Introduction to Environmental Impact Assessment, 4th Edition

J. Gasson, R. Therivel and A. Chadwick
Routledge, New York, (2012), 392 pp. Paperback, 55.95 USD, ISBN 978-0-415-66470-7

I wanted to review this book. After doing dozens, nay hundreds, of community noise monitoring projects, all with different durations, different metrics, and different criteria, I was hoping to find something that could explain the rationale behind the various requirements. This book did not help me in that respect but it did give a very good understanding of what the environmental impact assessment (EIA) process involves. I am glad to have this volume.

The authors produced a book that is useful as a text or a reference: the former because it provides questions and references after each chapter and the latter because it is a quite comprehensive treatment on the makeup, requirements, and development of an EIA. The book mostly focuses on United Kingdom and European Union approaches but can easily be read and applied, at least in theory, to North American issues.

The edition is in four parts and subparts, which follows:

Part 1—Principles and Procedures

- Introduction
- Origins and development
- UK agency and legislative content

Part 2—Process

- Starting up: early stages
- Impact prediction, mitigation and enhancement
- Participation, presentation, and review
- Monitoring and auditing: after the decision

Part 3—Practice

- An overview of UK practice to date
- Case studies of EIA in practice
- Comparative practice

Part 4—Prospects: Widening the Scope

- Strategic environmental assessment
- Improving the effectiveness of project assessment

An appendix with some directive, regulations, etc., completes the contents.

The authors do a good job of explaining EIA: the phases, what the phases are for, and how they work. I must say, EIAs are much more complicated than just noise prediction (estimation) and follow-up monitoring. Noise is a just small portion of the EIA process too. From land use, to right-of way to citizen involvement to economic issues to air, water, power issues to sustainable development; noise usually, takes a back seat. But as many of you readers know, if there is nothing left to contest about in an EIA, noise will pop up.

In this book, noise plays a minor part. In the more than three pages of definitions, CRTN (I bet you don't know what that is), dB, dBA, and L_{10} are the only noise metrics discussed although in the text, other metrics are mentioned and never get defined (OK-CRTN = calculation of road traffic noise.)

In the discussion of the origins of the EIAs, there is a very good treatment of the National Environmental Policy Act (NEPA) and the USA experience. It was in 1969, during the time of Nixon of all people, that EIAs became established and they have been used worldwide ever since. As I write this (September 2012), the EIA is in the news because of the controversial "Keystone Oil Pipeline," that extends from Canada to the Gulf Coast of the USA where economics, politics, and science are converging and conflicting to make a very contentious assessment.

The book discusses areas of "science" that fall under EIAs. Often subjects specifically like "noise and vibration" appear. However, sometimes the noise issues are hidden and categorized under "energy." And sometimes they do not show up at all. Surprisingly, or not, in the UK with much stronger noise regulation than USA, of the approximately 20+ specialties dealing with environmental assessment, 22% of environmental consultants stated acoustics was a skill in demand. With "noise" ranking 19th, only "process engineering" was below.

In the evaluation of all aspects in EIAs that can somehow be quantified, people must put a value on each to reach a decision as to how to proceed, that is, how to determine if wetlands, or clean water, or population displacement, is more important than clean air, and so on. One matrix gave weightings as shown below even though the "weighting" is subject to bias and should (must?) address concerns of those impacted. You see where noise rates.

Impact	Ranking
Air quality	21
Water quality	42
Noise	9
Ecosystem	28
TOTAL	100

The book discusses how EIAs must somehow put value things that are not easily quantifiable like quality of life, aesthetics, annoyance, dislocation, and must help determine an overall meaning of "good." It discusses methods of prediction, including mathematical models (noise mostly but also air), physical and architectural models, expert judgment, and analog models. In the section dealing with mitigation, it briefly discusses the frequency of noise monitoring and where those monitoring records are kept.

In one section on decision-making, an airport map showing a 65 Ldn (DNL) (not found in definitions) contour overlaid on area with minority population. How many, if any, minorities should lie in the "loud" zone? Should the poor suffer? These decisions on competing interests must be very difficult. As mentioned, noise gets a very short treatment. In a very brief table, on traffic noise standards in Britain (Table 5.5) a lot of the content is just sloppy and incorrect acoustics (for example, many of the metrics are unexplained and there is an introduction saying that "noise is measured in decibels (dB) at a given frequency").

I really liked this book. It is full of information, nicely bound, with double column pages for easy reading, some very nice color photos of major projects, and a discussion of many countries experiences (Canada as the North American example). I learned a lot about EIAs and the role of noise in environmental impact. So no, I did not learn much about noise or noise impact, and I suspect readers of this Journal too will learn little about noise if they buy this book. However, the value in the book, and it is a very big value, it is that it gives a real understanding of EIAs.

Recommended.

Richard J. Peppin
Scantek, Inc.
6430c Dobbin Road
Columbia, MD 21045 USA
PeppinR@asme.org