FAIR OAKS RENEWABLE ENERGY PARK

Traffic and Access Statement

PREPARED ON BEHALF OF

Fair Oaks Renewable Energy Park Limited

JANUARY 2023

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TRAFFIC AND ACCESS STATEMENT

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INTRODUCTION

TA1 This Statement considers the impacts of the Fair Oaks Renewable Energy Park on the local roads infrastructure, particularly during the construction process.

TA2 The construction of a Renewable Energy Park requires the delivery of a variety of loads, including 'Redimix' concrete, standard HGV to carry the aggregate, panel frames, solar panels, inverters, various containers associated with the solar array, Battery Energy Storage (BESS) and substation compound and a small crane to offload the transformer and other containerised units. The site transformer comprises a single exceptional load.

TA3 The operational phase involves site traffic associated with monthly site visits and annual scheduled servicing, cleaning and ground maintenance.

TA4 The decommissioning phase is a reduced reverse of the construction phase involving the removal of the solar panels and frames, the BESS containers, the substation elements and the associated infrastructure elements, as described in **Chapter 7 - Construction, Operation and Decommissioning** of the Environmental Statement (ES) accompanying the planning application.

TA5 This assessment has been focused on the construction process. As detailed in **Chapter 7 - Construction, Operation and Decommissioning** of the ES, the operation of the development is largely undertaken through remote monitoring, with personnel visiting site approximately once per month. It is therefore considered that traffic volumes associated with the operation of the development will be negligible and, as such, are not considered further in this assessment. The traffic levels associated with the decommissioning of the project are significantly less than those associated with the construction phase with the tracks being left in situ, if required by the landowner.

TA6 The delivery route for the renewable energy park components is considered. Typical vehicular movements for the construction programme and an assessment of the associated impacts are provided.

TA7 Finally, following the application of mitigation, residual impacts are identified.

METHODOLOGY

Vehicle Movements

TA8 This assessment follows the Guidelines for the Assessment of Road Traffic (IEMA, 1993), published by the Institute of Environmental Management and Assessment (IEMA), to identify and address potential impacts on roads and their users.

TA9 The Guidelines state that the scale and extent of this assessment should include highway links where traffic flows are predicted to increase by more than 30% or where the number of heavy goods vehicles is predicted to increase by more than 30%; and to include any other specifically sensitive areas where traffic flows are predicted to increase by 10% or more (such as villages or near schools or hospitals). Increases in traffic flows below 10% are generally considered to be insignificant as this is likely to be within the daily variations in traffic flow. The proposed development is assessed against these thresholds. If exceeded, potential impacts are considered to be significant.

TA10 Much of the advice in the NPPF (MHCLG, 2021) relates to wider transport network planning, assessment of anticipated future transport requirements of a development, and sustainable solutions modes of transport. This is more applicable to other forms of development such as housing and retail, and not specifically relevant to renewable energy park development as the majority of the transport movements will occur in the construction phase rather than during the life of the project. However, the NPPF at Paragraph 113 requires:

'All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.'

TA11 Further guidance on transport matters is contained in the NPPG (MHCLG, 2014), which includes what information should be contained in a transport assessment (Paragraph Reference ID: 42-015-20140306). Specifically for Renewable and Low Carbon Energy, developers are directed at Paragraph Reference ID: 5-016-20140306 to the Highways Agency/ Department for Transport Circular 02/2013 (DfT, 2013a). Solar Farms are considered specifically at Paragraph Reference ID: 5-013-20150327 of the NPPG (2015), which is considered further for the current proposal in **Chapter 3 - Site Selection and Design** of the ES.

Exceptional Load Delivery Vehicles

TA12 UK Government also provides guidance for dealing with exceptional load deliveries. This guidance (HMSO, 2014) defines an exceptional load as a vehicle with any of the following:

- a weight of more than 44 000 kg (44 Tonnes);
- an axle load of more than 10 000 kg (10 T) for a single non-driving axle and 11 500 kg (11T) for a single driving axle;
- a width of more than 2.9m; or
- a length of more than 18.65m.

TA13 A standard HGV is not classified as an exceptional load.

TA14 For such vehicles, advance warning to the Police, Highways Authority and structure owners such as Network Rail may be required.

