TAX FOUNDATION

How Are Your State's Roads Funded?

September 11, 2019 • 2 min read

By: **Janelle Fritts**

Related Research

- **Report: Who Will Pay for the Roads?**
- **State Gasoline Tax Rates as of July 2020**

When we think of road funding, we tend to think of the taxes we pay at the pump. Gas taxes are largely used to fund infrastructure maintenance and new projects, but the amount of state and local road spending covered by gas taxes, tolls, user fees, and user taxes varies widely among states. It ranges from only 6.9 percent in Alaska to 71 percent in Hawaii. In the contiguous 48 states, North Carolina relies the most on dedicated transportation revenues (63.6 percent), while North Dakota relies on them the least (17.5 percent). States like Alaska and North Dakota keep their transportation taxes low in the same way that they keep all taxes on state residents low—by exporting taxes, primarily through the severance tax.

For a more detailed breakdown of where states' user-based road funding comes from, check out the table below.

Share of State & Local Road Spending Covered by State & Local Tolls, User Fees, and User Taxes, Fiscal Year 2016

State	Gasoline & License Taxes	Rank	Tolls & User Fees	Total Tolls, User Fees, & User Taxes	Rank
U.S.	41.0%		12.3%	53.4%	
Ala.	34.6%	32	1.1%	35.7%	44
Alaska	6.9%	50	5.7%	12.7%	50
Ariz.	45.8%	16	1.5%	47.3%	30
Ark.	36.8%	26	0.6%	37.4%	39
Calif.	51.3%	8	8.7%	60.0%	12
Colo.	42.9%	22	8.3%	51.3%	20
Conn.	33.0%	37	3.7%	36.6%	43
Del.	23.4%	48	43.3%	66.7%	5
Fla.	49.9%	12	22.1%	72.0%	2
Ga.	48.8%	13	1.5%	50.3%	23
Hawaii	71.0%	1	2.4%	73.4%	1
Idaho	62.1%	3	4.5%	66.6%	6
Ill.	34.0%	34	13.7%	47.7%	29
Ind.	43.3%	20	0.7%	44.0%	32

Note: D.C.'s ranks do not affect states' ranks, but the figures in parentheses indicate where it would rank if included.

Source: Tax Foundation calculations from the Census Bureau, State and Local Government Finance and Federal Highway Administration data.

State	Gasoline & License Taxes	Rank	Tolls & User Fees	Total Tolls, User Fees, & User Taxes	Rank
N.D.	17.5%	49	1.5%	19.1%	49
Ohio	44.9%	17	6.3%	51.2%	21
Okla.	46.2%	15	11.8%	58.0%	15
Ore.	51.5%	7	7.5%	59.0%	14
Pa.	36.4%	28	14.6%	51.0%	22
R.I.	31.8%	41	9.1%	40.9%	37
S.C.	43.9%	18	6.1%	50.0%	24
S.D.	27.6%	44	1.3%	28.9%	47
Tenn.	60.6%	4	0.5%	61.1%	10
Tex.	43.0%	21	15.0%	57.9%	16
Utah	53.0%	6	4.6%	57.5%	17
Vt.	23.6%	47	1.7%	25.3%	48
Va.	33.8%	36	7.9%	41.7%	34
Wash.	50.5%	10	13.0%	63.5%	9
W.Va.	32.0%	40	9.1%	41.1%	36
Wis.	42.7%	23	7.1%	49.8%	25
Wyo.	30.2%	43	1.3%	31.5%	46
D.C.	22.4%	(49)	12.9%	35.3%	(45)

Note: D.C.'s ranks do not affect states' ranks, but the figures in parentheses indicate where it would rank if included.

Source: Tax Foundation calculations from the Census Bureau, State and Local Government Finance and Federal Highway Administration data.

Alaska Department of Transportation and Public Facilities

Emerging Practices in Winter Highway Maintenance

DOT&PF Equipment Operator Nick Herman Plowing Snow on the Alaska Highway, Photo by Dennis Bishop ADOT&PF

October 2012

Road Surface Applications

Anti-Icing. Anti-icing involves treatment of the road surface prior to a storm, to slow or prevent the adhesion of snow and ice to the road surface. Historically, the department has used magnesium chloride for pre-treating road surfaces, however, rising costs have led to recent use of a salt brine using

Sanding Truck with Brine Tanks, Mike Coffey ADOT&PF

water mixed with sodium chloride to a 23.3% solution. Considered by many transportation experts to be the safest and most cost-effective anti-icing product available, salt brine is currently being used successfully in Juneau, Sitka, Valdez, Fairbanks, Homer, Klawock and Soldotna, and is expected to see wider application throughout the state.

Timing is critical for the successful application of an anti-icing solution. Crews pay careful attention to weather conditions, utilizing the 511 Road Weather Information System and other sources, to help assure that anti-icing is applied before snow accumulations build up. Salt brine is applied most effectively at temperatures of 20F and above. Since most snowstorms occur when the air temperature is between 20F and 32F, salt brine is an effective treatment. The department is also using an anti-icing additive that significantly lowers the working temperature of chloride salt, allowing longer working time, better adherence and reduced corrosion, resulting in a 30% to 40% savings in salt.

Corrosion caused by salt and other chemicals is a concern for both the motoring public and the department. To address concerns related to vehicle corrosion, the department uses an organic additive in the brine that results in a mixture only one-third as corrosive as salt alone. Maintenance staff and department researchers hope to find an in-state source of organic material, to reduce purchase and transportation costs. In addition to organic additives, automobile manufacturers have made significant improvements over the past thirty years to protect vehicles from corrosion. NACE International (formerly the National Association of Corrosion Engineers) found in a 1996 survey, that less that 1% of

improvements. This technology has been featured in two television specials, most recently (2012) in *Modern Marvels* on the History Channel, and earlier (2010), in *Dangerous Drives*, on Speed TV.

