

CHAPTER 8 - TRAFFIC AND ACCESS

Introduction	125	Predicted Impacts	139
Methodology	126	Construction Phase	139
Vehicle Movements	126	Decommissioning Phase	144
Exceptional Load Delivery Vehicles	126	Cumulative	145
Visibility Splays at Junctions	127	Avoidance and Mitigation	145
Road Accident Records	127	Residual Impacts	146
Transport Route	128	References	147
Baseline Conditions	129		
The Local Road Transport Network	129		
Traffic Volumes	129		
Road Accident Records	134		
Public Rights of Way	136		
Proposed Delivery Routes and Associated Works	137		

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INTRODUCTION

- 8.1 This chapter considers the impacts of the East Stour Solar Farm on the local roads infrastructure, particularly during the construction process.
- 8.2 For the purposes of the Environmental Impact Assessment and this Environmental Statement, assessments for impacts of the solar farm have been based upon panel rows with a maximum height of 3.0m,

at a tilt of approximately 20° facing south.

- 8.3 The construction of solar energy projects requires the delivery of a variety of loads, including 'Redimix' concrete, standard HGV to carry the panel frames and solar panels, and a small crane (typically 45T) to offload the inverter/ transformer units.
- 8.4 The operational phase involves site traffic associated with monthly site visits and annual scheduled servicing, cleaning and ground maintenance.
- 8.5 The decommissioning phase is a reduced reverse of the construction phase involving the removal of the solar panels, frames and associated infrastructure elements, as described in **Chapter 7 - Construction, Operation and Decommissioning**.
- 8.6 This assessment has been focused on the construction process. As detailed in **Chapter 7 - Construction, Operation and Decommissioning**, 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.

- 8.7 The delivery route for the solar farm components is considered. Typical vehicular movements for the construction programme and an assessment of the associated impacts are provided.
- 8.8 In addition, assessments have been undertaken to determine the requirement for modification to the highway network to facilitate deliveries.
- 8.9 Finally, following the application of mitigation, residual impacts are identified.

METHODOLOGY

Vehicle Movements

- 8.10 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.
- 8.11 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.
- 8.12 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 solar farm 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.'*
- 8.13 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**.

Exceptional Load Delivery Vehicles

- 8.14 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.
- 8.15 For such vehicles, advance warning to the Police, Highways Authority and structure owners such as Network Rail may be required.

Visibility Splays at Junctions

- 8.16 This assessment also considers the requirements for an appropriate site entrance. In this regard, advice on visibility splays is provided in the Design Manual for Roads and Bridges (DMRB) (Highways England et al., 2020). Guidance is also provided in the Department for Transport's Manual for Streets (MfS) (2007). The proposed development is assessed against the requirements of these design guides.
- 8.17 The required specification for site entrance visibility is shown in **Plate 8.1**. The speed limit on the highway at the site entrance location will be analysed along with recorded vehicle speeds during automated traffic count surveys. The appropriate minimum visibility distance will be established.

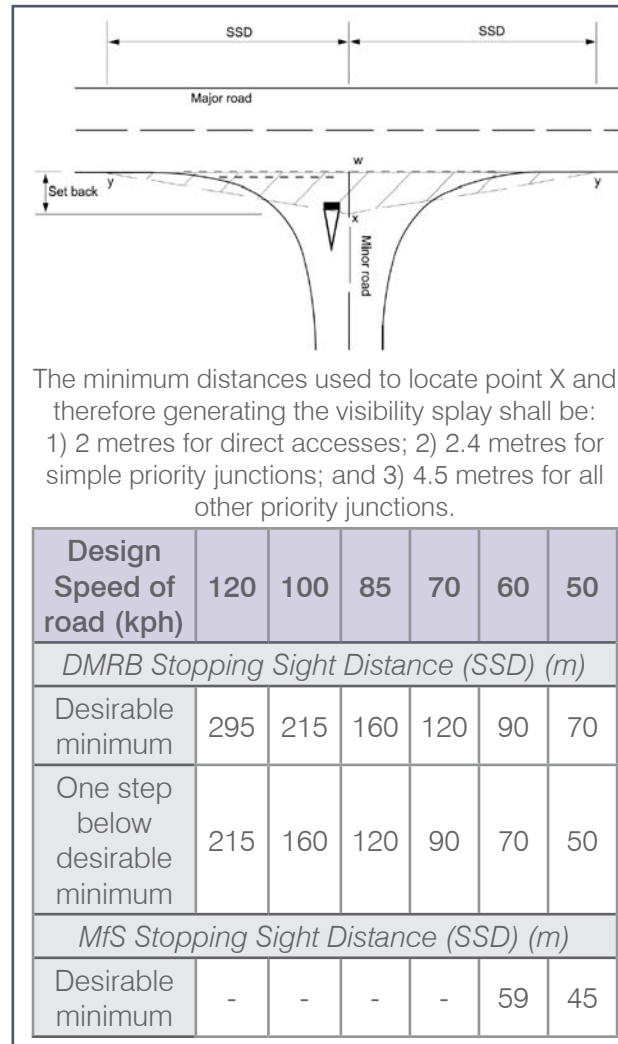


Plate 8.1 - Design Specification for Site Entrances as per the Guidance of the DMRB (2020) and MfS (2007)

Road Accident Records

- 8.18 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.
- 8.19 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).
- 8.20 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%.'

8.21 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.

Transport Route

8.22 An access route for the delivery of the solar farm components (as shown on **Plate 8.2**) was identified through an

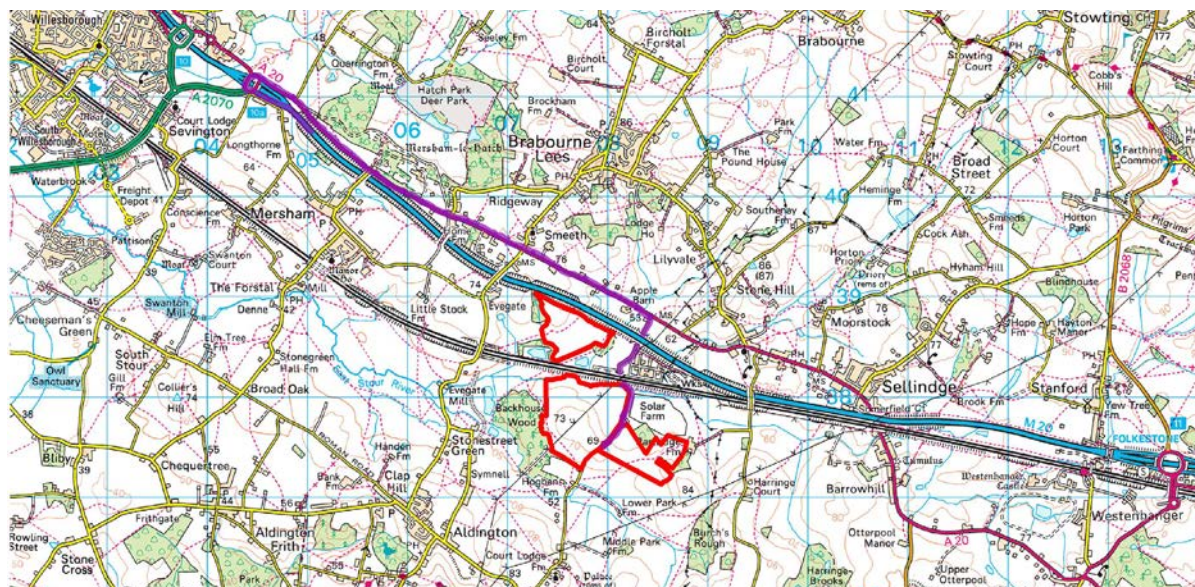
iterative desktop assessment and site visits.

