

Coal barges on the Ohio River near Cincinnati

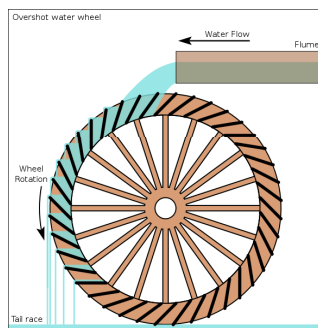


Manufacturing is the large-scale transformation of raw materials into finished goods that have higher value, typically with the use of machines, tools, labor and one or more more sources of power.

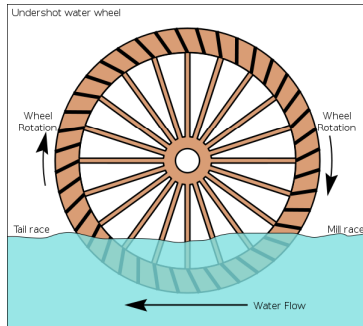
Water mill outside Boston



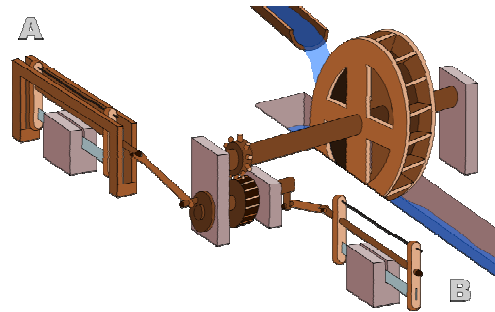
Overshot water wheel



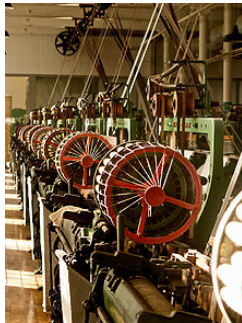
Undershot water wheel



Inside a hypothetical water mill



Cotton manufacturing museum Lowell, MA



Bridge sign, Trenton, NJ

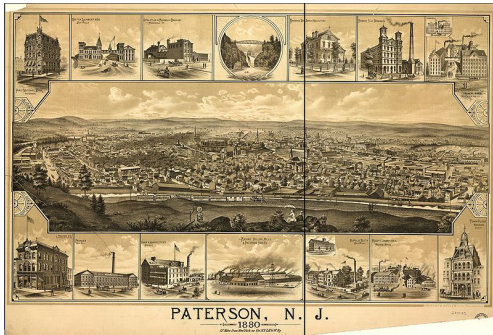


Paterson, NJ



The Great Falls of the Passaic River Paterson, NJ





Lowell, MA and the Merrimack River



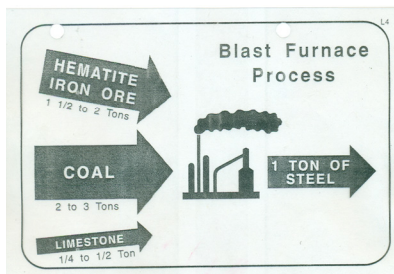
Abandoned mill by the confluence of the Merrimack and Concord Rivers, Lowell, MA



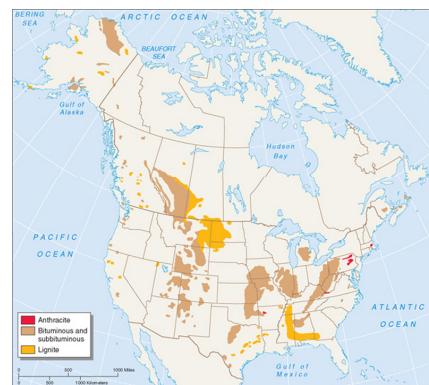
Heavy industry on the Cuyahoga River near Cleveland, Ohio

