



APPENDIX 14

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Objection to development at
Maggotts End, Manuden
(Pelham Spring Solar Farm)

PINS Reference: S62A/22/0011



**Section 62A Planning Application:
S62A/2022/0011 Land East of Pelham
Substation, Maggots End Manuden:**

**Further Representation on Transport
and Highways Matters on behalf of
Local Residents**

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1 INTRODUCTION

- 1.1 Railton TPC Ltd has been instructed by local residents to prepare a representation dealing with transport and highways matters in relation to a planning application for a ground mounted solar farm with a generation capacity of up to 49.9MW, together with with battery storage comprising modules, power inverter cabinets and transformer stations on land near Pelham substation, Maggots End, known as Pelham Spring.
- 1.2 An almost identical scheme on the same site was refused planning permission by Uttlesford District Council (UDC) on 24 January 2022 (UDC ref. 21/3356). Since this time UDC Planning has been placed in Special Measures and the current application is being considered by the Planning Inspectorate (ref. S62A/2022/0011) under Section 62A of the Town and Country Planning Act (1990).
- 1.3 All of the proposed construction routes have the potential to lead to significant adverse impacts on vulnerable highway users and local communities. There have recently been a number of applications for major energy-related developments in a relatively small area to the south of Berden yet there has been no assessment of the residual cumulative impact of these developments. None of these developments can therefore be considered to comply with Paragraph 111 of the National Planning Policy Framework (NPPF)that states:
- 'Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.'* (NPPF, paragraph 111)
- 1.4 Section 5 of this report deals specifically with this deficiency.
- 1.5 The author of this report is Bruce Bamber, Director of Railton TPC Ltd. who has over 30 years of experience working within the transport planning industry for both private and public sector clients. He has dealt with the transport and access arrangements for development schemes comprising all land use types and at all scales. He has been involved with numerous local and strategic transport studies and modelling exercises. He has given evidence at many informal hearings and public inquiries, participated in Local Plan Inquiries and at a DCO Hearing. He is a Chartered Member of the Institution of Highways and Transportation and has a Masters Degree in Transport from Imperial College, London.

- 1.6 Railton TPC Ltd has previously reviewed transport submissions associated with a number of proposed local developments. The author has visited the site and the surrounding highway network and has engaged in detailed discussions with local residents to understand their concerns.
- 1.7 The information submitted by the Applicant that informs this representation is available on the GOV.UK website¹. The key transport document is the Construction Traffic Management Plan (CTMP) (Pegasus, Sept. 2022) that identifies possible routes for construction traffic and provides information about the number and type of vehicles associated with construction activities.
- 1.8 The following sections provide details of the following errors and omissions in the transport supporting information:
- Section 2: Safety of Proposed Accesses
 - Section 3: Under-Estimate of HGV Trip Generation
 - Section 4: Proposed Access Routes
 - Section 5: Failure to Consider Cumulative Highways Impact
- 1.9 A summary and conclusion is provided in **Section 6**.

¹ <https://www.gov.uk/guidance/section-62a-planning-application-s62a20220011-land-east-of-pelham-substation-maggots-end-manuden#type-of-application>

2 SAFETY OF PROPOSED ACCESSES

Construction Access

- 2.1 The proposed construction access on Manuden Road is shown in Figure 3.1 of the CTMP. This shows a 2.4m x 108m visibility splay to the south based on observed 85th percentile vehicle speeds of 44.44mph and a 2.4 x 136m visibility splay to the north based on observed 85th percentile vehicle speeds of 47.85mph. The visibility splay to the south is incorrect and should be 123m. The correct calculation is attached as **Appendix 1**.
- 2.2 The visibility to the right (south) is shown to pass through a number of tree trunks. These would need to be felled to allow the hypothetical visibility to be achieved. This would have a significant impact on the rural character of this section of the road. No mention of the felling of the trees is made in the CTMP. This visibility splay is also not drawn to the edge of the carriageway as it should to meet standards. When drawn to the carriageway edge the impact on roadside vegetation is further increased.
- 2.3 Measurements undertaken on site reveal that to the right the visibility that is achievable without removing vegetation and without reconfiguration of the embankment on the eastern side of the road is 103m from 2.4m back from the edge of the carriageway. This observation confirms that a safe visibility splay cannot be achieved without impact on roadside vegetation.
- 2.4 It is concluded that the proposed access arrangement is currently based on incorrect visibility splays and cannot be implemented without significant impact on roadside vegetation.
- 2.5 Paragraph 3.5 of the CTMP states that an independent Stage 1 Road Safety Audit is currently being carried out. It is expected that this audit will also identify the error in the visibility splay to the south and highlight the issue of trees and vegetation obstructing safe sight lines.

