

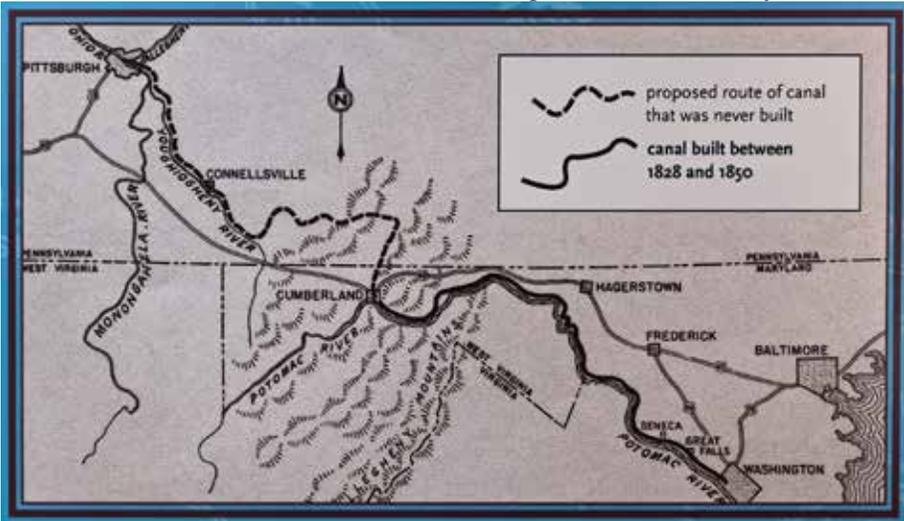
The Chesapeake and Ohio (C&O) Canal's Role in Developing the District of Columbia's Ports

Trevor W. Laurie

While the how and why of the Chesapeake and Ohio (C&O) Canal's birth are important, and it is with much thanks that students of inland waterways (few are we in number) are able to access this accumulated knowledge, it is somewhat shocking that the major role this canal played in developing the Potomac River valley and, most importantly, the country's capital region, is overlooked. This article will address the pivotal role the C&O Canal played in forming and developing the two main ports that serviced the greater District of Columbia area (encompassing northern Virginia), and, to a lesser extent, the middle Atlantic region.

Bien que le comment et le pourquoi des débuts du canal Chesapeake et Ohio (C&O) soient importants et que les amateurs des voies navigables intérieures (peu nombreux sommes-nous) soient très reconnaissants de pouvoir accéder aux connaissances acquises, il est étonnant que le rôle majeur qu'ait joué ce canal dans le développement de la vallée de la rivière Potomac et, plus important encore, de la région de la capitale nationale des États-Unis ait été laissé de côté. Cet article traite du rôle central du canal C&O dans la formation et le développement des deux principaux ports qui desservaient la grande région du district de Columbia (comprenant le nord de la Virginie) et, dans une moindre mesure, la région de l'Atlantique-Centre.

Visitors to the District of Columbia may be surprised to find a sliver of national park land nestled within the homes and shops of southeastern Georgetown, hidden from the casual tourist. Officially titled the Chesapeake & Ohio Canal National Historic Park, this area is near the starting point for the canal, also known as the “C&O,” that runs 184.5 miles west, ending in Cumberland, Maryland. Given the “widespread apathy toward the history of waterways” in North America, those few visitors who are aware of the canal’s existence likely do not appreciate the full extent to which this transportation channel helped form and develop Georgetown (District of Columbia), Alexandria (Virginia), and the greater National Capital Region.¹ What history has been written about the C&O Canal is often focused solely on how it was built, which can largely be attributed to the remains of the C&O being the only nineteenth-century canal in the United States preserved in its entirety, meaning all seventy-four lift locks, seven guard locks, eleven aqueducts, and the canal prism bed are able to be studied.² More recently, the unique canaller culture that developed along the route has made its way to print, due primarily to the enthusiastic associations that have formed to preserve such history.

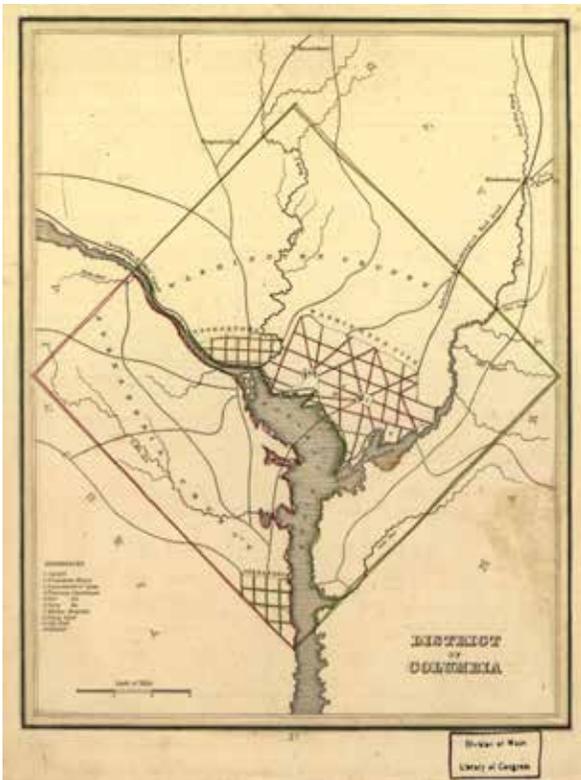


Proposed map of the Chesapeake and Ohio Canal, which includes portions never built. (C&O Canal Association courtesy of the National Park Service)

¹ Walter D. Sanderlin, *The Great National Project: A History of the Chesapeake and Ohio Canal* (Fort Washington, PA: Eastern National, 2005), 7.

