Aggregates in New Brunswick

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Sand, Gravel and Crushed Rock

The humble mineral commodities known as aggregate — sand, gravel and crushed rock — are princely in importance. In fact, aggregates are absolutely vital to our industrial infrastructure.

Construction projects rely on concrete, asphalt, roofing granules and other aggregate-based items. Aggregate products appear in water treatment plants and sewer systems. Specialized aggregate material supports the chemical and smelting industries. Our entire transportation network of highways, runways and railroad beds revolves totally around aggregate resources.

Where does aggregate come from?

The same glaciers that helped to shape New Brunswick landforms also left behind rich deposits of sand and gravel. The province's granular aggregate is obtained primarily from these unconsolidated sediments, which were deposited by the receding glaciers between 10,000 and 13,000 years ago.

New Brunswick crushed stone production is derived from bedrock that ranges from 350 to 600 million years old. Various bedrock types are crushed for stone, including limestone, granitic gneiss, basalt, shale, greywacke and metasediments. Crushed limestone and sand were probably the first industrial minerals ever used by European settlers in New Brunswick. Homesteaders in the late 17th century mixed sand with burned limestone to produce mortar for stone houses and barn foundations.

Production and Development

The production of mineral aggregate from bedrock and granular deposits is widespread throughout New Brunswick, with the larger more permanent operations tending to be strategically located near higher-demand urban centres. Granular deposits of sand, gravel and related materials are extracted by dozens of small companies and independent contractors, most of which are operated on an intermittent-demand basis. The bulk of the province's crushed rock is produced from ten to fifteen quarries located within economical trucking distance of higher-demand centres or areas lacking in quality granular resources. For several reasons, including shortage and variability of granular material and rising processing costs, there is an increasing preference toward the use of bedrock or "crushed rock" as a source of aggregate materials.

The 1990s have seen an unprecedented amount of highway and related infrastructure construction in New Brunswick that has led to considerable interest in locating and developing sources of high-performance mineral aggregate from bedrock and granular deposits. Apart from meeting increased requirements for the domestic market, the export of mineral aggregate from New Brunswick tidewater locations began in the mid 1990s and continues to gain momentum. Beginning with shipments of sand into the New York area, aggregate export has recently expanded to include bedrock that is quarried and processed adjacent the port facility at Bayside in southwestern New Brunswick. Combined annual shipments of these materials are in the range of 1,000,000 tonnes and now form a significant part of port traffic at Bayside.

Interesting Facts

- *Some of the glaciers that created New Brunswick's commercial sand and gravel deposits reached a thickness of about 1.5 km.*
- *By age 75, the average Canadian will have used about 450 tonnes of aggregate material.*
- *8.5 million tonnes of rock, gravel and sand were consumed during the primary construction phase of the Fredericton to Moncton highway project, not to mention millions of tonnes of quality aggregate materials that went into 1.5 million tonnes of asphalt and 57 000 cubic metres of concrete.*