

The ‘Ups’ and ‘Downs’ of Cayuga Lake.....

OR

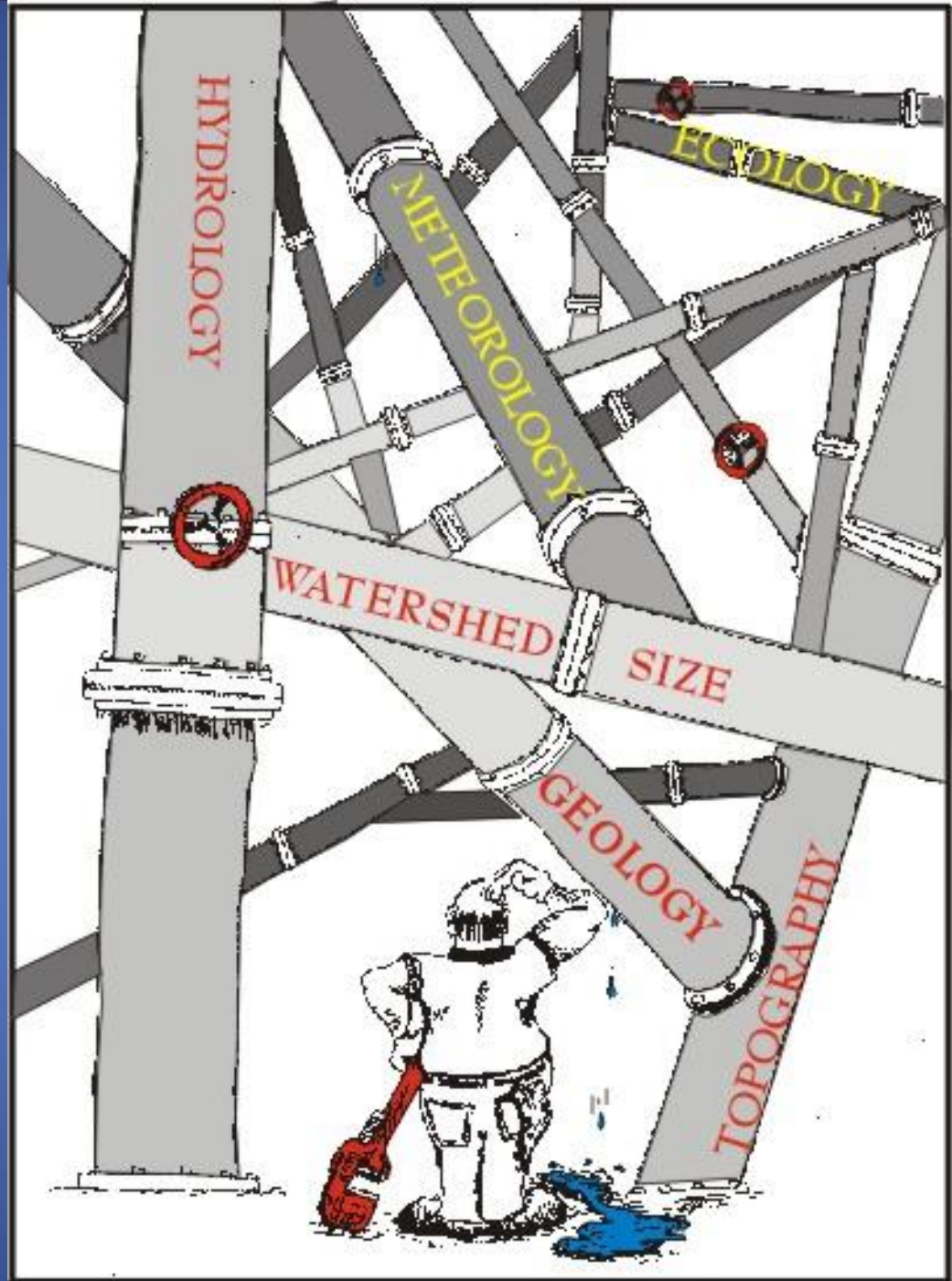
How I learned to stop worrying
and love the changes in
Cayuga Lake water levels.

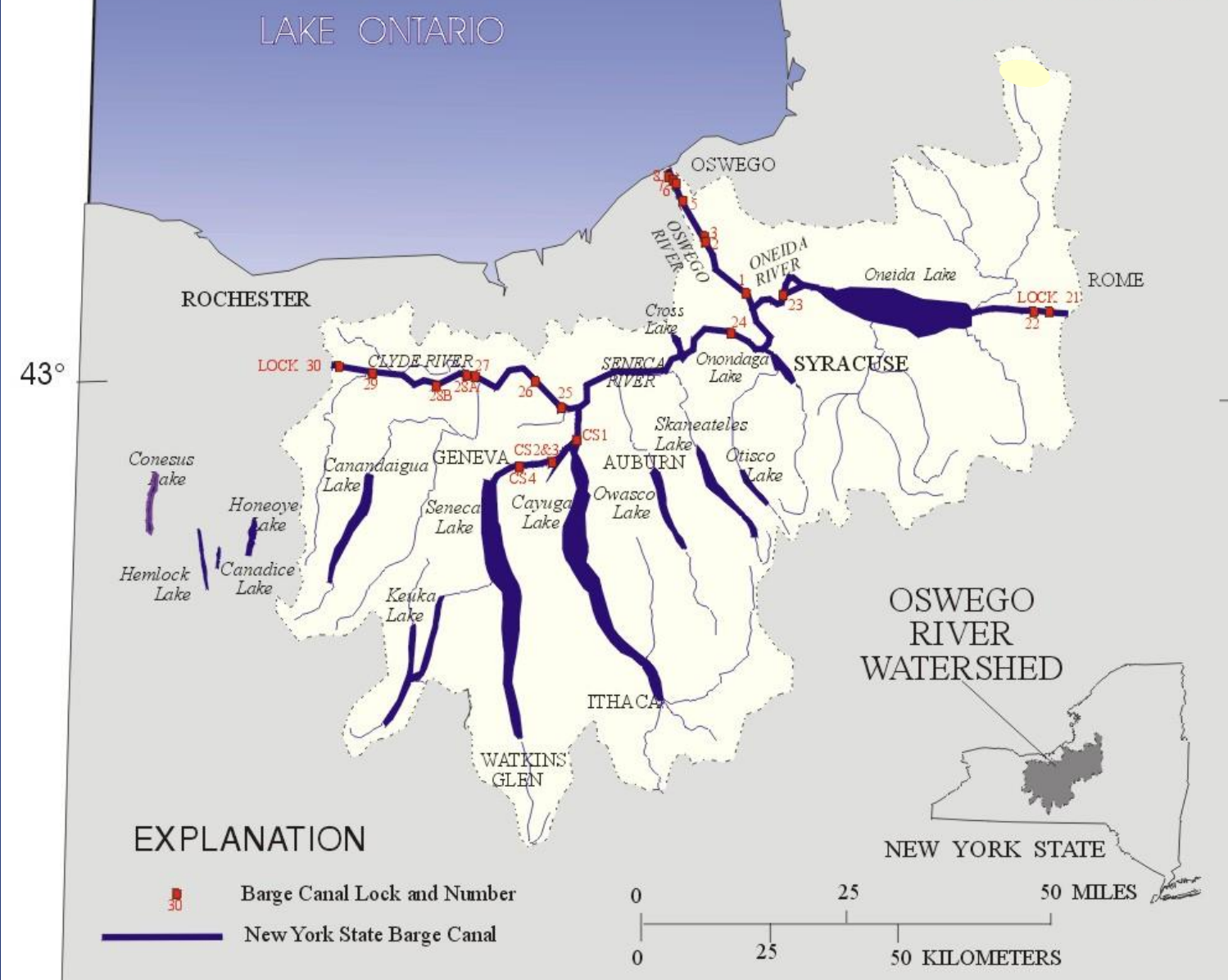
Contributors:
Dr. Craig Williams
New York State Museum

