

In this inquiry-based sorting lesson, students will review images, articles, and other primary source information about canal systems to determine the various purposes of canals. Students will eventually be able to sort and classify the primary documents into categories that will emerge from their inquiry into canal purposes.

Lesson Duration: DAY ONE: 40 minutes; DAY TWO: 60 minutes; DAY THREE: 60 minutes TOTAL: 2 hours 40 minutes

Enduring Understanding: Canals serve a purpose and influence the people around them.

Concepts: system, technology, problem/solution

New York State Social Studies Standards Addressed:

- 4.1a Physical and thematic maps can be used to explore New York State's diverse geography.
- 4.1b New York State can be represented using a political map that shows cities, capitals, and boundaries.
- 4.6a After the Revolution, New Yorkers began to move and settle farther west using roads, many of which had begun as Native American trails.
- 4.6b In order to connect the Great Lakes with the Atlantic Ocean, the Erie Canal was built. Existing towns expanded and new towns grew along the canal. New York City became the busiest port in the country.
- 4.6c Improved technology, such as the steam engine and the telegraph, made transportation and communication faster and easier. Later developments in transportation and communication technology had an effect on communities, the state, and the world.
- 4.6d Farming, mining, lumbering, and finance are important economic activities associated with New York State.
- 4.6f Between 1865 and 1915, rapid industrialization occurred in New York State. Over time, industries and manufacturing continued to grow.

New York State Social Studies Practices Addressed:

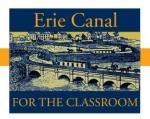
A. Gathering, Interpreting, and Using Evidence

- 1. Develop questions about New York State and its history, geography, economics, and government.
- 2. Recognize, use, and analyze different forms of evidence used to make meaning in social studies (including sources such as art and photographs, artifacts, oral histories, maps, and graphs).









- 5. Identify inferences.
- 6. Create an understanding of the past by using primary and secondary sources.

C. Comparison and Contextualization

4. Recognize the relationship between geography, economics, and history in social studies.

D. Geographic Reasoning

- 1. Use location terms and geographic representations (maps and models) to describe where places are in relation to each other, to describe connections between places, and to evaluate the benefits of particular places for purposeful activities.
- 2. Distinguish human activities and human-made features from "environments" (natural events or physical features—land, air, and water—that are not directly made by humans).
- 3. Identify how environments affect human activities and how human activities affect physical environments.
- 4. Recognize relationships between patterns and processes.
- 5. Describe how human activities alter places and regions.

Teacher Questions:

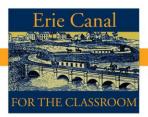
- 1. What do you See? Think? Wonder?
- 2. Where is your canal located?
- 3. What year was your canal built?
- 4. Why did the people in that area need a canal?
- 5. What problem(s) did the people face?
- 6. How did this canal solve their problem(s)?
- 7. Is this canal operating today? Why or why not?
- 8. How do canal systems affect the people around them?

Materials List:

- See Think Wonder worksheet (provided) shared as a class electronically projected or on large chart paper
- 2. Erie Canal image (provided)
- 3. Timer
- 4. How Canals Affect People graphic organizer (provided)
- 5. 12 primary source documents depicting the history of the Erie Canal and its purpose (provided)
- 6. Pencils







- 7. Images of canals from around the world (some provided), including canals used for:
 - Transportation of people and goods
 - Leisure activities
 - Urban water supplies

- Irrigation
- Land drainage
- Hydroelectric power
- 8. Devices for Internet research (if this is not possible, teacher will need to modify lesson by pulling resources or printing information about each canal)
- 9. Copies of each student's graphic organizer copied onto the back of its corresponding image, enough for each group to have a set (after completion of Day Two)
- 10. Sticky note pads one for each group
- 11. The question, "How do canal systems affect the people around them?" written or posed for students to respond to, either verbally as a group or in writing on half sheets of paper, notecards, a Google Form, etc.

TEACHER NOTE: Some ideas for canals that students can research are included below. Some of these canals are/have been used for multiple purposes. Some are still working, others are not.

- North Shore Channel, Illinois
- Dismal Swamp Canal, Virginia/North Carolina
- Morris Canal, New Jersey
- Sandy and Beaver Canal, Ohio
- California Aqueduct

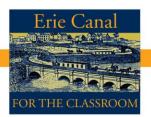
- 17th Street Canal, Louisiana
- Franklin Canal, Texas
- Chesapeake & Ohio (C&O) Canal
- Genesee Valley Canal, New York
- Grand Canal, Arizona

Images of many of the canals listed here can be found in the Library of Congress Prints and Photographs Division, https://www.loc.gov/pictures/. A selection of these images is provided in this lesson. Canal systems books from your library will also be very helpful. Take advantage of the resources available to you.

You may choose to let students build off the background knowledge they acquired through the previous inquiry in which they researched a famous canal. Keep in mind, however, that assigning the same canal to students would take away from their ability to acquire a more comprehensive understanding of canal systems. Instead, consider reassigning the famous canals so students have a new canal to learn about.







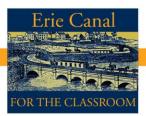
Procedure:

Teacher Questions		Procedure	Materials
1.	What do you See? Think? Wonder?	DAY ONE: 10 minutes: Share an image of the Erie Canal that shows goods being transferred. Use the "See Think Wonder" Visible Thinking Routine together as a class. Give students 2 minutes to see, 2 minutes to think, and 2 minutes to wonder about the image. Record students' responses in a T-chart, Padlet, Graffiti Wall, or any other means for recording brainstormed ideas. Display electronically or on chart paper.	 See Think Wonder worksheet (provided) – shared as a class electronically projected or on large chart paper Erie Canal image (provided, page 10) Timer
3.4.5.6.	Where is your canal located? What year was your canal built? Why did the people in that area need a canal? What problem(s) did the people face? How did this canal solve their problem(s)? Is this canal operating today? Why or why not?	group a primary source document (a short passage or image) about the Erie Canal's history that shows purpose, and one copy of the graphic organizer. Allow students 10 minutes to read/view and answer ONE of the questions on their graphic organizer. TEACHER NOTE: The documents provided are enough to answer all of the questions posed on the graphic organizer. Feel free to add resources if students finish early or want more. Additional resources can be found in the Erie Canal topic section of the Rochester Public Library's Rochester Voices website: http://www.rochestervoices.org/topics/erie-canal/ .	 How Canals Affect People graphic organizer (provided) 12 primary source documents depicting the history of the Erie Canal and its purpose (provided, pages 11-23) Pencils
		20 minutes: Facilitate a class discussion where each student/pair/group shares a summary of their document and the question they were able to answer. Students may complete their graphic organizers with information about the	How Canals Affect People graphic organizer (provided), hard copy and/or projected (if teacher chooses to model the completion of the organizer while students present their information)





