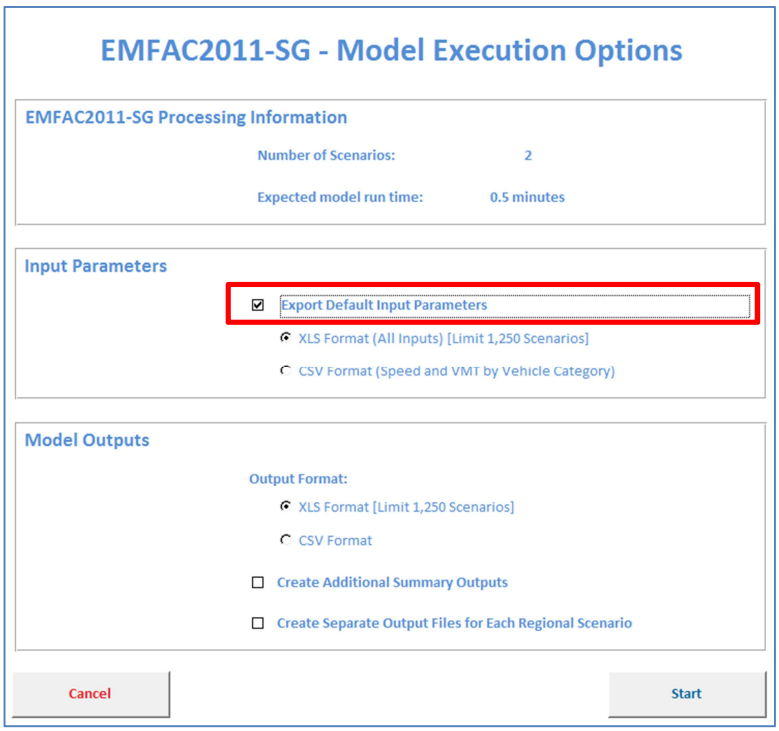
Question: The Transportation Conformity Guidance suggests that in order to model Transportation Conformity Scenarios in EMFAC, I should only modify the speed distribution for five vehicle classes (LDA, LDT1, LDT2, MDV, and MCY). How can I easily modify the speed distributions for the five vehicle categories in EMFAC2011-SG?

(Note: This guidance only discusses the procedure for editing Speed Distributions. Guidance for editing VMT data for Conformity analysis is available in the EMFAC2011-SG User's Guide)

