

## **Great North Road Solar and Biodiversity Park**

Environmental Statement

Volume 4 - Technical Appendices

Technical Appendix A14.1 - Transport Statement - Appendix F  
(Construction Trip Generation Calculation)

Document Reference - EN010162/APP/6.4.14.1B

Revision number 3

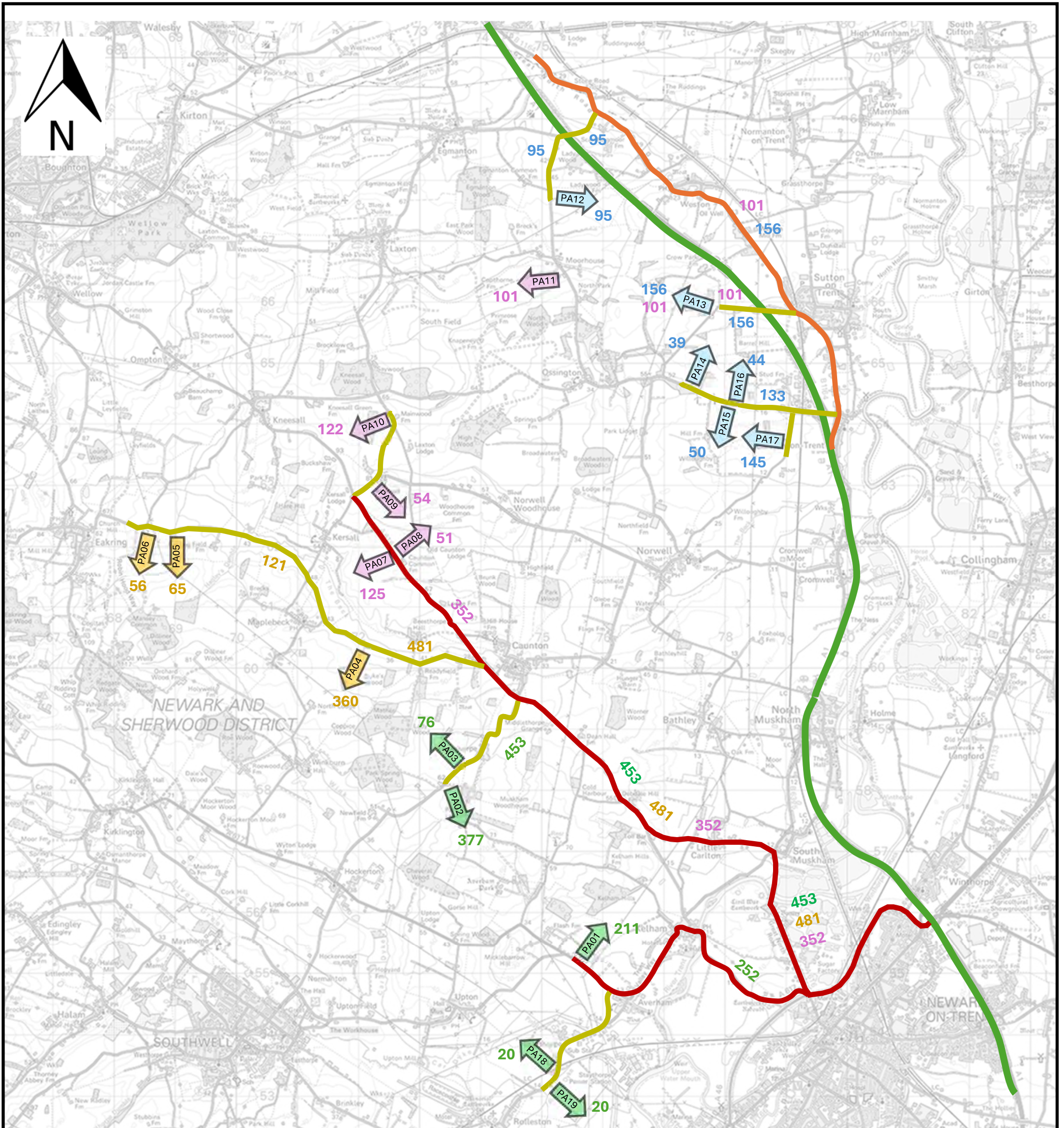
March 2026

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009, APFP Regulation 5(2)(q)