Tow Plows. Transportation departments across the country face increasing costs and demands for winter snow removal. The tow plow, a steerable trailer-mounted plow that is pulled behind a tandem axle snowplow truck, offers an opportunity for greater efficiency. The tow plow is able to swing out to

Tow Plow at Work in Missouri, Screengrab

one side, which doubles the plow width of the snow-plow truck. The tow plow is equipped with a 26' moldboard (ie, curved plow) and either a granular spreader or a tank for dispensing liquids for snow and ice control. The tow plow has been used successfully in Missouri since 2005 and is gaining acceptance in other states. The department has purchased two tow plows, one for Soldotna and one for Juneau, which will begin work this winter. Advantages include increased efficiency and production, reduction in manpower, reduced fuel use, safety improvements due to improved cycle times, and a longer service life than snowplow trucks.

511 Traveler Information and RWIS - Road Weather Information System. Maintenance personnel utilize information provided by the fifty-five Road Weather Information System (RWIS) stations located throughout the state, to improve the timeliness of maintenance actions such as when and where to snowplow or apply anti-icing/de-icing chemicals on highways. These stations provide real-time weather data invaluable for getting crews into the field at the right time.

RWIS Installation at Bird Point, Jack Stickel, ADOT&PF

determine road treatments, and road treatment locations, based on real-time weather data. It will help take the "guesswork" out of maintenance decisions, by providing site-specific and timely treatment recommendations, resulting in more efficient use of equipment, materials and manpower.

Statewide Maintenance Concerns

Many department-wide concerns are also concerns regarding winter maintenance. These include:

- recruiting and retaining qualified operators
- the increasing cost and sophistication of road maintenance equipment
- the increasing cost of materials (see earlier graph on the cost of winter salt and chemicals)
- static budgets
- more frequent, intense and unpredictable weather events, including storms and winter warming periods.

Winter weather poses special difficulties for department crews in the field. Temperatures can fall to as low as 60 degrees below zero. Snowfalls in excess of 900 inches can fall at Thompson Pass north of Valdez. High winds and blowing snow can create whiteout conditions. Ice storms in the Interior can create extremely hazardous driving conditions, while the prospect of avalanches is a recurring threat in the winter, and especially in the spring.

Avalanches

The department annually undertakes avalanche hazard reduction in Juneau, on the Seward Highway, on the Dalton Highway at Atigun Pass, and on the Richardson Highway at Thompson Pass north of Valdez. Avalanche hazard reduction will begin on the Klondike Highway in Skagway beginning in the winter of

Avalanche on the Seward Highway, Matt Murphy ADOT&PF

Snowplow Safety

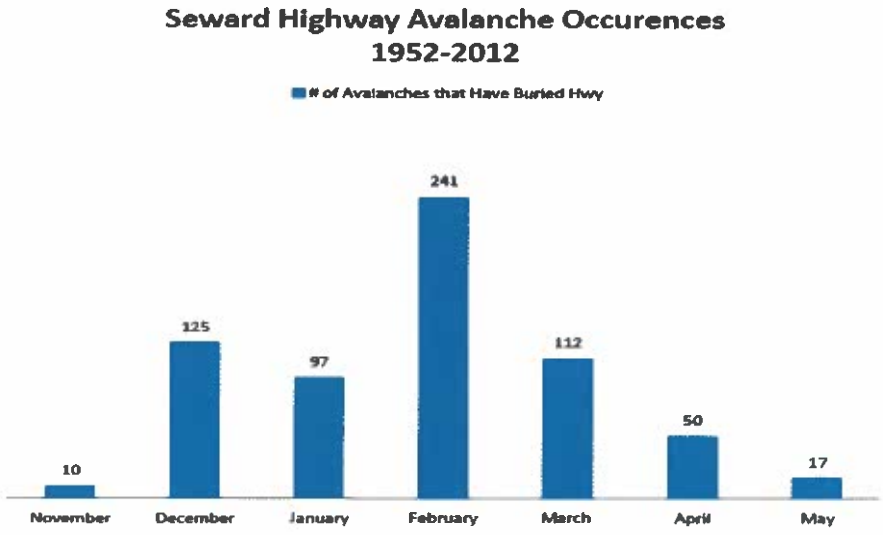
Always remember that motorists and department crews are all in the storm together. Be patient if you are behind, or being slowed down by, snow removal equipment. If you are stuck in traffic, then so are the equipment operators.

- Watch for snowplows and other snow removal equipment and give 200 feet clearance
- Never drive into a 'snow cloud' coming from a snowplow
- Snowplows travel slower than the posted speed limit because it is the safest and most effective method for cleaning the roads
- Stay behind the snowplow. The road behind the plow is safer for driving

DOT Snowplowing Hotlines

- Anchorage: 338-1466
- Dalton Highway: 451-2206
- Denali Highway: 451-2226
- Fairbanks: 451-2205
- Juneau: 465-1787 or 465-1799
- Kenai area: 262-2199
- Mat-Su area: 745-3117
- Nome area: 443-3443 or 443-3520
- SE Region: 465-1787 or 465-1779
- Tazlina: 822-3222
- Tok: 883-5128
- Valdez: 834-1059
- Municipality of Anchorage: 343-8277

