

National List of Major Freight Highway Bottlenecks and Congested Corridors Federal Highway Administration (FHWA) Freight Mobility Trends: Truck Hours of Delay, 2018

The following table lists the top Interstate bottlenecks and congested corridors in the U.S. based upon Truck Hours of Delay per Mile using Freight Mobility Indicators of Total Truck Delay per Mile from 2018. The U.S. Federal Highway Administration (FHWA) used the Freight Mobility Trends (FMT) tool with data from the National Performance Management Research Data Set (NPMRDS) (<https://nprmrs.ritis.org>) to develop the list.

Delay per Mile is calculated for each Interstate segment using the 2018 NPMRDS travel time data as follows:

- Delay is calculated for each 15-minute time period as the difference between actual travel time and reference travel time. Reference travel time is based on 85th percentile speed during off-peak and overnight time periods.
- Delay for each 15-minute time period is multiplied by 15-minute truck volumes. Truck volumes are estimated from Annual Average Daily Truck Traffic (AADTT) using typical time-of-day traffic volume profiles. Delay for each 15-minute time period is aggregated to get annual truck hours of delay.
- The total truck hours of delay is then divided by the segment length to get total truck hours of delay per mile, allowing for the comparison of all roadway sections across the NHS.

The above process was completed for 2017 to compare trends from year to year. The use of delay per mile for assessing bottlenecks is a consistent measure that allows for comparing performance over the entire Interstate system from year to year and across all States. Truck hours of delay are quantified along corridors, as opposed to individual points, to consider the full delay that a truck would experience driving along a congested corridor.

The top bottleneck locations were then compared with the bottlenecks identified by States in their 2018 Baseline Performance Reports. Finally, FHWA Office of Freight Management coordinated the locations with the FHWA Division Offices and State departments of transportation (DOTs) for review and comment.

The table lists the Route, Urban Area, and State ordered by 2018 Truck Hours of Delay per Mile. Information is provided for AADTT, Annual Truck Hours of Delay per Mile, Planning Time Index (PTI), Buffer Index (BI), Travel Time Index (TTI), and Travel Reliability Index (TRI), and Total Corridor Congestion Cost per Year. Annual Truck Hours of Delay per Mile is determined at the most congested segment of the corridor. Total Corridor Congestion Cost is calculated for the full extent of delay along the congested corridor, which may include multiple segments, as a function of both the time and fuel used while the truck is in congested traffic, factoring costs of personnel, commercial vehicle operation, and wasted fuel.

**Table 1. National List of Major Freight Highway Bottlenecks and Congested Corridors
Based Upon Truck Hours of Delay per Mile, 2018 NPMRDS**

