

Exercise Description:

This exercise is designed to help MOVES users work through the challenge of having some but maybe not all MOVES inputs for a MOVES run. The exercise goal is to develop a Carbon Monoxide (CO) inventory for a January weekday in Ann Arbor, Michigan (Washtenaw County) for 2015. On-Your-Own Class Exercise data files are located in the Course Files folder. Review this page carefully before starting the exercise.

Available data:

The metropolitan planning organization (MPO) has provided several MOVES inputs. These files are located in the Course Files\On-your-own class exercise\MPO MOVES Files folder and include:

- speeddistribution.xls** – this file contains average speed distributions inputs.
- roadtypedistribution.xls** – this file contains road type distribution inputs.
- agedistribution.xls** – this file contains vehicle age distribution inputs but requires modification (see below).

Additional data is available but must be processed before it can be used as MOVES inputs. These files are located in the Course Files\On-your-own class exercise\Additional Data Files folder and include:

- temp and humidity.xls** – this file contains temperature and humidity data that must be entered into a meteorology template.
- daily VMT.xls** – the daily VMT provided is for a typical January weekday and must be entered into a HPMSVtypeDay template. Use the default HourVMTFraction.
- vehicle population.xls** – This data must be entered into a sourcetypepopulation template.

Likewise, the City of Ann Arbor plans to replace the entire diesel transit bus fleet with CNG buses in 2015. This should be reflected in both the RunSpec and the appropriate data inputs. The following inputs should be modified to reflect this technology replacement:

- agedistribution.xls** – must be modified to reflect an entirely new bus fleet.
- Fuels** – default fuels must be exported and reviewed. Transit bus fractions in the AVFT should be changed to reflect entirely CNG fuel-use.

Lastly, all combination long-haul trucks, source type 62, will be required to use Auxiliary Power Units (APUs). The following inputs should be modified to reflect this:

- Hotelling** – this input should be appropriately changed.

Helpful Hints:

Begin by creating a RunSpec with the appropriate time period, vehicle/equipment, pollutant/processes, road types, etc. Next, create an input database and populate the known inputs. As noted above, extra steps must be taken to develop some inputs including VMT, population, meteorology, age distribution, fuels, and hotelling. After running MOVES, open MySQL Workbench and calculate a total CO value for the modeled period (January weekday).