

Mineral Resource Land-use Information and Policy

D. B. Hopper and F. J. Bonner

The Land-use Group consists of a senior planner and a land-use geologist who provide the Minerals and Energy Branch with land-use information and policy, and planning services that relate to mineral resources. The Land-use Group provides a link between the provincial government's interests in geoscience and the public's need for geological and mineral resource information. Policy and regulatory analyses are conducted on land-use, resource and environmental planning and development initiatives, which have the potential to affect mineral exploration and development. Principal clients include interested stakeholders in the use of land and resources, such as other resource departments, municipal units, community economic development agencies, other non-government organizations and landowners. Activities in 1998 focused on (1) information services, (2) Integrated Resource Management (IRM), (3) policy reviews, and (4) review of the Miller Report.

Information Services

The Land-use Group prepares geological, mineral resource and land-use information, maps, reports and digital products, using a geographic information system (GIS), to facilitate land-use, resource and environmental planning and decision-making. The group also provides information to government and its clients on mineral resources, mineral use, mineral potential, land use, IRM, reclamation, mineral recycling and sustainable development. Maps and reports were prepared for geotechnical consultants, municipal and transportation planners and departmental staff. The information services can be grouped into several themes including: general inquiries, presentations, conferences, student project assistance, and special projects.

General Inquiries

The Land-use Group handles a wide range of information requests from the public, industry and government. Inquiries included information on acid drainage, aquifer and flood-risk mapping, watershed mapping, mineral resource assessments for candidate protected areas, land ownership status for prospectors, statistics on land area disturbed by mining in Canada, and geological and mineral resource mapping for the Department of

Agriculture's Wetland Evaluation Screening Tool (WEST) project.

The Land-use Group is beginning to focus more on community economic development issues. Initial plans were discussed for organizing and presenting geological and mineral resource information to communities and local businesses. Several requests were handled that are closely related to community economic development such as geological information for international interests in horizontal drilling for lateral pipeline development in Nova Scotia, and community water supply and industrial development issues. One idea, by a Halifax-based company, involved the use of construction waste to neutralize acid drainage problems in abandoned and inactive slate pits.

Requests also came from the Department of Transportation and Public Works for mineral resource and geological information needed in new highway development projects. A route location process gathers key data to screen out constraints including geological hazards and conflicts with mineral resources, including current and potential activity. Three projects were provided with resource mapping information including one in New Minas, another in Beavertown, and a proposed 100-series, 4-lane, controlled access highway connecting highways 102 and 103.

Presentations

The Land-use Group coordinated a series of papers presented to graduate students in resource and environmental studies at Dalhousie University. F. J. Bonner presented an overview of the role of geoscience in planning and decision-making. H. V. Donohoe focused on the main activities of exploration and mining and their economic effects in rural Nova Scotia. D. B. Hopper addressed the need to integrate mineral resource and land-use planning in Nova Scotia.

Presentations were also given to junior high school students at a 'Science and Technology Conference'. This involved explaining the role of a professional geologist and conducting a resource management module designed after the Jim Campbells Barren story.

Articles were written for *Minerals Update* on the subjects of land access and mineral resources in Nova Scotia and an update on the protected areas agenda.

Conferences

The Annual Canadian Land Reclamation Association (CLRA) conference, held in Toronto, was attended by F. J. Bonner. CLRA is a national organization associated with the American Society for Surface Mining Reclamation (ASSMR). Several presentations focused on mining-related projects, including a program for managing abandoned aggregate properties and community involvement programs in mine-site reclamation. Informal discussions about establishing a Nova Scotia Chapter of CLRA were initiated by the CLRA Executive.

Student Project Assistance

The Land-use Group provided advice to a number of student projects from the College of Geographic Sciences, Nova Scotia College of Art and Design (Environmental Planning), and Dalhousie University.

Special Projects

The Land-use Group also conducts special projects along the theme of minerals, geology and land-use planning. The development of a digital, thematic atlas (a set of interactive, digital maps covering the province at 1:50 000) called the 'Mineral Resource Land-use (MRLU) Atlas' continued this year. This is a compilation of digital, mineral-based inventories that are stored as thematic layers. These thematic layers show the location and distribution of mineral occurrences, sand and gravel deposits, coal seam traces, operating and abandoned mines, quarries and pits, old gold workings, drillholes, geomorphological features, geohazard indicators, mining leases and permits, and special land-use designations. This year about 90% of all MRLU data were transferred from hard-copy maps and made available in digital form. Final development of the MRLU digital atlas and a companion database will be undertaken during the summer of 1999.

