California Emission Estimator Model (CalEEMod®) Update Workshop

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What CalEEMod® Does

- Quantifies criteria pollutants, GHG emissions
- Applies to 68 land use subcategories
- Applies approved emission factors, established methodology, latest survey data
- Statewide model – all 35 air districts
- Calculates for air district, county, air basin, state
- Calculates emissions from construction/operation/area
- Calculates direct and indirect GHG emissions *(e.g., energy use, water/wastewater use, solid waste disposal, and vegetation planting and/or removal)*
- Calculates benefits from mitigation measures

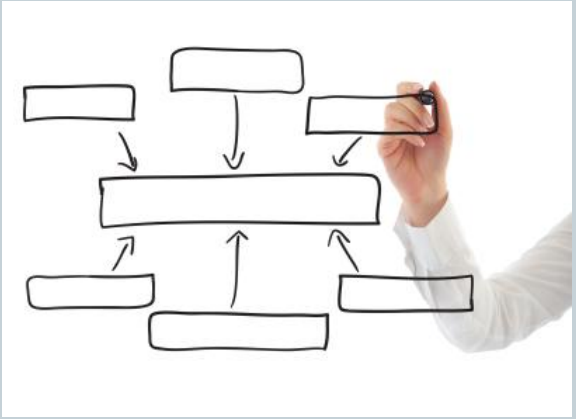
Use and Functionality

- Variety of applications – specific project, mixed use, plans, inventory, *user defined* land uses
- Statewide users include:
  - ✓ environmental consultants
  - ✓ city and county planners
  - ✓ air quality districts
  - ✓ CEQA/NEPA document reviewers
  - ✓ developers
  - ✓ decision-makers

- Flexibility in usage
  - ✓ defaults allow minimal amount of required input
  - ✓ provides ability to insert spreadsheet for large projects (e.g., construction schedule, construction equipment list)

History

- ✓ First version released to the public in Spring 2011
- ✓ Thousands of download across the state
- ✓ Majority air districts and local governments recommending, if not requiring, usage for air quality analysis
- ✓ Ownership transferred to CAPCOA; copyright approved
- ✓ Needed an upgrade once EMFAC 2011 was released (Dec 2011)
- ✓ Modifications took 21-month period to prepare and test
- ✓ Extensive beta-testing with air districts, consultants, local gov
- ✓ Released 2013.2 in July 2013
- ✓ Two revisions since (Sept, Oct 2013)

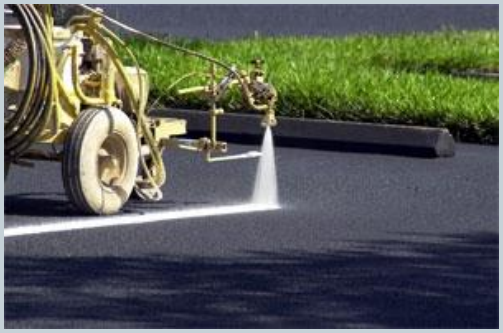


Major Upgrades

- ✓ Incorporation of latest AP-42 EFs for paved roads, CARB's EMFAC2011, and updated 2011 off-road inventory
- ✓ Update platform, optimize code *(speed has improved 60%)*
- ✓ Correct re-loading problems with construction dates/equipment
- ✓ New "cascade default" button will save time; improve user efficiency
- ✓ Calculate emissions from off-road equipment during operation
- ✓ Calculate energy from elevators/lighting/ ventilation from parking land uses
- ✓ Update utility carbon intensity values

Additional Upgrades

- ✓ New water/solid waste defaults for industrial land uses
- ✓ Allow user to change architectural ctg sq footage
- ✓ Modify VOC calculation from parking lot painting
- ✓ Modify wastewater treatment methodology
- ✓ Add CAPCOA mitigation number to GHG mitigation measures screens
- ✓ Re-format report (& include more input data)
- ✓ Provide new separate mitigation report



Supporting Documentation Updates

- List of Specific Revisions (2013.2, 2013.2.1, 2013.2.2)
- User's Guide
  - ✓ Main document
    - ❑ Improved descriptions and explanations
    - ❑ Updated screen shots
  - ✓ Appendix A – Calculation details/methodologies
  - ✓ Appendix D – Default data
  - ✓ Appendix E – Technical source documentation
  - ✓ Appendix F – Climate Zones
- User's Tips