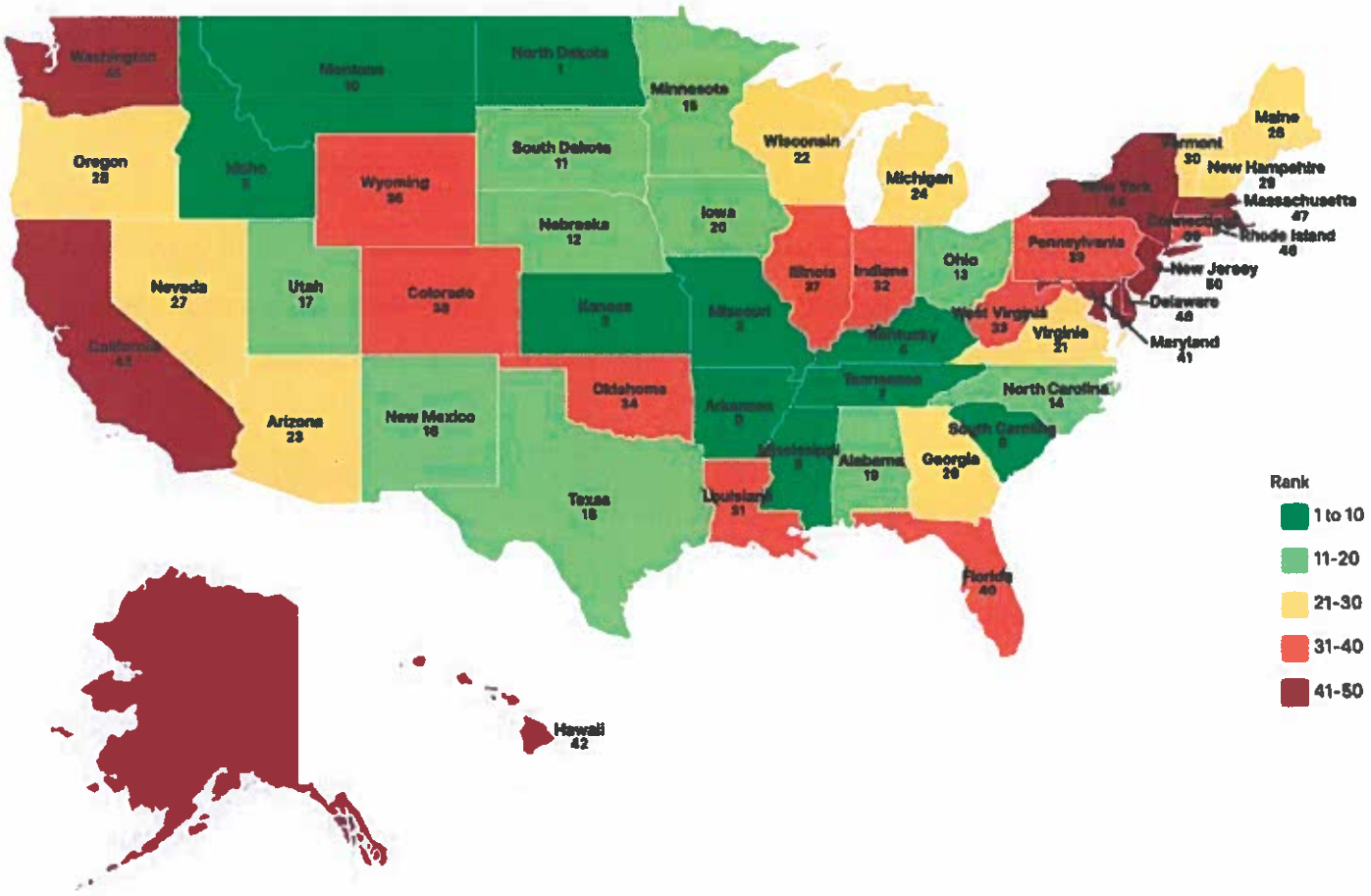
Statewide Chief of Maintenance and Operations Mike Coffey can be reached in Juneau at 465-3904.



Alaska's Highway Conditions, Ranked

Published on **January 14, 2021 (https://alaskapolicyforum.org/2021/01/alaskas-highway-conditions-ranked/)** by **Sarah Montalbano (https://alaskapolicyforum.org/author/sarahm/)**