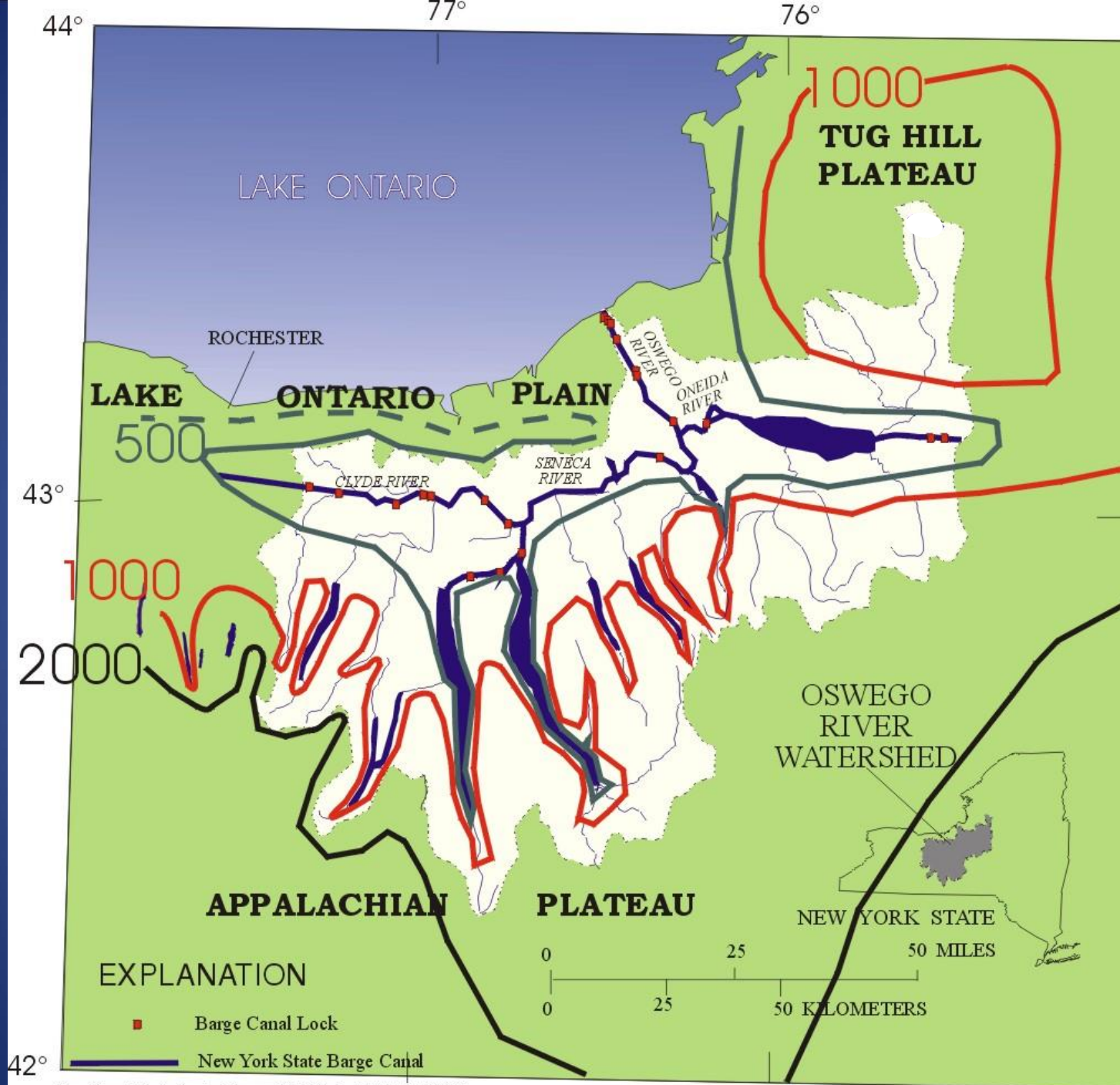
Mike Riley
Local Canal Historian

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Local History/Photography
Archivist

Bill Kappel
USGS Hydrogeologist

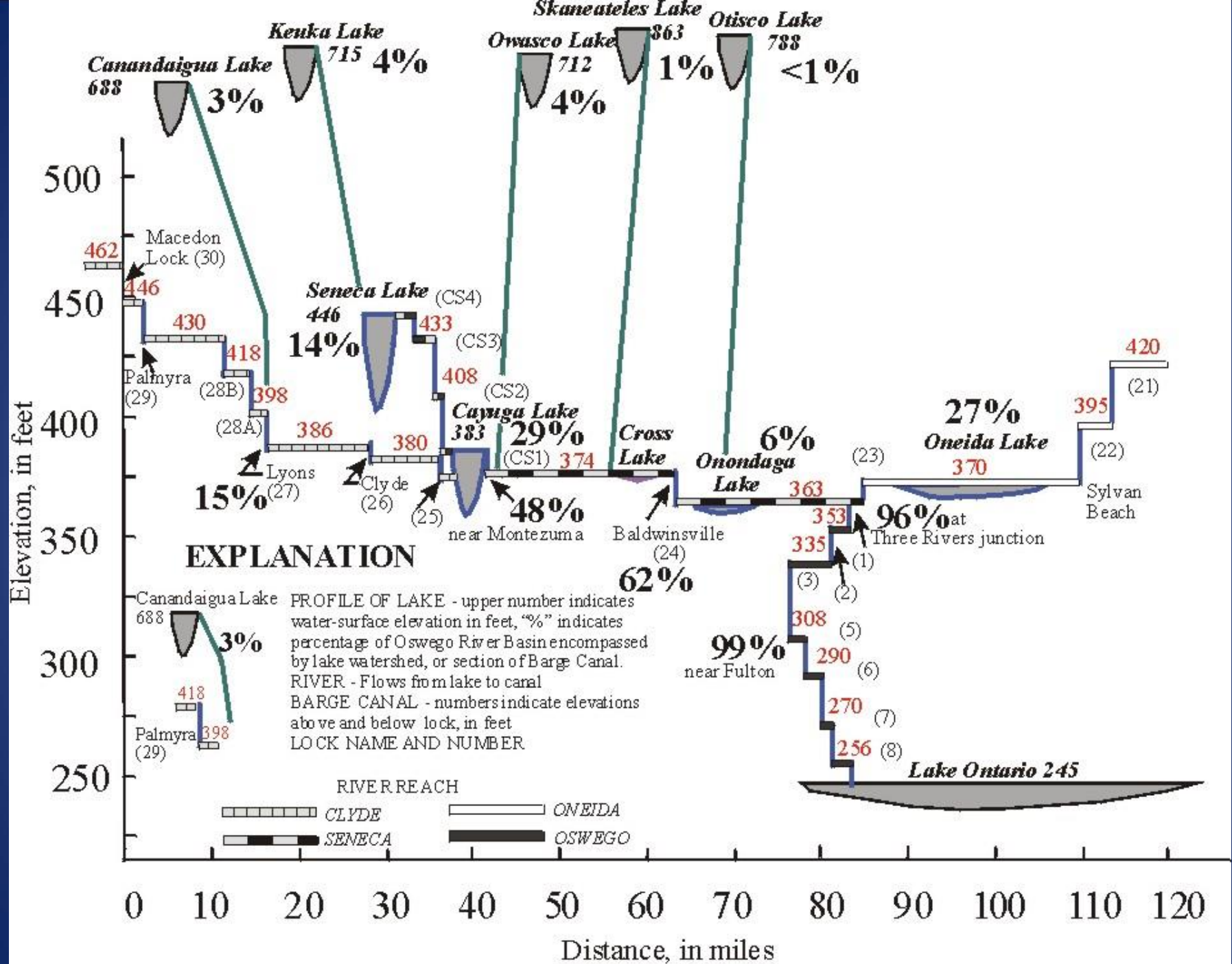


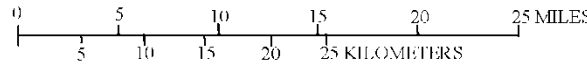
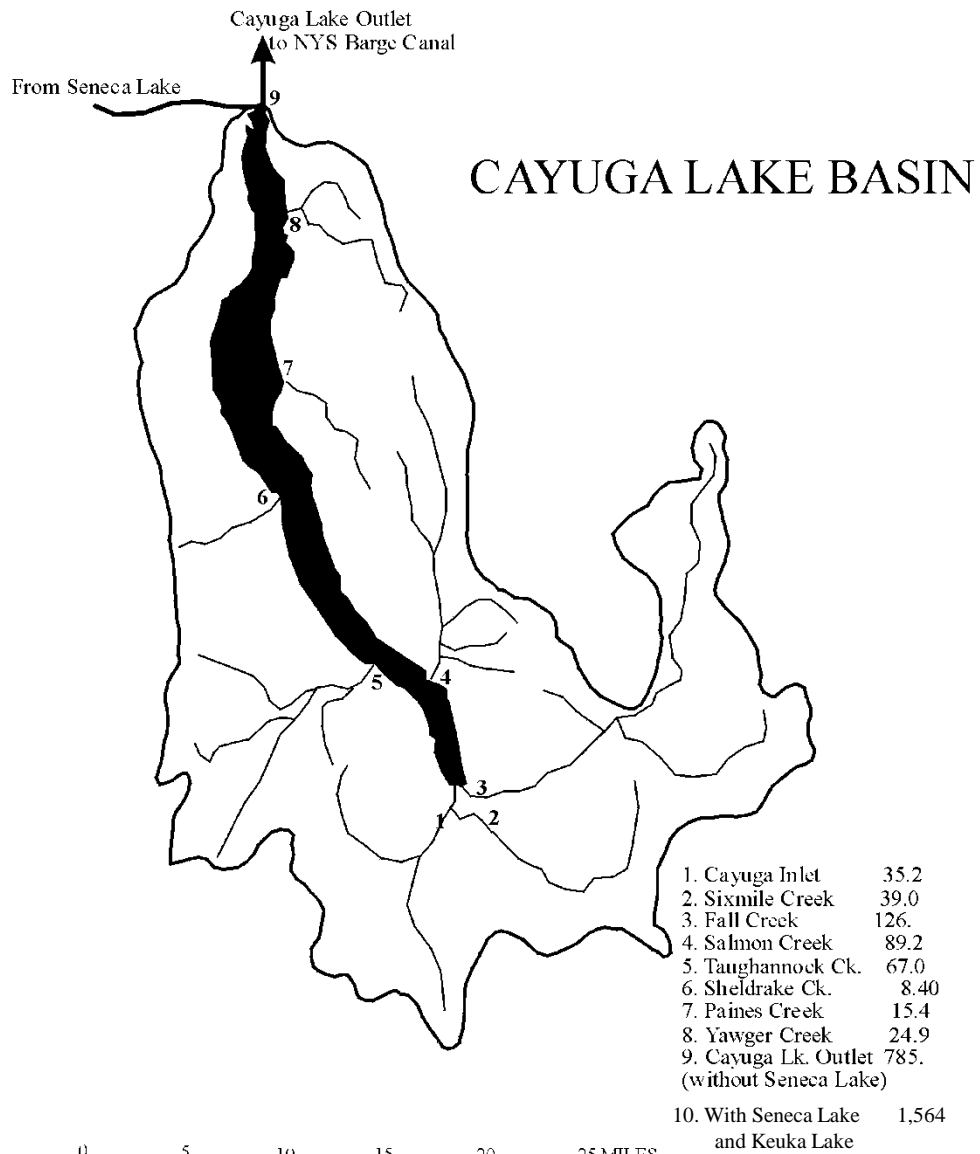




Base from U.S. Geological Survey digital data, 1:2,000,000, 1972.

