short term (construction phase) and long term (operational phase) traffic impacts.

Construction

13.48 Full construction logistics and the associated method statements (these are not yet available) are usually calculated by the main contractor as part of the detailed programming for the operation of the Application Site; however, below is a summary of the potential construction impact.

13.49 The construction phase of the proposed development would generate a relatively small number of vehicle movements in comparison to the long-term operational traffic generated by the development. However, whilst only a temporary phase in the lifespan of a site, construction traffic includes the movement of Heavy Goods Vehicles (HGVs). Therefore, it is important that all potential traffic impacts, but particularly HGVs, be identified and measures implemented to manage their effects wherever practicable (see mitigation measures later in this chapter).

13.50 The construction activities at Moneystone Park are likely to take place over a period of 3 to 5 years and will involve certain activities taking place and structures being installed as part of the construction period, which will influence the number and type of vehicles used.

- 13.51 The traffic flows generated from both development and construction will vary throughout the various phases of construction for the Application Site. The likely number of Heavy Goods Vehicles (HGVs) and construction staff movements associated with the overall construction phase of the development will be confirmed once a Contractor has been appointed.
- 13.52 The peak traffic generation for a construction site generally occurs outside the traditional weekday morning and evening peak hours, frequently starting at 07:00 and finishing as late as 19:00. Specific site activities may spread trips across the construction site's operating period.
- 13.53 A simple 'Ready Reckoner' was devised by the Building Research Establishment (BRE) in the 2003 report 'Construction Site Transport'. This provided a summary of indicators for construction site transport, using the M4I environmental performance indicator (www.m4i.org.uk) on transport as a starting point to construct two calculations, both of which relate to project value.
- 13.54 The calculations relate to the generation of vehicle movements to a site, per £100,000 project value. Factors considered include workforce movements, delivery of materials and plant to site and movement of waste off-site. This alternative methodology has been used to validate the first principle calculations obtained from considering the likely bulk material transport requirements.
- 13.55 Based on data collected in 2012, the total recorded movements onto a site per £100,000 of project value was 49.5 one-way trips (www.kpizone.com), or 99 two-way trips assuming all trips arrive and depart the site. For deliveries of materials, the indicator simply considers the final delivery journey to site, therefore not accounting for off-site storage, consolidation of loads or other factors.
- 13.56 Based on 3-years of construction activity, to provide a robust assessment, with an average of 250 working days per year, the construction activities at Moneystone Park would generate around 17,820 trips, equating to 24 two-way total vehicle movements per day using the BRE formula and an indicative on site construction cost of £18M.
- 13.57 It is anticipated that the construction traffic will have a **Moderately Adverse** impact on existing traffic movements (although it may be considered a Negligible change compared to the historic use, i.e. the quarry).

Completed Development (Operational Phase)

- 13.58 The traffic assignment, contained in the TA, onto the local highway network identifies the key location for highway capacity analysis as the access route from the A52 via Whiston Eaves Lane junction. The background traffic and development Saturday daily traffic flows are summarised in **Table 13.9**, which include:
- 2016 surveyed flows factored by 1.5 to reflect an August peak holiday Saturday in 2016 (Figures 36 and 37 of the TA). Traffic flows shown in Table 13.9 are the factored 2016 daily flows;
 - 2020 Base Traffic Flows (Figure 38 of the TA shows daily the committed development traffic flows for the Bolton Copperworks site and Figure 39 of the TA shows the 2020 Base Traffic Flows);
 - Daily trip generation traffic flows, including 20% contingency, for the proposed Moneystone Park site;
 - 2020 Assessment Traffic Flows (Figure 40 of the TA); and
 - Figure 42 of the TA shows the Saturday daily percentage traffic impact.

Table 13.9: Two-Way Link Flow Changes (August Forecasts)

Link No.	Link	2016 Surveyed Flows	2020 Base Traffic Flows	Moneystone Park Traffic	2020 Assessment Traffic Flows	Magnitude of Traffic Impact
1	A52 (West of Eaves Ln)	2961	5656	604	6260	11%
2	A52 (East of Eaves Ln)	2561	5239	303	5541	6%
3	Whiston Eaves Ln (South of the junction with A52)*	893	934	906	1840	97%
4	Blakeley Ln	71	74	0	74	0%
5	Eaves Ln (South of Blakeley Ln)	272	284	68	352	24%
6	Carr Bank (in Oakamoor)	975	1019	68	1087	7%
7	B5417 (West of Carr Bank)	4079	4263	4	4268	0%
8	B5417 (East of Carr Bank)	3879	4055	64	4119	2%

13.59 The traffic impacts for the total flow on each arm are classified for each junction in turn below, in relation to the thresholds identified previously for 'Negligible', 'Low', 'Medium' and 'High' traffic impact respectively.

Junction 1: A52 / Whiston Eaves Lane

13.60 The With-Development scenario results in a significant increase on the total flow at the junction, from Whiston Eaves Lane in particular in the opening year assessment scenario. The arms of the junction experience the following scale of traffic impact in 2020.