2018 Rank	2017 Rank	Road	Urban Area	State	Generalized Bottleneck Location/Congested Corridor	Length (Miles)	AADT (Trucks)	Delay (Hours)	Delay/ Mile	Change from 2017	PTI	BI	TTI	TRI	Total Corridor Cong. Cost
1	1	I-95/I-295	New York	NY/NJ	I-278/I-678 to NJ side of GW Bridge/SR-4	8.2	19,118	323,407	252,672	-19%	10.27	218%	3.11	1.45	75,204,000
2	2	I-35	Austin	TX	Airport Blvd to Stassney Ln	7.9	21,842	435,069	208,917	24%	8.56	259%	2.39	2.09	108,716,000
3	4	I-90/I-94	Chicago	IL	I-94N to I-55	10.5	16,032	320,239	155,066	-3%	7.92	166%	2.92	1.63	85,870,000
4	5	I-605	Los Angeles	CA	I-5 to SR-60	6.5	21,706	329,427	125,865	-6%	5.19	133%	2.22	1.27	61,881,000
5	7	I-678	New York	NY	I-495 to Belt Parkway and I-295/I-95 to south end Bronx-Whitestone Bridge	5.8; 2.9	13,036	138,746	103,500	-2%	6.08	166%	2.28	1.28	39,464,000
6	35	I-610	Houston	TX	I-69 to I-10	3.8	14,794	102,109	101,629	96%	8.18	192%	2.86	1.39	60,218,000
7	11	I-290	Chicago	IL	I-90/I-94 to I-290	13.5	17,418	172,535	100,833	19%	5.91	186%	2.11	1.58	59,227,000
8	60	I-69/US-59	Houston	TX	Buffalo Speedway to I-45	4.4	16,182	189,172	95,532	158%	8.34	261%	2.25	2.27	57,112,000
9	12	I-24	Nashville	TN	US-41 to SR-155	5.8	25,556	131,123	93,316	11%	5.01	191%	1.69	2.02	51,668,000
10	16	I-10	Los Angeles	CA	20th Street to I-5; And at I-605	15.3; 6.0	18,866	113,295	93,264	21%	5.39	139%	2.25	1.52	162,444,000
11	9	I-405	Los Angeles	CA	I-105 to SR-42 Manchester Blvd	7.5	23,692	230,767	92,463	-6%	5.91	230%	1.77	2.3	146,072,000
12	10	I-278	New York	NY	I-95/I-678 to Grand Central Pkwy. and SR-27 Prospect Expy. to SR-29 Queens Blvd.	7.7; 9.2	13,190	694,009	86,481	-1%	6.34	170%	2.28	1.56	145,792,000
13	0	I-696	Detroit	MI	I-75 to US-24/SR-10	9.4	10,024	121,764	83,157	-	1.83	49%	1.23	1.65	8,460,000
14	19	I-5	Los Angeles	CA	SR-134 Ventura Fwy. to I-605	19.8	14,656	192,738	80,290	17%	6.92	233%	2.08	2.05	122,060,000
15	20	I-710	Los Angeles	CA	Cesar Chavez Ave. to Atlantic Blvd.	3	12,244	145,494	72,209	8%	8.1	259%	2.11	2.71	47,131,000
16	23	I-15	Las Vegas	NV	I-515 to Tropicana Ave	5.5	10,740	106,751	70,920	12%	6.47	174%	2.4	1.3	16,922,000
17	22	I-680	San Francisco	CA	SR-262 to SR-238	4.3	12,814	187,179	70,472	11%	7.33	243%	2.13	1.91	13,816,000
18	17	I-10	Baton Rouge	LA	I-110 to SR-1	2.2	21,378	148,115	68,808	-9%	5.85	269%	1.64	4.24	33,461,000
19	15	I-87	New York	NY	I-278 to 230th Street	5.9	9,686	170,504	66,426	-14%	6.92	210%	2.16	1.79	24,886,000
20	13	I-76	Philadelphia	PA	University Ave to US-1	6.2	9,138	80,642	65,533	-19%	8.32	223%	2.51	1.71	36,985,000
21	27	I-5	Seattle	WA	I-90 to 85th St and SR-18 to Port of Tacoma Rd	7.1; 5.8	13,752	130,677	65,528	9%	7.44	199%	2.51	1.77	61,856,000
22	3	I-75/I-85	Atlanta	GA	I-20 to I-75/I-85 split	4.2	14,710	43,287	63,444	-62%	5.36	171%	2.03	1.56	19,097,000
23	21	I-45	Houston	TX	US-90 to I-69	3.5	14,384	100,359	61,596	-5%	4.78	115%	2.07	1.35	58,044,000
24	32	I-110/CA-110	Los Angeles	CA	I-10 to SR-42 Stauson Ave.	3.4	8,136	124,522	61,570	11%	7.28	169%	2.7	1.8	9,938,000
25	14	I-495	New York	NY	Little Neck Parkway to Queens Midtown Tunnel	14.3	13,350	240,805	61,096	-23%	5.46	185%	1.91	1.69	111,261,000