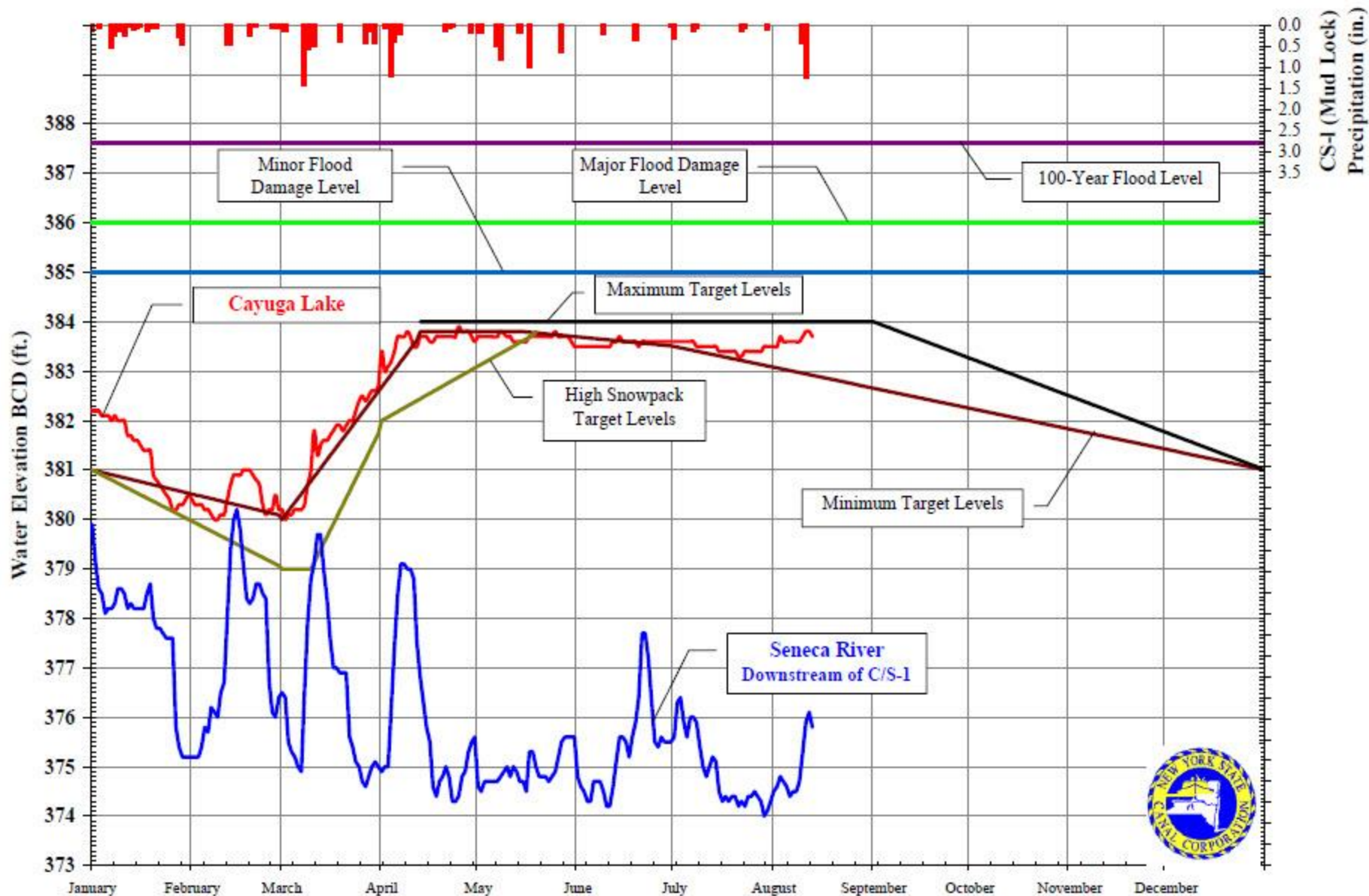
Albers Equal-Area Conic projection



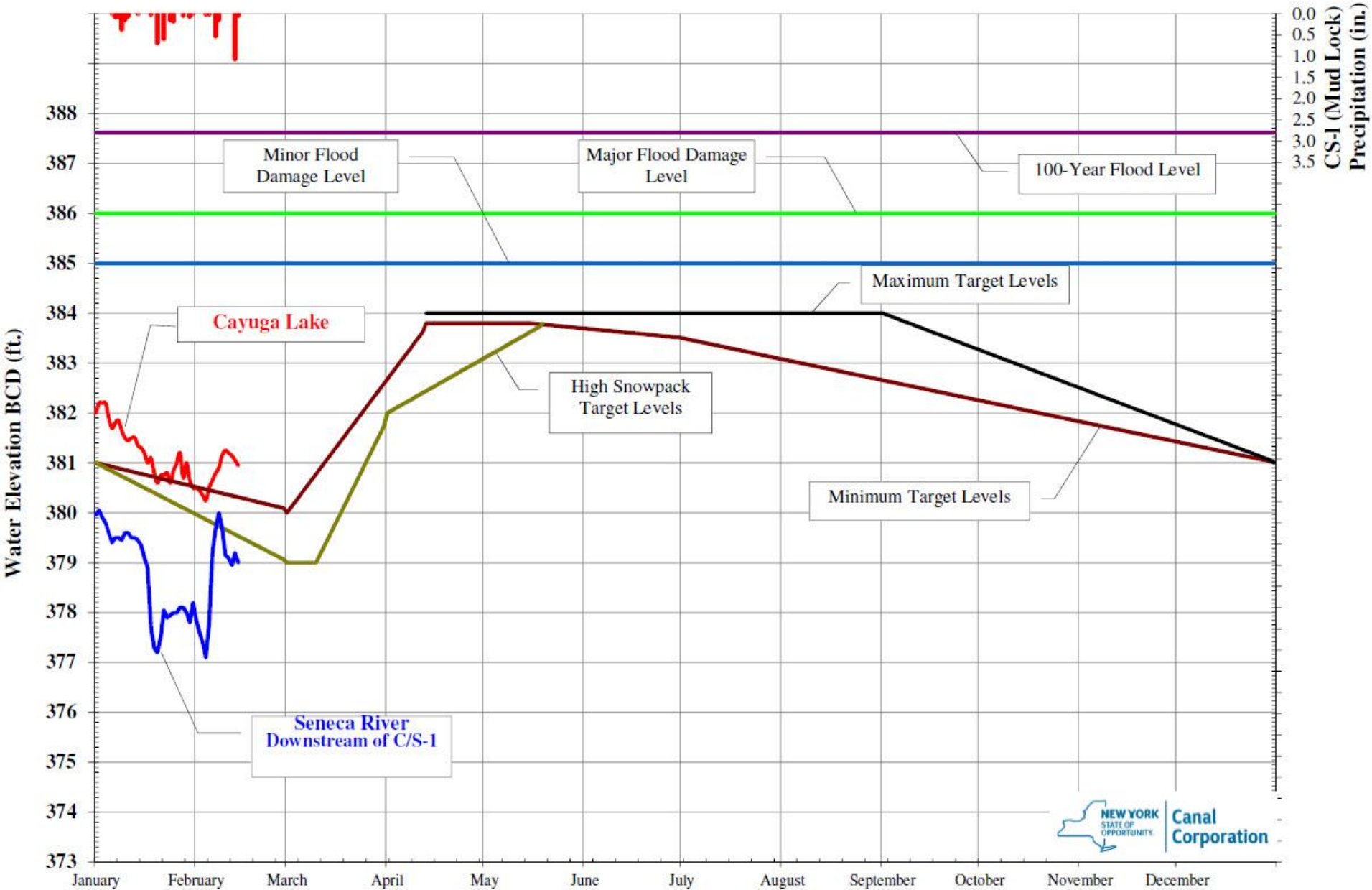


Last Modified: 08/13/2009

CAYUGA LAKE LEVEL - 2009

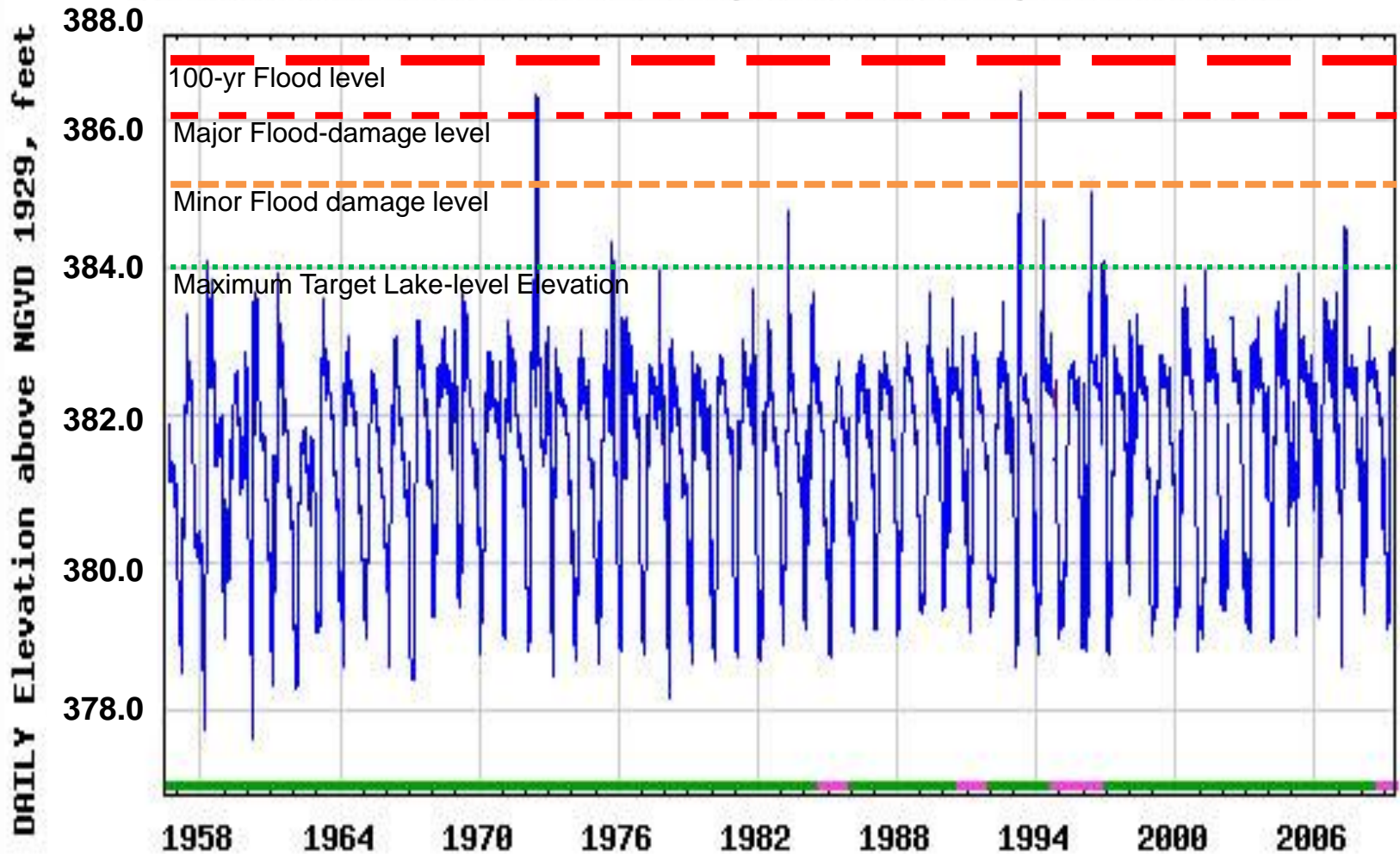


CAYUGA LAKE LEVEL - 2019





USGS 04233500 CAYUGA INLET (CAYUGA LAKE) AT ITHACA NY



OLYMPUS,

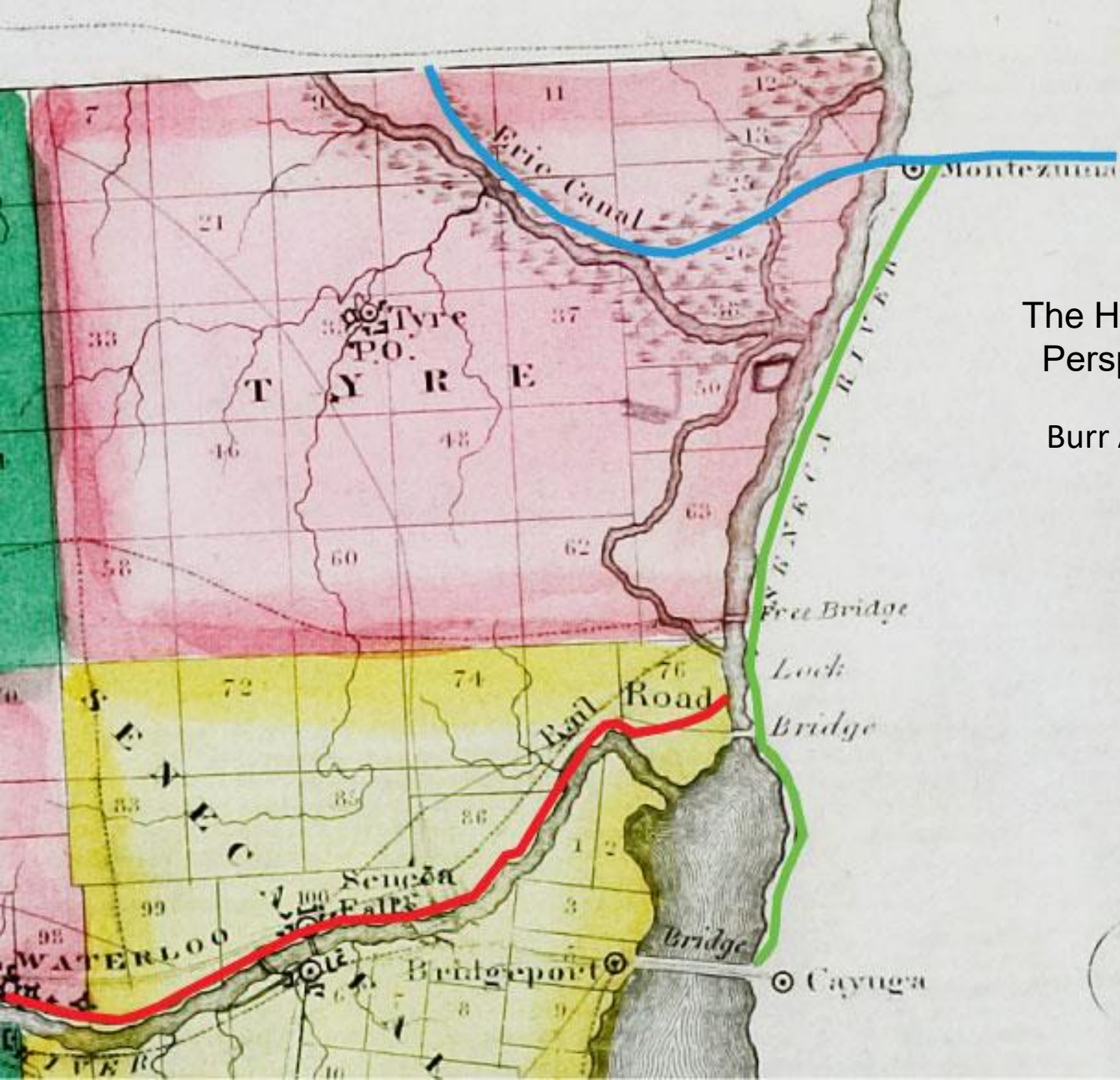
WHERE THEY SAY, THE GOD'S ETERNAL MANSION STANDS UNMOVED,