² For an overview, see William E. Davies, *The Geology and Engineering Structures of the Chesapeake and Ohio Canal: An Engineering Geologist's Descriptions and Drawings* (Glen Echo: C&O Canal Association, 1999). Available for download at <https://candocanal.org/books/>.

The sixth-longest canal in the United States, the C&O operated partially from 1831 (and fully from 1850) until 1924 and was the result of over sixty years' effort by Virginia, Maryland, and federal leaders. Looking at the results of all this effort, however, the "so what" is rarely – if ever – addressed by those few historians or enthusiasts who cover the topic of canals and inland waterways. The how and why of the C&O's birth are important and it is with much thanks that students of inland waterways (few are we in number) are able to access this accumulated knowledge.³ It is somewhat shocking, however, that the major role this canal played in developing the Potomac River valley and, most importantly, the country's capital region, is overlooked. This article will address the pivotal role the C&O Canal played in forming and developing the two main ports that serviced the greater District of Columbia area (encompassing northern Virginia), and, to a lesser extent, the middle Atlantic



1835 Map of the District of Columbia including Alexandria, Georgetown, the Potomac River, and a portion of the C&O Canal. (Library of Congress)

³ See, for instance, Sanderlin, *The Great National Project*; Joel Achenbach, *The Grand Idea: George Washington's Potomac and the Race to the West* (New York: Simon and Schuster, 2004); Robert Kapsch, *The Potomac Canal, George Washington and the Waterway West* (Morgantown, WV: West Virginia University Press, 2007); Harlan D. Unrau, *Historic Resource Study: Chesapeake & Ohio Canal* (Hagerstown, MD: U.S. Department of the Interior, 2007).

Looking west into Locks 1 through 4 from Rock Creek in Georgetown (2020).
(Photo by author)



region.

Proponents of the C&O Canal sought to create a navigable link between the Potomac and Ohio rivers that would bind the then-new country together, both economically and socially. These leaders hoped the trade resulting from connecting these two waterways, surrounded as they were by areas blessed in both agriculture and mineral resources, would enrich the young country, providing economic growth and opportunities for an expanding population.⁴ Unfortunately, this hoped-for linkage between the rivers did not come to fruition, as the canal ended in Cumberland due to a number of factors, the most significant of which was competition with the railroads. Despite not reaching the Ohio River, the canal did, to a certain degree, meet its original intent by connecting the farms and mines of western Maryland, Pennsylvania, and Virginia (including what would become West Virginia) to eastern cities and ports. These ports, primarily Georgetown and Alexandria in the District of Columbia,⁵ benefitted enormously from the canal and owed their growth and success to the steady stream of cargo conveyed by mule-pulled boats along this artificial waterway.

⁴ “About the C&O Canal,” C&O Canal Association, n.d., <https://candocanal.org/canal-info/>.

⁵ Alexandria would be returned to Virginia with the retrocession of 1846.

The Potomac River served as a significant channel for regional commerce to the Chesapeake Bay and beyond in the country's formative years. Several challenges, however, prevented the river from serving as a marine highway. Along the western half of the river a series of cataracts, or falls, block commercial shipping west of Georgetown. Further upriver, a series of rock formations known as "Great Falls" cross the river, forming a complete barrier to all water-borne trade. Given this topography, early cargo transport from the frontier to eastern cities was generally conducted via raft conveyed by the Potomac's eastward-moving current with portage around the obstructions. The westward movement of goods was all but impossible by any means other than foot and mule trains following trails along the river.

In addition to the movement of goods, these Potomac trails also served as a primary pathway by which settlers moved westward. As these settlements grew, they required port access to export their agricultural, mineral, and animal products and to import manufactured goods. In 1749, the Virginia General Assembly authorized the establishment of the city of Alexandria on a spot where several docks had been constructed to handle fishing and local trade.⁶ This new city was to serve as the port for northern Virginia, an area previously neglected by larger shippers, who called at Fredericksburg, a tobacco port almost fifty miles south on the Rappahannock River. Two years later, the city of Georgetown was established in Frederick County by the General Assembly of Maryland to serve those living on the northern side of the river, becoming the Potomac's westernmost port accessible by ship.⁷

As the desire to find a practical – and profitable – means to utilize the Potomac to ship goods to and from the western settlements and the new ports became more intense, landowners along the river, including George Washington, investigated available options. As a young man, Washington had surveyed parts of the Potomac River associated with a land grant he received and had served in the area during the French and Indian War, for which he received an additional 15,000 acres.⁸ Transforming these land grants into a profitable enterprise required a reliable means to get goods to market, which simply did not exist. As no road could be easily created through the mountains and rough nature of the countryside, the river became the focus for both landowners and traders. Washington and other Virginians with land along the

⁶ "A Brief History of Alexandria, Virginia," City of Alexandria, Virginia, 19 November 2022, <https://www.alexandriava.gov/historic-alexandria/the-history-of-alexandria-virginia-an-introduction-and-resources>.

⁷ Hugh T. Taggart, "Old Georgetown," *Records of the Columbia Historical Society, Washington, D.C.* 11 (1908): 120.

⁸ National Park Service, *Chesapeake and Ohio Canal* (Washington, DC: Department of the Interior, 2015), 7.