Integrated Land-use and Resource Management

The need to integrate geological and mineral resource interests with other land-use and resource planning is clearly identified in the province's Mineral Policy, Nova

Scotia's Sustainable Development Strategy, and the department's Integrated Resource Management (IRM) process. This year the Land-use staff continued to work with the regional IRM teams and the provincial IRM steering committee - the Integrated Resource Management/Land-use Committee (IRM/LUC).

The Land-use geologist worked with regional geologists in representing geological and mineral-based interests in the IRM process. All IRM overview and commitment layers for mineral resources were developed for the three regions. Two maps were compiled for the Eastern Region at a scale of 1:200 000, two maps for the Western Region at a scale of 1:125 000, and four for the Central Region at a scale of 1:125 000.

In support of developing the 'Base Case' for the Central Region's IRM process, eighteen mineral inventory maps were compiled at a scale of 1:125 000. These maps displayed known geological and mineral resource information including, geology, mineral occurrences, abandoned mine openings, pits and quarry locations, drillholes, surficial geology, water supply areas, and resource commitments such as petroleum licence blocks and mineral licences, mining leases and permits.

Municipal water supply areas in Halifax and Hants counties were also defined, updated and plotted on a series of IRM maps at a scale of 1:125 000. A similar set of maps are being planned for the Eastern and Western regions.

The senior planner continued to provide planning and process advice to the regional IRM teams as well as to the IRM/LUC. At the regional level this involved reviewing drafts of IRM overview documents from all regions and attending regional IRM meetings. Special assistance was provided to the Central Region IRM team by working through each step of the IRM planning process. The planner also acted as a resource person for the Central Region's public consultation sessions.

Writing the IRM planning framework document continued to be a major task of the senior planner. The main objective of the framework document is to provide a clear, easily understood description of the IRM process for the regional IRM planning teams. Drafts were sent to IRM/LUC members and the three regional IRM planning teams. Principle issues still to be resolved include the incorporation of an ecosystem-based management system, defining local area planning, and setting provincial resource objectives and indicators.

Policy Reviews

The Land-use Group reviews and advises on land-use matters and related policy initiatives as they affect the mineral industry. This involves monitoring, reviewing and advising on land, environmental and natural resource-based policy, planning and development initiatives. The objective is to ensure the protection of mineral resources, land access and mineral tenure for mineral exploration in Nova Scotia. Local land-use priorities, land access, tenure and environmental issues are also monitored and considered in mineral resource management, exploration, mining and reclamation programs. The group also participates in various intra- and inter-departmental land-use, environmental planning, and strategic development initiatives. This service includes reviews and commentary on environmental assessment documents as well as other development initiatives conducted by other departments.

This year the 'Municipal Government Act: a working paper in legislative form' was reviewed. Recommendations were made to forge communication links with the Department of Housing and Municipal Affairs to review Municipal Plans, to form an interdepartmental consultation process for developing statements of provincial interest, and to develop for statutory amendment one or more statements of provincial interest regarding natural resources.

Other reviews conducted involved the Department of Environment's Watershed Management Strategy; the Federal Government's Water Strategy and the Gully Conservation Strategy; the World Commission on Protected Areas policy on mining and associated activities

in relation to protected areas; a Halifax Regional Municipality draft by-law regarding blasting regulations; municipal controls on pits and quarries, with special attention to the control over rock crushers; and provided input to a Land Access workshop held during the Mines Ministers' Conference in Calgary.

Environmental assessment registration documents reviewed included the Greenhills Coal Development project, Melford Gypsum Quarry, Coalburn Mining project in Thorburn, and the Berichan (Cottam Settlement) Project in Debert. Staff also coordinated the department's review of environmental assessment documents for the Halifax and Point Tupper pipeline laterals.

Miller Report Implementation Plan

In December 1997, Mr. George Miller was commissioned by the government of Nova Scotia to carry out a review of the structure and staff of the department's Minerals and Energy Branch. The review was completed at the end of March 1998, and the Miller Report outlined a number of recommendations to be considered by an implementation team.

Staff of the Land-use Group were assigned to the following two committees to discuss implementation of the Miller Report: a program review team, and a mineral development and policy team. Staff participated in the review of the Miller Report and proposed an alternative program structure for the Minerals and Energy Branch. Staff also participated in the development of a proposed Mineral Development and Policy (MDP) Group.