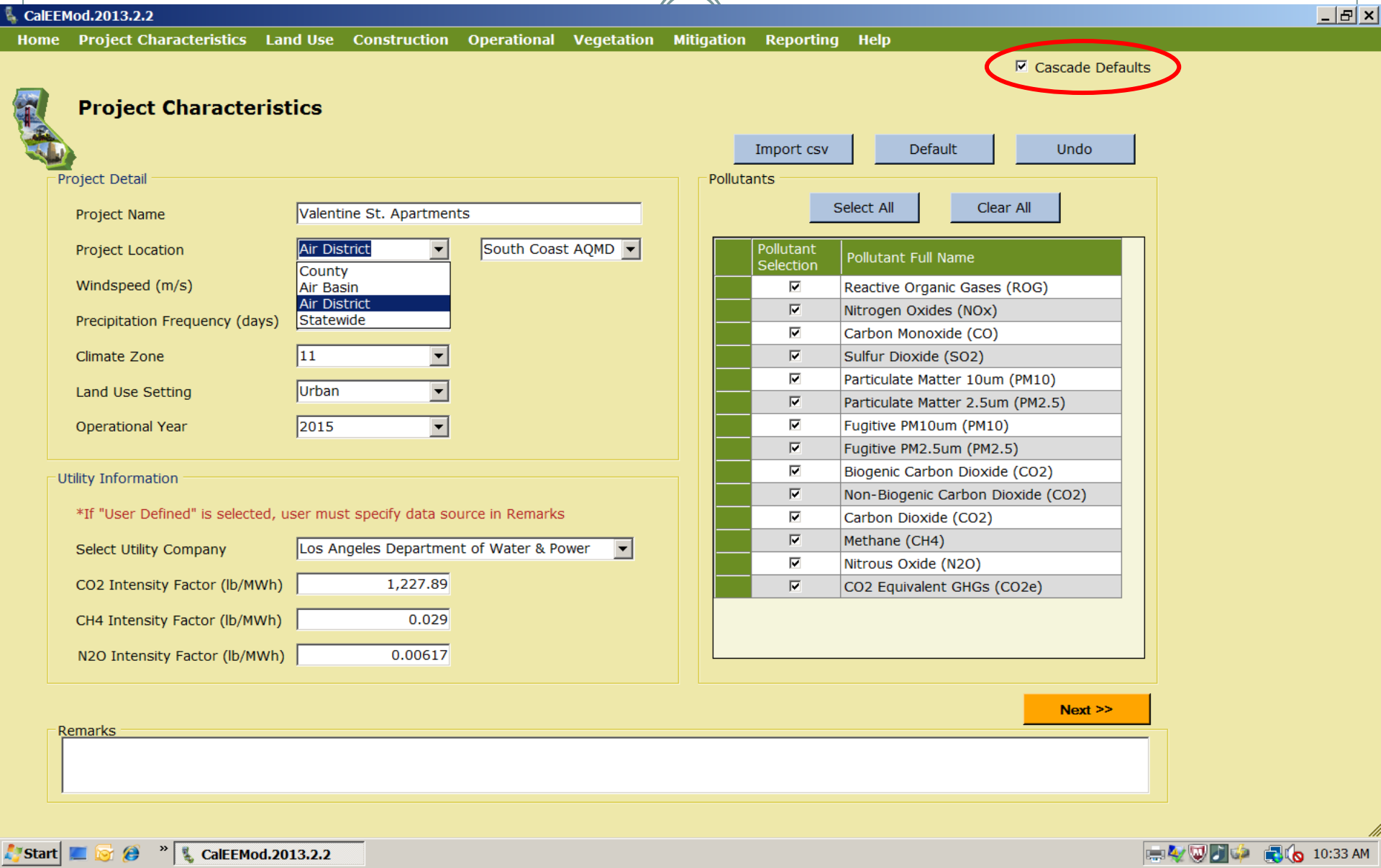
Current Status

- Online training segments to be produced
- Website - www.caleemod.com:
  - ✓ Modeling files (*latest version and 2011.1.1 during transition*)
  - ✓ User's Guide/User's Tips
  - ✓ List of Specific Revisions
  - ✓ FAQs
  - ✓ Subscriber sign-up
  - ✓ Upcoming events

