The Potomac Company and Potomac River Surveys

The Potomac Company

In 1781, Thomas Jefferson's *Notes on the State of Virginia* summed up the status of navigation on the upper Potomac River. In the first 15 miles above tidewater, the Little, Great, and Seneca Falls remained obstacles. Upstream of those lower rapids, navigation "for batteaux and canoes, is so much interrupted as to be little used. It is, however, used in a small degree up the Cohongoronta branch [the Potomac's main stem and North Branch] as far as Fort Cumberland, which was at the mouth of Wills's creek, and is capable, at no great expence [sic], of being rendered very practicable." In other words, the upper Potomac then saw limited commerce, but with some improvement could see much greater use.[1]

With the peace following the Revolutionary War, interests in western development and river navigation renewed. Leaders of the new United States wanted to better connect the lands and citizens on both sides of the Allegheny Mountains. They feared that the Northwest Territories might be lost to Great Britain or Spain unless transportation and commerce with the eastern seaboard were improved. The Spanish increased the need for east-west routes by first closing the Mississippi River to Americans in 1784 and then charging large duties on goods when they reopened it.[2]

The states competed with each other over the western trade. New Yorkers planned to improve the Mohawk River to link the Great Lakes with the Hudson River and New York City. In Pennsylvania, the Union Canal would connect Philadelphia to the Susquehanna River in the middle of the state. (In the nineteenth century, systems of canals, railroads and inclined planes would cross all of Pennsylvania.) Mid-state Virginians hoped that improvements to the James and Kanawha Rivers would serve to open Ohio Valley trade to Richmond and the Virginia tidewater. Marylanders and Northern Neck Virginians looked to the Potomac and Monongahela Rivers as linking Georgetown and Alexandria to Pittsburgh, the Ohio River, and beyond.

The Hudson–Mohawk and the Potomac–Monongahela routes were the most promising. While the former, the New York route to the West, was longer, it crossed lower elevations than routes going through the southern mountains. (When completed in 1825, the Erie Canal would extend this route to Lake Erie and help establish New York City as the nation's greatest trade center.) The Potomac–Monongahela route would need to cross much higher elevations over the Allegheny Plateau; however it offered the shortest route from tidewater to the Ohio River valley.

On May 31, 1783, the Maryland legislature appointed Normand Bruce and Charles Beatty to examine the upper Potomac River and estimate the time and expense for making it "navigable through several falls." On November 15, 1783, they reported back with a plan intended to make the Potomac navigable from Fort Cumberland to tidewater. This included removing rocks and erecting dams in the river "to deepen and confine the water and check the rapids." A mile-long canal with two locks would be built along the Virginia side at Shenandoah Falls. At Seneca Falls they would deepen the channel along the Virginia shore and erect a dam to water it. A mile-long canal with eight locks would be built on the Virginia side of Great Falls. And a three-mile-long canal with four locks would be made on the Maryland side of Little Falls. Bruce and Beatty very optimistically estimated that these works could be completed in two years at the total expense of $92,000. The Maryland legislature took no further action then.[3]

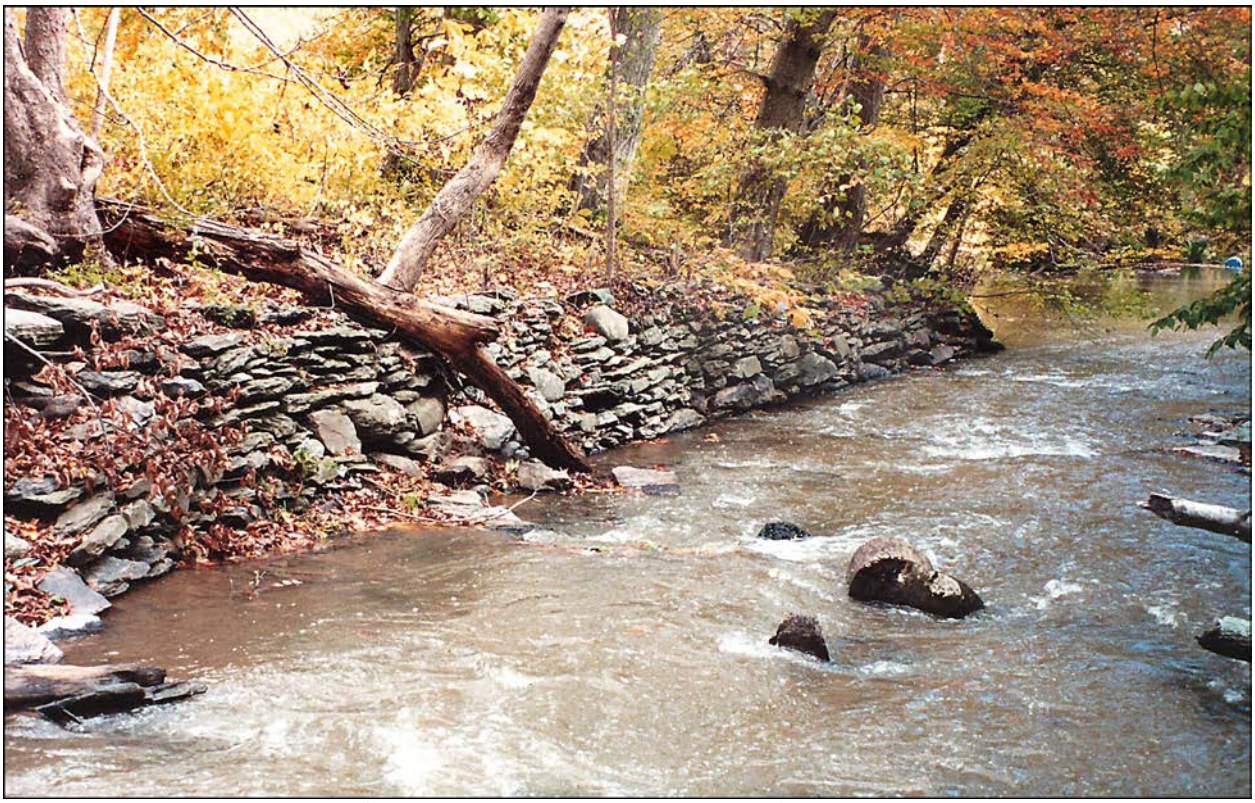
In September 1784, after returning to civilian life, George Washington journeyed to western Pennsylvania with his nephew Bushrod Washington, Doctor James Craik and his son, William, and three "servants." Washington wrote that his trip's objective was to check on and settle affairs on a mill he co-owned at Washington's Bottom (Perryopolis, Pa.). However, this trip was also meant to gather information on land and water trade routes. In his diary and subsequent other documents, including a very detailed letter to Virginia Governor Benjamin Harrison, Washington outlined his vision for trade routes from Detroit and the Great Lakes to Alexandria at the Potomac tidewater.[4]

