

## CHAPTER 3. CONCLUSIONS

The three sources of aggregate in Cumberland and Colchester Counties are granular aggregate, bedrock aggregate and slag. Currently, granular aggregate is the overwhelming material of choice by industry, however resource depletion, deposit sterilization, environmental concerns and more stringent product specifications will undoubtedly cause a shift towards bedrock operations.

### GRANULAR AGGREGATE

The major sources of sand and gravel in Cumberland and Colchester Counties are outwash plain and ice contact deposits. The outwash materials are generally more consistent in character than ice contact deposits and often are easier to process. However, their location on valley floors or lowland plains results in strong competition for the land due primarily to population density. The best quality outwash deposits lie on the northern side of the Minas Basin between Kemptown and Five Islands, Colchester County. The ice contact deposits are more widespread in the region, however there is little consistency within and between deposits. There are several major kame deposits west of Folly Lake in the Cobequid Highlands which are capable of producing high quality aggregate.

Sand and gravel deposits north of the Cobequid Highlands are extremely scarce. Those few that are present contain primarily sedimentary clasts and abundant fines.

Several alternative sources of granular materials have been identified in this study, including colluvium, residuum and alluvial fans. Colluvium and residuum are suitable as low quality aggregate for fill or access road construction. The alluvial fan deposits occur as small lenses on the edge of lowlands. The gravels in the fans can be of excellent quality because of igneous-metamorphic source areas for most of the deposits.

### BEDROCK AGGREGATE

The best sources of bedrock aggregate in the study area are the igneous-metamorphic belt comprising the Cobequid Highlands and the Triassic basalt outliers. The igneous-metamorphic rocks most suited to the production of durable aggregate are the volcanics, granitoids and quartzites. Advantages in quarrying the Highland areas are: (1) the quality of the rock, (2) the

remoteness of the location, and (3) a generally thin overburden. However, it should be noted that occasionally the granitoids have a deep weathering profile or residuum overlying the solid rock, producing a thick overburden which would be costly to remove.

The Carboniferous sedimentary rocks produce a less durable aggregate which is best suited for fill, road base and erosion control. Exceptions to this are a few of the sandstones, conglomerates and limestones (carbonates) which exhibit greater durability.

The two largest population centres in the study area are Amherst, Cumberland County, and Truro, Colchester County. Correspondingly the potential economic growth in these towns suggests that they will be the major aggregate consumption areas in the region. An examination of the aggregate potential near both towns indicates that bedrock will play a more important role in the future. The best aggregate potential near Amherst is the igneous-metamorphic bedrock on the northern edge of the Cobequid Highlands between Lakelands and Collingwood, Cumberland County. Near Truro, the main potential is the igneous-metamorphic rocks on the southern edge of the Cobequid Highlands between East Folly Mountain and Upper Kemptown, Colchester County.

### FERROUS SLAG

An alternative to the conventional sources of aggregate is the ferrous slag at Londonderry, Colchester County. The slag, a byproduct of the iron and steel industry, produces a durable material suitable for a variety of local uses. However, several characteristics in the materials probably make them unsuitable for the production of concrete and asphalt. Slag represents a minor component of the aggregate budget for the region.