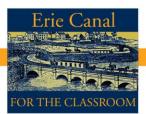




		Erie Canal as they listen to each other present their information.	
1.	What do you See? Think? Wonder?	DAY TWO: 10 minutes: Assign each student/pair/ group an image of a canal from around the world. These images will include canals used for: Transportation of people and goods Leisure activities Urban water supplies Irrigation Land drainage Hydroelectric power Have students complete their own "See Think Wonder" Visible Thinking Routine, giving ample time for each of the components of the routine.	 See Think Wonder worksheet one for each student/pair/group (hard copy or shared electronically) Timer Images of canals from around the world (some provided, pages 24-30), including canals used for: Transportation of people and goods Leisure activities Urban water supplies Irrigation Land drainage Hydroelectric power
2.	Where is your canal located?	40 minutes: Give students time to research their canal and complete their	How Canals Affect People graphic organizer (provided)
3.	What year was your canal built?	graphic organizers, answering the organizer questions and hopefully one or	(a clean copy) Devices for Internet research
4.	Why did the people in that area need a canal?	more of their own questions from the "See Think Wonder" routine.	(if this is not possible, teacher will need to modify lesson by pulling resources or printing
5.	What problem(s) did the people face?	TEACHER NOTE: Students may work in pairs or groups to research canals	information about each canal)
6.	How did this canal solve their problem(s)?	together or work independently on their own canal.	• Pencils
7.	Is this canal operating today? Why or why not?		
		10 minutes: Bring the class back together	
		and allow each student/pair/group a	
		moment to share something about their	
		canal. They may choose ANYTHING from	
		their See Think Wonder OR from their	







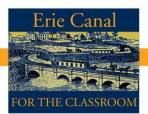
	graphic organizer. The class does not need to have a discussion about the groups' new information today, unless time permits, or great conversation unfolds. They will see all the notes tomorrow. This sharing works well when gathered in a sitting or standing circle. TEACHER NOTE: Before the next lesson, copy each student's graphic organizer onto the back of the image it goes with, or keep the notes with the images if done electronically. (You could use a slide deck or a multipage document to compile all the information, but it will still need to be PRINTED AND COPIED.) EACH GROUP will need ALL pages for the next lesson. You will need enough copies of ALL DOCS for ALL GROUPS.	
	DAY THREE: 30 minutes: Break students into groups. Give each group the multiple images of canal systems around the world AND the student note pages from yesterday. Give ALL groups the same images and ask them to sort the canals in any way they choose. Students will sort them differently! This is okay! Give them sticky notes to write the label for each organizational category they create. Remind students they may sort canals into any categories they want, as long as every canal has a home. They must label their categories.	 Copies of each student's graphic organizer copied onto the back of its corresponding image, enough for each group to have a set Sticky note pads – one for each group Pencils
What do you notice? What do you wonder?	10 minutes: Allow students time to participate in a Gallery Walk. This is when students will walk around the room (hands behind their backs for fun!) and	

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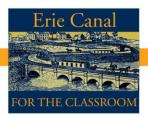




	take note of other groups' decisions regarding categories. They do not need to be silent at this time! Conversation here is productive. Encourage them to use language like, "I noticed" and "I wonder"	
What do you notice? What do you wonder?	10 minutes: Bring students back together and talk about what they noticed and what they wondered during the Gallery Walk.	
8. How do canal systems affect the people around them?	10 minutes: Pose the final question to the group: "How do canal systems affect the people around them?" TEACHER NOTE: Students may complete this in writing if you would like to have a formative assessment or a Ticket Out the Door. They answer this question on a half piece of paper or a notecard, or electronically—a Google Form is useful.	The question, "How do canal systems affect the people around them?" written or posed for students to respond to, either verbally as a group or in writing on half sheets of paper, notecards, a Google Form, etc.
	electronically – a Google Form is useful for this.	







How Canals Affect People Graphic Organizer

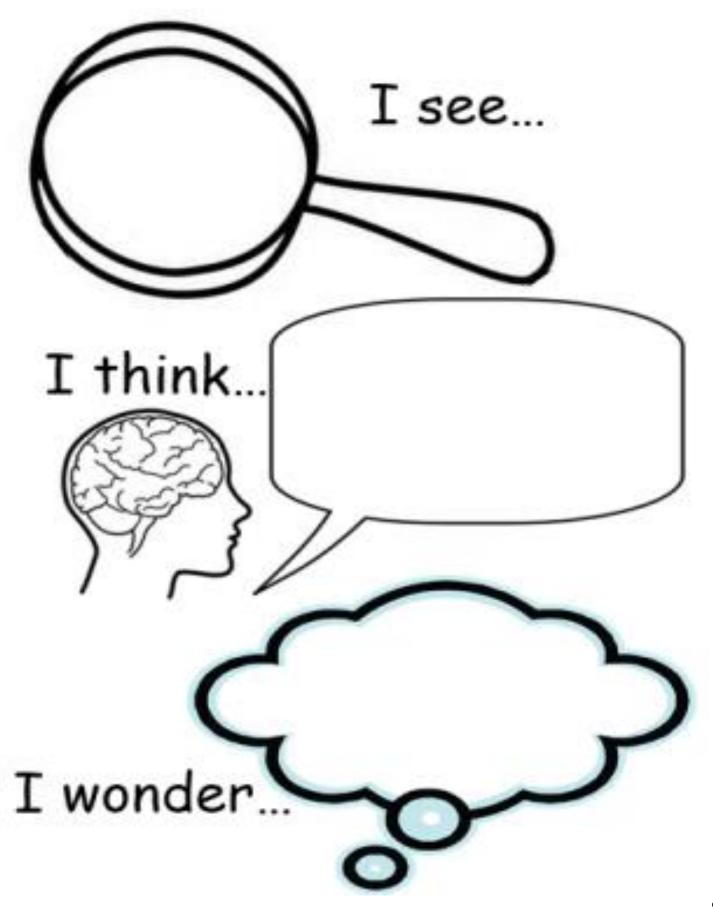
Your Canal Name:	
Where is your canal located?	
2. What year was your canal built?	
3. Why did the people in that area need a canal?	
4. What problems did the people face?	
5. How did this canal solve their problem(s)?	
6. Is this canal operating today? Why or why not?	

