STRIDE TREGLOWN

Environmental Statement: Chapter 8 – Highways and Transportation

Ellel Holiday Village, Lancaster

Ellel

Ellel Holiday Village LLP

8. Highways and Transportation

8.1. Introduction

8.1.1 This chapter assesses the effects of the proposed development on transport and access. The chapter describes the baseline conditions surrounding the site, the potential impacts of the development with respect to transport, accessibility and highways, the mitigation measures included to offset the effects and the residual impacts. The assessment has been undertaken by SK Transport.

8.2. Legislative and Policy Framework

National Planning Policy Framework (NPPF 2019)

8.2.1 The National Planning Policy Framework (NPPF) was originally published in 2012 and was revised in 2019. At the heart of NPPF is the presumption in favour of sustainable development that supports economic growth and vibrant communities. NPPF supports development that balances economic, social and environmental gains, while considering local circumstances and opportunities. At paragraph 103 NPPF states that local authorities should:

"...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."

8.2.2 NPPF requires all developments that generate significant amounts of movement to be supported by a Transport Statement or Transport Assessment, and states at paragraph 108 that decisions should take account of whether:

- appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location
- safe and suitable access to the site can be achieved for all users
- any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree

8.2.3 Paragraph 109 of NPPF states that:

"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."

Lancaster City Council Development Management DPD

8.2.4 The Lancaster City Council Development Management DPD was adopted in 2020. This sets out planning policies that will be used when determining applications. Policy DM60 states that:

> *"The council will seek to ensure that development proposals, particularly those which will generate significant footfall and motorised vehicle journeys, are located where sustainable travel patterns can be achieved. This will seek to ensure that higher density mixed use development located in accessible centres or in close proximity to main public transport routes.*
>
> *Proposals should minimise the need to travel, particularly by private car and maximise the opportunities for the use of walking, cycling and public transport. Development proposals will be supported where they seek to:*

i. *Make the best use of existing public transport services and where appropriate provide opportunities for improving and sustaining the viability of those services;*

ii. *Ensure that there is convenient access for walking and cycling to local amenities, including education, employment and community facilties;*

iii. *Create buildings and places that are easily accessible for the whole community, particularly those with disabilities;*

iv. *Develop an innovative and flexible approach to the delivery of public transport in rural areas of the district;*

v. *Include measures that address matters of highway safety to the satisfaction of the local highway authority;*

vi. *Ensure that the proposal site can be accessed safely both during the construction and occupation phases of development;*

vii. *Make appropriate provision for parking in accordance with Policy DM62 and the car parking standards set out in Appendix E of this document, in terms of both the number of spaces provided and their location in relation to the development, to encourage sustainable travel patterns and avoid congestion and adverse highway safety impacts caused by excessive on-street parking; and*

viii. *Be designed and located to ensure the provision of safe streets and reduce as far as possible the negative impacts of vehicles in accordance with paragraph 32 of the National Planning Policy Framework. This should address issues such as highway safety, highway efficiency and excessive volumes of traffic, fumes and noise and also where possible road infrastructure should seek to complement and enhance the landscape and townscape.*

Where proposals are not able to achieve this, it must be clearly demonstrated that significant impacts can be addressed through the preparation of a Travel Plan in accordance with Policy DM63.

Development proposals should seek to maximise efficiency and capacity on the existing transport and highway network. Where such capacity is insufficient to accommodate the proposal, the provision of new transport and highway infrastructure will be sought as a priority. Depending on the scale, nature and location of development, new infrastructure, either in whole or in part, will be required to enable the properly phased implementation of the development. Where capacity is insufficient, and inadequate mitigation measures are proposed to remediate this issue, then planning permission is likely to be refused."

8.2.5 Policy DM63 states that:

"The Council will support proposals that maximise opportunities for the use of sustainable modes of travel. Development proposals should make appropriate contributions (having due regard to cost-effectiveness) to improve the transport network and transport infrastructure, particularly to facilitate walking, cycling and public transport (bus and rail) to encourage the use of alternative forms of transport from the private car.

Proposals that would generate a high number of trips or visits or generate significant traffic movements on the local highway network should be located in a sustainable location which can be accessed through a variety of transport modes. Proposals should not give rise to traffic volumes that exceed the capacity of the local road network without mitigation measures being agreed, nor cause harm to the character of the surrounding area.

To demonstrate the likely impacts of a development proposal a 'Transport Assessment' or 'Transport Statement' may be required. This requirement will be dependent on the size, nature, scale, location and potential impact of the proposal. The requirement for such an assessment or statement is set out in the Council's Planning Application Validation Guide.

The 'Travel Plan' will also be required where the development involves significant residential, commercial or employment development or non-residential institutions including schools, colleges, universities and hospitals.

Development proposals will be supported where a Travel Plan can demonstrate that appropriate mitigation measures can be achieved, and a clear approach is identified to deliver such measures."

Planning Practice Guidance

8.2.6 Best practice when preparing a TA has typically supported the use of Department for Transport (DfT) "Guidance on Transport Assessment". The DfT document was withdrawn in 2014 and replaced with the advice in Planning Practice Guidance (PPG) that should be read in conjunction with NPPF. PPG has been updated periodically since 2014. PPG provides practical guidance on NPPF policy, including advice on the assessment of traffic and transport impacts. PPG has informed the method set out in the TA in Appendix 9.1. PPG does not provide details of impact thresholds or detailed assessment methodology. However, transport professionals, including local highway authorities, still refer to the DfT guidance. DfT guidance sets a threshold of development significance of 30 vehicles per hour (1 vehicle every 2 minutes) and 100 vehicles per day. This threshold has been used in both the TA and this chapter.

Guidelines for the Environmental Assessment of Road Traffic

8.2.7 The assessment has been undertaken in accordance with the Institute of Environmental Assessment (IEA, formally the IEMA) guidance document "Guidance Note Number 1: Guidelines on the Environmental Assessment of Road Traffic" (IEMA 1993). The guidelines set out the parameters for assessing the environmental impact of a proposed development on specific transport criteria and a consistent approach to the appraisal of traffic and transport impacts. Reference is made to these guidelines in the assessment set out in this chapter. Further details of these parameters are set out later in this chapter.

