East Anglia TWO Offshore Windfarm

Appendix 26.2

Traffic and Transport Cumulative Impact Assessment with the Proposed East Anglia ONE North Project

Environmental Statement
Volume 3

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Glossary of Acronyms

AADT	Average Annual Daily Traffic
CCS	Construction Consolidation Sites
CIA	Cumulative Impact Assessment
DCO	Development Consent Order
ES	Environmental Statement
GEART	Guidelines for the Environmental Assessment of Road Traffic
HDD	Horizontal Directional Drilling
HGV	Heavy Goods Vehicle
LCV	Light Commercial Vehicle
MW	Megawatt
OAMP	Outline Access Management Plan
RFC	Ratio of Flow to Capacity
SCC	Suffolk County Council

Glossary of Terminology

AADT	Depart for Transport recognised measurement of annual average daily traffic flows.
Applicant	East Anglia TWO Limited.
Cable sealing end compound	A compound which allows the safe transition of cables between the overhead lines and underground cables which connect to the National Grid substation.
Cable sealing end (with circuit breaker) compound	A compound (which includes a circuit breaker) which allows the safe transition of cables between the overhead lines and underground cables which connect to the National Grid substation.
Construction consolidation sites	Compounds associated with the onshore works which may include elements such as hard standings, lay down and storage areas for construction materials and equipment, areas for vehicular parking, welfare facilities, wheel washing facilities, workshop facilities and temporary fencing or other means of enclosure.
Development area	The area comprising the onshore development area and the offshore development area (described as the 'order limits' within the Development Consent Order).
East Anglia TWO project	The proposed project consisting of up to 75 wind turbines, up to four offshore electrical platforms, up to one construction, operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure.
East Anglia TWO windfarm site	The offshore area within which wind turbines and offshore platforms will be located.
National electricity grid	The high voltage electricity transmission network in England and Wales owned and maintained by National Grid Electricity Transmission
European site	Sites designated for nature conservation under the Habitats Directive and Birds Directive, as defined in regulation 8 of the Conservation of Habitats and Species Regulations 2017 and regulation 18 of the Conservation of Offshore Marine Habitats and Species Regulations 2017. These include candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation and Special Protection Areas.
Horizontal directional drilling (HDD)	A method of cable installation where the cable is drilled beneath a feature without the need for trenching.
HDD temporary working area	Temporary compounds which will contain laydown, storage and work areas for HDD drilling works.
HGV	A term for any vehicle with a Gross Weight over 3.5 tonnes. This assessment also uses the term HGV as a proxy for HGVs and buses / coaches recognising the similar size and environmental characteristics of the respective vehicle types.
Jointing bay	Underground structures constructed at intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into the buried ducts.

Landfall	The area (from Mean Low Water Springs) where the offshore export cables would make contact with land, and connect to the onshore cables.
Link boxes	Underground chambers within the onshore cable route housing electrical earthing links.
Mitigation areas	Areas captured within the onshore development area specifically for mitigating expected or anticipated impacts.
National Grid infrastructure	A National Grid substation, cable sealing end compounds, cable sealing end (with circuit breaker) compound, underground cabling and National Grid overhead line realignment works to facilitate connection to the national electricity grid, all of which will be consented as part of the proposed East Anglia TWO project Development Consent Order but will be National Grid owned assets.
National Grid overhead line realignment works	Works required to upgrade the existing electricity pylons and overhead lines (including cable sealing end compounds and cable sealing end (with circuit breaker) compound) to transport electricity from the National Grid substation to the national electricity grid.
National Grid overhead line realignment works area	The proposed area for National Grid overhead line realignment works.
National Grid substation	The substation (including all of the electrical equipment within it) necessary to connect the electricity generated by the proposed East Anglia TWO project to the national electricity grid which will be owned by National Grid but is being consented as part of the proposed East Anglia TWO project Development Consent Order.
National Grid substation location	The proposed location of the National Grid substation.
Natura 2000 site	A site forming part of the network of sites made up of Special Areas of Conservation and Special Protection Areas designated respectively under the Habitats Directive and Birds Directive.
Onshore cable corridor	The corridor within which the onshore cable route will be located.
Onshore cable route	This is the construction swathe within the onshore cable corridor which would contain onshore cables as well as temporary ground required for construction which includes cable trenches, haul road and spoil storage areas.
Onshore cables	The cables which would bring electricity from landfall to the onshore substation. The onshore cable is comprised of up to six power cables (which may be laid directly within a trench, or laid in cable ducts or protective covers), up to two fibre optic cables and up to two distributed temperature sensing cables.
Onshore development area	The area in which the landfall, onshore cable corridor, onshore substation, landscaping and ecological mitigation areas, temporary construction facilities (such as access roads and construction consolidation sites), and the National Grid Infrastructure will be located.
Onshore infrastructure	The combined name for all of the onshore infrastructure associated with the proposed East Anglia TWO project from landfall to the connection to the national electricity grid.
Onshore preparation works	Activities to be undertaken prior to formal commencement of onshore construction such as pre–planting of landscaping works, archaeological investigations, environmental and engineering surveys, diversion and laying of services, and highway alterations.