2018 Rank	2017 Rank	Road	Urban Area	State	Generalized Bottleneck Location/Congested Corridor	Length (Miles)	AADT (Trucks)	Delay (Hours)	Delay/ Mile	Change from 2017	PTI	BI	TTI	TRI	Total Corridor Cong. Cost
26	62	I-210	Los Angeles	CA	SR-39/164 Azusa Ave to SR-19 Rosemead Blvd	10	19,162	155,199	60,395	65%	3.67	121%	1.65	1.37	67,026,000
27	24	I-105	Los Angeles	CA	I-405 to Long Beach Blvd'	9.5	12,732	62,587	60,161	-2%	8.33	305%	2.04	3.97	56,137,000
28	34	I-294	Chicago	IL	At I-290 and At I-90	6.1; 3.9	28,556	182,812	59,784	13%	3.64	138%	1.49	2.29	40,516,000
29	29	I-5	Portland	OR	Columbia River to Terwilliger Blvd	10.5	15,338	168,422	59,204	-2%	4.54	161%	1.7	1.89	52,529,000
30	8	I-55	Chicago	IL	I-94 to SR-171	10	14,756	330,123	57,568	-45%	4.76	167%	1.79	1.71	57,686,000
31	26	I-25	Denver	CO	I-70 to University Blvd	8.7	15,972	73,711	57,144	-6%	4.32	150%	1.73	1.65	53,563,000
32	36	I-70	Denver	CO	I-25 to I-270	4.8	11,962	130,816	55,902	11%	5.67	187%	1.93	1.66	26,385,000
33	42	I-10	New Orleans	LA	I-610 to Pontchartrain Expy.	3.7	27,784	116,419	54,478	17%	3.47	130%	1.46	1.57	72,405,000
34	33	I-80/ I-580	San Francisco	CA	US-101 to University Ave	10.7	5,484	92,300	52,091	-3%	9.23	215%	2.84	1.46	34,986,000
35	25	I-10	Phoenix	AZ	At I-17 from 51st Ave to SR-143	13.9	23,442	170,821	51,349	-16%	3.53	139%	1.46	1.91	90,178,000
36	28	I-285	Atlanta	GA	East/ SR-400 to US-78 and West/ I-20 to Northside Dr	11.7; 11.2	23,710	82,000	50,469	-16%	3.29	134%	1.43	1.67	135,911,000
37	40	I-75	Cincinnati	OH	SR-562 to SR-126	3	22,350	39,096	50,166	7%	4.07	166%	1.49	1.57	29,269,000
38	41	I-10	Houston	TX	I-69 to I-45	2.1	18,150	93,395	49,558	6%	4.1	155%	1.57	1.87	53,184,000
39	44	I-270	Denver	CO	I-25 to I-70	5.8	10,744	158,556	49,507	9%	5.38	179%	1.9	1.75	14,344,000
40	43	I-95	Baltimore	MD	I-395 to I-895	8.1	17,994	140,495	47,683	4%	8.12	185%	2.68	2.24	34,649,000
41	110	I-94	Minneapolis	MN	SR-280 to Hennepin Ave	4.5	9,562	86,257	47,280	120%	5.81	206%	1.94	2.14	6,000,000
42	48	I-15	Los Angeles	CA	At I-10	3.2	18,198	150,021	47,039	12%	3.71	146%	1.48	2.36	12,514,000
43	46	I-15	Riverside	CA	At SR-91	2.2	10,538	100,631	45,982	6%	5.92	216%	1.88	2.06	18,351,000
44	37	I-495	Washington	MD/VA	I-66 (VA) to I-95 (MD)	19.5	18,848	236,359	45,461	-7%	3.31	122%	1.47	1.66	93,071,000
45	50	I-15	Salt Lake City	UT	At I-215 (SR-173 to SR-48)	2.4	46,724	87,028	45,052	9%	2.19	77%	1.23	1.6	51,588,000
46	55	I-95	Washington	VA	SR-123 to SR-286	6.3	16,088	305,822	44,650	13%	4.27	145%	1.69	1.69	49,198,000
47	78	I-35E	Dallas	TX	I-30 to Market Center Blvd.	2.8	15,702	105,326	43,997	45%	3.75	132%	1.59	1.9	24,686,000
48	51	I-695	Baltimore	MD	I-95 to I-795	10.1	20,640	44,782	42,470	5%	3.54	152%	1.41	2.56	44,821,000
49	30	I-64	St. Louis	MO	Market St to I-70 (over Mississippi River)	5	18,426	93,004	41,678	-29%	3.79	158%	1.44	2.27	9,057,000
50	58	I-94	Chicago	IL	I-90/94 to US-14	2.3	8,906	94,466	41,449	10%	6.19	205%	2	1.65	12,838,000
51	92	I-494	Minneapolis	MN	SR-77 to W Bush Lake Rd	6.6	12,258	84,660	41,278	63%	4.56	177%	1.67	1.82	8,904,000
52	70	I-635	Dallas	TX	I-35 to SR-78	14	19,872	55,876	40,761	21%	3.1	109%	1.48	1.61	60,698,000
53	39	I-30	Little Rock	AR	At I-630	1.9	38,846	76,319	40,687	-14%	2.22	79%	1.22	1.81	11,544,000
54	52	I-238	San Francisco	CA	I-880 to I-580	2.1	18,088	82,303	40,071	-1%	3.07	96%	1.52	1.31	4,527,000