8.23 Traffic count data are considered in comparison with the anticipated vehicle numbers and transport requirements for delivery of the East Stour Solar Farm components.

8.24 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.

8.25 Consultation has taken place with the Highway Authority, Kent County Council, to establish the loading capacity of the East Stour bridge on Church Lane.



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Plate 8.2 - Proposed Delivery Route from M20 Motorway (shown in purple)

BASELINE CONDITIONS

The Local Road Transport Network

- 8.26 As described in **Chapter 4 - Existing Conditions**, the proposed development is located south of the M20.
- 8.27 The nearest motorway to the proposed site is the M20, which runs parallel to the northern boundary of the site at a distance of approximately 30m. The nearest trunk road is the A20, which is to the north of the M20 and approximately 300m from the northern site boundary. Church Lane (USRN: 1300278) is a minor road that travels south from the A20 towards Roman Road, Aldington.
- 8.28 Church Lane will be used to gain access to all three land parcels of the proposed site. The National Speed Limit of 60mph applies along Church Lane, automated traffic counts have been undertaken at two points on Church Lane to establish actual traffic speeds.
- 8.29 In the wider area, a network of minor roads surround the site serving the

local villages and individual farm houses. These include Evegate Mill Lane (USRN: 1301856) and Goldwell Lane (USRN: 1300495) to the west; Roman Road (USRN: 1301012) to the south; and Harringe Lane (USRN: 34503089) to the east.

- 8.30 There are two site entrances proposed off Church Lane and one crossing. The delivery route and site entrances are discussed further from **Paragraph 8.73 on page 137**.

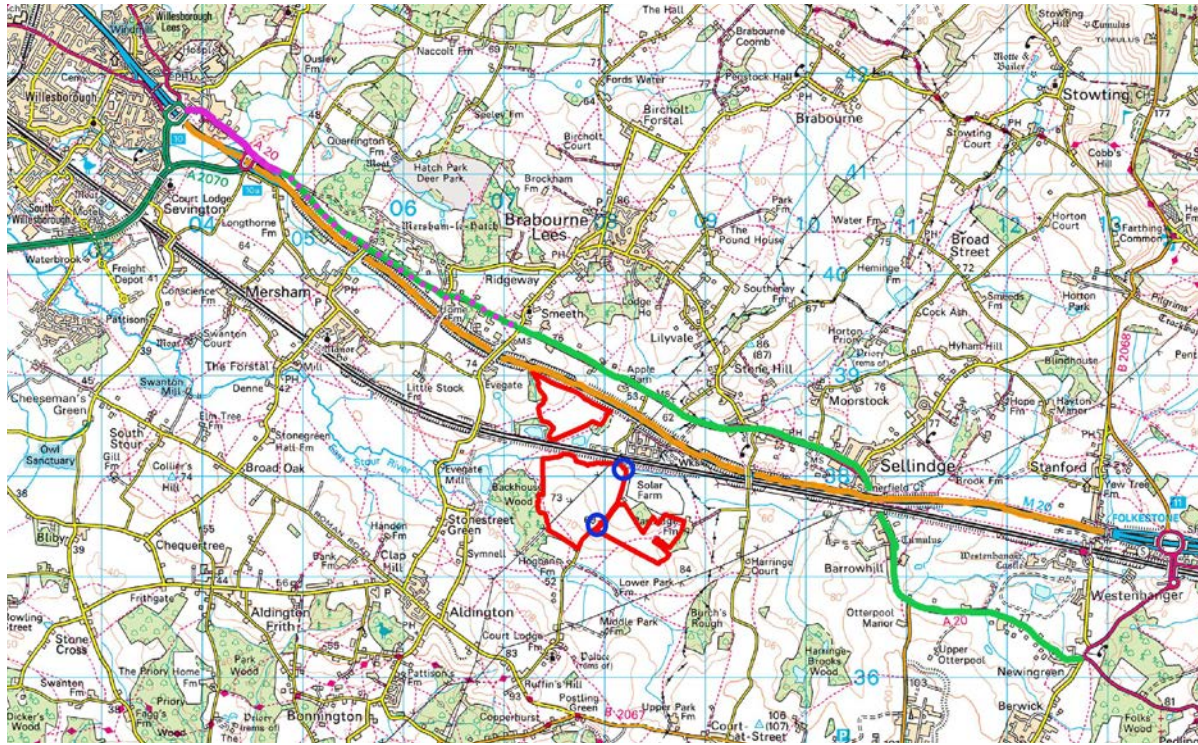
Traffic Volumes

- 8.31 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.
- 8.32 In Kent there are 787 existing count points. There are no count points in proximity to the proposed site entrance. The closest points to the proposed site are on the M20 (count point 7869), the A20 (count points 36252 and 92060). Traffic counts at Church Lane were undertaken as part of the site assessment, as discussed from **Paragraph 8.50 on page 132**.

Traffic count locations are shown at **Plate 8.3 on page 130**.

Motorways - M20

- 8.33 The count segment for the M20 nearest to the proposed site (count point 7869) covers the area between Junctions 10 and 11, a stretch of approximately 10.9km.
- 8.34 Traffic count data are available for this location from the year 2000. Over the past 4 years, traffic levels were measured using automatic counters. In 2019, the Annual Average Daily Flow (AADF) was 54 485, of which 8 059 were HGVs. These figures are representative of the previous two yearly counts, which saw approximately 55 000 vehicle movements with approximately 8 200 of these being HGVs. In 2020 traffic levels were considerably reduced as a result of the SARS-CoV-2 restrictions and the transition to new border requirements following UK's departure from the European Union. An AADF of 38 416 was recorded for all vehicles, 7 429 of which were HGVs (DfT, 2021). These numbers account for vehicles travelling in the east and west-bound directions.