Onshore substation	The East Anglia TWO substation and all of the electrical equipment within the onshore substation and connecting to the National Grid infrastructure.
Onshore substation location	The proposed location of the onshore substation for the proposed East Anglia TWO project.
Transition bay	Underground structures at the landfall that house the joints between the offshore export cables and the onshore cables.
Two-way movement	A movement is the process of transporting goods from a source location to a predefined destination. A two-way movement represents the inbound (laden trip from source) and the outbound unladen trip (back to source). For example, 20 two-way movements comprise 10 laden trips from source and 10 outbound unladen trips back to source.

26.1 Traffic and Transport Cumulative Impact Assessment with the Proposed East Anglia ONE North Project

26.1.1 Introduction

1. This appendix covers the Cumulative Impact Assessment (CIA) of the proposed East Anglia TWO project with the proposed East Anglia ONE North project in relation to traffic and transport.

2. The East Anglia ONE North offshore windfarm project (the proposed East Anglia ONE North project) is also in the application phase. The proposed East Anglia ONE North project has a separate Development Consent Order (DCO) which has been submitted at the same time as the proposed East Anglia TWO project. The two projects share the same landfall location and onshore cable corridor and the two onshore substations are co-located, and connect into the same National Grid substation.

3. The proposed East Anglia TWO project CIA for traffic and transport will therefore initially consider the cumulative impact with only the proposed East Anglia ONE North project against two different construction scenarios (i.e. construction of the two projects simultaneously and sequentially). The realistic worst case scenario of each impact is then carried through to the main body of the CIA which considers other developments which have been screened into the CIA.

4. For a more detailed description of the CIA please refer to ***Chapter 5 EIA Methodology***.

26.1.2 Construction Scenarios Realistic Worst Case

5. There are two potential scenarios for construction of the proposed East Anglia TWO project and proposed East Anglia ONE North project, namely:

    - Scenario 1 - the proposed East Anglia TWO project and East Anglia ONE North are built simultaneously; and
    - Scenario 2 - the proposed East Anglia TWO project and East Anglia ONE North are built sequentially.

6. Under scenario 2, either the proposed East Anglia TWO project or the proposed East Anglia ONE North project could be constructed first. However, there will be no difference in impact regardless of which project is constructed first. The CIA presented in this ES is presented using the intended development strategy of the proposed East Anglia TWO project being constructed first. However, in the eventuality that the proposed East Anglia ONE North project is constructed first, the impacts presented would be the same.

7. With respect to traffic and transport, the worst case for all effects would be scenario 1 whereby there would be far greater traffic demand associated with constructing two projects simultaneously. For scenario 2, the cumulative impacts would be no worse than those assessed for the proposed East Anglia TWO project alone.

8. The traffic and transport CIA therefore adopts scenario 1 for an initial assessment of cumulative effects with the proposed East Anglia ONE North project.

9. ***Section 26.6.2*** of ***Chapter 26 Traffic and Transport*** identifies that for the operational phase, the onshore substation and National Grid substation would not normally be staffed and vehicle movements would therefore be limited to occasional repair, maintenance and inspection visits and periodic checks of the onshore cable route. The same operational requirements apply to the proposed East Anglia ONE North project therefore, **no significant** cumulative impacts during operation are anticipated. Therefore, cumulative operational impacts are not considered further within this appendix.

10. Embedded and additional mitigation measures for the proposed East Anglia TWO project and proposed East Anglia ONE North project will be the same. These are detailed in ***Chapter 26 Traffic and Transport***.

26.1.3 CIA during Construction under scenario 1

26.1.3.1 Trip Generation and Assignment

11. The simultaneous construction of the proposed East Anglia TWO project and proposed East Anglia ONE North project (scenario 1) would result in an increase in the volume of materials and personnel required, when compared to constructing the proposed East Anglia TWO project in isolation. This section therefore outlines the vehicle trips generated by simultaneous construction in order to inform an assessment of the potential impacts.

12. To minimise the impact of the increase in traffic, scenario 1 would adopt the same embedded mitigation as that outlined for the proposed East Anglia TWO project (as set out in ***Table 26.2*** of ***Chapter 26 Traffic and Transport***). Both the proposed East Anglia TWO and proposed East Anglia ONE North projects would

be required to share a single haul road therefore limiting the potential traffic demand required for bulk stone movements (that would otherwise be required for the construction of two separate haul roads).

13. Utilising the same approach as outlined in ***section 26.6*** of ***Chapter 26 Traffic and Transport***, ***Appendix 26.22*** provides a summary of the expected quantity of materials and plant movements that could be expected for each of the construction activities in scenario 1.

14. ***Appendix 26.23*** disaggregates the proposed East Anglia TWO and proposed East Anglia ONE North projects traffic demand (contained in ***Appendix 26.22***) by activity over time to provide total one-way (deliveries) and two-way Heavy Goods Vehicle (HGV) and Light Commercial Vehicle (LCV) movements per day. ***Table A26.1*** and ***Table A26.2*** provide an extract showing the peak daily HGV and employee movements per discrete site respectively. The two-way employee movements presented within ***Appendix 26.23*** have been reduced by an employee to vehicle ratio of 1.5 to derive the two-way LCV movements detailed within ***Table A26.2***.