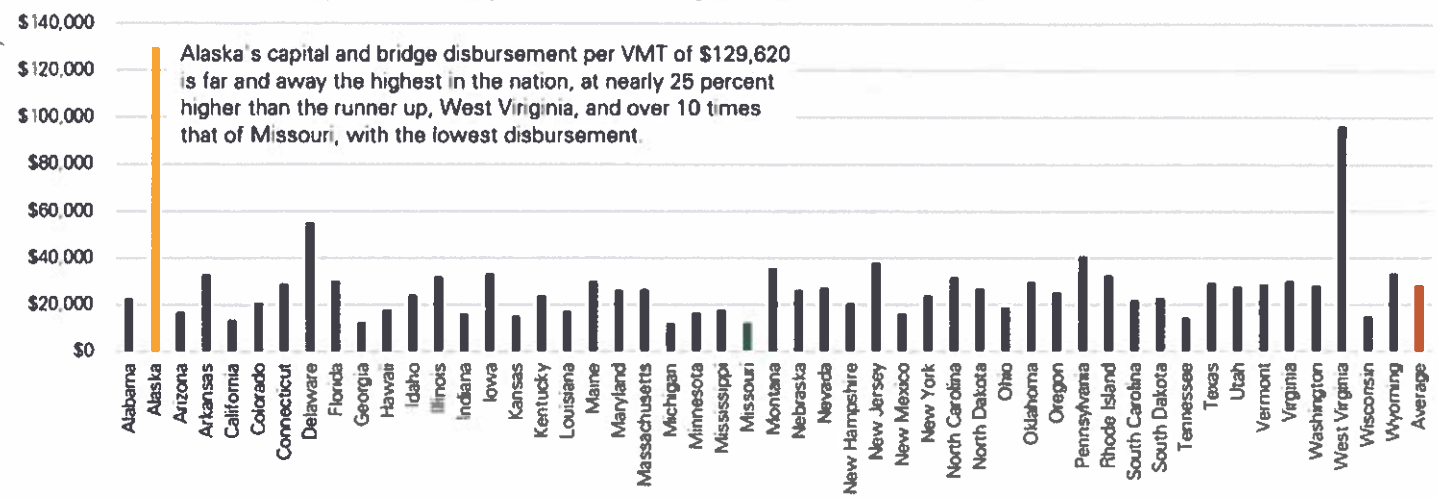
Overall Highway Performance Rank, 2018



Source: Baruch Feigenbaum, Spence Purnell, and Joe Hillman, *25th Annual Highway Report* (https://reason.org/policy-study/25th-annual-highway-report/), Reason Foundation, 2020.

Alaska's performance in most individual metrics measured by the *25th Annual Highway Report* is dismal. The good news is that for three metrics, Alaska ranked above 25th: urban interstate pavement condition (17th), urban arterial pavement condition (21st), and urbanized area congestion (fifth).

The authors found that 2.5 percent of major multi-lane highways in urbanized areas are in poor condition, placing Alaska 17th for the urban interstate pavement condition metric. Both New Hampshire and Vermont reported clean bills of health in this metric, with 0 percent of their urban interstate mileage in poor condition. On the opposite end, Wyoming ranked last with nearly 37 percent of their urban interstate mileage in poor condition. Alaska performed similarly to Missouri and New Mexico in this metric.



Source: Baruch Feigenbaum, Spence Purnell, and Joe Hillman, *25th Annual Highway Report* (https://reason.org/policy-study/25th-annual-highway-report/), Reason Foundation, 2020.

The maintenance disbursements per mile metric assesses the cost to perform routine upkeep, such as filling potholes and repaving roads. Alaska ranked 46th, spending $13,555 per lane-mile and $43,501 per VMT on maintenance. In comparison, the national average maintenance per VMT was $9,950. Clearly, some of Alaska's maintenance costs are a result of freezing and thawing that accelerates damage to pavement. However, closely analyzing the value these maintenance disbursements provide may help Alaskans get more from less.

In terms of administrative disbursements, which includes general and main-office expenditures in support of state highways, Alaska ranks 42nd. Alaska reported below-average administrative disbursements per SHA of $16,387 and per lane-mile of $5,242. In comparison per VMT, Alaska's administrative disbursements were $16,823, far above the national average of $4,154.

However, Alaskans aren't getting what they pay for in terms of road conditions in most areas of the state. In the rural interstate pavement condition metric, which measures the conditions in rural four- to six-lane highways, Alaska ranked 48th. Because Delaware and Hawaii did not report, Alaska placed last in this metric. Alaska reported almost 12 percent of these roads to be in poor condition – contrast this with the national average of 2 percent in poor condition. Similarly, Alaska ranked 50th for rural four- to six-lane highways pavement condition, reporting nearly 23 percent of these roads to be in poor condition. The national average was only 2 percent of rural four- to six-lane roads in poor condition.

The report notes that Alaska's best rankings were in urban interstate pavement condition, urban arterial pavement condition, and urbanized area congestion. However, Alaska simultaneously has some of the largest disbursements on capital and maintenance while suffering the some of the poorest conditions for all roads and bridges. Alaska must effectively utilize disbursements to fix dangerous road conditions that contribute to Alaska's shocking fatality rates.

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Previous
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(https://alaskapolicyforum.org/2021/01/read-by-9-or-fall-behind/)

Next
Policy Brief: Alaska's Businesses Need COVID-19 Liability Protection Now

(https://alaskapolicyforum.org/2021/01/pb-blp/)

Fixing America's Surface Transportation Act (FAST Act) Truck Size and Weight Provisions

Questions and Answers Full List [Updated August 9, 2018]

U.S. Department of Transportation
Federal Highway Administration

Memorandum

Subject: Information: Fixing America's Surface Transportation Act (FAST Act) Truck Size and Weight Provisions

Date: February 24, 2016

From: Jeffrey A. Lindley [Signature on file]
Associate Administrator for Operations

In Reply Refer To: HOFM

To: Division Administrators
Directors of Field Services
Director of Technical Services Lands Highway (HFL-1)

On December 4, 2015, the President signed into law the Fixing America's Surface Transportation Act (FAST Act) (P.L. 114-, which authorized Federal surface transportation programs for five fiscal years (FY 2016-2020). This memorandum provides guidance on the following FAST Act truck size and weight provisions: Milk Products (Sec. 1409), Interstate Weight Limits (Sec. 1410), Emergency Route Working Group (Sec. 5502), Additional State Authority (Sec. 5516), Automobile Transporter (Sec. 5520), Commercial Delivery of Light- and Medium-Duty Trailers (Sec. 5523), and a Report to Congress (Sec. 5525) relating to the safety and enforcement impacts of several commercial motor vehicle provisions. The effective date of the amendments made in the FAST Act is October 1, 2015 unless otherwise specified. References to the "date of enactment" are to December 4, 2015.