Road Accident Records

TA15 The Royal Society for the Prevention of Accidents (ROSPA) state that '*Great Britain has one of the best road safety records in Europe and the world*' (2021). Human error is a factor in 95% of all road accidents and the road environment (road and junction design, and road surfaces) a factor in just 12% of accidents (ROSPA, 2017). Human error can be a result of many factors including: alcohol or drugs, inexperience, tiredness or illness, in-car distractions, impatience, stress, carelessness or negligence.

TA16 ROSPA (2020) describe many potential sources of driver distraction, but note that in reality the information required to perform the driving task is prioritised. Many distractions occur within the vehicle, such as conversing with passengers and manipulating audio controls. An American Study found external distractions to occur in over 85% of journeys in the sample (ROSPA, 2020).

TA17 Of the four types of distraction (visual, cognitive, biomechanical and auditory), only visual distraction is potentially relevant for solar farm developments. The ROSPA factsheet (ROSPA, 2020) states:

'The way that a driver observes the area around the vehicle depends on how complex it is, and in complex environments, drivers can find it more difficult to identify the main hazards.

In undemanding situations, driver's attention tends to wander towards objects or scenery that are not part of the driving task. Estimates of how much time drivers spend doing this varies from between 20% and 50%.'

TA18 Existing crash records in proximity to the proposed site entrance were reviewed. The number, circumstances and reasons for the crashes were analysed and where similar circumstances may arise as a result of the proposed development significant impacts may be possible. The site layout was designed in accordance with current planning policy and guidance to avoid potential impacts on users of the local highway network.

Construction Transport Route

TA19 Access for the delivery of equipment was initially anticipated to be routed through Ruddington Village to site via Asher Lane. During public consultation, (as discussed further in **ES Volume 2a Chapter 5 - EIA**), valuable information was provided by the community which the Applicant considered and progressed.

TA20 An access route for the delivery of the renewable energy park components avoiding Ruddington village was identified through a desktop assessment and site visits and is shown on **Plate TA.1**).

TA21 From the direction of the M1 and wider highway network, delivery vehicles will approach site from Remembrance Way/Clifton Lane (A453), then right on to Farnborough Road after the NTU Clifton Campus. Following Farnborough Road clockwise, vehicles will then turn left on to Clifton Lane after approximately 1.9km. After 750m, the route turns right on to Pasture Lane and then through the Artex Works facility south towards site along a temporary and non-intrusive road surface parallel to Pasture Lane within agricultural fields to the site.

TA22 Returning vehicles will follow the reverse of the route taking the appropriate course through road junctions.

TA23 Traffic count data are considered in comparison with the anticipated vehicle numbers and transport requirements for delivery of the Fair Oaks Renewable Energy Park components.

TA24 Existing road accident records have been analysed and the site layout designed in accordance with current planning policy and guidance to avoid potential impacts on users of the local highway network.

BASELINE CONDITIONS

The Local Road Transport Network

TA25 As described in the ES, **Chapter 7 - Construction Operation and Decommissioning**, the proposed development is accessed off Pasture Lane to the west of Ruddington.

TA26 Pasture Lane is accessed from the wider highway network via Clifton Lane and then around Clifton on Farnbrough Road to the A453. The A453 is dual carriageway from the Park and Ride junction to the south-west of Clifton from which the highway towards to the motorway network is dual carriageway.

