14 March 2024

Attention: Suffolk County Council

SLR Ref.: 405.064987.00007

Regulation 25 Response

Cumulative Impact - Air Quality

Suffolk Country Council (SCC) have submitted a request (dated 21st November 2023) for further information regarding the proposed anaerobic digestion facility on land to the north of Spring Grove Farm (SCC planning application reference: SCC/0045/23SE) under Regulation 25 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended). This letter presents the applicant's responses to the information requests made by SCC relating to air quality.

The information request, transposed from Appendix A of the information request, relates to :

"No. 16 – Cumulative Impact

a) An assessment of cumulative impacts in relation to the current application CC/23/110/FUL Land at Streetly Hall Farm under consideration by Cambridgeshire County Council. The following subjects will need to be considered:

ii. Air Quality"

This letter provides responses to the information request, as well as additional information (where appropriate).

1.0 SLR Response

All efforts have been made to allow this letter to be read as a stand-alone document, but reference may be needed to the following technical assessments:

- 'Environmental Statement Ch 7 App 7.a Air Quality Assessment' (SLR Ref: 404.11923.00004 Phase 14 Version No: v1.7) dated May 2023, submitted in conjunction with this planning application referred to here on in as 'Spring AQA'; and
- Streetly Hall Farm Air Quality Assessment (reference 5949-1r2) dated 21st August 2023, the requested 'cumulative' development', referred to here on in as 'Streetly AQA'.

1.1.1 Cumulative assessment of Impacts to Human health

The assessed human health receptors considered within the Streetly AQA and the Spring AQA do not consider locations which overlap with one another (given the distance between the two developments, i.e. nearly 4 km).

The closest human health receptors are separated by a distance of approximately 3 km, as presented in Figure 1. Both AQAs concluded that impacts at the surrounding receptors to be 'not significant' for NO_2, SO_2 and NH_3 emissions. It can therefore be inferred that that impacts at receptors further afield would also be 'negligible'.