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-  Principal development area
-  Traffic count segment 92060
-  Traffic count segment 7869
-  Overlapping segments 36252 and 92060
-  Traffic count segment 36252
-  Project-specific traffic count locations

Plate 8.3 - Traffic Count Locations

A Roads - A20

8.47 The most relevant count points along the A20 are located to the north-west of the proposed site. Traffic levels at count point 36252, which starts at the junction with the A2070 and ends at the junction with Church Road covering a distance of approximately 4.1km, were measured from 2000 to 2019. Manual counts were taken in the years 2000, 2003, 2007, 2010 and 2015, whereas the remaining data were estimated using previous year's AADF.

8.48 The 2019 AADF estimate at segment 36252 was 11 416 motor vehicles, 378 of which were estimated to be HGVs. The 2019 figures are representative of previous years, as shown on **Plate 8.4 on page 131**. The monitored segment of the A20 was predominantly used by cars and taxis (c. 82%), and light goods vehicles (LGVs) (c. 12.8%), as shown on **Plate 8.5 on page 131**. HGVs represented approximately 3.3% of the total number of vehicles.

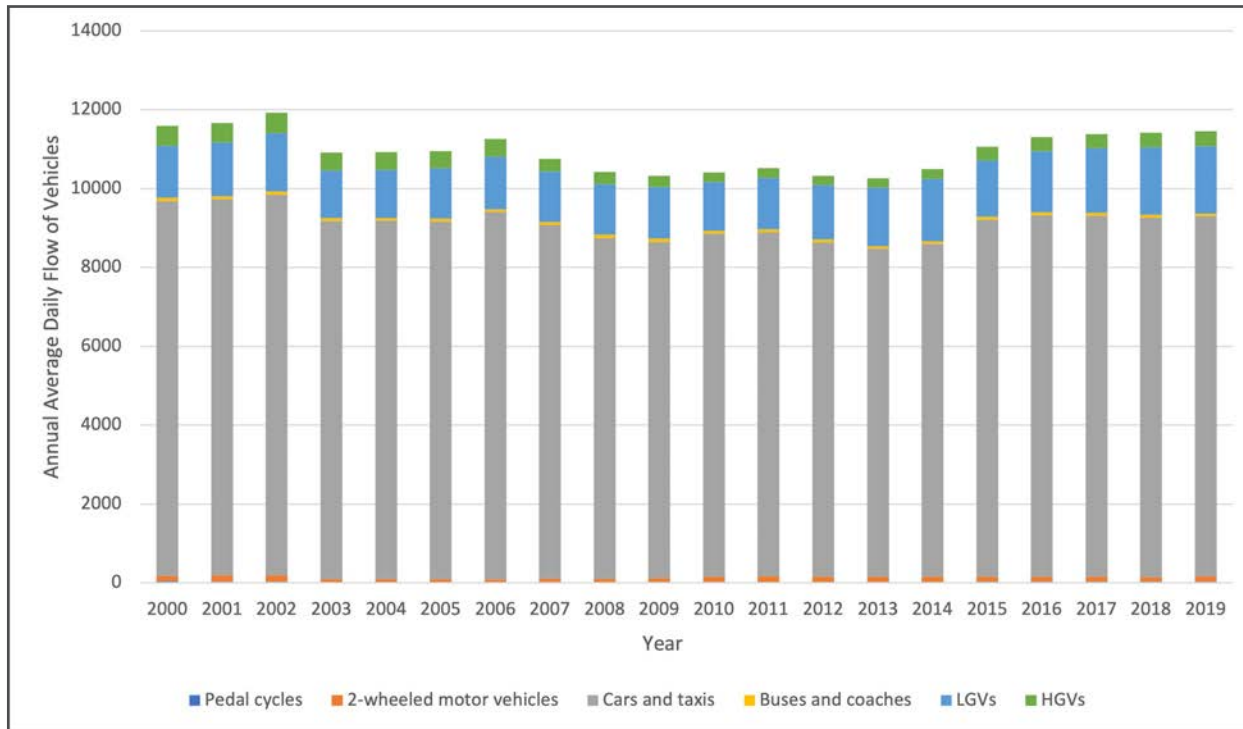


Plate 8.4 - Annual Average Daily Flow (AADF) at Segment 36252 on the A20 for Different Vehicle Types (2000 - 2019) (Data source: DfT, 2021)

8.49 In 2020, a manual count was conducted at a nearby segment of the A20 (point count 92060), over a section of approximately 10.2km. AADF for all motor vehicles was 9 396, with 255 (2.7%) of these accounting for HGVs (DfT, 2021). These numbers account for vehicles travelling in the east and west-bound directions.

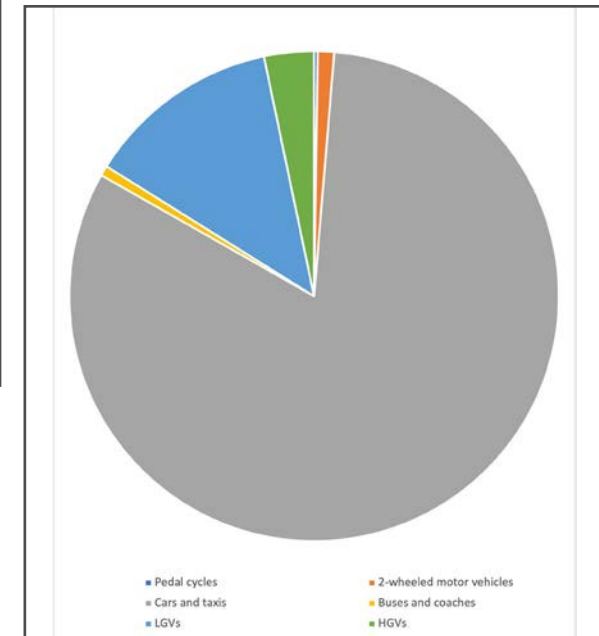


Plate 8.5 - Average Vehicle Type Composition of AADF at Segment 36252 on the A20 (2000 - 2019) (Data source: DfT, 2021)

