

Viking CCS Pipeline

9.21 Technical Note on 2023 IEMA Guidance

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1.1 Introduction

- 1.1.1 This Technical Note has been produced by AECOM in response to Question 1.16.1 of The Examining Authority's first written questions and requests for information (ExQ1). In Question 1.16.1 the Examining Authority sought clarification in relation to the implications of changes within the 2023 IEMA Guidelines: Environmental Assessment of Traffic and Movement, as compared to the previous 1993 Guidelines which were used as the basis for the methodology presented in ES Chapter 12 Traffic and Transport [APP-054].
- 1.1.2 In addition to asking if there were any transitional arrangements in place, the Examining Authority asked the following:
- “2) What implications would there be if the 2023 guidelines were followed and what parts of the assessment would be impacted / affected the most?”
 - “3) Provide a highways Technical Note to clarify what the significance of the July 2023 guidelines is and how it would impact on the outcomes of the ES”.
- 1.1.3 This technical note considers the differences in methodology between the old and new guidelines, and reports on the changes associated with key differences in approach.

1.2 Differences in Methodology

- 1.2.1 Following a review of both the 1993 and 2023 guidelines, the only substantive change (i.e. that could potentially change the significance of effects) to the guidelines relates to the assessment of Fear and Intimidation, which now requires the assessor to determine a baseline “degree of hazard” based upon the proportions of average traffic flow over an 18-hour day; the total number of HGVs; and the speed of traffic. This is repeated using the construction traffic flows and a new “score” determined. The magnitude of the Fear and Intimidation impact is then determined based upon the change in the score.
- 1.2.1 The remainder of the assessment criteria, as set out in Table 12-6 of Chapter 12 Traffic and Transport (Ref EN070008/APP/6.2.12) would not change as a result of using the new Guidelines.
- 1.2.2 As such, this Technical Note provides an overview of the changes to the technical Guidelines in terms of Fear and Intimidation between the 1993 and 2023 guidelines.
- 1.2.3 **Table 1-1** shows the differences between the approach to assessing the magnitude of fear and intimidation impacts between the 1993 and 2023 guidelines. It can be seen that there is a difference between how the impact is calculated, with the main difference being the inclusion of a change in the degree of hazard.
- 1.2.4 In terms of the definition of a step change this is the increase from one threshold to another i.e. from Very Low to Low, in terms of a two-step change this would be the increase from Very Low to Medium or Low to Large.

Table 1-1. Table comparing the 1993 and 2023 Fear and Intimidation Guidelines

Impact	Very Low	Low	Medium	Large
Fear and Intimidation - ORIGINAL 1993	Increase in total traffic flows or HGV flows of 29% or under (or increase in HGV flows under 10%).	Increase in total traffic flows of 30-59% (or increase in HGV flows of between 10%- 39%).	Increase in total traffic flows of 60%-89% (or increase in HGV flows between 40%-89%).	Increase in total traffic flows or HGV flows of 90% and above.
Fear and Intimidation - UPDATED 2023	No change in overall level based on the degree of hazard scores for daily traffic flows, HGV flows and vehicle speeds.	One step change in overall level, but with <400 daily vehicle increase or <500 daily HGV increase.	One step change in overall level, but with >400 daily vehicle increase or >500 daily HGV increase.	Two step changes in overall level based on the degree of hazard scores for daily traffic flows, HGV flows and vehicle speeds

1.2.5 **Table 1-2** shows the different assessment criteria used to assess the step change between the baseline and baseline + development scenarios for 2023 based on the following:

- A. Average Hourly Traffic Flow – This is calculated based on the average traffic flow over the 18-hour day – all vehicles / hour two-way;
- B. Daily HGV Flow - This is calculated based on the total 18-hour Heavy Goods Vehicle flow; and
- C. Average Vehicle Speed (mph).

Table 1-2. Degree of Hazard Criteria

Criteria	Degree of Hazard (Level)			
	Small	Moderate	Great	Extreme
A. Average Hourly Traffic Flow	<600 (0)	600-1,200 (10)	1,200-1,800 (20)	>1,800 (30)
B. Daily HGV Flow	<1,000 (0)	1,000-2,000 (10)	2,000-3,000 (20)	>3,000 (30)
C. Average Speed	<20mph (0)	20-30mph (10)	30-40mph (20)	>40mph (30)
Total Score (A+B+C)	0-20	21-40	41-70	71+

1.2.6 As shown in **Table 1-2**, the different metrics have a bracketed score, which is calculated based on the relevant criteria within the assessment.