The Strategic Road Network and the Delivery of Sustainable Development (Circular 02/2013)

8.2.8 Circular 02/2013 was published in 2013 by the Department for Transport (DfT). It sets out Highways England's approach to assessing development impacts and the methods Highways England will use to deliver sustainable development while protecting the function of the strategic road network. The Circular states that where it can be demonstrated that a proposal will not significantly worsen the operation of the network, taking into account the effects of transport strategy measures and Travel Plans. The Circular has been referred to in the TA.

The Strategic Road Network: Planning for the Future

8.2.9 "The Strategic Road Network: Planning for the Future" was published by Highways England in 2015. The document offers advice and information regarding what Highways England requires from a developer to establish the impact of a development on the highway network. The document has informed the method used in the TA.

8.3. Approach

Assessment Methodology

8.3.1 A TA has been prepared for the proposed development and is attached as **Appendix 9.1**. This document is the principal analysis that will be considered by the Local Highway Authority (Lancashire County Council) and Trunk Road Network Authority (Highways England) when assessing the transport and access impacts of the proposed development.

8.3.2 Before assessing the effects of the proposed development, the TA examines the baseline conditions with respect to the local highway network, traffic and road safety conditions, parking facilities, walking and cycling accessibility, and public transport facilities.

8.3.3 Information gathered and observations made of current transport network conditions during site visits has been supplemented by traffic survey data from an independent survey company, traffic survey data from the Local Plan, DfT count database Annual Average Daily Traffic (AADT) flows and road safety data from Lancashire County Council. Mode share data for the proposed development has been taken from the National Travel Survey and distribution data has been taken from the Census.

8.3.4 In line with guidance, the TA examines a future year base situation in which the proposed development does not come forward. The base traffic forecast uses Lancaster City Council's Local Plan TA Do-Something Scenario. This flow scenario includes background traffic growth derived from TEMPRO locally adjusted NTEM rates, committed development and Local Plan site allocation traffic flows. The committed development and site allocations in the Local Plan TA flows include those requested during pre-application discussions by Lancaster City Council. In line with TA guidance, the committed developments and site allocation traffic flows are included in the do-nothing scenario as these are developments that will generate traffic onto the highway network in the future.

8.3.5 The proposed development trip forecast is based on sites with comparable characteristics from the TRICS database. The TRICS forecast has been calibrated against projected annual visitor numbers and is shown in the TA to be representative of future conditions. A sensitivity test using a method based on the calibration test is also included in the TA.

8.3.6 The development traffic flows have been distributed on the network based on a Gravity Model built using National Travel Survey visitor journey time information, Census population data and quickest route software.

8.3.7 The proposed development trip forecast is based on sites with comparable characteristics from the TRICS database. The TRICS forecast has been calibrated against projected annual visitor numbers and is shown in the TA to be representative of future conditions. The development traffic flows have been distributed on the network based on a Gravity Model built using National Travel Survey visitor journey time information, Census population data and quickest route software.

8.3.8 This chapter provides a full assessment of the accessibility by non-car modes and the opportunities for site users to access the site without needing to use a car. The accessibility analysis has been undertaken using standard appraisal methods and examines the existing walking, cycling and public transport network serving the site. The assessment also then considers the effects of the proposed improvements that will be delivered by the development.

8.3.9 The chapter is based on the assessment method and findings set out in the Transport Assessment (TA). The TA is attached as Appendix 9.1. A Travel Plan has also been prepared for the site and this is appended to the TA in Appendix 9.1.

8.3.10 The environmental impact of the development traffic has also been assessed in this chapter with reference to the IEMA guidelines set out below.

Characterisation of Impact

8.3.11 The environmental impact of new developments in transport and access terms occurs because of increases in traffic flows and the introduction of new transport infrastructure. The potential impacts that occur are defined in the IEMA guidelines. These include:

- Severance;
- Driver delay;
- Pedestrian delay;
- Pedestrian amenity;
- Accidents and safety;
- Dust and dirt; and,
- Hazardous loads.

8.3.12 In addition to the IEMA recommendations, consideration is also given in this chapter to the impacts on access to public transport and cyclist amenity.

8.3.13 The impacts relating to noise and vibration and air pollution are considered in the other relevant technical chapters.

8.3.14 This chapter considers the impacts set out above during both the operational and construction phase of development.

Severance

8.3.15 The guidance states that severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery. Severance is difficult to quantify and by its subjective nature is likely to vary between different groups within a single community. The level of severance is however influenced by the geometric characteristics of a road and the availability of crossing facilities. In general terms, IEMA guidance states that between a 30% and 60% change in traffic flow is likely to produce a minor change in severance, with moderate changes occurring between 60% and 90% and major changes occurring above 90%. A change in flows below 30% will have a negligible effect.

Driver Delay

8.3.16 Delay to drivers and impacts on network operation generally occur at junctions where opposing vehicle manoeuvres are undertaken with vehicles having to give or receive priority depending upon the type of junction arrangement.

8.3.17 DfT guidance states that impact on the operation highway network is generally where a development results in a change in traffic flows of 30+ vehicles per hour or 100+ vehicles per day. Changes in flow below this level generally result in insignificant effect. Where changes in flow are in excess of this level then industry standard modelling software is used to model the effects of the proposed development on highway operation.

Pedestrian Delay

8.3.18 Changes to the volume, composition or speed of traffic on a road can influence pedestrian delay. IEMA guidance advises that assessors should use professional judgement to determine whether these changes result in significant effects.

Pedestrian and Cyclist Amenity

8.3.19 This is broadly defined as pleasantness of a journey. Amenity is affected by traffic flow, crossing facilities and footway widths, and encompasses the overall relationship between pedestrians and traffic, including fear and intimidation, which is the most emotive and difficult effect to quantify and assess. Guidance suggests using changes in traffic flows as a tentative means of assessing amenity impact and IEMA guidelines state that amenity is affected where traffic flows are halved or doubled.

Access to Public Transport

8.3.20 IEMA guidance does not provide specific assessment advice relating to the impact of a development on public transport. In the absence of this, information included in the TA is used to assess the accessibility of the site by public transport.