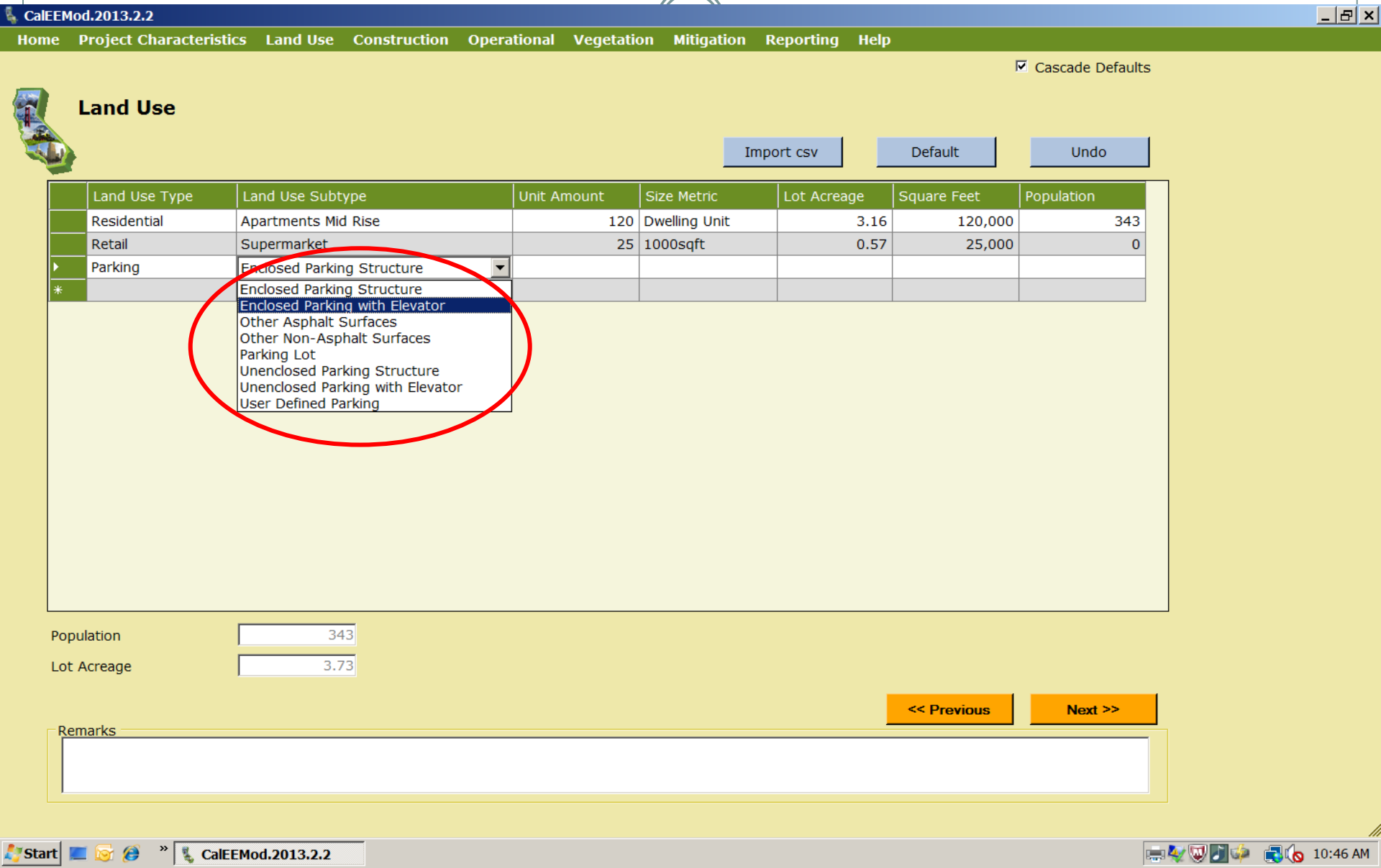
Future Upgrade Ideas

- CARB's 2014 EMFAC update
- Construction study
- Method to start construction schedule
- 9th edition ITE trip rates
- 2013 update to Title 24 (part 6)
- Option to calculate *only* construction or *only* operation
- GHG emissions from water, waste, electricity use during construction
- More off-road (e.g., ships and trains)
- Stationary sources (e.g., ICEs, boilers, sump pumps)
- Individual HHDT category emission factors
- Water use from cleaning solar panels, energy from blow torching process in applying parking coatings, etc.
- More sequestration categories (e.g., biological habitat)
- Future CAPCOA updates to mitigation document