15. The location of each of the discrete sites is illustrated within ***Figure 26.2***.

Table A26.1 Daily Two-Way HGV Movements per Month - Scenario 1 (Extract)[1]

Discrete sites	Months										⋮							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**		**30**	**31**	**32**	**33**	**34**	**35**	**36**
Landfall location	0	0	30	28	48	30	28	28	28	37		0	0	0	0	42	40	20
Onshore cable route section 1	56	52	4	0	22	18	32	37	28	32		0	0	0	0	34	30	34
Onshore cable route section 2	20	18	18	41	27	49	27	29	25	29		0	0	0	0	41	37	41
Onshore cable route section 3	0	0	0	0	30	44	17	25	21	25		0	0	0	0	27	23	27
Onshore cable route section 4	54	69	52	52	7	5	19	27	23	27		5	5	5	5	56	52	56
East Anglia TWO and East Anglia ONE North onshore substations	0	0	0	58	75	73	68	52	75	76		3	8	3	3	33	30	30
National Grid Substation and Infrastructure	68	45	47	47	45	45	42	30	28	9		18	33	33	33	37	35	37
Total two-way * daily HGV movements accessing all discrete sites	198	184	151	226	254	264	233	228	228	235		26	46	41	41	270	247	245

Key	
	Peak period
*	Total two-way movements represent the inbound and outbound trip, i.e. 270 two-way movements equates to 135 arrivals and 135 departures

[1] Complete profiles for each month are provided in ***Appendix 26.23***

Table A26.2 Daily Two-Way LCV Movements per Month - Scenario 1 (Extract)[2]

	Months																			
Discrete sites	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Landfall location	0	0	36	36	36	8	8	8	8	26	34	30	46	46	0	0	0	0	0	0
Onshore cable route section 1	54	54	0	0	50	50	54	54	54	58	56	64	62	58	70	70	58	38	26	18
Onshore cable route section 2	34	34	34	54	50	58	54	54	54	58	54	64	62	58	70	70	54	38	26	18
Onshore cable route section 3	0	0	0	0	54	58	38	52	52	56	54	58	58	58	58	58	38	38	26	18
Onshore cable route section 4	60	78	74	74	48	48	62	74	74	78	76	82	82	82	82	82	62	62	48	42
East Anglia TWO and East Anglia ONE North substations	0	0	0	86	102	102	98	104	110	94	94	72	72	102	102	120	120	142	106	106
National Grid Substation and Infrastructure	58	28	28	14	14	14	60	68	68	34	34	34	58	58	58	76	76	76	76	76
Total two-way * daily LCV movements accessing all discrete sites	206	194	172	264	354	338	374	414	420	404	402	404	440	462	440	476	408	394	308	278

Key	
	Peak period
*	Total two-way movements represent the inbound and outbound trip i.e. 476 two-way movements equates to 238 arrivals and 238 departures

[2] Complete profiles for each month are provided in ***Appendix 26.14***

16. The daily vehicle movements have been assigned to the highway network adopting the same assumptions as those set out in ***section 26.6*** of ***Chapter 26 Traffic and Transport*** for the proposed East Anglia TWO project alone, augmented with specific cumulative assumptions, namely:

- A theoretical 'combined worst case' month has been adopted, whereby the peak construction activity for all discrete sites would occur concurrently for scenario 1. This results in worst case peak vehicle movements on the local highway network, appropriate reduction factors are applied to the A12 to avoid an unrealistic accumulation of traffic;
- All LCV and HGVs to be assigned to the same accesses proposed for the proposed East Anglia TWO project; and
- Employees assumed to have the same origin / destinations as assumed for the proposed East Anglia TWO project.

17. Utilising these assumptions, ***Appendix 26.24*** highlights the traffic flows assigned to the highway network.

26.1.3.2 Traffic Impact Screening

18. In accordance with the Guidelines for the Environmental Assessment of Road Traffic (GEART) (Rule 1 and Rule 2), a screening process has been undertaken for the onshore highway study area (defined in ***section 26.3.1*** of ***Chapter 26 Traffic and Transport***) to identify routes that are likely to have sufficient changes in traffic flows and therefore require further impact assessment.

19. ***Table A26.3*** summarises the total daily peak two-way vehicle movements (i.e. arrivals and departures) of all materials, personnel and plant during the peak combined worst case month when distributed across the highway network, ***Appendix 26.25*** graphically depicts this demand on the highway network for scenario 1.

20. ***Table A26.4*** also provides a comparison of the peak daily construction flows with the forecast background daily traffic flows in 2023 (assumed worst case realistic start of construction) for scenario 1.

