

mainly form the work. In several positions but one dike would be required, the bank, which would require an apron of loose stone spread over it, forming the other side of the made water-way.

On the map I have outlined (in dotted red lines) the proposed approximate position of the dikes; the absolute determination of them can best, it is believed, rest with the engineer in immediate charge of the work.

Observations for discharge and velocity are wanting wherewith to enter the formulae and deduce the width for a given depth and velocity; in this case, perhaps, these are not so essential, as the natural analogies may guide, generally. At Switzer's bridge, the section where, probably, the maximum discharge would be found, and where is the deepest and most marked scour, the width is 180 feet clear across. Taking, then, 150 feet and 200 feet, where channel crosses river from one bank to another, as the width for the canalized river below, and diminishing this width progressively as the ascent is made till at Deep Run a contraction to 100 feet, or even 80 feet, would probably be found requisite for a stable channel. The width contracted to should, in point of fact, be determined independently for each position where dikes are put in by the local circumstances.

With the main lateral dikes should be constructed light structures, as deflectors to runs entering the river, to give proper direction to their discharge, and all sloughs or bayous should be closed at their lower ends, to diminish the quantity of water escaping from the main channel and facilitate the movement yet farther up of the flood-tide. Near the mouth, where the canal is carried across the marsh referred to in section 5, and directed toward the deep water around the draw of Light-street Bridge, an embankment of some size, extending from the south shore, where the change of direction occurs, for some distance along the outer (easterly) dike, would be needed, probably; this should be of greater strength and dimensions than the balance of such work.

The aggregate of dikes, deflectors, and closures foots up 50,000 feet (running) of this species of work. It is believed that a mean cost of this would be \$2.75 per foot, considering the slight type of work often sufficing. The cost of the diking would be then \$137,500. To this should be added the additional cost for the more substantial diking or embankment required in carrying the new rectified channel-way across the swamp and mouth (sections 5 and 6), as above referred to. The length of this class of structure being 6,275 feet, and the additional cost, reckoned at 75 cents per foot (running), would aggregate \$4,707.

Estimating the dredging required for a "cut" 6.5 feet deep, 0.5 foot allowed for filling in behind bucket, and 100 feet wide, allowing the water to scour out the residue of the width between dikes and adjust the side slopes of cut for entire length of improved water-way, would involve the excavation of 380,000 cubic yards; as this material is soft and could be deposited on rear side of dikes, with but little, if any, scowling for removal, the locality, too, of work being sheltered, 8 cents per yard is assumed as the cost, figuring up to, for the whole excavation, \$30,400. The total cost would be then, by the above plan, \$172,607.

This presupposes that the entire improvement is executed at once. If, however, the work of contracting the natural way by the dikes be begun at the upper end of the improvement and carried down, say one-third of the entire distance, the season after one winter-spring high-water, and a second section be similarly taken up and completed after the following flood, and so on, the dredging could be nearly, if not entirely, dispensed with, it is believed; the natural erosion due to the contraction would effect the deepening of the new water-way to the desired depth, the stream so naturally accommodating itself to its changed conditions in its own due course of time. As an actual working plan, this latter course would seem most advisable to follow, notwithstanding its being to a certain extent slow and tentative; by it, it is estimated, the cost of the improvement under the same plan could be reduced to \$150,000.

If, instead of the sheet-piled (or wattled) dikes herein proposed and estimated for, the required new channel-way be first dredged out, and with this material simple embankments be raised, following the same lines as laid out for the diking, there would require to be excavated, making the side slopes and finishing the channel-way complete, 475,000 cubic yards; this, at 8 cents per yard, equaling \$38,000, and more than sufficing for the contents of the proposed banks, after allowing for due settlement. These banks would imperatively call for an apron of riprap stone to be spread uniformly over channel and rear slope and top. The mean dimensions being taken as 2 base to 1 perpendicular for channel slope, 1½ base to 1 perpendicular for rear slope, 4 feet (minimum) width on top, and thickness of apron 0.75 foot, there would then be required of stone 30,000 cubic yards. It is estimated this would stand, delivered on works and duly spread, at per yard \$1.90 at lowest. The cost of the stone would then equal \$57,000. Add additional cost for strengthening embankment at mouth of river, as per dike plan, \$4,707; and total cost per this plan \$99,707, to which must be added the subsequent charge of planting with aquatic plants the banks, watching and tending them, and repairing breaks and caves that may fairly be expected, until in time the

whole mass had firmly consolidated itself, when a new system of banks for the stream would have been made.