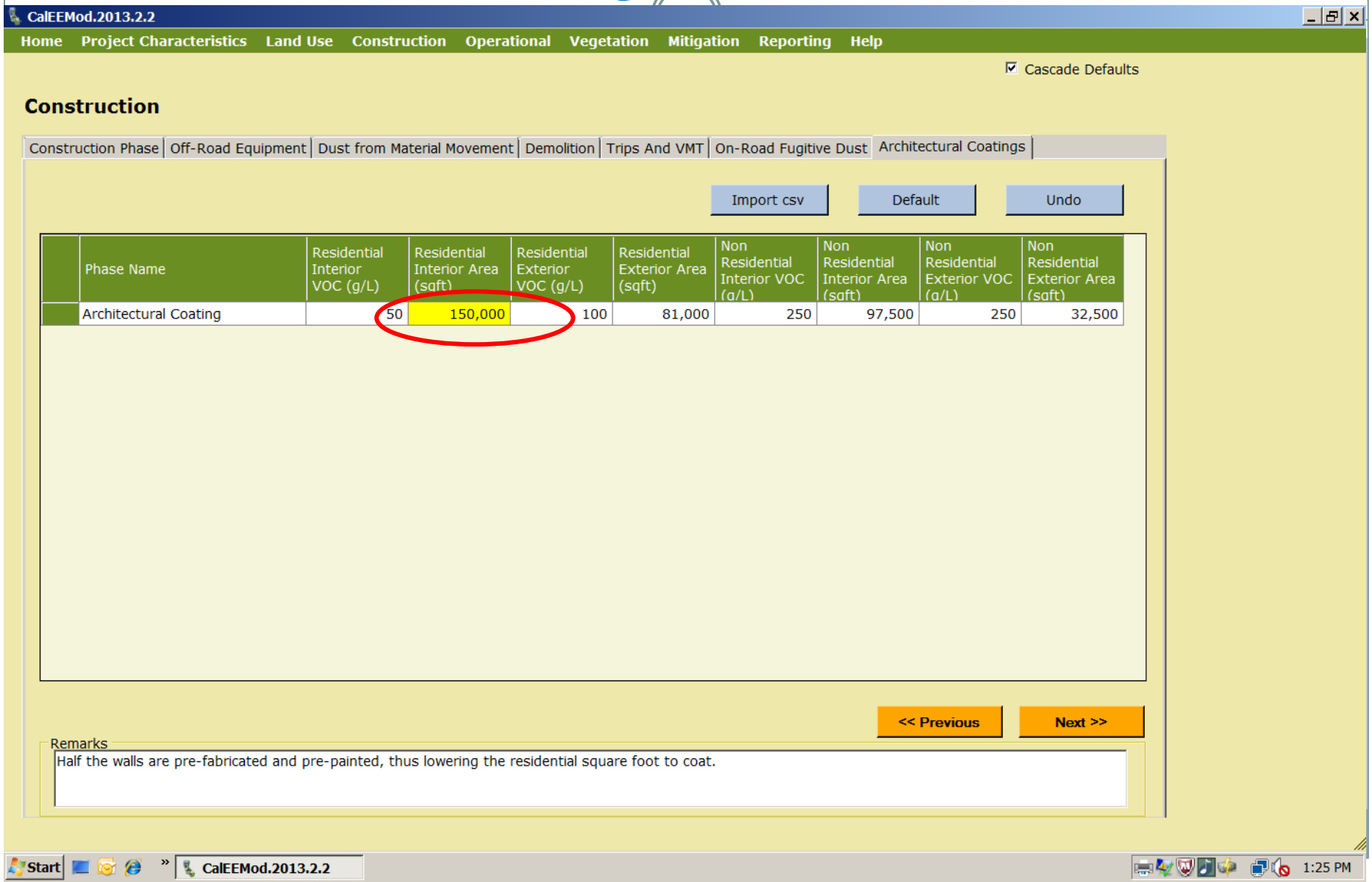
New option to not populate defaults