1.2.7 Once these scores are combined (A+B+C), the degree of hazard is calculated based on the total score metric at the bottom of the Table; for example, 0-20 results in a small degree of hazard. A degree of hazard assessment is completed for the baseline information and then completed for the base + development scenario. For example, an average hourly traffic flow of 600-1,200 would result in a score of 10 for the “A” value.

1.2.8 If the development traffic increases this score to between 1,200-1,80 this would then result in an “A” score of 20. This is then combined with the Daily HGV Flow and Average Speed scores to get a total score. This information is then compared to the Baseline to understand if there is a step change in the degree of hazard which is then used to calculate the impact based on the Guidelines in **Table 1-1**.

1.3 Fear and Intimidation – Comparison of Results using 1993 vs 2023 Guidelines

1.3.1 **Table 1-3** outlines the significance of effects for each of the links using both the 1993 and the 2023 Guidelines, with a column then showing whether there is a change in overall significance of effects as a result. The blue highlighted rows show a drop from Minor – Not Significant to Negligible – Not Significant and the green highlighted rows show a drop from either Major/Moderate – Significant to Negligible – Not Significant. There are no increases in the significance of effects when applying the 2023 methodology. The calculations for the assessment based on the 2023 guidelines are provided in **Appendix A**.

Table 1-3. Comparison of Fear and Intimidation Link Significance 1993 vs 2023 Guidance

Site	Road Name	Significance of Effects		Change in Significance?
		1993 Guidance	2023 Guidance	
1	B1210	Negligible – Not Significant	Negligible – Not Significant	No
2	A1173	Negligible – Not Significant	Negligible – Not Significant	No
3	A160	Negligible – Not Significant	Negligible – Not Significant	No
6	A18	Negligible – Not Significant	Negligible – Not Significant	No
7	Waltham Road 1	Minor– Not Significant	Negligible – Not Significant	Yes
9	A16	Negligible – Not Significant	Negligible – Not Significant	No
10	Thoroughfare	Negligible – Not Significant	Negligible – Not Significant	No
11	White Road	Negligible – Not Significant	Negligible – Not Significant	No
12	A18	Negligible – Not Significant	Negligible – Not Significant	No
13	A16	Negligible – Not Significant	Negligible – Not Significant	No
14	A46	Negligible – Not Significant	Negligible – Not Significant	No
15	A46 - Grimsby Road	Negligible – Not Significant	Negligible – Not Significant	No
16	Washingdales Lane	Minor– Not Significant	Negligible – Not Significant	Yes
18	A1173	Negligible – Not Significant	Negligible – Not Significant	No
19	A18 - Barton Street North	Negligible – Not Significant	Negligible – Not Significant	No
20	A18 - Barton Street South	Negligible – Not Significant	Negligible – Not Significant	No

Site	Road Name	Significance of Effects		Change in Significance?
		1993 Guidance	2023 Guidance	
21	A16 Peaks Parkway	Negligible – Not Significant	Negligible – Not Significant	No
22	Pear Tree Lane	Negligible – Not Significant	Negligible – Not Significant	No
23	Ings Lane	Negligible – Not Significant	Negligible – Not Significant	No
24	Alvingham Road	Minor– Not Significant	Negligible – Not Significant	Yes
25	Yarburgh Road	Minor– Not Significant	Negligible – Not Significant	Yes
26	Westfield Road	Negligible – Not Significant	Negligible – Not Significant	No
27	A18	Negligible – Not Significant	Negligible – Not Significant	No
28	A16	Negligible – Not Significant	Negligible – Not Significant	No
29	Louth Bypass	Negligible – Not Significant	Negligible – Not Significant	No
30	B1200 Manby Middlegate	Minor– Not Significant	Negligible – Not Significant	Yes
33	Saltfleet Road	Negligible – Not Significant	Negligible – Not Significant	No
35	Thacker Bank	Minor– Not Significant	Negligible – Not Significant	Yes
36	Thacker Bank	Negligible – Not Significant	Negligible – Not Significant	No
38	Three Bridge Lane	Negligible – Not Significant	Negligible – Not Significant	No
39	Mill Road	Negligible – Not Significant	Negligible – Not Significant	No
41	Habrough Road	Minor– Not Significant	Negligible – Not Significant	Yes
42	A1173	Negligible – Not Significant	Negligible – Not Significant	No
44	A160	Negligible – Not Significant	Negligible – Not Significant	No
45	Killingholme Road	Minor– Not Significant	Negligible – Not Significant	Yes
49	A180 - Westgate	Negligible – Not Significant	Negligible – Not Significant	No
50	Grimsby Road	Moderate– Significant	Negligible – Not Significant	Yes
51	A1031	Major– Significant	Negligible – Not Significant	Yes