NEVER ROCKED BY GALEWINDS, NEVER DRENCHED BY RAINS,
NOR DO THE DRIFTING SNOWS ASSAIL IT, NO,
THE CLEAN AIR STRETCHES AWAY WITHOUT A CLOUD,
AND A GREAT RADIANCE PLAYS ACROSS THAT WORLD
WHERE THE BLITHE GODS LIVE ALL THEIR DAYS IN BLISS.

From: The Odyssey, Chapter IV, by Homer

The Historical
Perspective....

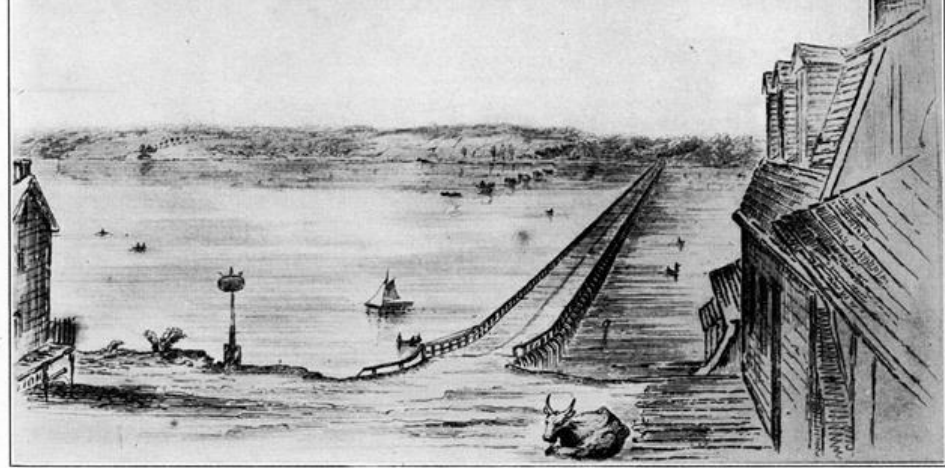


1825 Map
Upstate New York

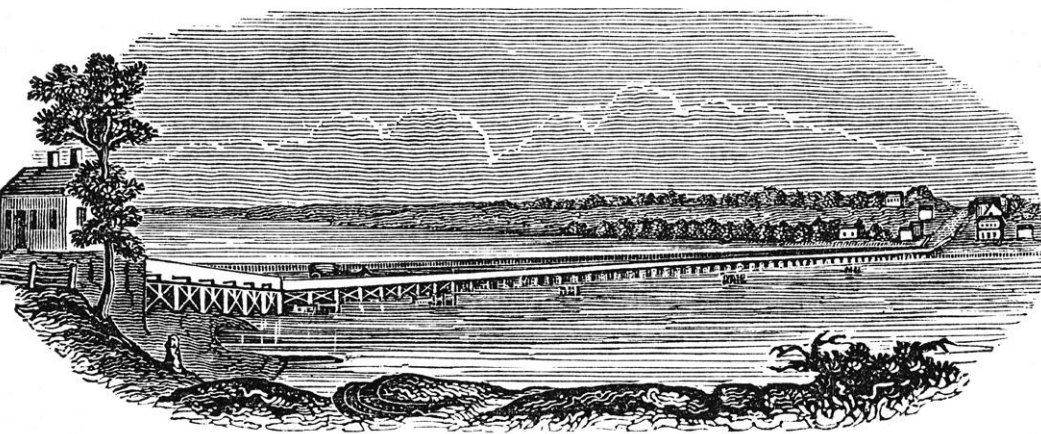


The Historical
Perspective....