Washington considered both the Youghiogheny and Cheat Rivers as possible navigational connections to the Monongahela, but seemed to prefer the latter. An option the Cheat posed was that instead of turning downstream at its mouth, toward Pittsburgh, one might go upstream on the Monongahela and its West Fork, portage to the Little Kanawha River, and then boat downstream to the Ohio River. That route would include only a very few miles within Pennsylvania, an attribute desired by Virginians. Washington's preference for a Cheat River route is presumably why it, and not the Youghiogheny River, was later mentioned in the Potomac Company's charters.

With Washington's influence, the Maryland and Virginia legislatures chartered the Potomac Company in 1784 and 1785. The charters allowed the company to condemn land along the Potomac River to build its navigational works, and to collect tolls on boat cargos so that it could pay off debts and reward investors. George Washington would serve as the company's first president from 1785 to 1789.[5]

The Potomac Company's charters stated that it should make the river navigable for "vessels drawing one foot of water" to a place on the North Branch above Cumberland "at which a road shall be set off to the Cheat River." The charters gave the company three years to make the Potomac River navigable from Great Falls to Cumberland, and ten years to make it navigable from tidewater though Great Falls. However, the Potomac Company would take seventeen years to complete its initial major navigational works. As will be discussed further, the company's failure to satisfy the one-foot-depth navigational requirement on the upper stretches of the river during the dry seasons of the 1820s would lead to its demise.[6]

In August and September of 1785, Washington and the Potomac Company directors personally inspected the Potomac River from Elks Run, above Harpers Ferry, to Little Falls. Undaunted by what whitewater paddlers now designate as Class I to III rapids, they canoed through all river stretches except the large cataracts at Great and Little Falls. Their observations and conclusions made during these canoe trips would serve as the basis for the company's initial work.[7]



Midsection of Seneca Falls sluice (looking downstream from Virginia shore, D. Guzy)

The company first began building bypass canals without locks along the Virginia shore at Seneca Falls, and along the Maryland shore at the Shenandoah Falls on the Potomac River above Harpers Ferry. Labor problems, heavy rains, and high water levels slowed progress. However, these bypass canals and other works nearby were sufficiently completed by January 1790 for Thomas Johnson, then the company president, to officially state: "Inland navigation is now constantly performed by Batteaux of ten tons burthen and upwards, from East Cumberland, and a considerable distance within the South Branch to the Great Falls, within nine miles of Tide water, the boats returning on an average of twenty miles a day."[8]

While its initial focus was clearly on opening the Potomac River from the Blue Ridge Mountains to tidewater, the Potomac Company realized that it must assure navigation on the river's upper stretches through the Great Valley and the Allegheny Mountains, and on its major tributaries. It also needed to establish a land and water route over the Allegheny Plateau and on to the Monongahela River.

In 1786, a survey by Colonels Francis Deakins and John Neville concluded that the overland road should start on the North Branch at the mouth of the Savage River and continue through the upland glades to Dunkards Bottom (near present day Kingwood, W.Va.), but not stop there. Unlike Washington, the colonels observed that the stretch of the Cheat below Dunkards Bottom and through Laurel Hill was too rough for navigation in its unimproved state (so rough that today this Cheat River stretch is a whitewater rafting mecca). Deakins and Neville recommended that the road continue on to the Monongahela River at Morgantown.[9]

In July and August 1789, Colonel George Gilpin and James Smith surveyed the upper Potomac River and the potential water and land routes through the Allegheny Plateau. Gilpin was a surveyor from Alexandria, one of the Potomac Company's directors, and Washington's friend and confidant. Smith was then the Potomac Company's "principal manager."

Gilpin and Smith traveled the Potomac and its North Branch by boat, from Great Falls to twelve miles above Cumberland. Moving overland from there, they concluded that the North Branch would have been navigable as far upstream as New Creek (Keyser, W.Va.) for a boat with "thirty to forty barrels of flour." Their overall assessment of the upper Potomac was similar to Washington's. "After passing the Falls at the mouth of the Shenandoah river, we found no fall which would prevent a boat passing up and down with ease and safety, except in those seasons when the river is very low, then in the broad parts the water is shallow, and requires to be collected and deepened in those parts which does not appear either difficult or expensive to accomplish."[10]

Gilpin and Smith considered two routes between the Savage and Monongahela Rivers to be viable—a portage to Dunkards Bottom and then down the Cheat River, or a shorter portage to Deep Creek and then down that creek and the Youghiogheny River. They recognized that falls in both the Cheat and Youghiogheny Rivers posed navigation problems, but expressed optimism in overcoming them. These two potential routes would be reevaluated again and again as later surveys tried to determine the best trans-mountain canal extension from what would become the Chesapeake and Ohio Canal.