Operational Access

- 2.6 The operational access is proposed from Maggots End Road at a point currently used as an agricultural access. This is shown on Figure 3.2 of the CTMP. It is noted that visibility to the right for drivers leaving the site is very limited (28.5m) and constrained by

the presence of hedgerows and a tight bend. Paragraph 3.13 of the CTMP justifies this poor visibility; *'It is considered that the access is appropriate given the low frequency of vehicular movements in real terms and because it has operated as an agricultural access and has no highway safety record within the most recently available five years.'*

- 2.7 Paragraph 5.15 of the CTMP states that during the operational phase the site will generate around 4 vehicle visits per week and that these vehicles would be 4 x 4s or small vans. This level of trip generation far exceeds the level associated with agricultural use of the existing access and therefore represents a significant intensification of use of the access. Since vehicle movements at the existing access are so low, the absence of any recorded personal injury accidents at the existing access is not evidence that the proposed level of use will not lead to unacceptable highway safety risk.
- 2.8 Maggots End Road is a very narrow country lane with very tight bends with limited forward visibility and, along much of this section of its length, steep vegetated embankments. On-site measurements reveal widths of between 3.0m and 3.5m between the site access and Manuden Road. This is insufficient to allow two light vehicles to pass and would put pedestrians at risk, particularly if the vehicles were 4 x 4s or small vans. The vehicles would be unable to safely pass an equestrian. A series of small passing places are provided but no assessment has been made of whether these passing places are sufficient to avoid a significant risk of vehicles meeting other vehicles or other vulnerable highway users in places where it is not possible to pass without reversing, potentially around blind bends.
- 2.9 It is concluded that insufficient information has been submitted to demonstrate that the proposed operational access is acceptable with regard to highway safety.

3 UNDERESTIMATE OF HGV TRIP GENERATION

- 3.1 The applicant estimates 922 HGV deliveries (1,844 2-way trips) during construction (see Table 5.1 of CTMP).
- 3.2 Paragraph 5.9 of the CTMP comments of the import of material to construct access tracks within the site and states that, '*we have assumed that around 100 deliveries of stone may be required*'.
- 3.3 A review of the proposed site layout as shown in Low Carbon Drawing PLI-01 rev 19 (Appendix A of CTMP) reveals around 1.3km of construction access and at least 3.0km of access tracks. The drawings submitted with the application indicate that the construction access² will have a width of at least 3.5m and a construction depth of 275mm and the Distribution Network Operator (DNO) access tracks³ will have a width of at least 4.0m and a construction depth of 250mm. These features alone will require the import of around 4,250m³ of material. On the basis of an average density of material of 2.4 tonnes per m³ this would constitute 10,000 tonnes of material. A typical capacity of a large HGV is 20 tonnes so there would need to be around 500 HGV deliveries (1,000 HGV movements) for this material alone. There would need to be additional HGV movements to transport material for passing places, compound and substation surfaces and geotextiles and to remove the construction access and construction compound surface once the construction phase is complete. There may also be a need to remove topsoil from the site as all access tracks will require the displacement of a volume of topsoil equivalent to the volume of imported material.
- 3.4 It is concluded that the estimate of HGV movements associated with on-site access tracks vastly under-estimates the number that is likely to be required. Rather than the 922 deliveries (1,844 HGV trips), the total figure is likely to be at least 400 HGV deliveries (800 HGV trips) greater. A more reasonable estimate would therefore be in the region of 1,500 deliveries or 3,000 HGV trips, taking into account those additional movements described above.

2 See Low Carbon Drawing SD-06 rev 01

3 See Low Carbon Drawing SD-09 rev 01

4 PROPOSED ACCESS ROUTES

Preferred Construction Route 1 and Alternative Route 2: B1083 through Newport and Clavering