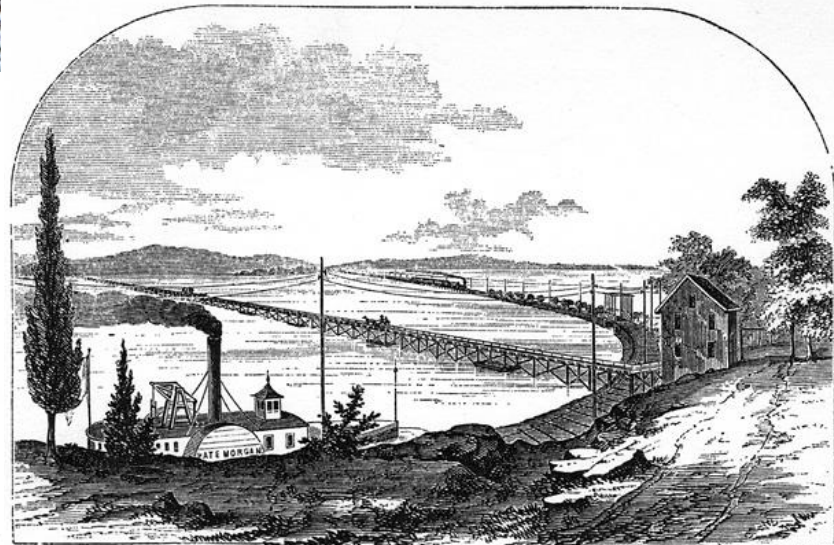
Burr Atlas, 1839



CAYUGA LONG BRIDGE, 1800-1857



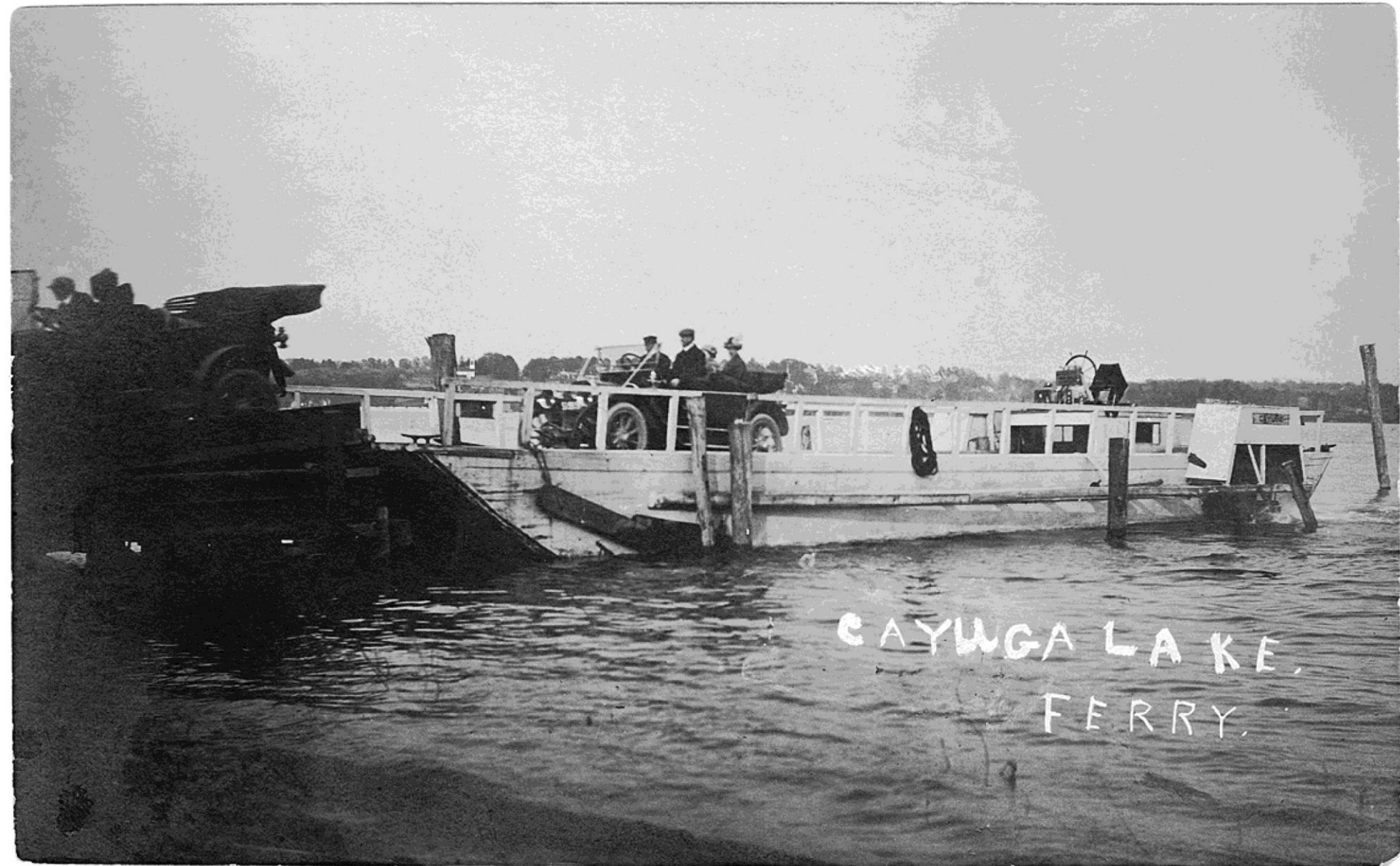
Cayuga Bridge.



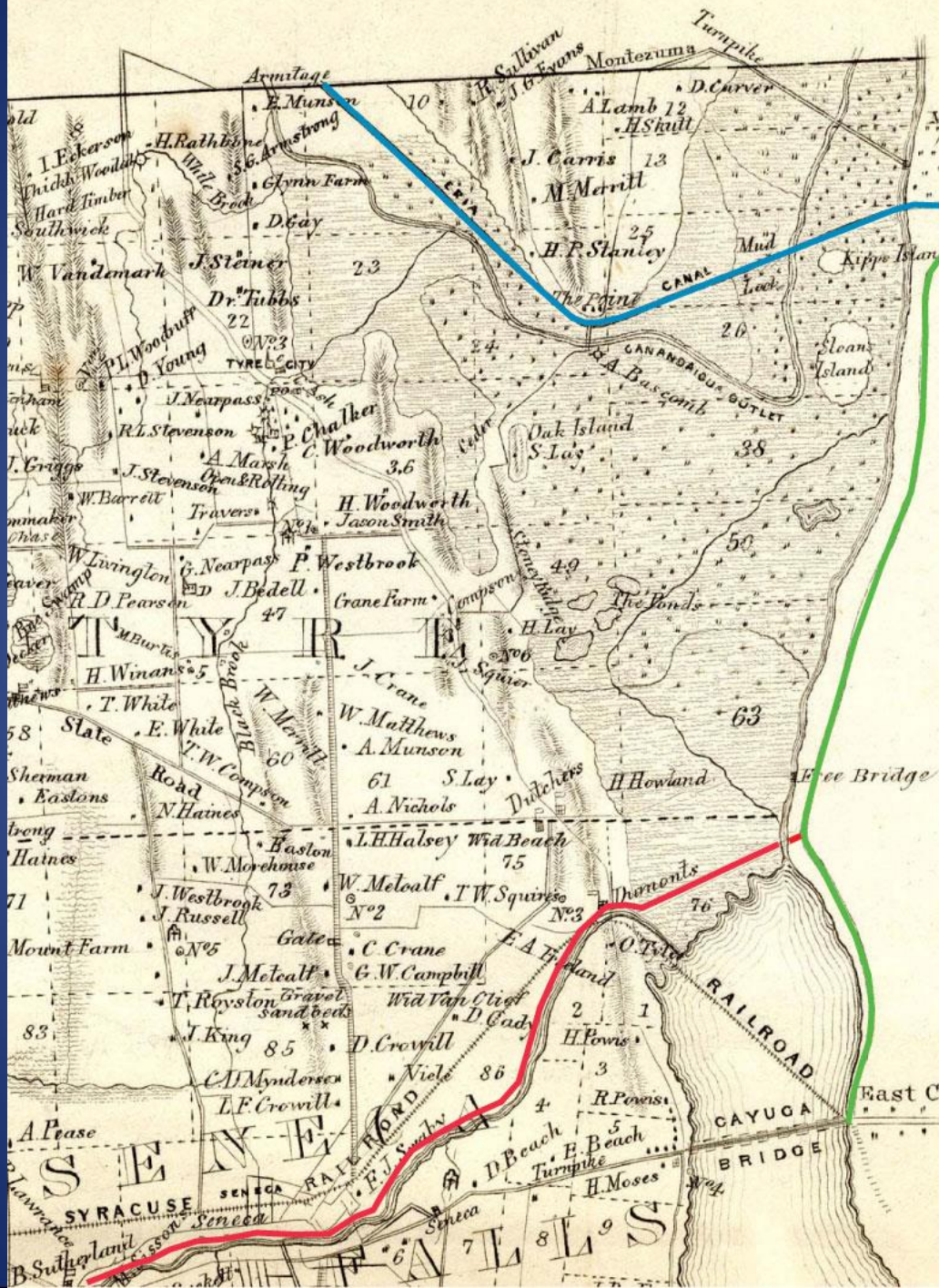
CAYUGA BRIDGE.

No Bridge?

No Problem.....



CAYUGA LAKE,
FERRY.



