CV-SALTS Salt and Nitrate Work Plan and Pilot Study

Site selection Workshop Notes

Tuesday June 2, 2009 2:00 pm to 4:30

Action Summary

- **Committee recommended a Tulare Area Pilot be added or substituted and areas of lesser data be addressed**
    - Consultant to review costs and options for Tule River or Upper Kings River areas
    - Consultant to recommend addition or substitution and costs and timing and schedule issues
    - Consultant to provide short documentation of above for committee review and coalition
    - Consultant to propose methods for handling or documenting the lack of data in areas and time and cost required when we move from the better documented and organized areas

- **Committee recommended future discussion in the work plan on the temporal and spatial extent and range for the pilots and the separation of Nitrate and Salinity for management**
    - Consultant will include this in the work plan to provide opportunity for future discussion
    - Consultant will include model assumptions, inputs and limits in the work plan for review
    - Consultant will describe items in B, based on Nitrate and Salt separately

Notes from the Meeting

1. Welcome and Purpose provide by Daniel Cozad
2. Presentation of overview of scope and deliverables was presented and introduction to the general data and working of the model. **Final Presentation Posted Here**
    a. Reclamation may have crop use for double checking or calibration purposes.
    b. The group will be able to provide other information to assist the consultants
3. Discussion of land use
    a. Land use accuracy improves source information
    b. Land use type in various classes can be assigned salt loads based on irrigation and other information
    c. Small high concentration sources may need to be added but may not significantly change the catchment level source information.
    d. Updating the land use to DWR land use data would cost about $35K which is budgeted in the existing project for the San Joaquin basin
    e. Updating it all to land sat data for land use would cost about $130 for an average pilot area.
    f. DWR Data is available for the entire Central Valley from the 88-95 or 2005 time frames
    g. Mark Gowdy asked if WARMF calculated evapotranspiration and concentration of salts in the water use process, Joel answered that it did.
    h. Others asked about the use of census or dairy animal counts as a method of calculation or calibration for urban density
    i. Nigel and others discussed the method in which wetlands were identified and handled by WARMF

j. Each crop or other use is characterized by inches per year, water applied is what the crop needs minus precipitation, surface deliveries and groundwater makes up the difference
k. Catchments are the discrete level of for WARMF; all land uses are calculated to be % of the catchment area. << need further discussion on the size or scale of information needed for salt management>>
l. Temporal scale is also critical groundwater will need a longer temporal scale to provide data and obtain values as well changes on a slower scale. Surface water is faster scale and may need to be run over a year to bridge between surface and groundwater modeling and data.
m. RFP requested recent source information and trend of changes if obtainable
n. Workplan should include appropriate temporal and special ranges for the pilot area and how they are determined

4. Discussion of WARMF and groundwater models interaction
    a. Steve from USGS has long term water history built to indicate how we got here to manage salts
    b. Michael Steiger asked if WARMF dealt with salt mineralization and dissolution, Joel indicated that it did and varied with soil type, pH, redox etc.
    c. The Model calculates surface water issues and continues to a depth of only a few meters below the surface
    d. Below WARMF ModFlow or other models and actual imperial data will be used to supplement the model and provide pilot area data
    e. Work Plan should provide
        i. Inputs to the model and sources
        ii. Assumptions made and rational/sensitivity
        iii. Land surface discharge may be an issue in groundwater dominant areas
    f. WARMF and ModFlow will provide data to each other but will run separately
    g. Point source stormwater will be included where available
    h. Modpath uses auto-calibration and such processes will be in the work plan
    i. Steve USGS has a Valley Wide Mod flow model
    j. Grid size is 25 meters
    k. Modesto uses the ModFlow
    l. Modesto has lots of data and the Rock-wells recharging groundwater
    m. Modesto model is a NGR steady state flow model from 2000
    n. The work plan will look at wet and dry periods.
    o. Need steady state for one year to use in ModFlow
5. Discussion of data and selected pilot areas
    a. Rosa noted that Tulare was not included and indicated that the general conditions of the basin are different due to its use of groundwater and local recharge
    b. The consultant indicated they are open to other pilot area and that will be discussed next. The methodology should be applicable to any other area.
    c. Discussion of dropping Merced or Modesto provided discussion and opinions from all

d. Matthew Zucca- added by Gotomeeting chat the concept of moving forward this effort and being able to add other work or modify the approach as the other work is formulated and performed

6. Discussion of alternative areas
    a. Current Proposed pilots – Yolo, Modesto, Merced
    b. Alternatives - Tulare, West Valley, and others
    c. Consultants provided rational for the selected locations and the ability to obtain the right balance of urban and rural and quickly prepare the documents and studies to meet the requirements
    d. USGS described the Central Valley Wide ModFlow model with 1 square mile grids for the entire valley floor. It uses the Farm Process approach rather than, but similar in some ways to WARMF. It simulates land use and irrigation from districts and the rest is from groundwater or precipitation.
    e. Tulare Area Upper Kings River suggested by Longley and coordinate with the IRWM efforts lots of data is available. Contac is Dave Orth http://www.krcd.org/_pdf/groundwater_brochure_03_04.pdf
    f. Tulle River Suggested by Westcot, Harter and others contacts in the link below http://groundwater.ucdavis.edu/gw_203.htm
    g. David Cory indicated that west valley must be studied as well because of its differences but may not be able to fit into the first pilots, but must not be forgotten

Attendees in Davis included

1. Bob Smith
2. Joel Herr
3. Daniel Cozad
4. Joe DeGeorgio
5. Linda Dorn
6. Laura Folie
7. Vicki Kretsinger
8. Clause Suverkropp
9. Karl Longley
10. Dennis Westcot
11. Andy Malone
12. Thomas Harter
13. Charlie Kratzer
14. Jon Schitz
15. Nigel Quinn
16. Lisa Holm
17. Paula Hansen

Via Teleconference/Gotomeeting

18. Will Stringfellow
19. Michael Steiger
20. Steve Bailey
21. Rosa Lau-Staggs
22. Joe LeClaire
23. Jim Van Camp
24. David Cory
25. Jay Simi
26. Jim Atherstone
27. Mark Gowdy
28. Matthew Zucca
29. Gail Cismowski
30. Karna Harrigfeld
31. Mike Johnson
32. Melissa Turner