Accidents and Safety

8.3.21 IEMA guidance states that professional judgement should be used when assessing the impact on road safety. For the purposes of this assessment, Lancashire County Council road safety data for five years has been used to examine existing safety issues. The DfT significance threshold (30+ vehicles per hour/100+ vehicles per day) has been used to establish locations where any existing accident hotspots could be exacerbated by the proposed development.

Dust and Dirt

8.3.22 Potential dust and dirt arising from traffic is mainly associated with HGV traffic. The proposed development is a land use that will not be associated with significant HGV movements during the operational stage and so this element has been scoped out of any further assessment.

8.3.23 The extent of any impact of dust and dirt arising from the construction phase will be dependent upon the management practices adopted on site. A Construction Environment Management Plan (CEMP) will be required should outline planning permission be granted setting out how dust and dirt impacts will be mitigated through the construction phase.

Hazardous Load

8.3.24 IEMA guidance accepts that most developments will not be associated with the movement of hazardous loads. This is the case for the proposed development and no further action is required in this regard and so it has been scoped out of the assessment.

8.4. Extent of Assessment

8.4.1 The TA study area is based on the A6 corridor and M6 at Junction 33.

8.4.2 The initial study area for the purposes of this chapter is the same as that used in the TA. To determine the extent of the assessment on each link within the study area, the following IEMA screening thresholds have been used:

- Rule 1: include highway links where traffic flows will increase more than 30% (or the number of HGVs will increase by more than 30%)

- Rule 2: include any other specifically sensitive areas where traffic flows will increase by 10% or more

8.4.3 The above rules are to be used in determining the links that should be included within the environmental assessment. The 30% threshold is based upon research and experience of the environmental effects of traffic, with less than a 30% increase generally resulting in imperceptible changes in the environmental effects of traffic. Guidance states that the 10% threshold level should be applied to sensitive receptors only.

Significance Criteria

Sensitivity of Receptors

8.4.4 Sensitive areas are defined by the presence of sensitive receptors. From a transport and access perspective, the sensitivity of a receptor is based on the relative importance of the receptor using the scale in Table 8-1.

Table 8-1: Method for determining sensitivity

Sensitivity	Transport Receptor Types
Major	Schools, retirement homes, roads used by pedestrians with no footway, and road safety hot spots
Moderate	Congested junctions, hospitals, community centres, and conservation areas
Low	Open space, residential areas with adequate footways, tourist attractions, historical buildings and churches

8.4.5 The transport and access networks surrounding the proposed development have been designed to accommodate the car and large vehicle traffic flows using them.

8.4.6 The road safety data shows that of the 18 accidents that have occurred in the study area, 12 of these occurred at Hampson Green Roundabout and six of these involved cyclists. While the level of accidents at a major junction with high traffic flows that provides access to the motorway is not unusual, this location has been defined as a receptor with a major sensitivity due to the level of cyclist accidents. IEMA's Rule 2 will apply to this location.

8.4.7 The proposed development lies on a confluence of important routes, including the A6 and M6 Junction 33, that serve a strategic function with high levels of traffic using them. In recognition of this the A6 links and the M6 have been defined as receptors with a moderate sensitivity. IEMA Rule 1 will apply to these locations.

8.4.8 The road links that come off the A6 generally serve a more minor access function and based on this, the roads have been defined as having a low receptor sensitivity for this assessment. IEMA Rule 1 will apply to these locations.

8.4.9 For ease of reference and assessment, the receptor links have been grouped as shown in Table 8.2.

Table 8-2: Receptor Grouping

Receptor Type	Links	Sensitivity
Access Roads	Hampson Lane Salford Road Stoney Road Hazelrigg Road Bigforth Road Hala Road Ashford Road Ashton Road Bowerham Road	Low
Strategic Roads	A6 Preston Lancaster Road Hampson Green Roundabout to M6 Link Road M6	Moderate
Sensitive Receptor	Hampson Green Roundabout	Major

Magnitude of Impact

8.4.20 Once the extent of the assessment, based on significant changes in traffic flow and the sensitivity of receptors has been established, the assessment quantifies the magnitude of impact based on the criteria in Table 8-3.

Table 8-3: Method for Determining Impact Magnitude

Magnitude	Assessment Criteria
Major	Total loss or major/substantial alteration to key elements/features of the baseline (pre-demolition) conditions such that the post demolition character / composition / attributes will be fundamentally changed.
Moderate	Loss or alteration to one or more key elements / features of the baseline conditions such that post demolition character / composition / attributes of the baseline will be materially changed.

Magnitude	Assessment Criteria
Minor	A minor shift away from baseline conditions. Change arising from the loss /alteration will be discernible/detectable but not material. The underlying character / composition / attributes of the baseline condition will be similar to the pre-demolition circumstances / situation.
Negligible	Very little change from baseline conditions. Change barely distinguishable, approximating to a "no change" situation.

Significance of Effect

8.4.21 The significance of an environmental effect is determined by the interaction of magnitude and sensitivity, whereby the impacts can be positive or negative. The Impact Significance Matrix is set out in Table 8-4.

Table 8-4: Significance Matrix

Magnitide / Sensitivit	Major	Moderate	Low
Major	Major Adverse/Beneficial	Major - Moderate Adverse/Beneficial	Moderate – Minor Adverse/Beneficial
Moderate	Major - Moderate Adverse/Beneficial	Moderate – Minor Adverse/Beneficial	Minor Adverse/Beneficial
Minor	Moderate – Minor Adverse/Beneficial	Minor Adverse/Beneficial	Minor – Negligible
Negligible	Negligible	Negligible	Negligible

Duration of Effect

8.4.22 The construction phase will have a limited duration of effect that will be extinguished when the proposed development is built.

8.4.23 The completed development will have a permanent duration of effect. Though as the Travel Plan and sustainable transport measures bed in it is likely that car use will fall further than shown in this chapter.

8.5. Assumptions / Limitations

8.5.1 The assessment of future transport conditions is based on established and agreed transport planning principles. Full details of the assessment method used is provided in the TA in Appendix 9.1.

8.5.2 The limitations of the assessment relate to robust, overestimation of car traffic generation. This is in part due to the flows not being adjusted to acknowledge the effects of the sustainable transport strategy and Travel Plan, and also due to the worst-case forecast of car use.