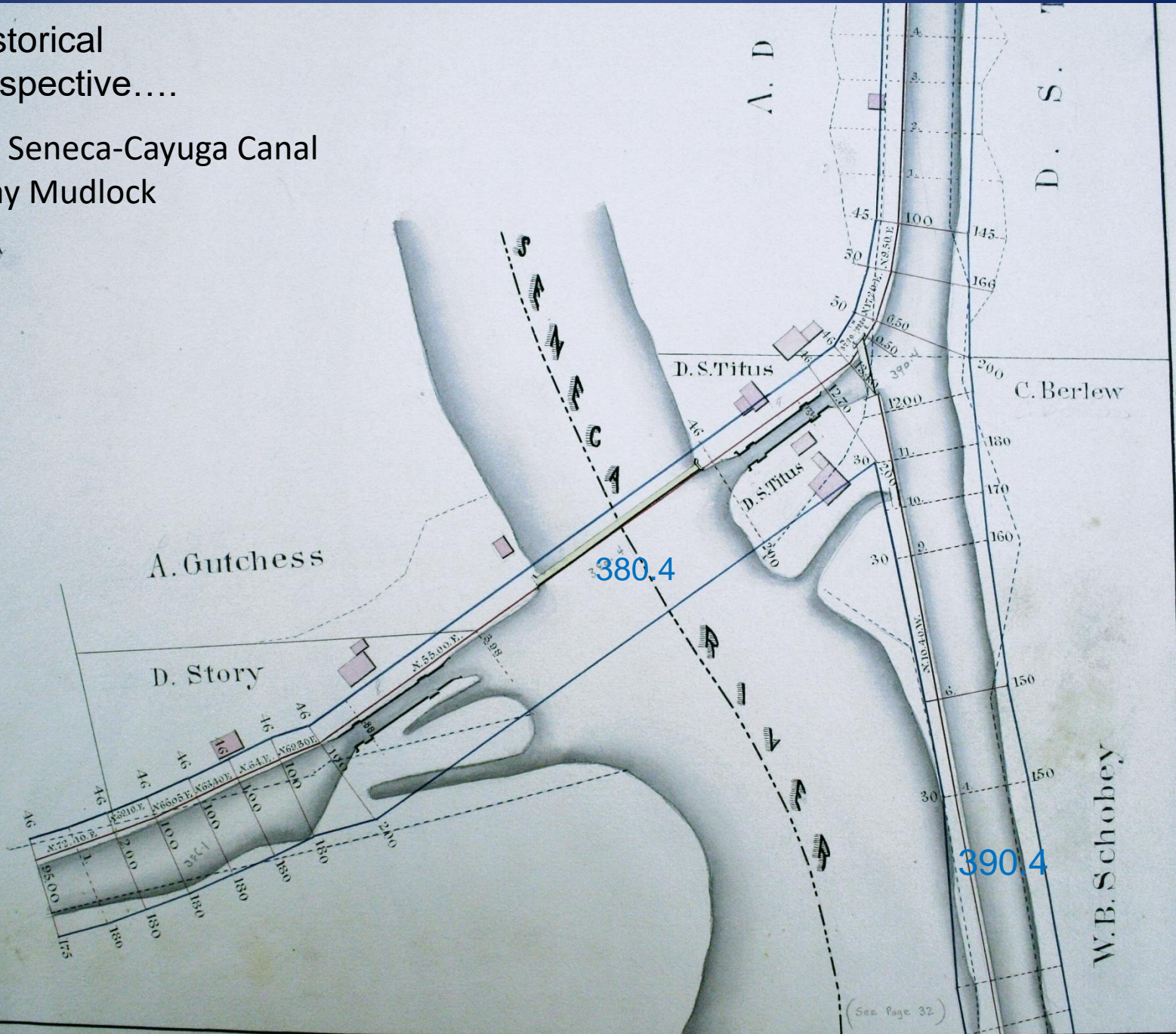
The Historical Perspective....
Seneca County Map, 1850

The Historical Perspective....

1860s Map – Seneca-Cayuga Canal at present day Mudlock

Seneca Falls

386.4



380.4

390.4

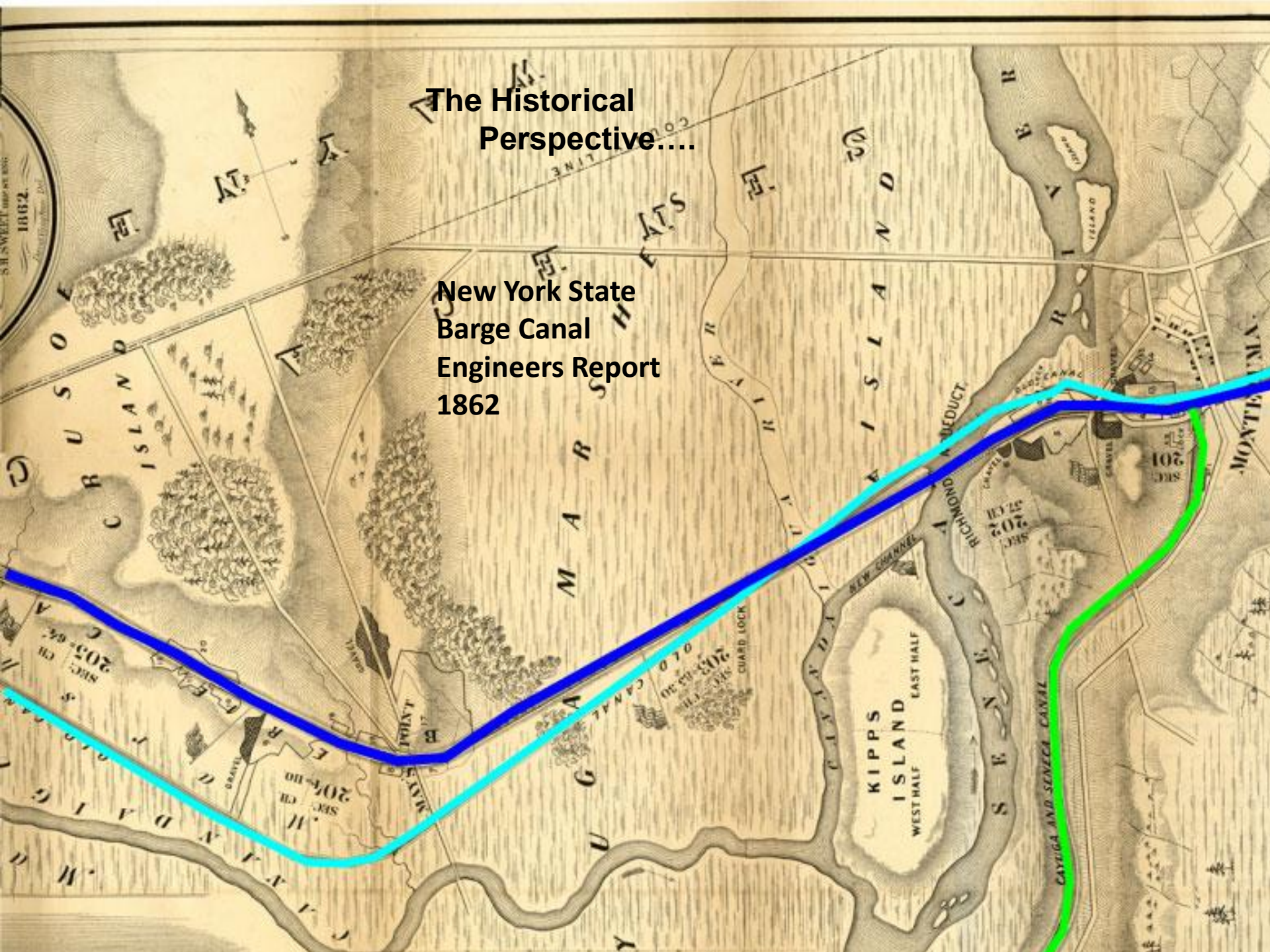
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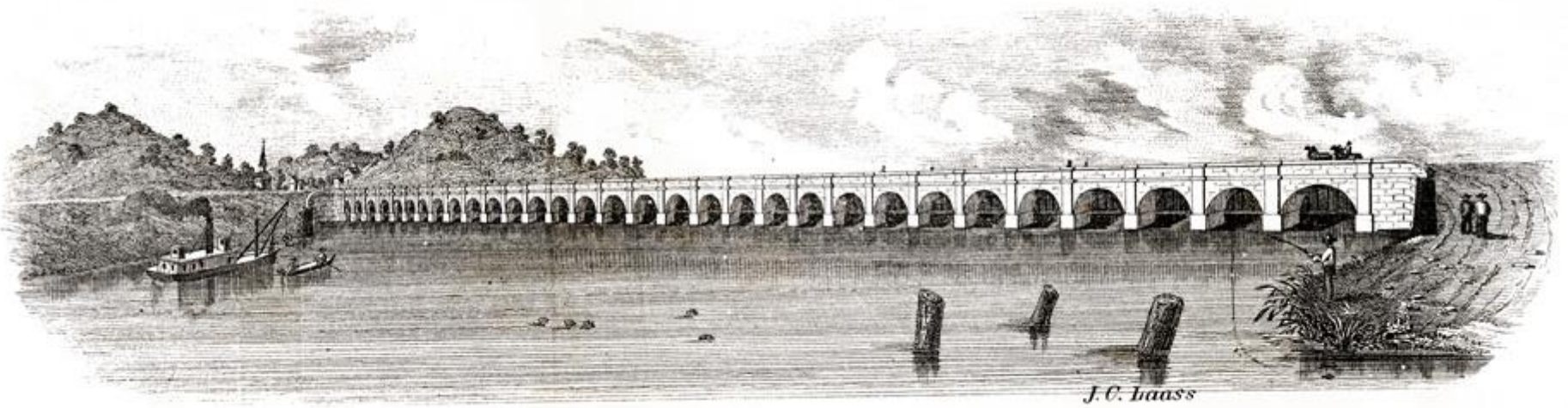