- 4.1 Paragraph 4.4 of the CTMP states that it has been agreed that the route for construction traffic should not go through Manuden because of the presence of a primary school. The Preferred Route 1 and the Alternative Route 2, however, pass through Clavering and the Clavering Primary School (yrs 1-6) that is accessed by many parents and children on foot as well and numerous parents in vehicles that lead to significant lengths of the adjacent carriageway becoming congested and, in places, reduced to single lane operation. The route also passes Clavering Village Hall that hosts a number of daytime activities including some for parents and toddlers. A section of carriageway in the centre of the village immediately north of the Fox and Hounds public house has a width below 5.5m and as little as 4.9m and thus of insufficient width to allow two HGVs to pass. On one side is a steep ditch and on the other a narrow footway that reduces to as little as 1.0m. No assessment has been made of the potential impact of construction traffic on the sensitive receptors and low standard of carriageway in the village.
- 4.2 The route joins the B1383 in Newport at the High Street/Wicken Road junction in the centre of the village. This is a highly constrained junction with narrow footways, tight kerb radii and high pedestrian flows. The junction has a poor safety record and is the subject of requests from local residents to Essex County Council Highway Authority to implement measures to improve safety. Large vehicles have difficulty turning into and out of the junction. An HGV is unable to turn left into the junction from the B1383 when any vehicles are waiting on the B1083 to turn out of the junction. No assessment has been undertaken to establish whether the types of vehicles expected to access the site during construction can safely turn into and out of the junction and what impact these movements could have on pedestrians.
- 4.3 The section of Wicken Road (B1038) in Newport is subject to significant on-street parking that reduces the road to single lane operation. The section close to the B1383 junction is also used by school buses to access the Joyce Frankland Academy (secondary school), not because this is a good quality route but because the buses have no better option. A construction vehicle meeting a school bus on this section of the road is likely to lead to dangerous manoeuvres such as reversing in close proximity to pedestrians or over-running kerbs.

- 4.4 The route between Newport and the site access is used by equestrians. Signs warning of the presence of horse riders are currently present on the section of Manuden Road north of the proposed site access. No assessment has been made of the potential impact of construction traffic on equestrians.
- 4.5 It is proposed to use the lay-by on the B1038 west of Newport as a potential holding area for HGVs heading towards the site in circumstances when exiting HGVs are on the section of the route between the site and the holding area. The lay-by is currently in very poor condition and is barely able to accommodate one large HGV. There is a significant distance between the lay-by and the site and it is likely that an exiting HGV would take around 10 min to pass the holding area. If another HGV arrives during this period there would be nowhere for it to wait. There has been no assessment made of the risk of further HGVs arriving during the periods when HGVs are being held due to exiting vehicles.
- 4.6 The risk of the proposed marshalling strategy failing is increased if the overall number of HGVs during construction increases, as appears likely to be the case (see above) or if the period over which deliveries can take place decreases as appears likely given that the delivery route passes a primary school in Clavering (and close to other schools in other settlements).

Alternative Construction Route 3: B1038 Route between Buntingford and Site access through Hare Street, Great Hormead and Brent Pelham

- 4.7 The second alternative access route (route 3) utilises the A10 and the B1038 via Hare Street, Great Hormead and Brent Pelham. This route is subject to a number of significant constraints, none of which have been assessed by the applicant.
- 4.8 A 200m section of the B1038 immediately east of Hare Street has a width of as little as 4.1m, insufficient to allow an HGV to pass a car and only just wide enough to allow two cars to pass at slow speed.
- 4.9 An infant school is located on the northern side of the B1038 just to the west of Great Hormead. No assessment has been made of the potential impact of construction traffic on this sensitive location.
- 4.10 The B1038 through the centre of Great Hormead has a width of around 5.0m over around 150m. In the same area there is no footway on the southern side of the road and the footway on the northern side of the road is narrow with section less than 1.0m

and as little as 0.7m. An HGV is only just able to pass a car on a carriageway of width 5.0m. It is not possible for vehicles to over-run the verge on the southern side of the road due to the presence of a ditch. Vulnerable highway users are likely to be put at risk in circumstances where construction vehicles pass other vehicles in the centre of the village where footways are narrow.

- 4.11 The B1038 is highly constrained east of Great Hormead where a narrow section of carriageway with widths as low as 4.7m (insufficient to allow an HGV to pass a car) with no verges and steep, vegetated embankments coincides with a series of very tight bends with very limited forward visibility. The section is also on quite a steep gradient leading to increased risks of vehicles travelling down the hill being unable to stop in time if confronted, unexpectedly with an oncoming vehicle. The steep embankments show significant evidence of vehicles pulling in as close as is physically possible to pass oncoming vehicles. Any significant increase in flows of large vehicles will have a severe impact in terms of highway safety in this area.
- 4.12 The route through Brent Pelham passes the village church and the village hall. The B1038 west of the village is narrow with widths as low as 4.9m and a tight bend with restricted forward visibility where verges and embankments show significant evidence of drivers struggling to pass oncoming vehicles without over-running verges and damaging steep embankments.
- 4.13 East of Brent Pelham the B1038 reduces in width to as little as 4.6m with further evidence of the difficulties faced by vehicles negotiating narrow and winding sections of carriageway.
- 4.14 Overall Route 3 is considered entirely unsuitable as a construction access route due to the potential impact on sensitive receptors and the low standard of the B1038 in several locations making it entirely unsuitable to accommodate any significant increase in HGV traffic.

