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The primary source of aggregate in Nova Scotia is crushed stone from bedrock. In 2009, approximately 72% of aggregate production came from quarries scattered throughout the province. This reflects the generally high quality and consistency of the products that are produced at these operations. Although high quality sand and gravel is still being used, the deposits have been heavily exploited and are becoming more difficult to find. Another advantage related to geological characteristics is the size of the deposits. Producers can typically extract a far greater volume of materials from a bedrock deposit than a gravel deposit with the same operational footprint. Gravel deposits are typically twenty m or less in thickness whereas bedrock deposits can be mined at significantly greater depths.

Because of the importance of crushed stone to our economy and communities, the focus of DNR aggregate research has been the bedrock potential. Public works agencies constantly need new sources of high quality stone in proximity to construction sites to minimize haulage costs. It is very costly to repave in an area if they have to haul the stone from existing operations several tens of kilometres away. If a closer source of rock can be identified and accessed by the road builder, the taxpayer benefits from the cost saving in haulage costs. Because construction stone is used in such large quantities, quarry reserves are also significantly diminishing in many of the permanent operations, leaving producers with the daunting task of finding new deposits in the future. But the search for new deposits is becoming increasingly difficult. Land-use issues, urban sprawl, regulatory legislation and rigid materials standards have dramatically reduced the amount of accessible resource land. The result is that it is becoming increasingly important to define the resource from a geological perspective. This information quickly narrows the search and identifies the options available to government and industry.

This oral presentation will be an overview of how bedrock aggregate potential is affected by geology and offer suggestions regarding the exploration process. We will look at the properties that the stone materials must have in order to be acceptable for construction purposes. These characteristics will then be examined in terms of Nova Scotia’s geology, which is remarkably complex yet can be reduced to some relatively simple rules in terms of the exploration process. Finally we’ll examine the value of this geological research. Is it worth it? This brief discussion will examine the benefits of using superior materials, including the potential for cost savings to the tax payer. It will also stress the importance of being geologically informed regarding environmental issues and the need to protect public health and safety. Due diligence by government and the industry is critical in today’s society. Not paying attention to the geology could have significant legal and financial implications for all concerned.

A final report is currently being prepared which will examine all of these subjects in greater detail.

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