Patowmack Canal Company seal reflecting the batteaux used on the canal. (National Park Service)

upper reaches of the Potomac met in October 1774 to discuss a “plan and proposal for clearing the Potowmack [*sic*] River,” but no action resulted from this meeting.⁹

The State of Maryland was more proactive and conducted a survey in 1783 exploring options to make the Potomac River navigable. Unfortunately, the original report from this survey has been lost to history. The results must have been encouraging, however, for the following year, many of the leading men of the newly founded country were meeting with and writing letters to each other and excitedly addressing

possible solutions. Many, including Thomas Jefferson, likely saw a navigable Potomac River as a profitable means to solidify the political gains made during the recent war. In a letter to George Washington dated 15 March 1784, Jefferson wrote:

[T]he upper parts of Yohogany & Cheat rivers . . . are the true doors to the Western commerce. The union of this navigation with that of the Potowmack [*sic*] is a subject on which I mentioned that I would take the liberty of writing to you. I am sure its value and practicability are both well known to you. This is the moment, however, for seizing it if ever we mean to have it. All the world is becoming commercial. . . . [F]or the trade of the Ohio or that which shall come into it from its own waters or the Mississippi, it is nearer to Alexandria than to New York by 730 miles and is interrupted by one portage only. Nature then has declared in favor of the Potowmack [*sic*], and through that channel offers to pour into our lap the whole commerce of the Western world.¹⁰

On the wave of such enthusiasm the Patowmack Company was incorporated on 17 May 1785 with Washington as the company’s president.¹¹

The Patowmack Company set to work clearing out channels in the river

⁹ Corra Bacon-Foster, “Early Chapters in the Development of the Potomac Route to the West,” *Records of the Columbia Historical Society, Washington, D.C.* 15 (1912): 120.

¹⁰ “To George Washington from Thomas Jefferson, 15 March 1784,” *Founders Online*, National Archives, <https://founders.archives.gov/documents/Washington/04-01-02-0160>.

¹¹ Sanderlin, *The Great National Project*, 31.

and building skirting canals around the primary obstacles to navigation. Clearing channels in the riverbed was relatively easy. The primary challenge the engineers had to overcome was building the skirting canals, particularly at Great Falls, where substantial lift had to be achieved in a short distance. The total length of the Great Falls skirting canal was 1,200 yards, with the total lift (or fall, depending on the boat's heading) being seventy-six and three-quarter feet, which was accomplished by a five-lock series completed in 1802.¹² Even before the full set of locks was completed, Thomas Jefferson wrote to the company president in January 1790 noting that trade was already

Locks 3, 4, and 5 of the Great Falls skirting canal were set in the cut through the rocks. This image, looking down into the river from the top, shows the rough, hand-hewn walls, demonstrating the engineering challenges faced in navigating around the falls. (Photo by author)



moving. Jefferson wrote that “[i]nland 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 twenty miles a day. The navigation has already become useful.”¹³ It was now possible to ship the riches of the West to the ports of the East.

¹² Dan Guzy, *Navigation on the Upper Potomac River and its Tributaries* (Hagerstown, MD: Western Maryland Regional Library, 2011), 76.

¹³ William P. Palmer and Sherwin McRae, *Calendar of Virginia State Papers and Other Manuscripts, Volume 5* (Richmond, VA: R.F. Walker, 1885), 99.

The boats, or batteaux, employed on the river and skirting canals were essentially large, wide rafts that drew very little water, allowing them to transit the shallowest parts of the river. As the Patowmack Canal did not utilize horses or mules, propulsion was provided by poles, which would be driven into the river bottom and then “walked” by a crewman, providing forward propulsion. The journey downriver generally consisted of floating with the current until reaching one of the falls, at which point the boatmen would “lock in” to a skirting canal and then, once around the obstruction, “lock out” back onto the river. Moving westward was more challenging, as it was against the current, but as the batteaux were often lightly loaded on the return trip, they could be poled for most of the journey. This was clearly not an easy task though, as a veteran of such a journey declared it to be the “hardest work ever done by man.”¹⁴ Although more efficient than ground transportation options available at the time, the amount of cargo that could be transported by batteaux was circumscribed.

Despite its limitations, the Patowmack Canal was a boon to both Alexandria and Georgetown. In 1791, Alexandria’s exports amounted to \$381,000. By 1795 exports had increased to \$948,000, and in the first few years of the new century (after all dredging and skirting canals had been completed) averaged \$1,114,000 per year. “The completion of the locks and the opening of the canal around Great Falls on the Virginia side, by the Potomac [*sic*] Canal Company . . . greatly facilitated the bringing of produce from the upper Potomac valley to the Alexandria market. Exports of flour and wheat from Alexandria in 1802 were nearly double those of 1801.” Georgetown likewise saw its exports increased, albeit modestly, from \$315,000 in 1791 to \$365,000 in 1793.¹⁵

As tensions rose with Great Britain, the canal’s financial situation became strained. The embargo imposed after the 1807 *Chesapeake-Leopard* affair, compounded by the War of 1812 that followed, left the region economically depressed and trade greatly diminished. In June 1815, acting Patowmack Company president Elie Williams issued a statement declaring:

The directors find that the diminished intercourse on the river navigation during the war and the disbursements of the Company within that period on the new Locks at the Little Falls and other work, has so far depressed the funds of the Company that with all the aid of accruing funds there will scarcely be a sufficiency to complete the new locks in time to pass boats and other craft before the old locks which

¹⁴ Taggart, “Old Georgetown,” 181.

