

Addendum to Standard 1.2.8 Narrative

In [GEOG110](#), students are also learning about the factors that contribute to the favorable circumstances allowing Michigan to place itself as a major manufacturing center for the United States. From there its influence has reached out to the rest of the world. They learn that Michigan Basin's position in a stable part of the North American Plate provides stability and isolation from earthquakes and volcanic activity. Erosion and glacial activity scoured deeply along margins of the basin to generate Lakes Michigan and Huron to the west and the east. Even deeper erosion in the north formed Lake Superior. Water connections through this lake system formed a natural system for water transport.

In addition to very long, fresh water shorelines for Michigan, these lakes provided major inland waterways for transporting iron ore from major deposits near Lake Superior to smelters and steel mills close to Michigan on the south shores of Lake Michigan. These mills then shipped steel by ship and by train to manufacturing plants in Michigan. Following the manufacturing process, finished products could move by rail throughout the United States or by water to the Atlantic for parts of the United States or to international ports worldwide. More recently interstate highways have provided important connections within Michigan and out to the rest of the United States and Canada. More and more finished metal products have moved along this highway system.

Detroit and the region around it were close to the steel plants and had good transport networks for obtaining materials and parts. At the same time this area was close to major markets in the northeastern United States. Proximity to waterways also facilitated auto shipment to customers worldwide. Detroit developed into the center for automobile manufacture, and the big three auto companies (GM, Ford, and Chrysler) established headquarters in this area. Understandably, major parts suppliers established themselves as close as possible.

Students are learning about relationship between industrial development, high technology, and education. Automobiles provide a good illustration. As autos, roads, and transportation in general improved, technology advanced and high technology industries formed around the manufacturing centers. Support for this technological development required strong educational institutions. The University of Michigan, Michigan State University, and Wayne State University all participate actively in research and development. Michigan is among the top states for the annual number of engineering graduates nationally.

Students are surprised to learn of the valuable forests and forest products coming from Michigan. Many logs left the state for processing elsewhere. In time Grand Rapids became a major center producing office furniture, having once been known as the furniture capital of the world.

Variations in the climate provide an excellent opportunity for students in southwestern Michigan to experience and study local modifications of regional climate patterns. The regional climate is humid continental. Lake Michigan modifies this with warmer temperatures that generate lake effect snowfall and enhanced rainfall. With this local warming, a fruit belt extends along the western margin of the state close to the shore. Consequently, Michigan annually produces the largest crop of tart cherries and one of the largest blueberry crops in the United States. Farther from the lake, colder winters favor the dairy industry and dairy products that provide the greatest agricultural income for the state.