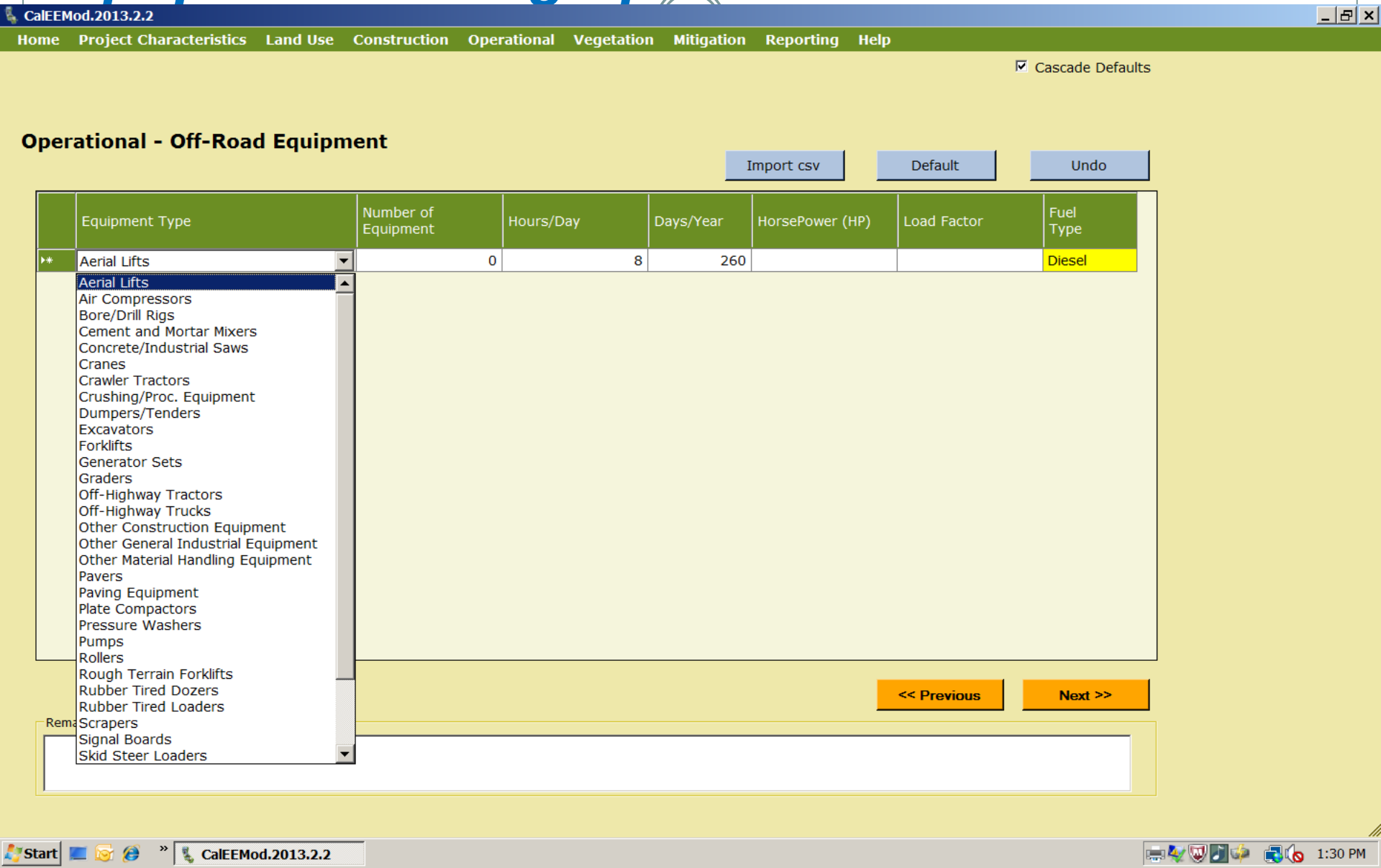
New Parking Subtypes – energy impacts