¹⁵ Arthur G. Peterson, “The Alexandria Market Prior to the Civil War,” *The William and Mary Quarterly* 12, no. 2 (1932): 104-5.

are of wood and much decayed will be wholly unfit for use.¹⁶

Alexandria and Georgetown fared little better than the canal. Alexandria, in particular, had been heavily reliant upon flour sales to Great Britain and the loss of this trade during the war changed the regional market. In the years following the war, Potomac River shipping shifted to Baltimore, which capitalized on both the Pawtowmack Company's challenges and the creation of a new overland route, the National Road, that provided an alternate means to move goods. "In value of exports, the area [Georgetown and Alexandria] in 1820 had ranked ninth among the states and territories; by 1826, it had dropped to fourteenth place among twenty-one and had lost half its former export trade."¹⁷ Clearly, something had to be done to halt this downward economic spiral.

In order to revive the area's commerce several solutions were discussed, but it was decided by many leading politicians and merchants that the best way to stimulate trade was to have a better, more reliable means to ship goods east from the western reaches of Virginia and Maryland: a substantial canal capable of conveying large cargoes. Virginia Congressman Charles F. Mercer once stated in a debate that "[a] canal substituted the labor of horses for that of men in conducting boats, and, by multiplying the force five times, did, in effect, convert five boats into one."¹⁸ Given such endorsements, a new corporation, the "Potomac Canal Company,"¹⁹ was chartered March 3, 1825 to build a continuous canal from the District of Columbia to the Ohio River. With New York's Erie Canal nearing completion after eight years of construction, and several canal projects underway in Pennsylvania and Virginia, there was a growing appetite to again try to shape the environment to meet the business and transportation needs of a growing population. Instead of relying on the river itself to be part of the infrastructure, the re-named Chesapeake and Ohio Canal Company would build a lateral canal beside the river.

Building the canal would be anything but easy, with the biggest initial hurdle being finances. Various estimates were made by engineers as to the projected costs, which were initially thought to be \$1,578,954, or \$8,676

¹⁶ Bacon-Foster, "Early Chapters in the Development of the Potomac Route to the West," 208-9.

¹⁷ Constance McLaughlin Green, "The Jacksonian 'Revolution' in the District of Columbia," *The Mississippi Valley Historical Review* 45, no. 4 (1959): 591.

¹⁸ United States Congress, *Register of Debates in Congress, Vol 8, Pt 2* (Washington, DC: Gales & Seaton, 1832), 2751.

¹⁹ Many Marylanders did not find the name descriptive enough and pushed for the canal to be named the "Chesapeake and Ohio" as there were, at the initial stages of discussion, plans to have the canal extend through the District of Columbia to the Severn or Patuxent rivers, linking it to the Chesapeake Bay.

per mile for a canal thirty feet wide at the surface, twenty feet wide at the bottom, and three feet deep.²⁰ This money was going to be raised primarily by subscription in a joint-stock endeavor based on the following proportions “2/11ths to be subscribed by the state of Maryland, 3/11ths by the state of Virginia, 4/11ths by the United States, and 2/11ths by the District cities.”²¹ As the scope of the project grew, the estimates, of which there were many, ranged from roughly \$4 to \$4.5 million.

[When the U.S. Board of Engineers reported] that a canal 60 feet wide at the surface, 48 feet wide at the bottom, and 6 feet deep could be built for less than \$5,000,000, the canal board decided to adopt the larger dimensions for the canal between Georgetown and Harpers Ferry because of the increased advantages attainable at what was projected as little additional cost. The greater size would give the canal a cross section of 306 square feet and a prism of 59,840 cubic yards as compared with 136 square feet and 25,595 5/9 cubic yards on the New York, Pennsylvania, and Ohio canals whose general dimensions were 40 feet wide at the surface, 28 feet wide at the bottom, and 4 feet deep. It was estimated that the increased prism would reduce water resistance to the equivalent of unimpeded sea navigation, and it was believed that much of the masonry, the most expensive part of the construction, would be unaffected by the increase in size.²²

The company began preparations, to include hiring thousands of foreign laborers and, on 4 July 1828, President John Quincy Adams turned the first spade of dirt, initiating construction. That act also signaled the end of the Patowmack Company, which turned over its properties, rights, and operations to the Chesapeake and Ohio Canal Company.

Work proceeded, but slowly. There were problems with the recruitment of enough labor: “2,113 men were working along the line of the canal in June 1829 while it was estimated that 6,000 were needed in order to complete the canal in the time specified in the contracts.”²³ By the mid-1830s, the number of workers had risen close to 5,000, but it was still short of what was needed.²⁴

²⁰ Moses T. Hunter et al. “Potomac River, To his Excellency the Governor of Maryland,” *Journal of the Senate of the Commonwealth of Pennsylvania, Vol XXXIII* (Harrisburg, PA: Mowry & Cameron, 1822), 260-61.

²¹ Chesapeake and Ohio Canal Company, *Proceedings of the Chesapeake and Ohio Canal Convention* (Washington, DC: Way and Gideon, 1827), 16.

²² Chesapeake and Ohio Canal Company, *First Annual Report* (Washington, DC: Chesapeake and Ohio Canal Company, 1829), 9.

²³ Harlan D. Unrau, *Historic Resource Study: Chesapeake & Ohio Canal* (Hagerstown, MD: U.S. Department of the Interior, 2007), 61.

²⁴ Peter Way, “Shovel and Shamrock: Irish workers and labor violence in the digging of the

Those laborers that were employed were often the cause of delays due to unrest – mainly caused by wages being in arrears, as the contractors for whom they worked often overpromised and underdelivered.