5 FAILURE TO CONSIDER CUMULATIVE HIGHWAYS IMPACT

- 5.1 The Planning Inspectorate has raised the issue of cumulative impact since there are several significant proposed developments in the area that have the potential to come forward in combination with the Pelham Spring development⁴. The assessment of cumulative impact is a requirement of the NPPF yet no work has been undertaken by any of the various applicants to establish whether or not there is the potential for severe residual cumulative impact resulting from the construction activities associated with these major developments.
- 5.2 The applicant acknowledges that the local highway network is constrained and that typical road widths are often insufficient to allow two large vehicles to safely pass each other (see para. 4.5 of CTMP). For this reason the applicant proposes that a lay-by on the B1038 west of Newport be used as a handling point to minimise the risk of construction vehicles meeting along the route between this lay-by and the site (see above). Although the applicant may have some control over the movements of HGVs associated with the Pelham Spring construction site, there will be no ability to manage HGV movements associated with other construction projects using all or part of the route.
- 5.3 The following further planning applications have the potential to generate significant additional HGV movements on the local highway network during construction:
- 21/0969 (E Herts.) Land at Greens Farm East End, Stocking Pelham: Proposed Battery Energy Storage Site: Land At Greens Farm East End Stocking Pelham Buntingford Hertfordshire SG9 0JU (immediately south-west of the Berden Hall Farm site);
 - 22/0806 Land off Crabbs Lane and Pelham Substation, Stocking Pelham: Proposed Battery Energy Storage System and associated infrastructure: Land off Crabbs Lane and Pelham Substation Stocking Pelham Herts (immediately west of the Berden Hall Farm site);
 - S62A/22/0006 Berden Hall Farm, Ginns Road, Berden: ground mounted solar farm with a generation capacity of up to 49.99MW, together with associated infrastructure and landscaping.

4 See Planning Inspectorate letter to Pegasus Group dated 05 October 2022 (SoS Screening letter)

5.4 The first two applications above (refs. 21/0969 and 22/0806) are battery storage facilities of similar size and the third (ref. S62A/22/0006) is a solar farm development similar to that proposed at Pelham Spring. A conservative estimate of the overall level of HGV trip generation during construction for each of these developments, based on information that has been submitted with each application is set out in the following table:

Table 5.1: Potential Cumulative HGV Construction Traffic

Application ref.	Name	Description	HGV Trip Generation (2-way)
21/0969 (E Herts.)	Land at Greens Farm ¹	Battery storage	1,350
22/0806	Land off Crabbs Lane ¹	Battery storage	1,350
S62A/22/0006	Berden Hall Farm ²	Solar Farm	3,000
S62A/2022/0011	Pelham Spring ²	Solar Farm	3,000
Total			8,700

Notes: ¹ trip generation based on CTMP, Ethical Power, 06/07/2021

² see Section 3 above

5.5 The cumulative level of HGV trip generation (8,700 HGV trips) is much higher than the trip generation of the Pelham Spring construction phase (3,000 HGV trips). This is strong evidence that there is significant potential for adverse cumulative transport impacts arising from the four large developments being proposed within a relatively small area south of Berden.

5.6 The latest construction route proposed for the Berden Hall Farm development includes the route between Newport and Clavering. Together, the two developments have the potential to lead to severe cumulative impacts on the sensitive receptors such as the primary school in Clavering, on the sections of carriageway unable to accommodate two large vehicles such as those within Clavering village or at the highly constrained B1038/B1383 junction in Newport.

5.7 It is possible that one or both of the other proposed developments may seek to use this route, parts of it or combine to use other routes. In all cases there exists a significant risk of sensitive areas being impacted by more than one development over some period of time. Not one of the applicants associated with the above proposed developments has undertaken an assessment of the potential for cumulative adverse transport environmental impacts. This is a significant failure and one that needs to be rectified before any serious consideration is given to any of these proposed developments.

