CLM Urban -- Changes to checkin to trunk

CLM Urban Model Work to checkin to Trunk (clm3_5_16)

Major CLM Tags - post clm3_exp_48:

- clm3_expa_54 - finemesh updates - bfb with expa_48
- clm3_expa_66 - Tony restructuring, share clocks, various updates - bfb except in CN mode and for time-manager
- clm3_expa_79 - misc changes, memory restructuring - bfb (except RTM)
- clm3_expa_87 - new configure tests - changes answers - new Hydro
- clm3_expa_99 - Move externals to top - changes answers - BTRAN, others
- clm3_5_09 ----- Latest clm version - changes answers, surf-datasets
- clm3_5_15 ----- Tag before checkin of Urban to trunk.
- clm3_5_16 ----- Urban tag.

Task list:

List of tasks once science branch is on trunk

- Modify so that urban columns can work with 15 layers (default for new CLM) - DONE
- How to handle urban heat source
- Fix indexing bug in SoilTemperature related to SNICAR in clm3_6_15 - DONE
- Fix rootfr_road_perv setup (change from 1,nlevgrnd to 1,nlevsoi and 0 elsewhere) - DONE
- Change urban soil properties in iniTimeConst.F90 to use CLM4 equations (w/organic soil) but with organic soil set to zero. - DONE
- Urban does not have SNICAR snow in it. OK? OK! - DONE
- Commit mksrfdat code related to replacing bare soil preferentially with urban.
- Decide on 0.1% or 1% threshold. Either way, generate new surface dataset and associated parameter file because current default dataset uses 1% threshold but does not preferentially replace bare soil with urban.
- Check proper averaging of fields being passed to atmospheric model (again)
- Add namelist options for 1) no URBAN_AC/_HEAT OR URBAN_AC/_HEAT, 2) no WASTEHEAT or WASTEHEAT - DONE
- Change AC and HEAT efficiencies (15-30% and 80%)? 25% AC, 75% HEAT - DONE
- Review all history fields for proper averaging (including those for CASA, DUST, etc.)
- Set set_nourb=0 for history fields WASTEHEAT, BUILDHEAT, URBAN_AC, URBAN_HEAT, TRAFFICFLUX, Qanth - DONE
- Fix water balance error due to snow capping in urban - DONE
- Datasets - set up proper averaging of urban parameters and urban fraction to desired resolutions and put everything into netcdf.

Update urban branch to latest clm

- Checkin last changes into CVS - DONE
- Verify scripts and testing scripts on this version - DONE
- Update branch from clm3_expa_41 to clm3_expa_48 - verify works correctly - DONE
- Move branch from CVS to SVN - DONE
- Examine differences between Urban model and clm3_expa_48. - DONE
- Update to clm3_expa_54 DONE
- Update to clm3_expa_66 DONE
- Update to clm3_expa_79 DONE
- Update to clm3_expa_87 DONE (Keith Validated, no-pervious is identical to _54)
- Update to clm3_expa_99 DONE (Keith Validated, TKFRZ only change)
- Testing clm3_expa_99 on other platforms (DONE)
- Update to clm3_5_09 (DONE) (Keith Validated)
- Update urban scripts, add in datasets, add urban tests to test_driver.sh (DONE)
- Update to clm3_5_15 (DONE)
- Move tests in testurban.csh script to test-driver.sh DONE
- Remove URBAN_TESTING, URBAN_OUTPUT, URBAN_LONGW, URBAN_FORCT DONE
- Make URBAN_SOLAR the default, check what datm7 does
- Verify and validate new Urban model branch (Keith) (DONE)

Changes required to check into clm_dev

- Make sure urban datasets are in XML file. DONE
- Make sure unneeded CPP options are removed. DONE
- Add new Urban tests into configure, build-namelist and test suite DONE