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## The Groundwater Protection Scheme in Ireland: A RISK-BASED TOOL FOR Effective Land-use Planning

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### ABSTRACT

The groundwater protection scheme in Ireland provides an effective means of assessing the impacts of potentially polluting activities on groundwater resources, and hence of providing appropriate guidance on development. The scheme involves the classification of land into different zones according to the level of risk of groundwater pollution (based on maps of groundwater vulnerability, resource classification and source protection areas), and the production of development guidelines, or 'responses', for each zone for activities such as landfills and on-site wastewater treatment systems. The scheme has a number of features in common with the groundwater protection policy in England and Wales, but includes features specific to hydrogeological conditions and pollutant sources found in Ireland. The preparation of schemes for individual counties is facilitated by the use of GIS systems, and much of the information produced will be useful also in the preparation of plans for River Basin Districts, as required under the new EU Water Framework Directive. The directive requires that groundwater and surface water are managed in an integrated way, and the integration of groundwater protection schemes with measures for the protection of surface water is one of the challenges to be addressed in the future.

### INTRODUCTION

Land-use planning and environmental planning (which in this paper is taken to encompass environmental impact assessment, integrated pollution control licensing, waste licensing, water pollution legislation, and so on) are the main approaches used in Ireland for trying to achieve a balance between the need to protect the environment and the need for development. However, land-use planning is a dynamic process with social, economic and environmental interests and impacts influencing to varying degrees the use of land and water. In a rural area, for example, farming, housing, industry, tourism, conservation, waste disposal and water supply are potentially conflicting interests, and may compete for priority.

A key requirement in good decision-making, at all levels of environmental planning (including developers and regulatory authorities), is the availability of reliable information on all relevant issues, in a form that can be readily used. In Ireland, groundwater protection schemes are becoming an effective means of providing relevant information on groundwater (including resources, vulnerability and general hydrogeology), and of integrating geoscientific information on rocks and groundwater into land-use planning. Schemes are prepared on a county by county basis, and follow the guidelines laid down in the national groundwater protection scheme.