



Alaska Department of Transportation & Public Facilities Studded Tire Presentation

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State Highway System subject to Studded Tire Damage

- **Pavement Ruts:** Longitudinal depressions in the wheel paths
- **High Traffic Volume, High Speed Roads** are more prone to Studded Tire Damage

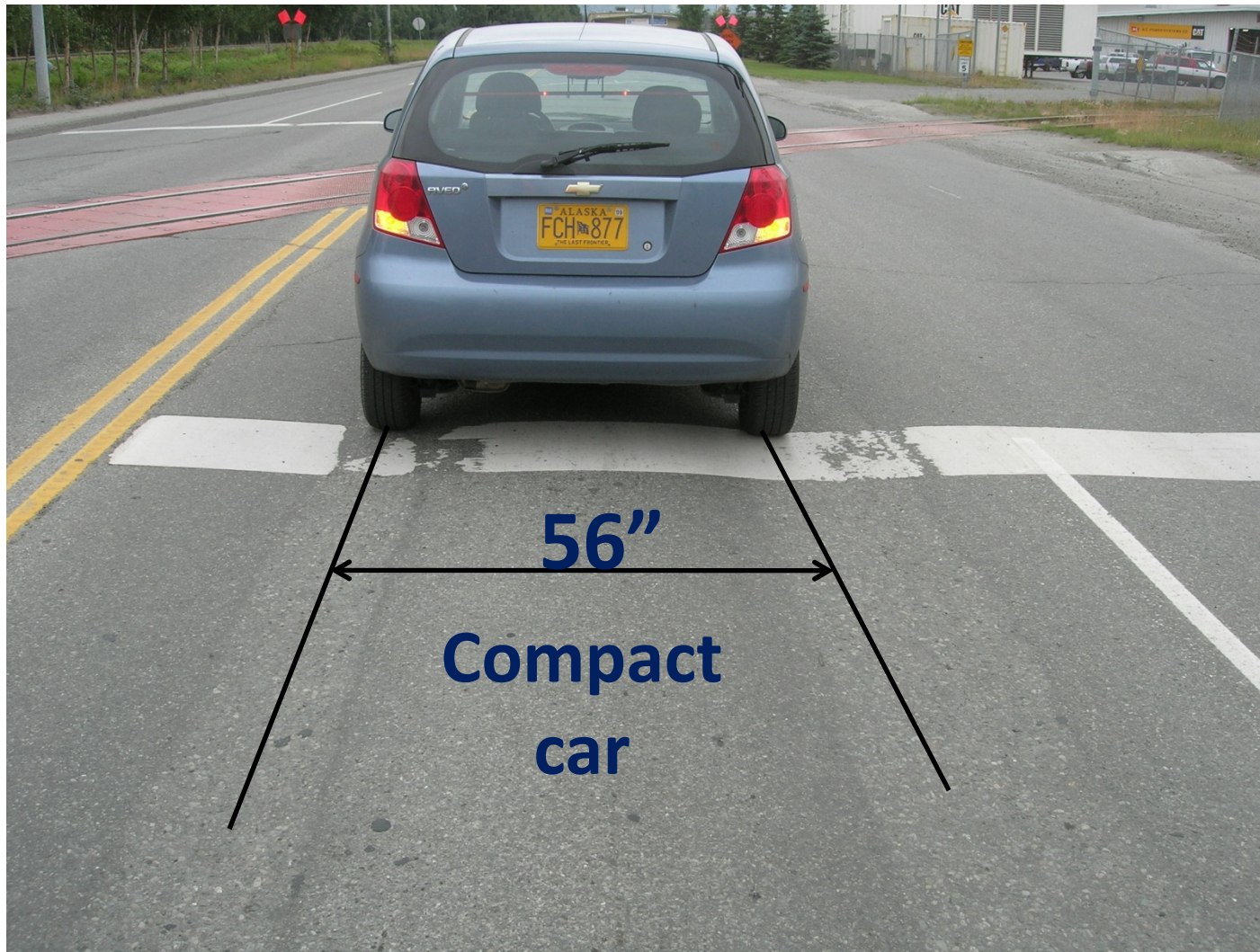
Examples include:

- **Glenn Highway** (Anchorage area)
- **Seward Highway** (Anchorage area)
- **Minnesota Drive** (Anchorage)
- **Egan Drive** (Juneau)

