Vehicle Size & Weight Enforcement Updates

WASHTO – COHT
Reno, NV

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U.S.Department of Transportation
Federal Highway Administration

Office of Freight Management and Operations
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Washington, D.C. 20590
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202-366-9210

Topics

- USDOT Comprehensive Truck Size and Weight Limits Study
- Jason's Law
- Bus Weights
- Reasonable Access for Trucks
- Bridge Formula Brochure Update

USDOT Comprehensive Truck Size and Weight Limits Study

The Study provides estimates of the magnitude of the potential impacts if changes were made to current federal Truck Size & Weight (TSW) limits:

- Assesses differences between trucks operating at or within federal truck size and weight limits and trucks legally operating in excess of federal limits.
- Estimates changes in freight movements by the introduction of alternative truck configurations.
- Estimates the potential impacts of alternative truck configurations.
- Identifies all Federal rules and regulations impacted by potential changes in size and weight limits.

Fundamental Truck Size and Weight Policy Question

- Increases in allowable TSW limits are presumed to impact highway safety, infrastructure condition, effectiveness of enforcement, shift of goods movement from other modes to truck, and overall productivity of the freight system.
- Do the estimated "positive" impacts of a particular TSW change outweigh the estimated "negative" impacts?
- This study does not attempt to answer this question.

Specific Areas the Study Examined

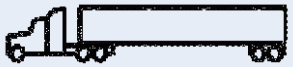
Technical Study Areas:

- Modal Shift Analysis.
- Compliance and Enforcement Analysis.
- Highway Safety Analysis.
- Pavement Comparative Analysis.
- Bridge Impact Analysis.

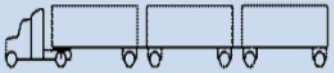
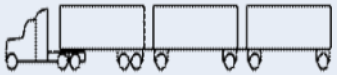
Six Scenarios with Alternative Truck Configurations:

- Three heavier, single trailer trucks.
- Three longer combination trucks.

Single Trailer Truck Configurations and Weights
Scenarios Analyzed in the Study

Scenario	Configuration	Depiction of Vehicle	# Trailers or Semi-trailers	# Axles	Gross Vehicle Weight (pounds)	Roadway Networks
Control Single	5-axle vehicle tractor, 53 foot semitrailer (3-S2)		1	5	80,000	Surface Transportation Assistance Act (STAA) vehicle; has broad mobility rights on entire Interstate System (IS) and National Network including a significant portion of the National Highway System (NHS)
1	5-axle vehicle tractor, 53 foot semitrailer (3-S2)		1	5	88,000	Same as Above
2	6-axle vehicle tractor, 53 foot semitrailer (3-S3)		1	6	91,000	Same as Above
3	6-axle vehicle tractor, 53 foot semitrailer (3-S3)		1	6	97,000	Same as Above

Multi-Trailer Truck Configurations and Weights Scenarios Analyzed in the Study

Scenario	Configuration	Depiction of Vehicle	# Trailers or Semi-trailers	# Axles	Gross Vehicle Weight (pounds)	Roadway Networks
Control Double	Tractor plus two 28 or 28 ½ foot trailers (2-S1-2)		2	5	80,000 maximum allowable weight 71,700 actual weight used for Modal Shift Analysis	Same as Above
4	Tractor plus twin 33 foot trailers (2-S1-2)		2	5	80,000	Same as Above
5	Tractor plus three 28 or 28 ½ foot trailers (2-S1-2-2)		3	7	105,500	74,500 mile roadway system made up of the Interstate System, approved routes in 17 western states allowing triples under ISTEA Freeze and certain four-lane PAS roads on east coast
6	Tractor plus three 28 or 28 ½ foot trailers (3-S2-2-2)		3	9	129,000	Same as Scenario 5

Important Notes

Reading the Study contents, certain considerations must be understood:

- Lack of data availability, data quality, and models limited level of analysis in some areas.
- Freight volumes were held constant at 2011 levels to understand impacts of size and weight variables nationwide.
- Results from Modal Shift Analysis impact the results in other study areas.
- Did not attempt to get to a single statement or number that summarizes results, results are often not additive.
- Even with robust data, actual market responses to changes in TSW are difficult to predict.

