

2006 Aggregate Program

G. Prime

The primary function of the Aggregate Program is the evaluation of the mineral aggregate resource in Nova Scotia. This research includes the examination of bedrock that could be quarried for the production of crushed stone, and surficial deposits consisting of sand and gravel. The focus of the work is the collection of data that can be used to assess and delineate aggregate potential. This geoscientific information has a variety of applications, but the most common use is assisting industry in finding sources of high-quality stone for construction purposes. Data are also used to seek out new aggregate opportunities which may result in an economic benefit to the province. The long term goal of this program is protection of this vital resource for the future. Issues such as population growth, land-use conflicts, zoning bylaws, regulatory legislation, recreational interests and public opinion are continually impacting access to the resource land. Unless measures are taken to protect these basic, but indispensable materials, they may disappear in the areas where they are needed the most. The future socio-economic and environmental implications of this would be significant for the province and its communities.

The focus of efforts in 2006 has been a regional study in the Annapolis Valley and a provincial bedrock study. The Annapolis Valley Project is an assessment of the aggregate resource in Hants, Kings, Annapolis, Digby and Yarmouth Counties. For more than a decade a combination of air photo interpretation, field investigation and laboratory analysis of test samples has resulted in a substantial amount of data being collected for input into a digital database. These data include all aspects of the aggregate resource as well as potential for other specialty stone products. During the summer of 2006, the Geological Information Services Section continued digital entry of the data. This included the input of field descriptions and the scanning and entry of photographs collected for the project. Other field related work during this period included a final examination of the study area, the recording of recently created exposures (e.g. new quarries) and photography in areas where there were gaps in coverage. Currently the data entry and field review are nearing completion. Final manipulation of the data and report preparation will require at least another year of effort. The completed ArcView® digital product will consist of thousands of point locations and site descriptions, laboratory analyses for hundreds of samples, and an extensive collection of photographs. It is anticipated that the database will have multiple uses, including exploration for aggregate and specialty stone deposits, land-use applications and other geoscientific research. Ultimately it is hoped that the information will highlight the need for policies and measures to protect this strategic resource.

The Nova Scotia Bedrock Aggregate Project is a collaborative study with Dr. Chris White, Nova Scotia Department of Natural Resources, to evaluate crushed stone potential throughout the province using a detailed geoscientific approach. Although previous studies under the Aggregate Program applied geoscientific methods to the field work, the laboratory analysis was generally restricted to materials engineering tests. The goal of this project is to conduct geochemical and petrographic studies in conjunction with the aggregate tests to refine our understanding of what makes high-quality stone. The primary product of the research will be a province-wide bedrock resource database using the results of this study, as well as data collected from other sources. During the winter of 2006, samples from the South Shore were collected and analyzed for aggregate quality. Further sampling in the same area and possibly in the eastern Cobequid Mountains is anticipated later this fall and early winter if weather conditions are satisfactory. The petrographic examination and aggregate testing on the samples will continue during the winter of 2006-2007.