

Implement of Husbandry Impacts to Highway Pavements



History

- 2004 – Implements of Husbandry Committee formed by Minnesota County Engineers Association to address concerns with IOH weights
- 2005-2007 – Stakeholder meetings to pursue legislative changes
- 2008 – Successfully proposed legislation to address IOH weights on bridges while agreeing to further research of IOH weight impact on pavements
- 2008-2012 – MnROAD Effects of IOH on Pavement Performance Study conducted
- 2014-2016 – Local Road Research Board Research Implementation Project
- 2017 – Direction by MCEA Board of Directors to pursue legislation for maximum IOH axle and gross weights

Current Statutes

- Minnesota Statutes 169.80 through 169.891 contain Minnesota's laws regulating the size and weight of vehicles on public highways.
- M.S. 169.801, enacted in 1993, exempts implements of husbandry from size and weight laws contained in M.S. 169.80 to 169.88, restricting IOH weights to 500 pounds per inch of tire width.

Current Statutes

- 2008 Legislation

- After December 31, 2009, a person operating or towing an implement of husbandry on a bridge must comply with the gross weight limitations provided in section [169.824](#) (Gross Weight Schedule).
- ...a person operating or towing an implement of husbandry must comply with a sign that limits the maximum weight allowed on a bridge.

Minnesota County Engineers Association

Legislative Platform

- MCEA supports the establishment of maximum axle weights and gross weights for implements of husbandry.
- MCEA supports authority for implements of husbandry to be weighed by law enforcement officials, and civil penalties applied for excess weight.
- MCEA supports the elimination of the implements of husbandry liability exemption for damage caused by unlawful operation.

Specific Exemptions of Concern

- M.S. 169.824 establishes maximum axle and gross weights for highway operation
- M.S. 169.85 and 169.871 authorizes weighing of IOH and issuance of a civil penalty on owners of vehicles that are overweight.
- M.S. 169.87 establishes spring weight restrictions
- M.S. 169.88 imposes liability on owners of vehicles that unlawfully damage highways and highway structures.

Single-Axle Grain Carts



- Available up to 1200 bushel capacity
- Killbros 1175
 - 24.5” tire width
 - 750 bushel capacity
 - 49,810 pound gross weight (loaded)
 - 45,990 pound axle load
 - 938 pound per inch of tire width

Single-Axle Grain Carts



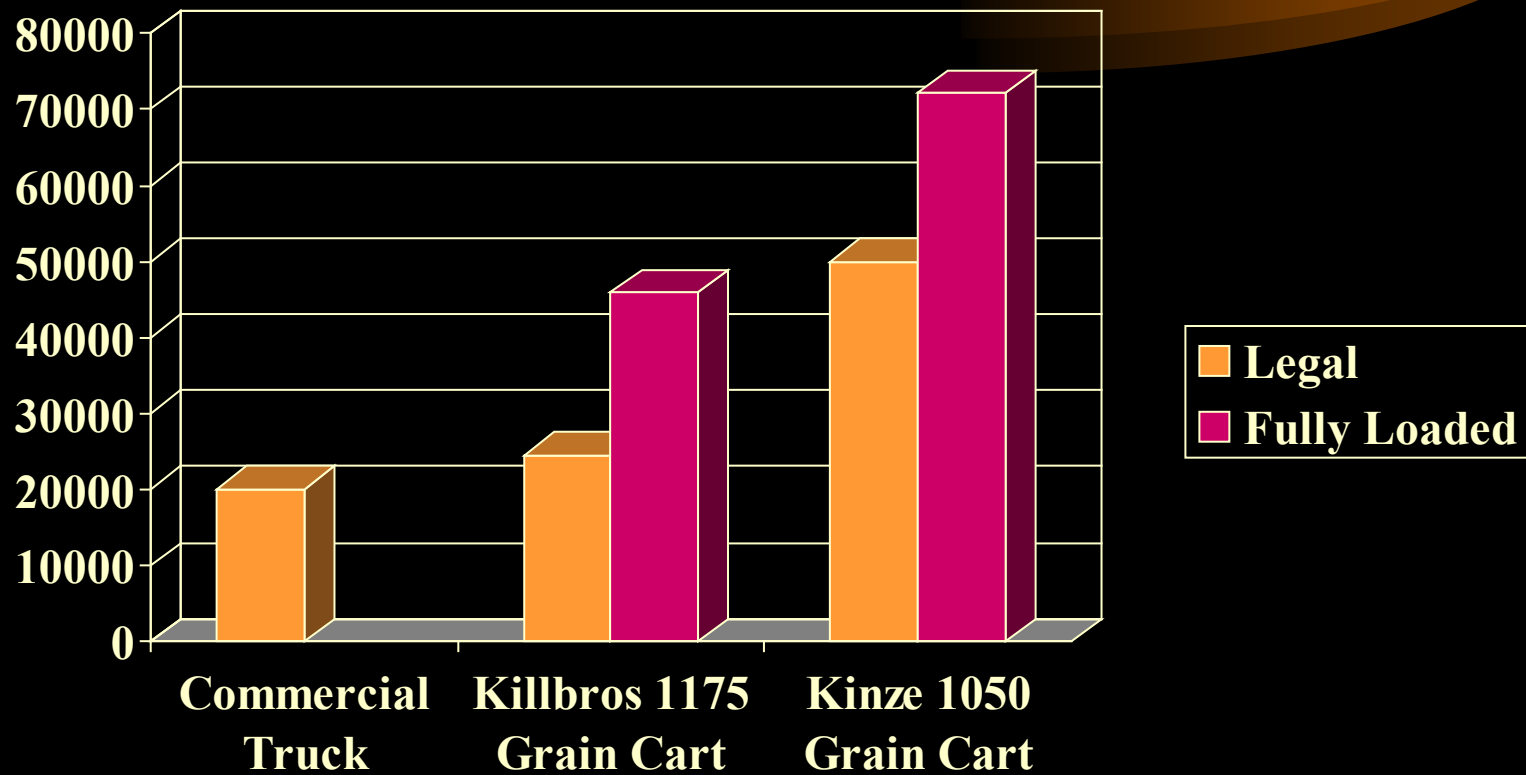
- Kinze 1050
 - 50” tire width
 - 1,050 bushel capacity
 - 77,261 pound gross weight (loaded)
 - 72,121 pound axle load
 - 721 actual pound per inch of tire width