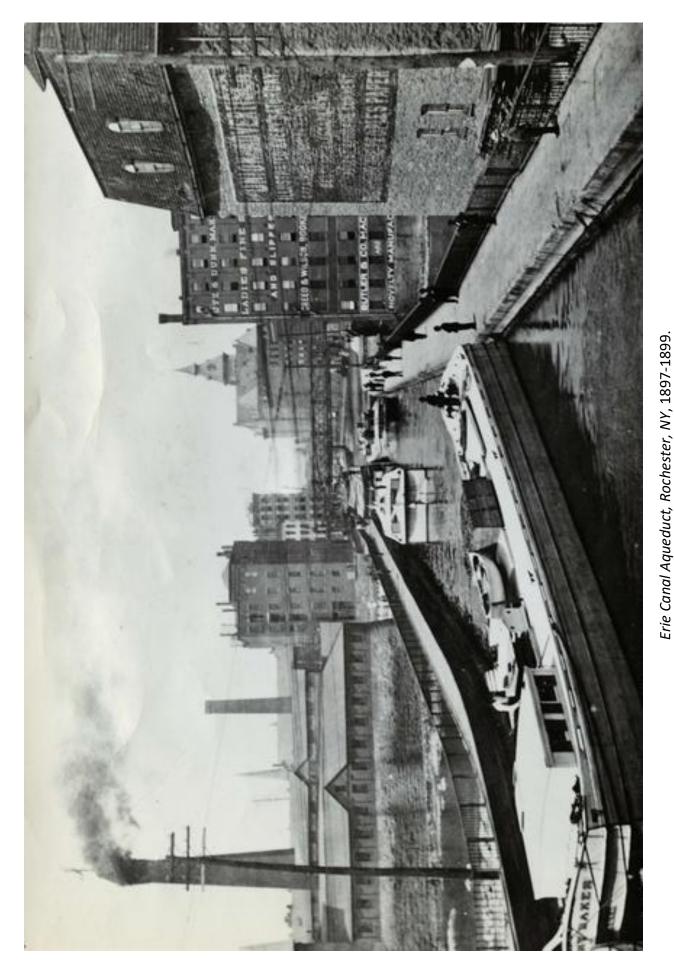




See Think Wonder Worksheet

Name(s) _____ Date ____





https://catalogplus.libraryweb.org/?section=resource & resource id=1115915646 & current Index=11 & view=full Details Details Tab.Courtesy of the Rochester Public Library Local History & Genealogy Division.

FOR SALE,

TO FARMERS AND EMIGRANTS, 15,000 Acres of Land,

IN THE TOWN OF WOLCOTT,

COUNTY OF SENECA, AND STATE OF NEW-YORK,

BEING THE UNSOLD PART OF A TRACT OF 55,000 ACRES.

The tract is bounded on the north by Lake Ontario, on the west by Sodus Bay, and the Great Canal runs within a few miles south of it. The large Vessels navigating the Lake regularly visit the Bay, which is an excellent harbour. The tract is intersected by leading Roads, one of which is a continuation of the great Ridge Road from Lewiston to Oswego falls, and a Bridge is now erecting across the Bay. The land therefore possesses the greatest facilities for the transportation of its productions both to the Canada and New-York markets. It is calculated that the Canal will reduce the price of transporting a bushel of wheat, from Seneca County to New-York, from Sixty five to fifteen cents. It is reasonable therefore to conclude that the cheapness of transportation, the fertility of the Soil, and the mildness of the climate, will raise the intrinsic value of the land, to the value of that bordering on the Hudson River.

The land is of excellent quality—is well watered—abounds with inexhaustible beds of good Iron Ore, and is well supplied with mills, and with sites for hydraulic works.—A forge and furnace for manufacturing the Ore into wrought Iron, and Castings, are now erecting on the tract, and will soon be in operation. It is already settled by about 350 families, and the adjacent Country is both populous, and prosperous.

It is confidently asserted that there is not now for sale in the Genesee County a more inviting tract of land, both for quality of soil, and advantages for trade.

It will be sold in farms of about 100 acres to actual settlers only, at moderate prices, and on a credit of ten yearly payments. The title is indisputable, and good warrantee deeds will be given to purchasers.

ALSO FOR SALE,

AT LOW PRICES, AND ON A LIBERAL CREDIT, SEVERAL VALUABLE IMPROVED FARMS, IN THE COUNTY OF ONTARIO.

Persons desirous of becoming purchasers may apply to the subscribers.

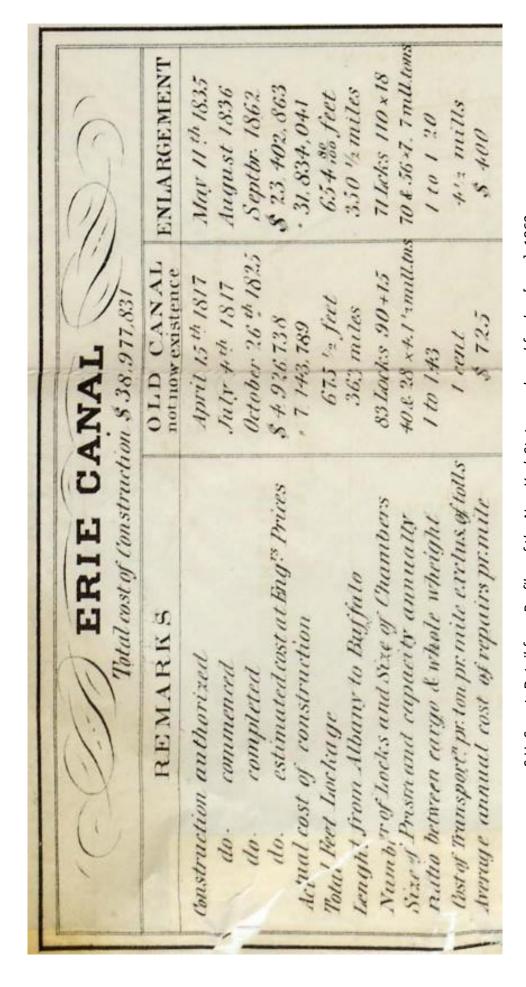
Land Office-Geneva-Ontario County, State of New-York. December, 1821.

