Instructions for evaluating the impact of the differences between the Water Erosion Prediction Project (WEPP) and the Revised Universal Soil Loss Equation, Version 2 (RUSLE2) erosion rates in your State, specifically looking for significant differences between the models for common highly erodible land conservation (HELC) systems.

Required completion date is December 14, 2018

STEP 1: Complete WEPP runs using link http://brenton.nserl.purdue.edu/rest/weppcrtest/ for three different management systems and two separate crop rotations that meet the HELC erosion requirements (2T or less). If you do not have water erosion HEL land, evaluate non-HEL land.

a. Develop three management (tillage) systems for two common crop rotations from scratch (do not use a template). The two common crop rotations for each tillage system (i.e., corn-soybeans, continuous corn, corn-soybeans-wheat) should utilize common commodity crops in your area that are impacted by HELC and are eligible for farm program payments and crop insurance. (e.g., corn, cotton, beans (any type), canola, small grains (any type), sorghum, sunflowers, etc.). There will be a minimum of six runs completed in each model (three management tillage systems × two crop rotations).
b. The three management (tillage) systems must include—
    i. Continuous no-till system (save as client name = No Till).
    ii. Combination of no-till and mulch till systems include any type of noninversion tillage operations (save as client name = No Till – Mulch Till).
    iii. Mulch till only system (save as client name = Mulch Till).
    NOTE: Mulch till system can include any type of noninversion tillage.
c. Additional management system requirements:
    i. Do not use pre or postemergent sprayers.
    ii. Do not add any type of weed residue, mulch, manure, or other type of reissue or organic matter additions.
    iii. Start the management with the first operation that occurs immediately after January 1.
    iv. Use the typical planting and harvest dates for the area.
    v. Do not include additional conservation practices in the run (i.e., cover crops, strip-cropping, contour buffer strips, contour farming, or terraces).
    vi. Do not duplicate any dates for a specific management operation.
    vii. Simulated yields must calibrate between a 0.5 and 2.0.

STEP 2: Utilize the center of the sample county in the lower 48 without using the map feature. For Alaska, Hawaii, Puerto Rico, or other areas that do not have PRISM adjustments, use the polygon or marker map feature to locate the field. Select a sample county with a significant amount of water erosion HEL. If you do not have a county that has cropland that is HEL due to water erosion, select a county that has water erosion resource concerns.

STEP 3: Select a soil map unit component that has a medium texture (i.e., silt loam or loam surface) and is also HEL due to water erosion. If you do not have a HEL due to water erosion soil mapping unit, select a sloping soil that has water erosion concerns.

STEP 4: Select Slope Shape = Uniform, and use the "Slope Steepness" and "Length" typical for the county selected. For example, 12 percent 150 feet uniform slope; 6 percent 200 feet uniform slope. Do not use slope lengths longer than 300 feet. Use a south-facing aspect.

STEP 5: Save and prepare for submittal the WEPP project files for each system, including the project (.prj file) and the PDF Summary of Simulation (pdf file).

STEP 6: After completing the WEPP runs, develop identical RUSLE2 runs.

a. Use identical naming protocol used for the WEPP runs.
b. Use simulated yields that are identical to the WEPP runs.
c. Use identical management files (sequence of dates, operations, yields, sequence of operations).
d. Use identical soil map unit/component, slope length/percent/shape, etc.
e. Use the same county/location.

STEP 7: Save each RUSLE2 profile. These files may be requested if the run needs to be repeated. You will be asked to correct and repeat the RUSLE2 run if it is not identical to the WEPP run in all aspects.

STEP 8: Save and prepare for submittal for each system the RUSLE2 file report titled "Summary Report- NRCS RUSLE2 Profile Record 02232015.pro.dot" and the RUSLE2 profile runs exported to a single database with all the dependent records included. Contact your regional agronomist if you have questions on how to export your profile runs to a database.

STEP 9: There should be a minimum of six runs completed in each model (three management tillage systems × two crop rotations). **Submit all files to Mike Kucera, michael.kucera@lin.usda.gov, NLT December 14, 2018:**

- **WEPP project .prj files**
- **WEPP PDF Summary of Simulation pdf file**
- **RUSLE2 Summary Report- NRCS RUSLE2 Profile Record 02232015.pro.dot**
- **RUSLE2 profile runs exported to a single database with all the dependent records**