

**THE FELIXSTOWE BRANCH LINE AND
IPSWICH YARD IMPROVEMENT ORDER INQUIRY**

SUMMARY

PROOF OF EVIDENCE OF

JOHN DAVID DRABBLE



Port of Felixstowe



ROYAL HASKONING

This proof of evidence relates to the implications of the following application:

An application under section 1 of the Transport and Works Act 1992 for works to improve Ipswich Yard through the provision of new sidings and other associated works between London Road Bridge and Ipswich railway station and to construct a second railway line in alignment with and to the southern side of the existing Felixstowe Branch Line from a point west of Mile Post 78.5 on the Branch Line to a point east of the railway platforms at Trimley station, to include works to level crossings along the Branch Line, made on 13 December 2005 and including the revisions and amendments submitted to the Secretary of State for Transport on 5 May 2006.

Application reference:

TWA 05/APP/04

**THE FELIXSTOWE BRANCH LINE AND
IPSWICH YARD IMPROVEMENT ORDER INQUIRY**

**Summary Proof of Evidence of John David Drabble,
on matters relating to Air Quality impact.**

1. INTRODUCTION

- 1.1 My name is John David Drabble and I am employed by Royal Haskoning as an Advisory Group Director in the Environment Division, specialising in air quality, air pollutant emissions, atmospheric dispersion modelling, regulation and permitting and environmental impact assessment.
- 1.2 I have a Bachelor of Science Honours Degree in Chemistry, and a Master of Science Degree (with Distinction) in Environmental Protection.
- 1.3 I am a Member of the Institute of Air Quality Management, the Institution of Environmental Sciences and the Institution of Chemical Engineers, and have more than 20 years experience in the assessment of air pollutants and their effects.
- 1.4 I gave evidence on air quality matters at both the Bathside Bay and the Felixstowe South Reconfiguration Inquiries.

2. SCOPE OF EVIDENCE

2.1 My evidence relates to ambient air quality issues arising from the proposed Order. It therefore covers the release, dispersion and potential impact of pollutant emissions to atmosphere from construction activities, freight rail transport, and relevant activities at Ipswich Yard and Ipswich Fuel Point.

3. BASELINE AIR QUALITY

3.1 Background air quality along the length of the branch line, at Ipswich Yard and at Westerfield was considered. Information from Local Authority ambient monitoring networks, and from background pollutant data available on the UK Air Quality Archive, was used, and projected forward in accordance with recommended procedures Defra Technical Guidance¹.

3.2 The benchmark air quality standards used in the impact assessment were those laid down in the government's Air Quality Strategy and the associated Air Quality Regulations^{2,3,4,5}. The Regulations prescribe health-based air quality 'Objectives',

¹ Defra (and the Devolved Administrations) (2003). *Local Air Quality Management Technical Guidance LAQM.TG(03)* [CD 40].

² Department of the Environment, Transport and the Regions (2000a). *The Air Quality Strategy for England, Wales and Northern Ireland. – Working Together for Clean Air. DETR Cm4548; London, The Stationery Office.*

³ Department of the Environment, Transport and the Regions (2000b). *The Air Quality (England) Regulations 2000 (No 928); London, The Stationery Office [CD 68]*

⁴ Department for Environment, Food and Rural Affairs (2003a). *The Air Quality Strategy for England, Wales and Northern Ireland: Addendum. PB7874; London, The Stationery Office*

⁵ Department for Environment, Food and Rural Affairs (2003b). *The Air Quality (England)(Amendment) Regulations 2002 (SI 2002 No 3043); London, The Stationery Office [CD 69]*

against which Local Authorities are required to periodically review and assess air quality within their areas. If any Objective is likely to be exceeded, a Local Authority must designate an Air Quality Management Area.

3.3 Suffolk Coastal District Council has completed its statutory air quality review and assessment procedures, and no Air Quality Management Area (AQMA) has been designated.

3.4 Ipswich Borough Council has declared three AQMAs due to NO₂ from traffic exhaust emissions on specific town centre roads, but not in areas close to Ipswich Yard, the Fuel Point or the Westerfield crossing.

4. CONSTRUCTION PHASE AIR QUALITY IMPACTS

4.1 The air quality assessment of the construction phase of the scheme was based on consideration of the construction programme, predicted plant and equipment usage, and location in relation to residential properties.

4.2 The location of the construction compound adjacent to the roundabout on High Street in Trimley St Martin as originally proposed was re-located during the course of the planning discussions, to minimise the potential noise and dust impact upon residents of Reeve Lodge. The new main compound area is well beyond 200m from Reeve Lodge and fugitive dust impacts are not likely to be significant at this receptor location.

4.3 A Code of Construction Practice (COCP) will be operated which will incorporate construction dust minimisation and management techniques. The approach will follow best practice guidance on the control of dust emissions from construction activities, published after the ES was prepared⁶.

5. BRANCH LINE OPERATIONAL IMPACTS

5.1 A modelling study was undertaken to predict pollutant concentrations at receptor locations, resulting from the release and dispersion of freight train exhaust emissions. The receptor locations were selected as the residential properties in closest proximity to the rail line along the length of the proposed scheme.

5.2 Primary emissions of nitrogen oxides, PM₁₀ particulate matter and sulphur dioxide were calculated. Total carbon dioxide emissions likely to be generated by the scheme were also estimated. The operational impacts of increasing train movements were assessed between a base year (2005) and a fully developed scheme in 2023.