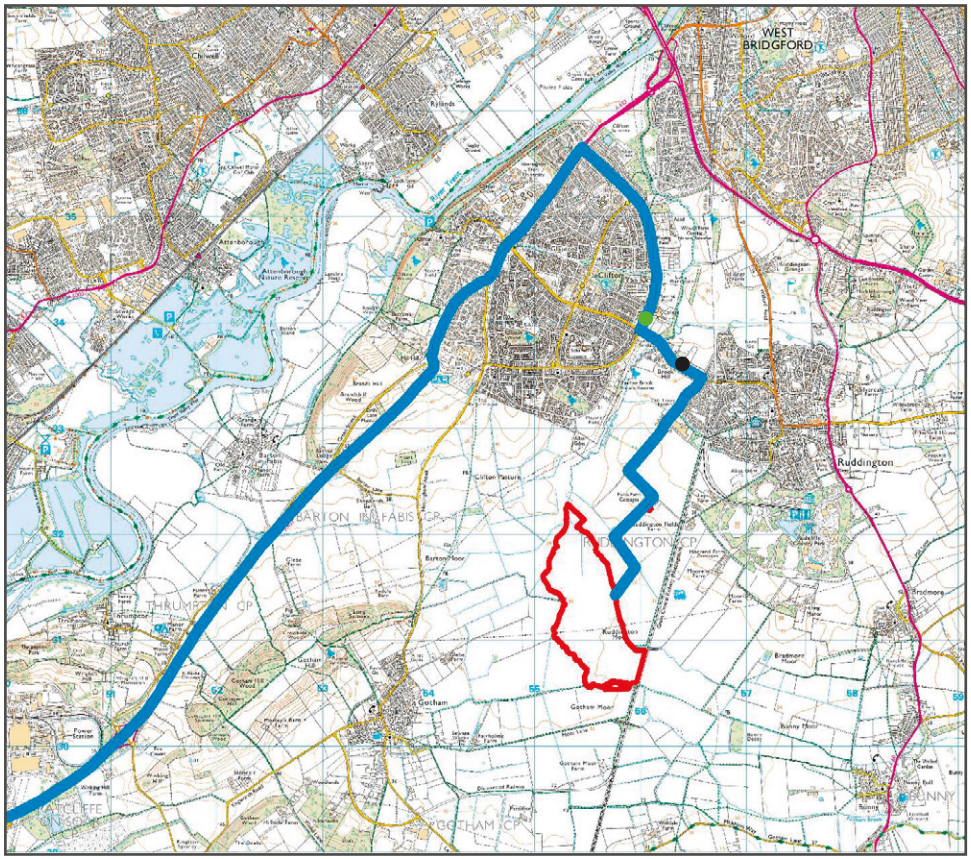

Plate TA.1 - *Proposed Construction Delivery Route from direction of M1 Motorway (shown in blue, site in red, Traffic Count 810842 location black dot, ATC location green dot)*

Traffic Volumes

TA27 The Department for Transport (DfT) provides National traffic count data for locations across the UK. Traffic count data provides the number of vehicles that will drive on the particular stretch of road on an average day of the year.

TA28 There is one traffic count location on Clifton Lane on the delivery route as shown at **Plate TA.1 on page 4**.

TA29 Traffic count data available for this location is from the year 2019. Based on manual counting, the Annual Average Daily Flow (AADF) was 8 058, of which 89 were HGVs. The count was undertaken in September of 2019 and so preceding any influence on traffic levels associated with SARS-CoV-2 restrictions. These numbers account for vehicles travelling in the east and west-bound directions. The DFT Traffic Count Report 810842 is provided as **Appendix TA1**.

TA30 To identify traffic volumes on Farnborough Road, an Automated Traffic Count (ATC) was undertaken just north of the Farnborough Road - Clifton Lane roundabout. The survey recorded vehicle class, numbers and speed in both directions between Saturday 10th and Friday 16th December, 2022. The ATC location is shown at **Plate TA.1 on page 4**.

TA31 Total daily average HGV movements of 123 HGVs (seven day average taken as worst case). The ATC Report and survey data is provided as **Appendix TA2**.

Road Accident Records

TA32 A National accident database map (Crashmap, 2021) was consulted to determine the number and nature of accidents recorded along the delivery route and proximate to the Pasture Lane/Clifton Lane junction.

TA33 The records relate only to personal injury accidents on public roads that are reported to the police, and subsequently recorded, using the Department for Transport 'STATS19' accident reporting form. Data for the most recent five-year period available are analysed.

TA34 Between the site and the trunk road network, In the last 5 years (2017-2021, inclusive), there was one 'serious' incident on Farnborough Road and no fatal incidents. The closest incident to the site entrance more than 20m east of the Clifton Lane - Pasture Lane junction east of the delivery route. Personal injury was slight. The location of recorded incidents is shown in **Plate TA.2 on page 6**.

TA35 'Serious' incidents are also shown on **Table TA.1 on page 5**.

TA36 The Crashmap report associated with the serious incident is contained at **Appendix TA3**.