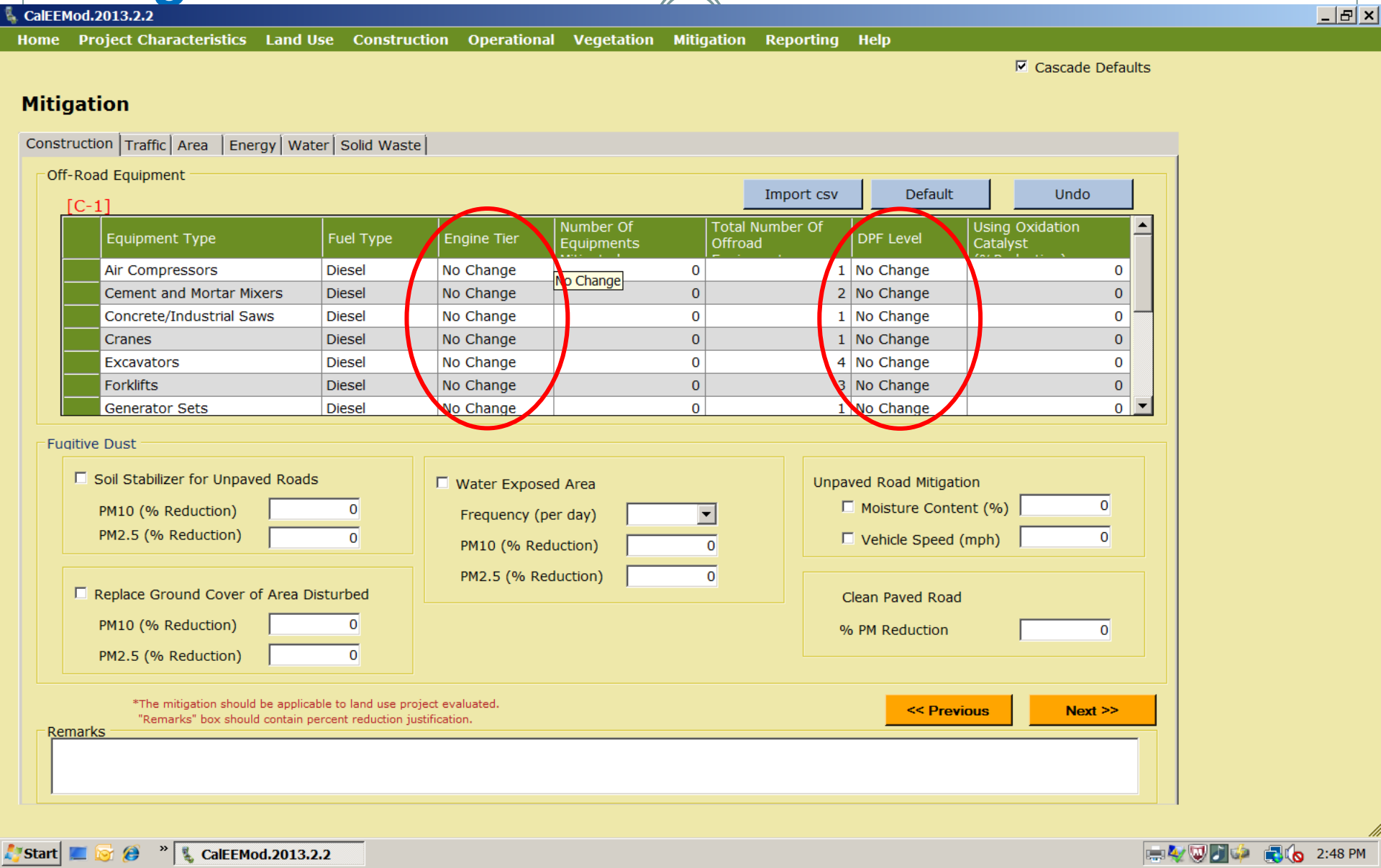
Providing option to change the sq ft of architectural coatings