On his return trip down the Potomac, Gilpin noted the river commerce already in effect. "Two boats came down from Old Town with tobacco, two or three from Opeckon [Opequon Creek] with flour; and we went in the company with two or three from Shepherd's town; one of which was more than seventy feet long and when fully loaded, would carry from 120 to 130 barrels of flour; these boats went quite down to Great Falls; and I was informed by Captain Shepherd, that one thousand barrels of flour had been sent down the river this spring from Shepherd's town only."[11]

Gilpin and Smith's survey and "leveling" of the river would serve the Potomac Company and future surveyors for years to come. The accompanying table presents the summary of their levels (i.e., elevations). In 1790, company president Thomas Johnson summarized the optimistic conclusion from Gilpin and Smith's survey: "These gentlemen have no doubt that navigation will be extended to the mouth of the Savage & think it may at considerable expense be connected with the western waters, several of which they visited and examined."[12]

Summary of Levels from Gilpin and Smith's 1789 Survey

(*House of Representatives Report No. 111, 17th Congress, 1st Session,* May 3, 1822)

"The different falls in the Potomac river leveled, and the distance of the river surveyed, by Col. George Gilpin and James Smith, in July and August 1789, beginning at the mouth of Savage, to Shenandoah falls; and from Shenandoah falls to tide water, below the Little falls, by James Smith, at sundry times."

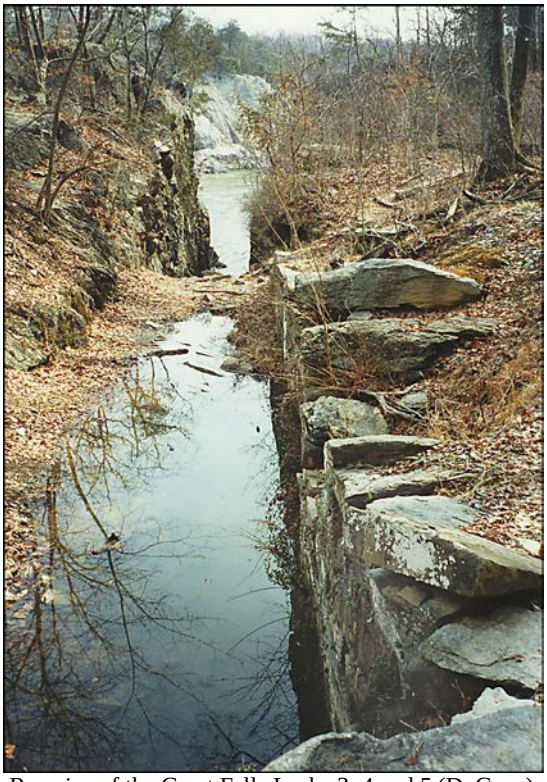
	Distance			Fall	
	Miles	¼ M	Perches	Feet	Inches
From the mouth of Savage to the mouth of Georges creek	2		63	61	5½
mouth of George's creek, to the mouth of New creek	5	3	50	129	2½
mouth of New creek to Fort Cumberland	22	1	60	254	4
From Fort Cumberland to Evit's creek	4	2	5	34	2
Evit's creek to the road on the river side from Cumberland	7	0	39	33	3
where Cumberland road joins the river to Patterson's creek	1	2	27	6	0
Patterson's creek to Mr. William Moore's	2	3	7	15	0
Mr. William Moore's to Mr. Joseph Sprig's of Old Town	4	0	49	11	9
Joseph Sprig's to the mouth of the South Branch	1	3	15	6	1
mouth of the South Branch to Town creek, or Gregg's	2	2	44	13	7
Gregg's to Mathias Brant's	4	0	77	25	½
Mr. Brant's to the lower end of the Tumbling Dam falls	6	3	41	35	1
Tumbling Dam falls to the lower end of Bear falls		3	32	00	0
lower end of Bear falls to David Mitchell's house	4	1	72	16	6
David Mitchell's house to Washington's bottom	5	3	42	23	1½
Washington's bottom to 15 mile creek	4	3	30	13	11
15 mile creek to Sideling hill creek	4	1	39	14	1½
Sideling hill creek to Great Cape Capron	2	2	10	13	6½
mouth of Great Cape Capron to Little Canolaway creek	8	0	67	27	9½
Little Canolaway creek to Hancock town		2	3	00	6
Hancock town to Great Canolaway creek		3	4	00	0
Great Canolaway creek to Licking creek	6	0	48	24	6
Licking creek to opposite Fort Frederic, or Back creek	4	1	24	17	6
Back creek to the lower end of Garrison's falls	1	1	36	4	10
lower end of Garrison's falls to Boyd's ferry	1	0	48	0	0
Boyd's ferry to the mouth of Little Conogocheague	6	2	6	23	2½
Little Conogocheague to the mouth of Great Conogocheague	5	3	24	25	1
mouth of Great Conogocheague to mouth of Opicon	8	3	8	48	3½
mouth of Opicon to Shepherdstown	17	1	24	35	9
Shepherdstown to the head of the Shenandoah falls, just below Cape Trist furnace	10	0	52	22	2
Head of Shenandoah falls to the lower end of island at Paynes falls	5	1	53	43	1¼
Island at Paynes falls to Senaca falls	32	0	8	13	9½
Head of Senaca falls to Broad run	2	1	19	15	0
mouth of Broad run to head of Canal at Great falls	5	3	26	9	9
fall at the Great falls				76	9
Head of canal at Great falls, to the head of the canal at Little falls	9	2	36½	29	4
fall at the Little falls				37	1
length of the canal at Little falls	2	2	75¼		
[Total]	**218**	**0**	**63¾**	**1160**	**7¼**

Table Notes:

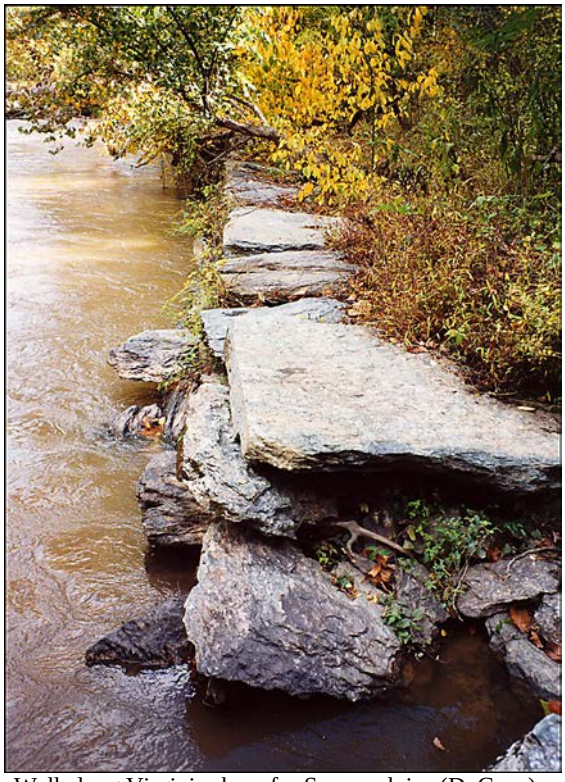
1. Distance in miles, quarter miles (1/4 M.) and perches. 80 perches = 1 quarter mile
2. Using the US Geological Survey's (USGS's) river mileage cited for the locations of its river gages, the river distance from the mouth of the Savage River to the Washington D.C., line is about 223 miles. Lock Cove is about 1.4 miles below the D.C. line. So the total of 218 miles 63.75 perches measured by Gilpin and Smith is only 2.5% less than modern measurements.
3. The USGS river gage at Luke, Md., .2 miles downstream from the mouth of the Savage River, is 944.22 feet above sea level. The total fall of 1160 feet 7¼ inches measured by Gilpin and Smith is 23% greater than this elevation.

_____

The Potomac Company completed its canal and three wooden locks at Little Falls in 1795. This opened navigation through to tidewater, with the exception of a portage around Great Falls where the canal and locks were still under construction. In July 1799, the president and directors of Potomac Company announced improved navigation on the Potomac: "from Georges Creek, twenty-eight miles above Fort Cumberland, and two hundred and eighteen above tide water, into tide water; which at this time, is in such a state, that at certain seasons, boats loaded with an hundred barrels of flour and upwards, can safely navigate that whole extent, except five hundred feet at the Great Falls."[13]



Remains of the Great Falls Locks 3, 4 and 5 (D. Guzy)



Wall along Virginia shore for Seneca sluice (D. Guzy)

With the completion of the Great Falls locks in 1802, the Potomac Company finished its initial works, that is, those originally planned by George Washington and the directors in 1785. At their January 1802 meeting, the company's president and directors proudly proclaimed: "after the approaching frost no obstacle on any part of the main River will remain to the free and safe transportation of the Produce of the upper country, from Georges Creek to tidewater markets, a distance of more than two hundred miles . . . [We] confidently expect that in the course of a very few years it will be so far improved as to admit to free passage of loaded boats at almost all seasons." Adding to the optimism, the Potomac Company paid its first (and only!) dividend to its shareholders in 1802.[14]

At the start of the nineteenth century, the Potomac Company turned its efforts toward opening navigation on the Potomac's tributaries. The company opened up stretches on the Shenandoah and Monocacy Rivers and Conococheague Creek, and attempted to do so on Antietam Creek.

In 1808, the Potomac Company's response to the secretary of the U.S. treasury's, Albert Gallatin's, request for information on the nation's "internal improvements" stated that the company's greatest mistakes were constructing the Little Falls locks too large and using wood for their lock seats. (The Potomac Company used stone for all its other lock seats.) By 1812, the Little Falls three wooden locks were "much decayed." About 1815 they "gave way, in such a manner that it became necessary to renew them entirely." The company began quarrying stone for replacement locks as early as 1802. In 1812, it condemned land for the new locks upstream of the old wooden locks and began work. However, this had

to be temporarily suspended in 1816 due to lack of funds. The new set of four stone locks was finally opened in March 1818.[15]

Along with its aborted efforts to open navigation on Antietam Creek, the new Little Falls locks were the last major projects the Potomac Company attempted. The expense of Little Falls locks drove the company further into permanent debt. After 1818, its operations chiefly involved maintenance, and even that had to carefully prioritized. Lock gates, wing dams, and in-river sluices frequently needed repairs. And the canals, locks and sluices had to be cleansed of the mud and other sediment that filled them.[16]

Later chapters will discuss in more detail the Potomac Company's navigational works on individual river stretches and tributaries.

Little Falls Canal entrance, later a feeder canal for the C&O Canal; now a whitewater slalom course (looking upstream, D. Guzy)

Potomac River Surveys

The building of the Erie Canal (1817–1825) threatened to take western trade away from Maryland, Virginia, and the new District of Columbia. This renewed interest in connecting the Potomac and Ohio Rivers by a canal over the mountains. It also created the desire to replace the Potomac Company's in-river navigation system with the region's own continuous, still-water canal—a canal built entirely off the river and relying extensively on locks, like the Erie Canal. Several surveys for a new continuous "Potomac Canal" were conducted in the 1820s. The optimistic conclusions of these surveys about still-water canals led to the end of in-river navigation on the Potomac, and to the Potomac Company itself.

Thomas Moore, a Quaker from Brookeville, Md., led two of the Potomac canal surveys in the early 1820s. Apparently self-taught, Moore was a scientific farmer, businessman, inventor, surveyor, and had served as an engineer on the National Road. John Mason befriended Moore and hired him to direct the construction of the causeway connecting Mason's summer home on Analostan Island (also called Mason's and now Theodore Roosevelt Island) with the Virginia shore. When the Virginia Board of Public Works was seeking a principal engineer in 1818, Mason, then the Potomac Company president, recommended Moore. The Board offered Moore the position and he accepted.