It is believed, however, that, from all the information now available, very much, if not all, of such dredged material would be totally unfit for building into the embankment proposed without some close and rigid structure, such as sheet-piling or close wattle work, be first put in to hold it back from the channel, and retain it until it had consolidated by time and pressure. The method of simple embankments might then be found entirely impracticable, while that of dikes certainly affords from the outset a much larger measure of stability and permanency.

Since beginning to write this report, the following information has been kindly furnished me by Mr. W. R. Hutton, taken from the gaugings of this stream by Engineer Slade, of the Baltimore water-works, in 1857-78:

Minimum discharge, Elk Ridge Landing, 2,500 below end of present survey and 1,350 feet above mouth of Deep Run.	180 cubic feet per second.
Ordinary low-water discharge	561 cubic feet per second.
At 10,000 feet below Elk Ridge at ordinary low stages, including tidal water	567 cubic feet per second.
At 20,000 feet below	618 cubic feet per second.
At 34,000 feet below	687 cubic feet per second.

The last three discharges are calculated for a 1-foot rise and fall of tides, with about the widths of the stream here taken in the summarized description of it. These figures would seem to lend a reasonable ground to what I find to be the generally held opinion as to this "West Branch," to wit, that it has more water considerably in it than this present survey shows it actually has at date. Within the past sixty years vessels of some size, drawing perhaps 6 feet of water, certainly ascended to Elk Ridge Landing, and carried on considerable transportation thence. The old furnace here and the landing place further attest this having been something of a shipping point. Now nothing of the kind would be possible. There has been, then, without question, in these past sixty years, a very great silting up of the bed of this stream, the causes producing which are to a certain extent yet operative. If now gauged, it is not thought that the discharge above given would be met.

In concluding this report, it may be well to call attention to the fact that in the execution of the scheme of improvement herein proposed, or, indeed, in any scheme of improvement, certain private and riparian rights and privileges, now claimed and exercised, would be interfered with or abrogated, to adjust and settle which might lead to an expenditure not herein estimated for. Neither time nor occasion have been available to me, as yet, to investigate the bases on which these rights and privileges are supposed to rest. Generally only are they known to exist and be exercised, and compensation for them would be sought in case of their abridgment.

I have the honor, sir, to remain, very respectfully, your obedient servant,

JAS. W. CUYLER,
Captain Engineers.

Maj. WM. P. CRAIGHILL,
Corps of Engineers, U. S. A.

CHAPTER 365.—AN ACT to incorporate the Maryland Canal Company.

Whereas the State of Maryland, in giving her assent to the charter of the Chesapeake and Ohio Canal Company, expressly reserved the right of the State to charter and construct a lateral canal to connect with the Chesapeake and Ohio Canal at some point within the District of Columbia, which reservation was assented to by the Congress of the United States; and

Whereas the State of Maryland did charter a company to construct a canal from some point on the Chesapeake and Ohio Canal, within the District of Columbia, to a point on the Chesapeake Bay, near the city of Baltimore, which charter has expired by limitation; and

Whereas it is now more than ever necessary to secure to the city of Baltimore a portion of the large and increasing trade of the Chesapeake and Ohio Canal, which can only be effected by the construction of a branch canal from the Chesapeake and Ohio Canal; and

Whereas to secure this trade to the State of Maryland and the city of Baltimore it is only necessary to construct twenty-eight (28) miles of canal, from the head of navigation on the eastern branch of the Potomac River to the head of navigation on the Patapsco River; therefore, it is the intention of this act to incorporate a company to construct a canal from such point on the Chesapeake and Ohio Canal, within the District of Columbia, to such point on the Patapsco River, near Baltimore City, as the board of directors may select, and to use such portion of the Potomac River, near the eastern branch thereof, and such portion of the Patapsco River as the company shall

deem best, and to confer upon the company hereby incorporated all and similar rights, powers, exemptions, privileges, and franchises, in the construction, maintenance, and operation of this work as are now held and enjoyed by the Chesapeake and Ohio Canal Company under its charters and the several amendments thereto: Therefore,

