



CalEEMod User's Tips (Version 2013.2.2)

The following user tips have been compiled to assist the operators of CalEEMod. The tips include operational information, proper modification of the defaults, program limitations, program flexibilities, and design features to be modified.

General Guidance

1. Due to the inclusion of default values, the model can calculate emissions from the project (Reporting screen) after input from the first two screens (Project Characteristics, Land Use).
2. The program is linear. Unless the "cascade default" box is unchecked, changing data in earlier screens will trigger the software to apply the defaults related to the new data throughout the rest of the program.
3. If the "cascade default" box is unchecked, no default values will be populated in subsequent screens. Unless all the necessary input parameters required for a proper analysis are known, it is recommended the user runs the model at least once with "cascade default" box checked to allow the defaults to be populated. Then, if the user would like to change project parameters (e.g., number of dwelling units, building square footage, etc) without cascading new defaults in later screens, then uncheck the "cascade default" box when in the land use screen. Similarly, if the user wants to preserve the 'user defined' defaults already inputted (either by hand or .xls file) and run the model with different project parameters, un-check the "cascade default" box.
4. Users who want to open/review/print a report from a previously saved file, the following is the easiest protocol to retain the changes to the CalEEMod defaults that are saved in the file:
 - a. Open the file
 - b. Uncheck the "Cascade Defaults" check box in the upper right hand
 - c. Review any tab of interest in any order and/or run any of the project reports.
5. Users are encouraged to understand the defaults and provide site specific data (e.g., construction schedule, construction equipment type, results of traffic study, predicted water usage, etc.), if available, for a more accurate analysis.
6. The user must activate cells by clicking on the cell or using the tab key to activate the next cell. The next cell will not be activated by the enter key.
7. The ImportCSVtemplate.xls (found under User's Guide at www.caleemod.com) provides the necessary header row and dropdown lists of input characteristics down to row 100. If using this spreadsheet, be sure to delete any unused lines down to row 100 so the program does not take the time to process blank cells.

8. The "Remarks" box is limited to 255 characters due to the current capabilities of the software, so users are advised to be efficient in justifying the modification and, if need be, provide additional wording for reviewers (e.g., see attachment for further clarification).
9. When exiting the "Project Characteristics" screen to the "next" screen, dropdown boxes will temporarily show the first item on the dropdown lists. The model did not change the user's input selection. This is a result of the programming but the input provided by the user will not change to that first listed item that flashed before the next screen appears.

Land Use Screen

10. If identifying a "User Defined" land use, the user should be prepared to supply necessary input data because the defaults are not provided in the "User Defined" options.
11. Non-residential land uses with parking will require the user to select a parking land use subtype (parking lot, parking structure, other asphalt surfaces, or other non-asphalt surfaces). Off-gassing emissions from paving of parking lots and other asphalt surfaces are calculated for the project construction period. A parking structure or other non-asphalt surfaces are assumed to be concrete with no off-gassing.
12. The square footage of a land use is used for certain calculations such as determining the wall space to be painted (i.e., VOC emissions from architectural coatings) and volume that is heated or cooled (i.e., energy impacts). The acreage is used to determine the amount of ground to be prepared, graded, paved, etc. If the land uses are being constructed in a mixed use setting (e.g., multi-storied), the acreage should be assigned to the residential or split between non-residential land uses if no residential.

Construction Screen

13. The model requires at least one construction phase be listed to calculate project emissions. If not interested in construction emission results, the user can delete all but one phase and zero out the default number of equipment and trip lengths. *The option to output only operation will be considered in a future upgrade.*
14. If a "construction only" project is desired, the user needs to enter the following land uses at a minimum to ensure proper calculation of defaults. 1) Other Asphalt Surfaces - specify the correct acreage of asphalt for off-gassing emissions. 2) User Defined Residential and User Defined Commercial - specify the correct building square footage for architectural coating emissions. 3) Ensure the total acreage at the bottom of the land use screen is accurate as this is the basis for the default construction schedule and equipment list. *The option to output only construction will be considered in a future upgrade.*
15. If modifying the construction dates in the input excel spreadsheet be sure to use the format of 4-digit year/2-digit month/2-digit day.
16. If loading a different construction schedule (i.e., with .xls or .csv file), the model is unable to revert back to the original default schedule.