Table TA.1 - 'Serious' *crashes on the route between Pasture Lane and A453*

Incident date	Severity	Vehicles/ casualties	Environmental conditions	Further Description	Junction
03/05/2019	'serious'	1/1	Daylight, fine without high winds, wet or damp	Front of car hit front of motorcycle - both proceeding normally along the carriageway, not on a bend	T or staggered junction

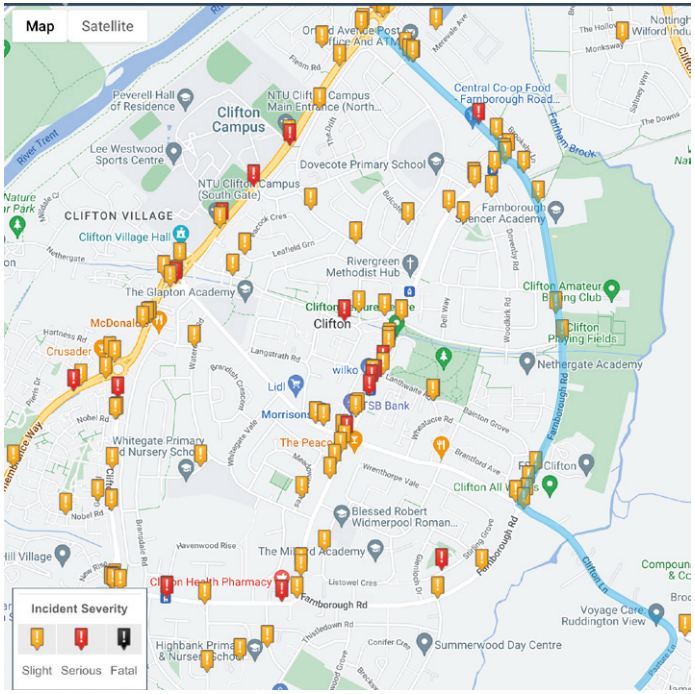

Image courtesy of Crashmap.co.uk. Not to Scale

Plate TA.2 - *'Serious' Crash Location (shown in red, delivery route shaded blue) (2017-2021)*

Public Rights of Way

TA37 As described in **Chapter 4 - Existing Conditions** of the ES, and shown on **Plate 4.4**, two footpaths follow the east and southern site boundary.

TA38 The public rights of way will remain open during construction and operation.

PREDICTED IMPACTS

Construction Phase

Vehicular Movements

TA39 The construction of a renewable energy park is straight forward and involves moderate levels of site traffic when compared to many other civil engineering projects.

TA40 The equipment and materials used to construct the development will fit on standard Heavy Goods Vehicles (HGV). One delivery, the site transformer, will be classed as an exceptional load.

TA41 As reported in the ES **Chapter 7 - Construction, Operation and Decommissioning**, the principal phases to the construction comprise:

- temporary construction compound is established, site access tracks are built or upgraded and site fencing is erected;
- panel frames are push-driven into the ground and fixed in place;
- site containers are offloaded in situ;
- panels are mounted to the frames and wired together;
- cable trenches are dug to install the main cables;
- all electrical connections are made;
- the site is commissioned; and
- landscape mitigation planting takes place during the autumn.

TA42 The typical construction programme for a project of the scale of the Fair Oaks Renewable Energy Park is shown in **Table TA.2 on page 8**.

TA43 As described in ES **Chapter 7** it is envisaged that the Fair Oaks Renewable Energy Park proposal will take approximately nine to twelve months to construct. Most of the construction activity is involved in the construction of the site tracks and BESS and substation compound.

TA44 The approximate number of vehicular movements have been determined in accordance with the estimated construction quantities as proposed in ES **Chapter 6 - Development Proposal**. These movements were then correlated with the typical construction programme to provide an indication of traffic movements by month. This is illustrated in **Table TA.2 on page 8**. For clarity, 'movement' denotes a single trip to or from site.

TA45 This construction assessment has focussed on HGV movements. Personnel have not been included in this - it is estimated that the peak number of personnel on site at any one time will be approximately 125. Construction personnel tend to travel to site in groups via minibus or shared light vehicles.

TA46 Deliveries are spaced throughout the construction period although fewer movements are associated with the end of the construction period. The construction programme starts with a temporary construction compound. Thereafter, a rolling programme will complete areas of the site with the fencing, framing system, panels, containers, electrical system installation and commissioning.