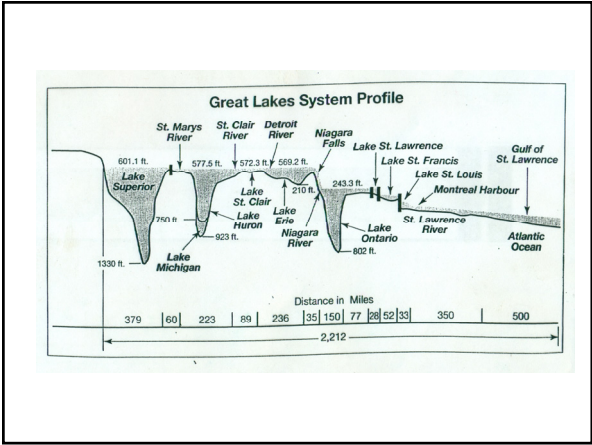
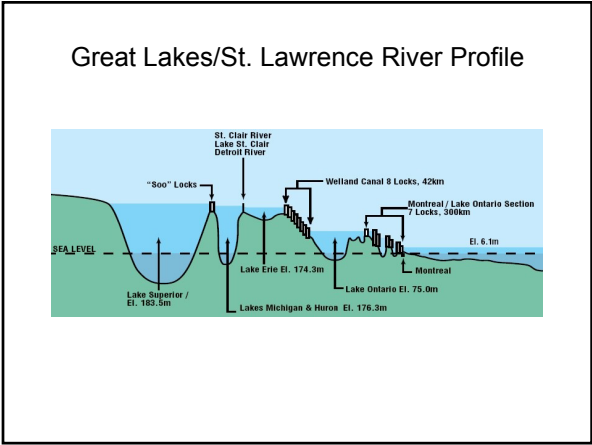
Recipe for Making Steel

(art by Phil Gersmehl)



Coal





The locks at Sault Sainte Marie



Pittsburgh, PA



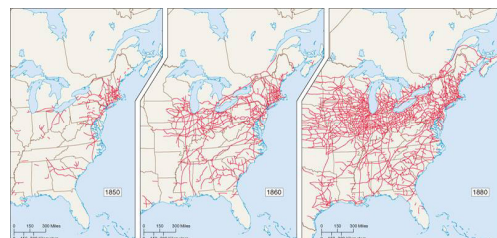
A Pittsburgh steel mill:
vintage photo



Vintage photo of air pollution from
Pittsburgh steel mill



Railroads in the Eastern U.S., 1850-1880





Detroit:
Satellite image



from the French,
de troit – “of the
narrows”

Located along the
narrow Detroit
River (a channel)
that connects Lake
Erie (bottom) with
Lake St. Clair
(upper right)

A **choke point** is a location along a strategic narrow route that provides passage from one region to another.

Control of a choke point facilitates control over one or both of the adjacent regions.

Detroit: looking north along the Detroit River to Lake St. Clair (in the distance)

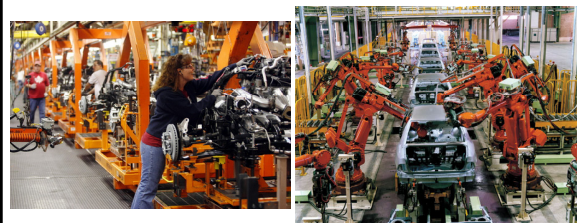


Henry Ford (1863-1947)

Industrialist, automobile manufacturer, and pioneer of the assembly line technique of mass production



A Modern Automobile Assembly Line





The Ford Plant at River Rouge



Ore Boat at River Rouge



Ford Plant at River Rouge



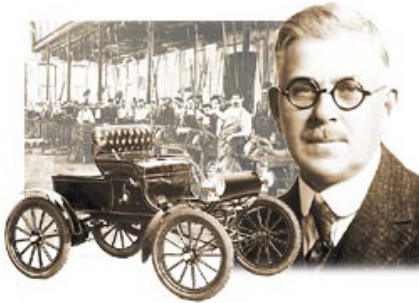
Ford's River Rouge Plant



Louis Chevrolet, 1911



Ransom E. Olds



R.E. Olds out for a test drive (Note the condition of the road)