8.6. Consultation

8.6.1 The scope of assessment was issued to Lancashire County Council and Highways England in 2019. The TA assessment has been updated to acknowledge the comments received from both authorities.

8.7. Baseline Conditions

Site Use

8.7.1 The site is largely undeveloped at present, though there are a number of properties present in the area around Ellel Grange, and a church, accessed from the A6 via existing minor roads. The Lancaster Canal also runs north-south on the western side of the A6 and divides the site into two distinct areas. Two existing bridges link the eastern area of the site with the west.

Local Highway Network

8.7.2 The A6 Preston Lancaster Road is a principal, high standard road running north-south broadly parallel to the M6 and connecting the major settlements of Lancaster and Preston with numerous smaller towns and villages. The A6 is the principal corridor for existing public transport services connecting to established settlement areas.

8.7.3 To the north of the site, Preston Lancaster Road is 7m wide road subject to a 50mph speed limit, widening as it approaches the Hampson Green Roundabout, with a footway present on the eastern site and street lighting present. Continuing south Preston Lancaster Road meets the M6 slip roads at a large roundabout (known as the Hampson Green Roundabout). Access is gained from the roundabout to Junction 33 of the M6, with access/egress to the M6 provided to both northbound and southbound directions.

8.7.4 South of the roundabout Preston Lancaster Road provides access via a ghost island priority junction to Hampson Lane, which provides connections to the east. South of Hampson Lane Preston Lancaster Road is 10m wide subject to a 50mph speed limit, with street lighting present. Footways are provided on either carriageway edge from the Hampson Green Roundabout to the existing site access junction.

8.7.5 Travelling north on Preston Lancaster Road past the site it becomes the A6 Main Road as it enters the built up area of Galgate. At this point the speed limit changes to 30mph. Main Road meets Stoney Lane and Salford Road at a signalised junction. Street lighting and footways are present on all arms of the junction.

8.7.6 As the A6 leaves Galgate it becomes Preston Lancaster Road again. The road continues north towards Lancaster and passes the University of Lancaster (3.2km from the site) and the Scotforth area of south Lancaster 1.6km further on. Continuing towards the city centre the University of Cumbria in Lancaster campus and Lancaster Hospital are on the southern side of the city centre, around 6km north of the site, with the city centre itself approximately 8km in total.

8.7.7 A number of infrastructure proposals are set out in Lancashire County Council's "Highways and Transport Masterplan for Lancaster", which will result in traffic reductions along the A6 corridor. These include, inter alia:

- Reconfiguration of M6 Junction 33 (programmed completion 2020/2025)
- Highways Improvements into South Lancaster

- Lancaster South A6 Corridor Improvements
- Junction Improvements at A6 Main Road
- Junction Improvements at A6 Lancaster Road
- Creation of new Cycle/Walking Superhighway
- Lancashire Reach Bus Rapid Transit Phase 1 South Lancaster

8.7.8 A £140m bid has been submitted by Lancashire County Council under the Housing Infrastructure Funding Programme (HIF) towards the infrastructure improvements in South Lancaster. Funding for the infrastructure was announced in the Spring Budget (2020). Lancashire County Council has consulted on 6 potential options for a Junction 33 link including link road options and junction reconfiguration works. This consultation ended on 8 December 2020.

8.7.9 An improvement at the Galgate signals has been agreed as part of the Lancaster Science Park (ref: 09/00330) consented development. This includes the delivery of the following infrastructure:

- Immediately north of the junction – the provision of a layby at the northbound bus stop
- 120m north of the junction – the removal of parking on the highway
- Consideration of MOVA and/or Puffin system at the junction

Road Safety Assessment

8.7.10 In January 2020 Lancashire County Council's Mario database was reviewed to allow an understanding of the accidents occurring in the most recent five years available for the roads providing access to the site. Details of the accidents by location, year and severity is attached included in the TA in Appendix 9.1, with a summary provided below.

8.7.11 The accident review shows that there have been 18 accidents during the five year period assessed, of these 83% were classified as slight and 17% as serious. The majority of the accidents occurred at Hampson Green Roundabout.

Hampson Green Roundabout

8.7.12 12 accidents have occurred at the Hampson Green Roundabout, all of which were classified as slight. All of these accidents occurred before 2018, with no accidents at all in the final year available.

8.7.13 Two accidents occurred at the Preston Lancaster Road (N) entry to the roundabout, both occurred in 2017 with no accidents before or after this year. One accident occurred during the PM peak period and one in the middle of the day.

8.7.14 Two accidents occurred on the circulating carriageway between the Preston Lancaster Road (N) entry and the M6 slip road link road exit. One accident occurred in 2014 and the other in 2017. Both accidents occurred outside the peak periods.

8.7.15 A single accident occurred on the circulating carriageway at the M6 slip road link entry. This accident occurred in the AM peak period in 2016.

8.7.16 Two accidents occurred on the M6 slip road entry approach. The accidents occurred in 2016 and 2017, one in the middle of the day and one late at night.

8.7.17 Two accidents occurred on the circulating carriageway between the M6 slip road link entry and the Preston Lancaster Road (S) exist. The accidents occurred in 2016 and 2017, with one accident occurring just prior to the PM peak period and the other late at night.

8.7.18 A single accident occurred at the Preston Lancaster Road (S) exit in 2014. The accident occurred in the evening.

8.7.19 Two accidents occurred at the Preston Lancaster Road (S) entry. Both occurred in 2014 and neither occurred during the peak periods.

8.7.20 Of the 12 accidents, six involved cyclists travelling across the roundabout north and south between the Preston Lancaster Road approaches. All of the cyclist accidents were classified as slight. The accidents occurred in 2014, 2016 and 2017, with no cyclist accidents in 2015 and 2018.

Preston Lancaster Road (S) / Home Farm

8.7.21 Two accidents have occurred at the Home Farm access junction. Both occurred in the same year, with one classified as slight and the other as serious. No accidents have been recorded at this location since 2015.