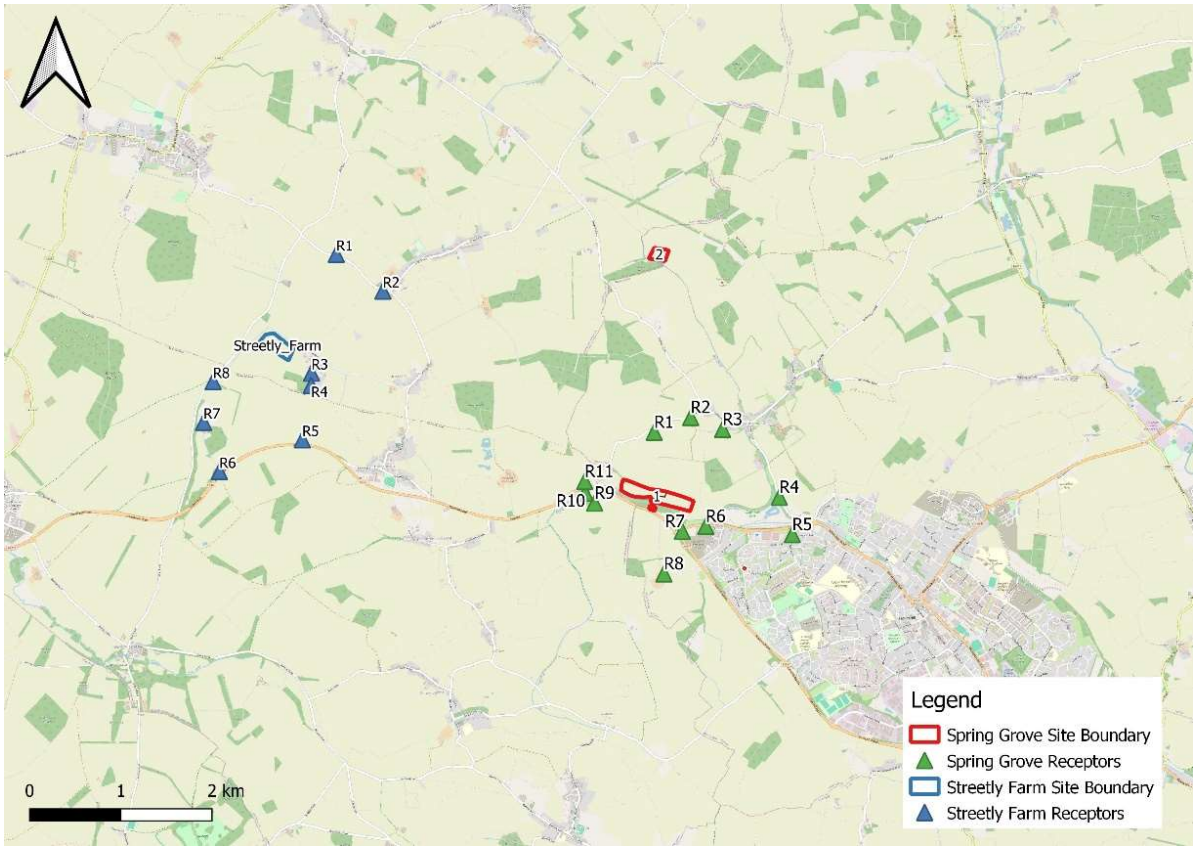

Figure 1 Spring Grove and Streetly Farm Considered Human Health Receptors

1.1.2 Cumulative assessment of Odour

Streetly AQA does not provide an assessment of odour emissions in relation to nearby residential receptors. However, considering the extended distance between the two Sites (nearly 4 km) they would be considered 'remote' from each other (in line with IAQM Odour guidance regarding pathway effectiveness). In addition, their relative geographical locations would mean that winds coming from any given direction would not result in odours from both sites converging on the same receptors. Therefore it can reasonably be considered that potential odours from either one of these sites would disperse to an imperceptible level within the locale of the other site.

1.1.3 Cumulative assessment of Impacts at Ecological Receptors

A review of potential ecological sites which may be considered to experience 'cumulative' impacts as a result of the two applications has been undertaken. The designated sites identified are listed in Table 1-1 and presented in Figure 2.

Table 1-1 'Cumulative' Designated Ecological Sites

Site	Designation	Sensitive Interest Features	Distance and Direction from Sites
Hare Wood	Ancient Woodland (AW)	Broadleaved, Mixed and Yew Woodland	Spring Grove - 1,550m NW Streetly Farm – 1,780m SEE
Over and Lawn Woods	Site of Special Scientific Interest (SSSI) and AW	Broadleaved, Mixed and Yew Woodland	Spring Grove (Site 1) - 1,030 m N Spring Grove (Site 2) – 760 m SW Streetly Farm - 2,450 m E