TA47 The decommissioning of the renewable energy park at the end of its life will be a reduced reverse version of the construction process and controlled by condition through a Decommissioning Traffic Management Plan (DTMP) to be agreed with Rushcliffe Borough Council.

Impact on Roads and Users

TA48 As stated from **Paragraph TA8 on page 2**, this assessment considers the approach outlined in the Guidelines for the Assessment of Road Traffic (IEMA, 1993). The Guidelines state that the scale and extent of this assessment should include highways links where traffic flows are predicted to increase by more than 30% or where the number of heavy goods vehicles is predicted to increase by more than 30%; and to include any other specifically sensitive areas where traffic flows are predicted to increase by 10% or more. Increases in traffic flows below 10% are generally considered to be insignificant as this is likely to be within the daily variations in traffic flow. Based on DFT traffic count data for Clifton Lane, (**paragraph TA29 on page 5**), at the peak (in months seven and eight) twelve additional HGV movements (six individual HGVs) per day represents a percentage increases in HGV movements on this road of 13.5% (to 3 S.F.) as a result of the Fair Oaks Renewable Energy Park construction. Ten HGV movements (anticipated during months two to six) represents an increase of 11.2%. This is considered within the guidelines as significant given consideration of increased traffic along Pasture Lane and Clifton Lane

TA49 Farnborough Road, still considered sensitive as a consequence of the school would, with a 9.75% increase in seven-day average HGV traffic flows, not experience a significant increase in HGV movements even during the two peak months. Construction traffic during months one and nine are not significant anywhere along the delivery route. Traffic flows will not be significant beyond Pasture Lane and Clifton Lane.

Table TA.2 - *Typical construction programme with total and mathematical average monthly vehicular movements*

Activity	Total Movements	Programme Month								
		1	2	3	4	5	6	7	8	9
Construction compound, including gates, welfare and temporary surfacing	12	12								
Temporary trackway	32	16								16
Security fencing and gates	22	7.3	7.3	7.3						
Foundation concrete for inverter/transformer units, customer cabin, welfare unit, store, substation and CCTV posts	16	2.7	2.7	2.7	2.7	2.7	2.7			
Site tracks & BESS/Substation compound (crushed stone over geogrid base)	1092	136.5	136.5	136.5	136.5	136.5	136.5	136.5	136.5	
Inverters	6		1	1	1	1	1	1		
Cabling	12		1.7	1.7	1.7	1.7	1.7	1.7	1.7	
Cable trench sand	24		3.4	3.4	3.4	3.4	3.4	3.4	3,4	
Solar panels	452		60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3
Mounting system	76		10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
Transformers	18				6	6	6			
Client container, BESS & Substation Components	128							64	64	
Ecological works (seed, new hedge and woodland), subject to appropriate time of year.	6									6
Site commissioning and site clearing	12									12
TOTAL MOVEMENTS	**1908**	**174**	**223**	**223**	**222**	**222**	**222**	**277**	**276**	**69**
Average movements per day	**-**	**8**	**10**	**10**	**10**	**10**	**10**	**12**	**12**	**3**
Average movements per hour on working days, assuming off-peak weekday delivery and Saturday mornings	**-**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**1**

Note. Total movements are distributed across the construction months and rounded to the nearest whole movement.

TA50 For existing road users, impacts may arise through traffic delays caused by construction vehicles, or to their visual amenity (which is considered further in ES **Chapter 9 - LVIA**).

TA51 With respect to road impacts there is the potential to damage road surfaces through the delivery of aggregates and silting of drains through mud deposits on to the highway.

TA52 The road width and junctions in the approach to site are considered to be adequate for the intended use for conventional HGV traffic. Therefore there is low potential for damage to highway verges.

TA53 The Construction Traffic Management Plan (CTMP) to be agreed with the Local Planning Authority prior to construction commencing and controlled by way of planning condition will include details of all traffic management proposals.

PEAK AND AVERAGE CONSTRUCTION VOLUMES

TA54 It has been established that the elements of the renewable energy park creating the maximum traffic volume will be delivery of the access track and BESS and substation compound materials. There are approximately 137 movements anticipated per month (six per day assuming a 24-day working month) during the first to eighth months inclusive.