Preston Lancaster Road (S) / Hampson Lane

8.7.22 Three accidents have occurred at the Hampson Lane junction with Preston Lancaster Road (S). Two accidents were classified as serious and one as slight. The accidents are sporadic, with the serious accidents occurring in 2015 and 2018, and the slight accident occurring in 2016.

8.7.23 A single accident has occurred on the M6 slip road link on the movement towards the roundabout. This accident was classified as slight and occurred in 2015.

Base and Do-Nothing Traffic Flows

8.7.24 In December 2018 WYG was commissioned by Lancaster City Council to prepare a TA that assessed the impact on the network of the Local Plan proposals. The TA was prepared in co-ordination with Lancaster City Council, Lancashire County Council and Highways England (HE). The method set out in the TA (including the source of traffic data and future forecast method) and the conclusions of the TA are also agreed with all three authorities as set out in the Statement of Common Ground agreed between all parties in April 2019. The relevant extract from this document is attached as Appendix 9.1.

8.7.25 The agreed Local Plan base traffic data is based on the following information:

- 2017 & 2018 traffic surveys
- Webtris traffic surveys
- Traffic Master output
- Journey time surveys

8.7.26 The traffic survey data is less than three years old and is therefore still fit for purpose in assessing the impact of the Local Plan and this assessment. This is in line with paragraph 4.18 of DfT's "Guidance on Transport Assessment" which states that:

"*The assessment should include recent counts (normally surveyed within the last three years) for peak period turning movements at critical junctions.*"

8.7.27 The future year background traffic growth is based on TEMPRO. The Local Plan TA considers the impact of development identified in the Local Plan on the highway network for future years of 2023 and 2033.

8.7.28 The committed development and Local Plan sites included in the Local Plan TA Do-Something scenario are shown in Appendix 9.1. The Do-Something scenario includes 31 committed developments equating to 1,325 new dwellings, over 47,000sqm of new employment space and over 13,000sqm of new retail space. The Do-Something scenario includes 22 Local Plan allocations equating to over 5,299 new dwellings, 2,000 student beds, over 232,000sqm of new employment space and over 6,000sqm of new retail space.

8.7.29 Lancaster City Council has specifically requested that the following committed developments and Local Plan allocation sites be included in the TA for the Ellel site;

- Land North East of Bailrigg Lane (19/01135/OUT)
- Galgate Mill (LPSA 780)
- Bailrigg Garden Village (LPSA 334)
- Land South of Marsh Lane (LPSA 643)
- Junction 33 Auction Market (LPSA 824)
- Ridge Farm/Cuckoo Farm (LPSA 671)
- Leisure Park (LPSA 251)
- Lancaster University Innovation Campus (LPSA 739)
- Grab Lane (LPSA 321)
- North Lancaster Strategic Site (LPSA 710)

8.7.30 A review has been made of the sites listed above and the assumptions made in the Local Plan TA Do-Something scenario. All but one the sites set out is already covered by the Local Plan TA flows.

8.7.31 The only site excluded from the Local Plan TA flows is Galgate Mill. This is an existing employment site that is identified in the Local Plan for continued employment use and residential use (circa 13 dwellings). The site has been excluded from the Local Plan TA as paragraph 4.1.3 of the Local Plan TA states that an 18 dwelling threshold was set and sites smaller than this are excluded from the assessment. This is because the sites beneath 18 dwellings would generate a negligible level of traffic that would be sufficiently covered by the TEMPRO background traffic growth. The Local Plan TA exclusion method is agreed with all authorities and on this basis the site has also been excluded from the proposed development assessment.

8.7.32 The Transport Assessment at Appendix 9.1 shows the Base and Do-Nothing AM and PM peak hour flows used in the TA. In line with the Local Plan TA, the TA includes 2023 and 2033 assessment scenarios.

8.7.33 In line with IEMA guidance, this chapter assesses the daily (AADT) traffic impact of the proposed development. The Do-Nothing AADT flows are based on DfT 2018 count database flows.

8.7.34 The DfT 2018 flows have been growthed to 2023 based on a factor derived from the Council's Local Plan TA flows (prepared by WYG). The factor allows for background traffic growth between 2018 and 2023. A further factor has been derived from the Council's Local Plan TA flows that allows for a scenario that includes all of the Local Plan allocated and committed development traffic flows. This is the Do-Nothing scenario that will occur should the development not proceed.

8.7.35 The AADT Do-Nothing flows are attached as Appendix 9.2.

Walking Links

8.7.36 Section 5 of Appendix 9.1 sets out the full pedestrian accessibility assessment. This shows that the pedestrian connections across the site are provided from an extensive Public Right of Way (PROW) network and canal towpath routes. These connect across the Lancaster Canal to routes towards Ellel and Galgate local centre, and the A6. These routes are in keeping with the proposed leisure and tourism nature of the proposed development.

8.7.37 Footways are provided from the existing Home Farm access on both sides of the carriageway on Preston Lancaster Road. These footways continue north to connect to the bus stops located to just to the south of Hampson GreenRoundabout. Preston Lancaster Road benefits from street lighting.

8.7.38 Two-thirds of all journeys in the UK are under-five miles and short distance and local trips offer the greatest opportunity for changes in travel behaviour. The Department for Transport (DfT) best practice guidance states that walking has the potential to substitute for car trips under 2km, which equates to a 25-minute walk. The centre of the site is a 2km walk from the centre of Galgate using the PROW routes.

8.7.39 The routes on site provide good opportunities for access to the amenities provided across the site and these will be improved as part of the proposal. Opportunities also exist for site users to access the centre of Galgate.

8.7.40 The accident data shows that during the five year period assessed there has been no pedestrian accidents.

Cycle Links

8.7.41 Section 5 of Appendix 9.1 shows that there are currently no cycle routes directly serving the site, but cyclists are permitted to use bridleways. The PROW route that is accessed across the canal on the northern boundary of the site is a bridleway (1-13-BW3). This bridleway provides a continuous route to Galgate.

8.7.42 Routes 6 and 90 of the National Cycle Network are located nearby. Route 6 provides links to Kendal, Windermere and Preston, and Route 90 (the Lancashire Cycleway) is a scenic 260 mile cycle tour of the county. Route 6 is accessed at the Galgate crossroads, continuing southeast on Route 6 provides a connection to Route 90. Route 90 can also be accessed by travelling south on Preston Lancaster Road.

