Cambridge Waste Water Treatment Plant Relocation Project
Anglian Water Services Limited

Appendix 19.12: Comparison of IEMA 1993 and 2023 Guidance

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Summary

This technical note provides an overview of the sensitivity test carried out to understand whether the release of IEMA 2023 guidelines results in any changes to the significance of effects reported in ES Chapter 19 Traffic and Transport that was completed using the IEMA 1993 guidelines. The technical note covers the matters of accidents and road safety, fear and intimidation, and hazardous loads.

No new significant environmental effects are identified as a result of this sensitivity test.

1 Background

The Examining Authority (ExA) requested in their First Round of Written Questions (ExQ1) that the Applicant confirms the implications of new IEMA guidance, published in 2023, on the traffic and transport assessment that was submitted with the DCO application and which was based on IEMA 1993 guidelines.

> *"New IEMA Guidance about the Environmental Assessment of Traffic and Movement was published in July 2023. Does this have any implications for the methodology or conclusions of ES Chapter 19 [AS-038] which was based on the IEMA's 1993 guidance, or does it require any changes to be made to any proposed mitigation?"*

This technical note has been produced to address the ExA's question and provide a view on new IEMA guidance from the Applicant.

2 Review of IEMA 2023 Guidance and implications on previous assessment

2.1 Introduction

In the response to ExQ1, the Applicant confirmed that the following three assessment criteria required further review alongside the IEMA 2023 guidance: accidents and road safety, fear and intimidation, and hazardous loads.

For the methodology of other assessment criteria, such as severance, the Applicant considers that there have been minimal changes to the assessment of these criteria in the new IEMA guidance and the assessment remains unchanged.

2.2 Accidents and road safety

Table 2-1 provides a comparison of the environmental assessment methodology between IEMA 1993 and IEMA 2023 guidance. The Applicant in the ES Chapter 19 Traffic and Transport (App Doc Ref 5.2.19) has completed the environmental assessment for accidents and road safety based on IEMA 1993 guidance.

Table 2-1 Accidents and road safety: IEMA 1993 guidance and IEMA 2023 guidance

IEMA 1993	IEMA 2023
Accidents and road safety The ES magnitude has been set based on the percentage change in traffic associated with different phases of the Proposed Development: - 0-30%: negligible - 30-60%: minor - 60-90%: moderate - 90%+: major A summary of personal injury collision (PIC) history is available in the ES, Section 3.1 'Accident History'. The assessment carried out in the ES Chapter 19 has concluded that there is no significant effect on accidents and road safety.	The 2023 update to the guidance suggests a number of new assessment approaches that must be included: - an assessment of road accident rates should be undertaken using recent data. This includes the identification of collision clusters - provision of road safety audits: a Road Safety Audit (RSA) should be carried out to review the road safety attributes of the proposed engineering changes. - establish a baseline road safety level for the roads within the study area using iRAP StarRatings[1] protocols. - follow a Safe System approach

Collision clusters

With reference to new requirements under the IEMA 2023 guidance, Section 3.1 'Accident history' of ES Chapter 19 Traffic and Transport (App Doc Ref 5.2.19) provides a summary of the Personal Injury Collisions (PIC) record within the study area. A detailed summary of the PIC record within the study area and by settlement in the 2016-2021 period is available in the Transport Assessment (TA) (App Doc Ref 5.4.19.3). Collision cluster identification has been completed as part of the PIC analysis within the TA and a number of collision clusters have been identified. This aspect of the IEMA 2023 guidance is therefore satisfied.

[1] iRAP Star Ratings are used for road safety inspection, road safety impact assessments, and in designs. Star Ratings are an objective measure of the level of safety which is 'built-in' to the road through more than 50 road attributes that influence risk for vehicle occupants, motorcyclists, bicyclists, and pedestrians

Road Safety Audit (RSA)

An RSA has been produced and included as ES Appendix 19.11 (App Doc Ref 5.4.19.11). The RSA reports only on the road safety implications of the scheme/changes to J34 of the A14. This aspect of the IEMA 2023 guidance is therefore satisfied.

iRAP Star Rating assessment

iRAP star rating surveys have been undertaken every five years on the Strategic Road Network (SRN) in England, which includes the A14. Horningsea Road has not been surveyed.