TA55 For average construction traffic flows, the peak traffic volume identified is likely to occur in months seven and eight with 277 and 276 average monthly movements respectively. Averaged across the working month (assuming 24 day working month), this would equate to an average of twelve HGV movements per day during each of these months. This is likely more than 10% of the average daily total HGV vehicular movements along Pasture Lane and Clifton Lane although not along Farnborough Road. As such, significant impacts are localised and limited to Pasture Lane and Clifton Lane during seven months of the construction period.

TA56 Traffic levels associated with the decommissioning of the project are significantly less than those associated with its construction, and decommissioning impacts are considered to be reduced with aggregate from the tracks and compounds being left in situ for use by the landowner. No significant impacts are anticipated in the wider highway network.

Impacts on Public Rights of Way

TA57 As described from **Paragraph TA37 on page 6** there are two footpaths adjacent to the site boundary to the south and east.

TA58 Wide buffer strips have been incorporated into the site design to minimise impacts for footpath users around the site.

TA59 During the construction phase of the proposed solar farm the PRoWs will remain fully open for use. There is no alteration to the accessibility of any of the PROW in the wider area around the site.

TA60 Visual amenity impacts for users of the Public Rights of Way are described further in ES **Chapter 9 - LVIA from Paragraph 9.388 on page 226**.

Driver Distraction

TA61 The Fair Oaks Renewable Energy Park is not located in proximity to major junctions in the existing road network and is not adjacent to the highway.

TA62 The potential visibility of the solar farm is considered in the Landscape and ES Visual Assessment (**Chapter 9**).

TA63 Potential Glint and Glare impacts of the proposed development on motorists are considered in the Glint and Glare report accompanying the application.

Decommissioning Phase

TA64 The decommissioning process will be a shorter period than the construction phase, and it will typically involve:

- isolating electrical connections and removing from site all electrical equipment (including inverters, transformers, BESS and the substation) and cables;
- removing from site all solar panels;
- removing from site the panel frames;
- removing foundation pads; and
- removal of access tracks, where not retained by the landowner.

TA65 The solar farm, BESS and substation equipment will be removed from site and sorted for recycling.

TA66 Significantly fewer vehicle movements will be required than during the construction phase, principally as aggregate removal will be limited to those tracks and areas not retained by the landowner. Following the Guidelines for the Environmental Assessment of Road Traffic (IEMA, 1993), the vehicle movements associated with the construction phase are identified as not significant in the wider motorway and highway network - although short lived and localised significant impacts may affect Clifton Lane.

AVOIDANCE AND MITIGATION

TA67 During construction and decommissioning, deliveries will be restricted, wherever possible, to off-peak weekdays and Saturday mornings to reduce impacts on local road users. Weekday off-peak is considered to be between 09:00 and 15:00.

TA68 Advance notification of potential delay for road users will be provided through appropriate signage and advertisement. The Applicant will liaise with the Highways Authorities and Police prior to the construction phase commencing.

TA69 In addition, prior to construction, precautionary mitigation measures are suggested to include wheel wash facilities, as appropriate, and sweeping is to be carried out to ensure the road is kept reasonably clear of any deposits from the construction works and the local drains are kept clear.

TA70 Banksmen will control HGV movements along Pasture Lane to avoid congestion, with HGVs being held at dedicated holding pens before being instructed to leave the site.

TA71 Decommissioning mitigation measures including the decommissioning route, notices and wheel washing etc. will be detailed in a DTMP, to be submitted to and agreed with the LPA in advance of the decommissioning phase and secured by way of planning condition.

POST-MITIGATION IMPACTS

TA72 The predicted peak HGV movements are likely less than 30% of daily movements along the A453 and onwards through the highway network

and as such, no significant impacts are predicted on the wider highway network, nor along Farnborough Road where HGV flows will increase by less than 10% throughout the construction process.

TA73 Pasture Lane and Clifton Lane are considered within the guidelines as sensitive being within a village. Consequently, localised impacts associated with increased HGV movements along this section of the delivery route are considered significant (assessed as 11.2% - 13.5% increase in HGV movements) applying through months two to eight on these two roads.

TA74 Construction traffic during months one and nine are not significant anywhere along the construction delivery route.

TA75 Measures are proposed for the construction period (and similarly for decommissioning) to mitigate potential impacts and disruption to local traffic as far as possible for the nine to twelve-month construction period.

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