Minor Roads - Church Lane

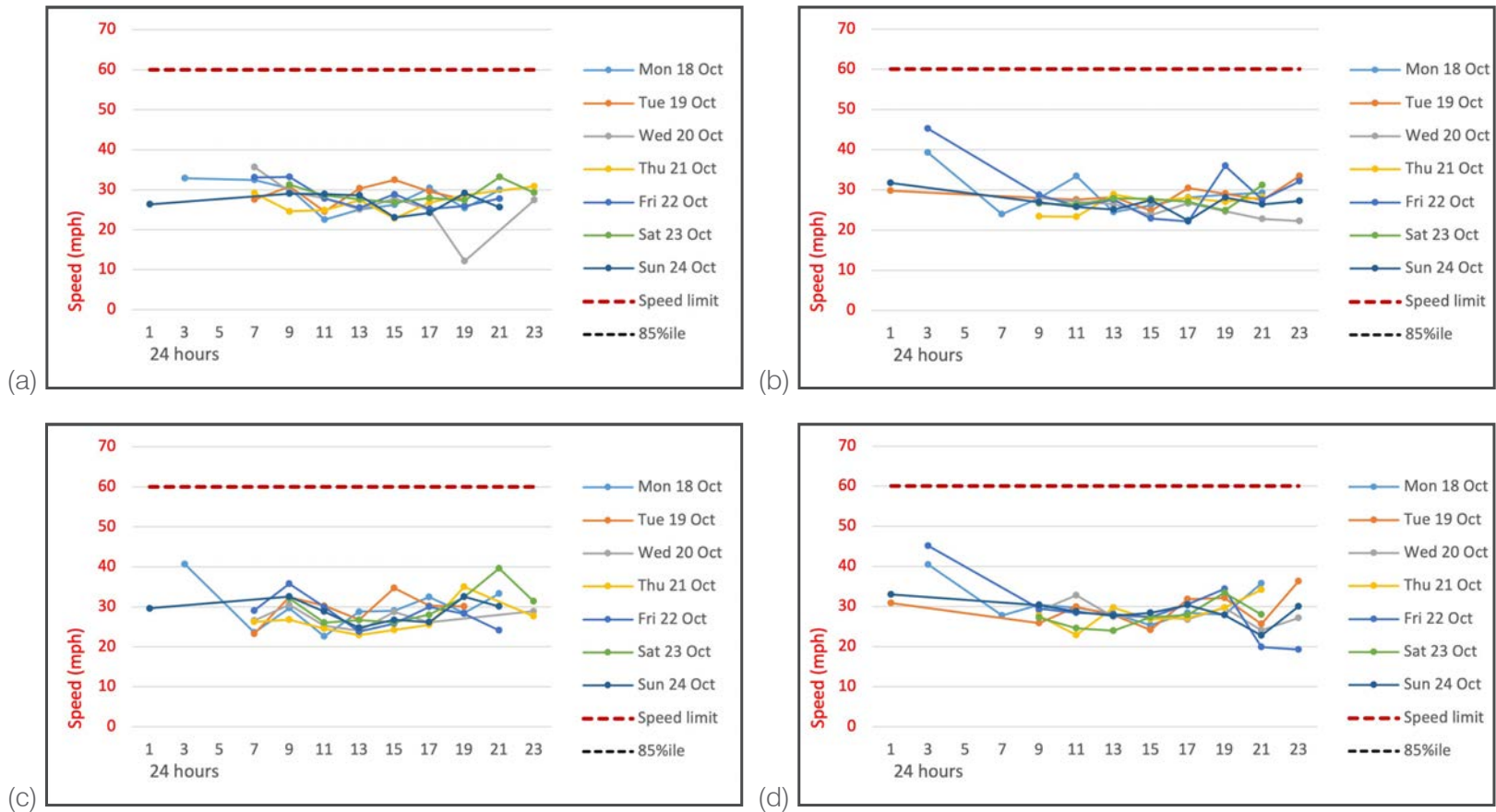
Table 8.1 - Analysis of Automatic Traffic Count data near proposed site entrances on Church Lane

8.50 Due to the lack of traffic data on the vicinity of the proposed site access points, Traffic Surveys UK Limited were appointed to undertake traffic counts on Church Lane. Two locations were chosen, approximately matching the location of the central access point towards Bested Hill (Church Lane North) and the southern crossing of Church Lane providing the access point towards Partridge Plantation (Church Lane South), as shown in **Plate 8.3 on page 130**.

8.51 Automatic traffic counts were undertaken over a period of 7 days, commencing on 18th October 2021. Data were collected in 15 minute periods using a pair of pneumatic tubes installed securely across the carriageway, one metre apart, recording air pulses to determine vehicle speed, class and volume.

8.52 Traffic data gathered are provided in full at **Appendix 8.1. Table 8.1** gives a summary of the northbound (N) and southbound (S) data for weekdays (Monday to Friday average), as this is the period in which most construction traffic will occur (weekend deliveries to site will be avoided whenever possible).

Location	Monday - Friday Average	All Traffic			Light Goods Vehicles % of Total (to 3 S.F.)		Heavy Goods Vehicles % of Total (to 3 S.F.)	
		Both directions	N	S	N	S	N	S
Church Lane North	Count, 7am-7pm	743	388	355	36 (9%)	19 (5%)	2 (0.5%)	7 (2%)
	Count, all day	843	437	406	42 (10%)	28 (7%)	2 (0.5%)	7 (2%)
	85 th Percentile Speed, 7am-7pm	31.8 mph	31.8 mph	31.7 mph				
Church Lane South	Count, 7am-7pm	660	351	309	30 (9%)	22 (7%)	4 (1%)	8 (3%)
	Count, all day	748	394	354	34 (9%)	29 (8%)	4 (1%)	8 (2%)
	85 th Percentile Speed, 7am-7pm	33.5 mph	34.1 mph	32.9 mph				



Average daily speeds (solid thin colours) and 85th percentile (dashed black) compared against 60mph posted speed limit (dashed red). The 85th percentile is the speed at which 85% of all vehicles are observed to travel under free flowing conditions. A minimum of ten vehicles per speed bin is required for this calculation, hence the overnight low-volume 85th percentile values may be zero.

Plate 8.6 - Average Daily Speeds on Church Lane adjacent to East Stour Solar Farm (data collected in October 2021)

(a) Church Lane North, Northbound, (b) Church Lane North, Southbound (c) Church Lane South, Northbound, (d) Church Lane South, Southbound

- 8.53 Data showed that in both locations, the majority of vehicles were cars and taxis. The average 85th percentile daily speed was around 32mph on Church Lane North and around 34mph on Church Lane South.
- 8.54 Further analysis of the speed showed that during weekday daytime hours (7am - 7pm) average vehicle speed was 27.0mph in both directions at Church Lane North and 28.4mph northbound and 28.7mph southbound at Church Lane South, as shown at **Plate 8.6 on page 133**. The highest speeds were recorded in the very early morning, at around 3am.
- 8.55 In terms of Annual Average Daily Traffic (AADT), the survey determined that 168 vehicles travel along Church Lane North per average day, and 151 vehicles travel along Church Lane South per average day.

Road Accident Records

- 8.56 A National accident database map (Crashmap, 2021) was consulted to determine the number and nature of accidents recorded in the vicinity of

the proposed solar farm site entrances and highway crossings.