Table A26.3 Existing and Proposed Daily Traffic Flows (scenario 1)

Link ID	Link Description	Link sensitivity	Background 2023 flows (24Hr Annual Average Daily Traffic (AADT))		Scenario 1 Construction Vehicle Movements (two-way)		Percentage Increase	
			All vehicles	HGVs	All Vehicles	HGVs	All Vehicles	HGVs
1	A12 north of the B1122	Low	13,529	1,058	442	270	3%	26%
2	A12 between the B1122 and A1094	Low to High	12,111	1,033	357	270	3%	26%
3	A12 south of the A1094	Low to High	18,485	1,107	452	270	3%	24%
4	B1122 from the A12 to Leiston	Low to High	2,772	201	355	153	13%	76%
5	B1121 from the A12 to Friston	Low to High	1,252	49	75	0	6%	0%
6	A1094 from the A12 to the B1121 / B1069	Low to High	8,082	420	425	256	5%	61%
7	B1121 Friston to the A1094	High	1,274	56	45	0	4%	0%
8	A1094 from the B1069 to B1122	Low to High	5,909	215	86	10	1%	4%
9	B1069 from the A1094 to south of Knodishall / Coldfair Green	Low	4,846	196	663	265	13%	135%
10	B1122 from Aldeburgh to the B1353	Medium to High	3,383	147	86	10	3%	6%
11	Lover's Lane	Medium	1,993	168	341	152	17%	91%

Link ID	Link Description	Link sensitivity	Background 2023 flows (24Hr Annual Average Daily Traffic (AADT))		Scenario 1 Construction Vehicle Movements (two-way)		Percentage Increase	
			All vehicles	HGVs	All Vehicles	HGVs	All Vehicles	HGVs
12	Sizewell Gap	Low	2,844	87	341	152	12%	176%
13	Aldringham Lane	High	2,563	94	0	0	0%	0%
14	B1122 south of Lover's Lane to Leiston	High	2,772	201	197	0	7%	0%
15	B1069 through Knodishall, Coldfair Green and Leiston	High	4,846	196	175	0	4%	0%
	Exceeds GEART screening thresholds							

21. In accordance with GEART only those links that are showing greater than 10% increase in total traffic flows (or HGV component) for sensitive links, or greater than 30% increase in total traffic or HGV component for all other links, are considered when assessing the traffic impact upon receptors.

22. It is noted from ***Table A26.3*** that links 1, 5, 7, 8, 10, 13, 14 and 15 are below the GEART screening thresholds and are therefore not considered further in the impact assessment. The remaining links (highlighted within ***Table A26.3***) are all above the GEART screening thresholds and are therefore considered further.

23. The following paragraphs summarise the assessment construction traffic impacts on the effects identified as being susceptible to changes in flow.

26.1.3.3 Impact 1: Pedestrian Amenity

26.1.3.3.1 Impacts Prior To Mitigation

24. GEART suggest adverse amenity impacts may be experienced where the peak daily change in total flows or HGV component is greater than the 100%. GEART also suggest that in addition to considering traffic flows and composition, the assessment should also have regard to the relationship between pedestrians and

traffic and should consider factors such as traffic speeds, footway width and separation from traffic.

25. It is considered that there would not be a material increase in baseline speed associated with proposed East Anglia TWO project's traffic and therefore this variable has not been considered further.

26. The following section considers the remaining amenity parameters and augments the sensitive receptor audit presented in ***section 26.5.3*** of ***Chapter 26 Traffic and Transport*** for the proposed East Anglia TWO project by reviewing the local pedestrian attractors in the context of the proposed changes in total and HGV traffic flows. The location of the links and assigned link sensitivity, are illustrated in ***Figure 26.5***.

26.3.3.1.1 Link 2

27. Link 2 forms the A12 north from its junction with the A1094 to its junction with the B1122 at Yoxford. The link is identified by SCC as a Strategic Lorry Route within their Lorry Route Network.

28. Heading north from its junction with the A1094, the A12 is a modern A road that provides a bypass to the communities of Benhall, Saxmundham and Carlton before continuing north to Yoxford. There is some sporadic residential development along this section of the A12 but no significant trip attractors and as such has a low baseline of pedestrian activity. Therefore, this part of the A12 (link 2b) is assessed as low sensitivity.

29. Upon entering the built-up area of Yoxford, the speed limit reduces to 30mph and a footway is provided along eastern side of the road. Within Yoxford, there is an extensive range of local amenities including a primary school, church, shop, village hall and public house. All of these facilities are located to the north of the A12 and would therefore not be impacted by the proposed East Anglia TWO and East Anglia ONE North project's traffic. However, there are a number of residential properties and a public house that are located off the A12. To access the amenities, residents living along the A12 have to cross the road, and likewise, residents living within the main part of Yoxford wishing to access the public house need to cross the A12.

30. Within Yoxford, a footway is provided on at least one side of the road, however there are no crossing points and the footway is of a substandard width (below 1.8m) in some places. This part of the link (link 2a) is therefore assessed as a high sensitive receptor.

31. ***Table A26.3*** identifies that total traffic flows would be expected to increase by up to 3% and HGV flows by 26%. The review of baseline conditions has identified a

shortfall in existing crossing facilities within Yoxford and that residents of Yoxford need to walk along narrow footways adjacent to the A12 to reach key local amenities.

32. It is considered that a change in total traffic of up to 3% would not materially impact upon the ability of pedestrians to cross the road when compared to existing conditions. With regards to the impacts upon amenity from increases in traffic (and HGVs) passing pedestrians walking along footways on the A12, GEART suggests that HGV flows over 18 hours of 1,000 to 2,000 vehicles could lead to moderate impacts (***Table 26.6***). It can therefore be concluded that an increase from 1,045 HGVs a day to 1,315 HGVs per day would not change the assessed level.

