

## Leaburg Dam Vehicle Crossing Speeds with no Speed Bumps in Place

Saturday and Sunday, 2015-09-11 & 12 and Saturday, 2015-09-19, with the speed bumps having been removed for the moment, I collected two sets of data. The first is of 109 vehicles when there were no pedestrians on the roadway. That's large enough to be of some statistical validity. The second is of 7 vehicles when there were pedestrians on the roadway. That's obviously not large enough to be statistically valid, but it does illustrate that pedestrian traffic is relatively infrequent.

While I tried to be accurate, this is not intended to be a substitute for the data collection I am sure a traffic engineer would do, and I'm not a professional observer. Before considering the data, I recommend reading the link below:

[http://onlinemanuals.txdot.gov/txdotmanuals/szn/determining\\_the\\_85th\\_percentile\\_speed.htm](http://onlinemanuals.txdot.gov/txdotmanuals/szn/determining_the_85th_percentile_speed.htm)

### WITH NO PEDESTRIANS ON ROADWAY

85th percentile	Std Dev
15.4 mph	3.3 mph

	date	time	vehicle type	seconds	mph	direction		
1	2015-09-12	14:46	car	20.4	7.6		roadway offset	8 feet
2	2015-09-12	14:53	suv+trailer	46.2	3.4			
3	2015-09-12	14:54	pickup	13.2	11.8		pier house 2 angle	60 degrees
4	2015-09-12	14:55	pickup	16.2	9.6		parallax correction	13.85641 feet
5	2015-09-12	14:56	suv	9.3	16.7			
6	2015-09-12	14:58	car	11.1	14.0		pier house 4 angle	15 degrees
7	2015-09-12	15:00	car	10.1	15.4		parallax correction	2.143594 feet
8	2015-09-12	15:02	car	7.7	20.2			
9	2015-09-12	15:03	car	9.7	16.0		net correction	11.71281 feet
10	2015-09-12	15:05	pickup	11.1	14.0		scaled distance	216 feet on Google Earth
11	2015-09-13	13:40	car	10.5	14.8		corrected distance	227.7128 feet
12	2015-09-13	13:41	pickup	17.2	9.0		convert to miles	0.043127 miles
13	2015-09-13	13:42	pickup	10.1	15.4			
14	2015-09-13	13:43	car	16.8	9.2			
15	2015-09-13	13:47	car	10.5	14.8			

16	2015-09-13	13:48	car	10.6	14.6
17	2015-09-13	13:50	car	10.7	14.5
18	2015-09-13	13:52	car	18.2	8.5
19	2015-09-13	13:53	car	8.4	18.5
20	2015-09-13	13:54	car	11.2	13.9
21	2015-09-13	14:00	car	11.0	14.1
22	2015-09-13	14:02	pickup	16.0	9.7
23	2015-09-13	14:06	car	14.3	10.9
24	2015-09-13	14:07	pickup	10.1	15.4
25	2015-09-13	14:08	car	10.9	14.2
26	2015-09-13	14:11	van	22.4	6.9
27	2015-09-13	14:13	car	16.2	9.6
28	2015-09-13	14:16	car	12.0	12.9
29	2015-09-13	14:17	car	13.1	11.9
30	2015-09-13	14:18	car	12.4	12.5
31	2015-09-13	14:22	car	14.8	10.5
32	2015-09-13	14:23	car	9.2	16.9
33	2015-09-13	14:24	suv+trailer	14.1	11.0
34	2015-09-13	14:26	car	8.8	17.6
35	2015-09-13	14:27	pickup	9.4	16.5
36	2015-09-13	14:29	car	12.1	12.8
37	2015-09-13	14:32	car	11.8	13.2
38	2015-09-13	14:33	suv	17.1	9.1
39	2015-09-13	14:34	car	14.3	10.9
40	2015-09-13	14:35	car	11.0	14.1
41	2015-09-13	14:36	pickup	15.7	9.9
42	2015-09-13	14:38	semi	24.2	6.4
43	2015-09-13	14:39	car	21.0	7.4
44	2015-09-13	14:41	car	14.6	10.6
45	2015-09-13	14:43	suv	13.5	11.5
46	2015-09-13	14:46	car	14.6	10.6
47	2015-09-13	14:47	pickup	14.5	10.7
48	2015-09-13	14:48	car	12.4	12.5
49	2015-09-13	14:51	car	19.8	7.8

For westbound traffic, timing started when the front of a vehicle started to disappear behind the east edge of pier house 4 and stopped when it started to disappear behind the east edge of pier house 2. Eastbound timing started when a vehicle front first appeared from behind pier house 2 and stopped when it first appeared from behind pier house 4.

Timing by using the visual alignment from an angle of the front of a vehicle with the edge of a pier house creates a parallax problem because the vehicle is not in a true abeam position, so we need to correct for the offset of the roadway from the pier house edge.

Using the roadway as one leg and a 90° line from the roadway to my position downstream from the Dam on the hatchery side as a right angle, then my lines of sight to the pier houses 2 and 4 east edges form two right triangles, and we can calculate the parallax correction necessary to account for the offset of roadway . The corrected distance is then used with the seconds to come up with the mph.