- A52 West of Whiston Eaves Lane (Link 1) = 11% increase = a relatively high increase; however, this is from a relatively low baseline traffic flow for an A-class road.
- A52 East of Whiston Eaves Lane (Link 2) = 6% increase = a medium increase; although again this is from a relatively low baseline traffic flow for an A-class road.
- Whiston Eaves Lane (Link 3) = 97% increase = a high increase; however, this is from a low baseline traffic flow.

Junction 2: B5417 / Carr Bank

13.61 The With-Development scenario results in a significant increase on the total inflow into the junction, from Whiston Eaves Lane in particular in the opening year assessment scenario. The arms of the junction experience the following scale of traffic impact in 2020.

- Carr Bank (Link 6) = 7% increase = a medium increase; however, this is from a very low baseline traffic flow.
- B5417 West of Carr Bank (Link 7) = 0% = a negligible change.
- B5417 East of Carr Bank (Link 8) = 2% = a negligible change.

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Driver Delay

Junction 1: A52 / Whiston Eaves Lane (Whiston)

13.62 The traffic modelling, included in the TA, forecasts that the operational impact of the proposed development at Junction 1 is **Negligible**. The junction is forecast to operate in the With-Development scenario with demand that is significantly less than the existing capacity during the assessed peak hours (See Appendix E in the TA for more information).

Junction 2: B5417 / Carr Bank (Oakamoor)

13.63 The traffic modelling, included in the TA, forecasts that the operational impact of the proposed development at Junction 2 is **Negligible**. The junction will operate in the With-Development scenario with demand that is significantly less than the existing capacity (See Appendix E in the TA for more details).

Pedestrian Delay and Amenity

13.64 There is expected to a **Negligible** impact on pedestrian delay as pedestrians are still able to take the same on road routes as before.

13.65 Negative changes in pedestrian amenity are assumed to be significant where traffic flows double or more. None of the links considered were shown to experience a doubling of flows, and overall it is therefore concluded that the impact would be negligible. However, the proposals will also provide new pedestrian routes through the site which will have a good level of pedestrian amenity so in this respect the development has a **Minor Beneficial** impact on pedestrian amenity.

Severance

13.66 **Table 13.10** provides an indication of the level of change in severance between the 2020 baseline AADT flows and the 2020 flows with development from the proposal.

Table 13.10: Change in Severance as a Result of the Proposed Development

Link Name	Severance Level		Significance
	2020 Baseline AADT	2020 + Development AADT	
A52 (West of Eaves Ln)	Slight	Slight	Negligible
A52 (East of Eaves Ln)	Slight	Slight	Negligible
Whiston Eaves Ln (South of the junction with A52)*	Slight	Slight	Negligible
Blakeley Ln	Slight	Slight	Negligible
Eaves Ln (South of Blakeley Ln)	Slight	Slight	Negligible
Carr Bank (in Oakamoor)	Slight	Slight	Negligible
B5417 (West of Carr Bank)	Slight	Slight	Negligible
B5417 (East of Carr Bank)	Slight	Slight	Negligible

13.67 As there is little change to the level of severance on any link the development would have a **Negligible** effect on severance.

Accidents and Highway Safety Impacts

13.68 It is possible that additional traffic may result in additional number of Personal Injury Accidents (PIA) on the local highway network. However, the analysis in **Table 13.9** illustrates that no part of the Local Highway Network Study Area will experience medium two-way traffic flow changes of greater than 1,000 AADT in comparison to the Planning Baseline.

13.69 In comparison to the 2020 Background traffic flows, none of the links or junctions within the highway network study area will experience a change classified greater than a '**Low**' (i.e. less than 1,000 AADT) in the With-Development conditions. It is therefore concluded that the proposals would have a **Negligible** impact on accident rates.

Hazardous Loads

13.70 No hazardous loads are expected at the development so the significance of this effect is considered to be **Negligible**.

Mitigation Measures

13.71 This section considers the embedded mitigation to assess that the levels of traffic assessed and the delivery routes are adhered to.

Construction

13.72 Traffic will be generated during the construction phase of the development. These vehicle trips will include:

- Workforce movements to/from the site.
- Deliveries made to the site.
- Removal of material from the site.
- Trips made by associated trades.

13.73 To mitigate the impact of these trips it is anticipated that a Construction Traffic Management Plan will be implemented this will consider, as appropriate the following to facilitate site access and construction activities:

- Supply Chain Optimisation.
- Delivery logistics.
- Route mapping.
- Construction Travel Plan.
- Programme Compression.
- Management of Bulk Transport Movements.
- Construction Methodology and Safe Methods of Work.

Completed Development

13.74 To help mitigate the impact of trips caused by the development a Travel Plan Framework (TPF) which accompanies the TA (TPF in Appendix 13.2) and includes a number of measures that will encourage travel by non-car mode will be

adopted. This includes; a staff car share proposal; cycle storage and a bus for Alton Towers to the site for visitors.