SECTION 1. *Be it enacted by the general assembly of Maryland,* That A. P. Gorman, E. Pratt, John T. Ford, George Wheeler, M. Bannon, Robert T. Baldwin, C. Coffin, W. H. Tuck, James G. Berret, S. I. Cooke, H. H. Dodge, Andrew Banks, and such other persons as may become associated with them in the manner hereinafter provided, and they are hereby constituted a body corporate and politic, by the name of "The Maryland Canal Company," and as such shall have all the rights, powers, exemptions, privileges, and franchises now held and enjoyed by the Chesapeake and Ohio Canal Company, under its charter passed by the legislature of the State of Virginia at the December session, eighteen hundred and twenty-three, and ratified by the State of Maryland at the December session, eighteen hundred and twenty-four, and the several supplements thereto, so far as the same may be applicable, for the purpose of constructing a canal, and all the dams, locks, feeders, and other works and devices of every sort or description appertaining thereto, in constructing a canal from such point on the Patapsco River as the president and directors may select, and in the same manner and to as large an extent as if said rights, powers, exemptions, privileges, and franchises had been particularly granted to the Maryland Canal Company by this act.

SEC. 2. *And be it enacted,* That the capital stock of the said Maryland Canal Company shall consist of four million of dollars, divided into fifty thousand shares of the par value of one hundred dollars each, which shall be considered as personal property, and shall be transferable in such manner as may be provided by the by-laws of said company; and each share thereof shall entitle the holder thereof to one vote in all meetings of the stockholders of said company, to be given either in person or by proxy duly appointed by an instrument in writing properly executed before some officer authorized to take acknowledgments of deeds; and for the purpose of obtaining subscriptions to the said capital stock, books shall be opened under the direction of A. P. Gorman, R. H. Baldwin, M. Bannon, W. H. Tuck, and James G. Berret, or a majority of them, at such time, in such place, and under such regulations, as to the mode, manner, and time of payment and otherwise as they, or a majority of them, shall deem expedient.

SEC. 3. *And be it enacted,* That whenever subscriptions to the amount of one million of dollars shall have been obtained, the subscribers, or a majority in value thereof, shall have authority to meet and organize said company by the election of one of their number to the office of president of said company, and six others, also from amongst their number, to the office of directors of said company, who shall hold their respective offices for the term of one year thereafter or until their successors shall be duly elected and qualified, with power to said president and directors to fill any vacancy or vacancies which may take place amongst them, during their term of office, by the election of such other person or persons from amongst the stockholders as they may select; and the said president and directors so selected, and their successors duly appointed, shall have and exercise all the powers now possessed and enjoyed by the president and directors of the Chesapeake and Ohio Canal Company under its charter and the several amendments and supplements thereto, not herein otherwise provided, and shall at all times be removable by a vote of a majority of the stockholders of said company at any public meeting thereof, duly called after thirty days' public notice; said meeting to be held at the principal office of said company; and shall receive such compensation for their services as the stockholders may from time to time determine.

SEC. 4. *And be it enacted,* That there shall be held annually, on the first Tuesday in June in each and every year, a general meeting of the stockholders of said company, to receive and consider the annual report of the president and directors of the preceding year, and elect their successors, and to transact any and all other business relating to said canal and the affairs of said company which may be brought before them. At all meetings of the stockholders a majority in value thereof shall be necessary to constitute a quorum; and in case, at any of said annual meetings of stockholders, or any other meeting thereof, whether regular or special, a quorum should not be present, an adjournment may be had to some other day, and so from time to time until the attendance of a quorum shall be obtained.

SEC. 5. *And be it enacted,* That the said company shall begin the construction of said canal within ten years from the date of the passage of this act, and shall complete the same within twenty years from the commencement thereof; and the said canal and the works to be erected thereon, when completed, shall forever thereafter be esteemed and taken to be navigable as a public highway, free for the transportation of all goods, commodities, and produce whatever, on payment of the tolls to be imposed by the said president and directors under the powers vested in them by this act.

SEC. 6. *And be it enacted,* That so soon as any part of said work is completed, with necessary locks, and open for navigation, the said company is hereby authorized and empowered to collect tolls and exercise as full and complete jurisdiction over the same

as if the whole was completed; and no part of the rights and privileges hereby granted shall be taken away by reason of the failure to complete the whole work, or by uniting with any other canal or slack-water company, both or all together forming one continuous navigation from the terminus of the Chesapeake and Ohio Canal at Georgetown to the city of Baltimore.