Division Offices should take notice that the truck size and weight provisions of the FAST Act may affect States' compliance with 23 CFR 650 Subpart C, the National Bridge Inspection Standards. Of particular importance are the potential impacts on bridge load rating and posting requirements. Division Offices should work with the States to determine whether the FAST Act's weight limit changes will require bridges to be re-rated and posted (restricted) with respect to the maximum load-carrying capacity in accordance with 23 CFR 650 Subpart C.

If you have any questions, please contact John Berg of the Office of Operations at 202-740-4602, or Lubin Gao of the Office of Infrastructure at 202-366-4604.

Attachment

FAST ACT TRUCK SIZE AND WEIGHT PROVISIONS

A. BACKGROUND

Section 127 of title 23 of the United States Code establishes weight limitations for vehicles operating on the Interstate System. The maximum weight limitations are: 20,000 pounds on a single axle; 34,000 pounds on a tandem axle; and 80,000 pounds gross weight, or the maximum allowed by the Federal Bridge Formula. Section 127 states that the overall gross weight may not exceed 80,000 pounds, including all enforcement tolerances, except for those vehicles

- **Natural Gas Vehicles** – A vehicle, if operated by an engine fueled primarily by natural gas, may exceed any vehicle weight limit (up to a maximum gross vehicle weight of 82,000 pounds) under 23 U.S.C 127, by an amount that is equal to the difference between: the weight of the vehicle attributable to the natural gas tank and fueling system carried by that vehicle; and the weight of a comparable diesel tank and fueling system. [23 U.S.C. 127(s)]

Section 5502 Emergency Route Working Group – The FAST Act requires U.S. DOT to establish a working group to determine best practices for State approval of special permits for vehicles involved in emergency response and recovery. DOT will issue further information on the establishment of this group soon.

Section 5516 Additional State Authority – The FAST Act provides South Dakota the opportunity to update and revise the routes designated as qualifying Federal-aid Primary System highways under section 31111(e) of title 49, United States Code, as long as the update shifts routes to divided highways or does not increase centerline miles by more than 5 percent and is expected to increase safety performance. FHWA plans to provide the State of South Dakota implementing guidance on this provision at a later date.

Section 5520 Automobile Transporter – The FAST Act amends 49 U.S.C. 31111(a) by striking the word "specifically" from the definition of "automobile transporter." The FAST Act further provides that an automobile transporter shall not be prohibited from the transport of cargo or general freight on a backhaul, so long as it complies with weight limitations for a truck tractor and semitrailer combination. "Backhaul" means the return trip of a vehicle transporting cargo or general freight, especially when carrying goods back over all or part of the same route. Section 5520 also mandates that a State may not prescribe or enforce a regulation of commerce that imposes a vehicle length limitation of less than 80 feet on a stinger-steered automobile transporter with a front overhang of less than 4 feet and a rear overhang of less than 6 feet. The previous limitations were 75 feet for the overall length, and 3-foot front and 4-foot rear overhangs.

Section 5523 Commercial Delivery of Light- and Medium-Duty Trailers – The FAST Act amends 49 U.S.C. 31111(a), to include the term "trailer transporter towing unit," which means a power unit that is not used to carry property when operating in a towaway trailer transporter combination. "Towaway trailer transporter combination" means a combination of vehicles consisting of a trailer transporter towing unit and 2 trailers or semitrailers with a total weight that does not exceed 26,000 pounds; and in which the trailers or semitrailers carry no property and constitute inventory property of a manufacturer, distributor, or dealer of such trailers or semitrailers. A State may not prescribe or enforce a regulation of commerce that has the effect of imposing an overall length limitation of less than 82 feet on a towaway trailer transporter combination. [49 U.S.C. 31111(b)(1)(H)]

Section 5525 Report – The FAST Act requires U.S. DOT to submit to the Committee on Commerce, Science, and Transportation of the Senate, and the Committee on Transportation and Infrastructure of the House of Representatives, a report describing the safety and enforcement impacts of sections 5520, 5521, 5522, 5523, 5524, and 7208 of the FAST Act. The report is due by December 4, 2019.

D. **TERMS AND DEFINITIONS**

Automobile transporter – Any vehicle combination designed and used for the transport of assembled highway vehicles, including truck camper units. An automobile transporter shall not be prohibited from the transport of cargo or general freight on a backhaul, so long as it complies with weight limitations for a truck tractor and semitrailer combination. [49 U.S.C. 31111(a)(1)]

Backhaul – The return trip of a vehicle transporting cargo or general freight, especially when carrying goods back over all or part of the same route. [49 U.S.C. 31111(a)(5)]

Bridge Formula – Congress enacted the Bridge Formula in 1975 to limit the weight-to-length ratio of a vehicle crossing a bridge. This is accomplished either by spreading weight over additional axles or by increasing the distance between axles.

Compliance with Bridge Formula weight limits is determined by using the following formula:

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

W = the overall gross weight on any group of two or more consecutive axles to the nearest 500 pounds. L = the distance in feet between the outer axles of any group of two or more consecutive axles. N = the number of axles in the group under consideration. [23 U.S.C. 127(a)(2)]

Covered heavy-duty tow and recovery vehicle – A vehicle that is transporting a disabled vehicle from the place where the vehicle became disabled to the nearest appropriate repair facility; and has a gross vehicle weight that is equal to or exceeds the gross vehicle weight of the disabled vehicle being transported. [23 U.S.C. 127(m)]

Answer 5: Yes. Under 23 CFR 657.9, a State's plan for vehicle size and weight enforcement must include identification of policies and practices addressing permits for overweight vehicles and loads. Administrative directives, booklets, or other written criteria shall be included in the State's enforcement plan. In addition, the annual certification described in 23 CFR 657.15 requires States to report the number of permits issued for overweight loads. Those reports must specify the number of permits issued for divisible and non-divisible loads, and whether the permits were issued on a per-trip or annual basis.