Advancements Since Prior Studies

The Study took advantage of improved models in a number of areas, data sets not available to previous Studies, and undertook an analysis not previously performed in TSW Studies:

- Freight Analysis Framework – enabled a robust modeling regiment for modal shift analysis.
- Mechanistic-Empirical Pavement Design Guidelines – enabled the evaluation of impacts on pavements using state-of-the-art techniques.
- AASHTOWare VIRTIS – enabled state-of-the-art assessment of bridge structural impacts.
- Regional and Short-line Railroad Shift Railroad Modal Shift Analysis – enabled an assessment of shifts of freight from Class II and III railroads that was not addressed in previous Studies.

NOTE: AASHTO is the American Association of State Highway and Transportation Officials

Heavier Single Semi-Trailer Trucks Results

Scenarios	Modal Shift		Safety			Bridge Projected One Time Costs	Pavement Changes in Life-Cycle Cost	Enforce-ment Program Costs and Effective-ness
	Truck VMT	Total Logistics Costs	Crash	Vehicle Stability and Control	Violations and Citations			
Five axle truck @ 88k pounds	-0.6%	-1.%	No national data or results; no analysis completed.	- Longer stopping distances - No difference in vehicle path or tracking	-Overall slightly higher violation, out-of-service and citation rates -Configurations operating over 80k pounds had 18% more brake violations and a higher number of brake violations per inspection -Vehicle weight or configuration not predominant factors in predicting a violation	$.4 B	+0.4% to +0.7%	-0.3%; Positive (185,000 more trucks could be weighed for the same cost)
Six axle truck @ 91k pounds	-1%	-1.4%	No national data or results; significant crash rate increase (+47%) in the one State (WA) analyzed.	6-axle heavy truck configurations did not differ significantly from the control vehicle in any of the maneuvers.	-Overall slightly higher violation, out-of-service and citation rates -Configurations operating over 80k pounds had 18% more brake violations and a higher number of brake violations per inspection -Vehicle weight or configuration not predominant factors in predicting a violation	$1.1 B	-2.4% to -4.2%	-0.4%; Positive (266,000 more trucks could be weighed for the same cost)
Six axle truck @ 97k pounds	-2%	-3.2%	No national data or results; significant crash rate increases in the two States (ID +99%, MI +400%) analyzed.	6-axle heavy truck configurations did not differ significantly from the control vehicle in any of the maneuvers.	-Overall slightly higher violation, out-of-service and citation rates -Configurations operating over 80k pounds had 18% more brake violations and a higher number of brake violations per inspection -Vehicle weight or configuration not predominant factors in predicting a violation	$2.2 B	-2.6% to -4.1%	-1.0%; Positive (625,000 more trucks could be weighed for the same cost)

Longer Combination Trucks Results

Scenarios	Modal Shift		Safety			Bridge Projected One Time Costs	Pavement Changes in Life-Cycle Cost	Enforce-ment Program Costs and Effective-ness
	Truck VMT	Total Logistics Costs	Crash	Vehicle Stability and Control	Violations and Citations			
Twin 33' trailers @ 80k pounds	-2.2%	-6.3%	N/A [Configuration not in common use]	-Did not perform as well as the control vehicle in avoidance maneuver -Slightly longer stopping distance -Path deviation not affected by the ABS malfunction	-Twin trailers generally have higher vehicle inspection violation rates than 5 axle 80k pound single trailers	$1.1 B	+1.8% to +2.7%	-1.1%; Positive (653,000 more trucks could be weighed for the same cost)
Triple 28' trailers @ 105.5k pounds	-1.4%	-5.1%	No national data or results; Decrease in crash rate (-42%) in one State (ID) analyzed.	- Did not perform as well as the control vehicle in avoidance maneuver -Amplification of the third trailer's response was greater than in the control -Some performance differences between the triples and twins in terms of braking or in the ABS malfunction -Off-tracking was greater than the control	-Sample size too small to conduct analysis	$.7 B	+0.1% to 0.2%	-0.7%; Positive (452,000 more trucks could be weighed for the same cost)
Triple 28' trailers @ 129k pounds	-1.4%	-5.3%	No national data or results; Minimal decrease in crash rate (-1%) on one roadway (KS Turnpike) analyzed.	- Did not perform as well as the control vehicle in avoidance maneuver -Amplification of the third trailer's response was greater than in the control -Some performance differences between the triples and twins in terms of braking or in the ABS malfunction -Off-tracking was greater than the control	-Sample size too small to conduct analysis	$5.4. B	+0.1% to +0.2%	-0.7%; Positive (446,000 more trucks could be weighed for the same cost)

Study Next Steps

- Steps Leading to Submittal of Report to Congress:
  - National Academy of Sciences' Peer Review Panel completes their Review and Letter Report.
  - Letter Report is delivered to U.S. Department of Transportation (USDOT) (received by mid September).
  - Review and assessment of comments and questions received in the Docket is completed.
  - USDOT Finalizes and Submits Report to Congress.