SEC. 7. *And be it enacted,* That this act shall take effect from and after the date of its passage.

Approved, April 11, 1874.

LETTER OF MR. W. R. HUTTON, ENGINEER OF THE CHESAPEAKE AND OHIO CANAL COMPANY.

CHESAPEAKE AND OHIO CANAL COMPANY,
Baltimore, January 20, 1879.

COLONEL: The president of this company requests me to invite your attention to some of the commercial advantages to be expected from the improvement of the West Branch of the Patapsco.

The improved navigation of this stream will promote and facilitate inter-State trade and commerce along our Atlantic seaboard, in connection with the Maryland Canal, which will form the link between the waters of the Potomac and those of the harbor of Baltimore.

The construction of this 26 miles of canal by the State of Maryland will thus complete an inland line of water communication between the capital of the country and New York, whereby a million tons of Cumberland coal, arriving by the Chesapeake and Ohio Canal, may be sent forward without breaking bulk to the steamships and factories of the North, bringing in return their heavier importations and manufactures, as well as the hard coal consumed in the District and neighboring country. This canal passes through a bed of iron ore furnishing a metal of the best quality, extensively used, and even exported in the form of car-wheels, and, as I am informed, adopted in our navy-yards in the construction of machinery. They are worked to a limited extent only, on account of the high cost of transportation on the iron and on the limestone used as a flux.

The great value of water transportation for heavy freights in developing trade and diminishing cost to the consumer is shown by the comparison of the work done on the seaboard canals with the freights by rail between the same points, which I quote from the report of the Senate Committee on Transportation Routes to the Seaboard, vol. 1, p. 68:

Freights by rail between New York and Philadelphia in 1872.....	206,398 tons.
By water-line, canal, and river.....	1,258,732 tons.
Between Philadelphia and Baltimore in 1872—	
By rail.....	838,568 tons.
By water-line.....	2,837,532 tons.

There is now a considerable quantity of freight carried by water from Baltimore to Washington by way of the bay and the Potomac River, a distance of 180 miles, which by the interior route would be transported less than 40 miles.

The State of Maryland has located its largest reformatory—the new house of correction—upon the line of this canal, and has expressly authorized (act of 1878, ch. 358) the employment of the convicts in the construction of the canal, and the payment for their services in the stock of the canal company.

Respectfully,

WM. R. HUTTON,
Engineer Chesapeake and Ohio Canal.

Col. W. P. CRAIGHILL,
United States Engineers.

F 17.

PRELIMINARY REPORT ON SURVEYS WITH A VIEW TO CONSTRUCTION OF A SHIP-CANAL TO CONNECT THE WATERS OF THE DELAWARE AND CHESAPEAKE BAYS.

UNITED STATES ENGINEER OFFICE,
Baltimore, February 7, 1879.

GENERAL: Severe weather came on before all the information desired had been obtained as to the various routes proposed for a ship-canal

between the waters of Chesapeake and Delaware Bays. The information at our disposal is, however, sufficient to justify the preparation of comparative approximate estimates of cost for three routes; the most northern, the most southern proposed, and the most direct intermediate one. Several other routes have been surveyed.

These estimates are made full, and the nearness of their approximation may be inferred from the statement that they will not differ from accurate detailed estimates by more than 20 per cent. These more careful estimates require much study of details, for which there has not yet been time.

What has been referred to as the most southern route proposed may be, for brevity, called the *Ferry Creek route*. In few words, it may be described as follows: Leaving Baltimore, it passes down the Patapsco River and Chesapeake Bay to the mouth of Choptank River; thence up that stream to the mouth of Ferry Creek (about 5 miles above Cambridge); up that stream about 3 miles, and then in a straight line to the forks of the Nanticoke River, in the borders of Wicomico and Dorchester Counties, Maryland; thence up the Nanticoke 13 miles to the town of Seaford, Del., and beyond, following the branch of that stream known as Deep Creek, to its head near Georgetown, Del.; thence crossing a low divide to the waters of the Broadkill (flowing into Delaware Bay 3 miles above Lewes, Del.), it follows that stream to the bay.