The iRAP star rating assessment for the A14 concludes that:

- the A14 scores 3 stars, which is a reasonable level of performance compared with the rest of the SRN.
- the change at Junction 34 going from three-arms to four-arms will have a marginal impact on fatal and serious injury estimation due to the low expected additional flow through the junction.

The iRAP Star Rating assessment provides additional background information and forecasts on the SRN and Junction 34 of the A14. Given the results (i.e. that the A14 performs reasonably and the marginal impact forecast at Junction 34), the iRAP Star Rating assessment does not change the results of the original assessment of accidents and road safety based on IEMA 1993 guidance. This aspect of the IEMA 2023 guidance is therefore satisfied.

Safe System approach

The Safe System approach is recommended by IEMA 2023 guidance as the standard to follow for the assessment of accidents and road safety. **Table 2-2** below provides an overview of the Safe System staged approach and what has been completed as part of the original assessment based on IEMA 1993 guidance.

Table 2-2 Comparison of the Safe System approach and assessment outputs based on IEMA 1993

Safe System staged approaches	Assessment based on IEMA 1993
Identify the study area using historic crash data.	PIC data for 2016-2021 has been analysed across a study area comprised of: • the extent of the settlement of Waterbeach • the extent of the settlement of Horningsea • the extent of the settlement of Fen Ditton • the extent of the settlement of Milton • the extent of the settlement of Chesterton • the extent of the settlement of the A10

Safe System staged approaches	Assessment based on IEMA 1993
	• the extent of the settlement of the A14
Undertake objective modelling techniques to establish a baseline road safety level. This can be done using iRAP Star Rating protocols.	The iRAP Star Rating assessment has been provided above. The assessment concludes that the A14 performs at a reasonable level and that marginal impact is expected at Junction 34 due to the change from a three-arm design to a four-arm design.
Assess the effects of additional development traffic for all users and also assess the effect of any new changes to the baseline network such as new access junctions.	The effect of the change from a three-arm junction to a four-arm junction at Junction 34 has been assessed in the Road Safety Audit (RSA). It concludes that vehicle restraint systems (VRS) may need to be provided at locations where there are steep or high embankments. The RSA has otherwise not raised specific concerns on accidents and road safety.

Conclusion

The Applicant concludes that updates to the IEMA guidance in 2023 does not result in a material change to the assessment outputs for accidents and road safety contained within the ES Chapter 19.

2.3 Fear and intimidation

Table 2-3 provides a comparison of the environmental assessment methodology between IEMA 1993 and IEMA 2023 guidance. The Applicant in the ES Chapter 19 Traffic and Transport (App Doc Ref 5.2.19) has completed the environmental assessment for fear and intimidation based on IEMA 1993 guidance.

Table 2-3 Fear and intimidation: IEMA 1993 guidance and IEMA 2023 guidance

IEMA 1993	IEMA 2023
Fear and intimidation The ES magnitude has been set based on the percentage change in traffic associated with different phases of the Proposed Development: - 0-30%: negligible - 30-60%: minor	The 2023 update to the guidance suggests a new assessment approach which involves the calculation of a degree of hazard score based on 18-hour flows and average vehicle speeds. A magnitude of impact can then be determined based on the degree of hazard score.

IEMA 1993	IEMA 2023
- 60-90%: moderate - 90%+: major The assessment carried out in the ES Chapter 19 has concluded that there is no significant effect on fear and intimidation.	

The Applicant has carried out an assessment of B1047 Horningsea Road in the baseline and in construction using new IEMA 2023 guidance, as a test to compare results against the outputs obtained using IEMA 1993 guidance. The total hazard score is 50 across both 2026 baseline and 2026 baseline with construction (year 3 of construction), which indicates that there is no change in the level of fear and intimidation from baseline conditions, and the magnitude of impact is therefore negligible. Results of the test assessment for the calculations of the total hazard score are provided below in **Table *2-4*** and **Table *2-5***.

