



Luas Finglas

Environmental Impact Assessment Report 2024

Appendix A5.2: Limits of Deviation Wider Effects Report





Project Ireland 2040 Building Ireland's Future



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SECTION 1: LIMITS OF DEVIATION WIDER EFFECTS REPORT

1.1 Introduction

This report assesses whether the power to deviate within the proposed limits of deviation (LOD) for the Luas Finglas (hereafter referred to as the proposed Scheme) as identified on the property drawings that accompany this Railway Order (RO) application would alter the predicted significant impacts reported in the Environmental Impact Assessment Report (EIAR) by creating new or different (usually increased) significant impacts.

The statutory powers contained within the Railway Order allow for changes within the LOD to occur where it is found that the spatial position of Luas Finglas may need to be adjusted, mainly for reasons of engineering practicability. The LOD will allow permanent Scheme elements to be constructed within a defined envelope that would accommodate alterations in designs and layouts. These limits allow those who are appointed to implement the powers to deviate within stipulated tolerances/parameters from the Scheme design and alignment when constructing the proposed Scheme should it be required.

The LOD applied for as part of this RO application defines the scope of the construction of the proposed Scheme beyond the geographical extent of the Scheme works as described in Schedule 1 of the Railway Order application, should it be required.

All of these elements of the proposed Scheme consent can allow for flexibility in the finalisation of the detailed design and construction, subject to the constraints outlined in this report. This report assesses the maximum adverse environmental impacts of the LOD during both the Construction and Operational Phases. It also outlines mitigation measures to be applied where required, and constraints to the proposed LOD where impacts cannot be mitigated, to avoid any increase in impacts beyond what has been evaluated in the EIAR.

1.2 Limits of Deviation

The LOD is the maximum distance that a railway undertaking is authorised to deviate from the lines of the plans and drawings lodged with a successful application for a RO. The requirement for LOD is outlined in the Transport (Railway Infrastructure) Act 2001 (the 2001 Act). To summarise, the LOD are detailed in Table 1.1.

Scheme Element	Vertically (upwards) (m)	Vertically (downwards) (m)	Horizontally (in all directions from centre line) (m)	Longitudinally (m)
Surface works (not impacting on public roadways)	2	2	5	20
Surface works (impacting on public roadways)	1	1	2.5	20

Table 1.1: Limits of Deviations

It should be noted that any amendments to the alignment are expected to generally occur within construction tolerances, which are much lower than the potential variance indicated in Table 1.1. The maximum construction tolerance is of the order of 200mm in any direction.





However, the LODs set for the proposed Scheme are to accommodate any unknowns that might be encountered at the Construction Phase of the proposed Scheme. The assessment presented in this report is an overview of the potential environmental impacts that could be realised should the proposed Scheme deviate within the extents of these limits.

1.3 Environmental Analysis and Assessment

An environmental sensitivity analysis has been undertaken to identify:

- If the environmental impacts of changes to the Scheme alignment within the LOD are feasible; and
- Whether such changes are more significant and/or different from those assessed in the Environmental Impact Assessment Report, such that the assessment presented in the EIAR would not address all impacts and required mitigation measures. The analysis has regard to all of the environmental assessments undertaken in the EIAR.

The assessment was undertaken in three distinct stages which are as follows:

- Stage 1 Identification of Constraints to the application of LODs: A review of the proposed Scheme alignment to identify locations where there is no scope for LODs to be applied due to constraints.
- Stage 2 Scoping Analysis: An analysis of the potential for environmental impacts not identified within the environmental assessment presented in the EIAR to arise due to alterations to the Scheme alignment within the LOD. Where there is no potential for significant additional environmental impacts for specific disciplines for the different LODs, these are not considered further. However, where the analysis identified any potential for different/additional or increased impacts (than those identified in the EIAR), further analysis is undertaken in the Stage 3 Detailed Analysis.
- Stage 3 Detailed Analysis: Where Stage 2 identified the scope for potential environmental impacts beyond those identified in the EIAR, a more detailed assessment was undertaken in Stage 3. This analysis was undertaken to identify the potential additional receptors that could be impacted should the alignment be changed within the LOD and to identify the requirement for mitigation measures that can be adopted to ensure residual impacts arising are insignificant. This detailed analysis was undertaken having regard to the analysis presented in the EIAR and was based on a spatial analysis of additional receptors potentially impacted by changes to the alignment within the LOD.

1.4 Stage 1 Identification of Constraints to the Application of LODs

The assessment undertaken has identified a number of locations where it is not possible to apply LODs due to constraints in the immediate vicinity of the proposed Scheme. These locations are listed below progressing from south to north along the alignment.