Question 6: How do State enforcement officials determine if a vehicle is transporting fluid milk products?

Answer 6: Roadside enforcement of this provision should be done in accordance with State procedures and guidelines established to verify non-divisible load permits. If there are no guidelines or procedures in place, verification can be accomplished through methods that include, but are not limited to, a visible inspection of the vehicle and load, or examination of shipment documentation such as a bill of lading.

Question 7: What is an example of a vehicle carrying fluid milk products?

Answer 7: A "Bulk Milk Hauler Pickup Tanker" (reference: U.S. Food & Drug Administration-Pasteurized Milk Ordinance 2007), is an example of a vehicle carrying fluid milk products. A "Bulk Milk Hauler Pickup Tanker" is a vehicle that transports raw milk from a farm and/or raw milk products to or from a milk plant, receiving station or transfer station.

Interstate Weight Limits (FAST Act Section 1410)

Question 1: What is a "Covered Heavy-Duty Tow and Recovery Vehicle?"

Answer 1: A "Covered Heavy-Duty Tow and Recovery Vehicle" is a vehicle that is transporting a disabled vehicle from the place where the vehicle became disabled to the nearest appropriate repair facility and has a gross vehicle weight that is equal to or exceeds the gross vehicle weight of the disabled vehicle being transported.

Question 2: Are Covered Heavy-Duty Tow and Recovery Vehicles subject to Federal weight limitations?

Answer 2: No. The vehicle weight limitations set forth in 23 U.S.C. 127 do not apply to a covered heavy-duty tow and recovery vehicle. However, States will need to establish guidelines for the safe operation of these vehicles on Interstate highway bridges consistent with the requirements of 23 CFR 650 Subpart C on load rating and posting, and any applicable State standards on vehicle weight limitations.

Question 3: Is a tow truck subject to the Federal weight limits when it is not transporting a disabled vehicle?

Answer 3: Yes. A tow truck, when not transporting a disabled vehicle, is subject to the Federal weight limits under 23 U.S.C 127.

Question 4: How will the Federal weight limits affect vehicles in the State of Texas on any segment of United States Route 59, United States Route 77, United States Route 281, United States Route 84, Texas State Highway 44, or another roadway once such segments are designated as Interstate Route 69?

Answer 4: A vehicle that could operate legally on such a segment before the date of designation as Interstate Route 69 may continue to operate on that segment without regard to the weight requirements of 23 U.S.C. 127.

Question 5: What is a "Covered Logging Vehicle" in the State of Wisconsin?

Answer 5: A Covered Logging Vehicle is a vehicle that is transporting raw or unfinished forest products, including logs, pulpwood, biomass, or wood chips, has a gross vehicle weight of not more than 98,000 pounds; has no fewer than 6 axles; and is operating on a segment of Interstate Route 39 in the State of Wisconsin from mile marker 175.8 to mile marker 189.

Question 6: Are Covered Logging Vehicles in the State of Wisconsin subject to Federal weight limitations?

Answer 6: No. The Federal vehicle weight limitations set forth in 23 U.S.C. 127 do not apply to Covered Logging Vehicles in the State of Wisconsin.

Question 7: What are the Federal size and weight limits for United States Route 63 between the exits for highways 14 and 75 in the State of Arkansas if any segment of this route is designated as part of the Interstate System?

Answer 7: The single axle weight, tandem axle weight, gross vehicle weight, and Bridge Formula limits under 23 U.S.C. 127(a), and the width limitation under 49 U.S.C. 31113(a) do not apply to any such segment with respect to the operation of any vehicle that could legally operate on such segment before the designation of the route as an Interstate.

calculations may need to be updated, and agencies responsible for vehicle weight enforcement and posted bridge enforcement may need to update their procedures and enforcement practices.

Question 17: When do the new provisions take effect? Can we start implementation now?

Answer 17: The effective date of the amendments made in the FAST Act is October 1, 2015 unless otherwise specified. References to the "date of enactment" are to December 4, 2015.

Implementation guidance not covered in this memorandum or issues that are specific to a State, should be directed to the FHWA Division Office Truck Size and Weight Specialist in your State. A list of FHWA Division Office Truck Size and Weight Specialists is available at https://ops.fhwa.dot.gov/freight/sw/contact/index.htm#fhwa.

Question 18: Where are resources available for Vehicle Size and Weight?

Answer 18: FHWA has numerous resources available at https://ops.fhwa.dot.gov/freight/sw/index.htm.

Automobile Transporter (FAST Act Section 5520)

Question 1: May Automobile Transporters transport cargo or general freight on a backhaul?

Answer 1: Yes. An Automobile Transporter is not prohibited from the transport of cargo or general freight on a backhaul, as long as it complies with weight limitations for a truck tractor and semitrailer combination.

Question 2: What are the weight limitations for an Automobile Transporter hauling cargo or general freight on a backhaul?

Answer 2: An Automobile Transporter must comply with the weight limitations for a truck tractor and semitrailer combination mandated in 23 U.S.C. 127(a).

Question 3: What is a "backhaul"?

Answer 3: The term "backhaul" refers to the return trip of a vehicle transporting cargo or general freight, especially when carrying goods back over all or part of the same route.

Question 4: How may roadside enforcement officials verify a backhaul trip?

Answer 4: Law enforcement personnel may review the bill of lading for the part of the trip that occurred prior to the backhaul.