JOSEPH FELLOWS, ANDREW MCNAB.

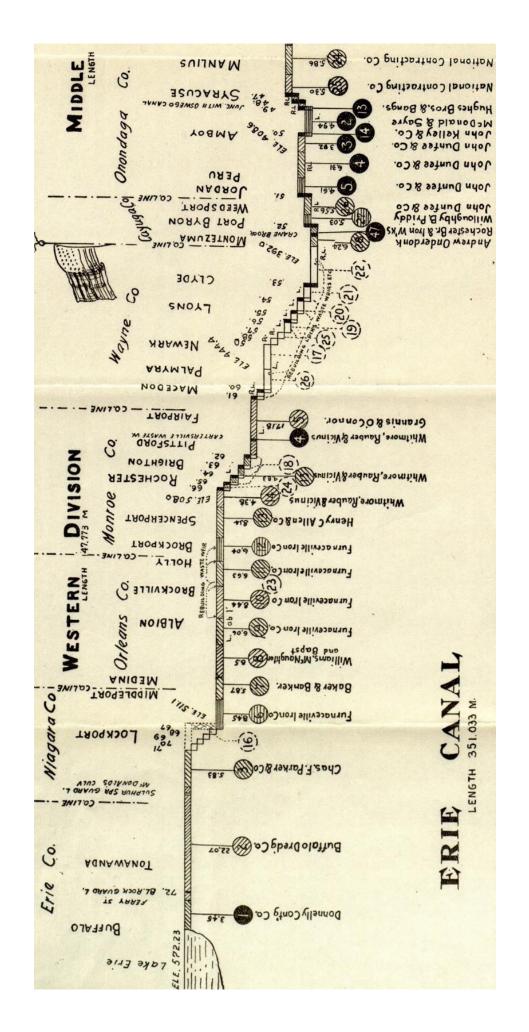
Broadside, For Sale to Farmers and Emigrants, 1821. https://catalogplus.libraryweb.org/?section=resource&resourceid=1117010

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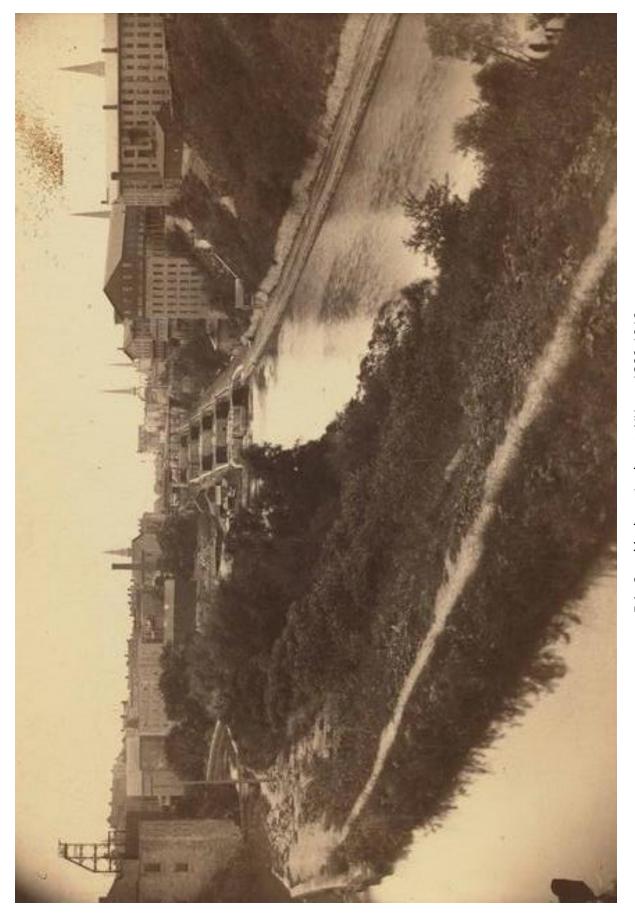
Courtesy of the Rochester Public Library Local History & Genealogy Division.



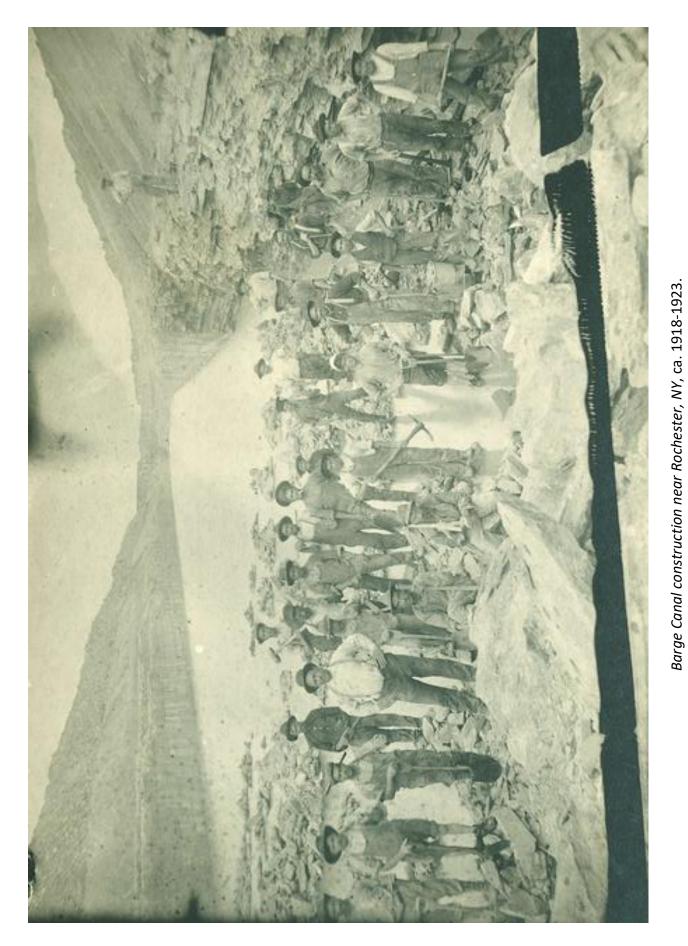
https://catalogplus.libraryweb.org/?section=resource&resourceid=1117041290¤tIndex=7&view=fullDetailsDetailsTab. S.H. Sweet, Detail from Profiles of the New York State canals and feeders [map], 1862. Courtesy of the Rochester Public Library Local History & Genealogy Division.



