purposes, $71,856 67. Divide this sum by 108 miles, the length of that navigation, and we have an average per mile of $665, add to this the increased expenditure, caused by an extraordinary freshet, as stated above, viz: $80,000, which is equal to $741 per mile, and we have a total of $1,406 per mile per annum, for a year of extraordinary damage from high water. The Erie canal costs per annum, for maintenance, &c., from $800 to $1,000 per mile. We have thus the gratifying results that the Chesapeake and Ohio canal, at the extreme limit of expenditure, in a year unparalleled in the extent of damage done by heavy rains and high freshets, costs less per mile for its maintenance than the Schuylkill navigation, and the Erie canal, in their years of least expenditure; and that under like circumstances, the cost on our canal *is less than one half as much per mile*, as on those improvements.

2. In reply to the enquiry, what will be the sum required for the repairs of the canal the current year?

I answer, $31,000. Thus:

For ordinary repairs and improvements, the same as last year.	$15,860
For other repairs that may be rendered necessary by breaches, say	15,140
Total	$31,000

In this estimate, I assume that the year will be an average one, as regards river freshets. I am justified, I think, in doing so; the year 1843, having been the only exception of extraordinary damage from high water, since the commencement of the canal in 1828.

I ought to remark that this estimate does not include any allowance for the making of certain improvements heretofore recommended by me, and referred to in the canal report of 16th November, 1843, and which ultimate economy would dictate should be early undertaken as a security to the canal against damage from high water and heavy rains.

3. In reply to the enquiry, as to the sum required in addition to the present amount for the pay of Engineers and the superintendence of the work, if the completion of the canal from Dam No. 6, to Cumberland, should be undertaken this year.

I answer, that $18,000 per annum will be required. This sum contemplates the employment, (besides the Chief Engineer,) of four assistant Engineers, four Rodmen, four Axemen, and nine superintendents of masonry and construction. Permanency of construction can alone be secured by a diligent and careful attention to the work in every stage of its progress, by a sufficient number of competent officers. That portion of the line of canal now navigable, which was last constructed, cost more for superintendence, than the work earliest done, and the consequence is, a large diminution in the annual cost of repairs on the former as compared with the latter.

If the work to be done, were in a connected line, there would be 18 miles only, requiring superintendence, and would of course re-