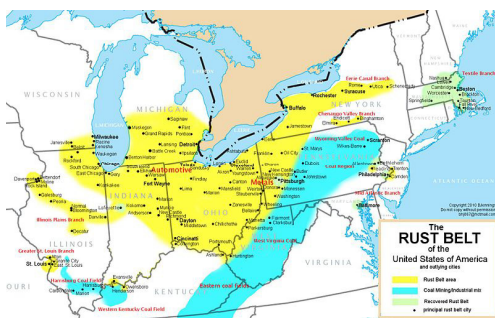


Post-industrial landscape, Detroit



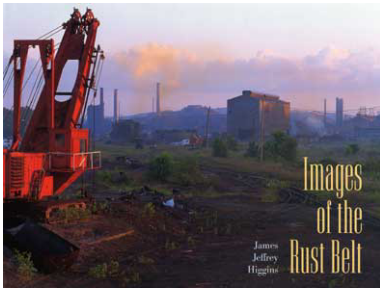
Rust Belt is an area of industrial decline, especially involving the manufacturing of steel, vehicles, and heavy machinery, stretching from western New York and Pennsylvania through Greater Chicago.

The name is meant to evoke images of abandoned and rusting manufacturing facilities.



The Rust Belt





Break-in-bulk point – a transfer point on a transport route where the type of carrier changes, and where the volume of shipment is expanded or reduced in size.

Examples: Buffalo, NY – which began as a place where goods transported in small Erie Canals boats were transferred to larger ships sailing the Great Lakes, or vice versa.

Cleveland, OH – transfer between Great Lakes and Cuyahoga River



Cuyahoga River, Cleveland
(old photo)

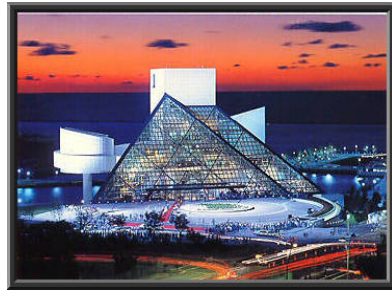


Cuyahoga River Fire
(June 22, 1969)





Rock and Roll Hall of Fame



Chicago

Southwestern shore of Lake Michigan



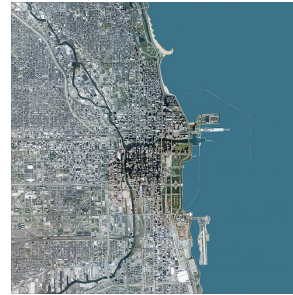
Chicago

Satellite image

Lake Michigan, right

Chicago River
dark line, center left

Originally, there were two rivers that flowed from top and bottom, joined, and entered the lake.

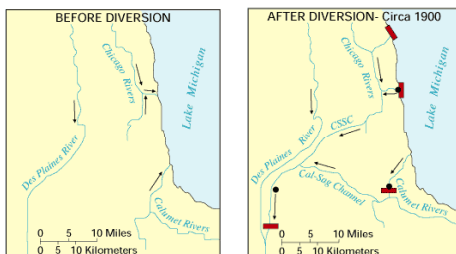
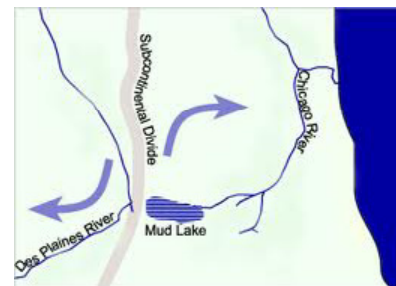


Portage: (a) the carrying of boats or goods overland from one body of water to another or around an obstacle (such as a rapids); (b) the route followed in making such a transfer.

Portage site: a location where portage occurs.

Site of Chicago

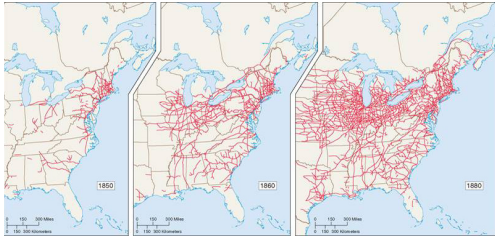
showing the original physical geography



The Chicago portage site

- Connects the watersheds of the Great Lakes and Mississippi Rivers
- “Discovered” in 1673 by the French explorers Father Jacques Marquette and Louis Joliet, who were informed of its location by Native Americans
- Became the most strategic site in the interior of North America, particularly between the French cities of Montreal and New Orleans
- Critical to French control of North America and the reason for Chicago’s location
- 1848: Opening of the Illinois and Michigan Canal, whose locks provide navigation between the waterways.

Railroads in the Eastern U.S., 1850-1880



Chicago Stockyards