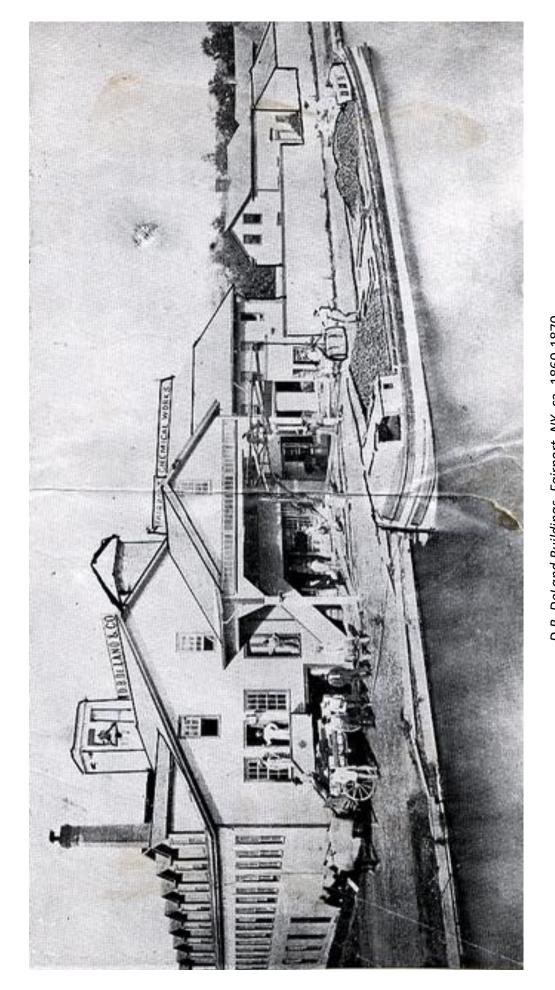
https://catalogplus.libraryweb.org/?section=resource&resourceid=1117044099¤tIndex=0&view=fullDetailsDetailsTab. Detail from Canal Improvement: Profiles of the Erie, Champlain, and Oswego Canals [map], 1898. Courtesy of the Rochester Public Library Local History & Genealogy Division.



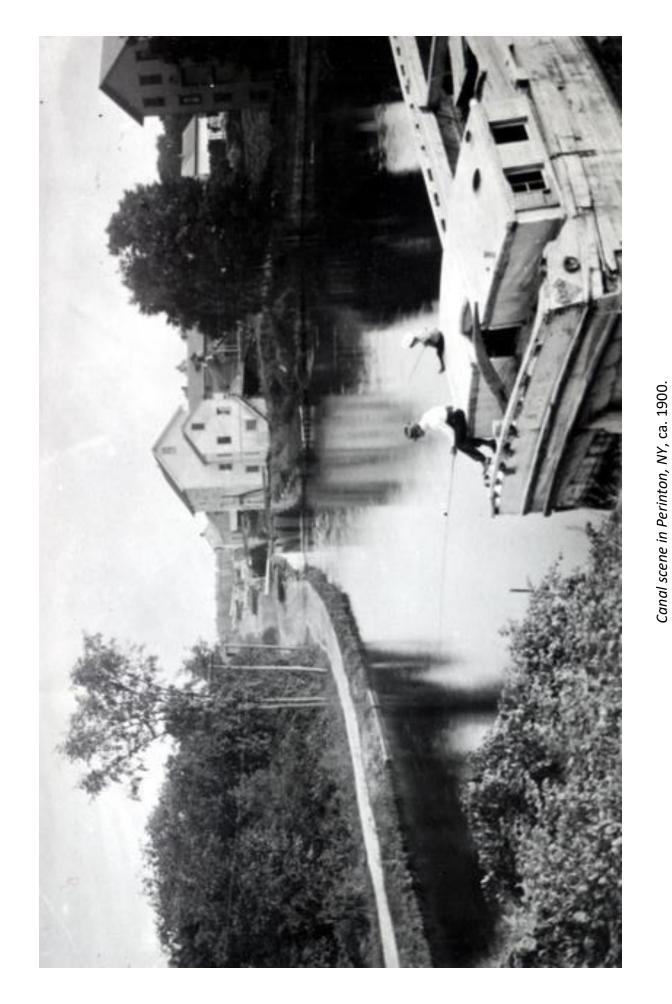
https://catalogplus.libraryweb.org/?section=resource&resourceid=1115986458¤tIndex=0&view=fullDetailsDetailsTab. Courtesy of the Rochester Public Library Local History & Genealogy Division. Erie Canal locks at Lockport, NY, ca. 1880-1910.



