

ly overrule that of engineering, about \$70,000, might be saved by constructing the remaining lockage of rubble stone masonry, with cut stone hollow quoins, and coping; a mode of construction I would prefer to any combination of stone and wood, which would be nearly as expensive and not so durable.

Further, by changing the plans and perhaps the material of culvert arches (which may indeed be advisable) and building the Town creek aqueduct, partly of wood, the aggregate present saving may be increased to about \$100,000.

There is another question involving grave considerations of cost and utility, which ought now to be presented to the directory; it is that of FEEDERS.

Before entering upon this subject, however, candor obliges me to admit, that the disposable time I have had to devote to this matter, has proved insufficient for the acquisition of sufficient instrumental data, to enable a final decision to be formed upon the merits of all the rival plans which present themselves and command our attention: indeed all that I can promise myself upon this occasion—with regard to such as possess nearly equal merit—is to indicate the direction in which further examinations ought to be made: though it is true, that to some of the plans of feeding, such insuperable and manifest objections exist, that we may venture to reject them, without any further evidence.

By gauging the north branch of the Potomac, above Cumberland, and also Wills creek, during an extraordinary drought (September 1838,) it was ascertained that the quantity of water then running in these streams was as follows:

<i>Cubic feet.</i>			
In the north branch	19.6-10 cubic feet, per section,		
	or per minute,		1176
In Wills creek,	3.6-10	ditto	ditto
			216
			<hr style="width: 20%; margin: 0 auto;"/>
Total running supply per minute, entering, the pool			
of the Cumberland dam, in September 1838,			1392

The above gauge of the north branch, though taken with much care, was made by transverse sections and average velocities, upon an uneven site; it may therefore possibly err in deficiency: still, with a reasonable allowance for error, it indicates that the supply of water at Cumberland, will be in very dry seasons, entirely inadequate even to supply the natural consumption of the canal, without providing for the lockage of the trade.