The dimensions of canal upon which the estimate is based are the following:

	Feet.
Width at bottom.....	100
Width at low-water.....	178
Width at high-water.....	190
Width of berm.....	10
Depth at low-water.....	26
Ratio of slopes.....	1½ to 1

The most northern route proposed is usually styled the *Sassafras River route*. A report on that route was made by Mr. B. H. Latrobe, July 4, 1874. A copy of his report and estimate are attached hereto. No re-examination has been made of that route under the directions contained in the river and harbor act of June 18, 1878, as it was considered best to devote our available time and money to other routes, which had strong advocates, and had not had the examination given them which the Sassafras route had received.

The Sassafras River route may be briefly described as follows: Commencing at Baltimore, it follows down the Patapsco to its mouth, crosses the Chesapeake Bay by the old Brewerton Channel, then passes up the bay to the Sassafras River (passing the old villages of Georgetown and Frederickton 12 miles above mouth) to its head; thence across the summit to the waters of Blackbird Creek (flowing into the Delaware Bay), down that stream to the marshes bordering the bay, and thence across the marsh, striking the bay near Liston's Point.

The estimate now presented for the Sassafras route is based upon the details furnished by Mr. Latrobe, but different prices for excavation, &c., are used, and a different section for the canal is proposed, being the same as those adopted in the estimates now submitted for the Ferry Creek and intermediate or Queenstown route.

The intermediate route, called the *Queenstown route*, may be described as follows: Leaving Baltimore, it follows the Patapsco to its mouth, passes across the bay to the mouth of Chester River and up that stream to the village of Queenstown, 9 miles from the mouth; thence the route passes in a straight line through Queen Anne and Caroline Counties,

Maryland, and Kent and Sussex Counties, Delaware, to Wiltbank's Landing, on the Broadkill, about 3 miles from the Delaware Bay; thence down that stream to the bay. This line crosses the Tuckahoe River just above Hillsborough, Md., and the Choptank half-way between Denton and Greensborough, Md., all of which are important agricultural centers. In Delaware it passes near Harrington, Milford, and Milton, all places of some importance.

The following are the approximate estimates for the three routes mentioned:

FERRY CREEK LINE.

Excavation above high-water, 38,243,512 cubic yards, at 20 cents....	\$7,648,702 40
Excavation between high and low water, 6,034,109 cubic yards, at 15 cents.....	905,116 35
Excavation below low-water,* 45,767,803 cubic yards, at 12½ cents..	5,720,975 37
Excavation, dredging, 6,895,757 cubic yards, at 10 cents.....	689,575 70
Approaches and protection, Delaware Bay.....	78,552 00
Approaches and protection, Chesapeake Bay.....	10,000 00
Bridges, highway (10, at \$20,000).....	200,000 00
Bridges, railway (3, at \$60,000).....	180,000 00
Tide-locks (4, at \$200,000).....	800,000 00
Total.....	16,232,921 82

QUEENSTOWN LINE.

Excavation above high-water, 128,355,910 cubic yards, at 20 cents...	\$25,671,182 00
Excavation between high and low water, 7,330,967 cubic yards, at 15 cents.....	1,099,645 35
Excavation below low-water,* 41,184,574 cubic yards, at 12½ cents..	5,148,071 75
Excavation, dredging, 7,895,757 cubic yards, at 10 cents.....	789,575 70
Approaches and protection, Delaware Bay.....	78,552 00
Bridges, highway (10, at \$20,000).....	200,000 00
Bridges, railway (3, at \$60,000).....	180,000 00
Tide-locks (4, at \$200,000).....	800,000 00
Total.....	33,967,026 80

SASSAFRAS RIVER LINE.

Excavation above low-water, 16,982,200 cubic yards, at 20 cents....	\$3,396,440 00
Excavation below low-water, 15,473,300 cubic yards, at 12½ cents....	1,934,162 50
Dredging, 19,762,950 cubic yards, at 10 cents.....	1,976,295 00
Tide-locks (2, at \$200,000 each).....	400,000 00
Highway-bridges (9, at \$20,000).....	180,000 00
Railway-bridges (2, at \$60,000).....	120,000 00
Draw at Georgetown.....	15,000 00
Approaches.....	98,000 00
Total.....	8,119,897 50

The totals of these approximate estimates, in round numbers, are:

For Ferry-Creek route.....	\$16,250,000 00
For Queenstown route.....	34,000,000 00
For Sassafras River route.....	8,250,000 00

To each of these should be added about \$150,000 for right of way.