Due to such conditions, the canal experienced near-continuous labor unrest between 1834 and 1840, which, at times, was quelled by militia and Federal troops. In January 1834, for example, two groups of Irish workers, with one group hailing predominantly from Cork, the other from Longford, clashed near Williamsport, Maryland. There were “about three hundred in number, and armed, in part with military weapons” involved, resulting in “five men in the agonies of death, who had been shot through the head; several dead bodies seen in the woods, and a number of wounded in every direction.”²⁵ Local leaders requested the militia from nearby Hagerstown to deploy and re-establish order. As the numbers involved in the fighting were so large (some estimates were over 700 men), the Maryland legislature requested federal assistance, and President Andrew Jackson dispatched two companies of infantry from Fort McHenry to the area with orders to “restore tranquility to the neighborhood.”²⁶

The biggest labor stoppage occurred at the Paw Paw Tunnel, where work had commenced in 1836 but stopped from 1841 to 1848 due to a number of issues, such as the company's financial difficulties, contract issues, cholera epidemics, and ethnic violence among the workers.²⁷ Utilizing militia forces, which labor historian Peter Way characterized as “an avenging force,” Chesapeake and Ohio Canal Company officials were able to break the hold of leaders amongst the workers and to reassert company authority, which included physically coercing workers back to the line.²⁸ By 1848, the *Alexandria Gazette* wrote that “[g]reat order and healthfulness prevail on the works,” indicating the Company's primacy over labor.²⁹

As each section below, or east, of the tunnel, was completed, it was watered and put into use. In 1831, the lower set of locks in Georgetown were completed. By 1834, the canal had reached Harpers Ferry, commencing the flow of coal and other products to the docks of Alexandria and Georgetown. By 1839, the canal had reached what would become three-fourths of its final

Chesapeake and Ohio Canal,” *Labor History*, 30 (1989): 495.

²⁵ “Chesapeake and Ohio Canal, A Battle,” *Niles Register Vol XLV*, 1 February 1834, 382-83.

²⁶ “A Battle,” *Niles Register Vol XLV*, 382-83. According to Carl Wittke in his *The Irish in America*, 36, this was the first time that “President Jackson called out federal troops in a labor dispute because of gang war among the builders of the Chesapeake and Ohio.”

²⁷ Unrau, *Historic Resource Study: Chesapeake & Ohio Canal*, 136-38.

²⁸ Way, “Shovel and Shamrock: Irish workers and labor violence in the digging of the Chesapeake and Ohio Canal,” 513, 516

²⁹ “The Great Tunnel of the Chesapeake and Ohio Canal,” *Alexandria Gazette*, 24 August 1848, 3.

overall length.³⁰

With a significant portion of the canal completed, attention turned to determining the best boat dimensions to maximize cargo load and speed. Canal Chief Engineer Benjamin Wright

suggested that the [freighter] boats should be 90 feet long and 14 ½ feet wide, as this would be the maximum size of craft that could take advantage of the canal's lock chambers (100 feet long and 15 feet wide). The boats should have a draft of 5 feet to take advantage of the 6-foot depth of the waterway. Such a boat would displace water equal to 5,460 cubic feet or 152 tons and 820 pounds. Since the boats would weigh approximately 22 tons and 820 pounds when they were empty, the design would permit the boats to carry a maximum cargo of 130 tons.³¹

Not all boats would be freighters, however, and initially four general classes were devised. Class one consisted of packet boats for carrying passengers, class two were freighter boats in the dimensions previously discussed, class three were scows used primarily by the canal's maintenance crews, and class four were gondolas similar to the batteaux used on the Patowmack Canal.³²

The freighters, with their substantial cargo capacity, were the workhorses of the waterway and, as the canal continued working its way westward, became the predominant vessel type employed. Described by a former canaller who sailed prior to the Civil War:

A [freighter] boat is divided into three apartments, the center was left open except a narrow walk around the edge and formed a hold where the freight is stored. . . . At each end of the boat is a cabin with the roof raised about three feet above the deck. The front one is used for a stable and the rear one is divided into a stateroom with berths and cooking galley. . . . When the boat was loaded the water came within a foot of the deck but when it was light it just skimmed over the water.³³

The canal, with boats of the size described, brought new commercial life to Alexandria and Georgetown. By 1840,

the export trade of Alexandria showed the largest increase following the general business depression. . . . Exports that year increased to nearly 79,000 barrels of flour and 15,000 barrels of bread. In 1840, a total of 106 foreign vessels with 16,725 tons cleared from the port of Alexandria.³⁴

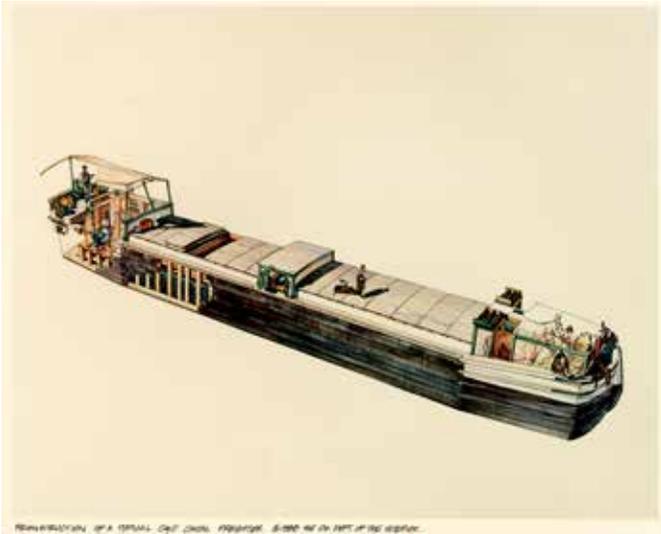
³⁰ National Park Service, *Chesapeake and Ohio Canal*, 15.