Site	Road Name	Significance of Effects		Change in Significance?
		1993 Guidance	2023 Guidance	
52	Thoresby Road	Major– Significant	Negligible – Not Significant	Yes
53	A1031 Main Road	Major– Significant	Negligible – Not Significant	Yes
54	Warren Road	Major– Significant	Negligible – Not Significant	Yes
56	A1173	Negligible – Not Significant	Negligible – Not Significant	No
57	Roxton Road	Minor– Not Significant	Negligible – Not Significant	Yes
59	Little Grimsby Lane	Negligible – Not Significant	Negligible – Not Significant	No
60	Brackenborough Road	Negligible – Not Significant	Negligible – Not Significant	No
61	Brackenborough Road 2	Negligible – Not Significant	Negligible – Not Significant	No
62	North Holme Road	Minor– Not Significant	Minor– Not Significant	No
63	Keddington Road	Minor– Not Significant	Minor– Not Significant	No
64	Louth Road 1	Negligible – Not Significant	Negligible – Not Significant	No
65	Mill Hill Way	Negligible – Not Significant	Negligible – Not Significant	No
66	Red Leas Lane	Negligible – Not Significant	Negligible – Not Significant	No
67	Pick Hill Lane	Negligible – Not Significant	Negligible – Not Significant	No
68	Marsh Lane	Negligible – Not Significant	Negligible – Not Significant	No
69	Louth Road 2	Minor– Not Significant	Negligible – Not Significant	Yes
70	Main Road	Negligible – Not Significant	Negligible – Not Significant	No
71	Kings Street	Minor– Not Significant	Negligible – Not Significant	Yes
72	Weelsby Road	Negligible – Not Significant	Negligible – Not Significant	No
73	A46 Laceby Road	Negligible – Not Significant	Negligible – Not Significant	No
74	A16	Negligible – Not Significant	Negligible – Not Significant	No
75	A1173 Manby Road	Negligible – Not Significant	Negligible – Not Significant	No

Site	Road Name	Significance of Effects		Change in Significance?
		1993 Guidance	2023 Guidance	
76	Keelby Road	Minor– Not Significant	Negligible – Not Significant	Yes
77	A180 - East of A1173	Negligible – Not Significant	Negligible – Not Significant	No
78	A180 - Between A1173 and A160	Negligible – Not Significant	Negligible – Not Significant	No
79	Mablethorpe Road	Negligible – Not Significant	Negligible – Not Significant	No
80	Rosper Road	Negligible – Not Significant	Negligible – Not Significant	No

1.3.2 **Table 1-3** shows there are a total of 17 links where a reduced significance is reported when using the 2023 Fear and Intimidation assessment criteria.

1.3.3 There are five links that were assessed to experience a significant impact using the 1993 Guidance, which are assessed as having a Negligible – Not Significant effect using the 2023 Guidance. These links are:

- 50 - Grimsby Road;
- 51 - A1031;
- 52 - Thoresby Road;
- 53 - A1031 Main Road; and
- 54 - Warren Road.

1.3.4 Based on the results of this reassessment it is concluded that applying the 2023 guidance results in a reduction in the reported significance of effects relating to fear and intimidation for 17 of the assessed construction access routes.

