Bonneagar Iompair Éireann
Transport Infrastructure Ireland

TII RESEARCH

RESEARCH PROJECT TITLE: DEVELOPMENT OF ADVANCED STRATEGIC NOISE MAPS FOR THE NATIONAL ROAD NETWORK

START DATE: **January 2008**	END DATE: **December 2010**

CONTRACTOR: Trinity College Dublin
RESEARCHER: Dr. Eoin King
PRIMARY SUPERVISOR: Prof. Henry Rice
TII MENTOR: Dr. Vincent O'Malley

DESCRIPTION: Statutory Instrument No. 140 (April 2006) specifies how environmental noise is to be assessed and managed in Ireland. In these Regulations, TII is designated as the noise mapping body responsible for mapping the major roads in the country. This means that TII has to produce noise maps for over 3,000km of national roads. The first phase of this mapping in 2007 revealed a number of issues that had to be addressed in order to produce effective noise maps by 2012. Research was undertaken to develop more advanced ways of producing strategic noise maps to allow TII comply with the 2012 deadline.

OBJECTIVES:

- To develop more advanced methods of measuring and predicting noise produced by traffic on national roads
- To enhance the integration of noise studies with a Geographic Information System (GIS) application, in order to ensure the effective implementation of the required noise mapping
- To assist in co-ordinating post Environmental Impact Assessment (EIA) evaluation studies to examine the effectiveness of the various noise mitigation measures used on the national road network

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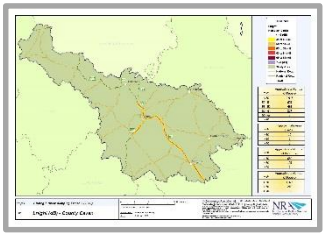
BENEFITS: This research enabled TII to fulfil its obligations regarding the production of noise maps and to do this in a more cost-effective way by developing a more highly structured system of data collection and management. The project also assisted in coordinating post-EIA evaluation studies to examine the effectiveness of the various noise mitigation measures used on the national road network.



RESEARCH FINDINGS:

- This project allowed for the integration of aerial LiDAR data into strategic noise mapping in Ireland for the first time
- The enhanced noise mapping techniques enabled TII to become the national body for coordinating the centralised approach to strategic noise of all major roads
- New GIS based calculation methodologies were developed for calculating exposure statistics for most exposed façades
- Post EIA evaluation studies resulted in the publication of a new design manual for noise barriers on national roads

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