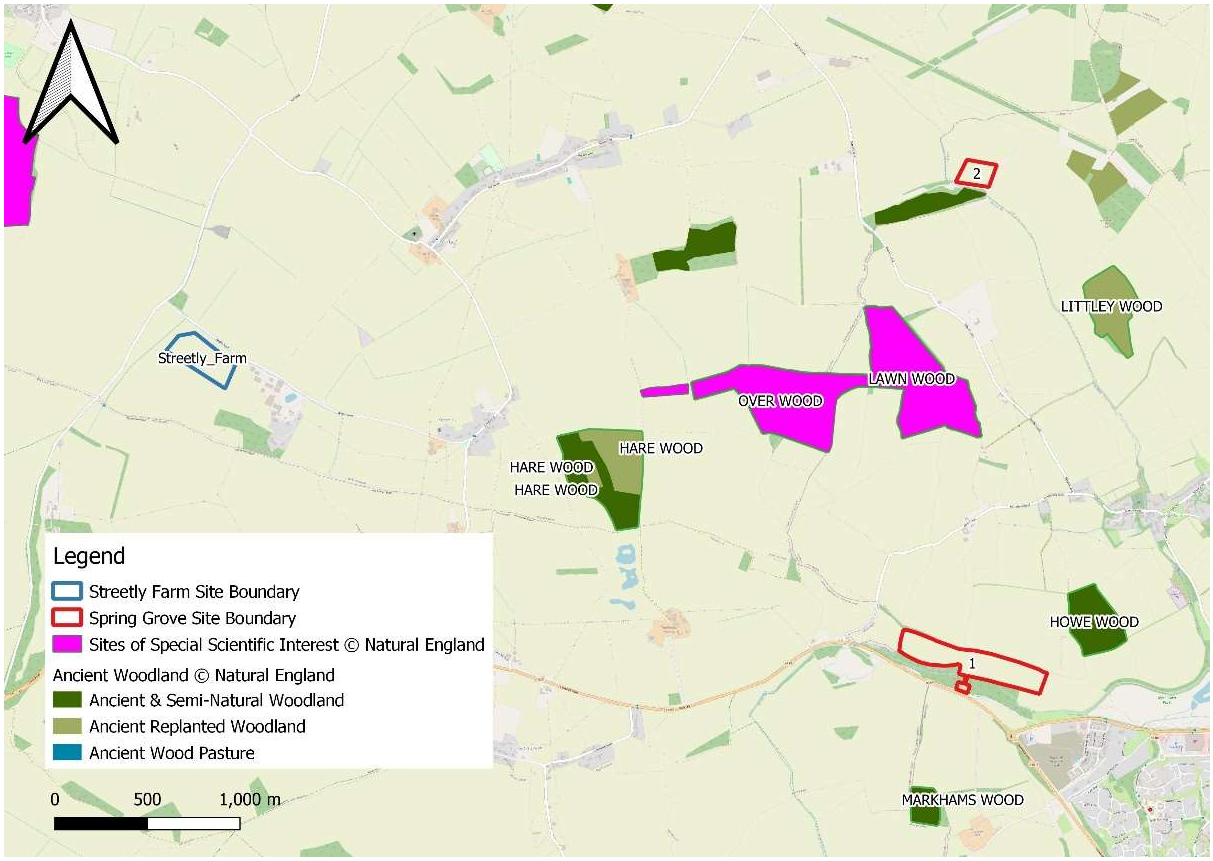

Figure 2 Spring Grove and Streetly Farm Considered Ecological Receptors

1.1.3.1 Baseline Conditions at Ecological Receptors

Both Streetly AQA and Spring AQA refer to the APIS website as a support tool used in the assessment(s) to determine background pollutant concentrations, current deposition rates and Critical Loads (C_{Lo}) of potential effects of air pollutants upon habitats.

Data from the APIS support tool is presented in Table 1-2 as reported in the Spring AQA and, for comparison, values from the Streetly AQA are presented in italics. There are some immaterial discrepancies in the values reported, which are related to the exact positioning of the geographical APIS reference data utilised within the two assessments, however the data broadly aligns and use of either sets of data would not alter the outcomes of the individual or cumulative assessments.

Table 1-2 Baseline Conditions at Ecological Receptors – Critical Levels and Loads

Site	APIS Critical Load Class (most sensitive)	NO_x Annual Mean (µg/m³)	SO_2 Annual Mean (µg/m³)	NH_3 Annual Mean (µg/m³)	Critical Load Range (kg N/ha/yr)	Critical Load Applied in Assessment (kg N/ha/yr)	Current Load (kg N/ha/yr)
Hare Wood (AW)	Broad-leaved, mixed and yew woodland	9.1	0.75	1.97	10-20	10	32.8
		9.24	*0.78*	*1.97*	*10-15*	*10*	*32.76*
Over and Lawn Woods (SSSI, AW)	Broad-leaved, mixed and yew woodland	8.9	0.73	1.97	15-20	15	32.8
		9.01	*0.74*	*1.97*	*15-20*	*15*	*32.76*

Table 1-3 Baseline Conditions at Ecological Receptors – Acid Critical Loads

Site	APIS Critical Load Class (most sensitive)	Critical Load Function (k_{eq}/ha/yr)			Current Load (k_{eq}/ha/yr)	
		CLmaxS	ClminN	ClmaxN	N	S
Hare Wood (AW)	Broad-leaved, mixed and yew woodland	10.790	0.214	11.004	2.45	0.15
		10.789	*0.214*	*11.003*	*2.40*	*n/a*
Over and Lawn Woods (SSSI / AW)	Broad-leaved, mixed and yew woodland	10.792	0.214	11.006	2.4	0.2
		10.787	*0.214*	*10.901*	*2.40*	*n/a*

1.1.3.2 Cumulative Assessment of Critical Levels

The reported values of impacts on C_{Le}'s for both the Streetly AQA and the Spring AQA are presented in Table 1-4 along with the cumulative impact from the two Sites.

It should be noted that in-lieu of isopleth imagery to overlay between the Sites, the maximum reported value at Hare Wood within the Streetly AQA (Receptor 'E8') has been utilised, representing a precautionary approach.