Public Comments and Feedback

There are two ways we are receiving comments:

- Docket: http://www.regulations.gov/#!docketDetail;D=FHWA-2014-0035

- E-Mail: CTSWStudy@dot.gov

We continue to monitor comments we receive.

Comments will be considered until the end of September as we prepare the Report to Congress.

Docket will remain open through the end of the calendar year (CY 2015).

MAP-21 Sec. 1401: "Jason's Law"

- Directed the Department to conduct a survey to:
  - Evaluate the capability of each State to provide adequate parking and rest facilities for commercial motor vehicles engaged in interstate transportation;
  - Assess the volume of commercial motor vehicle traffic in each State; and
  - Develop a system of metrics to measure the adequacy of commercial motor vehicle parking facilities in each State.
- Expanded eligibility for truck parking projects.

Jason's Law Survey Results

- The US DOT released the Jason's Law Truck Parking Survey and Comparative Assessment on August 21st, 2015.
- The Survey showed:
  - The majority of State DOTs (72.5%) believe they have a problem with parking shortages in their State.
  - A majority of drivers (over 75%) reported regularly experiencing problems finding safe parking locations when rest was needed.
  - Shortages appear most pronounced along major trade corridors and freight hubs.

Next Steps: National Coalition on Truck Parking

- The US DOT has announced a National Coalition on Truck Parking to discuss solutions to the truck parking issues across the nation.
- The Coalition will bring together state and local governments, law enforcement, and the trucking and business communities to work together to advance truck parking solutions to meet the needs of the nation's truck drivers.

- The Coalition will host regional meetings and identify workable regional solutions for the truck parking issues identified in the Jason's Law Survey.

Special Vehicle Permits During National Emergencies

- States now able to issue special **permits** during emergencies to overweight vehicles and loads on the Interstate system that can be easily dismantled or divided (Section 1511).
- Requirements and restrictions for permit issuing ability:
  - President must declare the emergency as a major disaster under the Robert T. Stafford Disaster Relief and Emergency Assistance Act;
  - Permits are issued in accordance with state law;
  - Permits are issued exclusively to vehicles and loads that are delivering relief supplies. Removal of debris may be eligible if it aids in relief activity.
- Permits must expire no later than 120 days after the disaster declaration date.

Bus Weights

- Some states require buses to enter the weigh stations and some states do not require buses to enter weigh stations, by operation of state law.
- Buses are subject to GVW of 80,000 lbs.
- Over-the-road (OTR) buses do not have to follow Federal single axle, tandem axles or bridge formula weights 23 CFR 658.17 (k).

