Using Weigh-In-Motion (WIM) Systems
for Screening Prior to Weight Enforcement

Weigh-In-Motion of WIM systems are only about 90% accurate. This is due to the accuracy of the sensors, varying temperature and weather conditions (pavement frozen or thawed), the smoothness of the pavement, the suspension on the vehicles, when the system was last calibrated, etc. For the most efficient use of your time, WIM systems should just be used for screening for selection of vehicles that should be weighed with static scales.

Attached are a couple sheets showing the vehicle class systems. One shows photos of actual vehicles and the other shows drawings of vehicles and axles and shows the variable options within some of the classes. For classifying vehicles, MnDOT uses 15 classes. Thirteen are shown in the attached sheets. A Class 14 is a vehicle that doesn't fit into any of the other categories and a Class 15 is an error. Class 15's can occur due to the vehicle passing as they cross the WIM. A Class 15 can also occur if the vehicle's right wheels track out onto the shoulder or onto the other lane. Some truckers have used this if they know there is a WIM and it is being used for enforcement. The WIM system just shows an error and the overweight truck just keeps going.

With the systems being about 90% accurate, for Class 9's and 10's that have a legal weight limit of 80,000 pounds this means they should not be pulled over unless the WIM indicates that they weigh more than 88,000 pounds. For Class 6's that have a legal weight limit of 54,000 pounds this means they should not be pulled over unless they weigh more than 59,400 pounds.

The WIM system also has several warnings that indicate if the system is operating correctly and the vehicle is overweight and should be pulled over. The following table lists some of the warnings and their meanings.

WARNING	MEANING AND/OR POSSIBLE CAUSE	STATUS
OverGVW	GVW of vehicle exceeds compliance limit for its class	Good Weight
OverWt	GVW or one or more axle weights exceed compliance limit for this vehicle's class	Good Weight
Significant speed change	A drastic speed change has been detected while the vehicle was being measured. Axle spacings may be inaccurate.	**ERROR!**
Unequal axle count on sensors	All axle sensors in the lane did not detect the same number of axles, but the vehicle's measurements can still be determined. Possible problem with one of the WIM sensors.	**ERROR!**
Significant weight difference	A significant difference has been detected between the weights measured by the left and right scales. Vehicle may have an unacceptable unbalanced load, or one of the WIM sensors may have been partly missed (wheels in the other lane or on the shoulder) or one of the WIM sensors may be out of calibration.	**ERROR!**
Tailgating	Vehicle trigger the upstream loop before the vehicle ahead of it had passed completely over the downstream loop. No effect on measurements, but may indicate traffic congestion or unsafe driving.	**ERROR!**
Upstream loop only or Downstream loop only	Vehicle not completely over the WIM system, could be passing.	**ERROR!**

If any of the Error warnings occur don't use the WIM system as a basis for pulling them over.