Appendix A – 2023 Guidelines Assessment Calculations

Criteria	Degree of Hazard (Level)	Baseline	Baseline				LIBV AASHT	Baseline				Score	Degree of Hazard	Baseline + Development				Score	Degree of Hazard	Baseline + Development				Baseline	Baseline + Development	Significance						
			Minor	Major	Very Major	Critical		Average Hourly	Daily VGV	Average Speed	Average Hourly			Daily VGV	Average Speed	All vehicle Increase	HGV Increase			+600 Daily Increase	+200 HGV Increase	Minor	Major				Very Major	Critical				
Average Hourly Traffic Flow	Minor	600-1,200 (20)	1,200-1,800 (20)	1,800-2,400 (20)	2,400-3,000 (20)	1	1,812	359	750	40	0	0	20	20	Small	1898.461	359	750	40	0	0	20	20	Small	237	39	YES	Very Low	1	1	1	Negative - Not Significant
15 mph VGV Flow	<1 (0-5)	600-1,200 (20)	1,200-1,800 (20)	1,800-2,400 (20)	2,400-3,000 (20)	1	2117	368	756	50	0	0	20	20	Minor	2117.174	368	756	50	0	0	20	20	Minor	258	41	YES	Very Low	1	1	1	Negative - Not Significant
15 mph VGV Flow	<1 (0-5)	600-1,200 (20)	1,200-1,800 (20)	1,800-2,400 (20)	2,400-3,000 (20)	1	4326	264	654	40	0	0	20	20	Minor	4326.581	264	654	40	0	0	20	20	Minor	429	67	YES	Very Low	1	1	1	Negative - Not Significant
20 mph VGV Flow	0-5	600-1,200 (20)	1,200-1,800 (20)	1,800-2,400 (20)	2,400-3,000 (20)	1	6228	349	756	40	0	0	20	20	Minor	6228.721	349	756	40	0	0	20	20	Minor	613	101	YES	Very Low	1	1	1	Negative - Not Significant
Maximum Speed	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	225	11	241	5	0	0	20	20	Minor	225.048	11	241	5	0	0	20	20	Minor	91	91	YES	Very Low	1	1	1	Negative - Not Significant
0-20	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	6300	349	1110	50	0	0	20	20	Minor	6300.243	349	1110	50	0	0	20	20	Minor	528	101	YES	Very Low	1	1	1	Negative - Not Significant
25-30	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	5268	293	600	50	0	0	20	20	Minor	5268.486	293	600	50	0	0	20	20	Minor	481	101	YES	Very Low	1	1	1	Negative - Not Significant
30-35	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	4236	247	450	50	0	0	20	20	Minor	4236.729	247	450	50	0	0	20	20	Minor	334	101	YES	Very Low	1	1	1	Negative - Not Significant
35-40	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	3204	191	300	50	0	0	20	20	Minor	3204.972	191	300	50	0	0	20	20	Minor	187	101	YES	Very Low	1	1	1	Negative - Not Significant
40-45	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	2172	135	150	50	0	0	20	20	Minor	2172.215	135	150	50	0	0	20	20	Minor	40	101	YES	Very Low	1	1	1	Negative - Not Significant
45-50	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	1140	79	75	50	0	0	20	20	Minor	1140.458	79	75	50	0	0	20	20	Minor	-15	101	YES	Very Low	1	1	1	Negative - Not Significant
50-55	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	420	49	45	50	0	0	20	20	Minor	420.701	49	45	50	0	0	20	20	Minor	-70	101	YES	Very Low	1	1	1	Negative - Not Significant
55-60	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	180	29	27	50	0	0	20	20	Minor	180.944	29	27	50	0	0	20	20	Minor	-125	101	YES	Very Low	1	1	1	Negative - Not Significant
60-65	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	90	17	16	50	0	0	20	20	Minor	90.472	17	16	50	0	0	20	20	Minor	-180	101	YES	Very Low	1	1	1	Negative - Not Significant
65-70	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	45	10	10	50	0	0	20	20	Minor	45.236	10	10	50	0	0	20	20	Minor	-235	101	YES	Very Low	1	1	1	Negative - Not Significant
70-75	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	22	6	6	50	0	0	20	20	Minor	22.118	6	6	50	0	0	20	20	Minor	-290	101	YES	Very Low	1	1	1	Negative - Not Significant
75-80	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	11	4	4	50	0	0	20	20	Minor	11.059	4	4	50	0	0	20	20	Minor	-345	101	YES	Very Low	1	1	1	Negative - Not Significant
80-85	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	6	2	2	50	0	0	20	20	Minor	6.039	2	2	50	0	0	20	20	Minor	-400	101	YES	Very Low	1	1	1	Negative - Not Significant
85-90	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	3	1	1	50	0	0	20	20	Minor	3.019	1	1	50	0	0	20	20	Minor	-455	101	YES	Very Low	1	1	1	Negative - Not Significant
90-95	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	2	1	1	50	0	0	20	20	Minor	2.013	1	1	50	0	0	20	20	Minor	-510	101	YES	Very Low	1	1	1	Negative - Not Significant
95-100	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	1	1	1	50	0	0	20	20	Minor	1.007	1	1	50	0	0	20	20	Minor	-565	101	YES	Very Low	1	1	1	Negative - Not Significant
100-110	0-20	20-25 (20)	25-30 (20)	30-35 (20)	35-40 (20)	1	0	0	0	50	0	0	20	20	Minor	0.001	0	0	50	0	0	20	20	Minor	-620	101	YES	Very Low	1	1	1	Negative - Not Significant