

Vehicle and Truck Classification

The purpose of this appendix is to document the vehicle classification for the project. The vehicle classification used by FHWA, IDOT and the EO-WB project are described below.

FHWA Vehicle Classification

FHWA classifies vehicles into the following 13 classifications:

1. **Motorcycles** (Optional) – 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. This vehicle type may be reported at the option of the State.
2. **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.
3. **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.
4. **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.

Note: 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 another 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.
 - The term “trailer” includes both semi- and full trailers.
5. **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.

6. **Three-Axle Single-Unit Trucks** – All vehicles on a single frame including trucks, camping and recreational vehicles, motor homes, etc., with three axles.
7. **Four or More Axle Single-Unit Trucks** – All trucks on a single frame with four or more axles.
8. **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.
9. **Five-Axle Single-Trailer Trucks** – All five-axle vehicles consisting of two units, one of which is a tractor or straight truck power unit.
10. **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.
11. **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.
12. **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.
13. **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.

IDOT Vehicle Classification

IDOT classifies the vehicles by three classes – passenger vehicles/cars (PC), single unit trucks (SU), and multiple unit trucks (MU) – and very long tandem trucks (greater than 100 feet in length). The FHWA vehicle classification scheme is attached. The types of vehicles included in each field class are as follows:

1. **PCs** – Classes 1, 2 and 3 (includes motorcycles) described in the FHWA Vehicle Classification,
2. **SUs** – Classes 4 to 7 (includes buses) described in the FHWA Vehicle Classification, and
3. **MUs** – Classes 8 to 13 described in the FHWA Vehicle Classification.

CMAQ Vehicle Classification

Four classifications of trucks are included in CMAQ's regional travel demand model.

1. **B-plate** – Gross weight up to 8,000 pounds (including vehicle and maximum load). These are commonly vans, pickups and two-axle small trucks.
2. **Light** – Gross weight up to 8,001 to 28,000 pounds. These are mostly step vans, cargo trucks and panel trucks.
3. **Medium** – Gross weight up to 28,001 to 64,000 pounds. These include straight trucks with three axles, buses and some articulated vehicles.
4. **Heavy** – Gross weight over 64,000 pounds. These include mostly articulated vehicles and some straight trucks such as concrete mixers.

Field Vehicle Counts

The field counts were classified as following:

1. **Passenger Vehicles/Cars (PC)** – Classes 1, 2, and 3 (includes motorcycles), described in the FHWA Vehicle Classification
2. **Single Unit Trucks (SU)** – Classes 4 to 7 (includes buses), described in the FHWA Vehicle Classification
3. **Multiple Unit Trucks (MU)** – Classes 8 to 13, described in the FHWA Vehicle Classification
4. **Multiple unit trucks (MU)** that are more than 100 feet long.

EO-WB Vehicle Classification

The vehicle classification used by CMAP, FHWA, EO-WB Field Counts and the TransCAD model are shown in the table below.

TABLE D-1			
EO-WB Vehicle Classification			
<i>CMAP</i>			
CMAP	FHWA Class^a	EO-WB Field Counts	TransCAD Model
Passenger vehicles/ cars (PC)	PC—1, and 2	Passenger vehicles (PC)	Passenger vehicles (PC)
B-plate	PC-3	Treated as PC	Treated as PC
Light	Light and Medium Trucks: 4 to 9	Single unit (SU) trucks	Buses and light vehicles
Medium		Multiple unit (MU) trucks	Medium Vehicles
Heavy	Heavy Trucks: 10 to 13	Multiple unit trucks, more than 100 ft	Heavy vehicles

^a Vehicle classification 1 through 13 are described above and listed in the exhibit on the following page.

FHWA VEHICLE CLASSIFICATION


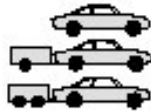




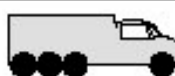
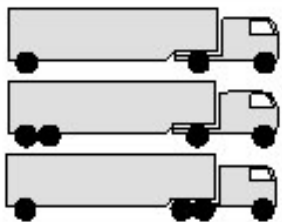
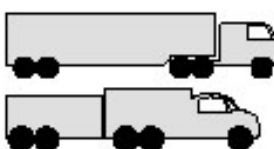



CLASS GROUP	DESCRIPTION	NO. OF AXLES	
1		2	
2		2 3 4	
3		2, 3, & 4	
4		2 & 3	
5		2	
6		3	
7		4	
HEAVY TRUCKS	8		3 4 4
	9		5 5
	10		6 & 7
	11		5
	12		6
	13	ANY 7 OR MORE AXLE	7 or more
14	NOT USED		
15	UNKNOWN VEHICLE TYPE		

Exhibit D-1