Question 5(revised) : What is the effect of the new provisions relating to stinger-steered automobile transporters? [49 U.S.C. 31111(b)(1)(G)]

Answer 5 (revised): A State may not prescribe or enforce a vehicle length limitation of less than 80 feet on a stinger-steered automobile transporter. The FAST Act provides for a front overhang allowance of up to 4 feet and a rear overhang allowance of up to 6 feet. The 4 foot front and 6 foot rear overhang allowances are in addition to the overall 80 foot length allowance.

Question 6: How does the provision affect reasonable access as provided in 23 CFR 658.19?

Answer 6: Pursuant to 49 U.S.C. 31114, automobile transporters have had and therefore will continue to have reasonable access to the National Network (NN). States may continue to regulate their length when no portion of a movement is on the NN.

Question 7 (revised): Does the backhaul provision apply to all automobile and boat transporters?

Answer 7 (revised): Yes. Both traditional automobile and boat transporter combinations and stinger-steered auto transporter combinations may haul cargo on a backhaul. [49 U.S.C. 31111(a)(1) and (5)]

Question 8 (revised): What actions may a State take to implement the changes the FAST Act made to 49 U.S.C. 31111?

Answer 8 (revised): A State may need to update its statutes, regulations, and procedures to implement the FAST Act changes regarding lengths and backhaul. In addition, an enforcement agency may need to update its procedures and enforcement practices. Regarding the amended length provisions for stinger-steered automobile transporters, a State may not impose a vehicle length limitation of less than 80 feet on a stinger-steered automobile transporter, not including the additional front and rear overhang allowances, as described in Answer 5. [49 U.S.C. 31111(b)(1)(G)]

Commercial delivery of light- and medium-duty trailers (FAST Act Section 5523)

Question 1: What are the length limitations of a towaway trailer transporter combination?

Answer 1: No State may impose an overall length limitation of less than 82 feet on a towaway trailer transporter combination.

Question 2: Are there any other limitations on a "Towaway Trailer Transporter Combination?"

Answer 2: The "towaway trailer transporter combination" consists of a "trailer transporter towing unit" and 2 trailers or semitrailers with a total weight that does not exceed 26,000 pounds and in which the trailers or semitrailers carry no property and constitute inventory property of a manufacturer, distributor, or dealer of such trailers or semitrailers.

Question 3: May the "trailer transporter towing unit" carry cargo?

Answer 3: No. The "trailer transporter towing unit" is defined as a power unit that is not used to carry property when operating in a towaway trailer transporter combination.

Question 4: Must "towaway trailer transporter combinations" be allowed access between the National Network (NN) and terminal, facilities for food, fuel, repairs and rest, and point of loading and unloading?

Answer 4: Yes. A State may not enact or enforce a law denying reasonable access for towaway trailer transporter combinations between the NN and terminal, facilities for food, fuel, repairs and rest, and point of loading and unloading.

Question 5: What was the previous length limit for a "towaway trailer transporter combination" type of vehicle prior to enactment of the FAST Act?

Answer 5: Each trailer would be limited to 28 feet or 28.5 feet (if the combination was in lawful operation on December 1, 1982 and did not exceed 65 feet), unless a longer vehicle was allowed pursuant to the ISTEA Longer Combination Vehicle (LCV), and Cargo Carrying Unit Freeze, required under 23 U.S.C. 127(d) (23 CFR 658, Appendix C).

Reports (FAST Act Section 5525)

Question 1: What consultation will the U.S. DOT do with States, State law enforcement agencies, and others to satisfy the reporting requirement in Section 5525 of the FAST Act?

Answer 1: The FAST Act requires the U.S. DOT to submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report describing the safety and enforcement impacts of sections 5520, 5521, 5522, 5523, 5524, and 7208 of the FAST Act. The FHWA will develop a mechanism to collect safety and enforcement information for this report as part of the State enforcement plan required under 23 CFR 657.