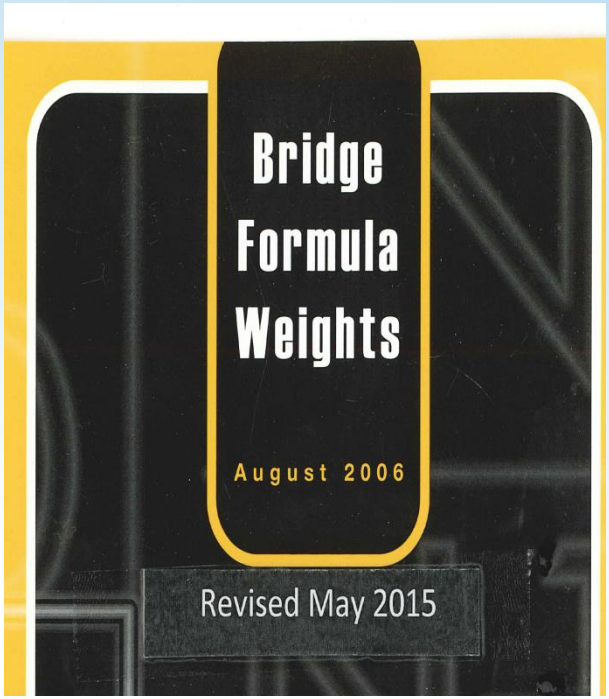
Bus Weights

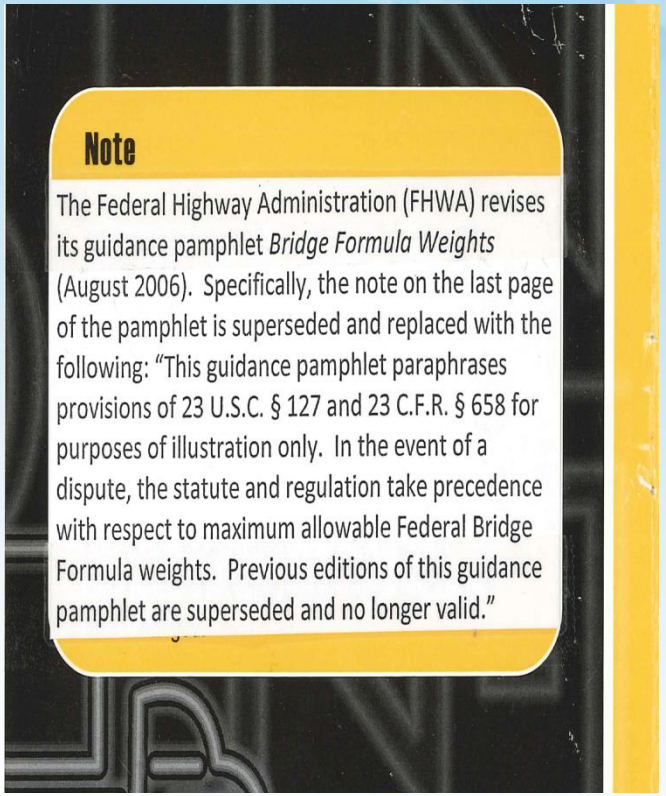
- State may enforce “State Laws” for tandem axle weights, bridge formula and Single Axle weights, however…
- State may not enforce single axle weight limits of less than 24,000 in “covered states”.
- Covered state are states that enforced a weight limit between 20,000 lbs. and 24,000 lbs. in the period beginning on October 6, 1992 and ending on November 30, 2005.
- Non-covered states may set any limit on an axle and not be penalized.
- This exemption was extended to RV’s in MAP-21.

Bridge Load Posting Enforcement

- Bridge Load Postings Should be Enforced to Protect Bridges.
- FHWA is developing a Educational Brochure for Implements of Husbandry and the Trucking Industry.
- Emphasis Area for Division Evaluations of States Truck Size and Weight Enforcement Plan.
- Bridge Engineers are focusing on the impact of Specialized Hauling Vehicles (SHV's) a.k.a. dump-trucks and bridge load ratings/Impacts.