Table 2-4 Test assessment of B1047 Horningsea Road (main site access) in 2026 With Construction using IEMA 2023

	Average two way flow over 18 hour day	Total 18-hour heavy vehicle flow	Average vehicle speed	Total hazard score
	4563	384	37.97	-
Score	30	0	20	50

Source: Mott MacDonald

Table 2-5 Test assessment of B1047 Horningsea Road (main site access) in 2026 Baseline using IEMA 2023

	Average two way flow over 18 hour day	Total 18-hour heavy vehicle flow	Average vehicle speed	Total hazard score
	4092	106	37.97	-
Score	30	0	20	50

The Applicant concludes that there is no material change to the outputs for the assessment of fear and intimidation and that the effect on fear and intimidation remains not significant.

2.4 Hazardous loads

Table 2-6 provides a comparison of the environmental assessment methodology between IEMA 1993 and IEMA 2023 guidance. The Applicant in the ES Chapter 19 Traffic and Transport (App Doc Ref 5.2.19) has completed the environmental assessment for hazardous loads based on IEMA 1993 guidance.

Table 2-6 Hazardous loads: IEMA 1993 and IEMA 2023

IEMA 1993	IEMA 2023
Hazardous loads The ES magnitude has been set based on the percentage change in traffic associated with different phases of the Proposed Development: - 0-30%: negligible - 30-60%: minor - 60-90%: moderate - 90%+: major The assessment carried out in the ES Chapter 19 has concluded that the effect on hazardous loads is neutral and not significant.	The estimated number of such loads must be outlined. Where the number of vehicles/movements carrying loads is considered to be significant, the assessment should include a risk or catastrophe analysis.

Construction

In the original assessment contained within the ES Chapter 19, the significance of effect for hazardous loads was determined to be neutral and **not significant** (based on a 1,312 m^3 of hazardous waste from the ES Chapter 16 Material Resources and Waste [APP-048]).

The Applicant notes that in response to ExQ1 20.46 , it noted the significance of effect for hazardous loads may have changed from not significant to **significant** due to the updated number of hazardous waste (from 1,312m^3 to 2,280m^3) in the ES Chapter 16 Material Resources and Waste [APP-048].

In response to ExQ1 20.5 (as covered by this technical note), the Applicant has carried out a sensitivity test relating to the effect on hazardous loads in light of new 2023 IEMA guidance and has concluded that the significance of effect remains neutral and **not significant**:

- A worst case assessment of up to 2,280m^3 of total hazardous waste is considered (based on ES Chapter 16 Material resources and waste [APP-048]). This corresponds to approximately 152 HGVs across the entire construction phase (four years' duration).
- Assuming approximately 50 working weeks for construction per year, this equates to:
    - 38 HGVs per year; or
    - Approximately 1 HGV a week

On the basis of the low number of weekly flows required for hazardous loads, the significance of effect is neutral and not significant. t.

Operation

During the operation of the proposed WWTP, a containerised liquified natural gas (LNG) station will be located adjacent to the workshop. The Anglian Water Services Limited tanker fleet, which will undergo conversion, will be able to use this facility to refuel, reducing the carbon footprint of the vehicle operations.

It is not anticipated that vehicles based on at other works or external operators will be using this facility. The delivery of the LNG will be by HGV tanker and consist of 1-2 deliveries per week. The containerised unit will be located on a concrete hard standing with a refueling area out of the way of the internal site access roads.

Owing to the low number of HGV deliveries of LNG, it is considered that the effect is neutral and **not significant**.

Get in touch

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You can view all our DCO application documents and updates on the application on The Planning Inspectorate website:

https://infrastructure.planninginspectorate.gov.uk/projects/eastern/cambridge-waste-water-treatment-plant-relocation/