33. It is therefore concluded that the impact upon link 2 would be negligible. This would result in a **minor adverse** impact upon link 2a and a **negligible** impact upon link 2b.

34. Noting impacts are assessed as no greater than minor adverse for link 2, no mitigation further to that embedded within the design of the proposed East Anglia TWO project is considered necessary.

26.3.3.1.2 Link 3

35. Link 3 forms the A12 south from its junction with the A1094 to its junction with B1116 north of Wickham Market. The link is identified by SCC as a Strategic Lorry Route within their Lorry Route Network.

36. Heading south from the A1094, the A12 initially passes through Farnham and Stratford St Andrew (link 3a). The majority of the community live to the north of the A12 and would therefore not be impacted by the proposed East Anglia TWO and East Anglia ONE Norths project's traffic. However, a convenience store (within the petrol filling station) and antiques centre are located off the A12 and would potentially serve as trip attractors for residents. In addition, there are trip attractors away from the A12 such as churches and the Riverside Centre that would attract residents living along the A12 to walk to these receptors.

37. Footways are currently provided along the A12 to link residents with the local amenities, these footways are however of substandard width and exceptionally narrow at a bend in the A12 known locally as 'Farnham Bend'. This section of the A12 (link 3a) is therefore assessed as a high sensitive receptor.

38. Heading south from Farnham and Stratford St Andrew there is some sporadic development until the village of Little Glemham, but no significant trip attractors. It is considered that therefore that there is a low baseline of pedestrian activity. Therefore, this part of the A12 (link 3b) is assessed as having low sensitivity.

39. Within Little Glemham there are a number of residential properties located off the A12 and also a public house. The footway continues south to Marlesford although is in a poor state of repair and has narrowed significantly. There is however the potential to walk between Marlesford and Little Glemham.

40. Within Marlesford there is a farm shop with café and antiques centre located off the A12 along with a small number of residential dwellings. Footways are also provided within Marlesford.

41. Footways are currently provided along the A12 at Marlesford and Little Glemham to link residents with the local amenities, these footways are however of substandard and no facilities are provided to assist residents crossing the road. This section of the A12 (link 3c) is therefore assessed as a high sensitive receptor.

42. ***Table A26.3*** identifies that total traffic flow along link 3 could be expected to increase by up to 3% and HGV flows by up to 24%. The review of baseline conditions has noted a shortfall in existing crossing facilities within the settlements along the A12 and that residents need to walk along narrow footways adjacent to the A12 to reach key local amenities.

43. It is considered that a change in total traffic of up to 3% would not materially impact upon the ability of pedestrians to cross the road when compared to existing conditions. With regards to the impacts upon amenity from increases in traffic (and HGVs) passing pedestrians walking along footways on the A12, GEART suggests that HGV flows over 18 hours of 1,000 to 2,000 vehicles could lead to moderate impacts ***(Table A26.3***). It can therefore be concluded that an increase from 1,120 HGVs a day to 1,390 HGVs per day would not change the assessed level.

44. It is therefore concluded that the impact upon link 3 would be negligible. A negligible magnitude of change would result in a **minor adverse** impact upon link 3a and 3c (assessed as high sensitivity receptors) and a **negligible** impact upon link 3b (assessed as low sensitivity receptor).

45. Noting impacts are assessed as no greater than minor adverse for link 3 no mitigation further to that embedded within the design of the proposed East Anglia TWO project is considered necessary.

26.3.3.1.3 Link 4

46. Link 4 forms the B1122 south from its junction with the A12 to its junction with Lover's Lane to the north of Leiston. The link is identified by SCC as a Zone Distributor Route within their Lorry Route Network.

47. Heading south from the A12, there are a number of properties along the B1122 near Middleton Moor, however, there are no footways to link these properties to wider communities and services. It is therefore considered that there would be minimal pedestrian activity along this part of the link and existing journeys would be completed by other modes. This part of the B1122 (link 4a) is therefore assessed as low sensitivity.

48. Heading south, the B1122 then continues a rural B road before passing through the community of Theberton. Within Theberton, there are a number of local amenities including a church, public house and village hall. The church and public house front on to the B1122. There is a footway along at least one side of the road for the majority of the village, however, the footway is truncated to the north and as such pedestrians living to the north of the village wishing to access the community facilities would currently either have to walk in the road or drive. This section of the B1122 (link 4b) is therefore assessed as a high sensitive receptor.

49. To the south of Theberton there is no frontage development for the remainder of the link. However, regional cycle route 42 follows the B1122 for a short distance. In addition, there is a section of footway that provides access to Leiston Abbey, an English Heritage property. It is therefore considered that residents of Leiston may walk along this footpath to access the abbey. Noting the presence of pedestrian and cyclists, this section of the B1122 (link 4c) is assessed as medium sensitivity.

50. ***Table A26.3*** identifies that total traffic flows would be expected to increase by up to 13% and HGV flows by 76%. The review of baseline conditions has noted a shortfall in existing crossing facilities and that residents within Theberton need to walk along narrow footways and occasionally within the road to reach key local amenities.