- Tie in location to existing Luas Stop at Broombridge no scope for lateral or vertical deviation given the fixed tie in location to an existing Luas Stop;
- Alignment over the Maynooth Rail Line and Royal Canal no scope for lateral or vertical deviation given the proximity to the existing Broombridge, required clearances over the railway line and tie into the existing Luas Stop at Broombridge;
- Alignment along Broombridge Road no scope for horizontal deviation due to the requirement to
 provide the Luas alignment and realigned Broombridge Road within the proposed Scheme land take
 plus the adjacent developments. There is also very little scope for vertical deviation due to maximum
 gradients to achieve an at-grade crossing point at Lagan Road and Ballyboggan Road plus access into
 the Colorman premises;
- Proposed new bridges at Broombridge and Tolka River no scope for vertical deviation given that the levels of these bridges are set by OPW (Section 50) and Waterways Ireland consents;
- A vertical upward deviation in Tolka Valley Park is not feasible due to the presence of the overhead high-voltage line;





- Alignment from St Helena's Stop through Farnham Pitches no scope for horizontal deviation due to location of adjacent Tusla Resource centre and requirement to relocate two pitches adjacent to the proposed Scheme alignment;
- Alignment along Patrickswell Place very limited scope for lateral or vertical deviation due to the requirement to provide the proposed Scheme alignment and the realigned Patrickswell Place Road within the land available for construction;
- Alignment along Cardiff Castle Road and Ravens Court very limited scope for horizontal or vertical deviation due to the existing Cardiff Castle Road, the Garda Station land take, Raven's Court land take and given the proximity to dwellings;
- Alignment at Mellowes Road / Finglas Village Stop no scope for horizontal deviation due to minimum curvature requirements, the existing road, and the proximity to existing buildings. In addition, no scope for vertical deviation in order to achieve an at-grade crossing point at Mellowes Road; and
- The site constraints at the Park & Ride facility will restrict horizontal deviations. However, a minor vertical deviation may be applied to accommodate the detailed structural design (such as beam depths), which is anticipated to remain well within the specified limits;N2 North Road, along St Margarets Road to the Terminus at Charlestown very limited scope for lateral or vertical deviation due to the existing / realigned St Margarets Road, the land available and the proximity to existing properties.

1.5 Stage 2 Scoping Analysis

The outputs of the Stage 2 Scoping analysis are summarised in Table 1.2. The results are presented for each environmental discipline having regard to the LODs as outlined in Table 1.1 above. The summary presented takes account of an analysis undertaken within Geographical Information Systems (GIS) of additional receptor types within the LOD distances which could be affected by change of the alignment within the LOD. The specialists who authored each of the EIAR chapters were engaged in the analysis. This analysis entailed workshopping these areas with the appropriately qualified specialists in terms of identifying potential for additional environmental effects having regard to the assessment undertaken in the relevant EIAR chapter This analysis involved overlaying the LODs with GIS data on sensitive location/receptors for their consideration.

Locations and disciplines where amendments to the proposed Scheme alignment within the statutory LOD have been confirmed not to give rise to new or different predicted significant effects are not considered further in this report.





Chapter	Vertically Upwards	Vertically Downwards	Horizontally (in all directions from centre line) (m)	Rationale
Traffic & Transport	No potential for significant additional Impacts	No potential for significant additional Impacts	No potential for significant additional Impacts	The assessment of impacts in Chapter 18 (Material Assets: Traffic and Transport), is based on a robust and detailed assessment of potential impacts on traffic, public transport and active transport modes. The proposed LODs in the vicinity of roads are not significant in the context of the assessment undertaken and will not impact the assessment outcomes in the EIAR.
Human Health	No potential for significant additional Impacts	No potential for significant additional Impacts	No potential for significant additional Impacts	The scale of variation to the extent of the proposed LOD will not impact the assessment outcomes in the EIAR as the assessment presented is based on an analysis at a higher more general level. Having regard to potential localised effects, the assessment of impacts is based on the conclusions of other technical chapters in the EIAR.
Population	No potential for significant additional Impacts	No potential for significant additional Impacts	Potential for additional Impacts	Potential horizontal changes within the LOD could result in impacts on different receptors arising from loss of amenity, access, public open space or private property.