2018 Rank	2017 Rank	Road	Urban Area	State	Generalized Bottleneck Location/Congested Corridor	Length (Miles)	AADT (Trucks)	Delay (Hours)	Delay/ Mile	Change from 2017	PTI	BI	TTI	TRI	Total Corridor Cong. Cost
55	47	I-71/I-75	Cincinnati	KY	I-275 to Western Hills	9.2	28,494	52,400	39,841	-6%	2.11	62%	1.31	1.21	18,017,000
56	6	I-85	Atlanta	GA	I-75 to SR 13/141 and I-285 to SR-378	2.8; 6.6	8,002	123,505	39,234	-63%	6.8	209%	2.21	1.89	35,416,000
57	45	I-80/I-94	Chicago	IL	I-294 to I-94	4.8	41,800	132,145	37,894	-16%	2.07	75%	1.19	1.93	8,940,000
58	71	I-30	Dallas	TX	I-35 to Grand Ave.	4	18,622	63,988	37,065	10%	3.52	145%	1.44	1.79	14,120,000
59	68	I-405	Seattle	WA	I-90 to SR-520	3.7	9,546	164,457	36,903	8%	6.47	231%	1.93	2.38	12,683,000
60	99	I-35W	Minneapolis	MN	I-94 to 4th St/ University Ave	1.2	7,130	27,680	36,720	53%	6.77	233%	1.98	1.81	5,564,000
61	64	I-215	Riverside	CA	I-10 to SR-80	5.9	14,222	188,865	36,605	2%	3.35	111%	1.47	1.47	34,944,000
62	107	I-35	San Antonio	TX	At I-10	3	21,420	87,456	36,267	60%	3.23	135%	1.37	2.45	24,063,000
63	56	I-676	Philadelphia	PA	I-76 to I-95	2.2	7,806	58,579	35,898	-8%	5.42	177%	1.88	1.94	7,228,000
64	66	I-45	Dallas	TX	I-30 to SR-366	2	21,258	39,627	35,273	-1%	2.74	112%	1.31	2.4	2,400,000
65	63	I-270	St. Louis	MO	I-64 to SR 100	3.5	35,122	108,969	34,574	-4%	1.99	68%	1.18	1.87	27,955,000
66	49	I-94	Detroit	MI	I-75 to I-96	2.4	12,382	48,272	34,315	-18%	4.47	160%	1.63	1.7	3,610,000
67	61	I-24	Chattanooga	TN	I-75 to US-41	3.5	22,298	93,795	32,883	-11%	2.52	97%	1.28	2.56	18,340,000
68	72	I-40	Nashville	TN	I-24 to I-65	3	12,946	69,561	32,848	0%	4.53	200%	1.45	3.41	11,600,000
69	79	I-805	San Diego	CA	SR-52 to SR-163	2.5	12,416	81,855	32,502	8%	5.7	242%	1.66	3.96	14,220,000
70	73	I-405	Portland	OR	I-5 to US-26	2.3	8,220	24,402	32,485	0%	5.34	181%	1.88	1.78	7,340,000
71	75	I-880	San Francisco	CA	At I-980 and At US-101	2.5; 5.8	14,892	78,846	32,114	-1%	3.95	158%	1.53	2.08	55,291,000
72	80	I-84	Hartford	CT	SR-2 to Prospect Ave	4	11,494	131,989	31,806	6%	4.26	163%	1.56	2.34	7,575,000
73	0	I-10	Lake Charles	LA	At I-210	9.3	28,100	293,531	31,628	-	2.01	50%	1.26	1.76	31,190,000
74	125	I-90	Seattle	WA	I-5 to I-405	7.3	4,832	177,893	31,451	75%	10.91	245%	3.25	2.31	2,310,000
75	88	I-10	Riverside	CA	At I-215	1.6	23,038	49,506	30,949	15%	2.61	105%	1.24	2.22	17,134,000
76	59	I-95	Philadelphia	PA	At I-676	2	10,928	55,814	30,877	-17%	3.3	95%	1.71	1.27	11,794,000
77	74	I-205	Portland	OR	At I-84	3.6	13,094	67,328	29,631	-9%	3.41	137%	1.45	1.86	6,992,000
78	54	I-90	Chicago	IL	I-90/94 to I-294	6.7	7,050	208,706	28,397	-28%	5.32	174%	1.88	1.78	32,015,000
79	135	I-95	Fredericksburg	VA	US-17 to Russell Rd	14.5	19,778	219,980	28,201	63%	2.76	106%	1.34	1.52	19,689,000
80	100	I-77	Charlotte	NC	At I-485	1.6	9,614	43,565	28,043	18%	4.89	196%	1.6	1.96	3,590,000
81	127	I-376	Pittsburgh	PA	Fort Pitt Bridge to Squirrel Hill	4.5	5,550	44,887	27,847	56%	7.16	239%	2.07	1.95	2,778,000
82	81	I-95	Bridgeport	CT	At US-1 in Fairfield and At US-1 in Stamford	1.5; 1.8	11,180	42,374	27,843	-7%	4.07	160%	1.57	1.95	50,318,000
83	93	I-95	Wilmington	DE	at I-295/I-495	3.7	24,278	45,403	26,838	7%	3.09	137%	1.31	2.64	2,640,000
84	57	I-95	New Haven	CT	I-91 to SR-10	1.8	11,708	48,395	26,499	-30%	3.93	160%	1.49	2.28	2,692,000
85	18	I-75	Atlanta	GA	I-85 to Moores Mill Rd	3.3	13,608	126,743	26,258	-64%	3.25	120%	1.47	1.69	12,210,000