³¹ Unrau, *Historic Resource Study: Chesapeake & Ohio Canal*, 331.

³² Unrau, *Historic Resource Study: Chesapeake & Ohio Canal*, 336.

³³ Ella E. Clark and Thomas F. Hahn, eds. *Life on the Chesapeake & Ohio Canal 1859* (Shepherdstown, WV: American Canal and Transportation Center, 1975), 12-13.

³⁴ Peterson, "The Alexandria Market Prior to the Civil War," 109.



C&O Canal freighter cutaway. (Steven Patricia and the National Park Service)

Compared to 8,230 tons in 1831, the tonnage had doubled. Georgetown's industry was likewise stimulated by the canal and, by 1851, the year after the full length of the canal opened, "the town had five flour mills, a grist mill, a cotton mill, a soap factory, an iron foundry, two bakeries, and a lime kiln," all of which were supplied by cargoes brought in by canal boats.³⁵

As trade increased, it became apparent to Alexandrians that it would be more advantageous for canal boats to arrive directly in their city instead of first offloading goods in Georgetown, the canal's eastern terminus, which then had to be shipped across the river. With that goal in mind, the Alexandria Canal Company was created with the express purpose of building an aqueduct from the C&O Canal across the Potomac River to the wharfs of Alexandria. Congressman Mercer, the most ardent early supporter of building the C&O Canal, advocated for the aqueduct by highlighting the importance of Alexandria's deeper harbor, pointing out that canal cargoes "must be subjected to a heavy percentage for transshipment, unless the canal should give them access to the only port [Alexandria] where they could meet the shipping in which they were to be carried abroad."³⁶ Once financing was secured, the 1,000-foot aqueduct and seven miles of canal on the Potomac's southern side were constructed, and on 2 December 1843 the aqueduct opened to boat traffic.

Almost seven years after the aqueduct opened the Paw Paw Tunnel was completed. On 10 October 1850 the canal's full length was officially opened, as the last brick was added to the arched ceiling of the 3,118-foot tunnel linking

³⁵ Elizabeth Kytte, *Home on the Canal* (Cabin John, MD: Seven Locks Press, 1983), 91.

³⁶ United States Congress, *Register of Debates in Congress, Vol 8, Pt 2, 2751*.



The Alexandria Canal Aqueduct across the Potomac River, looking towards Virginia from Georgetown. (Special Collections Research Center GWU)

the last fifty miles of the canal with the eastern portion.³⁷ Overcoming a 605-foot change in elevation over 184.5 miles, the longed-for dream of an efficient means to ship goods between the Upper Potomac and Tidewater regions was a reality, as boats carrying over 120 tons of goods could make two round trips per month. “In the first year of operation of the whole canal, tonnage doubled, going to 203,893 tons.”³⁸

In 1851, the final payments were made to the contractors and the canal was officially deemed complete. While the original plan was to have the canal join the Ohio River, the delays, cost overruns, and competition with the railroads precluded that as being a possibility. Taking twenty-two years to complete with an \$11,000,000 price tag, the canal had cost more than double the original estimates.³⁹ Most importantly, the Baltimore and Ohio (B&O) Railroad had reached Cumberland in 1842, eight years before the canal, diverting potential trade. Going any further west was just not fiscally feasible.

The prosperity of the full canal’s first decade was shattered by the Civil War. Lying within a border state with conflicted loyalties astride the river that was the de facto boundary between the United States and the Confederate States, the canal would bear the brunt of repeated Confederate attacks. Borders

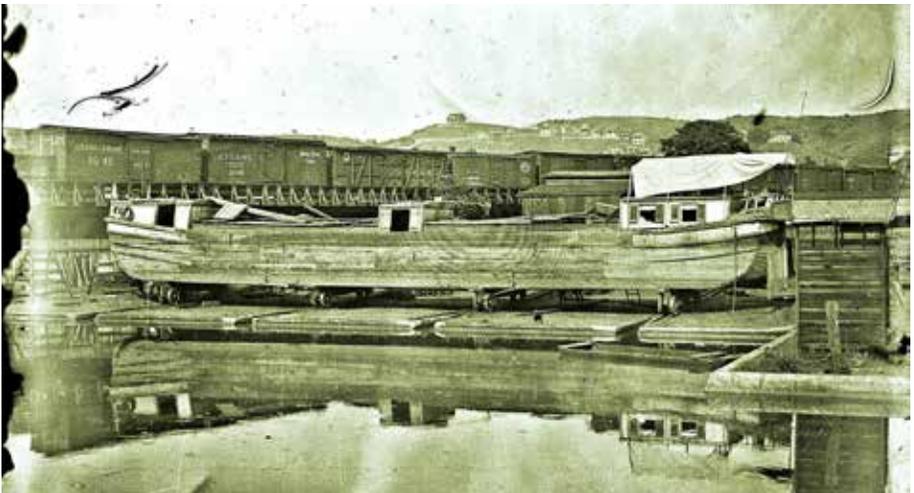
37 “The Chesapeake and Ohio Canal,” *The Alleganian*, 12 October 1850, 2.

38 Kytte, *Home on the Canal*, 94.

39 Unrau, *Historic Resource Study: Chesapeake & Ohio Canal*, 226.



The downstream entrance to the Paw Paw Tunnel (2018). Note the wooden towpath. (Photo by author)



C&O canal freighter under construction in a Cumberland, MD boatyard (1919). Note side-launch slipway. (National Park Service)

aside, the canal was extremely important to the Union war effort, as almost forty percent of the coal utilized by Northern industries and the Union military came from the coal beds of Maryland and what would become West Virginia.⁴⁰ As this coal was transported primarily via the canal, the Confederacy was determined to halt its operations.