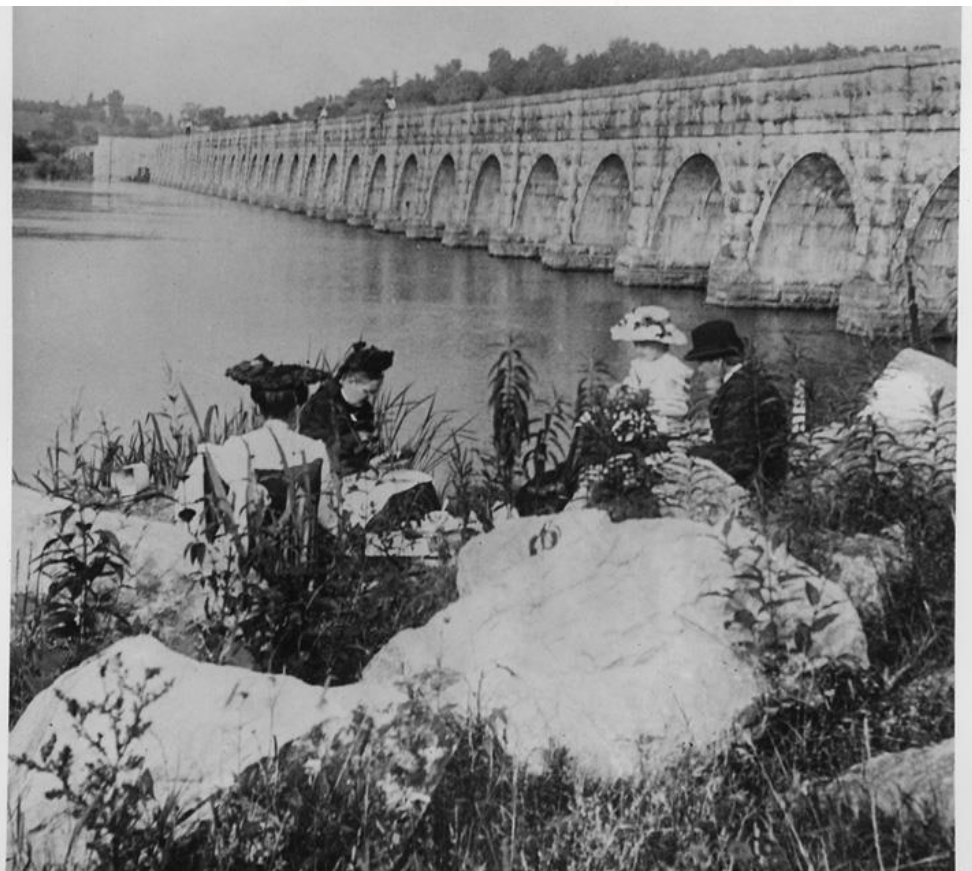
**The Historical
Perspective....**

**New York State
Barge Canal
Engineers Report
1862**





Richmond Aqueduct – Past and Present





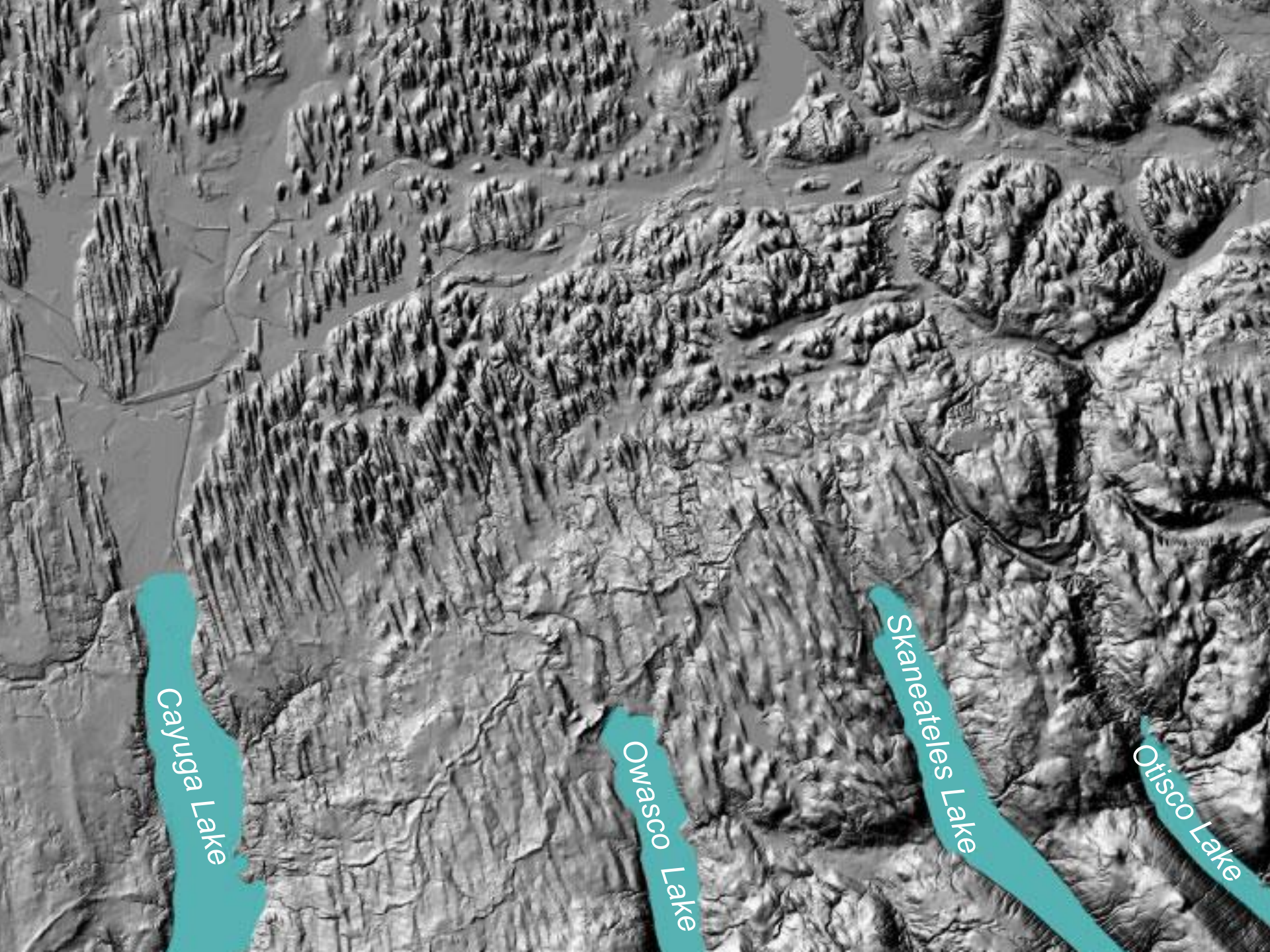






OLD CANAL

ENLARGED CANAL

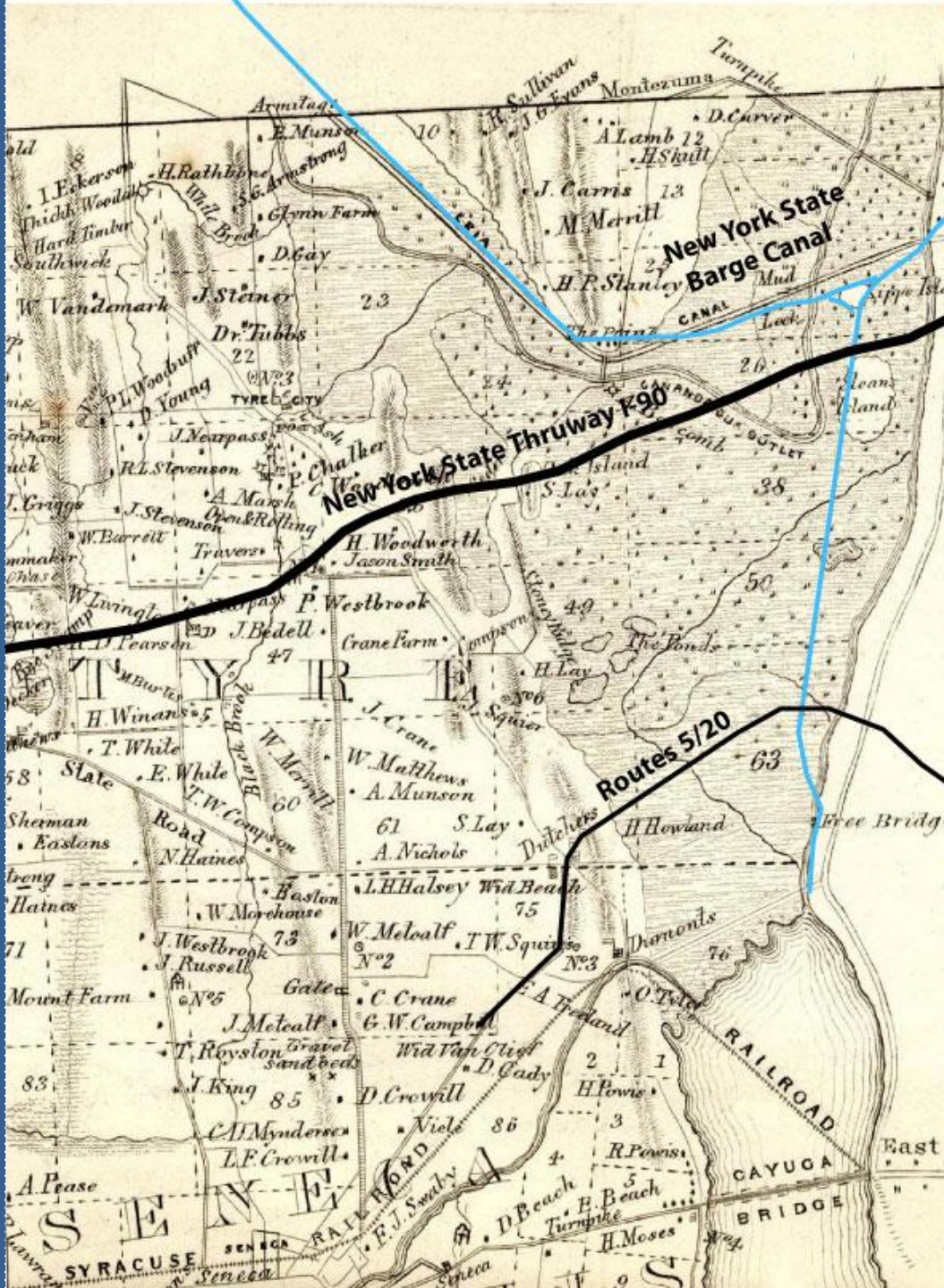


Cayuga Lake

Owasco Lake

Skaneateles Lake

Otisco Lake



1850 Map with
2009 cultural features
approximation of:
Routes 5 & 20
NYS- Thruway
NYS – Barge Canal

Footnotes on the water level of Cayuga Lake and the Seneca River from the records of the New York State Senate and Assembly

New York State Senate – 1852 “Fall of the [*Seneca*] River from the Rochester-Syracuse railroad bridge to Baldwinsville [*dam*] is 12.54 feet.

New York State Senate – 1853 Report of the Commissioners, relative To draining the Cayuga Marshes – “Lowering of the Seneca River at the foot of Cayuga Lake is proposed as the river level at Jacks Reef is to be lowered by 3 feet.” “Bars were removed at the foot of Cayuga Lake, Martins Rapids [*2 miles below*], and at Mosquito Pointto drain swamps below Ithaca.”