## **A14.1.14 APPENDIX F – CONSTRUCTION TRIP GENERATION CALCULATION**



**KEY:**

- |         |   |  |                                  |
|---------|---|--|----------------------------------|
| XXX PA→ | Phase 1: Traffic Flow and Site Access Point |  | Strategic Road Network Road (A1) |
| XXX PA← | Phase 2: Traffic Flow and Site Access Point |  | Class A Road                     |
| XXX PA→ | Phase 3: Traffic Flow and Site Access Point |  | Class B Road                     |
| XXX PA← | Phase 4: Traffic Flow and Site Access Point |  | Class C Road                     |

PROJECT: Great North Road Solar and Biodiversity Park  
 PINS REF: EN010163  
 DOC REF: EN010163/APP/6.4.14.1a – Appendix F

TITLE:  
 Construction Phase 2-Way AADT  
 Traffic Flow Diagram



**Calculation Inputs & Assumptions**

Item	Value
Total area of modules & mounting structures	550 ha
Total length of access tracks (Tarmac)	3 km
Total length of access tracks (Stone)	50 km
Area of compound areas	2 ha each
Total length of fencing	145 km
Site accesses to construct	41 No.
Construction vehicles required per access	5 HGV
Solar modules size range	3 sqm
Solar modules per container	620 No.
Frames per module factor	0.1
Storage units per substation	1 each
Vehicles required per storage unit	300
Number of substations	4 No.
Number of battery containers	400
Number of passing places to construct	40 No.
Internal stone track width	4 m
Internal stone track depth	0.15 m
Internal tarmac track width	5 m
Internal tarmac track depth	0.02 m
Density tarmac	2.3 t/m3
Density stone	1.8 t/m3
Truck capacity	20 t
Compound Areas	19
Length of fencing per HGV load	100m
Number of construction workers	2000 total
Number of construction workers	500 per phase
% of workers travelling to site by shuttle bus	50%
Number of workers per bus	20
Workers car share ratio	1.5
General Mitigation	100

Phase	% of Total Site Area
Phase 1 - South West	30.1%
Phase 2 - South East	20.6%
Phase 3 - North East	28.9%
Phase 4 - North West	20.5%

**Phase / Area Summaries**

Item	Phase 1 - South	Phase 2 - SouthWest	Phase 3 - NorthWest	Phase 4 - North	Phase 5	Total
No. Site Accesses	5	9	12	14	1	41
Area of Solar PV	204.92	208.37	227.14	384.64	20.69	1045.76
Percentage of Total	20%	20%	22%	38%		1
No. Compounds	3	3	5	8	0	19
Intenal Substations	1	1	1	1		4

**Total and Peak Month**

Phase	Activity	TOTAL HGV	PEAK MONTH HGV	
Phase One	Site access points	25	0	
	Roads and tracks	547	55	
	Construction compounds	810	486	
	Fencing and CCTV	290	14	
	Solar PV poles, modules, inverters and transformers	1068	50	
	Cabling	600	28	
	Intermediate substation	100	0	
	BESS/400 kV compound	145	0	
	Connection to network at Staythorpe	0	0	
	Mitigation/enhancement planting	20	2	
Phase Two	Site access points	45	0	
	Roads and tracks	556	61	
	Construction compounds	810	810	
	Fencing and CCTV	295	15	
	Solar PV poles, modules, inverters and transformers	1086	55	
	Cabling	610	31	
	Intermediate substation	100	0	
	Mitigation/enhancement planting	20	2	
	Phase Three	Site access points	60	0
		Roads and tracks	606	56
Construction compounds		1350	486	
Fencing and CCTV		322	14	
Solar PV poles, modules, inverters and transformers		1184	51	
Cabling		665	29	
Intermediate substation		100	0	
Mitigation/enhancement planting		22	2	
Phase Four		Site access points	70	0
		Roads and tracks	1026	103
	Construction compounds	2160	1296	
	Fencing and CCTV	545	26	
	Solar PV poles, modules, inverters and transformers	2005	94	
	Cabling	665	31	
	Intermediate substation	100	0	
	Mitigation/enhancement planting	22	2	
	Phase Five	Battery installation	75	5
			18104	3803