Table 1-4 Predicted Cumulative Critical Levels

Site	Averaging Period	Applied C_{Le} (µg/m³)	Streetly Farm PC (B)	Streetly Farm PC as % of C_{Le}	Spring Grove PC (µg/m³)	Spring Grove PC as % of C_{Le}	Combined PC	Combined PC as % of C_{Le}
Hare Wood (AW) (B)	NO_x Annual	30	0.12	0.39%	0.1	0.4%	0.22	0.73%
	NO_x 24-hour	75	1.60	2.14%	3.7	5.0%	5.3	7.07%
	SO_2 Annual	10 (A)	0.03	0.81%	<0.01	<0.1%	0.04	0.40%
	NH_3 Annual	1.0 (A)	0.002	1.972%	<0.01	0.4%	0.012	0.12%
Over and Lawn Woods (SSSI and AW)	NO_x Annual	30	0.09	0.30%	0.2	0.7%	0.29	0.97%
	NO_x 24-hour	75	0.87	1.16	4.3	5.8%	5.17	6.89%
	SO_2 Annual	10 (A)	0.02	0.76%	<0.01	<0.1%	0.03	0.30%
	NH_3 Annual	1.0 (A)	0.002	1.972%	0.008	0.8%	0.01	1.00%

Table note:

(A) The lower SO_2 and NH_3 C_{Le} has been applied, reflecting a conservative approach (assuming the presence of lichens or bryophytes).

The findings are as follows:

- the short-term NO_X PC is below 10% of the short-term C_{Le} at the Over and Lawn Woods SSSI;
- the NO_X, SO_2 and NH_3 PC does not exceed 1% of the long-term C_{Le} at the Over and Lawn Woods SSSI; and
- the NO_X, SO_2 and NH_3 PC is below 100% of the C_{Le} at the surrounding Ancient Woodlands.

It is acknowledged that the impact to long-term C_{Le} for NO_X and NH_3 at the SSSI is at 1% of the Critical Load. It should be noted that this is a theoretical maximum impact taken from the worst reported values at that specific receptor that do not overlap geographically. It is therefore concluded that the cumulative impact is considered to cause 'no likely damage' to the SSSI and 'no significant pollution' at the surrounding Ancient Woodlands.

1.1.3.3 Cumulative Assessment of Critical Loads

The results of the cumulative assessment of impacts on critical loads (as a result of NO_X, SO_2 and NH_3 emissions) are presented in Table 1-5 and Table 3-6. Process Contributions inclusive of contributions from NO_X and NH_3 is presented.

Table 1-5 Predicted Cumulative Nitrogen Critical Loads

Site	Applied C_{Lo} (kg N/ha/yr)	Streetly Farm PC	Streetly Farm PC as % of C_{Lo}	Spring Grove PC	Spring Grove PC as % of C_{Lo}	Combined PC	Combined PC as % of C_{Lo}
Hare Wood (AW)	10	0.04	0.42%	0.05	0.5%	0.09	0.90%
Over and Lawn Woods (SSSI, AW)	15	0.03	0.22%	0.10	0.7%	0.13	0.87%

Table 1-6 Predicted Cumulative Acid Deposition Critical Loads

Site	Applied C_{Lo} Max N (keq/ha/yr)	Streetly Farm PC	Streetly Farm PC as % of C_{Lo}	Spring Grove PC	Spring Grove PC as % of C_{Lo}	Combined PC	Combined PC as % of C_{Lo}
Hare Wood (AW)	11.004	0.003	0.08%	0.005	<0.1%	0.008	0.07%
Over and Lawn Woods (SSSI, AW)	11.006	0.002	0.06%	0.009	<0.1%	0.011	0.10%

The findings are as follows:

- the nitrogen and acid deposition PC does not exceed 100% of the C_{Lo} at the surrounding Ancient Woodlands; and
- the nitrogen and acid deposition PC does not exceed 1% of the C_{Lo} at the Over and Lawn Woods SSSI.

Therefore, the cumulative impact is considered to cause 'no likely damage' to the SSSI and 'no significant pollution' at the surrounding Ancient Woodlands.

1.1.4 Overall Conclusion of Cumulative Assessment

In consideration of potential cumulative impacts from both the Proposed Development and the Streetly Farm development, it is concluded that:

- a 'not significant' impact at human receptor locations would be observed; and
- impacts at ecological receptors are considered to cause 'no likely damage' to the Over and Lawn Woods SSSI and 'no significant pollution' at the Hare Wood Ancient Woodland.