Rutting Evidence caused by Studded Tire

Ruts fit wheel path of passenger vehicle

Arctic Blvd., Anchorage, August 5, 2008



Pavement Sampling

Eagle River Loop Road

13,000+ vehicles/day
July 29, 2008



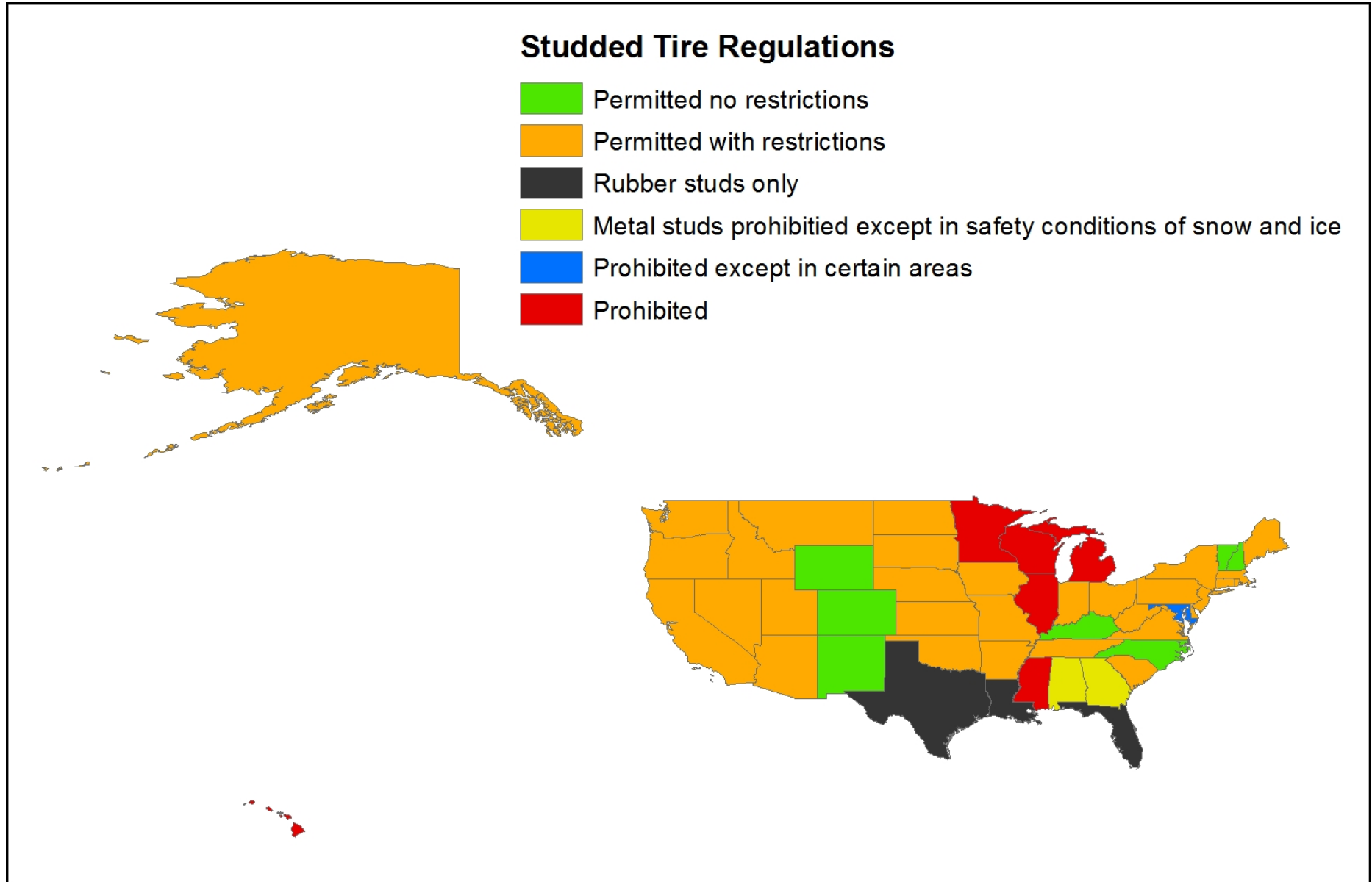
Eagle River Loop Road

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US Restrictions & Permissions



Safety and Environmental Issues

- Ruts become a **Safety Hazard** to the travelling public:
 - **Icy road:** Ice or snow in ruts causes additional loss of traction
 - **Dry road:** Difficulty steering and changing lanes
 - **Wet road:** Hydroplaning potential due to water in ruts
- **Studded tire use** on bare pavement generates dust, posing risk to human health
 - Based on this **human health risk**, Japan banned studded tires in 1990

Addressing Rut Damage

- **Rut Repair Trigger:** Rut depth of ½-inch triggers a project to address rut repair; usually a 2-year turnaround to bid-ready plans
- **Typical Fix:** Mill-and-Fill in travel lanes
- **Hard Aggregate Policy:** Stipulates the use of hard aggregate in the asphalt mix when the traffic volume exceeds 5,000 vehicles per lane in areas prone to stud use
- **Potential fixes, i.e., *Microsurfacing*,** a mix of aggregate, polymerized asphalt, and water that is used to fill the ruts using special paving equipment. Road is open to traffic in ~2 hours.

Winter Driving

- **Automobile Technology Improvements**
 - All-wheel drive
 - ABS braking
- **Tire Technology Improvements**
 - Tire composition and tread
 - Studless tires, e.g., X-Ice[®], Blizzak[™]
 - Better all-season tires
- **Limited range of conditions in which studded tires outperform alternatives**



Thank you

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Transportation is an *economic driver*

- Preserve, operate, and modernize existing infrastructure
- Provide transportation services
- Federally funded capital improvement projects

Impacts *daily quality of life*

- Safety
- Mobility
- Connectivity