**Phase 1 - South**

Construction Access ID	P2	P3
Area (Ha) served by access	170.6	34.3
Percentage of Total	16.8%	3.4%
Percentage of Phase	83.2%	16.8%
Construction Period (Working Days)	238	48
TOTAL HGV	528	106
Total HGV per day	22	4
<b>2-Way Total HGV per day</b>	<b>44</b>	<b>9</b>
TOTAL LGV / Car per day	166	33
<b>2-Way Total LGV / Car per day</b>	<b>333</b>	<b>67</b>
<b>TOTAL 2-way TRAFFIC per day</b>	<b>377</b>	<b>76</b>
Average Hourly HGV over 10hrs	4.4	0.9

**Phase 3 - South West**

Construction Access ID	P4	P5	P6
Area (Ha) served by access	155.9	28.3	24.1
Percentage of Total	15.2%	2.8%	2.4%
Percentage of Phase	74.8%	13.6%	11.6%
Construction Period (Working Days)	214	39	33
TOTAL HGV	729	133	113
Total HGV per day	31	6	5
<b>2-Way Total HGV per day</b>	<b>61</b>	<b>11</b>	<b>9</b>
TOTAL LGV / Car per day	150	27	23
<b>2-Way Total LGV / Car per day</b>	<b>299</b>	<b>54</b>	<b>46</b>
<b>TOTAL 2-way TRAFFIC per day</b>	<b>360</b>	<b>65</b>	<b>56</b>
Average Hourly HGV over 10hrs	6.1	1.1	0.9

**Phase 2 - North West**

Construction Access ID	P7	P8	P9	P10	P11
Area (Ha) served by access	62.6	25.6	27.2	61.2	50.6
Percentage of Total	6.1%	2.5%	2.7%	6.0%	4.9%
Percentage of Phase	27.6%	11.3%	12.0%	26.9%	22.3%
Construction Period (Working Days)	79	32	34	77	64
TOTAL HGV	176	72	76	172	142
Total HGV per day	7	3	3	7	6
<b>2-Way Total HGV per day</b>	<b>15</b>	<b>6</b>	<b>6</b>	<b>14</b>	<b>12</b>
TOTAL LGV / Car per day	55	23	24	54	44
<b>2-Way Total LGV / Car per day</b>	<b>110</b>	<b>45</b>	<b>48</b>	<b>108</b>	<b>89</b>
<b>TOTAL 2-way TRAFFIC per day</b>	<b>125</b>	<b>51</b>	<b>54</b>	<b>122</b>	<b>101</b>
Average Hourly HGV over 10hrs	1.5	0.6	0.6	1.4	1.2

**Phase 4 - North**

Construction Access ID	P12	P13	P14	P15	P16	P17
Area (Ha) served by access	69.0	113.6	28.5	35.9	32.1	105.4
Percentage of Total	6.7%	11.1%	2.8%	3.5%	3.1%	10.3%
Percentage of Phase	17.9%	29.5%	7.4%	9.3%	8.4%	27.4%
Construction Period (Working Days)	51	84	21	27	24	78
TOTAL HGV	278	458	115	145	130	425
Total HGV per day	12	19	5	6	5	18
<b>2-Way Total HGV per day</b>	<b>23</b>	<b>38</b>	<b>10</b>	<b>12</b>	<b>11</b>	<b>36</b>
TOTAL LGV / Car per day	36	59	15	19	17	55
<b>2-Way Total LGV / Car per day</b>	<b>72</b>	<b>118</b>	<b>30</b>	<b>37</b>	<b>33</b>	<b>110</b>
<b>TOTAL 2-way TRAFFIC per day</b>	<b>95</b>	<b>156</b>	<b>39</b>	<b>50</b>	<b>44</b>	<b>145</b>
Average Hourly HGV over 10hrs	2.3	3.8	1.0	1.2	1.1	3.6