17. If loading an incorrect construction schedule (e.g., construction ends before it starts), the model will reset the construction phase dates to original defaults. The error can be fixed by changing the construction schedule in a separate input file (such as a .xls or .csv file) and then loading that new input file into the model.
18. For construction equipment calculations, the user should evaluate whether the default equipment list, including equipment types and numbers, horsepower ratings, hours of operation, and duration of phases, are appropriate. If changes are made to the equipment list, the program will not automatically compensate by changing the construction time. Nor will the program automatically revise the equipment list to reflect a revised construction time. Changes to one of these must accompany revisions of the other based on project-specific data.
19. Changing the off-road equipment in the construction screen does not automatically load the horsepower (HP) or load factor for the modified equipment type. The user needs to click the “default” button in order to load the appropriate default HP and load factor data. The user may also input non-default HP and load factor values as well but would be required to provide a justification of the new input data in the “Remarks” box at the bottom of the screen.
20. Water truck(s) used during construction were counted in the vendor trip survey that was conducted for all the phases of construction (e.g., site preparation, grading, building construction, etc.). The vehicle count factor (vehicles per unit/square foot) was based on an average of the construction projects surveyed, and vendor trips calculated for the whole construction project are listed under the Building Construction phase. However, the user may manually enter any additional vehicles (on the Construction – Trips and VMT screen) under any construction phase to highlight the inclusion in the analysis.

Operational Screens

21. Trip rates reflect the vehicle activity related to a type of land use. Default residential trip rates for condos and mid- and high-rise apartments are the same as low-rise apartments, which is the baseline scenario (suburban area) from the CAPCOA GHG mitigation measure of increased diversity of urban and suburban development (mixed use). Thus, when the user applies the mitigation measure of increased diversity, the appropriate reduction in VMT will be calculated.
22. Units of the operational vehicle emission factors (on Operational-Mobile screen, Vehicle Emissions tab) are not listed because they vary depending on the action. For example, running exhaust and evaporative running loss emissions are in grams per vehicle mile traveled (VMT) and start-up, idling, and all other evaporative emissions are in grams per trip.
23. To eliminate the emissions from a specific vehicle class category, the user can zero out the emission factors (on Operational-Mobile screen, Vehicle Emissions tab).
24. The model calculates VOC emissions from consumer products from all land uses, thus requiring a non-zero emission factor on the area/consumer projects screen. If the user does not want to calculate emissions from consumer products, the default emission factor can be changed to a very small value

(e.g., 0.1×10^{-10}) so the report will generate less than zero (or negligible) VOC emissions from consumer products.

25. The consumer products screen shows an incorrect unit of “lbs ROG/sq ft/year” but the value is in “lbs ROG/sq ft/day.” User should use caution if changing the default on this screen. *This item will be modified in a future upgrade.*
26. If reducing the VOC content of architectural coatings during operation, the model will not transfer those new values to the area mitigation screen, but will highlight the boxes in yellow to alert the user the operational VOC content limits are different. If the user does not modify the VOC content limit on the mitigation screen to reflect the changed values in the operational phase, the report will list the default value as a new value under mitigation. However, the model will not calculate a mitigated value unless the box next to the architectural coating is checked on the area mitigation screen.
27. The percentage of wastewater treatment (i.e., septic, aerobic, or lagoons) should not exceed 100 percent and the waste digestion (i.e., anaerobic digestion with cogeneration or not) should total either 100 percent or zero percent. If wastewater treatment is aerobic or lagoon, there needs to be digestion to handle the waste, so digestion should total 100 percent. If the wastewater treatment is septic, digestion could be zero percent. A reminder box is triggered if input is incorrect.

Mitigation Screens

28. Alternative fuel options (e.g., CNG, bio-diesel) are provided for each construction equipment type. It is the responsibility of the lead agency to ensure the equipment operated by the project actually uses alternative fuel.
29. CNG equipment available for mitigation is restricted to those equipment and horsepower ranges listed in Table 3.6 of Appendix D. If CNG is selected for a non-valid piece of equipment emissions for this will not be quantified. *Considering prompt to alert user of a non-valid selection.*
30. Construction equipment types from all construction phases are combined on the mitigation screen. This limits the user's ability to apply different mitigation measures to the same types of equipment. For example, if the user wishes to apply diesel particulate filter mitigation to several dozers, and apply a biodiesel fuel mitigation to several other dozers, this option is not available. However, the model will read separate mitigation from the same equipment type from an import CSV (excel spreadsheet) if modified to reflect the same equipment type and different mitigation.
31. The project setting descriptions under the Traffic mitigation have been defined in the CAPCOA Quantifying GHG Mitigation Measures document (<http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>) except Suburban is called Low Density Suburban in the model and Compact Infill is called Urban Center in the model.

Report

32. An “Unhandled Exception” error message blocks the User's ability to view the report. The error is caused by an incorrect input data. For example, a mitigation input value is outside the allowable range

of reductions (as outlined in CAPCOA's Quantifying GHG Mitigation Measures document) or the input is zero when model expects a positive integer.

33. The output report provides either peak daily emissions from summer or winter emission factors, or annual emissions. Quarterly emissions results are not provided but can be calculated by multiplying the peak daily by 90 days (i.e., one quarter of year), or dividing the annual by four (i.e., one quarter of year).
34. The output report for Vegetation identifies the CO₂e emissions reductions (or increases) in units of metric tons, not metric tons per year. To ascertain the annual amount of emissions, the user should divide the total metric tons by the anticipated life of the project.