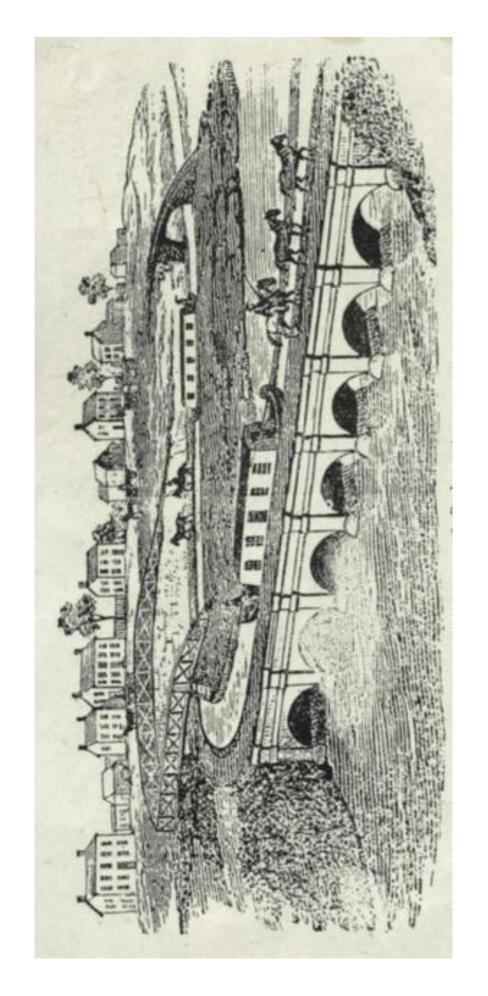
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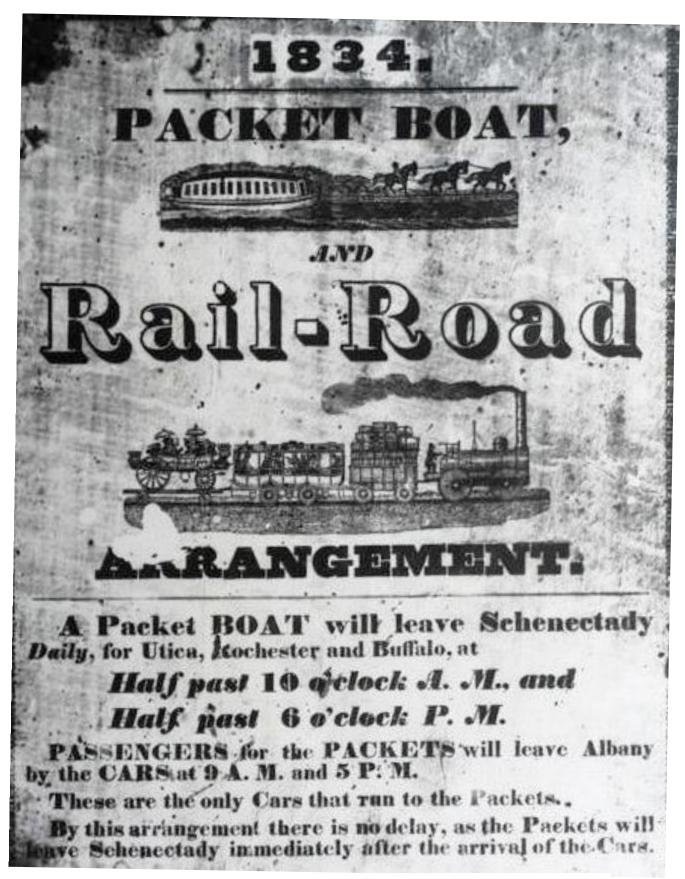
https://catalogplus.libraryweb.org/?section = resource & resource id = 1116580364 & current Index = 3 & view = full Details Details Tab.D.B. DeLand Buildings, Fairport, NY, ca. 1860-1870. Courtesy of the Town of Perinton.



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Everard Peck, Plan of the first aqueduct carrying the Erie Canal over the Genesee River at Rochester, New York, ca. 1817-1823. https://catalogplus.libraryweb.org/?section = resource & resource id = 1115911503 & current Index = 0 & view = full Details Details Tab.Courtesy of the Rochester Public Library Local History & Genealogy Division.



Broadside, Sign for 1834 packet boat trip, 1834.

Courtesy of the Rochester Public Library Local History & Genealogy Division.



https://catalogplus.libraryweb.org/?section = resource & resource id = 1116596342 & current Index = 0 & view = full Details Details Tab.Courtesy of the Town of Perinton.



https://catalogplus.libraryweb.org/?section = resource & resource id = 1115925020 & current Index = 0 & view = full Details Details Tab.From the Albert R. Stone Negative Collection, Rochester Museum & Science Center, Rochester, NY.

Projects proposed to revamp Erie Canal

\$300 million investment set for historic lifeblood

Jon Campbell

New York State Team USA TODAY NETWORK

ALBANY – A whitewater rafting course. A "pocket neighborhood." Hydropowered light displays.

It's all part of Gov. Andrew Cuomo's administration's flashy new plan to pump life into the Erie Canal, which remains a tourism lifeblood for many communities but costs the state more than \$100 million a year to maintain.

Cuomo on Monday announced plans to invest \$300 million over the next five years to revamp the historic canal, starting with a first phase of \$165 million that will fund a series of economic-development and flood-mitigation projects.

The New York Power Authority, which oversees the state's canal system, is expected to vote on the funding at its board meeting later this month.

Once approved, the first \$25 million will go toward five projects in communities up and down the Erie Canal, according to Cuomo's office.

Those projects include:

- The completion of the "Brockport Loop," which will include a pedestrian bridge that will connect the SUNY College at Brockport campus on one side of the canal to the multiuse trail on the other side.
- A whitewater sporting course along the canal at the north end of Cayuga Lake near Seneca Falls, along the Montezuma National Wildlife Refuge in Seneca County.
- A series of new homes in a "pocket neighborhood" on land along the old canal in Canastota, Madison County, about 25 miles east of Syracuse.
- Hydropowered lighting on movable canal dams in Amsterdam and Canajoharie in Montgomery County, meant to highlight the historic pieces of infrastructure.
- A revamped Guy Park Manor on the Mohawk River in Amsterdam, including a new pedestrian bridge across a canal lock.

See CANAL, Page 4A

"Projects Proposed to Revamp Erie Canal," *Democrat and Chronicle* (Rochester, NY), Jan. 8, 2020. Courtesy of the Rochester Public Library Local History & Genealogy Division.

Canal

Continued from Page 1A

First phase of Erie Canal funding: \$165 million

The first phase of funding would see \$100 million set aside for an Erie Canal economic development fund, including the \$25 million for the initial projects, according to Cuomo's office.

The other \$65 million in the first phase would go toward anti-flooding projects and preventing ice jams along the canal near Schenectady and along the Mohawk River Valley, which has long been susceptible to significant flooding.