2018 Rank	2017 Rank	Road	Urban Area	State	Generalized Bottleneck Location/Congested Corridor	Length (Miles)	AADT (Trucks)	Delay (Hours)	Delay/ Mile	Change from 2017	PTI	BI	TTI	TRI	Total Corridor Cong. Cost
86	-	I-395	Washington	DC	US-50 to VA-236	10.4	10,408	15,883	26,035	-	5.11	164%	1.98	1.69	1,690,000
87	65	I-65	Nashville	TN	I-40 to I-440	1.9	21,982	48,672	25,854	-28%	2.05	60%	1.24	1.82	13,388,000
88	108	I-275	Tampa	FL	I-4 to Howard Franklin Bridge	6.2	8,506	98,426	25,831	15%	4.49	160%	1.75	1.93	5,180,000
89	-	I-94	Milwaukee	WI	At I-41/I-894	2.1	13,562	133,681	25,659	-	1.99	67%	1.2	2.13	2,130,000
90	115	I-78	New York	NJ	US-22 to SR-440	5	7,870	108,062	24,920	20%	4.37	120%	1.85	1.69	6,655,000
91	77	I-95	Miami	FL	Florida Turnpike to I-395	9.5	9,214	133,630	24,794	-18%	3.8	115%	1.74	1.6	29,014,000
92	124	I-93	Boston	MA	At I-90 and At SR-3	5.0; 5.5	5,098	78,975	24,421	35%	6.37	195%	2.08	2.02	19,425,000
93	109	I-4	Tampa	FL	I-275 to 36th St	5.8	13,302	139,850	24,209	11%	2.79	86%	1.41	1.51	6,868,000
94	31	I-35W	Dallas	TX	At I-30	1.2	16,594	27,842	23,810	-58%	2.71	95%	1.38	2.15	11,761,000
95	122	I-95	Jacksonville	FL	I-10 to US-1	2.6	12,818	41,614	23,368	26%	3.5	157%	1.35	2.8	2,800,000
96	67	I-40	Albuquerque	NM	At I-25	1.7	28,604	38,438	23,308	-33%	1.37	15%	1.2	1.24	2,886,000
97	106	I-84	Portland	OR	At I-5	1.7	8,982	38,060	22,287	-2%	4.42	164%	1.64	1.74	3,260,000
98	-	I-64	Virginia Beach	VA	At I-564	2.8	4,156	62,099	22,189	-	7.53	218%	2.22	1.89	2,734,000
99	-	I-70	Columbus	OH	At I-670	2.2	10,750	48,234	22,040	-	2.91	116%	1.36	1.64	2,303,000
100	-	I-85	Greenville	SC	I-385 to Aviation Pkwy	5.6	9,962	100,432	17,916	-	3.12	112%	1.43	1.78	5,565,000

