

Highlights of the Community Engagement Program in 2014

G. J. DeMont

Community Guidebook

A guidebook designed to assist communities with their engagement of mineral exploration companies was written in 2014. This is a companion document to Information Circular ME 2014-068: *Community Consultation: A Guide for Prospectors and Mineral Exploration Companies Working in Nova Scotia*.

Information Circular ME 2014-068 guides prospectors and exploration companies to consult with communities, but communities are often not prepared to engage in discussions on mineral exploration activities. This stems from a lack of exposure by community members to earth science (geology) and mineral resource development in the provincial school curriculum. Earth sciences are taught in packaged modules in grades 4 and 7, and some high schools offer earth sciences as a grade 12 elective science course. In addition to this education deficiency, the mineral industry has historically maintained a low profile in communities. Mineral companies often surface in communities during the environmental permitting process required to open a new mine. The result is that many community members and leaders are not exposed to mineral exploration until late in the mineral development process.

The new guidebook focuses on the exploration stage of mineral resource development for two reasons: (1) most mineral development activities in Nova Scotia are at the early exploration phase, and (2) once mineral exploration projects reach the advanced exploration and mine development phases they should have already established community engagement programs.

The guidebook includes a questionnaire for use by communities to capture relevant information on proposed mineral exploration surveys, and a set of tables that outline some potential benefits, risks and

mediation options for mineral exploration surveys. The questionnaire and tables are the key components of the guidebook, but it also contains educational materials and a question and answer section.

A draft of the report was completed in 2014 and circulated to Mining Association of Nova Scotia, Sierra Club Atlantic, Eastern Shore Forest Watch, Department of Municipal Affairs and Union of Nova Scotia Municipalities for review. Comments were received from some of these organizations and the author is waiting for a response from the other reviewers. Comments will be compiled and revisions made in 2015. The final draft will be recirculated for comments once the revisions are complete. The final document should be released in 2015.

Tourism Engagement Activities

Richmond County is undertaking development of a tourism enhancement project which will focus on attracting tourists to the county's waterways and coastline. This includes the coastline of Isle Madame, St. Peters Canal and the Bras D'Or Lakes. The author contacted the municipality in 2014 to ask if there was an opportunity to use geology to enhance the educational stories they will pursue in this tourism project. They agreed that this was a good opportunity so Department of Natural Resources conducted some preliminary ground and library research to develop storylines in 2014. These stories will be developed further when the project advances to the educational product development stage in 2015-2016. The municipality is currently working on final designs for infrastructure required for the project to proceed.

The author spent a half day at Peggys Cove again this year training the student tour guide and Visitor

Information Center staff on the geological history of Peggys Cove. Visitors to the cove often ask the staff and tour guide about the history of the granite rocks and glacial erratics seen at the cove.

University Engagement Activities

A third year planning course at the Dalhousie University School of Planning entitled *Geology and Land-Use Planning* was completed in April 2014. This is the second year the course was offered at the school. A number of geoscientists from Nova Scotia Department of Natural Resources and Natural Resources Canada were guest lecturers in the course, which covered topics from coastal erosion to mineral resource development and their relevance to land-use planning. The lectures were also used as learning credits for professional planners. The presentations always generated lively debate. Students did an excellent job researching geological topics and presenting their findings on how these issues impact landuse planning developments. The author and colleague Jeff Poole also gave presentations on geology and mineral resource development to a second year planning class. This was the fifth year for this presentation. These lectures provide the branch with opportunities to educate land-use planners about geological issues at an early stage in their careers. A similar presentation was also given by the author to a fourth year course offered at Dalhousie University's School of Resource and Environmental Studies.

Coastal Program Community Engagement Activities

All municipalities in Nova Scotia were required to produce a Climate Change Adaptation Plan in 2014 to receive their allocated portion of the Gas Tax Rebate. Most municipalities in Nova Scotia contain coastal communities within their jurisdiction. In the future, due to predicted increases in sea-level rise, and predicted increases in storm frequency and intensity, coastal areas of Nova Scotia are expected to see an increase in vulnerability to coastal flooding and erosion. This increased level of risk provides an opportunity for the Geological Services

Division to engage with municipalities on the development of methodologies and land-use planning tools required to monitor and reduce the risks associated with coastal erosion and coastal flooding.

The north shore of Nova Scotia bordering the Northumberland Strait is perhaps the area at highest risk to increases in coastal erosion rates related to climate change. The coastline in this area is composed primarily of a mixture of soft sedimentary rocks and glacial sediments, materials that are subject to high rates of erosion during storm events. Most of the intense storms impacting this coastline occur during the winter months. Historically, ice covering the strait dampens the impact of these winter storms because it effectively prevents formation of large wind-driven waves. Climate change predictions indicate reductions should occur in the extent of this winter ice over time to the point where ice-free conditions will eventually prevail in the straits. If these predictions are proven to be correct, erosion rates are expected to increase significantly along this coastline.

This shoreline is an area of concentrated cottage and residential housing development so the economic risks are also significant if erosion rates and coastal flooding risks increase. Many of the cottage lots have been eroded to the point where the land owners have to make a choice between abandoning their properties and armoring the coastline. A high percentage of the shoreline is protected from erosion by coastal armoring but the quality of this armor varies from poor to good. It is not difficult to find areas where the armor is showing signs of collapse. Even properly armored shorelines only buy time for the local land owners. The armoring will eventually collapse and erosion will start again. The tax revenue obtained from these cottage properties is a significant source of revenue for both the province and the municipality so abandonment of coastal properties could result in a drop in revenues. This loss could be offset by a shift in tax burden to landowners who were previously not billed as coastal land owners, but now find their lands, due to erosion, are new coastal properties.

Due to the high risk of increasing vulnerability to erosion and flooding and the inherent health, safety

and financial risks, this coastline was chosen as an area to establish DNR coastal erosion monitoring sites. The author contacted the Municipality of Cumberland County in 2014 to discuss development of an erosion monitoring project along the county's shoreline bordering the Northumberland Strait. The municipality is supportive of the project and indicated they might have some staff time they could allocate to working on the project.

The Geological Services Division purchased a Real Time Kinematic (RTK) GPS unit in 2014 for use in

coastal monitoring. In 2014, the coastal mapping team worked with staff in Crown Land Survey Division to develop a Nova Scotia Department of Natural Resources Erosion Control Survey Marker. An order was placed for the survey markers so they are now available for use in the Coastal Erosion Monitoring Project. A number of sites for placement of these markers on Crown lands in Cumberland County were identified in 2014. These sites will be targeted for placement of monitoring pins in 2015.