





**Alaska Department of
Transportation & Public Facilities**

Weigh-in-Motion (WIM) Program

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Learning Outcomes

- What is Weigh-in-Motion ?
- The Alaska WIM program
- What its used for
- Available WIM resources

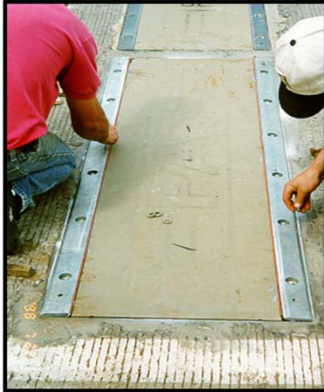


What is Weigh in Motion?

- Weigh in motion (WIM) systems are designed to capture and record weights as vehicles drive over a measurement site. This makes the weighing process more efficient, and, in some applications can allow for trucks under the weight limit to bypass static scales or inspection.

WIM Technology

- Strain gauge based dynamic weighing system (measures bending)

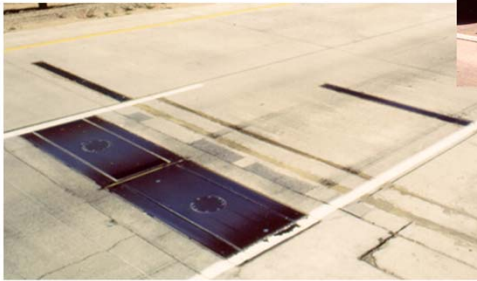


Bending Plate WIM



WIM Technology

Single Load Cell WIM Scales



Typical Accuracy

	Single Load Cell WIM	Bending Plate WIM
Low Speed	1-2%	2-3%
Medium Speed	3-5%	4-6%
High Speed	4-6%	5-8%

1 σ Confidence



WIM in Alaska



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Alaska WIM Sites

Anchorage Area:

- Minnesota Drive
- Tudor Road
- Seward Highway at 76th Avenue Ramp
- Ocean Dock Road (Port of Anchorage)
- Glenn Highway , Milepost 9*

Other Areas:

- Glenn Highway, Milepost 53 (Palmer)
- Steese Highway, Milepost 10 (Fox)
- Alaska Highway, Milepost 1310 (Tok)
- Sterling Highway (Soldotna)

* At weigh station



WIM in Alaska

A WIM Station provides the following data:

- vehicle gross weight*
- vehicle weight by axle*
- vehicle speed by lane and direction
- vehicle length*
- vehicle classification*
- vehicle volume
- vehicle speed
- time stamp
- overweight by vehicle classification or axle
- location by lane and direction

* data also collected at traditional weigh stations.





What is WIM Used for ?

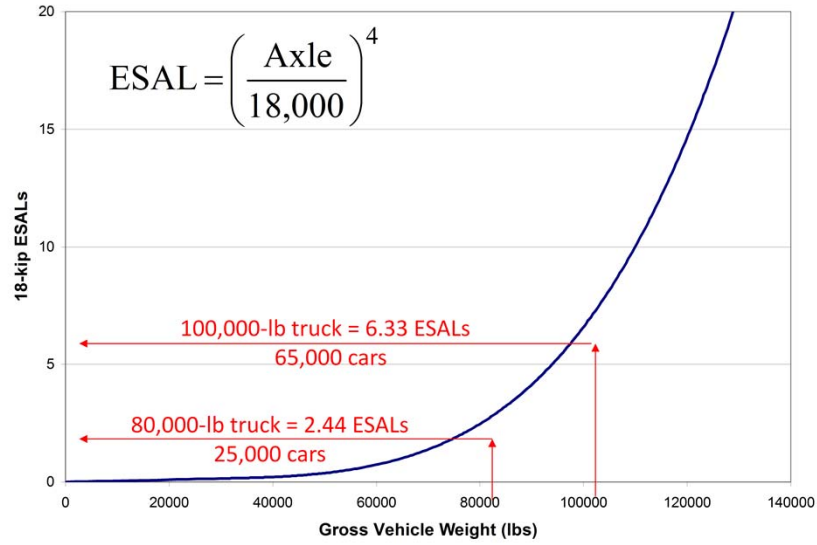
- Pavement design, monitoring, and research
- Bridge design, monitoring, and research
- Size and weight enforcement
- Planning
- Legislation and regulation

Pavement Design & Maintenance



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Pavement Design & Maintenance



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Bridge Design & Loading



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Enforcement

Weigh-In-Motion systems are integrated with other technology and used to keep industry moving



Secondary weight enforcement by the DOT&PF Division of Measurement Standards & Commercial Vehicle Enforcement (MS&CVE)

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Real Time Display via Internet

Virtual Weigh Station - Display - Windows Internet Explorer




http://192.75.165.90:8080/#display

File Edit View Favorites Tools Help

Virtual Weigh Station - Display

Summary Display VWS

Search Results

Vehicle	Class	Axle	Length (cm)	Speed (kph)	GVW (kg)	Max GVW (kg)	Time
	9	5	2,336	101	37,031	36,288	2011-11-02 11:31:12 AM
Max GVW (%) 102 License Plate Number 120140 License Plate Jurisdiction -- License Plate Confidence 90 AVI 291EDCBA 124 1138 136 620 8.3 8.0 7.7 7.6 5.5 16.2 15.3 ⚠️ overweight, over GVW							
	13	7	2,301	80	43,813	36,288	2011-11-02 11:30:57 AM
Max GVW (%) 121 License Plate Number P592KB License Plate Jurisdiction -- License Plate Confidence 97 128 130 880 134 134 596 5.7 5.7 5.8 6.1 6.1 6.2 8.3 17.2 18.4 ⚠️ overweight, over GVW							
	9	5	2,079	95	32,251	36,288	2011-11-02 11:30:42 AM
Max GVW (%) 89 License Plate Number C42711 License Plate Jurisdiction -- License Plate Confidence 93 132 974 128 608 5.2 5.1 7.9 8.1 6.1 10.3 ⚠️ overweight							

Done

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Virtual Weigh Station



Roadside Screening

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Planning

- To calculate Average Annual Daily Traffic (AADT) volumes
- to meet federal reporting requirements (Travel Monitoring, HPMS, Performance Management Initiatives)
- to upload data into Federal Highway Administration (FHWA) Travel Monitoring Analysis Software (TMAS)
- Data will be available in the State's Traffic Monitoring System Alaska Traffic Server
- Travel Demand Modeling
- Freight Planning

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Weigh- in-Motion Data Resources

- Alaska DOT

http://www.dot.alaska.gov/stwdplng/transdata/traffic_WIM.shtml

- FHWA

VTRIS :<http://www.fhwa.dot.gov/ohim/ohimvtis.cfm>

Traffic Monitoring Guide:

<http://www.fhwa.dot.gov/policyinformation/tmguide>



Questions?



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