

Table RMT 7 - Comparison of River Surveys from 1811, 1834, and 1859

DATUM (water, dam, bridge)	1811				DISTANCE						GRADIENT			
	RISE/FALL				Cumulative	Incremental				Cumulative				
	ft	in	tenths in ?	Total units (ft)	Feet > Datum	Miles	Rods	Links	Total Units (ft)	Feet > Datum		Increment ft/mi	rank (1=high)	Cumulative ft/mi
Water (dam)	0.00000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.000		0.000
Land (dam)	0.00000	9.00	5.00	0.79	0.79	0.00	0.00	0.00	0.00	0.00		0.000		0.000
Billerica Corner	0.00000	3.00	2.00	0.27	0.27	1.00	132.00	17.00	7,469.22	7,469.22	Dam - Corner	0.189	7	0.190
Middle	0.00000	0.00	1.00	0.01	0.28	1.00	90.00	8.00	6,770.28	14,239.50	Corner-Middle	0.006	9	-0.036
Mdsex Turnpike	0.00000	1.00	7.00	0.14	0.42	0.00	145.00	20.00	2,405.70	16,645.20	Middle-Turnpike	0.311	4	-0.022
Hills	0.00000	5.00	2.00	0.43	0.85	1.00	147.00	21.00	7,719.36	24,364.56	Turnpike-Hills	0.296	5	0.002
Carlisle	0.00000	9.00	2.00	0.77	1.62	1.00	319.00	15.00	10,553.40	34,917.96	Hills-Carlisle	0.384	3	0.024
North (Concord)	0.00000	0.00	2.00	0.02	1.64	3.00	275.00	6.00	20,381.46	55,299.42	Carlisle-ONorthBr	0.004	10	0.015
Barretts (=Hunts)	0.00000	3.00	6.00	0.30	1.94	0.00	154.00	11.00	2,548.26	57,847.68	ONorthBr-Barretts	0.622	2	0.020
Turnpike	0.00000	0.00	0.00	0.00	1.94	1.00	11.00	7.00	5,466.12	63,313.80	Barrets-Turnpike	0.000	11	0.018
South	0.00000	1.00	9.00	0.16	2.09	0.00	31.00	22.00	526.02	63,839.82	Turnpike-South	1.589	1	0.020
Nine-Acre-Corner	0.00000	1.00	8.00	0.15	2.24	1.00	153.00	6.00	7,808.46	71,648.28	South-NineACorn	0.101	8	0.020
Lees	0.00000	8.00	1.00	0.68	2.92	2.00	151.00	0.00	13,051.50	84,699.78	NineACorn-Lees	0.273	6	0.025
Shermans	0.00000	7.00	4.00	0.62	3.54	2.00	46.00	20.00	11,332.20	96,031.98	Lees-Shermans	0.287	5	0.029
Causeway														
Bridle Point														

Notes:

- (1) Based on instrumental surveys by Loammi Baldwin (1811) and by B.P. Perham under the supervision of Loammi Baldwin (1834) and by John Avery under the supervision of James B. Francis (1859)
- (2) The 1811 and 1834 surveys used the same reference points on bridge abutments, allowing comparison in changes.
- (3) The 1859 survey used new stations, preventing comparisons.
- (4) Yellow color highlights local gradients in 1811 and 1833, showing great differences there and only there.

Whereas formerly the steepest gradients were in the reaches away

1833

RISE/FALL		DISTANCE			GRADIENT		
Incremental ft	Cumulative Feet > Datum	Incremental Miles	Feet	Total (ft)	Cumulative Feet > Datum	Increment ft/mi	Cumulative ft/mi
0.000	0.00	0.00	0.00	0.00	0.00	0.000	0.000
0.200	0.200	0.00	0.00	0.00	0.00	0.000	0.000
0.065	0.065	1.00	906.75	6,186.75	6,186.75	0.055	0.055
0.000	0.065	1.00	156.50	5,436.50	11,623.25	0.000	-0.063
0.250	0.315	0.00	1193.50	1,193.50	12,816.75	1.106	-0.037
0.095	0.410	1.00	893.00	6,173.00	18,989.75	0.081	-0.020
0.855	1.265	2.00	234.50	10,794.50	29,784.25	0.418	0.016
0.035	1.300	4.00	996.25	22,116.25	51,900.50	0.008	0.010
0.360	1.660	0.00	398.00	398.00	52,298.50	4.776	0.017
0.025	1.685	1.00	497.00	5,777.00	58,075.50	0.023	0.015
0.135	1.820	0.00	723.00	723.00	58,798.50	0.986	0.017
0.120	1.940	1.00	108.50	5,388.50	64,187.00	0.118	0.018
0.390	2.330	2.00	963.50	11,523.50	75,710.50	0.179	0.020
0.485	2.815	2.00	730.00	11,290.00	87,000.50	0.227	0.023
0.09	2.905	2.00	200.50	10,760.50	97,761.00	0.044	

1861

Dist fr. Dam ft	Close Stat	Ave 2 days Oct15,16	Change Ht ft	Change Dist ft	Gradient ft/mi	
1861						
7620.00	27	27 (7680)	10.17			
13980.00						
16320.00						
23380.00						
34630.00	25	25 (39890)	10.12			
56460.00	20	20 (57650)	10.55	0.43	21830.00	0.10
59370.00	19	19 (59020)	10.59	0.04	2910.00	0.07
64620.00	16	16 (63110)	10.88	0.29	5250.00	0.29
65170.00	15	15 (64970)	10.90	0.02	550.00	0.19
73200.00	13	13 (16900)				
85230.00	12	12 (85570)				
98400.00	8	8 (97610)				
113350.00						