Roads and Airfields Constructed on Permafrost

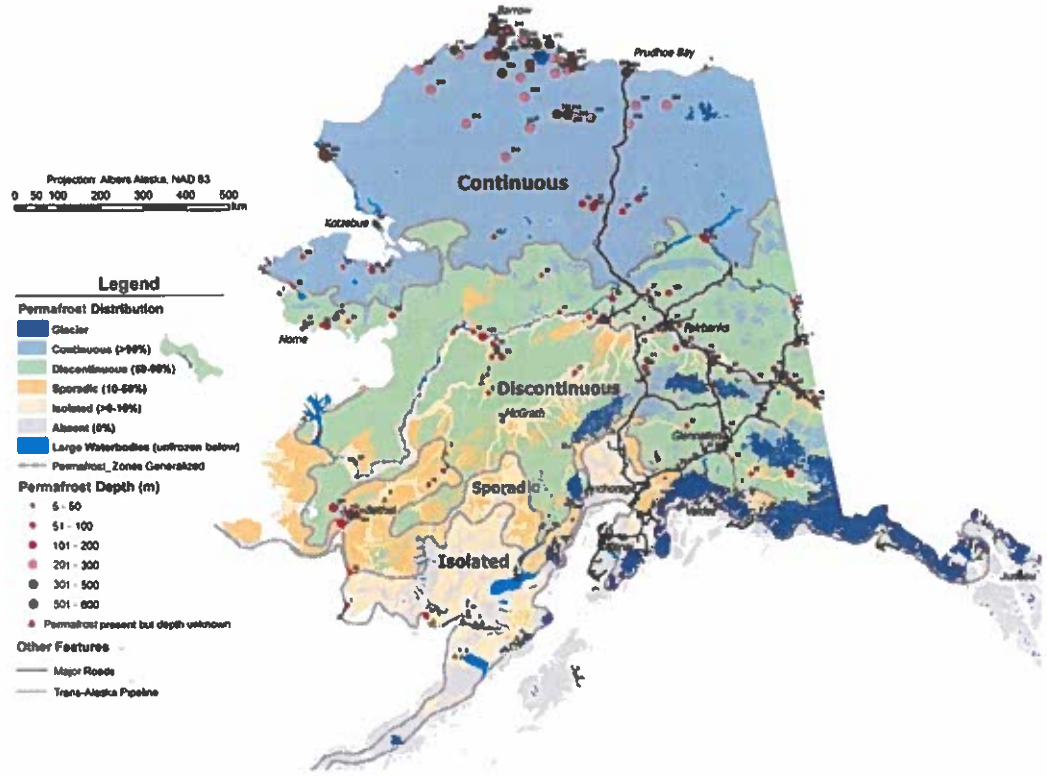
Technical Brief 1/18/2022

Based on Roads and Airfields Constructed on Permafrost-A Synthesis dated 12/22/2020.
This Synthesis was performed by University of Alaska Fairbanks at the request of Alaska DOT&PF to compile the many learned engineering principles regarding transportation infrastructure in Alaska. This Technical Brief summarizes the final report.

Permafrost

Permafrost is more complicated than the commonly used definition of ground that remains at or below 0° C (32° F) for two or more years. We must consider how much ice or moisture is contained in the frozen soil and how the permafrost was formed. In addition, the distribution of permafrost varies across the geography: it can be isolated, sporadic, discontinuous or continuous, and the temperature of the permafrost varies. Permafrost can be *ice-rich thaw unstable*, or *ice-poor thaw stable*.

A generally warm permafrost found in areas of sporadic and discontinuous permafrost will result in thawing with even small increases in temperature. When permafrost is both warm and ice-rich the probability of severe damage, due to thaw, to a constructed embankment increases, which may result in cracking, settling, slope collapse or other severe surface distortions.

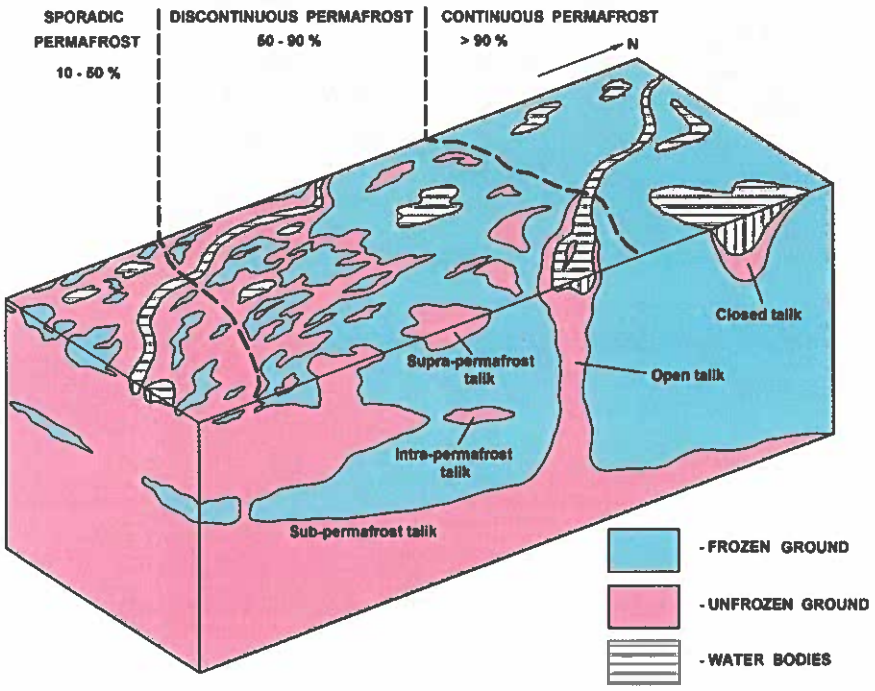


Permafrost map of Alaska (Jorgenson et al., 2008b).

Environment

There is a correlation between permafrost and its surrounding environment: mean annual air temperature (MAAT); snow cover, vegetation, type of soil and moisture content (MAGST mean annual ground surface temperature), and thermal conductivity of soil in frozen and unfrozen states (TTOP temperature at the permafrost top).

Continuous Permafrost that depends substantially on climate may be minimally affected by local disturbances. Discontinuous and Sporadic Permafrost are affected by both climate and local factors such as topography, soil properties and types (peat, clay, silt, sand, and gravel), snow depth and vegetation.



Typical permafrost distribution in continuous, discontinuous, and sporadic permafrost zones (modified from Shur et al., 2011).

Construction

Federal and state laws dictate construction activities including storm water discharge, erosion and sediment control, and maintained water quality. These laws include the Clean Water Act and the State of Alaska Water Quality Standards (18 AAC 70), Anadromous Fish Act, and Fish Passage Act (AS 16.05.841 & 871).

Projects are designed based on the readily available information and information gathered using the above-mentioned geotechnical investigations. The distribution of ice in the soil may be difficult to know with certainty prior to the exposure made during a construction cut into the material. Each specific location creates a unique challenge and relies on recent data for geotechnical assumptions in permafrost areas. Although there has been some success using designs from previous projects, previous design may be unreliable. Design is also based on the benefit-risk analysis for the scale of the project and available funding for that location.