50	2015-09-13	14:55	pickup	12.9	12.0	
51	2015-09-13	14:56	pickup	8.4	18.5	
52	2015-09-13	14:57	car	11.9	13.0	
53	2015-09-13	15:00	pickup	11.5	13.5	
54	2015-09-13	15:01	motorocyle	13.6	11.4	
55	2015-09-13	15:02	pickup	11.9	13.0	
56	2015-09-13	15:05	pickup	15.0	10.4	
57	2015-09-13	15:06	car	13.1	11.9	
58	2015-09-13	15:07	pickup	8.3	18.7	
59	2015-09-19	16:37	pickup+trailer	19.4	8.0	W
60	2015-09-19	16:48	suv	11.1	14.0	E
61	2015-09-19	16:49	car	10.4	14.9	W
62	2015-09-19	16:51	suv	21.0	7.4	W
63	2015-09-19	16:57	car	7.5	20.7	W
64	2015-09-19	16:58	car	8.5	18.3	W
65	2015-09-19	16:59	pickup	12.3	12.6	W
66	2015-09-19	17:00	car	12.8	12.1	W
67	2015-09-19	17:01	car	9.2	16.9	W
68	2015-09-19	17:02	car	17.8	8.7	W
69	2015-09-19	17:03	pickup	12.8	12.1	E
70	2015-09-19	17:04	car	10.4	14.9	E
71	2015-09-19	17:07	van	12.1	12.8	W
72	2015-09-19	17:09	car	13.6	11.4	W
73	2015-09-19	17:11	car	12.0	12.9	E
74	2015-09-19	17:16	suv	9.4	16.5	E
75	2015-09-19	17:17	suv+trailer	13.8	11.3	W
76	2015-09-19	17:19	car	12.2	12.7	E
77	2015-09-19	17:20	suv	11.7	13.3	E
78	2015-09-19	17:21	pickup+trailer	13.0	11.9	W
79	2015-09-19	17:22	car	11.9	13.0	E
80	2015-09-19	17:23	car	12.5	12.4	W
81	2015-09-19	17:24	suv	8.9	17.4	W
82	2015-09-19	17:27	suv	12.5	12.4	W
83	2015-09-19	17:30	car	9.8	15.8	E

84	2015-09-19	17:31	car	8.5	18.3	W
85	2015-09-19	17:32	car	12.4	12.5	W
86	2015-09-19	17:34	pickup	10.6	14.6	W
87	2015-09-19	17:38	pickup	17.1	9.1	E
88	2015-09-19	17:40	car	19.3	8.0	E
89	2015-09-19	17:41	car	13.6	11.4	E
90	2015-09-19	17:45	car	25.9	6.0	E
91	2015-09-19	17:47	suv	10.7	14.5	W
92	2015-09-19	17:48	car	13.0	11.9	W
93	2015-09-19	17:49	car	11.5	13.5	W
94	2015-09-19	17:50	car	12.0	12.9	W
95	2015-09-19	17:53	car	10.8	14.4	W
96	2015-09-19	17:54	pickup+trailer	13.0	11.9	E
97	2015-09-19	17:55	car	13.6	11.4	W
98	2015-09-19	17:56	van	12.0	12.9	W
99	2015-09-19	17:57	car	15.5	10.0	W
100	2015-09-19	17:58	van+trailer	17.7	8.8	W
101	2015-09-19	18:01	picup	16.9	9.2	W
102	2015-09-19	18:02	car	11.1	14.0	W
103	2015-09-19	18:03	car	12.3	12.6	W
104	2015-09-19	18:04	car	11.2	13.9	W
105	2015-09-19	18:05	suv	22.1	7.0	W
106	2015-09-19	18:06	pickup	19.0	8.2	E
107	2015-09-19	18:07	car	10.3	15.1	W
108	2015-09-19	18:08	pickup	19.4	8.0	E
109	2015-09-19	18:09	pickup	17.8	8.7	W

85th percentile  
10.9 mph

Std Dev  
3.8 mph

	date	time	vehicle type	seconds	mph	direction
1	2015-09-12	14:04	car	13.5	11.5	
2	2015-09-12	14:05	pickup	14.3	10.9	

3	2015-09-12	14:19	car	15.1	10.3	
4	2015-09-19	16:38	car	24.9	6.2	W
5	2015-09-19	16:39	car	16.7	9.3	E
6	2015-09-19	16:40	car	17.0	9.1	E
7	2015-09-19	16:41	suv	17.2	9.0	W

During 2.8 hours of observations, pedestrians were on the Dam only 3 times even though all the observations were on sunny weekend days. One fisherman walked across, a man with two children walked onto the hatchery side a short ways, looked for a bit, and then returned, and a party of four crossed the Dam west to East. Relatively speaking, there is so little pedestrian traffic that getting a sufficient sample size to be valid will take a lot of time. One would expect, though, that the 85th percentile speed for when there are pedestrians would be less than that for no pedestrians. This is, in fact, what we see for the few observations we have. The 85th percentile speed dropped 5.5 mph.