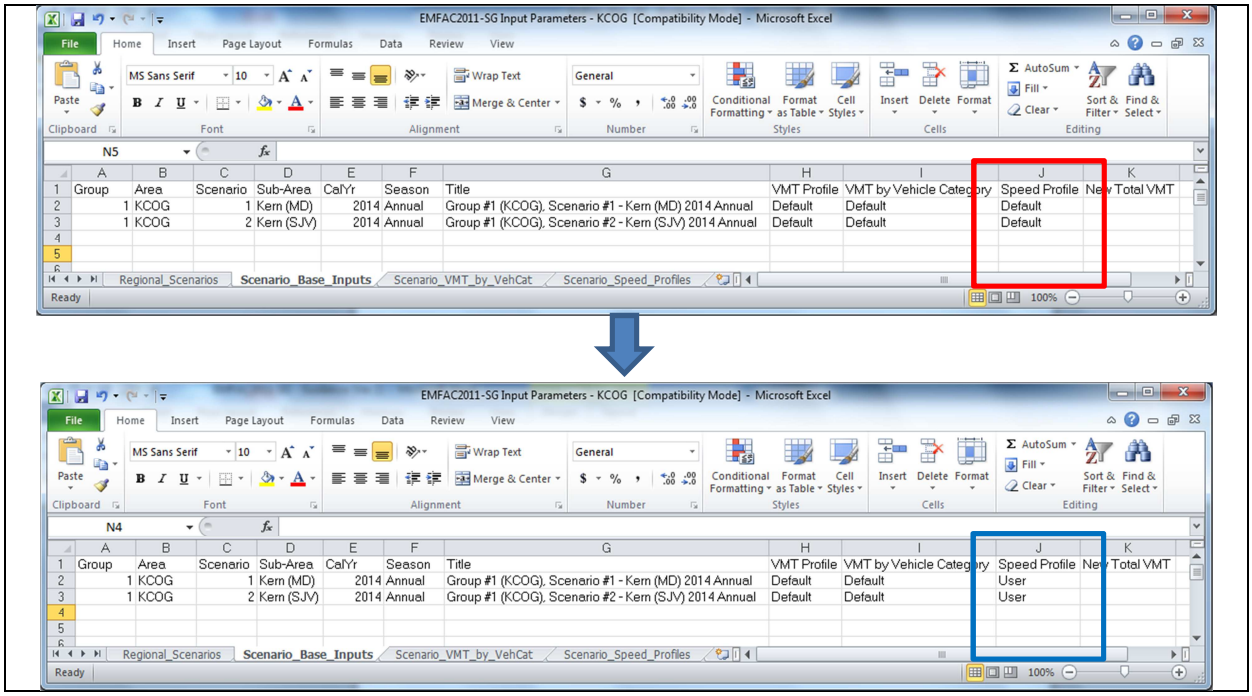
Solution: In order to alter the speed distribution in EMFAC2011-SG, the model should be run in 'User-defined' mode which requires inputting the speed distribution for all vehicle classes. In order to modify the speed profile for select vehicle classes, users should export the default speed distribution for the desired scenario, change the speeds for desired vehicle classes, and re-run the scenario. A step-by-step procedure is shown below:

1. Run EMFAC2011-SG for the desired region in "Default" mode (this step allows users to output the default input parameters for the scenario)
    a. In the "Model Execution Options" window, check the "Export Default Input Parameters" option (this will create an additional file which contains the default input parameters for future modifications)

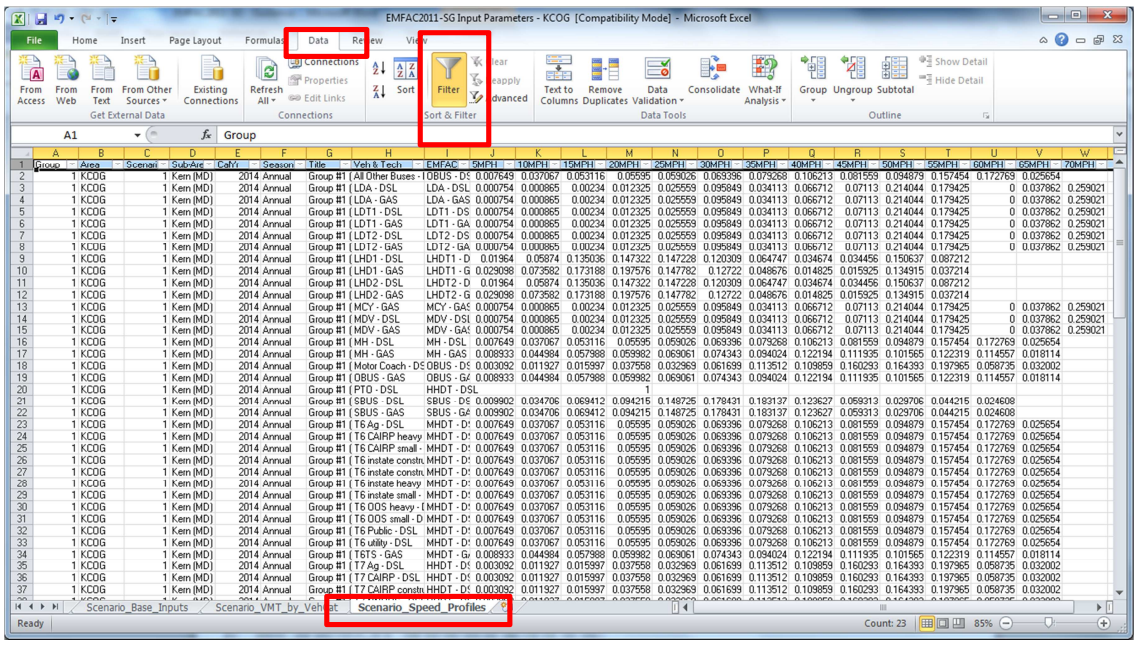


2. Once the default model execution is completed, open the corresponding "EMFAC2011-SG Input Parameters" file, and "Save As" a new file (with a different filename).