The plan also calls for opening an irrigation district in western New York, which would allow farmers to access water from the canal during droughts in the summer.

The plan was not specifically included in the New York Power Authority's three-year capital budget approved late last year, though it is expected to be approved in an update at a board meeting later this month.

The authority operates 16 power plants and 1,400 transmission lines across the state, as well as the canal system since 2017. Cuomo appoints the members of the authority's board of directors.

Cuomo's office released the plan ahead of the governor's State of the State address Wednesday, when he will lay out his agenda for 2020.

He called on the Power Authority's board to approve the funding.

'Reimagining' the Erie Canal

"When the Erie Canal was created in the 19th century, it set the state and the nation on a path to prosperity, and this year we will repurpose the canal to fit our state's 21st century needs," Cuomo said in a statement.

Long past its days as a major shipping waterway, the Erie Canal for years has been primarily used for recreational purposes, serving as an important tourism driver for many of the communities it cuts through but costing the state significant money to maintain it.

Each year, the canal generates about \$2.5 million in revenue primarily from recreational boaters, while costing the state more than \$100 million annually in operating and capital costs.

The Cuomo administration's plan was unveiled the same day a state panel tasked with "reimagining" the Erie Canal released its final report, which included a series of recommendations to bolster the economic and environmental future of the canal.

Among the recommendations in the Reimagine the Canals Task Force's report were to bolster water sports offerings along the canal, alter water-release patterns to improve fishing in the area, further research steps to stop the spread of aquatic invasive species and improve cultural programming and other recreational offerings to attract a younger crowd.

The task force's report came after the panel held a series of listening sessions across the state to solicit ideas.

The panel also oversaw a competition to come up with the best ideas for revamping the canal, which led to the selection of the "pocket neighborhood" in Madison County.

The 25-member task force included a series of experts, municipal leaders and former state officials. It was led by three co-chairs: former Onondaga County Executive Joanie Mahoney, former state Environmental Conservation Commissioner Joe Martens and former Lt. Gov. Robert Duffy, now the head of the Greater Rochester Chamber of Commerce.

"When the Erie Canal was created in the 19th century, it set the state and the nation on a path to prosperity, and this year we will repurpose the canal to fit our state's 21st century needs."

Gov. Andrew Cuomo

Connecting SUNY Brockport to canal trail

The "Brockport Loop" project, meanwhile, comes as the state is putting the finishing touches on the 750-mile Empire State Trail project, which is connecting a series of multi-use trails to allow users to travel uninterrupted from Buffalo to Albany and Albany to New York City.

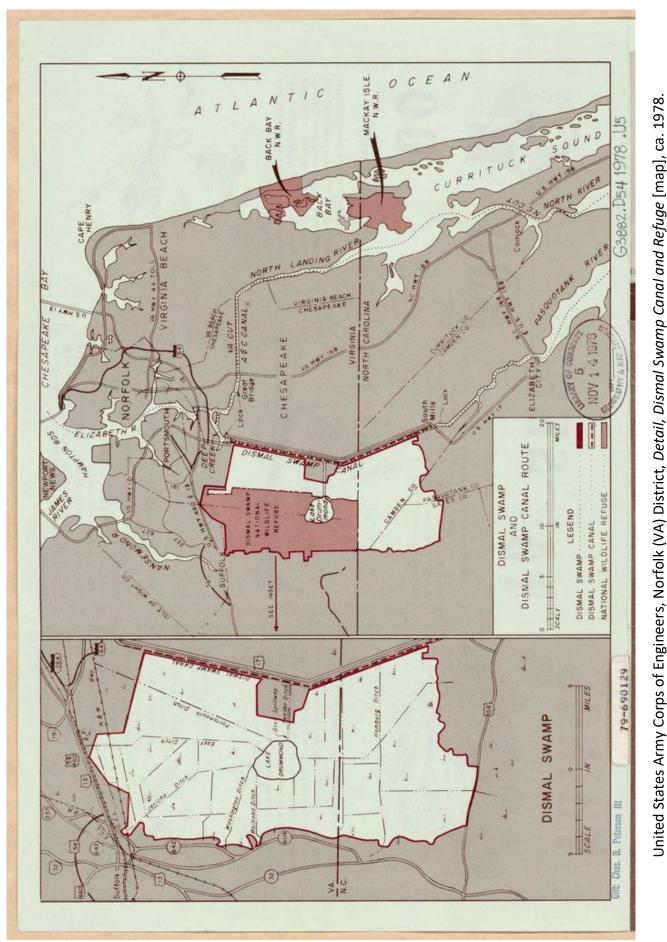
Once the new bridge is completed, the SUNY Brockport campus will be connected to the trail, which is on the other side of the canal and hasn't been easily accessible for students and faculty.

"Here and in other places, canal infrastructure — guard gates, movable dams, and other forms of water control infrastructure — can be retrofitted to serve as the backbone for pedestrian and bike connections that do not currently exist," the task force wrote in its report.

The plan has support from Power Authority CEO Gil Quiniones, who was appointed by Cuomo.

Quiniones called the plan "innovative" and said it has the potential to unite the canal and the Empire State Trail to create "one central artery connecting our communities and reinvigorating upstate economies all along the Albany-Buffalo spine."

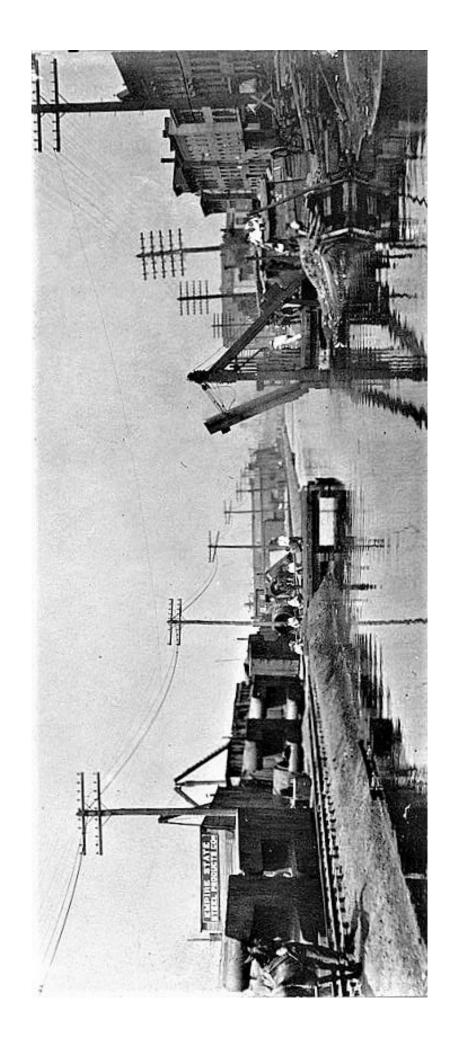
Jon Campbell covers state government and politics for the USA TODAY Network New York.