- 8.57 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 ten-year period available are analysed.
- 8.58 In the last 10 years (2011-2020, inclusive), there was one crash in proximity to the proposed site entrances on Church Lane. It involved two vehicles (cars) with one casualty (rider aged 21-25) and the severity was classed as slight. The incident occurred during daytime in wet weather conditions. There were no external factors noted as reason for the crash and the vehicles were proceeding normally along the carriageway, not on a bend. The vehicles impacted offside, possibly when passing each other.
- 8.59 On the A20, within approximately 500m of the junction with Church Lane, there have been six accidents between

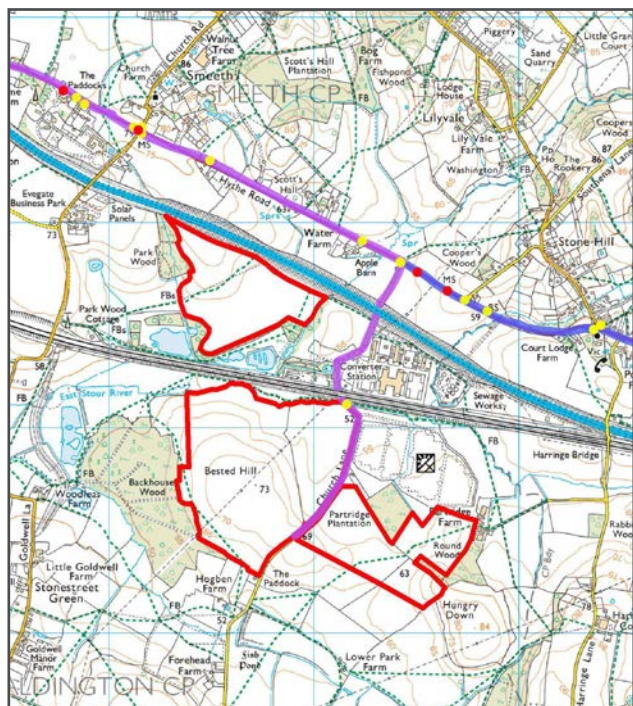
2011-2020. These are predominantly classed as slight crashes although there have been two serious incidents but no fatal crashes.

- 8.60 One of those occurred at the junction of Church Lane with the A20 Hythe Road in 2014. It involved a crash between two vehicles (cars), there were two casualties (rider ages 0-5 and 6-10) and the severity was classed as slight. There were no external factors noted as reason for the crash, and the vehicles were proceeding normally along the carriageway, not on a bend.
- 8.61 The location of the seven crashes proximate to the proposed site are shown in **Plate 8.7 on page 136**. Further details of the incidents recorded on the A20 are provided in **Table 8.2 on page 135**.
- 8.62 Further incidents have been reported over the past 10 years along the A20, Hythe Road, and the M20. No further details are provided in this Environmental Statement due to their distance from the proposed site.

CHAPTER 8 - TRAFFIC AND ACCESS

Table 8.2 - Crashes on the A20 between 2011 and 2020 inclusive, proximate to the A20/Church Lane junction. Listed by location, west to east

Incident date	Severity	Vehicles/ casualties	Environmental conditions	Further Description	Within 20m of junction?	On Proposed Delivery Route?
28/05/20145 11:55 pm	Slight	1 / 1	Darkness, no street lights. Fine, without high winds. Dry road.	Vehicles (car) proceeding normally along the carriageway, not on a bend.	No	Yes
09/08/2014 10:15 am	Slight	2 / 2	Daylight. Fine, without high winds. Dry road.	Both vehicles (cars) were proceeding normally along the carriageway, not on a bend. Vehicle 2 hit a permanent (roadside) object while Vehicle 1 was in the vicinity.	Yes	Yes
02/07/2019 3:30 am	Serious	2 / 2	Darkness, no street lights. Fine without high winds. Dry road.	Vehicle 1 (car) is passing another moving vehicle on its offside. Vehicle 2 (car) is proceeding normally along the carriageway, not on a bend. Head on collision.	No	No
17/0/2020 10:45 pm	Serious	4 / 6	Darkness, no street lights. Fine without high winds. Dry road.	Vehicle 1 (car) is proceeding normally along the carriageway, not on a bend. Vehicles 2, 3 and 4 (cars) are waiting to proceed normally but are held up. Likely to be a rear end shunt type collision.	No	No
13/01/2016 6:08 pm	Slight	2 / 2	Darkness, no street lights. Raining without high winds. Wet or Damp road.	Vehicle 1 (car) is in the act of turning right. Vehicle 2 (car) is proceeding normally along the carriageway, not on a bend. Rear end collision at the junction.	Yes	No
25/05/2020 11:07 pm	Slight	2 / 1	Darkness, no street lights. Fine without high winds. Dry road.	Vehicle 1 (car) is passing another moving vehicle on its offside. Vehicle 2 (van) is proceeding normally along the carriageway, not on a bend. Likely Vehicle 1 hit the back of Vehicle 2.	No	No



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-  Proposed delivery route from M20 Junction 10a
-  Crash site, coloured by severity: Slight (yellow) - Serious (red) - Fatal (black)

Plate 8.7 - Crash Site Locations along A20 and Church Lane (2011-2020, inclusive)

8.63 Referring to **Table 8.2 on page 135**, over the past 10 years there was one crash along the northern section of Church Lane and a total of six crashes within approximately 500m on either side of the A20/Church Lane junction. The majority of these incidents were classed as 'slight'.

8.64 When reviewing the crash data, it could be inferred that lack of lighting along the A20, and/or greater nighttime driving speeds, played a part in five out of the seven crashes. In terms of weather conditions, wet road surfaces may have been a contributory factor on two of the seven crashes.

8.65 Two of the traffic accidents involved overtaking vehicles: one was a head on collision and the other was likely a rear end collision.

8.66 Two incidents occurred at junctions: one involved the front of one car hitting the back of the turning car, indicating an error in timing; and the other incident involved a collision with a permanent (roadside) object.

8.67 Full Crashmap reports are contained at **Appendix 8.2**.

Public Rights of Way

8.68 As described in **Chapter 4 - Existing Conditions** and shown on **Plate 4.7**, there are a number of permissive routes and two public footpaths (AE432 and AE437) within the northern land parcel. Both footpaths partially follow the northern field boundary, and then cross the field towards south-west.

8.69 There are three PRoWs (AE656, AE657 and AE457) surrounding the central land parcel that occupies Bested Hill. Footpath AE457 briefly crosses the south-western corner of the field.

8.70 One footpath (AE459) crosses the eastern part of the proposed development, from Partridge Farm across Partridge Plantation.

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

8.72 Additional PROWs are located in the wider area. These routes are predominantly footpaths and are not part of any long distance routes (see **Chapter 4 - Existing Conditions**). As these routes are not in proximity to the proposed development area, they are not considered further in this chapter.

PROPOSED DELIVERY ROUTES AND ASSOCIATED WORKS

8.73 A desktop mapping exercise and driven visual route inspection, where necessary, considered potential routes for construction traffic to the proposed site from the highway network.