As he noted in a letter that year to his brother-in-law, Isaac Briggs, Thomas Moore was comfortable with the surveying aspects of the principal engineer job, but admitted his knowledge of river

improvements at that time was limited. Nevertheless, Moore, with Briggs' assistance, was soon surveying and planning canals along the James and other Virginia rivers for the Board. Briggs had a little more experience as the engineer on the Rome to Utica section of the Erie Canal.[17]

In an attempt to improve its funding situation with the Virginia legislature, the Potomac Company resolved during its August 1819 annual meeting to request that the Virginia Board of Public Works have its principal engineer (Moore) examine their navigational works and explore the country laying between the Potomac and Ohio Rivers "with a view to find the best manner to improve navigation." The Virginia Board of Public Works agreed to fund this survey.[18]

In June 1820, Thomas Moore was "taking the levels of the Monongahela River" and making arrangements to get a skiff at Westernport to boat down the Potomac River. He began his "examination" at the mouth of Savage River on June 30th, continuing downriver from Cumberland on July 10th.[19]

Appendix I contains the report from Moore's 1820 survey. Moore concluded that canal and sluice improvements were practical for both the Cheat and Youghiogheny routes. He also noted how a tunnel might be used for the latter. For the Potomac River, Moore presented both cost estimates for improving existing in-river navigation and for a new continuous canal. He noted the limitations for further river improvements on the North Branch, but concluded that improvements totaling $18,000 to $20,000 would enable "boats carrying 100 barrels of flour [to] descend the river at all times, from the mouth of the South Branch to tide water, except for in an unusually dry season." Without "a minute examination on [the Potomac] shore," but based on his experience with the James River canal, Moore roughly estimated the cost of an continuous canal along the Potomac from Cumberland to Great Falls to be $1,114,300. Thus, while recognizing the navigational superiority of a continuous canal over improvements to the Potomac Company's in-river navigation system, Moore estimated the cost to be more than 50 times greater. He left the ultimate cost/benefit decision for further river improvements versus new continuous canal construction to others.[20]

In 1822, the District of Columbia Committee of the House of Representatives took Moore's 1820 survey information and recommended that a continuous still-water canal be constructed from tidewater to Cumberland. The committee recommended that the Potomac Company build the new canal. It proposed a scheme raising $2.5 million between the U.S. government, the states of Virginia and Maryland, and individual subscribers to pay for new canal construction, and also to pay off the Potomac Company's existing debts.[21]

However, as shareholders in the Potomac Company who saw only constant debts, not dividends, the states of Virginia and Maryland wanted another survey and a new analysis of the Potomac Company's finances and capabilities. The new study would have a joint commission of "men of high standing and residing in the vicinity of the waters of the Potomac" to accompany Thomas Moore and issue a more detailed report. In January and February of 1821, the Virginia and Maryland legislatures appointed joint commissioners, and the Virginia Board of Public Works directed Thomas Moore to again examine the Potomac Company works and explore the country between the Potomac and Ohio Rivers.[22]

William Naylor, Moses T. Hunter, and William Temple Thomson Mason were the three Virginians appointed to the joint commission. Naylor and Hunter were both attorneys and politicians, respectively from Romney and Martinsburg (now West Virginia). Mason lived at Temple Hall, near Leesburg, Va. and was the first cousin of Potomac Company president John Mason.

Colonels Elie Williams and Athanasius Fenwick were the Marylanders on the joint commission. At 73, Elie Williams was the oldest member of the survey party. He had served in the Revolutionary War and had assisted his brother, General Otho Holland Williams, in the founding of Williamsport. Williams had also been a Potomac Company president (1814–1817) until he had to temporarily flee to Kentucky due to debts, and was succeeded by John Mason. Athanasius Fenwick was a resident of Saint Mary's County, Md., and had soldiered in the War of 1812. While the states of Virginia and Maryland may have wanted the new navigation study to have been independent, one must note that the engineer and two commissioners had strong ties to the Potomac Company or its president.[23]

Thomas Moore (courtesy of Sandy Spring Museum)

Elie Williams (courtesy of Williamsport, Md. library)

As they stated in their report, the joint commissioners' assignment was to examine: 1) the affairs of the Potomac Company; 2) the state of navigation on the Potomac River; 3) the river's susceptibility to improvement; and 4) whether the company had complied with the terms of its charters with Maryland and Virginia (particularly whether boats of 1-foot draft could navigate the river in the dry seasons). The survey was supposed to begin in 1821, but was delayed due to some "informality" in one of the state's appointment process, Moore's commitment to survey the Roanoke River first, and probably the difficulty of getting together busy men living distances apart.[24]

The joint commissioners first assembled in Georgetown on July 2, 1822, to examine "the affairs of the Potomac Company." On July 5th, they formally issued a letter to company president John Mason asking for details on stock shares, expenditures, debts, and tolls. Mason transmitted this information to them on December 20th, and it was later published as appendices to the joint commissioners' report.

After Georgetown, the commissioners next traveled to Cumberland, where Thomas Moore joined them on July 15, 1822. From Cumberland, the survey party inspected the Potomac's North Branch up to the mouth of Savage River, and from there "the connection between the western and eastern waters." The joint commissioners' report did not describe these first parts of the survey in any detail. Unlike Moore's earlier report, it did not mention the condition of navigation upstream of Cumberland. While asserting that there would be sufficient water supplies at summit levels for a canal up the Savage River and Crabtree Run and then down Deep Creek to the Youghiogheny River, the report did not describe the structures or route of this proposed canal over the Allegheny Front.

Instead, the focus of the joint commissioners' report was on the condition of Potomac and North Branch navigation from Cumberland to tidewater, and the effort to construct a continuous canal along this stretch that would connect with the National Road at Cumberland. On July 31, 1822, the survey party began its downstream journey from Cumberland in boats, at least one of which was said to draw "only seven inches of water." Despite their shallow drafts, the boats frequently stuck on shoals and ledges in the low water resulting from a continuing drought, and the survey crew frequently had to unload and drag the

boats off. Adding to the difficulties of the voyage, "nearly the whole party, commissioners as well as others" became sick. Thomas Moore was spared, but only temporarily.[25]

The sickness was later described as "violent bilious fever." Bilious fever was a term then used to describe several diseases, including malaria and typhoid. The survey party persevered until it was forced to quit on September 18th, having reached a point on the river just below Goose Creek, "157 miles below Cumberland." From there, all the commissioners went to convalesce at William T. T. Mason's home nearby, and resolved to resume the survey on November 4, 1822.[26]