- 13.75 Traffic movements will be actively managed such that excessive traffic flows do not arise on local access roads. This will be ensured through the sustainable access strategy working in conjunction with control of traffic using the site access points from the local highway network.
- 13.76 In addition a detailed Car Park Management Plan will be operated by the Management Company for the site and implemented by the Travel Plan Coordinator. The scope of the Car Park Management Plan will include:
- Allocating staff parking using a permit system based on travel needs.
 - Designated parking spaces will be assigned to car-sharers.
 - Financial incentives for staff not to drive to work.
- 13.77 All of above are expected to help reduce reliance on single occupancy private motor vehicles, although it should be noted that no operational mitigation is considered necessary on the highway network for any additional traffic generated from the site.

Residual Impacts

Construction

- 13.78 As noted earlier, to mitigate the impact of construction trips a Construction Traffic Management Plan will be implemented. Until a contractor has been appointed it is not possible to more accurately quantify the number of trips or those that can be reduced through the adoption of this management plan. However, these will be only on a temporary basis until the site is constructed. There will be mitigation in terms of routing (to prevent vehicles accessing the site via inappropriate routes) so this, with the management plan, is expected to result in a **Minor Adverse** residual impact.

Completed Development

- 13.79 The traffic impact analysis in the TA and summarised in this section, identifies that that the proposed development will result in an increase in traffic levels on the local roads providing immediate access to the development. As distance from the development increases, the traffic impact of the scheme dissipates as development traffic distributes across the wider highway network.
- 13.80 The travel behaviour influences of the proposed Transport Strategy and the Travel Plan Framework (TPF) will act as a beneficial influence on transport impact, in that it will support and encourage staff to change their mode of travel away from the private car to other forms of transport that are more sustainable in the long-term.
- 13.81 The TPF (Appendix 13.2) includes a mechanism to monitor future vehicular trip generation rates, traffic flows on local roads and traveller modal choice influences.
- 13.82 This monitoring will be linked directly to the traffic generation forecasts presented within the TA. Any 'breach' of the Travel Plan targets in this regard will be managed by S106 planning obligations to establish an appropriate monitoring and enforcement mechanism in line with the 'Good Practice Guidelines: Delivering Travel Plans through the Planning Process', published by the Department for Transport (April 2009).

13.83 The Travel Plan Framework is supported by measures that not only to restrict and discourage private car use (through appropriate car parking restraint for instance), but also to actively encourage and enable less reliance on private cars. This latter objective would be achieved through a combination of measures to encourage non-car modes of transport.

13.84 Therefore it is anticipated that the adoption of a TPF will help encourage a shift away from private motor vehicle but, this will result in a betterment from the potential impact identified earlier.

13.85 Table 13.9 summarises the residual impacts.

Table 13.9: Summary of Residual Impact

Phase	Nature of Effect	Level of Impact	Duration	Significance	Residual
Construction	Construction traffic	Local	Temporary	Moderate Adverse	Minor Adverse
Completion	Traffic Flows	Local	Permanent	Minor Adverse	Minor Adverse
	Driver Delay	Local	Permanent	Negligible	Negligible
	Pedestrian Delay	Local	Permanent	Negligible	Negligible
	Pedestrian Amenity	Local	Permanent	Minor Beneficial	Minor Beneficial
	Pedestrian Severance	Local	Permanent	Negligible	Negligible
	Accidents and Safety	Local	Permanent	Negligible	Negligible
	Hazardous Loads	Local	Permanent	Negligible	Negligible

Conclusions

13.86 In summary, traffic is expected to increase on the local roads around the site; the percentage increase on these has been considered in this section and assessed against a set of traffic capacity significance criteria. The operational capacity assessment (which includes consideration of driver delay) has been considered for key junctions in the study (identified in the TA) where traffic flows increases exceed 10%. Considering the impact of these using the significance criteria; the development is expected to have a **Minor Adverse** impact on traffic flows and a **Negligible** impact on driver delay.

13.87 In respect to construction traffic, mitigation is required (e.g. a routing plan) so the impact is considered to be **Moderately Adverse**. However, with this mitigation in place and a Construction Management Plan active, the residual impact is expected to be **Minor Adverse**. This impact is temporary until the site is constructed.

13.88 In terms of Pedestrian delay, the development is expected to have a **Negligible** impact and Amenity is expected to improve (with the provision of new routes on

site) so the impact is considered to be **Minor Beneficial**. In terms of pedestrian severance, there is expected to be a **Negligible** impact.

13.89 There is expected to be a **Negligible** impact on accidents and safety and, as there are not anticipated to be any hazardous loads to the site this impact is also considered to be **Negligible**.

13.90 As noted above, a Construction Traffic Management Plan will be provided as will a Travel Plan Framework (TPF). The TPF will seek to reduce the impact of the development which will help mitigate its impact.

ⁱ Department for Communities and Local Government (2012) *National Planning Policy Framework*, DCLG, London.

ⁱⁱ Staffordshire Moorlands District Council (2014) *A Local Plan for the Future of Staffordshire Moorlands. Core Strategy Development Plan Document*, SMDC, Staffordshire.

ⁱⁱⁱ Staffordshire Moorlands District Council (2014) *Churnet Valley Masterplan. Supplementary Planning Document*, SMDC, Staffordshire.