6 SUMMARY AND CONCLUSION

- 6.1 Railton TPC Ltd has been instructed by local residents to make a representation dealing with transport and highways matters in relation to a planning application for a ground mounted solar farm with a generation capacity of up to 49.9MW, together with with battery storage comprising modules, power inverter cabinets and transformer stations on land near Pelham substation, Maggots End, known as Pelham Spring.
- 6.2 The Pelham Spring development comprises one of a number of major energy related proposals in the small area south of Berden. Despite Paragraph 111 of the NPPF requiring an assessment of cumulative impact, not one of the various applicants has undertaken any assessment of how adverse impacts could be exacerbated if construction routes or parts thereof are used by more than one developer. A marshalling lay-by is proposed as a mitigation measure in relation to the Pelham Spring development but this would be ineffective if the route were to be used by another contractor; a possibility that has not been considered.
- 6.3 The preferred construction access route (Route 1) and the alternative Route 2 pass through Newport and Clavering. They pass the Primary School in Clavering and the Village Hall that hosts a number of daytime activities. No assessment has been made of the potential impact of construction traffic on these sensitive receptors. The route includes the Wicken Road/High Street junction in Newport that is highly constrained with narrow footways and high pedestrian flows. Local residents are so concerned about safety in this location that they have made direct approaches to Essex Highway Authority to implement measures to improve safety for pedestrians around the junction. No assessment has been made of the ability of large construction vehicles to negotiate this junction safely. An HGV is unable to turn left onto the B1038 if any vehicles are waiting to turn out of the side road. Notwithstanding the failure to consider cumulative impact as described above, the proposed marshalling lay-by will achieve nothing in terms of reducing conflict at the Wicken Road/High Street junction in Newport.
- 6.4 The other access route option (Route 3) from the A10 via Hare Street, Great Horstead and Brent Pelham is entirely unsuitable for use by HGVs as it is highly constrained with several narrow, winding sections with no verges and very limited forward visibility. The route also passes an infant school. Construction vehicles are likely to have a severe adverse impact on this route.

- 6.5 The visibility splay to the south at the proposed construction access on Manuden Road has been incorrectly calculated and is not drawn to the edge of the carriageway. Notwithstanding these errors, to achieve even the visibility shown on the preliminary layout plan will require the removal of a significant number of trees and roadside vegetation. This will lead to a significant change in the character of this section of the lane.
- 6.6 It is expected that the errors in the calculation of safe visibility will be identified as issues in the Stage 1 Road Safety Audit that is said to be being undertaken but is not currently available for scrutiny.
- 6.7 The proposed operational access on Maggots End Road suffers from very poor visibility to the right for emerging vehicles. The proposed development will lead to a significant intensification of use of the access and will therefore significantly increase the conflict between vehicles and between vehicles and vulnerable highway users since the section of the lane east of the access is extremely narrow with tight bends, steep embankments immediately adjacent to the highway edge, very limited forward visibility in places and limited passing places.
- 6.8 The CTMP vastly underestimates the number of HGV trips associated with the import of material to construct the construction access and internal roads, the construction of hard surfacing within the site, the removal of roads and compounds after construction is complete and the potential removal of topsoil.
- 6.9 There has been no assessment of the potential impact of construction vehicles on equestrians despite there already being signs of the presence of horse riders on the proposed access route.
- 6.10 Overall, it is likely that the proposals will lead to a significant adverse highway safety impact during construction and that this impact is likely to be further exacerbated by cumulative development. No work has been undertaken by the applicant to deal with these concerns as is required by Paragraph 111 of the NPPF.

Appendix 1

Application ref. S62A/2022/0011: Pelham Spring

Stopping Sight Distance (SSD) Calculations using Manual for Streets 2 Parameters

$$SSD = vt + \frac{v^2}{2(d + 0.1a)} \quad \text{source: Para. 10.1.5 of MfS2}$$

where v = speed (m/s)
 t = driver perception-reaction time (seconds)
 d = deceleration (m/s²)
 a = longitudinal gradient (%)

values*	60kph and below	above 60kph
t (s)	1.5	2.0
d **	0.45	0.375 absolute minimum SSD 0.25 desirable minimum SSD
d (m/s ²)	4.41	3.68 absolute minimum SSD 2.45 desirable minimum SSD

* see Table 10.1 of MfS2 (for speeds in excess of 60kph)

** as proportion of gravitational acceleration, $g=9.81\text{m/s}^2$

Observed Speeds (see Table 2.2 of IcenI Transport Statement, Sept. 2020)

	from right	from left
mph	44.44	47.85
kph	71.5	77.0

Calculation

Visibility to right

	v (mph)	v (m/s)	t	d	a (%)	SSD (m)	with bonnet allowance
using MfS2 parameters	44.4	19.9	2.0	2.45	0	120.2	122.6

Visibility to left

	v (mph)	v (m/s)	t	d	a (%)	SSD (m)	with bonnet allowance
using MfS2 parameters	47.9	21.4	2.0	2.45	0	136.0	138.4

shaded cells show SSD using MfS2 parameters for speeds in excess of 60kph (37mph)