Revised Federal "Bridge Formula Weights" Brochure





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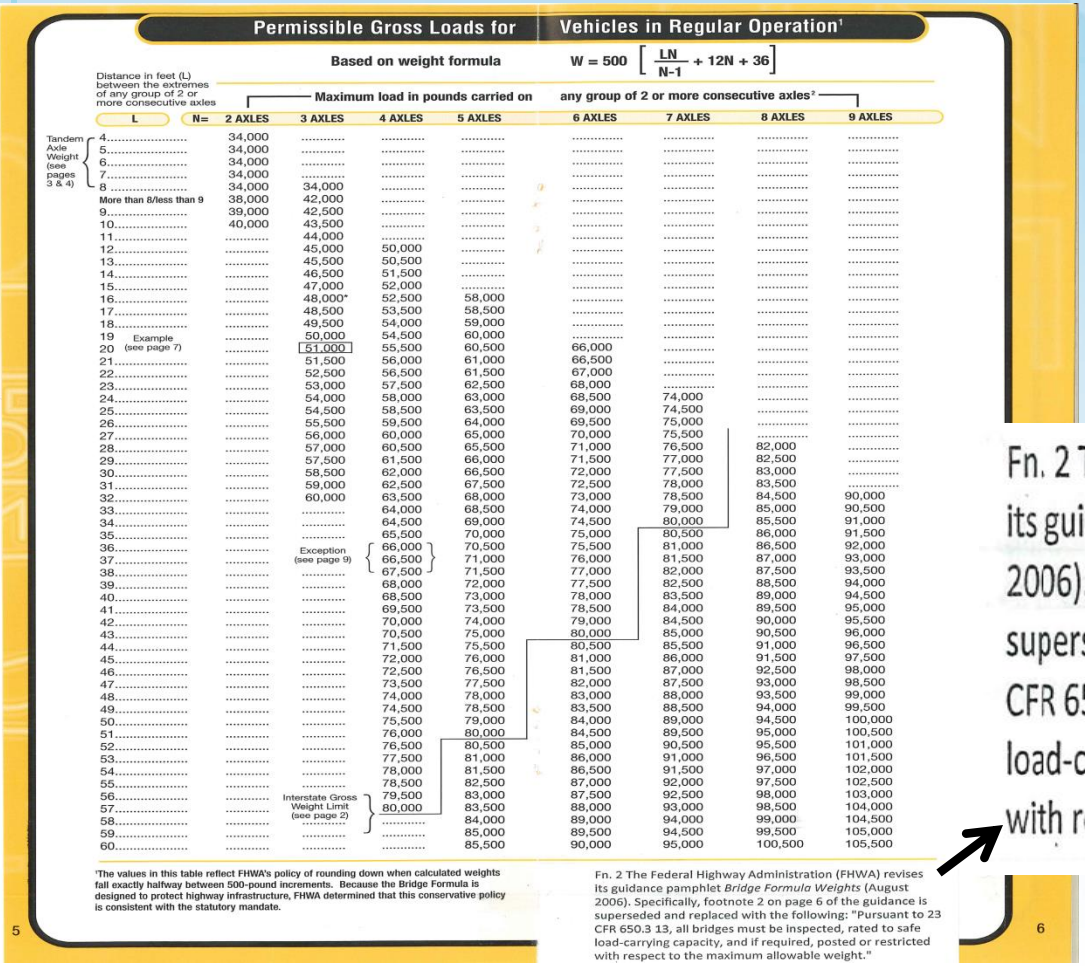

Permissible Gross Loads for Vehicles in Regular Operation[1]

Based on weight formula $W = 500\left[\frac{LN}{N-1} + 12N + 36\right]$

Distance in feet (L) between the extremes of any group of 2 or more consecutive axles

Maximum load in pounds carried on any group of 2 or more consecutive axles[2]