8.74 The port identified as likely arrival point of the solar panels and associated components is the Port of Dover, although any port connected to the motorway and trunk road network will be viable. It was determined that the most suitable route from this identified port of delivery for components would use the motorway and A-road network as far as possible. This minimises the potential disruption to local traffic and road users.

8.75 The optimal route identified for construction deliveries to the East Stour Solar Farm is as follows:

- from the Port of Dover, deliveries will follow the A20, which then becomes the M20 at Folkestone;
- the M20 will be followed for approximately 18.5km westbound;

- at the junction with the A2070 (JCT 10a) towards Hastings/ Ashford, vehicles will leave the dual carriageway and at the roundabout take the fourth exit on to the A20 Hythe Road eastbound;
- after approximately 4.5km A20, deliveries will turn right on to Church Lane;
- travelling southbound for approximately 300m and just after passing under the M20 bridge, the site entrance to the northern land parcel will be on the right;
- the route continues southbound along Church Lane, passing under the railway bridges and over a small watercourse. The second entry point towards Bested Hill will be on the right;
- and the final entry point towards Partridge Plantation will be via a crossing Church Lane a further 800m south.

8.76 Construction deliveries will not use the route followed during construction of the existing Sellindge Solar Farm which approached westwards along the A20 towards Church Lane from Junction 11 of the M20.



(a)



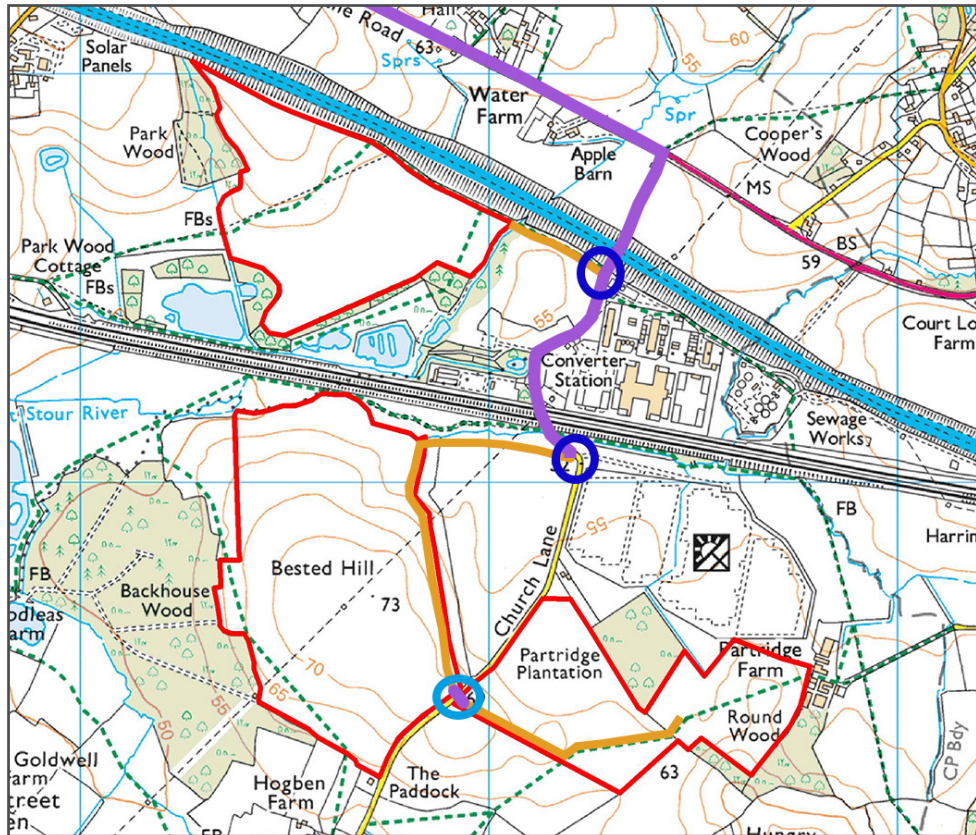
(b)



(c)

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Plate 8.8 - Existing Road Geometry at A20/ Church Lane Junction: (a) looking east on A20, (b) looking south on Church Lane, (c) looking west on A20



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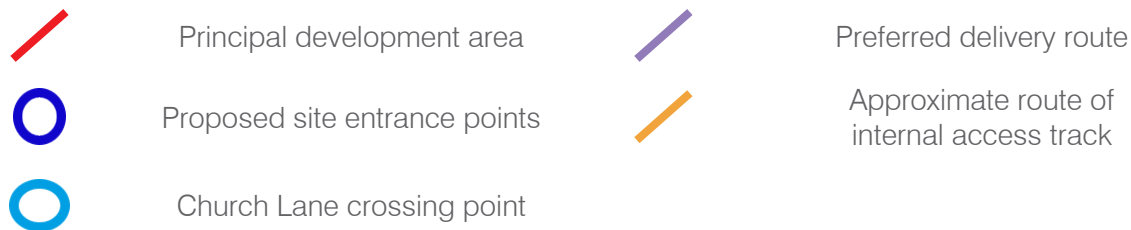


Plate 8.9 - Proposed Delivery Route for Construction Traffic and Site Entrance/crossing Locations

- 8.77 The proposed delivery route from the M20 motorway is shown at **Plate 8.2 on page 128**.
- 8.78 There are two proposed site entrances to reach the three distinct land parcels, and one crossing of Church Lane as shown at **Plate 8.9**. Within the proposed site there are access tracks to reach key elements of the development.
- 8.79 Construction site entrance and highway crossing drawings are provided at **Figure 6.2**, which demonstrates the swept path analysis and visibility splay achieved in line with current guidance from the Design Manual for Roads and Bridges (Highways England, 2020). No works are required to the highway for the site entrance or crossing points. Kent County Council as Highways Authority will continue to be consulted.
- 8.80 As described in **Chapter 15 - Socio Economics and Sustainability**, where possible, construction personnel will be contracted from local companies.

