07024 A H



Environmental Management of Road Maintenance -with Emphasis on "Green Procurement"

Charlotta Faith-Ell

Stockholm 2000

Licentiate Thesis
Division of Land and Water Resources
Department of Civil and Environmental Engineering
Royal Institute of Technology

ABSTRACT

Maintenance of roads exerts an impact on the environment in different ways, for example through pollution of air, land and water, noise and vibrations, damage of natural and cultural environment, consumption of natural resources, and results in waste. There are several policy instruments that can be used in order to improve the environment. Examples of these are taxes, procurement, standardisation and ecolabelling.

Procurement of road maintenance with environmental requirements (so called "green" procurement) is currently used within the Swedish National Road Administration (SNRA). Procurement of road maintenance with environmental requirements has to consider some factors in order to be relevant. First, the environmental problems which have been identified in connection with road maintenance. Second the environmental objectives which have been stated on different levels, supra-national, national, regional and local.

The aim of this study is to examine how road maintenance can be managed in order to adapt it to a more environmental perspective. The research is based on the results of a literature review, a content analysis and a case study. Environmental requirements have been identified and the performance by the contractors has been investigated in the study.

The conclusions of the study are that road maintenance can be environmentally managed through procurement with environmental requirements. There is a correspondence between the environmental requirements in the procurements and known environmental problems and the national environmental quality objectives. The study shows that there are no definite lines of demarcation between different means of control, several means of control can overlap each other. Procurement for example can not be a policy instrument all by itself, it interacts with other policy instruments. Procurement with environmental requirements has to be co-ordinated with other plans and procedures for example waste management plans and Environmental Impact Assessments for roads. In order to make procurement with environmental requirements a well functioning policy instrument for road maintenance the follow-up of the requirements must be improved.

TABLE OF CONTENTS

ABSTRACT1		
REFACE	5	
INTRODUCTION	7	
1.1 BACKGROUND	7 8	
METHOD		
METHODOLOGICAL CONSIDERATIONS	15	
REPORT I	15 15	
RESULTS		
Environmental aspects of road maintenance Environmental objectives, policies and restrictions	21	
Environmental policy instruments	22	
STANDARDISATION	24	
ENVIRONMENTAL PRODUCT DECLARATIONS	24	
REPORT II HAVE ENVIRONMENTAL REQUIREMENTS BEEN USED?	26	
What categories of environmental requirements can be found?	27	
HOW DO THE CONTRACTORS PERFORM THE ENVIRONMENTAL REQUIREMENTS?	30	
WITH LOWER REQUIREMENTS?	31	
ARE THERE ANY PROBLEMS IN PERFORMING THE REQUIREMENTS, FOR EXAMPLE THE REGULATIONS FROM MUNICIPALITY?	м тне 32	
CONCLUSIONS OF REPORT II	32 33	
DISCUSSION	35	
6.1 THE CONNECTION BETWEEN ENVIRONMENTAL PROBLEMS, OBJECTIVES AND REQUIREMENTS	37 39	
	INTRODUCTION 1.1 BACKGROUND 1.2 PROBLEMS 1.3 OBJECTIVES 1.4 SCOPE OF THE STUDY. METHOD METHODOLOGICAL CONSIDERATIONS REPORT I REPORT I REPORT I REPORT II CURSTIONNAIRE ETHICAL CONSIDERATIONS. RESULTS REPORT I ENVIRONMENTAL ASPECTS OF ROAD MAINTENANCE. ENVIRONMENTAL ASPECTS OF ROAD MAINTENANCE. ENVIRONMENTAL ASPECTS OF ROAD MAINTENANCE. ENVIRONMENTAL OBJECTIVES, POLICIES AND RESTRICTIONS. ROAD MAINTENANCE IN SWEDISH NATIONAL ROAD ADMINISTRATION. ENVIRONMENTAL POLICY INSTRUMENTS. PROCUREMENT STANDARDISATION. ECO-LABELLING. ENVIRONMENTAL PRODUCT DECLARATIONS. CONCLUSIONS OF REPORT I. REPORT II HAVE ENVIRONMENTAL REQUIREMENTS BEEN USED? HOW HAVE THE ENVIRONMENTAL REQUIREMENTS DEVELOPED OVER TIME?. WHAT CATEGORIES OF ENVIRONMENTAL REQUIREMENTS OF THE REGIONS? ARE THERE ANY DIFFERENCES IN THE REQUIREMENTS OF THE REGIONS? ARE THERE CONTRACTORS PERFORM THE ENVIRONMENTAL REQUIREMENTS ON THE REGIONS? HOW DO THE CONTRACTORS PERFORM THE ENVIRONMENTAL REQUIREMENTS DURING CON- WITH LOWER REQUIREMENTS? ARE THERE ANY PROBLEMS IN PERFORMING THE NEW ENVIRONMENTAL REQUIREMENTS DURING CON- WITH LOWER REQUIREMENTS? HOW IS THE CLIENT FOLLOWING UP THE REQUIREMENTS? ARE THERE ANY PROBLEMS IN PERFORMING THE REQUIREMENTS, FOR EXAMPLE THE REGULATIONS FROM MINICIPALITY? CONCLUSIONS OF REPORT II QUESTIONNAIRE DISCUSSION 6.1 THE CONNECTION BETWEEN ENVIRONMENTAL PROBLEMS, OBJECTIVES AND REQUIREMENTS.	

8 FURTHE	R RESEARCH45
REFERENCES	47
REPORT I	ENVIRONMENTAL MANAGEMENT OF ROAD MAINTENANCE
	ENVIRONMENTAL REQUIREMENTS IN PROCUREMENTS OF ROAD E - A CONTENT ANALYSIS AND A CASE STUDY
APPENDIX A	DEFINITIONS
APPENDIX B	GLOSSARY