

# Geoscience for Communities

*Garth J. DeMont<sup>1</sup>*

There are two equally important components of a community's fiscal balance sheet: expense and revenue. Nova Scotia's rich mineral endowment provides significant opportunities to add dollar values to the revenue side of the balance sheet while geology, if properly incorporated in the land-use planning process, could help reduce expenses.

The drive to find alternate sources of energy is generating strong interest in some underexplored mineral resources in rural Nova Scotia, in places that are in need of economic development opportunities. In the news we hear lots of discussions about windmills in Nova Scotia, but there is rarely a word spoken about the materials required to build these power generators. Occurrences or deposits of rare earth elements (REEs) used to manufacture the powerful magnets found in the generator coils, and copper used in the coils and electrical wiring, are both being explored for in Nova Scotia. Other commodities under active exploration include lithium used in Li-ion storage batteries and flake graphite used in a multitude of applications including electrodes in fuel cell engines and Li-ion batteries. The Geological Services Division of DNR is providing some of the geoscience research capacity required to locate and explore these deposits.

The managers of the Halifax International Airport can tell you the economic impacts of geohazards. Treating the acidic water coming off their site has cost them millions of dollars since the airport was built in 1957. Acid generating rocks are found throughout the southern mainland of Nova Scotia. Geological mapping and geophysical surveys can be used to define areas of high risk for acid rock drainage. If this geoscience information is incorporated in community land-use plans communities could avoid some future expenditures for water treatment.

Aggregate resources are required for all development projects. The largest component of the cost per tonne of aggregate is often transportation. The distance from the quarry gate to the development project can have significant influence on project costs. Transport costs are expected to rise in sync with rising fuel prices. Communities could see significant reductions in their development expenses if they identify good aggregate resources near their future development centres and then include plans for development of these resources in their land-use plans.

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<sup>1</sup>Nova Scotia Department of Natural Resources, 1701 Hollis Street, Halifax, NS B3J 2T9