Table 1.2: Screening of LOD Impacts by EIAR discipline





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		NY Z
Bonne	agar lompa	ir Eireann

Chapter	Vertically Upwards	Vertically Downwards	Horizontally (in all directions from centre line) (m)	Rationale
Electromagnetic Compatibility & Stray Current	Potential additional Impact	No potential for significant additional Impacts	Potential Impact significant additional Impacts	Potential vertical changes downward will not result in significant impacts beyond those assessed in the EIAR, whereas vertical changes upwards could increase AC and DC levels at receptors. Potential horizontal changes could also impact different receptors.
Noise & Vibration	Potential additional impact	No potential for significant additional Impacts	Potential additional impact	Potential vertical downwards changes will not result in significant impacts beyond those assessed in the EIAR although upward changes could impact the effectiveness of noise barriers. However, potential horizontal changes within the LOD could result in impacts on different receptors arising from airborne noise & vibration.
Biodiversity	No potential for significant additional Impacts	No potential for significant additional Impacts	No potential for significant additional Impacts	The scale of variation within the LOD, based on the identified constraints, will not impact the overall assessment outcomes presented in the EIAR as the assessment is not sensitive to changes in the surface level alignment of between 1 and 5 metres having regard to the habitats identified along the alignment.





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Chapter	Vertically Upwards	Vertically Downwards	Horizontally (in all directions from centre line) (m)	Rationale
Air Quality	No potential for significant additional Impacts	No potential for significant additional Impacts	No potential for significant additional Impacts	The scale of variation within the LOD, based on the identified constraints, will not impact the assessment outcomes presented in the EIAR as the assessment is not sensitive to changes in the surface level alignment of between 1 and 5 metres.
Climate	No potential for significant additional Impacts	No potential for significant additional Impacts	No potential for significant additional Impacts	The Climate assessment entails calculations having regard to GHG emissions arising from the proposed Scheme and is independent of specific geographic locations. The resilience of the proposed Scheme to climate change impacts is also undertaken at a scale where the proposed LODs are irrelevant.
Water (Hydrology)	No potential for significant additional Impacts	No potential for significant additional Impacts	No potential for significant additional Impacts	Based on the identified constraints, potential vertical variations within the LOD will not impact the assessment outcomes, presented in the EIAR. Similarly, potential horizontal changes within the LOD do not cross any additional waterbodies to those assessed in the EIAR, and so there are no significant additional environmental impacts.





Chapter	Vertically Upwards	Vertically Downwards	Horizontally (in all directions from centre line) (m)	Rationale
Hydrogeology	No potential for significant additional Impacts	No potential for significant additional Impacts	No potential for significant additional Impacts	The scale of variation within the LOD will not impact the assessment outcomes presented in the EIAR.
Soils & Geology	No potential for significant additional Impacts	No potential for significant additional Impacts	No potential for significant additional Impacts	The scale of variation within the LOD will not impact the assessment outcomes presented in the EIAR.
Land Take	No potential for significant additional Impacts No potential for significant additional Impacts	No potential for significant additional Impacts No potential for significant additional Impacts	No potential for significant additional Impacts No potential for significant additional Impacts	Potential vertical changes within the LOD will not impact the assessment outcomes, presented in the EIAR. Potential for minor changes if there are changes to horizontal alignment introduced but would not be expected to be significant in terms of overall land take. No potential impacts at ground level.
Infrastructure & Utilities	No potential for significant additional Impacts	Potential for significant additional Impacts	Potential for significant additional Impacts	Vertical and horizontal alignment changes are potentially significant where a shift of alignment could impact on utilities crossing the alignment.
Materials & Waste Management	No potential for significant additional Impacts	No potential for significant additional Impacts	No potential for significant additional Impacts	Any changes in volumes of materials would not be significantly different to those currently assessed in the EIAR.





Chapter	Vertically Upwards	Vertically Downwards	Horizontally (in all directions from centre line) (m)	Rationale
Cultural Heritage	No potential for significant additional Impacts	No potential for significant additional Impacts	No potential for significant additional Impacts	The scale of variation within the LOD will not impact the assessment outcomes presented in the EIAR as the assessment presented is based on an analysis at a higher more general level.
Landscape & Visual	No potential for significant additional Impacts	No potential for significant additional Impacts	No potential for significant additional Impacts	The assessment is undertaken based on an analysis of the potential for impacts on Local Landscape Character Areas (LLCAs) and on the visual amenity. The scale of variation within the LOD is not of a scale to impact the overall assessment outcomes presented in the EIAR.
Risk of Major Accidents and Disasters	No potential for significant additional Impacts	No potential for significant additional Impacts	No potential for significant additional Impacts	The assessment is undertaken at a scale where the proposed amendments to the LOD is not significant and so does not affect the outcomes presented in the EIAR.