However, Thomas Moore, who had maintained his health during the survey, took sick shortly afterwards and died. In a newspaper account of the death, Isaac Briggs explained that Moore had attended a monthly Friends meeting in Indian Springs on September 20, 1822, got chills the next day, and had a continuous fever for 12 days until he died on October 3, 1822. The Virginia Board of Public Works resolved on October 26, 1822, that Isaac Briggs would replace Moore on the Potomac River survey. Briggs would write the survey report using Moore's notes, and complete the survey as "the civil engineer of the state of Virginia." Because the joint commissioners' report made no reference to the survey's last leg, it seems that Briggs apparently wrote it before completing the rest of the survey.[27]

From December 11 through 18, 1822, Briggs, Naylor, Hunter and Fenwick, assisted by Moore's son, Asa, surveyed from Goose Creek to Little Falls. Briggs completed his separate report for this last leg of the survey on January 23, 1823, which, unlike the joint commissioners' report derived from Moore's notes, focused on the costs of the proposed continuous canal rather than the condition of Potomac River navigation and the Potomac Company works. Briggs estimated that the total cost for a new continuous canal from Cumberland to the head of the Potomac Company's Little Falls canal would be $1,575,074.[28]

Regarding the state of navigation, the joint commissioners' report gave a worse assessment than Thomas Moore's report had two years before. The new report concluded that navigation on the upper Potomac was practical for only "thirty three to forty five days" per year for "fully loaded boats." The number of navigable days would increase as one approached Great Falls, and decrease towards the head of the river.

The report stated that the navigable periods were chiefly during spring and fall floods and freshets, when the river was high but also fast and dangerous. Farmers and merchants who overestimated the duration of freshets could find their products stranded. The joint commissioners stated that "at the time of their examination of it [the river], there was not sufficient depth of water for the navigation of a boat drawing even six inches." That is, a boat with a draft only half that specified in the acts chartering the Potomac Company. And as for recommending the river's susceptibility to improvement, the report basically condemned the in-river "sluice navigation" approach used by the Potomac Company.[29]

The report contained a December 20, 1822, letter from John Mason that responded to the joint commissioners' earlier inquiries and showed that the company was deeply in debt. The total expenditures for the company (including construction and maintenance of its works, and presumably salaries) had been $729,387.29. Through August 1, 1822, the total collected for tolls was $221,977.67¾. Considering that the company paid a single dividend of $3,890 to stockholders in 1802, the company was roughly a half a million dollars in debt—as had been recognized earlier in the District of Columbia Committee of the House of Representatives' report.

In letters to the governors of Maryland and Virginia, the joint commissioners said that they "upon full consultation do not deem it prudent, or expedient, to further aid the Potomac Company; the only alternative therefore that remains is to divest them of character and adopt some more effective mode of improving the navigation of the river . . ." In other words, the joint commissioners recommended building a new continuous canal, but without the Potomac Company's participation.

In addition to the death of Thomas Moore, misfortune soon struck others involved in the 1822 Potomac survey. Elie Williams never recovered from his "bilious disorder" and died in December 1822. Isaac Briggs was greatly disappointed when Claudius Crozet, not he, permanently replaced Moore as Virginia's principal engineer. In 1823, while leading the first survey for a Baltimore to Potomac Canal, Briggs and all other survey party members took sick, including Athanasius Fenwick, who again served as

a commissioner. Fenwick died in September 1824. Briggs finished the report for the 1823 survey, but was invalid the rest of his life and died of malarial fever in 1825.[30]

Just as George Washington championed in-river navigation and the Potomac Company, Charles Fenton Mercer championed the independent canal that succeeded it. Mercer, a U.S. Congressman from Loudoun County, Va., organized several local meetings to drum up support for the proposed new canal. These led to a three-day canal convention in Washington D.C. in November 1823. The meetings successfully gained public and political support for the new canal that was eventually named the Chesapeake and Ohio (C&O) Canal. Mercer developed much of the federal legislation needed to make the C&O Canal a reality, and would later serve as its first president.[31]

Army engineer John James Abert and other topographical engineers, acting under the Board of Engineers for Internal Improvements, subsequently performed another canal survey and agreed with Thomas Moore on the practicality of connecting the Potomac with the Youghiogheny or Monongahela Rivers by canal. Their report, issued in 1826, estimated the total cost of a new canal connecting to the West (a canal bigger and longer than the one planned by the joint commissioners) would be $22,237,427.69. This great cost dampened enthusiasms for the new canal. However, following another canal convention in December 1826, President John Quincy Adams appointed Erie Canal engineers James Geddes and Nathan Roberts to conduct yet another survey. Geddes' and Roberts' 1827 survey and report estimated the cost of a canal just to Cumberland to be $4,500,000—a much more acceptable cost.[32]

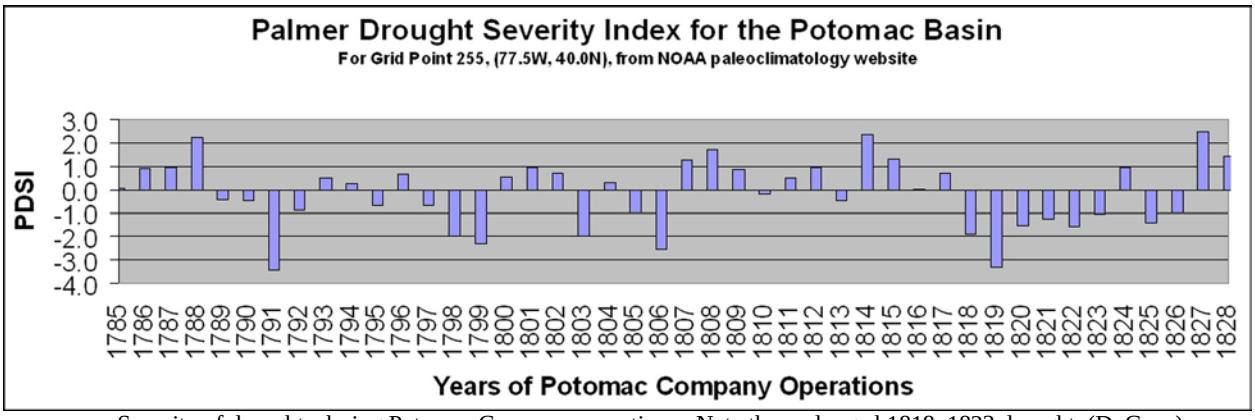
Harpers Ferry, detail from J. J. Abert's 1825 map (courtesy of National Archives).
The island channel along the Maryland shore was the upper part of the long canal.

