



Study Name		AASHTO Guide for Design of Pavement Structures, 1993		Development of Truck Equivalent Single-Axle Load (ESAL) Factors Based on Weigh-in-Motion Data for Pavement Design in Virginia		Traffic and ESAL Summary for the MnROAD Mainline		Determination of Practical ESALs Per Truck Values on Indiana Roads		The Annual Traffic Report 2009, NVDOT		Excessive Truck Weight: An Expensive Burden We Can No Longer Support	
Addendum to the 1997 Federal Highway Cost Allocation Study Final Report U.S. Department of Transportation Federal Highway Administration May 2000													
Vehicle Class/Registered Weight	Vehicle Miles of Travel (millions)	AASHTO 1993 ESAL	VMT x ESAL	VADOT 2009 Rec. ESAL	VMT x ESAL	MN 2011 ESAL	VMT x ESAL	IN 2000 Rec. ESAL	VMT x ESAL	NV 2009 ESAL	VMT x ESAL	GAO 1979 per Auto Damage	Auto Damage x VMT
Passenger Vehicles													
Autos	1,818,461	0.0008	1,455	0.0003	546	0.0007	1,273	0.0008	1,455	0.0008	1,455	1	1,818,461
Pickups/Vans	669,198	0.0122	8,164	0.0003	201	0.0007	468	0.0122	8,164	0.0122	8,164	1	669,198
Buses	7,397	0.6806	5,034	0.0003	2	0.7400	5,474	0.7400	5,474	0.9210	6,813	1	7,397
Total	2,495,056		14,653		749		7,215		15,093		16,432		2,495,056
Single Unit Trucks													
>25,000 pounds	56,451	0.1303	7,356	0.590	33,306	0.2400	13,548	0.8900	50,241	0.2280	12,871	2,500	141,127,500
25,001 - 50,000 pounds	18,631	0.1303	2,428	0.590	10,992	0.9000	16,768	0.8900	16,582	0.7520	14,011	3,500	65,208,500
<50,000 pounds	8,018	0.1303	1,045	0.590	4,731	0.9000	7,216	0.8900	7,136	0.7520	6,030	5,000	40,090,000
Total	83,100		10,828		49,029		37,532		73,959		32,911		246,426,000
Combination Trucks													
>50,000 pounds	6,744	0.8646	5,831	1.59	10,723	0.6055	4,083	1.9600	13,218	0.6130	4,134	5,000	33,720,000
50,001 - 70,000 pounds	16,685	0.6560	10,945	1.59	26,529	1.6400	27,363	1.9600	32,703	1.8370	30,650	5,000	83,425,000
70,001 - 75,000 pounds	5,926	2.3719	14,056	1.59	9,422	1.6400	9,719	1.9600	11,615	1.8370	10,886	5,000	29,630,000
75,001 - 80,000 pounds	86,176	2.3719	204,401	1.59	137,020	0.8300	71,526	1.9600	168,905	2.0160	173,731	5,000	430,880,000
80,001 - 100,000 pounds	3,879	2.3719	9,201	1.59	6,168	3.0600	11,870	1.9600	7,603	1.4180	5,500	9,600	37,238,400
<100,001 pounds	2,279	2.3719	5,406	1.59	3,624	3.0600	6,974	1.9600	4,467	1.4180	3,232	9,600	21,878,400
Total	115,689		249,839		193,486		131,535		238,510		228,133		636,771,800
All Truck Damage (Single Unit + Combination Trucks)		94.68%	260,667	99.69%	242,515	95.91%	169,067	95.39%	312,469	94.08%	261,044	99.72%	883,197,800
Tractor-Trailer Damage (Combination Trucks Only)		90.74%	249,839	79.54%	193,486	74.62%	131,535	72.81%	238,510	82.22%	228,133	71.90%	636,771,800
Total Damage			275,320		243,263		176,283		327,562		277,476		885,692,856
				Passenger vehicle values were VADOT current, while SU and Combo trucks were the study recommendations. Assumed rigid pavement.		Assumptions made to attribute FHWA Class-specific ESALs to FHWA weight classes. Assumed rigid pavement.		Study/recommendations did not include passenger vehicles. Estimates used highest values used in other studies. Assumed rigid pavement.		Study did not include autos or light trucks. Estimates used highest values used in other studies. Assumed rigid pavement on urban interstate.		DOES NOT USE ESAL. Comparison uses equivalent damage of auto based on statements in GAO report based on 1962 AASHTO Road Test Study.	

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