Tandem-Axle Manure Tankers

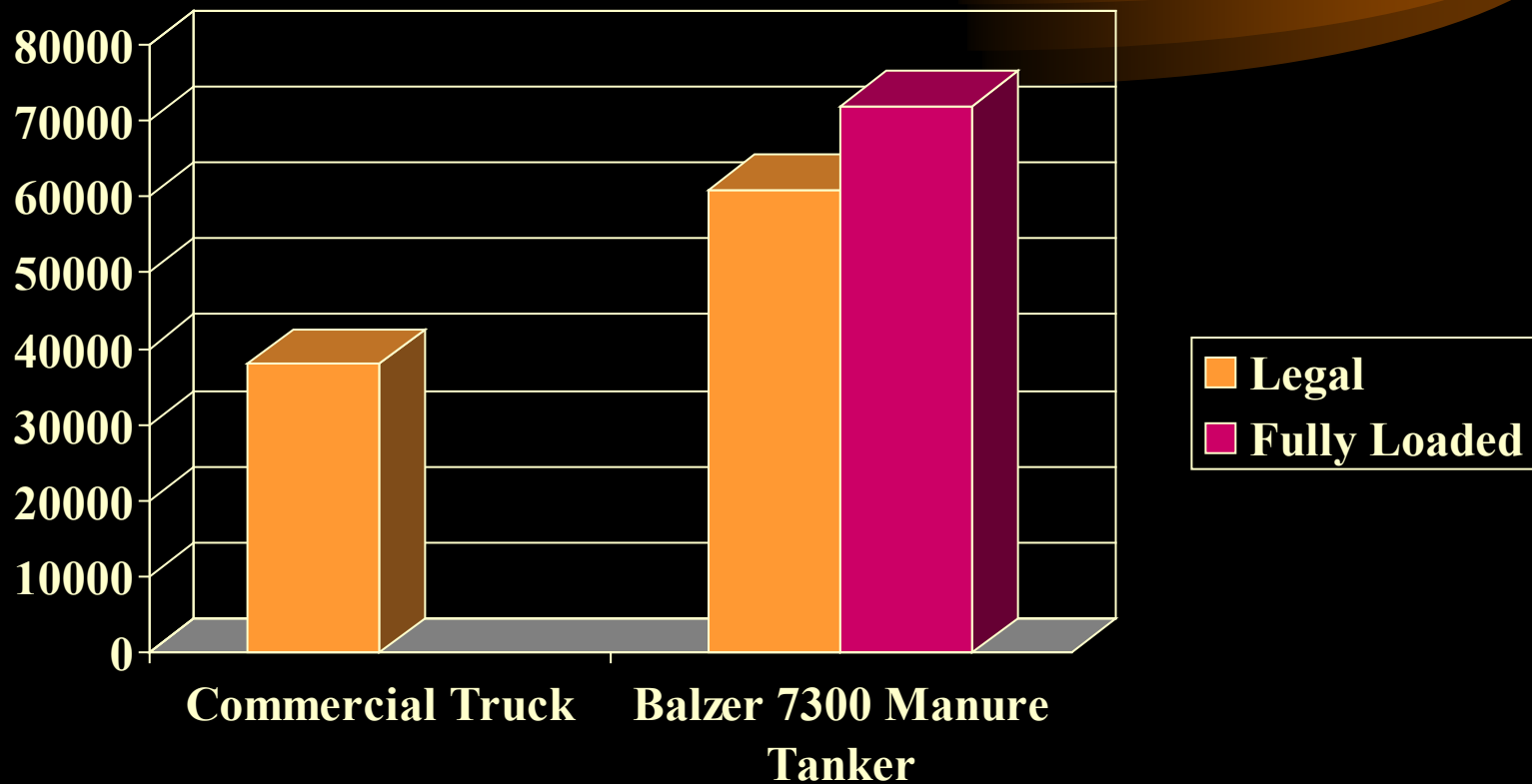


- Available up to 7,500 gallons
- Balzer 7300 Low Pro
 - 30.5” tire width
 - 7,300 gallons
 - 80,700 pound gross weight (loaded)
 - 36,000 pound axle load
 - 590 pound per inch of tire width

