TRANSFORMATIVE HISTORICAL INFRASTRUCTURES: THE CASE OF THE ERIE CANAL

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Overview

- The Canal Era
- Erie Canal “Quick Facts”
- Economic Impact
  - Boom-bust cycle following the War of 1812
  - Canal Investment for Economic Recovery
  - Population Growth hand-in-hand with Economic Growth & A Changing Landscape
- Social Impact
- Environmental Impact

Figure 1: A Lock on the Erie Canal (From Thompson)

Figure 2: A postcard depicting Canal Life (From Thompson)
The Canal Era
(Post Revolutionary War)

- Overland travel was long and arduous.
- Water travel was only efficient downstream, and only where the rivers were deep and wide.
- Half of the population lived west of the Appalachian foothills.
- Western territory resources segregated from eastern coastal ports:
  - Furs
  - Lumber
  - Wheat
  - Whisky
  - Iron

- By 1790: ~ 35 privately owned canal companies
  - subsidized in part by local and state funds
  - public stock was sold, expecting that there would be profits from tolls

Figure 3: Poling along the Mohawk River (From Thompson)

SOURCE: Schodek 1987
The Erie Canal

- Constructed 1817-1825
- 1st 2-way transport corridor
- Crossed the Appalachian Mountain Range
- “1st American School of Civil Engineering”
- Largest Canal in the world at the time:
  - 363 miles long
  - 84 locks
  - 18 aqueducts

SOURCE: Schodek 1987
Boom-bust cycle following the War of 1812

- **1817:** Stock prices up 30% over 3 years

- **1819:** 1/3 of the nation’s population “distressed”
  10% of New York City on “poor relief”

- **1821:** Canal contracts at 30-40% 1817-19 costs
  - Low interest rates decreased construction cost
  - High unemployment decreased labor cost

- **1821:** 9,000 men employed constructing the Erie Canal. The canal was one of the few places jobs were growing rather than shrinking

**Figure 5:** Canal construction workers (from Thompson)

**Sources:** Bernstein 2005, Sheriff 1996, Shaw 1966
Canal Investment for Economic Recovery

- “Canal Papers” from the Bank for Savings let citizen savers invest in Canal construction.
  - 1818 loan to Canal Commission $200,000: 69 subscribers, 51 at less than $2,000.

- Nearly $8,000,000 borrowed for Canal Construction, at approx. 5% interest.

- All loans repaid within a decade
  - $500,000 were raised in tolls in just 1826, five times the interest due on outstanding bonds.

**Figure 6:** Entrance of the canal into the Hudson at Albany (drawing by James Eights, 1824)

**SOURCES:** Bernstein 2005, Shaw 1966
Population Growth hand-in-hand with Economic Growth & A Changing Landscape

- Rochester, first center of the boat building business, became the first U.S. “boom town” increasing in population from 300 to 8,000 in 10 years, and to more than 36,000 by 1850.

- 1821-1835: 22\% increase in cultivated land along Canal route.

- 1820-1840: 262\% increase in factory workers in western New York.

- 1820s and ’30s: Other states began canal programs in order to compete, e.g. Ohio and Pennsylvania.

Figure 7: Genessee River, New York City, 1914. Governor DeWitt Clinton called the city “…the granary of the world, the emporium of commerce, the seat of manufactures…” (Image Source: Thompson)

SOURCES:  Shaw 1966, Thompson
Migration and City Life

- **Immigration and diversity**
  - Irish, English, Welsh and German laborers were attracted to work on the canal system:
    - 1820s- 129,000 immigrants
    - 1830s- 540,000 immigrants

- **Urban densification due to ease of travel and commodity access**
  - The first U.S. “boom towns”
  - Increase of women’s involvement in society as “home crafts” become buyable
  - Growth of social reform and religious movements

**Figure 8:** Women, men and animals at a religious revival meeting in the Burned Over District. A. Rider pinxit; drawn on stone by H. Bridport. Kennedy & Lucas Lithography, c1829. (Image Source: Library of Congress)

**Sources:** Thompson, Shaw 1966
Life on the Canal

- Social mixing and “canal culture” on passenger boats
  - On deck games, singing, reading, debates
  - Below decks “lying packed like herrings in a barrel” (description of a European Tourist)

- Robbery and violence

- Rapid Spread of Diseases
  - During construction: workers often contracted malaria
  - During Operation: Smallpox and Cholera “rode the canal”

Figure 9: Socializing on the deck of a packet boat (from Thompson)

Figure 10: “Low Bridge” song poster (from Thompson)

**Sources:** Thompson, Shaw 1966
Environmental Impact

- **Hydrology**
  - Deforestation increases runoff
  - Diverting from feeder streams
- **Bank leakage**
  - Affects burrowing animals
  - Waterlogs property
- **Water quality**
  - Waste dumped into canal
  - Septic conditions avoided due to inflowing streams
- **Fish migration into the Great Lakes**
  - At least 2 invasive species.

Figure 11: Hillside section illustrating Canal hydrology (From Langbein 1976)

**Sources:** Langbein 1976
Questions?

References:
- Thompson, L. *The Erie Canal*. Rourke Publishing