The advantage is clearly with the northern route, if we consider cost of construction only. The borings thus far made demonstrate that no rock is to be encountered on the Ferry Creek route. As to this very important point we do not know certainly for the Sassafras and Queenstown routes. Additional borings are needed to settle it.

* Excavation below low-water refers to dredging in canal prism, as distinguished from river and bay dredging.

No comparison will now be made of the relative advantages or disadvantages of the several routes, but their careful consideration should not be omitted before a definite location is made.

Comparative distances by these three routes are given below, measured from a point in mid-channel of the Patapsco, at the city limits of Baltimore, to a common point at sea off the entrance of Delaware Bay, on the usual route of vessels from Baltimore bound for European or Northern American ports:

FERRY CREEK ROUTE.		Miles.
Baltimore to Ferry Creek.....	.....	75
Ferry Creek to Delaware Bay.....	.....	53½
Delaware Bay to sea.....	.....	25
Total.....	.....	153½

QUEENSTOWN ROUTE.		Miles.
Baltimore to Queenstown.....	.....	35
Queenstown to Delaware Bay.....	.....	54
Delaware Bay to sea.....	.....	25
Total.....	.....	114

SASSAFRAS ROUTE.		Miles.
Baltimore to Georgetown, on Sassafras River.....	.....	50
Georgetown to Delaware Bay.....	.....	20
Delaware Bay to sea.....	.....	70
Total.....	.....	140

Comparing totals, we have the following:

	Miles.
Ferry Creek route.....	153½
Queenstown route.....	114
Sassafras route.....	140
Route now used, by the capes.....	335

The estimate made in 1872, and submitted to Congress, of the expense of making these surveys, was \$20,000. The sum thus far available has been \$16,000.

The field work was commenced in August, 1878, by several energetic parties, under the immediate supervision of Mr. N. H. Hutton, engineer of the harbor board of the city of Baltimore. The preparation of maps, estimates, &c., is now actively in progress in this office.

Thanks are due and hereby given to the harbor board, presided over by the mayor, Hon. F. C. Latrobe, for granting Mr. Hutton permission to take this additional and important duty, which he has performed with his usual ability and energy.

Very respectfully, your obedient servant,

WM. P. CRAIGHILL,
Major of Engineers.

Brig. Gen. A. A. HUMPHREYS,
Chief of Engineers, U. S. A.

APPENDIX G.

ANNUAL REPORT OF MR. S. T. ABERT, UNITED STATES CIVIL ENGINEER, FOR THE FISCAL YEAR ENDING JUNE 30, 1879.

UNITED STATES ENGINEER OFFICE,
Washington, D. C., August 5, 1879.

GENERAL: I have the honor to submit herewith my annual report relating to the works of river and harbor improvement under my charge for the fiscal year ending June 30, 1879.

The following works were transferred during the year, at the dates named, to Capt. Charles B. Phillips, Corps of Engineers:

- Improvement of Norfolk Harbor, Virginia, July 11, 1878.
- Improvement of Elizabeth River, Virginia, July 11, 1878.
- Improvement of Nansemond River, Virginia, July 11, 1878.
- Improvement of Blackwater River, Virginia, May 7, 1879.
- Improvement of Pamlico River, North Carolina, May 7, 1879.

Very respectfully, your obedient servant,

S. T. ABERT,
United States Civil Engineer.

Brig. Gen. H. G. WRIGHT,
Chief of Engineers, U. S. A.

G I.

IMPROVEMENT OF HARBORS AT WASHINGTON AND GEORGETOWN, DISTRICT OF COLUMBIA.

HISTORY OF OPERATIONS.

The improvement of the harbors of Washington and Georgetown has received the attention of Congress for many years.

The first appropriation was made March 2, 1833, to aid the citizens of Georgetown in removing the obstruction to navigation in the Potomac, for the purchase of the Little Falls Bridge, and the construction of a turnpike road. One hundred and fifty thousand dollars was appropriated for these three objects, but I am not informed as to the amount expended on the river. Several surveys were subsequently ordered, but it was not until July 11, 1870, that the improvement was definitely and systematically undertaken under the direction of the Chief of Engineers.

An appropriation of \$50,000 was then made for the improvement of the Potomac River between the Long Bridge and the city of Georgetown. In this part of the harbor has existed for a long period the most serious obstruction to navigation, viz, the bar which has formed where the river suddenly widens and spreads itself over the wide flats along the water-front of Washington, and which is maintained and increased