Confederate attacks were mainly aimed at aqueducts and feeder dams as a means of interrupting the water needed for boating. Attempts were made to blow up the Monocacy River Aqueduct, the longest on the canal, but its solid construction withstood the attack. Taking lessons from this, the Conococheague Creek Aqueduct was attacked with artillery in 1863 and 1864. After each attack the aqueduct was quickly repaired and operations continued.⁴¹

Canal infrastructure was not the only target. According to an 1863 report by a canaller, "Confederate raiders routinely crossed the Potomac and captured canal boats; burning the boats and carrying off the horses and mules."⁴² Some of these attacks were fatal, with a boatman killed in a Confederate attack on the canal facilities at Shepherdstown, (West) Virginia in September 1861.⁴³ One contemporary newspaper stated "the Virginia rebels amuse themselves by shooting at [canal] boatmen."⁴⁴ While these attacks slowed the flow of supplies and matériel to Union forces, they had no real military value in terms of advancing the Confederate cause. The C&O Canal continued to transport the coal that kept Northern factories running and Union blockading ships at sea, sealing the Confederacy's fate.

The winter of 1865-66 was spent in repairing the war-damaged canal. While the infrastructure was returned to its pre-war state, the trade it carried was irrevocably changed. Prior to the war, the canal had carried flour, wheat, corn, tobacco, lumber, whiskey, coal, and other commodities.⁴⁵ After 1865, however, coal alone became the canal's lifeblood, as the other previously shipped items were now primarily carried by the railways, which had exploited the canal's difficulties during the conflict.⁴⁶

Alexandria and Georgetown, both of which had been utilized as Union military ports during war, made significant efforts to boost their economies and

⁴⁰ Katherine A. Harvey, "The Civil War and the Maryland Coal Trade," *Maryland Historical Magazine* (1967): 361-2.

⁴¹ Kytte, *Home on the Canal*, 79.

⁴² William Bauman, *Joseph Grehan Family History* (Glen Echo, MD: C & O Canal Association, 2019), 4.

⁴³ Unrau, *Historic Resource Study: Chesapeake & Ohio Canal*, 714.

⁴⁴ "The Coal Trade," *Miner's Journal and Pottsville General Advertiser*, 24 August 1861, 3.

⁴⁵ Peterson, "The Alexandria Market Prior to the Civil War," 112.

⁴⁶ Thomas F. Hahn, *The C&O Canal Boatmen, 1892-1924* (Shepherdstown, WV: The American Canal & Transportation Center, 1980), 7.

pull maritime trade from Baltimore. As part of the effort to stimulate growth and recovery (and revenue for the canal), Georgetown permitted the Chesapeake and Ohio Canal Company to raise the heights of four of its five bridges over the canal at the Company's expense (financed primarily by temporarily increased



Canal boats being loaded with coal via rail bridge at Cumberland, MD. Note the difference in freeboard between the loaded and unloaded boats. (Special Collections Research Center GWU)

tolls, meaning it was ultimately paid for by the customers).⁴⁷ The higher bridges were needed to allow freighter boats to pass when lightly loaded, meaning fully loaded boats could make it further into Georgetown to offload (the return, or ascending, load was lighter than the descending load, resulting in a boat riding higher in the water). The canal's starting point at Rock Creek, which had silted up, was dredged by the government of Georgetown to facilitate the handling of both the canal boats and the ships that would take the cargo to its next destination. Other channels in the Potomac were also dredged and deepened, so larger vessels with deeper drafts could reach Georgetown.⁴⁸ Alexandria's aqueduct bridge was repaired and re-watered, having been drained and used as a military bridge during the war. These repairs had the desired effect – the *Allegianian* newspaper reported in May 1869 that between 1 June and 10 December 1868, 180,000 tons of coal and 3,000 tons of lime, stones, cement, and lumber had been delivered to Alexandria via the canal.⁴⁹

By 1873 over 500 boats were in operation carrying millions of tons of coal, to include steam-propelled canal boats, sixteen of which were operating on the canal in 1878.⁵⁰ There was so much cargo that it created difficulty in

⁴⁷ Corporation of Georgetown, *Ordinances and Resolutions of the Corporation of Georgetown, January, 1865, to January, 1866* (Georgetown, DC: Georgetown Courier Print, 1866), 19.

⁴⁸ Corporation of Georgetown, *Ordinances and Resolutions of the Corporation of Georgetown, January, 1868, to January, 1869* (Georgetown, DC: Georgetown Courier Print, 1869), 71-72.

⁴⁹ William Bauman, *Compilation of Canal Trade Articles From 1869* (Glen Echo, MD: C & O Canal Association, 2013), 7.

⁵⁰ William Bauman, ed., *Register of Boats Employed in the Chesapeake and Ohio Canal, Jan.*

finding enough coasting vessels to move the coal to its final destinations.⁵¹ But move the coal they did, as new markets were continually opening in the Caribbean and South America. This activity created much needed jobs and economic stimuli, as documented in an 1872 account of Alexandria that states “[t]hese [coal] agencies employ between 220 and 300 laborers the greater part of the year, to say nothing of the trade brought here by the vessels that come to carry away the coal and the large trade with the canal men, who nearly all purchase supplies in our city.”⁵² Not all the coal left the Capital Region, however. As Georgetown’s population increased from 8,366 in 1850 when the canal’s full length opened to 11,384 in 1870, near the apex of the canal’s trade volume, almost all the fuel for heating the city’s homes and businesses came directly from the boats plying the canal’s waters.⁵³ Alexandria and Georgetown



Canal boats lined up waiting to offload coal in Georgetown. (Special Collections Research Center GWU)

had, thanks to the C&O Canal, recovered from the trade slump after the war and regained their place among the mid-Atlantic ports.