3. Open the “Scenario_Base_Inputs” worksheet, and make the following changes to all the scenarios:
    a. Change the “Speed Profile” option (Column J) from “Default” to “User”

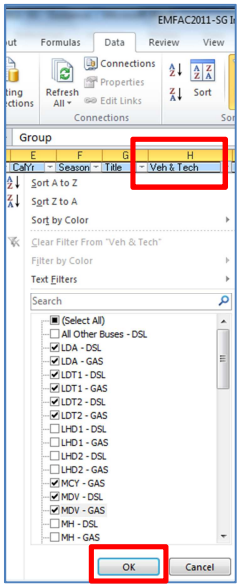


4. Open the “Scenario_Speed_Profiles” worksheet, and select the header row (Row #1)
5. Go to “Data” option, and click on the “Filter” button (Shortcut Ctrl + Shift + L)
    a. Filter button will be activated, and column headers will show drop-down buttons

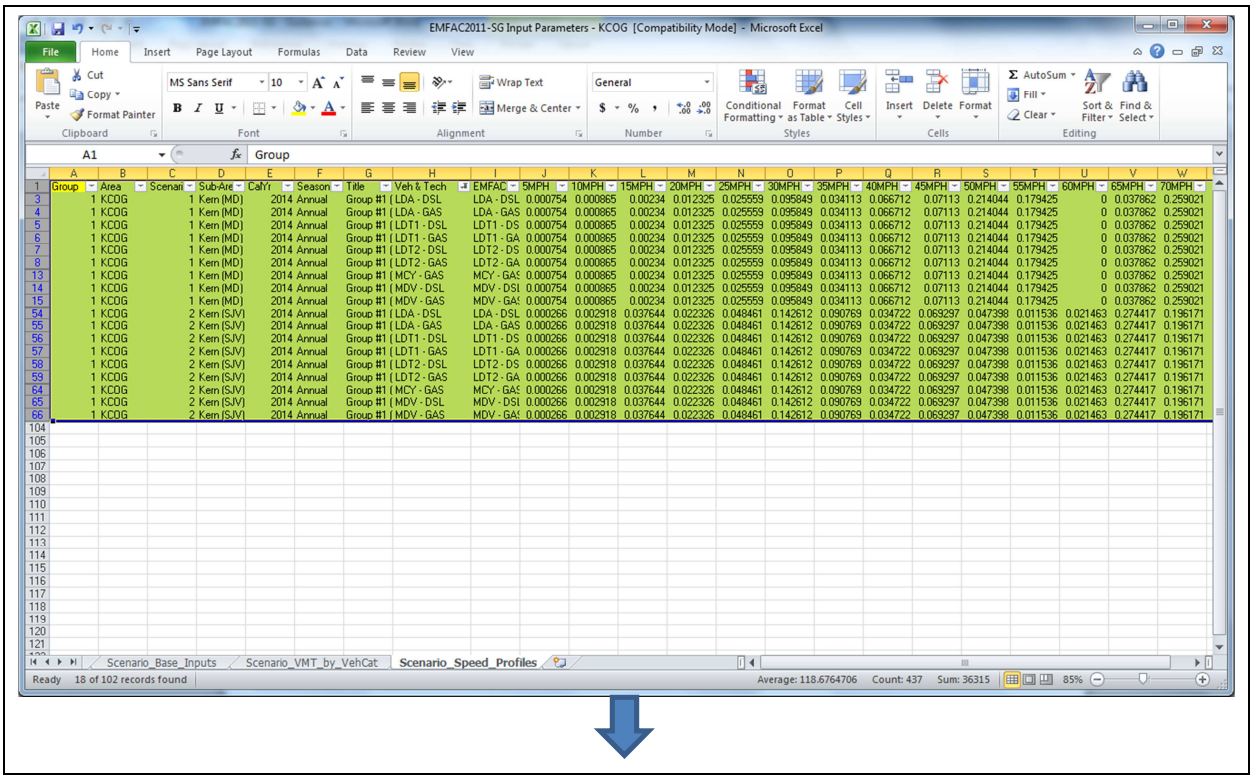


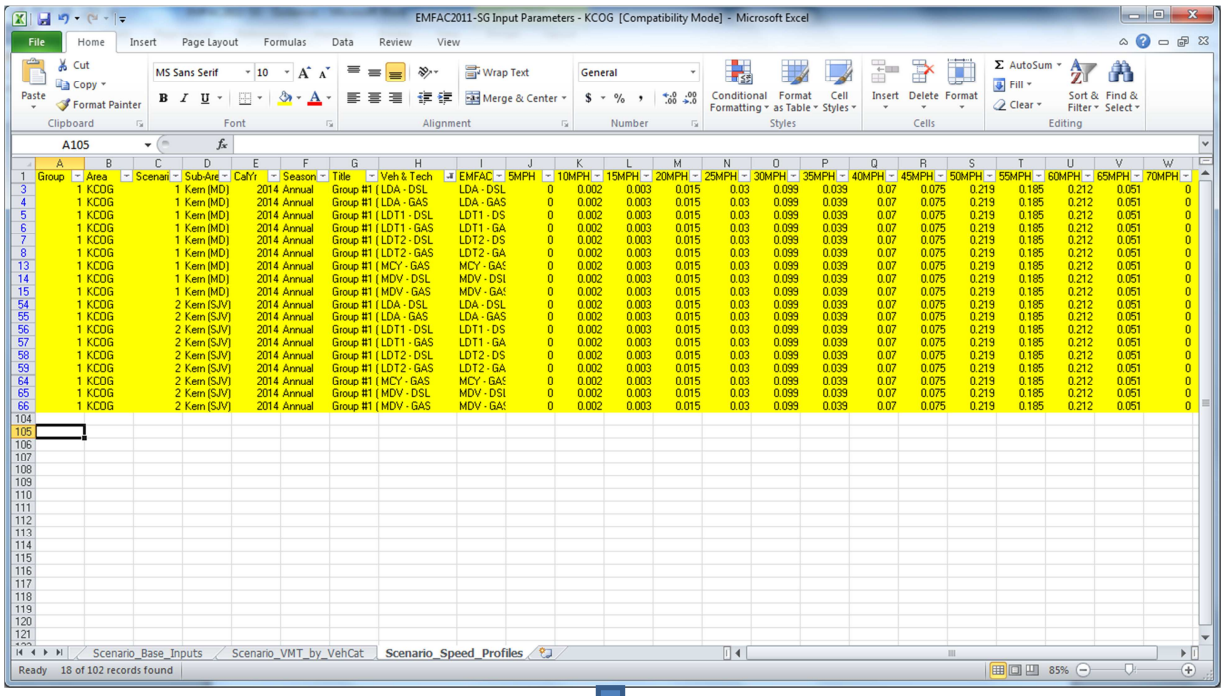
6. Use the drop down menu under “Veh & Tech” column (Column H), and check only the following nine Vehicle Categories, and Click OK:

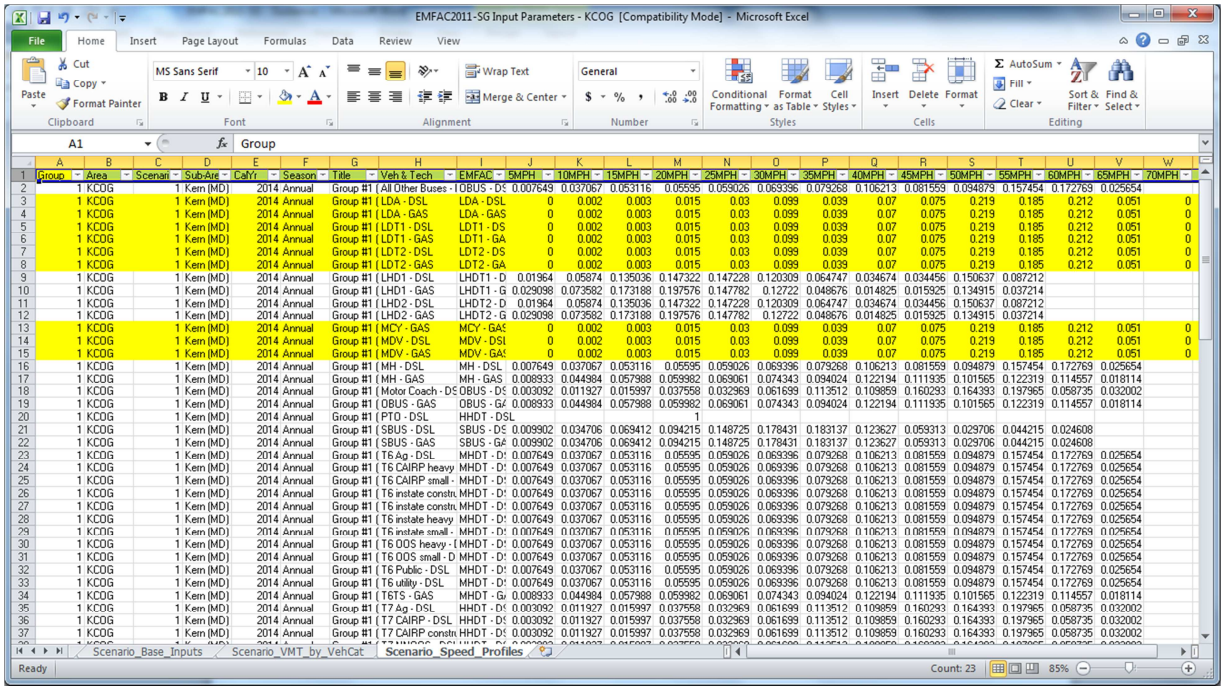
    a. LDA-DSL
    b. LDA-GAS
    c. LDT1-DSL
    d. LDT1-GAS
    e. LDT2-DSL
    f. LDT2-GAS
    g. MCY-GAS
    h. MDV-DSL
    i. MDV-GAS



7. For reference, select the displayed rows, and highlight them
8. Edit the Speed Profiles for all the highlighted rows to the desired values (keep the filtering on)







**Sample end product - Without filtering (Shortcut Ctrl + Shift + L)*

9. Save the file with a new filename
10. Load this saved file in EMFAC2011-SG, and run the model [follow the instructions for running 'External Files' detailed in EMFAC2011-SG User's Guide (Page 40)]

Note:

When users load a 'User-defined' profiles in EMFAC2011-SG Module, the model will automatically initiate the "Speed Data Verification" procedure to verify if the speed distributions for each vehicle class adds up to 100%.

- If the speed profile for each vehicle category adds up to 100%, the 'Continue' button will be enabled. Click on the 'Continue' button to proceed
- If the speed profile for any vehicle category does not add up to 100%, the module will identify the vehicle categories. The 'Continue' button will be disabled and user will be required to 'Reset' and Reload the speed data.

In some cases, the model may have zero VMT for certain vehicle categories (suggesting that the vehicle categories are not present in the region). In those cases, the speed profile for the vehicles will also be empty. Since the SG module checks the speed profiles for all vehicle categories irrespective of the VMT, the vehicle categories will be flagged during the "Speed Data Verification" process, and will prohibit the model from execution. In such cases, users are recommended to arbitrarily allocate 100% of the VMT in 5 MPH speed bin for those vehicle categories only.