The Virginia and Maryland legislatures passed acts chartering the new C&O Canal, and public subscriptions were first raised for it in late 1827 and early 1828. In August 1828, still heavily in debt and having lost political favor, the Potomac Company surrendered its properties, rights and operations to the C&O Canal Company. The C&O Canal Company would build feeder dams across the Potomac that would prevent further through-traffic on the river. Only local river commerce connecting to the new continuous canal by river locks would be possible.

When its conclusions and recommendations are contrasted with those of Thomas Moore's report of his 1820 Potomac survey and the District of Columbia Committee's report, we see that the joint commissioners' report was key to the Potomac Company's end. One wonders: Had Moore lived to write the latter report, would it have been so negative toward the Potomac Company?

It is important to note that the 1822 survey was made toward the end of a prolonged and severe drought, lasting from 1818 through 1823. No previous drought during the Potomac Company's operation had been that long. (See accompanying graph of severity of droughts.) One might also surmise that the continuing deforestation and development of land in the Potomac River watershed during the Potomac Company's operations increased rainfall runoff, further lowering ground water supplies and water levels during dry seasons. Thus the low water conditions experienced by the joint commission must have been far worse than previously experienced.[33]

A great value of the reports for the 1820 and 1822 Potomac surveys is that they present contemporary descriptions of navigational works and conditions on the upper Potomac River and its North Branch. Appendix I contains the complete report of Thomas Moore's 1820 survey and Appendix II presents excerpts of the joint commissioners' report that described their 1822 boat trip from Cumberland to Goose Creek.



Severity of droughts during Potomac Company operations. Note the prolonged 1818–1823 drought. (D. Guzy)

---

[1] Thomas Jefferson, *Notes on the State of Virginia*, Electronic Text Center, University of Virginia Library, originally published 1781–1782. Query 2, page 131. Note that "batteaux" rather than "bateaux" was the preferred spelling during colonial times and through the time of Potomac Company operations. The former spelling is still used by historians, and will be used in this book.

[2] Meredith Mason Brown, *Frontiersman – Daniel Boone and the Making of America*, Baton Rouge, 2008, page 233

[3] J. Thomas Scharf, *History of Maryland: From the Earliest Time to the Present Day*, Baltimore, 1879, page 519. *Votes and Proceedings of the House of Delegates of the State of Maryland, November Session, 1783*, pages 13–15.

[4] Diary entries for September and October 1784, and October 10, 1784, letter to Benjamin Harrison (George Washington papers). Joel Achenbach's *The Grand Idea—George Washington's Potomac and the Race to the West* (New York, 2004) presents a recent study of Washington's 1784 trip and his vision for opening routes to the West.

[5] The Maryland act was *An Act for Establishing a Company for Opening and Extending the Navigation of the River Patowmack*, November 1, 1784, Chapter 33 of 1784 Maryland Assembly acts. The Virginia act chartering the Potomac Company was similar to the Maryland act (Bacon-Foster Appendix G, pages 210– 233).

[6] Articles 17 and 18 of the acts charting the Potomac Company. Delays in completing the Potomac Company's works required new legislation to accommodate them, e.g., Maryland acts of 1786 Session, Ch. 2, 1790 Sessions Ch. 35, and 1794 Session, Ch. 29.

[7] A modern way to quantify and compare the severity of river rapids is through the standard difficulty classification developed for paddle sports (i.e., canoeing, kayaking, and whitewater rafting). The following is an abbreviated set of definitions:
Class I (easy): Fast moving water with riffles and small waves.
Class II (novice): Straightforward rapids with wide, clear channels which are evident without scouting.
Class III (intermediate): Rapids with moderate, irregular waves which may be difficult to avoid and which can swamp an open canoe.
Class IV (advanced): Intense and powerful but predictable rapids requiring precise boat handling in turbulent water.
Class V (expert): Extremely long, obstructed, or very violent rapids which expose a paddler to added risk.

Class VI (extreme and exploratory): These rapids have rarely been attempted and exemplify the extremes of difficulty, unpredictability, and danger.

[8] January 16, 1790, letter from Potomac Company president Thomas Johnson to Virginia Governor Randolph (William P. Palmer, editor, *Calendar of Virginia State Papers and Other Manuscripts*, Vol. 5, New York, Kraus Reprint Corp., 1968, pages 99–100). The phrase "boats returning" implies the use of batteaux rather than flatboats (see later discussion on boats).

[9] George Washington's diary entry for July 3, 1786 (see discussion of the diary and letter collections that comprise the George Washington papers in this book's References section). The diary entry said that the road would end on the Monongahela "below the Tygart Valley," which might place it near present day Fairmont, W.Va. However, George Fenwick would later draw a map based on Deakins' survey that showed the road ending at Morgantown (Ref. Robert J. Kapsch, "The Potomac Canal: A Construction History," *Canal History and Technology Proceedings*, Canal History and Technology Press, Volume XXI, March 2002, page 203).

[10] Gilpin and Smith must have issued an official report of their survey, because Thomas Moore and others referred to it later. Unfortunately, this author could not find such a report in the Potomac Company records. However, some of the survey's information is contained in a September 2, 1789, letter Gilpin wrote to Washington (George Washington papers). There was also a newspaper report of the survey obviously written by Gilpin (but unsigned) that appeared in the Alexandria *Daily Advertiser* on September 2, 1789, and was reprinted in the *Virginia Gazette* on October 1, 1789.

[11] September 2, 1789, letter from George Gilpin to Washington (George Washington papers).