PREDICTED IMPACTS

Construction Phase

Vehicular Movements

- 8.81 The construction of a solar farm is straight forward and involves moderate levels of site traffic when compared to many other civil engineering projects.
- 8.82 The equipment and materials used to construct the development will fit on standard Heavy Goods Vehicles (HGV). No delivery will be classed as an exceptional load.
- 8.83 As reported in **Chapter 7 - Construction, Operation and Decommissioning**, the principal phases to the construction comprise:
- site access tracks are built or upgraded and site fencing is erected;
 - the combined inverter/transformer units and site cabinets are offloaded in situ;
 - panel frames are push-driven into the ground and fixed in place;
 - panels are mounted to the frames and wired together;
 - cable trenches are dug to install the main cables; and
- all electrical connections are made and the site is commissioned.
 - landscape mitigation planting takes place during the autumn.
- 8.84 The typical construction programme for a project of the scale of the East Stour Solar Farm is shown in **Table 8.3 on page 140**.
- 8.85 As described in **Chapter 7** it is envisaged that the East Stour Solar Farm proposal will take approximately nine months to construct. Most of the construction activity is involved with the track construction during the first six months of construction.
- 8.86 The approximate number of vehicular movements have been determined in accordance with the estimated construction quantities as proposed at **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 8.3 on page 140**. For clarity, 'movement' denotes a single trip to or from site.
- 8.87 Construction personnel have not been included in this assessment. It is estimated that the peak number of personnel on site at any one time will be approximately 100. Construction personnel will be collected from key
- 8.88 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, electrical system installation and commissioning.
- 8.89 As noted in **Paragraph 8.78 on page 138** there are two site entrance points and one highway crossing to access the three distinct sections of the proposed solar farm. For the purpose of this assessment it is assumed that the total numbers of vehicles pass across each of the three parts, although in reality more of the vehicles will be held in the northern and central parcels where the main temporary construction compounds will be located and so traffic flows at the second entrance and at the highway crossing to the south will be lower.
- 8.90 The decommissioning of the solar farm at the end of its life will be a reduced reverse version of the construction process.

EAST STOUR SOLAR FARM

Table 8.3 - Typical construction programme and total monthly vehicular movements

Activity	Total Movements	Programme Month								
		1	2	3	4	5	6	7	8	9
Temporary construction compounds, including gates, welfare and temporary surfacing	70	24		23		23				
Security fencing and gates	38	7	7	6	6	6	6			
Site tracks (crushed stone over geogrid base)	726	121	121	121	121	121	121			
Foundation concrete for inverter/transformer units, welfare, store and substation containers and CCTV posts	24	4	4	4	4	4	4			
Frame mounting system and CCTV equipment	68		8	10	10	10	10	10	10	
Solar Panels	410		56	59	59	59	59	59	59	
Cabling and cable trench sand	62	6	8	8	8	8	8	8	8	
Inverter/Transformer units	40			10	10	10	10			
Substations, store and welfare containers	12				4	2	2	2	2	2
Ecological works (wild flower/grass seed mix, hedging and woodland), subject to the appropriate planting season	28									28
Site commissioning and clearing	70									70
TOTAL MOVEMENTS	1548	162	204	241	220	243	220	79	79	100
Average movements per day, assuming 24-day working month	-	8*	10*	12*	10	12*	10	4	4	6*
Average movements per hour on working days, assuming off-peak delivery between 9am and 3pm (6 hours)	-	2	2	2	2	2	2	1	1	1

Note. Total movements are distributed across the construction months and rounded to the nearest whole movement. * Identifies odd numbers of average movements rounded up to account for probable arrival and departure on same day.

Impact on Roads and Users

- 8.91 As stated from **Paragraph 8.10 on page 126**, 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. Percentage increases in traffic volumes as a result of the East Stour Solar Farm are detailed at **Table 8.4 on page 143**, and described from **Table 8.4 on page 143**.
- 8.92 For existing road users, impacts may arise through traffic delays caused by construction vehicles, cable laying, or to their visual amenity (which is considered further in **Chapter 11 - LVIA**).

- 8.93 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.
- 8.94 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.
- 8.95 The site access route has been selected to avoid the villages of Sellindge and Aldington and minimise use of the local road network and potential for local disruption over the construction period. By using internal tracks, traffic along Church Lane has been minimised and limited to immediately south of the railway bridges and the single crossing point which provides access to the south-eastern portion of the site.
- 8.96 Kent County Highways has been consulted with regard to the load capacity of the Church Lane East Stour river crossing bridge. It was advised the bridge was suitable for all normal road vehicles i.e. up to 40T. The heaviest element comprising the inverter/transformer units is 16T.

- 8.97 The local services railway tunnel over Church Lane has a height restriction of 3.81m. Whilst this can accommodate typical redimix-concrete vehicles, skip-vehicles etc. typical container HGVs are circa 4m. As such, there is a limit to the specification of vehicles making deliveries to the central and southern portions of the site.
- 8.98 Whilst the speed limit along Church Lane is a statutory 60mph, the nature of the road is reflected in a markedly reduced driving speed. During weekdays (7am-7pm), the ATC survey evidenced an average speed of 27mph at Church Lane North and 28.3mph at Church Lane South. Considering the 85th Percentile Speed (7am-7pm), this was calculated at 31.8mph and 33.5mph for Church Lane North and Church Lane South, respectively. At the site entrance south of the railway line, a corresponding 51kpm driving speed relates to a derived '*desirable minimum*' DMRB Stopping Sight Distance of 72.2m or a derived '*one step below desirable minimum*' of 52.9m the corresponding 54kpm driving speed at the Church Lane crossing (south) relates to a derived '*desirable minimum*' DMRB Stopping Sight Distance of 78.5m or

a derived 'one step below desirable minimum' of 57.6m. Whilst the speeds were not surveyed at the northern site entrance, assuming the higher speed of Church Lane, Stopping Sight Distance of 78.5m or a derived 'one step below desirable minimum' of 57.6m have been assumed. All are readily achieved from a 2.5m highway boundary setback.

- 8.99 As such, the proposed site entrances and Church Lane crossing point are considered to comply with the Manual for Streets (2007) and DMRB (2020), thereby ensuring appropriate visibility for vehicles entering and exiting the site as well as those travelling along the highway.
- 8.100 The Construction Traffic Management Plan (CTMP) to be agreed with the Local Planning Authority prior to construction commencing will include details of all traffic management proposals, both on site and leaving site to enter the highway. A draft CTMP is contained at **Appendix 8.3**.

PEAK AND AVERAGE CONSTRUCTION VOLUMES

- 8.101 It has been established that the elements of the solar farm creating the maximum traffic volume will be delivery of the solar panels and access track materials. There are approximately four movements anticipated per day for the delivery of the solar panels, which occurs for approximately 28 weeks. The access tracks are constructed in a similar time frame to the solar panels with delivery of these materials requiring approximately six movements per day for around 24 weeks.
- 8.102 For average construction traffic flows, the peak traffic volume identified is likely to occur in months three and five with 241 and 243 movements respectively within these months. Averaged across the working month (assuming 24 day working month), this would equate to an average of eleven HGV movements per day during each of these months, rounded up to 12. This is more than 30% of the average daily total HGV vehicular movements at both count locations on Church Lane in either direction of travel, so whilst highly localised would be

significant as shown in detail in **Table 8.4 on page 143**. When considering this peak number of movements (12 rounded up movements per day), as well as averaged daily movements compared to the existing number of HGV movements on the A20 and M20 highways (which comprise the bulk of the delivery route), these impacts are negligible and not significant.

- 8.103 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 although likely still significant to the affected limited sections of Church Lane. No significant impacts are anticipated in the wider highway network.