Generalized Bottleneck Location/Congested Corridor and Length: Extent of congestion for corridor caused by one or more bottlenecks, estimated based upon review of corridor congestion scans in the NPMRDS. For major congested corridors, this may include multiple contiguous bottlenecks.

Annual Average Daily Truck Traffic (AADTT) (Trucks): NPMRDS (single unit and combination) trucks conflated from Highway Performance Monitoring System (HPMS).

Annual Truck Hours of Delay/Mile: Difference between actual travel time and reference travel time (“free-flow” travel time), multiplied by truck volumes, then divided by the segment length. For larger bottlenecks that span multiple roadway segments, delay is provided for the most congested segment and direction of the bottleneck, not the full corridor.

Planning time index (PTI): Ratio of the 95th percentile travel time to the reference travel time (“free-flow” travel time), computed during the AM and PM peak periods.

Buffer index (BI): Represents the extra time (or time cushion) that travelers must add to their average travel time when planning trips to ensure on-time arrival.

Travel time index (TTI): Ratio of the peak-period travel time to the reference travel time (“free-flow” travel time), computed for the AM and PM peak periods.

Travel Reliability Index (TRI): Calculated the same as the MAP-21 performance measure for Truck Travel Time Reliability (TTTR), as the ratio of the 95th percentile travel time to the 50th percentile travel time during five different time periods of the day. Results will differ from the NPMRDS TTTR due to differences in route segmentation.

Total Corridor Congestion Cost (\$/year): Calculated for the full extent of delay along the congested corridor as a function of both the time and fuel used while the truck is in congested traffic, factoring costs of personnel, commercial vehicle operation, and wasted fuel. For major bottlenecks with long congestion queues, this will include multiple roadway segments. For major congested corridors, the congestion cost will include the full cost of congestion along the corridor through the entire urban area, which may include multiple bottlenecks.

The following map shows the top Interstate bottlenecks in the U.S. (table 1) based on Freight Mobility Indicators of Annual Truck Hours of Delay per Mile for 2018.

Map-1. Major Freight Highway Bottlenecks Based Upon Truck Hours of Delay per Mile, 2018 NPMRDS



Other Bottlenecks

The analysis in this report uses delay per mile for assessing bottlenecks to allow for comparison over the entire Interstate system across all States. Individual State DOTs and Metropolitan Planning Organizations (MPOs) use a range of bottleneck identification methods based upon their freight plan development process and local traffic characteristics, infrastructure constraints, and impediments to efficient freight movement.

There are a range of methods for measuring congestion, delay, and reliability. Reliability is another factor that is important to the freight industry. In addition to congestion-based delay, some truck freight bottlenecks can be attributed to infrastructure restrictions that uniquely impact trucks such as bridges with weight or clearance restrictions, steep grades, frequent adverse weather, or constraints at facilities, such as ports, intermodal rail facilities, and border crossings.