51. It is considered that a change in total traffic of up to 13% would not materially impact upon the ability of pedestrians to cross the road when compared to existing conditions.

52. With regards to the impacts upon amenity from increases in traffic (and HGVs) passing pedestrians walking along footways on the B1122 it is considered that a change in background of HGV flows of 76% would have a low magnitude of effect impact upon amenity.

53. A low magnitude of effect would result in a **minor adverse** impact upon link 4a (assessed as a low sensitivity receptor), a **moderate adverse** impact upon link 4b (assessed as a high sensitivity receptor) and a **minor adverse** impact upon link 4c (assessed a medium sensitivity receptor).

54. Noting the potential for significant amenity impacts upon residents within Theberton (link 4b) additional mitigation measures are required and discussed further in ***section 26.3.3.2***.

26.3.3.1.4 Link 6

55. Link 6 forms the A1094 east from its junction with the A12 to its junction with the B1069 to the east of Friston. The link is identified by SCC as a Zone Distributor Route within their Lorry Route Network.

56. Heading east from the A12, there is sporadic development along the A1094, there are however no footways to link these properties to wider communities and services. It is therefore considered that there would be minimal pedestrian activity along this part of the link and existing journeys would be completed by other modes. This part of the A1094 (link 6a) is therefore assessed as low sensitivity.

57. Heading east, the A1094 then passes through the community of Snape. The majority of the built up area of Snape and amenities (including a primary school and public house) are located to the south of the A1094 and would therefore not be impacted by the proposed East Anglia TWO and East Anglia ONE North project's traffic.

58. However, there are a number of local amenities including a church and local convenience store (located within the petrol filling station) that are located off the A1094. There is a footway that provides a link from these amenities and the majority of residents to the south of the A1094. Along the A1094, there is a footway along at least one side of the road for the majority of the built-up area, however, the footway is truncated and as such pedestrians living off the A10994 to the west of the village wishing to access the community facilities would either have to walk in the road or drive. This section of the A1094 (link 6b) is therefore assessed as a high sensitive receptor.

59. Heading east of Snape village, there is sporadic development along the A1094 and there are no footways to link these properties to wider communities and services. It is therefore considered that there would be minimal pedestrian activity along this part of the link and existing journeys would be completed by other modes. However, regional Cycle Route 42 routes on carriageway along the A1094 between Priory Road and Mill Road. This part of the A1094 (link 6c) is therefore assessed as medium sensitivity.

60. ***Table A26.3*** identifies that total traffic flows would be expected to increase by up to 5% and HGV flows by 61%. The review of baseline conditions has noted a shortfall in existing crossing facilities and that residents within the village of Snape

currently need to walk along narrow footways and occasionally within the road to reach key local amenities.

61. It is considered that a change in total traffic of up to 5% would not materially impact upon the ability of pedestrians to cross the road when compared to existing conditions.

62. With regards to the impacts upon amenity from increases in traffic (and HGVs) passing pedestrians walking along footways on the A1094 it is considered that a change in background HGV flows of 61% could potentially have a low magnitude of effect upon amenity. A low magnitude of effect would result in a **minor adverse** impact upon link 6a (assessed as a low sensitivity receptor), a **moderate adverse** impact upon link 6b (assessed as a high sensitivity receptor) and a **minor adverse** impact upon link 6c (assessed as a medium sensitivity receptor).

63. Noting the potential for significant amenity impacts upon residents within Snape (link 6b) additional mitigation measures are required and discussed further in ***section 26.3.3.2***.

26.3.3.1.5 Link 9

64. Link 9 comprises of the B1069 from the junction of the A1094 to the south of Knodishall/ Coldfair Green. The link is identified by SCC as a Zone Distributor Route within their Lorry Route Network.

65. Heading north from the A1094, there is sporadic development along the A1094, there are however no footways to link these properties to wider communities and services. It is therefore considered that there would be minimal pedestrian activity along this part of the link and existing journeys would be completed by other modes. This link is therefore assessed as low sensitivity.

66. ***Table A26.3*** identifies that total traffic flows would be expected to increase by up to 13% and HGV flows by 135%. It is considered that a change in background HGV flows of 135% could would have a medium magnitude of effect on a low sensitivity link resulting in a **minor adverse** impact.

67. Noting impacts are assessed as no greater than minor adverse for link 9, no mitigation further to that embedded within the design of the proposed East Anglia TWO project is considered necessary.

26.3.3.1.6 Link 11

68. Link 11 comprises of Lover's Lane from its junction with the B1122 south to its junction with King George's Avenue. The link is signed as the route for HGVs to the Leiston Industrial Estate and is also identified as a local access route by SCC in their Lorry Route Network.

69. Along the link, there is minimal residential development near to Sandy Lane, this residential development is linked to the community facilities in Leiston by a narrow footway alongside Lover's Lane. SCC have advised that there is an existing PRoW heading east from Leiston to access Leiston Common on the opposite side of the road. However, there is a stagger in the rights of way and pedestrians are therefore required to walk 140m south on road or verge. Therefore, the link is assessed as a medium sensitivity receptor.

