

Traffic Monitoring Guide

Appendix C. VEHICLE TYPES

Motorcycles – All two or three-wheeled motorized vehicles. Typical vehicles in this category have saddle type seats and are steered by handlebars rather than steering wheels. This category includes motorcycles, motor scooters, mopeds, motor-powered bicycles, and three-wheel motorcycles.

Passenger Cars – All sedans, coupes, and station wagons manufactured primarily for the purpose of carrying passengers and including those passenger cars pulling recreational or other light trailers.

Other Two-Axle, Four-Tire Single Unit Vehicles – All two-axle, four-tire, vehicles, other than passenger cars. Included in this classification are pickups, panels, vans, and other vehicles such as campers, motor homes, ambulances, hearses, carryalls, and minibuses. Other two-axle, four-tire single-unit vehicles pulling recreational or other light trailers are included in this classification. Because automatic vehicle classifiers have difficulty distinguishing class 3 from class 2, these two classes may be combined into class 2.

Buses – All vehicles manufactured as traditional passenger-carrying buses with two axles and six tires or three or more axles. This category includes only traditional buses (including school buses) functioning as passenger-carrying vehicles. Modified buses should be considered to be a truck and should be appropriately classified.

In reporting information on trucks, the following criteria should be used:

- Truck tractor units traveling without a trailer will be considered single-unit trucks;
- A truck tractor unit pulling other such units in a saddle mount configuration will be considered one single-unit truck and will be defined only by the axles on the pulling unit;
- Vehicles are defined by the number of axles in contact with the road. Therefore, floating axles are counted only when in the down position; and
- The term “trailer” includes both semi- and full trailers.

Two-Axle, Six-Tire, Single-Unit Trucks – All vehicles on a single frame including trucks, camping and recreational vehicles, motor homes, etc., with two axles and dual rear wheels.

Three-Axle Single-Unit Trucks – All vehicles on a single frame including trucks, camping and recreational vehicles, motor homes, etc., with three axles.

Four or More Axle Single-Unit Trucks – All trucks on a single frame with four or more axles.

Four or Fewer Axle Single-Trailer Trucks – All vehicles with four or fewer axles consisting of two units, one of which is a tractor or straight truck power unit.

Five-Axle Single-Trailer Trucks – All five-axle vehicles consisting of two units, one of which is a tractor or straight truck power unit.

Six or More Axle Single-Trailer Trucks – All vehicles with six or more axles consisting of two units, one of which is a tractor or straight truck power unit.



































Five or Fewer Axle Multi-Trailer Trucks – All vehicles with five or fewer axles consisting of three or more units, one of which is a tractor or straight truck power unit.

Six-Axle Multi-Trailer Trucks – All six-axle vehicles consisting of three or more units, one of which is a tractor or straight truck power unit.

Seven or More Axle Multi-Trailer Trucks – All vehicles with seven or more axles consisting of three or more units, one of which is a tractor or straight truck power unit.

Figure C-1 lists the 13 vehicle category classifications used by FHWA.

FIGURE C-1 FHWA 13 VEHICLE CATEGORY CLASSIFICATION

Class 1 Motorcycles		Class 7 Four or more axle, single unit	
Class 2 Passenger cars		Class 8 Four or less axle, single trailer	
			
			
			
Class 3 Four tire, single unit		Class 9 5-Axle tractor semitrailer	
			
			
Class 4 Buses		Class 10 Six or more axle, single trailer	
		Class 11 Five or less axle, multi trailer	
			
Class 5 Two axle, six tire, single unit		Class 12 Six axle, multi-trailer	
		Class 13 Seven or more axle, multi-trailer	
			
Class 6 Three axle, single unit			
			
			

Source: Federal Highway Administration

Certain truck configurations utilize axles that can be lifted when the vehicle is empty or lightly loaded. The position of these axles — sometimes called lift axles, drop axles, or tag axles — affects the classification category into which the vehicle falls. To maintain consistency between visual and axle-based counts, the *TMG* recommends that only axles that are in the dropped position be considered when classifying the vehicle. While this promotes consistency, it may induce difficulty when interpreting summary classification statistics at certain locations. For example, a site may exhibit directional differences in vehicle classification even though the same trucks may be travelling one direction loaded (with axles down) and the other direction empty (with axles lifted).

VEHICLE CLASS SCHEMES

FHWA 13 CLASS SCHEME

NCDOT 4 CLASS SCHEME

Class 1 – Motorcycles	PV
Class 2 – Passenger Cars	
Class 3 – 2 Axle 4 Tire Vehicles (Pickups, SUVs, Vans)	
Class 4 – Buses	DUALS
Class 5 – 2 Axle SU	
Class 6 – 3 Axle SU	
Class 7 – 4 or More Axle SU	
Class 8 – 4 Axle TTST with a Single Trailer	TTST
Class 9 – 5 Axle TTST with a Single Trailer	
Class 10 – 6 or More Axle TTST with a Single Trailer	
Class 11 – 5 Axle TTST with Two Trailers	TWINS
Class 12 – 6 Axle TTST with Two Trailers	
Class 13 – 7 or More Axle TTST with Two Trailers	

PV - Passenger Vehicles

SU - Single Unit Trucks

TTST - Truck, Tractor with Semi Trailer