“Many adjustments made in the 1830s to further lower the marshes [*Montezuma and at Ithaca*] to this point have been ineffectual.”

The 1831 report indicates that spring floods are not relieved until June/July, after which the water [in Cayuga Lake] continues to rise due to weed growth [*eel grass*] in the Seneca River channels.

Water in Cayuga Lake is higher in September/October than in April.”

Footnotes on the water level of Cayuga Lake and the Seneca River (cont'd)

Assembly of the State of New York – 1860 Report of the Commissioners, relative to draining the Cayuga Marshes. “Lockages downward from Buffalo to Montezuma and from Jordan to Montezuma create additional flows to the Seneca River.” “Mosquito Point reef not removed at this point.”

1855 observations – “the effect of the [*Richmond*] aqueduct....marshes at Montezuma are overflowed, large quantities of water passing over the marsh.... embankment for the canal [*1850 enlargement in the marsh and aqueduct construction*] dam the wetland and force all water through the Seneca River.... causing injury to lands all the way

“As the country is cleared up, and swamp lands drained and subjected to cultivation, the time required for heavy rains to find their way to stream and lake is much shortened. When in former time, the low lands held back and distributed slowly their contents for weeks, a few hours now suffice to precipitate the falling waters into their natural avenues of escape. Something must be done to prevent this flooding.....”

Footnotes on the water level of Cayuga Lake and the Seneca River (cont'd)

Assembly of the State of New York – **1860** Report of the Commissioners “Cut in Jacks Reef completed in 1857 and lowered Cross lake by 4 feet. Bars [sand] removed at: Hickory Point, Mosquito Point, Railroad Shoal and Weedsport, and will continue to enlarge cuts in other shoals, fans, reefs.”

Assembly of the State of New York – **1885** Report of the Commissioners “These observations [1875-1883] indicate improvements already made have reduced the lower-water stage of Cayuga Lake by 1 foot, at the Richmond Aqueduct by 2 feet and Mosquito Point by 4 feet.”

Nobel Whitford – History of the New York State Barge Canal – Chapter 8 – **1907** Amendment for the reconstruction of the Cayuga-Seneca Canal and connection to the new Barge Canal – moving the present main canal alignment 5 miles south, closer to Cayuga Lake, due to the ‘massive’ quantities of cement/gypsum and especially salt, a direct link between Cayuga Lake and the main Barge Canal was warranted.....”

Construction of the Mudlock structure in **1915** was the first structure across the outlet of Cayuga Lake and did not change the average water level of Cayuga Lake, but the continued efforts to lower the water level of the Montezuma Marshes from the 1810s and the next 100 years did lower the level of the Clyde/Seneca River by as much as 10 feet near Mudlock.

Measurements at the Seneca – Cayuga Canal
Old Lock 10 (Cayuga Lock) and at Old Lock 9, (the
east side lock at present day Mudlock) were made
from the top of the lock structure to the lake surface.

Lock 9 (Mudlock)

1851 8.076 ft

1884 8.566

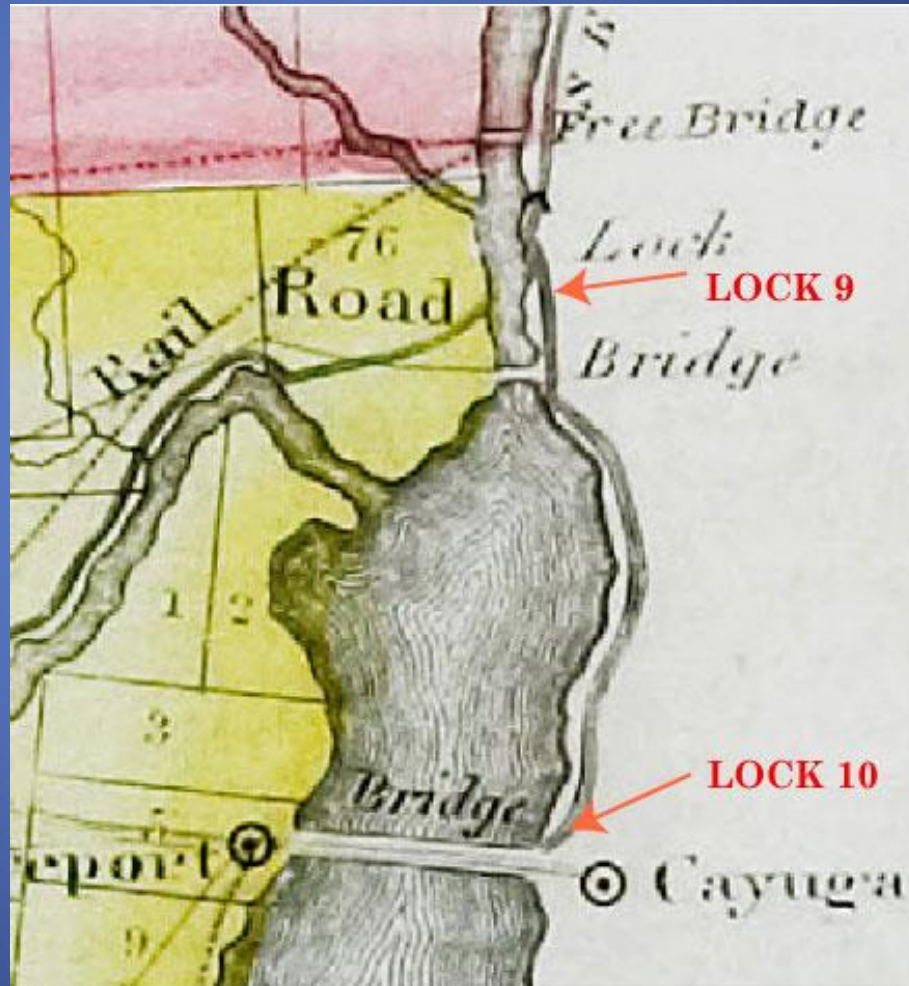
2009 8.357

Lock 10 (Cayuga)

1851 8.132 ft

1884 8.582

2009 8.325



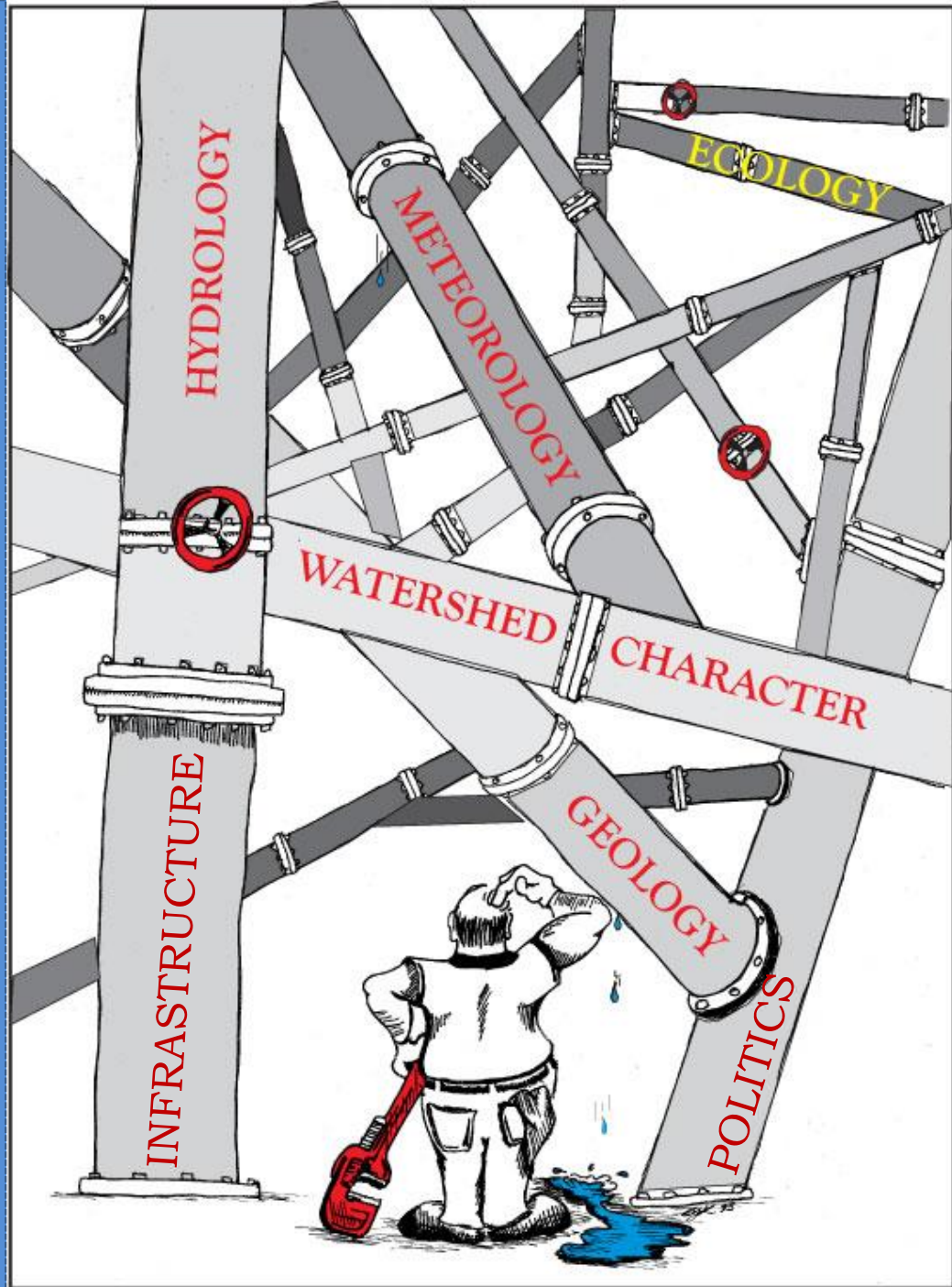
1850's



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Questions?