5.3 Comparison of the baseline pollutant concentration values with those predicted for the fully developed scheme indicate that for NO₂ the short-term average levels increase whereas the long-term (annual) average levels for both NO₂ and PM₁₀ are predicted to marginally reduce. The short-term average PM₁₀ and SO₂ concentrations show a

⁶ Greater London Authority and London Councils (2006). *The Control of Dust and Emissions from Construction and Demolition – Best Practice Guidance*. November 2006.

mixed distribution with marginal increases and decreases depending on receptor location. However none of the respective health-based air quality Objectives is predicted to be exceeded in the base year or fully developed scheme completion year.

5.4 Emissions from freight and passenger rail sources are therefore not predicted to have a significant impact on worst-case receptor locations, those being the residential properties in closest proximity to the rail line, for a fully operational double tracking scheme between Trimley St Mary and Warren Hill.

5.5 Whilst total CO₂ releases along the dualled length of track would increase by 32%, the absolute values are small in relation to regional emissions associated with transportation, and the additional CO₂ emissions would be offset were the containers to be transported by road. The CO₂ generation from HGV traffic transporting the additional containers (by 2023), only along the length of the proposed dualled line, would be more than double the release from equivalent transportation by rail⁷. Clearly this difference is further enhanced if the full hinterland routes were to be considered.

Standing Train Emissions

5.6 The modelling of NO_x and SO₂ emissions from a freight train standing with its engine idling for an assumed (worst-case) 1-hour period indicates that the concentrations at the nearest receptor location to each existing signal would be well below the

⁷ Assumptions made: 24-wagon trains; 85% load utilisation; 275 rail working days per year; TEU to container factor of 0.671; container to HGV factor 1.41; average CO₂ emission factor for rigid and articulated HGVs 208g/km (rural driving). Sources evidence presented at Bathside Bay and FSR Public Inquiries, and NAEI¹³.

respective short-term health-based air quality Objective. It expected that the new signalling scheme and the timetable for the dualled line can be organised so as to preclude trains leaving the North Terminal from standing to join the Branch Line.

5.7 Ipswich Borough Council commissioned an air quality monitoring survey at a property on Ancaster Close in 2006. Provisional results for a 4-month period of September to December showed that the statutory Objectives were not exceeded during the monitoring period. Ipswich Borough Council has indicated that the monitoring survey will continue until around April 2007.

5.8 Since the publication of the ES, a further dispersion modelling study was carried out to assess the impact of the combined emissions of a number of locomotives standing with their engines idling at Ipswich Fuel Point. Total annual mean nitrogen dioxide concentrations are predicted to be lower than the existing situation at properties on Ancaster Close. The predicted short-term concentrations show a marginal 5% increase as an average of the 4 property locations selected as receptor points. Despite the predicted increase in number of locomotives likely to use the Fuel Point, the modelling results reflect the lower emissions from the Class 66 locomotives, and the lower background concentrations in future years.

Emissions from Vehicles Queuing at Westerfield

5.9 The Addendum ES describes the existing and predicted with-scheme situations in respect of barrier down times at Westerfield Junction. The potential impact of vehicle emissions on concentrations of NO₂ and PM₁₀, the primary traffic-related pollutants, was assessed at properties adjacent to the crossing.

5.10 The model results show that the predicted pollutant concentrations in 2006 are well below the relevant health-based Objective, and as background concentrations reduce in future years, the concentrations for 2010 are lower still.

6. OBJECTIONS

6.1 A number of objections have been submitted in respect of air quality matters. Several of the Objections make general reference to air quality, emissions, odour or traffic exhausts, to the effect that air quality will deteriorate should the scheme be consented.

6.2 My response to these general objections that the assessment of potential impacts of the scheme concluded that none of the health-based Objectives would be exceeded at any of the receptor locations considered, either over short-term periods or as an annual mean. In many respects the studies used a conservative approach, and the worst-case conclusions can be assumed to reduce with distance from the rail line.

6.3 Other Objections refer to emissions from vehicles queuing at Westerfield, and this issue has been addressed in my evidence at paragraphs 5.13 and 5.14 above. Objections relating to emissions from trains standing at signals have been addressed at paragraph 5.9 above. The issue of emissions from trains standing at Ipswich Fuel Point has been subject to further modelling studies, and Ipswich Borough Council has commissioned a monitoring survey. The results of both the modelling studies and the continuous monitoring survey indicate pollutant levels below the Government's health-based air quality Objectives. The monitoring and modelling results would not require Ipswich Borough Council to designate the location as an Air Quality Management Area.

6.4 The Fuel Point has been in use in its current location for a number of years, and its use will continue irrespective of the scheme gaining consent. Its operation is not required by the scheme, and although the scheme will bring about an increase in operations, any potential impact of the scheme on air quality at this location will not be significant.

7. CONCLUSIONS

7.1 Predicted emissions from diesel freight trains were used in a detailed modelling study to determine the impact on air pollutant concentrations at residential properties along the length of the branch line in question.

7.2 The study concluded that none of the health-based Objectives would be exceeded at any of the receptor locations considered, either over short-term periods or as an annual mean. Whilst total emissions from diesel engine exhausts would increase, atmospheric dispersion means that levels of the key pollutants were not predicted to exceed relevant standards at properties close to the rail line.

7.3 I conclude that the scheme proposed by the Applicant will not give rise to any significant impacts on ambient air quality.