[12] January 16, 1790, letter from Potomac Company president Thomas Johnson to Virginia Governor Randolph (William P. Palmer, editor, *Calendar of Virginia State Papers and Other Manuscripts*, Vol. 5, New York, Kraus Reprint Corp., 1968, pages 99–100).

[13] Printed announcement: *Call from the President and Directors of the Patowmack Company*, dated Great Falls, July 2, 1799 (George Washington papers and Bacon-Foster, Appendix B, pages 169–171).

[14] Potomac Company records

[15] Dan Guzy, "The Potomac Company's Canal and Locks at Little Falls," *Maryland Historical Magazine*, Vol. 96, 4, Winter 2001, pages 425–427

[16] Potomac Company records

[17] July 13, 1818, letter from Thomas Moore (1760–1822) to Isaac Briggs (1763–1825) in the files at the Sandy Spring Museum, Sandy Spring, Md. The Rome to Utica section of the Erie Canal was so level that it required no locks; thus Briggs' experience in canal building was also limited. In the joint commissioners' report of their 1822 survey (discussed later), Briggs noted that he and Moore had completed a part of the James River Canal.

[18] Minutes of August 2, 1819, annual meeting in Potomac Company records and Virginia Board of Public Works (Va. BPW) 4th annual report, 1819, page 40. Bacon-Foster, page 125.

[19] In a June 7, 1820, letter to Potomac Company president John Mason, Moore asked for the skiff, but also suggested that if the river were too low from Westernport to Cumberland, he would examine that stretch without a boat. Mason ordered James Moore, the Potomac Company treasurer, to meet Thomas Moore at Westernport and to provide him "proper transportation." This response and the survey report itself seem to imply that Moore's first Potomac survey was done all by boat. However, the report does not actually note "our little skiff" until it was below Seneca Falls, so part of survey might have been done by land (Potomac Company records).

[20] See Appendix I.

[21] "Report of the Committee of the District of Columbia," *House of Representatives Report No.111, 17th Congress, 1st Session*, May 3, 1822

[22] Report of annual meeting of president and directors of Potomac Company, August 6, 1821 (Bacon-Foster, pages 131–132). Va. BPW 5th annual report, 1820, page 135.

[23] Dan Guzy, "The Potomac River Survey of 1822," *Maryland Historical Magazine*, Winter 2008, pages 382–403, provides more information on the joint commissioners and their survey.

[24] See Appendix II for descriptions of the different versions of the joint commissioners' report, plus excerpts of the material most pertinent to Potomac River navigation.

[25] The start of the survey's boat trip from Cumberland is discussed in the letter from Naylor, Hunter and Fenwick to the Governor of Virginia, in the preface to the Va. BPW version of the report.

[26] Va. BPW version of the joint commissioners'1822 survey report. A September 24, 1822, letter from E.G. Williams to William Elie Williams mentioned that the commissioners stayed at Mason's house (*Otho Holland Williams Papers* at the Maryland Historical Society).

[27] *Richmond Enquirer*, October 29, 1822 (photocopy in files at the Sandy Spring Museum). Va. BPW annual report, 1822, page 13. George Washington Ward in his *The Early Development of the Chesapeake and Ohio Canal Project* (Baltimore, 1899) claimed that Briggs had assisted Moore in the 1822 survey. However, the evidence infers that Briggs was not involved in the survey until after Moore's death. Briggs had to get Moore's notes from Moore's estate, implying he did not have his own notes. Briggs replacement of Moore on the survey went through a formal process with the Va. BPW that would seem unnecessary had Briggs been involved with the survey from its beginning.

[28] Isaac Briggs, *Report on the Potowmac*, in the 8th annual report of the Va. BPW, published Richmond, 1824, pages 11–65. Asa Moore had worked with Briggs on the Erie Canal. The early plans for the Potomac Canal, later renamed the Chesapeake and Ohio (C&O) Canal, assumed that it would connect to the Potomac Company's Little Falls Canal. The joint commissioners' report

initially estimated the total cost for a new continuous canal from Cumberland to the head of the Potomac Company's Little Falls canal to be $1,578,954, but Isaac Briggs' second report gave a more detailed accounting of this estimate and slightly lowered it to $1,575,074.

[29] See the "Present State of Navigation" in Appendix II.

[30] Files at the Sandy Spring Museum. Briggs-Stabler Papers, 1793–1910. Maryland Historical Society (online at http://www.mdhs.org/library/Mss/ms000147.html). Ella Kent Barnard, "Isaac Briggs, A.M., F.A.P.S (1763–1825)", *Maryland Historical Magazine*, December 1912, page 419. Elie Williams' obituary in the December 31, 1822, issue of the Hagerstown, Md. *Torch Light*, noted that he died on December 29, 1822, after "a long and severe bilious disorder contracted on the survey of the Potomac, ordered by the Legislatures of Maryland and Virginia." Information on Athanasius Fenwick was gathered from Linda Reno and various old newspaper accounts.

[31] Walter S. Sanderlin, *The Great National Project—A History of the Chesapeake and Ohio Canal*, Baltimore, 1946. Karen Gray of the C&O Canal Association shared information on Mercer and the actions leading up to the chartering of the C&O Canal.

[32] Sanderlin, *The Great National Project*, pages 55–56, and personal communications with Karen Gray.

[33] NOAA's Palmer Drought Severity Index provides drought information based on tree ring growth (www.ngdc.noaa.gov/paleo/pdsi.html). Grid Point 255 represents conditions in the Potomac River basin. The drought severities from 1818 through 1823 are similar to those of the recent droughts of 1999, 2001 and 2002. The prolonged effects of the 1818–1823 drought on ground water supplies to the Potomac must have further decreased water levels. The September 24, 1822, letter from E.G. Williams (see earlier endnote) cited the bad drought. A November 13, 1822, letter from James Stubblefield, Harpers Ferry Armory Superintendent, to Col. George Bomford noted a "scarcity of water" during the summer of 1822 that hindered armory water power supplies (David T. Gilbert's *Waterpower*, Harpers Ferry Historical Association, 1999).