8.7.43 The Local Plan includes a proposed Cycle Superhighway that will provide an improved connection between the city centre and the University. The proposal forms part of the current HIF bid.

8.7.44 Cycling England recommends 8km as a maximum cycling distance in the document “Integrating Cycling into Development Proposals” and the CIHT document “Planning for Cycling” states that cycling has the potential to substitute for car trips under five miles (8km). Figure 2.4 shows an 8km cycling catchment from the site.

8.7.45 Section 5 of Appendix 9.1 shows that the site is within an 8km cycle distance of areas to the south of Lancaster, Cockerham, Scorton and Dolphinholme. Access can also be gained with a short cycle from the site to Routes 6 and 90 of the National Cycle Network, providing opportunities for longer distance leisure trips. The assessment shows that opportunities exist for access by cycle.

8.7.46 The accident data shows that there have been six accidents involving cyclists travelling across the roundabout north and south between the Preston Lancaster Road approaches. All of the cyclist accidents were classified as slight. The accidents occurred in 2014, 2016 and 2017, with no cyclist accidents in 2015 and 2018. It is concluded in the TA in Appendix 9.1 that the cycle accidents are a result of there being no cycle route infrastructure available at the Hampson Green Roundabout.

Public Transport Links

8.7.47 Section 5 of Appendix 9.1 shows that the A6 is principal public transport corridor with numerous existing scheduled bus services. Stops are currently present on the A6 between the two site access junctions.

8.7.48 The existing bus services provide regular scheduled services linking Lancaster with Preston and two services currently passing the site providing two buses per hour in each direction between these destinations. A further service is provided that provides an hourly link to / from Blackpool. The services provide a total of three buses per hour in each direction to Lancaster.

8.7.49 Lancaster train station is served by routes on the West Coast Main Line offering frequent service connections to London, Edinburgh, Glasgow and Manchester.

8.7.50 The assessment shows that opportunities exist for use of existing public transport services to access the site.

8.8. Embedded Mitigation

8.8.1 This section describes the measures which have been "embedded" into the development and will be delivered as part of the proposal.

Demolition and Construction

8.8.2 A Construction Management Plan will be prepared that sets out consideration of the measures that will be used to ensure safe, efficient and environmentally considerate construction practices.

8.8.3 The Construction Management Plan will identify the construction access locations and routes, and will outlines measures that will be used to reduce environmental effects, such as:

- Promotion of public transport modes of travel
- Delivery management measures to reduce conflict with vulnerable road users and impact during peak periods, including timing controls, etc
- Measures to reduce effects on dirt and dust, such as wheel washing, road sweepers and segregated cutting zones, etc

Completed Development

8.8.4 A new site access is proposed via creation of a fourth arm on the Hampson Green Roundabout. The proposed modifications to the roundabout are shown in Appendix 9.1. The proposed layout includes cycle bypass facilities and crossing points. The Hampson Green Roundabout junction will provide the vehicular access to the Marketplace and hotel area of the site and its parking area.

8.8.5 It is also proposed to reduce the speed limit through the Hampson Green Roundabout and along the site frontage from 50mph to 40mph. This will have benefits to road safety levels at this location and will improve the active travel mode environment.

8.8.6 The existing site access at Home Farm will be used to access the holiday park and will provide a connection to the holiday park parking area located at Canalside Meadow. The existing junction will be formalised with standard radii and a ghost island right turn arrangement, as part of a comprehensive improvement scheme for the section of Preston Lancaster Road fronting the site. The proposals are shown in Appendix 9.1. Guest vehicles are not allowed beyond the parking area for the holiday park. On arrival they will park their car and swap this for bikes or buggies to travel to their accommodation and around the rest of the site.

8.8.7 Appropriate levels of standard, accessible, EV and cycle parking will be provided for the scheme in line with local and national policy guidance.

8.8.8 The development offers the opportunity to deliver a sustainable and eco-tourism facility in Lancaster. The applicant is committed to developing a destination where visitor, activity and accommodation destinations are sensitively embedded into the proposal with the aim of enabling people to meet many of their needs without needing to travel off site or use a vehicle within the site. Play destinations are comprised of both formal leisure facilities (food and drink destinations and activity centres) and informal leisure areas that take advantage of the surrounding environment (canalside walks, open space and play areas). A tourist information point will be provided within the development to allow guests to find information on other tourist destinations in the area.

8.8.9 The final site layout will be designed so that guests staying at the site are required to leave their vehicles on entry at the car park and either walk, cycle or use the electric buggies to access their accommodation. This allows the creation of a car-free circular route around the site which promotes active and safe travel. Improvements are proposed to PROW routes and access facilities to the canal. The routes provide linkages to the Market Place area.

8.8.10 The proposal will be served by appropriate levels of cycle parking, a bike hire facility and EV charging facilities. The site access proposals include measures to enhance the safe movements on foot, cycle and public transport. The site will be served by a shuttle bus providing connections to centre of Lancaster and the train station.

8.8.11 The applicant supports the future infrastructure proposals set out in the Transport Masterplan for the south of Lancaster. An appropriate and commensurate contribution towards these proposals will be made, in line with the tests set out in paragraph 56 of NPPF.

8.8.12 A Framework Travel Plan has been prepared for the planning application which sets out the general philosophy that will be adopted at the site and recommended sustainable management measures. The Framework is attached as Appendix 9.1.

8.9. Potential Impacts

Construction Phase

Traffic Flows

8.9.1 Construction movements are usually limited to regular but low level traffic volumes over a course of a working day and are comprised of contractor cars, light goods vans and larger vehicle movements. Construction activity typically occurs prior to the morning peak period and is complete prior to the evening peak period. The site is large which means that it offers good opportunities in terms of construction activity and containing any impacts within the site.

8.9.2 The level of construction traffic will be insignificant when considered in the context of the removal of the existing site car park traffic and when compared to the base traffic flows on the study area network. The level of change in traffic during the construction phase will not meet either the IEMA 10% or IEMA 30% change in flows on any link and so no further assessment is required, other than for Dust and Dirt.

