Watersheds **Wednesday, Aug. 27, 2015**

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FRAMING: Adopt a Watershed construct that considers socio-economic aspects of multiple dimensions; include the management question associated with research needs

- Adaptation for Land Management
- Adaptation for Water Supply and Demand
- Adaptation/quantification for Environments.
- Drought (not simply hydrologic)
- Outreach, Interpretation, Translation

SECTION 4 in general:

- Improve treatment of ecological processes; inc. guidance to modelers on biological ecosystem effects
- Include snow processes in updated document

4.01 Guidance on Models to support planning - *Priority: Move from Low to Medium*

- Transferring our products. We are making progress but we are not transparent
- Regardless of uncertainty, help march people thru a decision/risk assess framework.
- ID sensitivity of models to what metrics and what we can trust. Describe **fit-for-use** of techniques.
- Are our policies flexible and adaptable enough to deal with a changing climate?

4.02 PET: Change to ACTUAL ET. Priority: High

- Energy balance equations; internal consistency of climate/hydro models (pressure, radiation, wind, etc)
- Biologically based ET should be incorporated to improve calculation of water balance at the surface.
- Develop simple ways to tell people if the model over or underestimates the risk

4.03 Extreme Events

- Separate High flow from Low flow (drought)
- Define indicators of hydrologic drought.
- Streamflow/groundwater interaction; how snowpack translates to streamflow (not just soil moisture)

4.04 Weather Data

- Atlas 14: ID a way to integrate climate projections into IDF calculations;
- Facilitate data sharing between cities, states, feds. Citizen science.

4.05 GROUNDWATER/SURFACE WATER INTERACTION - *High Priority*

- Improve understanding of recharge of deep aquifers; pumping and cc interaction
- Effects of air temperature on soil→groundwater→surface water→water quality→treatment

Reframe 4.06, 4.07, 4.08 – *Medium or High Priority (Not Low)*

- 1) Fisheries, benthic, non-native riparian, other species and habitats; 2) Riparian Ecosystems; 3) Groundwater dependent ecosystems (GDE); 4) Upland Ecosystems
- Integrate quantitative fish models in community oriented system models. (fisheries and benthic)
- ID Threshold-like behaviors and standards. Couple climate impact with biological needs.

Water Quality – *High Priority* - Dynamic modeling: water temp., nutrient cycling, erosion, sediment

4.12 Sediment – Progress to date mostly related to fire. Climate change and sediment still needs work.