Table 8.4 - Summary of predicted impacts on road users

					Peak Traffic Volumes (movements/day)	Average Traffic Volumes (movements/day)
Estimated Construction Traffic					11	8
Location of Traffic Count Data	a	All Traffic	Existing % of HGV	c	% of Total Vehicular Movements	
	b	Heavy Goods Vehicles		d	% of HGV Movements	
A-Road ¹						
DfT Count Segment 36252 - A20 (Average all data 2000 - 2019)	a	10 944	3.3%	c	0.1%	0.07%
	b	361		d	3%	2%
DfT Count Segment 92060 - A20 (2020 manual count, worst case as less movements than typical due to SARS-CoV-2)	a	9 396	2.7%	c	0.1%	0.1%
	b	255		d	4%	3%
Local Roads ²						
ATC, Church Lane North (October 2021)	a	1 113	1.0%	c	1%	0.7%
	b	11		d	100%	73%
ATC, Church Lane South (October 2021)	a	1 000	1.3%	c	1%	0.8%
	b	13		d	85%	62%

1 National data (DfT, 2021).

2 Automatic traffic count data, **Appendix 8.1**.

Impacts on Public Rights of Way

- 8.104 As described from **Paragraph 8.68 on page 136** there are six footpaths that cross the development area and/or travel adjacent to the site boundary.
- 8.105 Wide buffer strips have been incorporated into the site design to minimise impacts for footpath users.
- 8.106 During the construction phase of the proposed solar farm the PRowS crossing the site will remain fully open for use. There may be some minor disruption for users at the conflux of fields where construction traffic may pass. As the PRowS are located within a working farm users may already experience agricultural activity along the paths. Nonetheless, mitigation measures will be applied to ensure safety and minimise disruption to users of the footpaths.
- 8.107 There is no alteration to the accessibility of any of the PRow in the wider area around the site.
- 8.108 No significant impacts on Public Rights of Way are anticipated as a result of the proposed East Stour Solar Farm's construction nor operation.

- 8.109 Visual amenity impacts for users of the Public Rights of Way are described further in **Chapter 11 - LVIA**.

Driver Distraction

- 8.110 The East Stour Solar Farm is not located in proximity to major junctions in the existing road network. There are established hedges on some roadsides which will screen some views of the solar farm where it is adjacent to the highway. Prior to mitigation, there will be some open views of the solar panels on the central (Bested Hill) and eastern (Partridge Plantation) sections of the proposed site from Church Lane.
- 8.111 The potential visibility of the solar farm is considered in the Landscape and Visual Assessment (**Chapter 11**).
- 8.112 Potential Glint and Glare impacts of the proposed development on motorists are considered in **Chapter 14 - Glint & Glare**.

Decommissioning Phase

- 8.113 The equipment used to de-construct the solar farm will be no larger than standard HGVs. The solar farm equipment will be removed from site

and sorted for recycling at waste management centres rather than on site.

- 8.114 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 inverter/transformers 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.
- 8.115 Significantly fewer vehicle movements will be required than during the construction phase, principally as aggregate removal will be limited to those tracks 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 Church Lane.

CUMULATIVE

8.116 It is understood Pivot Power, a company linked to EDF Renewables, is soon to submit an application for a Battery Energy Storage System (BESS) immediately west of Church Lane by the Sellindge Converter Station, as shown on **Figure 3.1, Volume 3**. Given the key components of the BESS (namely battery containers, power conversion system containers and control container) are delivered ready assembled in their operational form, the numbers of deliveries are anticipated to be nominal and negligible in the context of the deliveries identified for the East Stour Solar Farm, even should they be constructed concurrently. Construction of the BESS is not anticipated to be likely to add to the significance of impacts identified on the stretch of Church Lane between the A20 and the railway bridges.

AVOIDANCE AND MITIGATION

8.117 As a key design principle, construction traffic was removed from the highway at the earliest point by using one

access point for the northern area and a single site access point from Church Lane immediately south of the railway bridges - moving traffic to on-site tracks and restricting highway disruption any further south to a single crossing point of Church Lane which enables access to the eastern Partridge Plantation parcel of land.

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

8.119 Advance notification of potential delay for road and PRow 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.

8.120 At the construction site entrances, traffic management measures will be deployed as deemed necessary and appropriate by the Highways Authority (Kent County Council).

8.121 Any vehicle approaching the 3.81m height limit of the local services rail

tunnel will be required to register at the northern temporary construction compound before being permitted to proceed through the tunnel. Where a suitable delivery vehicle/load geometry is not available, loads will be broken down within this compound and transported on appropriately sized vehicles.

8.122 To avoid construction traffic travelling through the nearby villages, all construction vehicles will be required to use the access route identified from the A20 and HGVs will be required to approach from the identified route from Junction 10a of the M20. No construction traffic be it HGV, LGV or PSV will be permitted south of the Church Lane highway crossing.

8.123 As well as advance notification and appropriate signage, banksmen will be used on the PRow to ensure safety and minimise disruption to users of the footpaths during the construction phase.

8.124 A rolling set of traffic lights will be employed during the laying of the verge-side grid connection cable.

8.125 Mitigation planting is proposed to filter and screen views to users of the road network once established.

8.126 It is suggested a scheme for pre-construction and post-construction road condition and road drainage surveys to identify then rectify any damage to the highway, verges and drains caused by construction traffic be produced by the Applicant and agreed with Kent County Council in advance of construction commencing.

8.127 In addition, prior to construction, precautionary mitigation measures are suggested to include:

- a drainage scheme should be devised to ensure that no water enters the highway from the site access or a suitable system is agreed; and
- 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.

8.128 Alongside the proposal the Applicant is committing to maintain reduced height hedges in proximity to the

Church Lane crossing of the East Stour to maximise highway visibility. This would be agreed with Ashford Borough Council through a Landscape and Environmental Management Plan and controlled by condition.

8.129 Decommissioning mitigation measures would be agreed at that time with Ashford Borough Council, but would be likely to include the same access route, delivery timing, notices, height restriction, PROW, wheel washing and road condition controls outlined above.

RESIDUAL IMPACTS

8.130 The predicted peak HGV movements are less than 10% of daily movements on the M20 and A20 and as such, no significant impacts are predicted on the wider highway network. Movements along Church Lane to the site entrances, and at the highway crossing point are more than 30% of the average daily HGV total vehicular movements at these locations, and so assessed as potentially significant. However, given the sequential nature of construction across the site over time, not all stretches of Church Lane

will be affected for the full nine-months of construction.

8.131 Measures are proposed for the construction period (and similarly for decommissioning) to mitigate potential impacts and disruption to local traffic as far as possible. These impacts are, however, likely to remain significant although limited to Church Lane.

8.132 Following mitigation, minimal non-significant impacts are predicted for users of Public Rights of Way surrounding the proposed development with temporary delays as vehicles cross the rights of way under the control of banksmen.

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