Dust and Dirt

8.9.3 Potential dust and dirt arising from traffic is mainly associated with HGV traffic. The extent of any impact of dust and dirt arising from this will be dependent upon the management practices adopted on site. The unmitigated magnitude of dust and dirt impacts is assessed to be moderate. However, these effects will benefit from embedded mitigation in the Construction Management Plan to a negligible level. The preparation of a Construction Management Plan will be a requirement by planning condition.

8.9.4 The proposed development will have a negligible significance on the access roads and a negligible significance on the strategic roads.

Construction Phase Impact Summary

8.9.5 Table 8-5 sets out impacts during demolition and construction including assessment of significance in accordance with criteria stated.

Table 8-5: Construction Phase Impacts

Receptor	Impact	Significance
Access Roads	Dust and Dirt	Negligible
Strategic Roads	Dust and Dirt	Negligible
Hampson Green Roundabout	Dust and Dirt	Negligible

Completed Development Phase

Development Traffic Flows

8.9.6 The development traffic generation method is set out in full in the TA in Appendix 9.1

8.9.7 The TRICS database has been used to establish the trip rates for the different uses in proposed from surveys of comparable uses across the UK.

8.9.8 During pre-application discussions a query was raised by Highways England regarding the appropriateness of the use of some of the comparable TRICS sites. A sensitivity test based on projected visitor numbers and survey data from another tourist destination in the North West. Section 7 of Appendix 9.1 shows that the TRICS method results in a higher level of daily trips than forecast using the sensitivity test method.

8.9.9 The 2018 National Travel Survey shows that on average people travel 77 minutes for a holiday in the UK. Based on this an 80 minute drive-time from the site. Population data from the 2011 Census has been used for the areas within the drive-time catchment. A gravity model has been built to assess the distribution of trips from the areas within the catchment. The gravity model uses a standard deterrence factor of 1.5 and takes the form:

$$\text{Population}/\text{Distance} \times 1.5$$

8.9.10 The trips have been assigned to the network based on journey time software. The AM and PM peak distributions are shown in Appendix 9.1. The distributed AADT (daily) traffic development trips used in the assessment set out in this chapter is attached as Appendix 9.3.

8.9.11 Table 8-6 shows the AADT development traffic flows on each link in the study area.

Table 8-6: Development Traffic Flows (AADT)

Link	Location	Assessment Road Category	Development Flows
A6 Preston Lancaster Road S	South of J33 M6	Strategic*	319
Hampson Lane	South of J33 M6	Access	5
A6 Preston Lancaster Road N	North of Stoney Lane	Strategic*	267
Stoney Road	East of A6	Access	0
Salford Road	West of A6	Access	0
Hazelrigg Road	East of A6	Access	30
Bigforth Drive	East of A6	Access	30
Ashford Road	West of A6	Access	62
Hala Road	East of A6	Access	60
A6 Preston Lancaster Road N	North of Barton Road	Strategic	43
Barton Road	East of A6	Access	43
Ashton Road	West of A6	Access	0
Bowerham Road	East of A6	Access	18
Link Road	Roundabout to M6	Strategic*	1982
M6 N	North of J33 M6	Strategic	375
M6 S	South of J33 M6	Strategic	1607
*These links also include the Hampson Green Roundabout which has been identified as being a receptor with a major sensitivity			

8.9.12 Table 8-6 shows that all of the access roads will experience a change in traffic flows below the DfT significance threshold of 100 vehicles per day. Based on this no further environmental assessment is required.

8.9.13 Table 8-7 shows the percentage change in traffic flows occurring on the strategic links.

Table 8-7: Percentage Impact

Link	Location	Assessment Road Category	% Impact
A6 Preston Lancaster Road S	South of J33 M6	Strategic*	2.15%
A6 Preston Lancaster Road N	North of Stoney Lane	Strategic*	1.32%
A6 Preston Lancaster Road N	North of Barton Road	Strategic	0.30%
Link Road	Roundabout to M6	Strategic*	8.13%
M6 N	North of J33 M6	Strategic	0.45%
M6 S	South of J33 M6	Strategic	1.85%
*These links also include the Hampson Green Roundabout which has been identified as being a receptor with a major sensitivity			

8.9.14 With the exception of the Hampson Green Roundabout, all of the strategic links in the study area are defined as having a moderate level of sensitivity to changes in traffic flow. Table 8-7 shows that the change in flows on all links are substantially beneath the IEMA 30% threshold.

8.9.15 The Hampson Green Roundabout will experience a concentrated increase in traffic flows as it forms part of the site access and is also the route to the motorway. However, the level of change will still be below the IEMA 10% threshold.

8.9.16 The assessment shows that effects on the study area roads, including the Hampson Green Roundabout, will not be significant and that no further environmental assessment is required. Notwithstanding the insignificant effects, further consideration of the environmental transport and access effects is set out below.

Severance

8.9.17 IEMA guidance states that changes in traffic flow below 30% will produce a negligible effect on severance. The changes in traffic flows associated with the proposed development's operational phase are well beneath this level and the magnitude of impact is assessed as negligible on all receptors.

8.9.18 The proposed development will have a negligible significance on severance on the strategic roads and the Hampson Green Roundabout.

Driver Delay

8.9.19 DfT significance threshold of 100+ vehicles per day have been used to establish locations where the development may impact on driver delay. Where the changes in flows will exceed this threshold, the relevant junction has been modelled using industry standard software to establish the actual impact. The impacts on Junction 33 of the M6 have been assessed using DMRB Merge-Diverge analysis. The modelling results and output are set out in Section 6 of the TA in Appendix 9.1.

8.9.20 The modelling shows that at all locations the development will not significantly alter queueing and delay from the baseline/Do-Nothing scenario. Based on this the magnitude of impact is assessed as minor on all receptors.

8.9.21 The proposed development will have a minor-adverse significance on all the strategic roads and moderate-minor-adverse significance on the Hampson Green Roundabout.

Pedestrian Delay

8.9.22 The proposed development will not result in a significant change in traffic flows and will not significantly alter the operation of the highway network. Therefore, the magnitude of effects on pedestrian delay is assessed as negligible on all receptors.

8.9.23 The proposed development will have a negligible significance on severance on the strategic roads and the Hampson Green Roundabout.