Single-Axle Weight Comparisons



Tandem-Axle Weight Comparison

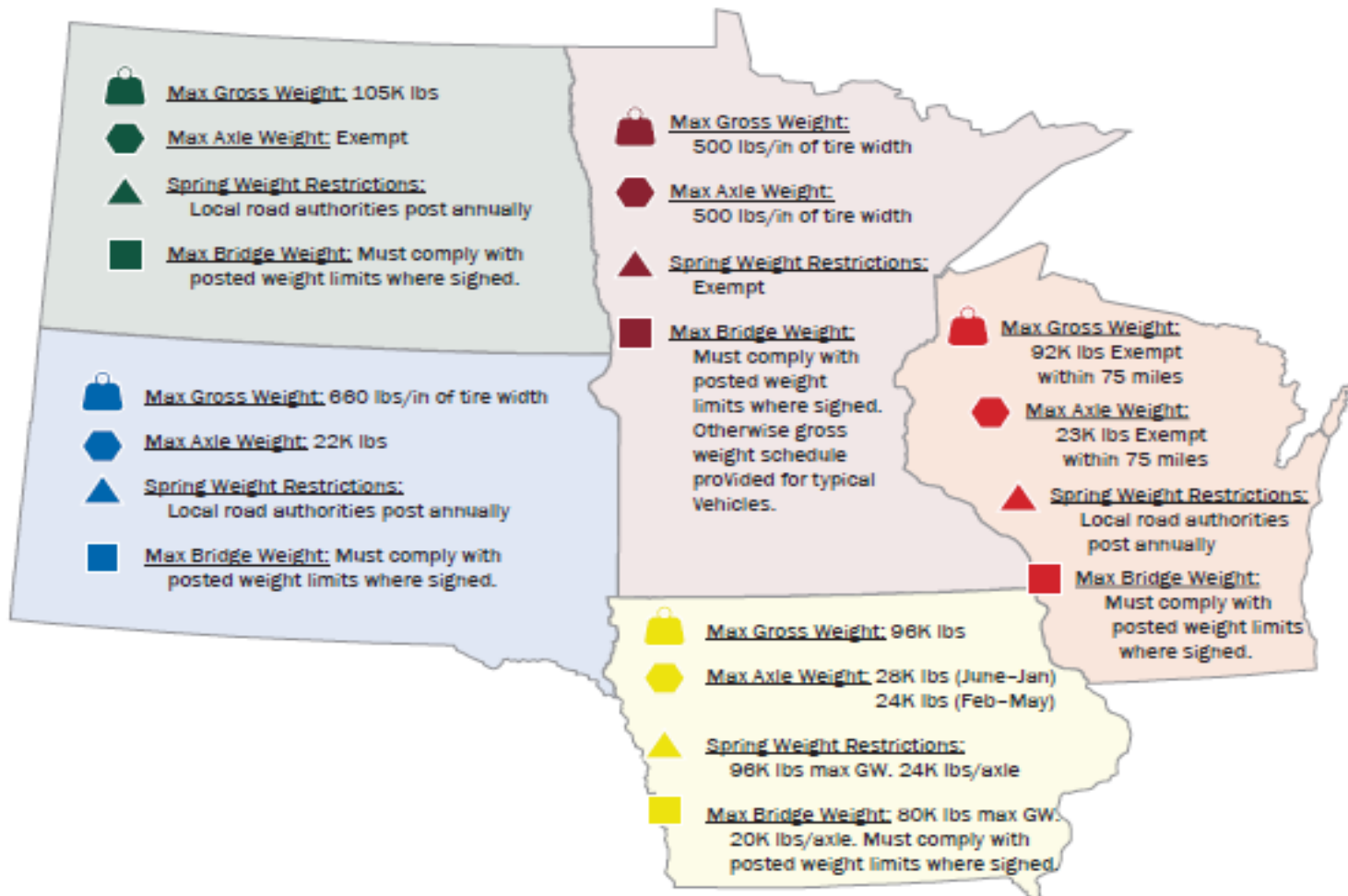


MnROAD Effects of IOH on Pavement Performance Study

- Conclusions:
 - Pavement was significantly impacted by IOH
 - Pavement response is governed by axle weight , not gross weight
 - Fully loaded IOH should not be allowed to be on pavement as they cause significant damage
 - Additional increase in pavement damage occurs during certain conditions
 - Saturated Soil Conditions
 - High asphalt temperature

Regional Allowable IOH Weights

Comparison of Maximum IOH Allowable Weights By Neighbor States



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- Next Steps
 - Questions?