L	N=	2 AXLES	3 AXLES	4 AXLES	5 AXLES	6 AXLES	7 AXLES	8 AXLES	9 AXLES
Tandem Axle Weight (see pages 3 & 4) 4		34,000	.....	.....	.....	.....	.....	.....	.....
5		34,000	.....	.....	.....	.....	.....	.....	.....
6		34,000	.....	.....	.....	.....	.....	.....	.....
7		34,000	.....	.....	.....	.....	.....	.....	.....
8		34,000	34,000	.....	.....	.....	.....	.....	.....
More than 8/less than 9		38,000	42,000	.....	.....	.....	.....	.....	.....
9		39,000	42,500	.....	.....	.....	.....	.....	.....
10		40,000	43,500	.....	.....	.....	.....	.....	.....
11		.....	44,000	.....	.....	.....	.....	.....	.....
12		.....	45,000	50,000	.....	.....	.....	.....	.....
13		.....	45,500	50,500	.....	.....	.....	.....	.....
14		.....	46,500	51,500	.....	.....	.....	.....	.....
15		.....	47,000	52,000	.....	.....	.....	.....	.....
16		.....	48,000*	52,500	58,000	.....	.....	.....	.....
17		.....	48,500	53,500	58,500	.....	.....	.....	.....
18		.....	49,500	54,000	59,000	.....	.....	.....	.....
19 Example (see page 7)		.....	50,000	54,500	60,000	.....	.....	.....	.....
20		.....	51,000	55,500	60,500	66,000	.....	.....	.....
21		.....	51,500	56,000	61,000	66,500	.....	.....	.....
22		.....	52,500	56,500	61,500	67,000	.....	.....	.....
23		.....	53,000	57,500	62,500	68,000	.....	.....	.....
24		.....	54,000	58,000	63,000	68,500	74,000	.....	.....
25		.....	54,500	58,500	63,500	69,000	74,500	.....	.....
26		.....	55,500	59,500	64,000	69,500	75,000	.....	.....
27		.....	56,000	60,000	65,000	70,000	75,500	.....	.....
28		.....	57,000	60,500	65,500	71,000	76,500	82,000	.....
29		.....	57,500	61,500	66,000	71,500	77,000	82,500	.....
30		.....	58,500	62,000	66,500	72,000	77,500	83,000	.....
31		.....	59,000	62,500	67,500	72,500	78,000	83,500	.....
32		.....	60,000	63,500	68,000	73,000	78,500	84,500	90,000
33		.....	.....	64,000	68,500	74,000	79,000	85,000	90,500
34		.....	.....	64,500	69,000	74,500	80,000	85,500	91,000
35		.....	.....	65,500	70,000	75,000	80,500	86,000	91,500
36		.....	Exception (see page 9) 66,000	70,500	75,500	81,000	86,500	92,000	
37		.....	66,500	71,000	76,000	81,500	87,000	93,000	
38		.....	67,500	71,500	77,000	82,000	87,500	93,500	
39		.....	.....	72,000	77,500	82,500	88,500	94,000	
40		.....	.....	73,000	78,000	83,500	89,000	94,500	
41		.....	.....	73,500	78,500	84,000	89,500	95,000	
42		.....	.....	74,000	79,000	84,500	90,000	95,500	
43		.....	.....	75,000	80,000	85,000	90,500	96,000	
44		.....	.....	75,500	80,500	85,500	91,000	96,500	
45		.....	.....	76,000	81,000	86,000	91,500	97,500	
46		.....	.....	76,500	81,500	87,000	92,500	98,000	
47		.....	.....	77,500	82,000	87,500	93,000	98,500	
48		.....	.....	78,000	83,000	88,000	93,500	99,000	
49		.....	.....	78,500	83,500	88,500	94,000	99,500	
50		.....	.....	79,000	84,000	89,000	94,500	100,000	
51		.....	.....	80,000	84,500	89,500	95,000	100,500	
52		.....	.....	80,500	85,000	90,500	95,500	101,000	
53		.....	.....	81,000	86,000	91,000	96,500	101,500	
54		.....	.....	81,500	86,500	91,500	97,000	102,000	
55		.....	.....	82,500	87,000	92,000	97,500	102,500	
56		.....	Interstate Gross Weight Limit (see page 2) 79,500	83,000	87,500	92,500	98,000	103,000	
57		.....	80,000	83,500	88,000	93,000	98,500	104,000	
58		.....	.....	84,000	89,000	94,000	99,000	104,500	
59		.....	.....	85,000	89,500	94,500	99,500	105,000	
60		.....	.....	85,500	90,000	95,000	100,500	105,500	

[1]The values in this table reflect FHWA's policy of rounding down when calculated weights fall exactly halfway between 500-pound increments. Because the Bridge Formula is designed to protect highway infrastructure, FHWA determined that this conservative policy is consistent with the statutory mandate.

5

Fn. 2 The Federal Highway Administration (FHWA) revises its guidance pamphlet *Bridge Formula Weights* (August 2006). Specifically, footnote 2 on page 6 of the guidance is superseded and replaced with the following: "Pursuant to 23 CFR 650.3 13, all bridges must be inspected, rated to safe load-carrying capacity, and if required, posted or restricted with respect to the maximum allowable weight."

6

OLD FOOTNOTE: The following loaded vehicles must not operate over H15-44 bridges, 3-S3 (5-axle tractor semitrailer with a wheelbase of less than 38 feet), 2-S1-2 (5 axle semitrailer combination with a wheelbase of less than 45 feet), 3-3 (6 axle truck trailer combination with a wheelbase less than 45 feet), and any truck with 7 or more axles. H15-44 bridges are designed for a specific vehicle load; H15 refers to a 15 ton 2-axle truck; 44 refers to the year AASHTO published the loading information. See AASHTO Standard Specification for Highway Bridges.

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Reasonable Access for Trucks

- Generally, it is the state's responsibility to enforce reasonable access, and make sure local jurisdictions allow reasonable access.
- FHWA has a stewardship role in advising the states on the applicability of our regulations, or taking action on cases where reasonable access is not being provided for unwarranted circumstances.
- The National Network (NN) is distinct from the National Highway System (NHS). As such, for these purposes, it does not matter if the route is, or is not on the NHS.
- What is your State's reasonable access policy? The State should be following this.