Pedestrian and Cyclist Amenity

8.9.24 IEMA guidance states that amenity is affected with a doubling of traffic flows. The proposal will not double traffic flows on any links in the study area.

8.9.25 The proposed development will improve PROW routes, provide cycle facilities at the Hampson Green Roundabout and reduce the speed limit on the A6. Measures are also embedded within the proposal to facilitate sustainable movements around the site, including bike hire facilities, cycle parking and efficient circulation routes.

8.9.26 Based on the above, the magnitude of impact on pedestrian and cyclist amenity will be beneficial to site users and the wider community, and so the impact is set as minor. The proposed development will have a minor-beneficial significance on the strategic roads and moderate-minor-beneficial significance at the Hampson Green Roundabout.

Road Safety and Accidents

8.9.27 The TA in Appendix 9.1 sets out the road safety analysis. This shows that there have been 18 accidents in the study area during the five year period assessed, of these six involved cyclists.

8.9.28 The proposed development will not result in a significant increase traffic flows and the measures embedded in the access proposals that will have a beneficial impact on road safety. These include the reduction in speed limit on the A6 and cycle infrastructure at the Hampson Green Roundabout.

8.9.29 The magnitude of effect has been set as minor and the proposed development will have a minor-beneficial significance on the strategic roads and moderate-minor-beneficial significance at the Hampson Green Roundabout.

Access to Public Transport

8.9.30 The TA in Appendix 9.1 shows that the site is served by three buses per hour each way, providing links to Preston, Lancaster and Blackpool. The proposed development and the changes in traffic flow will not alter or impact on existing public transport routes.

8.9.31 The proposed development will have a negligible significance on severance on the strategic roads and the Hampson Green Roundabout.

Completed Development Impact Summary

8.9.32 Table 8-8 sets out impacts during demolition and construction including assessment of significance in accordance with criteria stated.

Table 8-8: Completed Development Impacts

Receptor	Impact	Significance
Strategic Roads	Severance	Negligible
	Driver Delay	Minor-Adverse
	Pedestrian Delay	Negligible
	Pedestrian and Cyclist Amenity	Minor-Beneficial
	Road Safety and Accidents	Minor-Beneficial
	Access to Public Transport	Negligible
Hampson Green Roundabout	Severance	Negligible
	Driver Delay	Moderate-Minor-Adverse
	Pedestrian Delay	Negligible
	Pedestrian and Cyclist Amenity	Moderate-Minor-Beneficial
	Road Safety and Accidents	Moderate-Minor-Beneficial
	Access to Public Transport	Negligible

8.10. Mitigation Measures

Demolition and Construction

8.10.1 The assessment identifies a negligible impact on the roads in the study area due to the requirement to adopt a Construction Management Plan. Therefore, no further actions are required.

Completed Development

8.10.2 The assessment identifies minor-adverse effects due to minor changes to driver delay. The development includes a commitment to adopt a Travel Plan and to introduce a dedicated bus route between the site and the centre of Lancaster. These measures will be of benefit in terms of reducing car trips generated by the site and therefore reducing delay to negligible significance on strategic roads and the Hampson Green Roundabout.

Residual Impacts

8.10.3 The enhancement to crossing times on New Bridge Street will result in the effect reducing to negligible.

Table 8-9: Residual Effects Summary

Description of Effect	Potential Maximum Impact	Mitigation	Residual Maximum Impact
Construction			
Dust and Dirt	Negligible	No further action other than CMP	Negligible
Completed Development			
Severance	Negligible	Travel Plan and bus service	Negligible
Driver Delay	Moderate-Minor-Adverse		Negligible
Pedestrian Delay	Negligible		Negligible
Pedestrian/Cyclist Amenity	Moderate-Minor-Beneficial		Moderate-Minor-Beneficial
Road Safety	Moderate-Minor-Beneficial		Moderate-Minor-Beneficial
Access to Public Transport	Negligible		Negligible
Dust and Dirt	Negligible		Negligible

8.11. Assessment of Cumulative Effects

8.11.1 In line with standard TA appraisals the cumulative effects of committed development and Local Plan site allocations is embedded in the main assessment, as the traffic flows are included in the base/Do-Nothing scenario flows. Therefore, the cumulative impacts are set out in Table 8-9 for the completed development and Table 8-5 for the construction phase.

8.12. Conclusions

8.12.1 An assessment has been undertaken of the transport and access impacts resulting from the proposed development. This assessment has been undertaken in line with required guidance on assessing the environmental effects of transport for both this chapter and the TA. The assessment is in line with IEMA, DfT and NPPF requirements. Pre-application consultations have been held with Lancashire County Council and Highways England.

8.12.2 The applicant is committed to developing a sustainable tourist destination where people can stay and play. Play destinations will be comprised of both formal leisure facilities (food and drink destinations and a leisure attractions) and informal leisure areas that take advantage of the surrounding environment (canalside walks, open space and play areas). Embedded in the proposal is measures that will offer natural improvements to the surrounding transport and highway network, these include reducing the speed limit on the A6, providing safe and appropriate vehicle access points, and providing enhanced cycle facilities at the Hampson Green Roundabout.

8.12.3 The assessment shows that during the construction phases the impact of the traffic movements will be negligible in effect and short-term in duration. Embedded mitigation measures such as a Construction Management Plan will be required and this will reduce effects on other road users, particularly by ensuring that any dust and dirt generated by the construction phase is reduced.

8.12.4 The assessment shows that the impact of the proposal will be either minor-adverse, negligible or minor-beneficial during the operational phase. This is due in part to development traffic increases below IEMA significance thresholds and also because of the safety enhancements embedded in the access proposals. Further mitigation is proposed including the adoption of a Travel Plan and the introduction of a bus link to the centre of Lancaster.

8.12.5 The proposed mitigation measures have the effect of reducing significance of all adverse impacts to negligible for both the construction and operational phases. The proposal will have moderate-minor-beneficial and minor-beneficial effects on road safety and pedestrian/cyclist amenity.

8.12.6 The cumulative effects of committed developments and Local Plan site allocations is included in the main assessment, as is standard practice for assessing traffic impacts. Therefore, the conclusions drawn above are the same.