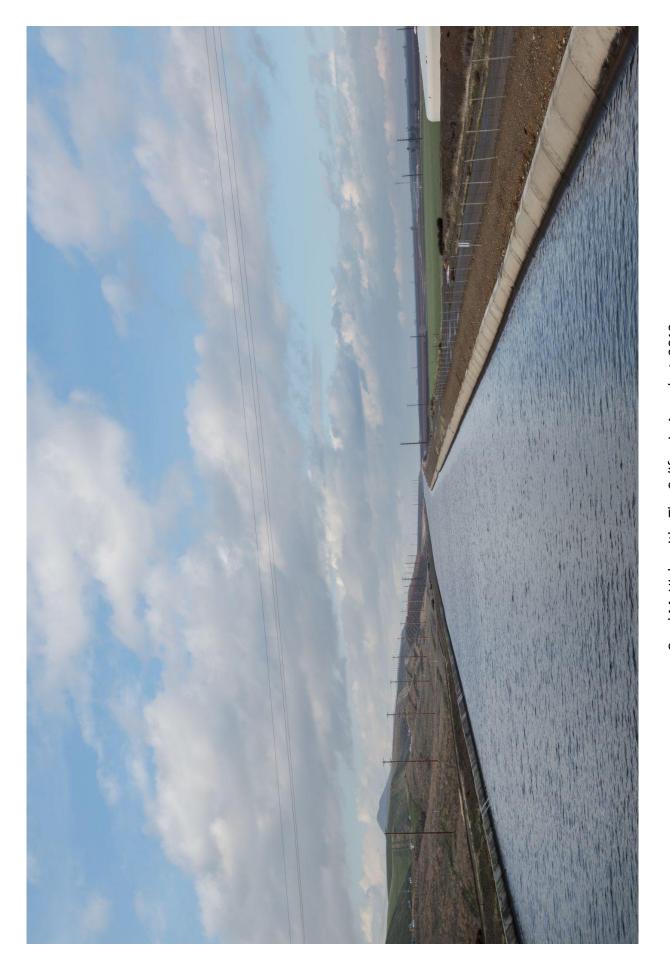
https://www.loc.gov/item/79690129/.

Courtesy of Library of Congress Geography and Map Division.

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Morris Canal, Phillipsburg, Warren County, NJ, n.d. https://www.loc.gov/resource/hhh.nj0903.photos/?sp=146. Courtesy of Library of Congress Prints and Photographs Division.



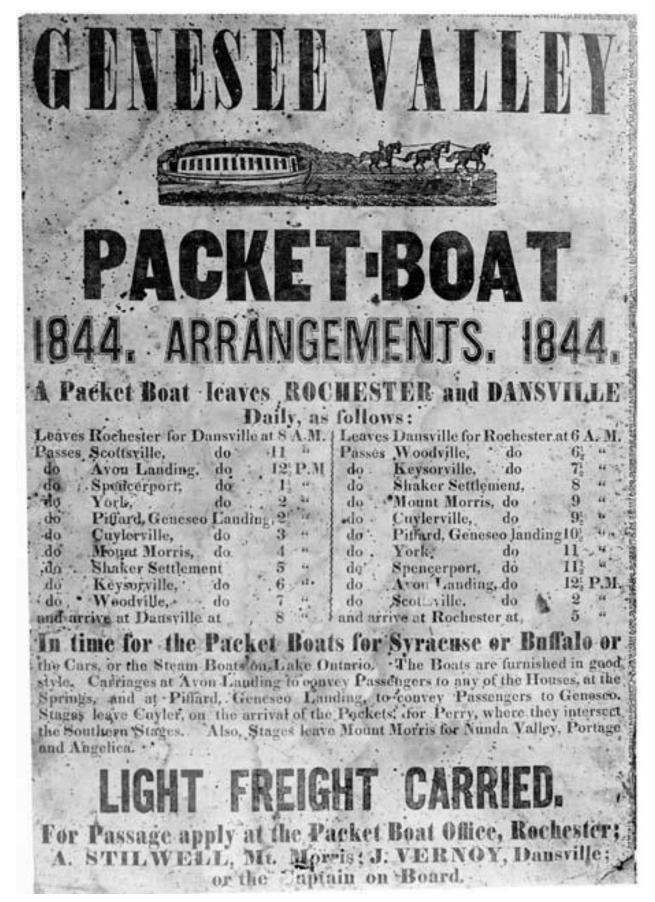
Carol M. Highsmith, *The California Aqueduct*, 2012. https://www.loc.gov/item/2013631236/. Courtesy of Library of Congress Prints and Photographs Division.



United States Bureau of Reclamation, Franklin Canal, El Paso (Texas), 1914. https://www.loc.gov/item/2008676785/. Courtesy of Library of Congress Prints and Photographs Division.



C&O Canal from Wisconsin Avenue Bridge, Georgetown, Washington, D.C., ca. 1890-1940. Courtesy of Library of Congress Prints and Photographs Division. https://www.loc.gov/item/96502919/.



Timetable: Genesee Valley Canal Packet Boat, 1844.

https://catalogplus.libraryweb.org/?section=resource&resourceid=1116736350¤tIndex=2&vie w=fullDetailsDetailsTab. Courtesy of the Rochester Public Library Local History & Genealogy Division.



View Showing Grand Canal Reconstruction, Near Salt River, Looking East Toward Tempe Butte (Arizona), ca. 1916. Courtesy of Library of Congress Prints and Photographs Division. https://www.loc.gov/resource/hhh.az0239.photos/?sp=7.