speaking, be considered everlasting, and in this respect far better than any bridge or viaduct, whatever be the material employed in their construction.

2. An embankment, properly consolidated and completed, costs nothing to keep up; whilst bridges require constantly to be looked after, and, if made of perishable materials, to be renewed periodically.

3. An embankment, as a rule, is more economical than a mechanical structure, unless the latter be one of the most temporary and perishable kind.

In proof that an embankment, in addition to its other recommendations, is absolutely cheaper than a viaduct for all ordinary heights and under all ordinary circumstances, I submit the following tabular comparison of the relative cost of an embankment and of a viaduct, each 1000 feet in length, and for various elevations.

The several kinds of work are calculated at ordinary and fair prices in each case, the piers and abutments are of masonry, and to make the comparison complete, in the table will be found the estimated cost of wooden as well as iron viaducts, of various spans as well as heights.

Height of Embankment or Viaduct.	Cost of Embankment.	Iron Viaduct, Spans 100 feet.	Iron Viaduct, Spans 50 feet.	Wooden Truss, Spans 100 feet.	Wooden Truss Spans 50 feet.
Feet.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
30	21,000 00	94,360 00	84,064 00	62,666 00	63,264 00
40	34,666 00	106,610 00	101,452 00	74,160 00	79,056 00
50	51,666 00	119,392 00	119,946 00	86,060 00	95,688 00
60	72,000 00	132,706 00	139,798 00	98,744 00	114,210 00
70	95,666 00	146,748 00	160,952 00	112,030 00	133,768 00
80	122,666 00	161,420 00	183,702 00	125,946 00	154,922 00

From this it will be seen that the net cost of an embankment 40 feet high and 1,000 feet in length is under $35,000, whilst a viaduct with a wooden superstructure on stone piers would cost from $74,000 to $79,000, or more than double.

As to the relative durability of a solid embankment and of a timber structure, or the economy of maintaing them, there really can be no comparison

To show that it is really a matter of some consequence, that the fullest information respecting the greatest volume of water in streams should be obtained before the character of structures is determined on, and that it is not at all consistent with true economy, either to act in a haphazard way, or on the principle of erring on the safe side, by making all the waterways much larger than necessary, I will now show the comparative cost of structures of various kinds.

Taking a 40 feet embankment, and calculating the quantity of masonry in each, at the same price per yard, the comparative cost would be as follows.

A box culvert, 2 ft. 6 in. by 2ft. 6 in.	$1,280
An arch culvert, 4 ft. span, by 5ft. 9 in. high in the clear	3,330
An arch culvert of 6 ft. span by 7 ft. high	4,170
An arch culvert of 10 ft. span by 12 ft. high	7,400
A beam culvert, two vertical walls with stringers of timber	17,500

These figures show very clearly that the size of a stream is a question of no little importance, and one which cannot very well be disposed of, simply by making all the structures of one size and character. If a stream were such that a culvert costing $3,330, would allow ample passage way for all the water that will ever in the course of nature run throught it, it would be unwise and wasteful to build a culvert that would cost $4,170 or $7,400, still more so to erect a structure that would cost no less a sum than $17,500.