70. ***Table A26.3*** identifies that total traffic flows would be expected to increase by up to 17% and HGV flows by 91%. It is considered that a change in background of HGV flows of 91% could potentially result in a low magnitude of effect upon amenity, therefore the impact is assessed as low on a medium sensitivity link resulting in a **minor adverse** impact.

71. Noting impacts are assessed as no greater than minor adverse for link 11, no mitigation further to that embedded within the design of the proposed East Anglia TWO project is considered necessary.

26.3.3.1.7 Link 12

72. Link 12 comprises of Sizewell Gap from its junction with King George's Avenue to Sizewell B Nuclear Power Station. The link is identified as a local access route by SCC in their Lorry Route Network.

73. Along the link there is minimal residential development, and this is linked to the community facilities in Leiston by a shared use footway/ cycleway. This footway/ cycleway also provides a local route between Leiston (to the west) and Sizewell Beach and Sizewell A and B power stations to the east. Noting that there are minimal receptors along the link and that pedestrians and cyclists are accommodated off road, the link is assessed as having low sensitivity.

74. ***Table A26.3*** identifies that total traffic flows would be expected to increase by up to 12% and HGV flows by 176%. It is considered that a change in background of HGV flows of 176% could result in a medium magnitude of effect on a low sensitivity link resulting in a **minor adverse** impact.

75. Noting impacts are assessed as no greater than minor adverse for link 12 no mitigation further to that embedded within the design of the proposed East Anglia TWO project is considered necessary.

26.1.3.3.2 Additional Mitigation Measures

76. The following additional mitigation measures are proposed to address potentially significant impacts upon links 4b and 6b.

26.3.3.2.1 Link 4b

77. The impact assessment noted potentially significant impacts upon the amenity of pedestrians trying to access services within Theberton. A review of the baseline network identified a number of gaps in footway provision and therefore where possible a series of footway improvement are proposed within the existing Local Highway Authority boundary:

- Extend the existing footway on the eastern side of the road near to Manor Cottage to align with Ivy Cottages on the northern side of the road;
- Provide pedestrian dropped to facilitate pedestrians crossing from the extended footway neat Manor Cottage to Ivy Cottages; and
- Provide a short section of footway on the western side of Church Road (outside the church) to allow pedestrians to cross from one side of the road to the other and stand outside the church off the highway.

78. An outline concept sketch for these improvements is provided within ***Appendix 26.17*** of ***Chapter 26 Traffic and Transport*** for the proposed East Anglia TWO project. It is proposed that the detailed design of these improvements would be agreed with SCC post-consent during the development of the final Access Management Plan (AMP), submitted to discharge the requirements of the draft DCO.

26.3.3.2.2 Link 6b

79. The impact assessment noted potentially significant amenity impacts upon pedestrians trying to access services within Snape. A review of the baseline highway conditions identified a number of gaps in footway provision and therefore, where possible, a series of footway improvements are proposed within the existing Local Highway Authority boundary:

- Provision of a dropped crossing and short section of footway outside the church to allow pedestrians to cross A1094 and wait outside the church off the highway;
- An extension of the existing footway along the front of the petrol filling station to reduce the distance residents living to the west of the village have to walk in the road; and
- Provide a footway opposite the petrol filling station near the post box and village notice board and associated pedestrian dropped crossing to access the southern side of the road.

80. An outline concept sketch for these improvements is provided within ***Appendix 26.17*** of ***Chapter 26 Traffic and Transport*** for the proposed East Anglia TWO

project. It is proposed that the detailed design of these improvements would be agreed with SCC post-consent during the development of the final AMP, submitted to discharge the requirements of the draft DCO.

26.1.3.3.3 Impacts Following Mitigation

81. The implementation of the additional mitigation measures along the B1122 through Theberton (link 4b) and A1094 through Snape (link 6b) would reduce the distance that some residents would need to walk in the road and assist pedestrians crossing between footways.

82. With the implementation of the additional mitigation measures, the sensitivity of the links would still be expected to remain high, however, the magnitude of effect would be reduced from low to negligible resulting in a **minor adverse** residual impact.

26.1.3.4 Impact 2: Severance

83. It can be noted from ***Table A26.3*** that total traffic flows along links 4, 9 and 11 (with and without the proposed East Anglia TWO and East Anglia ONE North project's traffic) are significantly below 8,000 vehicles per day where the DMRB suggests severance is unlikely to manifest. The magnitude of effect upon these links is therefore assessed as negligible on low to high sensitivity links giving a maximum impact of **negligible** to **minor adverse.**

84. The links with traffic flows above 8,000 vehicles AADT include links 2, 3 and 6. Link 3 has total traffic flows in excess of 16,000 vehicles per day and therefore in accordance the DMRB it can be assessed the receptors along the link would currently experience 'severe' levels of severance. Links 2 and 6 have total traffic flows of between 8,000 – 16,000 vehicles AADT and therefore in accordance with the DMRB it can be assessed that the receptors along the links would currently experience moderate levels of severance.

85. It can be noted from ***Table A26.3*** that the proposed East Anglia TWO and East Anglia ONE North project's traffic would not elevate the levels of severance for any link. In addition, the peak daily change in total traffic flow for all screened links is significantly less than the 30% change in total traffic, therefore applying the GEART severance threshold (***Table 26.8*** of ***Chapter 26 Traffic and Transport***) the magnitude of effect is assessed as very low on low to high sensitivity links giving a maximum impact of **minor adverse** to **negligible**.