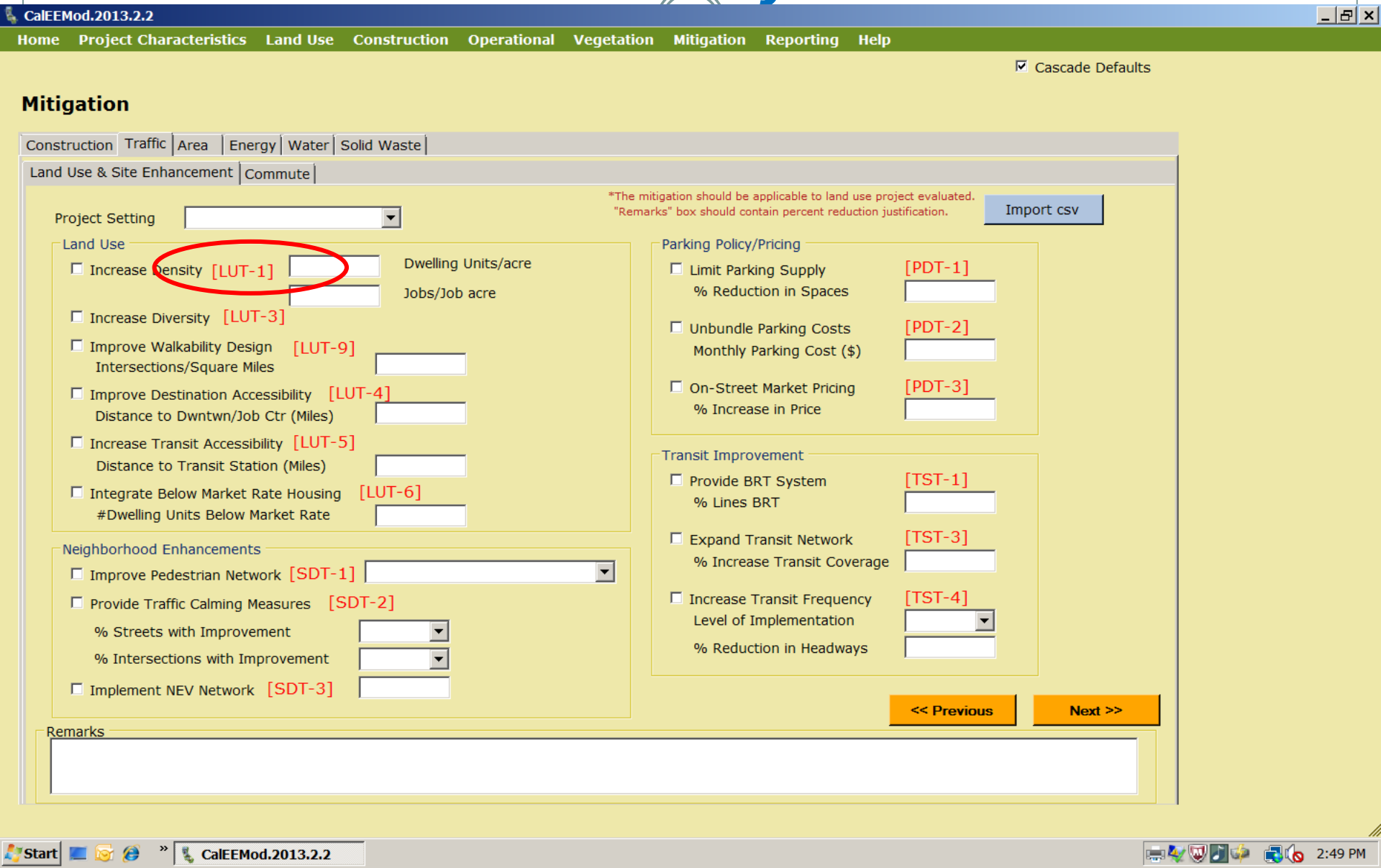
Calculating emissions from off-road equipment during operation



"No Change" default for Construction Mitigation



Identifying CAPCOA GHG mitigation measure number for easy reference



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