Despite the success enjoyed by the canal, it was clear by the latter part of the nineteenth century that things were beginning to change. It was the 1886 abandonment of the Alexandria Canal Aqueduct that indicated a significant decline in the canal’s future. The aqueduct had been damaged by a break that required extensive repairs, for which there was little appetite on the part of the governments and companies involved. The federal government decided to convert the structure to a bridge, ending forty-three years of service interrupted only by the Civil War.⁵⁴ Shipments to Alexandria reverted to being

^{1st}, 1878 (Glen Echo, MD: C&O Canal Association, 2012), 3-13.

⁵¹ Sanderlin, *The Great National Project*, 227.

⁵² Kelsey Ryan, *Traveler’s Accounts of the Historic Alexandria Waterfront* (Alexandria, VA: Office of Historic Alexandria/Alexandria Archaeology, 2009), 101.

⁵³ Richard L. Forstall, ed., *Population of States and Counties of the United States: 1790-1990* (Washington, DC: U.S. Department of Commerce, 1996), 29.

⁵⁴ Elliott Cater, “This Georgetown Bridge Was For Boats,” *Architect of the Capital*, 25 June

towed across the river from Georgetown or carried via one of the bridges. The changing transportation infrastructure in the region was a harbinger of the canal's bleak future. Rail transport was increasing in efficiency and capacity every year and better roads facilitated horse-drawn transportation connecting northern Virginia, the District of Columbia, and southern Maryland, all made possible by the region's expanding bridge network.

The canal's commercial life ended in 1924, when in late March a "prodigious flood raged over the entire canal and left it in utter ruin."⁵⁵ Given the fact that by this point the C&O's owners, the Chesapeake and Ohio Transportation Company, and the main boat operator, the Canal Towage Company (both owned by the B&O Railroad to prevent ownership by a rival), had been continuously losing money, they made little effort to initiate full repairs.⁵⁶ Some work was done to repair the canal at the eastern end of the line and the section between Cumberland and Williamsport, but the onset of the Great Depression shelved these projects. Essentially, after the spring of 1924, the C&O Canal abruptly ceased to exist. Canaller Lester Mose said this of the flood: "The boats was all gone. The '24 flood took all the boats away.... There wasn't nothing there. It was dead."⁵⁷

Alexandria and Georgetown were, by this time, less reliant on the canal than they had been in years past, when the canal supplied most of the cargo being shipped from their piers. Alexandria, in particular, had diversified its economy by investing heavily in manufacturing and industry, particularly shipbuilding and shipyards, after the closure of the Alexandria Canal Aqueduct. This activity had paid off during World War I, when both naval and merchant vessels were built in Alexandria. As the war was drawing to a close, the Navy built one of its three torpedo factories along the Alexandria waterfront, which was active until after World War II. These activities reduced the impact of the canal's closure.

Georgetown, however, being far more reliant upon the canal's cargo, was economically impacted by its closure, which unfortunately coincided with a changing maritime world. Due to the topographic constraints of the port, particularly at Rock Creek, which was in a constant battle against silting, Georgetown's shipping had dwindled due to the deeper ports required by contemporary vessels. Sadly, Georgetown "went into an economic decline and in the period after World War I . . . gained a reputation as one of Washington's

2016, <https://architectofthecapital.org/posts/2016/5/30/aqueduct-bridge>.

⁵⁵ Kytlye, *Home on the Canal*, 119.

⁵⁶ Unrau, *Historic Resource Study: Chesapeake & Ohio Canal*, 499.

⁵⁷ Kytlye, *Home on the Canal*, 187.

worst slums.”⁵⁸ This situation was eventually reversed by the housing need created by the influx of workers required by the growing federal government.

The C&O Canal, while ultimately a commercial failure in and of itself, met the original goals of its founders: economically and socially linking the emerging western frontier, with its seemingly boundless natural resources, and the eastern cities and ports that provided both markets and transshipment points for this bounty. These linkages were accomplished not only by carrying millions of tons of cargo, but by also serving as a communications line between the two worlds. By performing this service, the canal functioned as a catalyst for regional growth and prosperity – especially in Alexandria and Georgetown. By serving as the “door” between the products of the Potomac River Valley and the global market, these two ports were able to develop in ways that were only possible due to the steady stream of canal-borne cargo that arrived at their piers and wharves. Given this vital service, the canal’s role in the development of the District of Columbia cannot be overstated. It is not hyperbole to assert that without the C&O Canal, Georgetown, Alexandria, and perhaps the entire National Capital Region, would be very different places than they are today, and this is a topic deserving of future study and reflection.

Trevor Laurie holds graduate degrees from Salve Regina University and the State University of New York Maritime College. A student of inland waterways, he is a member of several canal societies and associations, including the Chesapeake & Ohio Canal Association. A former naval officer, he is now a federal civil servant. (Contact: trevor.lauriel@gmail.com)

⁵⁸ “Georgetown Historic District,” National Park Service, 12 October 2007, <https://web.archive.org/web/20071012101639/nps.gov/nr/travel/wash/dc15.htm>.