86. Noting impacts are assessed as no greater than **minor adverse** for all screened links, no mitigation further to that embedded within the design of the proposed East Anglia TWO project is considered necessary.

26.1.3.5 Impact 3: Road Safety

87. ***Table A26.4*** provides a summary of collision clusters and links with a collision rate higher than the national average for comparable roads previously identified in ***section 26.6.1.10*** of ***Chapter 26 Traffic and Transport***. ***Table A26.4*** also provides a comparison of increase in traffic flows for the proposed East Anglia TWO project and scenario 1.

Table A26.4 Collision Analysis (Scenario 1)

Sensitive Links	Description	East Anglia TWO % increase		Scenario 1 % increase	
		All vehicles	HGVs	All vehicles	HGVs
Cluster 1 (Link 2)	A cluster of nine collisions at the junction of the junction A12 and B1119 Rendham Road that demonstrates a pattern of collisions involving vehicles right turning from Rendham Road on to the A12.	2%	20%	3%	26%
Cluster 3 (Link 2, 3 and 6)	A cluster of 17 collisions at the junction of the A12 and A1094 that demonstrates a pattern of collisions between vehicles turning between the A12 and A1094.	4%	49%	5%	61%
B1121 (Links 5 and 7)	It has been identified that the number of collisions along the B1121 is higher than the national average for comparable roads.	5%	0%	6%	0%
A1094 (Links 6 and 8)	It has been identified that the number of collisions along the A1094 is just below the national average for comparable roads.	4%	49%	5%	61%

88. It is concluded from ***Table A26.4*** that the potential road safety impacts for scenario 1 are similar to those assessed for the proposed East Anglia TWO project and therefore the package of additional mitigation measures outlined in ***section 26.6.1.10*** of ***Chapter 26 Traffic and Transport*** (reduced speed limit, enhanced warning signage, 'rumble strips' and slow markings) would be equally applicable to scenario 1.

89. The implementation of the additional mitigation measures at the junction of the A12 and A1094 would reduce the speed to traffic on the A12 and help highlight the junction to drivers. It is reasoned therefore that these measures would

consequently assist in reducing the number and potential severity of the collisions at this location.

90. With the implementation of the additional mitigation measures the sensitivity of the junction would be expected to reduce to low. The magnitude of effect remains medium upon a low sensitive receptor resulting in a **minor adverse** residual cumulative impact.

91. With the provision of a package of measures to mitigate the potential impact of the slow-moving construction traffic at the proposed accesses, the magnitude of effect is assessed as low on receptors of low sensitivity resulting in a residual **negligible** cumulative impact.

26.1.3.6 Impact 4: Driver Delay (Capacity)

92. The GEART screening thresholds do not apply to this effect as the potential impact is defined as significant when the traffic system surrounding the development under consideration is at or close to capacity.

93. The most sensitive time for Driver Delay could be if the construction shifts start or finish at the same time as the morning (07:30 – 08:30) or evening network peak (16:30 – 17:30) hours. The detailed modelling of junction capacity undertaken for the proposed East Anglia TWO project (contained within ***section 26.6.1*** of ***Chapter 26 Traffic and Transport***) applied these overlaps and forecast potentially significant driver delay impacts.

94. To mitigate the impacts, the assessment proposed that employee traffic movements would be managed to control movements within peak hours. No restrictions upon HGV movements are proposed. The construction HGV movements through each of the sensitive junctions are forecast to be 21 two-way HGV movements. The 21 HGV movements would be forecast to increases to 27 two-way HGV movements for scenario 1.

95. It is concluded that the hourly HGV movements for scenario 1 are similar to those assessed for the proposed East Anglia TWO project and therefore the conclusion of a residual **minor adverse** impact would be equally applicable.

26.1.3.7 Impact 5: Driver Delay (Highway Geometry)

96. During consultation with SCC (detailed within ***Appendix 26.1***), a request was made to consider the potential for delays associated with HGVs attempting to pass on coming vehicles at locations where the existing highway width is constrained, namely:

- The priority junction of the A1094 and B1069; and

- The roundabout junction of the A1094 and B1122 at Aldeburgh.

97. ***Section 26.6.1.12*** of ***Chapter 26 Traffic and Transport*** identified that at the roundabout junction of the A1094 and B1122 rigid body tipper can complete all manoeuvres, however, the articulated HGV travelling from A1094 to the B1122 would swing out into the oncoming lane potentially resulting in moderate adverse impacts and as such mitigation measures were proposed.

98. It is considered that this mitigation would be equally applicable to the simultaneous construction of the proposed East Anglia TWO project and proposed East Anglia ONE North project. Therefore, the residual cumulative impact is assessed as **negligible**.

26.1.4 Summary

Construction scenario 1 was identified in ***section 26.1.2*** as creating a realistic worst case in terms of impacts to traffic and transport and has been assessed in the sections above. Therefore, scenario 1 will be carried through into the wider CIA with other developments, see ***section 26.7.2*** in ***Chapter 26 Traffic and Transport.***