

# TUC Institutional Options Study



## DISCUSSION ON FUNCTIONS

ACF Stakeholders  
Governing Board Meeting:  
Cordele, GA  
December 13, 2012

# Education

- A function of all but 2 of the organizations interviewed
- Includes dissemination of information to inform public & stakeholders
- May motivate public to become more involved in water issues

# Education

- Examples from other basins
  - MWDSC: Water Forum provides grants to local university for research, develops & tests curricula on water issues for primary & secondary schools
  - SRBC: produces information sheets & distributes through local media
  - CRT: sponsors conferences & stakeholder meetings focused on water issues in basin

# Data Acquisition, Coordination, and Dissemination

- Widespread among organizations interviewed
  - Cited by some as critical to success & a main strength
- Impacts almost every other function
  - Adds weight to final product whether recommendation or decision
- Type of data collected depends on scope of institution

# Data Acquisition, Coordination, and Dissemination

- Examples from other basins
  - CRT: rainfall & snowpack data used to plan for hydropower & prevent flooding
  - ICPRB: chemical & biological monitoring of water quality
  - MDBA: Sustainable Rivers Audit used to inform basin plans; data made publicly available
- ACF Examples
  - Jones Ecological Center, WaterSMART, SWMP/IFA

# Water Conservation

- Can be regulatory or non-regulatory
  - Information based approaches: educating public
  - Regulatory approaches: mandating conservation measures
  - Financial approaches: subsidize or fund projects to improve efficiency or reduce leaks

# Water Conservation

- Examples from other basins
  - MWDSC: provides funds to utility companies to promote conservation practices & funds to residents for installation of water-efficient devices (\$310 million since 1990)

# Agricultural Practices

- May affect both quality & quantity
- Different approaches:
  - Education & technical extension
  - Funding for efficiency measures
  - Issuing withdrawal permits & implementing water shortage plans



# Agricultural Practices

- Examples from other basins
  - ORSANCO: studies impacts of agriculture on water quality
  - CBP: uses local media outlets to educate public, obtains grants to implement BMPs, considering a nutrient credit market
  - NWPCC: funds efficient irrigation projects
  - SFWMD: regulates withdrawals, issues permits, & implements water shortage plans

# Recreation

- Active engagement with recreation not widespread among interviewed organizations, but indirect engagement
  - Water quality: Regulating water quality may benefit recreation
  - Water quantity: Reservoir levels & releases may affect recreation opportunities
- Possible approaches
  - Providing environmental flows to support nurseries
  - Stocking recreationally important fish
  - Purchasing land or easements
  - Building & maintaining facilities

# Recreation

- Examples from other basins
  - SFWMD: land acquisition program (in past), owns over 1.2 million acres open for public use
  - TVA: provides access to 80 sites on almost 300,000 acres of land, provides information on best areas for fishing

# Flood Control

- Many approaches
  - Mapping floodplains & watersheds
  - Monitoring flows & issuing public warnings
  - Affecting land use patterns to minimize risk (buyouts & appraisals)
  - Planning/construction/maintenance of infrastructure

# Flood Control

- Examples from other basins
  - UMRBA: flood risk management through land appraisals
  - DRBC: recent collaboration with interstate-federal task force focusing on stormwater management, reservoir control, & flood warning management
  - GoMA: flood forecast center
  - SRBC: warning system that promotes collaboration between local weather stations & USGS

# Restoration

- May involve entire ecosystems or specific species
- Variety of approaches approaches
  - Creation & review of data
  - Providing grants for & collaborating with other agencies/groups with expertise
  - Conducting restoration projects with in-house resources

# Restoration

- Examples from other basins
  - CRB: modifies dam operations based on biological opinions for salmon
  - MWDSC: provides seed money for new restoration organizations, engages in habitat conservation in some areas
  - SFWMD: collaboration with Corps & other agencies to restore Everglades

# Planning

- Widespread among organizations interviewed
- Scope of planning depends on organization's mission
- Can be used to accomplish institution-level goals (e.g. comprehensive water quality or allocation planning) & to address specific issues (e.g. droughts or floods)



# Planning

- Examples from other basins
  - Many organizations develop & enforce comprehensive plans (e.g. DRBC, SRBC, MDBA, TRPA)
  - ICPRB: plans for withdrawals & reservoir releases during droughts

# Regulatory Review

- May focus on quantity, quality, or a combination of both
- Different approaches:
  - Advisory role in reviewing & commenting on permits
  - Establishment of standards & issuing permits

# Regulatory Review

- Examples from other basins
  - DRBC: established TMDLs in 1960s before EPA existed & before mandated by CWA
  - GLC: reviews & comments on permitting decisions made by EPA
  - Many organizations issue water use or effluent discharge permits (e.g. DRBC, SRBC, TVA, SFWMD, TRPA)

# Ecological Flows

- An emerging & complicated topic
  - Most organizations made before CWA & ESA, so not on radar in creation
  - Defining flow requirements & flow-ecology relationships a developing science
  - Precedence for providing minimum flows, variable flows more difficult
- May involve data generation, flow prescription recommendations, & modification of dam operations

# Ecological Flows

- Examples from other basins
  - MDBA: The Living Murray program, stores & delivers water for environment at certain sites, monitoring of ecological response & adaptive management, attempts to buyback water for environment in over-allocated basins

# Hydropower

- Not many organizations that produce & sell hydropower
  - Generally under purview of federal & state agencies (e.g. Army Corps of Engineers) & private companies
  - More often indirect effects on power companies: implementing environmental flows, providing minimum flows for water quality & endangered species

# Hydropower

- Examples from other basins
  - TVA: can build & operate hydropower facilities
  - CRT: created to maximize hydropower generation & minimize flooding
  - ORSANCO & TRPA: review permits for new hydropower facilities to see if adverse water quality effects
  - NWPCC: produces hydropower plans & oversees impacts of hydropower, but doesn't establish or maintain hydropower projects

# Water Quality

- A scope rather than a function
  - Many organizations interviewed address a combination of both quantity & quality
- Wide range of approaches taken by interviewees
  - Regulatory: setting & enforcing standards
  - Non-regulatory & Market based: subsidizing or funding upgrades & BMPs for point sources & non-point sources, nutrient credit trading, education & technical extension



# Water Quality

- Examples from other basins
  - Only quality: TRPA has regulatory control of lake quality that includes developing & implementing land development codes as well as TMDL/NPDES
  - Combination:
    - ORSANCO & ICPRB initially focused on quantity now also addressing quantity
    - MWDSC initially quantity now also quality
    - Importance of addressing both expressed by multiple interviewees