1.6 Stage 3 Detailed Analysis

The following section describes the environmental disciplines identified in the Stage 2 Scoping Analysis which had been subject to further assessment. A commentary is provided on the likely significant environmental impacts which are predicted will result from a change in alignment with the proposed LODs. Where appropriate, references have been made to potential mitigation measures that will be employed in specific locations.

1.6.1 Electromagnetic Compatibility & Stray Current

The potential impacts arising during the Construction and Operational Phases of the proposed Scheme are assessed in the EIAR chapter. The analysis entails modelling of potential impacts arising from Electromagnetic Interreference (EMI) and stray current during the Operational Phase of Luas Finglas. The assessment identified no potential for significant effect during the Construction Phase. The outputs of the modelling are presented in the chapter as EMI levels predicted as sensitive receptors along the alignment during Operational Phase of the proposed Scheme, and mitigation measures required.





In addition, a review of additional sensitive receptors within the full extent of the LOD, not previously identified for the proposed alignment in the EIAR, revealed no further sensitive receptors within this area. Therefore, considering the constraints identified, no additional potential impacts are anticipated should any changes within the LOD be required.

1.6.2 Noise and Vibration

The potential impacts arising during the Construction and Operational Phases of the proposed Scheme are assessed in the EIAR chapter. The analysis entails modelling of potential impacts arising from construction activity and from the operation of Luas Finglas. The outputs of the modelling are presented in the chapter as noise and vibration levels predicted as sensitive receptors along the alignment during both the construction and operational phases of the proposed Scheme and required mitigation measures.

In order to avoid or reduce significant airborne noise effects during operation, the proposed Scheme incorporates noise barriers, as necessary.

Where there are any horizontal changes to the alignment of the surface works within the extent of the LOD there could be changes in the receptors most impacted by airborne noise and ground vibration if the route alignment moves closer to them. However, given the relatively small LOD in the horizontal direction it is unlikely that any new receptors will be impacted significantly.

As a result, the implementation of the proposed mitigation measures as described in the EIAR Chapter 15 (Noise & Vibration), would mean that there would be no predicted change to residual impacts identified within the EIAR chapter. The mitigation measures during the construction phase of the proposed Scheme will be implemented at source i.e. adjacent to the construction activity.

1.6.3 Population

The Population chapter in the EIAR presents an assessment of the potential for impacts on journeys, amenity, severance and economic activity during the construction and operational phases. The assessment is partially based on outputs of other assessments such as Traffic and Transport, Noise & Vibration, and Landscape & Visual. As a result, if these assessments identified a potential for additional impacts associated with potential deviations within the LOD, these could also affect the population assessment.

1.6.4 Infrastructure and Utilities

The potential impacts on infrastructure and utilities are assessed in the EIAR chapter having regard to the potential for significant disruption to the relevant material asset during the Construction and Operational Phases. This assessment identified potential impacts and proposed mitigation measures. A change in the vertical alignment through the retained cut sections would have the potential to impact on the conclusions (pre-mitigation) of the utilities assessment presented in the EIAR as any change within the extent of the LOD would have the potential to impact utilities that have not previously been identified in the EIAR. However, the proposed mitigation measures identified in Chapter 17 (Infrastructure & Utilities) i.e. diversion of utilities and measures to protect against potential settlement would ensure that the residual impacts identified in the EIAR would not be changed, should a change within the LOD be required.

1.7 Mitigation Measures

In order to ensure that the environmental effects of the proposed Scheme will not exceed or be different to those set out in the EIAR, specific provisions/conditions relating to the control and management of the receiving environment have been included in the Construction Environmental Management Plan, which will be updated following the grant of any RO to reflect all conditions imposed by the Board. The nominated appointed contractor(s) will take forward the detailed design and implementation of the proposed Scheme after the RO has been enacted. The appointed contractor will be required to comply with all environmental commitments set out in the RO and any further conditions set out by the Board.





Together, this will ensure that no impacts will arise that have not been identified, described and evaluated in the EIAR.

1.8 Conclusions

The analysis of the potential LOD set out in this document:

- Has identified areas where the LODs will not be applied (at Stage 1) and Identification of Constraints to the Application of LODs;
- Has identified in respect of which environmental factors, different impacts or increased impacts are predicted to arise if the proposed Scheme is developed within a different part of the LOD than the Scheme is proposed to be located (at Stage 2 Scoping Analysis); and
- Based on the assessments presented in the individual assessment chapters potentially different and/or additional impacts associated with possible deviations to the route and structures have been identified, within the stipulated LODs. It is concluded that there would be no change to the required mitigation measures or residual impacts from the application of the mitigation measures set out in the EIAR (Stage 3 Detailed Analysis).











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