Latest Revisions to CalEEMod (Version 2013.2.2)

Released October 2, 2013

#	Revision
1.	Modified ROG running loss equation for on-road vehicles to match emission factors. CalEEMod now calculates ROG per vehicle trip instead of per mile driven.

Recent Revisions to CalEEMod (Version 2013.2.1)

Released September 20, 2013

#	Revision
1.	Allow the report to be generated when triggering the "Water Conservation Strategy" mitigation measure.
2.	Correct the unmitigated construction PM10 fugitive dust emissions from haul trucks.
3.	Remove the error message when opening a saved project that identified no construction mitigation.
4.	Remove the year 2040 from the operational year dropdown list since there are no 2040 emission factors yet.
5.	Modify the report to list all acres of activity (e.g., graded, paved) in a single section as opposed to being split up under specific construction phases.
6.	Modify one county name under the Project Characteristics screen to more accurately reflect the appropriate air basin ("Solano – San Joaquin" to "Solano – Sacramento").
7.	Update Climate Zone options in dropdown menu (Project Characteristics screen) to reflect the latest information provided in the CEC's 2010 RASS

Action Item Checklist for Revisions to CalEEMod (Version 2013.2)

Released July 26, 2013

✓	#	Action Items	Discussion/Status
✓	1.	Incorporation of new AP-42 emission factors for paved roads and CARB's EMFAC2011	Incorporated revised EPA's AP-42 emission factors for paved roads (approved Jan. 2011), Section 13.2.1 http://www.epa.gov/ttn/chief/ap42/ch13/index.html Published in Federal Register, Vol 76, No. 24, (40 CFR Parts 51 and 93) on Feb 4, 2011 http://edocket.access.gpo.gov/2011/pdf/2011-2422.pdf
✓	2.	Incorporation of updated off-road inventory information (emission factors, load factors, HP gaps, etc.) – Tables 3.3 to 3.5 in App D	Incorporated CARB's EMFAC2011 and OFFROAD 2011 (should include updated off-road emission inventory), and TRUCK EMFACs; add N2O calculations from off-road and on-road sources http://www.arb.ca.gov/msei/offroad/offroad.htm http://www.arb.ca.gov/msei/onroad/latest_version.htm
✓	3.	Update platform from Microsoft Compact Edition 2005 to a newer version to optimize code and improve speed/model efficiency.	Done

✓	4.	Proper reloading of modified construction dates and construction equipment	Done
✓	5.	Correct emission output from energy use (from retirement community)	Off by 3 decimal places.
✓	6.	Correct solid waste emissions when choosing Gas Energy Recovery under landfill capture	Done
✓	7.	Correct daily reporting of PM10 from soil hauling (not annual)	Done
✓	8.	Update any air district specific data defaults: a. Tahoma trip lengths/percentage same as Shasta b. Sacramento Hearth/Wood stove defaults c. change county name Placer –San Joaquin to Placer – Sacramento (no change in data) d. use Placer APCD values for county name Placer – Mtn Counties (*seems to be same already*) e. SLO's unpaved road request (*5/2/12 email from SLO APCD*) f. SLO's wood cord value	e) CalEEMod defaults for SLO County changed to emulate the 2 lb/VMT emission rate. Under the "Paved Road Dust" ,"% Pave" calculates [1 – (A/B)] x 100% (A = The unpaved road distance to access project and B is average one way trip distance (SLO-13 miles). Under "Unpaved Road Dust", 9.3 for "Material Silt Content (%)", 0.1 for "Material Moisture Content (%)" and 32.4 for "Mean Vehicle Speed (mph)" Added to User's Guide, not model. f) "Wood Mass Stove" for SLO: wood burn rate = 2016.5 lbs/year (0.6545 cords/year x 3,081 lbs/cord)
✓	9.	Verify exhaust and fugitive dust emissions from on-road vehicles at construction sites are being calculated	Add a reference to the 0.1 mile/trip for on-site equipment and offsite vehicles traveling on construction site
✓	10	New water use default for industrial land uses (general, heavy, warehouses, mfg)	925 gals/1000 sq ft/day. Analysis to be included in Appendix E.
✓	11.	Ensure modified defaults are not reverted back to original defaults when importing a CSV file on another screen; option should be provided to not cascade defaults	Done
✓	12.	Construction mitigation should be defaulted with "no change"	Done
✓	13.	Report should include more input information (operational year, changed default values, equipment phases, equipment types, HP, load factors, population, % mitigation applied "on applicable activity," etc.); Repaginate report so headers are not split by page break (also, when viewing pages, the # do not match the actual PDF pages, unless under print view); consider revamping report design to allow more info on a page, etc.	Focus group recommendations (separate file); new tab under Report to provide the mitigation calculations
✓	14.	Include California Energy Commission's 2010 Residential Appliance Saturation Study (RASS) climate zone map and intensity factors	Includes natural gas fireplaces, not done in 2004 RASS http://www.energy.ca.gov/appliances/rass/
✓	15.	Changes to any wastewater treatment and digestion defaults and trigger if exceeding 100%	Prompt reminder message bubble
✓	16.	Inclusion of option to calculate emission from off-road equipment (*e.g., forklifts, loaders, cranes*) used during operation of the project	Done
✓	17.	"Import CSV" on mitigation screen works	Done