Reasonable Access for Trucks

- If the State does not have one, they revert back to the requirements in 23 CFR 658.19.
- Verify that route is not on National Network (NN) by checking 23 CFR 658 Appendix A. If the route is on the NN then any restrictions must follow the procedures in 23 CFR 658.11.
- If reasonable access comes up in the context of a project, and NEPA approval, determine if there is a purpose and need for trucks to have access to this route. Are there other "reasonable access routes," if this route were to ban trucks?
- No State may enact or enforce any law denying access within 1 road-mile form the NN using the **most reasonable and practicable** route available except for specific safety reasons on individual routes. [Ref 658.19 (d)] **Are other reasonable routes available? If so a restricted route may not violate our reasonable Access Policy.**

Reasonable Access for Trucks

- Reasonable access is applicable to STAA vehicles. STAA vehicle are those that are described in 658.13 and 658.15.
- Reasonable access must be provided from the NN to terminal and facilities for food, fuel, repair and rest, and to points of loading and unloading of household goods carriers, motor carriers of passengers, and to 28.5 foot twin trailers. There may be cases where a local ordinance may ban through trucks, but may allow trucks to these destinations/purposes – and be compliant with 658.19.
- The State or Local agency may restrict access based on documents safety considerations.
- Regarding Reasonable Access to terminals; "**FHWA does not intend that this definition supersede existing bans or preclude new bans on combination truck travel, such as those on through travel on residential streets, weight posted roads and bridges, or roads not deemed appropriate for access on the basis of sound safety and engineering considerations."** [Ref. 55 FR 22760, Vol 55, No 106, June 1, 1990].

Reasonable Access for Trucks

- Coordinate with the local governments through the State; coordinate with the trucking industry; and coordinate with other States, when applicable.
- Many Reasonable Access cases between the plaintiff (ex. trucking company) and the jurisdiction have been addressed in court.
- Federal law [Title 23 sec. 127(b)] provides that state may not deny reasonable access for vehicles loaded to Interstate weight limits between that system and terminals and facilities for food, fuel, repairs and rest. However, FHWA has never issued regulations governing what access is reasonable for such vehicles. Nevertheless, we consider at least **one mile** on State or state maintained highway should be allowed and that further distance should be carefully considered by state authorities. FHWA has been more involved in these issues.
- Federal Law regarding reasonable access is also contained in Title 49 sec. 31114

Truck Size and Weight NHI Training (139004)

- 6 Locations this Fall.
- Registration is Free for State Public Sector.
- No HQ Funding for Travel.
- 3 spots for FHWA.
- 7 spots are reserved for State - out of state participants.
- 20 spots are for in-State participants.
- Private sector has to pay the registration fee.

Truck Size and Weight NHI Training

Course #	Date	Course Description	Location	Coordinated By	Agency
139004	10/06/2015-10/07/2015	Principles of Effective Commercial Motor Vehicle (CMV) Size and Weight Enforcement.	Carson City, NV	Randy Travis	Nevada Department Of Transportation
139004	10/5/2015-10/6/2015	Principles of Effective Commercial Motor Vehicle (CMV) Size and Weight Enforcement.	Concord, NH	Mark Kirouac	New Hampshire Department Of Transportation
139004	09/29/15- 9/30/15	Principles of Effective Commercial Motor Vehicle (CMV) Size and Weight Enforcement.	Golden, CO	Kirstie Nixon	Colorado State Patrol
139004	09/22/15- 9/23/15	Principles of Effective Commercial Motor Vehicle (CMV) Size and Weight Enforcement.	Hanover, MD	Tina Sanders	Maryland Department Of Transportation
139004	11/3/2015-11/4/2015	Principles of Effective Commercial Motor Vehicle (CMV) Size and Weight Enforcement.	Jefferson City, MO	Kelly Ray	Missouri Department Of Transportation
139004	10/14/2015- 10/15/2015	Principles of Effective Commercial Motor Vehicle (CMV) Size and Weight Enforcement.	Frankfort, KY	Bernadette Dupont	FHWA-KY

Open Discussion

- What are your permitting challenges?

Questions ?

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