<table>
<tr><td>✓</td><td>18.</td><td>Calculate energy impact from elevators, lighting and ventilation in parking lots/structures</td><td>Focus Group recommendations (separate file included in Appendix E)</td></tr>
<tr><td>✓</td><td>19.</td><td>Add CAPCOA's mitigation numbers to the mitigation measure screen</td><td>Done</td></tr>
<tr><td>✓</td><td>20.</td><td>Change solid waste generation default for industrial land uses (including warehouses)</td><td>1999 Waste Characterization study from CalRecycle also presents waste disposal rates for the manufacturing sector. An employee weighted average rate is 1.15 tons/employee-yr. (15% of the rate in CalEEMod) More current data and might be more appropriate (analysis included in Appendix E)</td></tr>
<tr><td>✓</td><td>21.</td><td>Change non-residential landscaping default (hrs/sq ft/day)</td><td>CalEEMod currently does this:
<table><tr><th>Equipment</th><th>Population (a)</th><th>Hrs/Year (b)</th><th>TOTAL Hrs/year (a x b)</th></tr><tr><td>Chainsaws</td><td>182,618</td><td>405</td><td>73,960,290</td></tr></table>405 hr/yr /365 day/yr = 1.11 hours/day/12 billion sq ft (CA commercial space) = 9.2 x 10-11 hr/sq ft/day. However, the factor should be derived by taking the TOTAL hrs/year and dividing by non-weekend days of the year. 73,960,290 hr/yr /250 day/yr = 295,8410 hours/day/12 billion sq ft (CA commercial space) = 2.46 x 10-5 hr/sq ft/day (analysis included in User's Guide)</td></tr>
<tr><td>✓</td><td>22.</td><td>Update the utility's carbon intensity values to reflect what was in 2010 report (for year 2007); Upgraded to 2007; 2010 for PGE, SCE, LADWP; matrix to be included in User's Guide of values from what latest year.</td><td>Reference: http://www.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf (Page 208, Table G-6)</td></tr>
<tr><td>✓</td><td>23.</td><td>Include parking lot sq. ft when metric is "acre" – now reads "0."</td><td>Done</td></tr>
<tr><td>✓</td><td>24</td><td>Correct urban trip lengths for Riverside. Salton Sea and SC are switched</td><td>Done</td></tr>
<tr><td>✓</td><td>25.</td><td>Change sq ft of parking lots to be painted</td><td>Separate file (analysis included in Appendix E)</td></tr>
<tr><td>✓</td><td>26.</td><td>Incorporate wastewater treatment methodology according to Sanitation Districts</td><td>Recommendation received by LA and Sacramento</td></tr>
<tr><td>✓</td><td>27.</td><td>Allow user to change the square footage painted under Arch. Coatings</td><td>Currently determines surface area and locks out user to change</td></tr>
<tr><td>✓</td><td>28.</td><td>Revise operational days per year to be consistent and logical</td><td>CalEEMod calculates annual usages of energy and water - should be based on 365 days/year for all land uses. Annual residential landscaping should be 365 days/year but commercial landscaping equipment based on 250 days/year. Annual mobile sources based on daily trip rates so no change.</td></tr>
<tr><td>✓</td><td>29.</td><td>New wording for dialog boxes</td><td>Separate file</td></tr>
<tr><td>✓</td><td>30.</td><td>Update wording on the opening "flash" screen to include CAPCOA and copyright; and remove the need for the user to click "ok."</td><td>Done</td></tr>
<tr><td>✓</td><td>31.</td><td>Edits to the User's Guide and Appendices including:
a) Non-Pavley/LCFS emission factors
b) Table 3.3 – latest load factors
c) Table 3.4 – providing a factor for missing HP ranges
d) Correct Table 3.5 values (based on latest Carl Moyer values)
e) Explain usage of terms VOC and ROG</td><td>Done</td></tr>
</table>

		f) Updated utility energy intensity values and reporting year g) Update commercial landscaping defaults h) Wood cord calculation i) Modify Vehicle Trips equation (page 19 in Appendix A) to reflect the annual weekday trips are "divided by 7" j) The Anaerobic Digester methane equation in Appendix A (page 34) is missing the conversion factor from grams to kilograms. NOTE: *the model equates correctly* k) The total wastewater used (in gallons) is missing from CO2 equation in Appendix A (page 35) and electricity equation in Appendix A (page 36). l) Add guidance to User's Guide on how to apply a separate construction profile for land uses not listed such as underground parking, roads, pipelines, etc. m) Add guidance to User's Guide on how to calculate trenching scenarios and accurate scraping calculations n) Edits to Appendix D (e.g, update Table 4.3 Trip Rates for 2 land uses; insert correct Solid Waste Disposal Rates in Table 10.1 – NOTE: *model is calculating correctly)* o) Under CalEEMod installation instructions for downloading SQL Server Compact 3.5, "Be sure to follow the instructions on Microsoft's website and locate the appropriate .msi file. For 32-bit computers, one needs SSCERuntime_x86-ENU.msi and for 64-bit computer, SSCERuntime_x64-ENU.msi file."	