Director’s Welcome and What’s New at TWRI? Programs, Priorities, Opportunities and Capabilities – Dr. Roel Lopez and Dr. Kevin Wagner

Roel
- Pillars of TWRI: Surface water and groundwater
  - Water policy, law, regulation
  - Agricultural irrigation and water management
  - Watershed management
  - Urban industrial use and conservation
  - Water quality
- Need this well-integrated with centers, faculty, etc., not in competition – must deliver; better way to engage centers
- Keep climate change in mind
- San Antonio Brochures (link to PDF on website)

Kevin
- Need to make the next step forward in the CIRE group
  - Prioritization of key issues – narrow the focus and identify the key issues to target
  - Work together as a team to get those key issues/projects funded
- Kevin was on the USDA Water Panel – drought, climate variability, salinity, watershed-scale projects
  - Proposals come out in May, but we need to begin long before the proposal comes out
  - Collaboration between research, education and Extension is needed and must be strong
  - Water conservation and water quality
- Irrigated Agriculture Brochure (link to PDF on website) – being distributed
  - Back page – areas we could focus on
  - Need to do things on urban level as well
  - TWDB intern is studying urban studies – outdoor use around the state
  - Uvalde (Daniel & Raul) also gathering urban information
  - Need to bring data together as a whole
  - Possible areas of lessons learned in ag and transfer to urban
  - ET Networks – not only ag but also urban use; ag technologies can be transferred to landscape – right types, timing, scheduling, ET network, sensors
- Efforts need to be balanced and integrated statewide
- How is it going to change over the next 2-4 years? More integrated.
- Discussion: Haven’t accomplished much from the CIRE group or moved forward as a group. Hasn’t been communication in between meetings.
  - Keep looking for funding sources for collaboration – need multi-state, look at federal
  - Take this message to research and Extension
- San Antonio conservation – city collects data, enforces drought stages
Collaboration by region, but need more collaboration statewide between regions – overarching; highlight big regional projects and build upon them

- Can use model but has to be fitted for your situation
- How to implement on wide-scale
- Tell the story of what we’ve done through all these projects – can continue but need funding available
- Need to talk to the right people who can lobby legislators
- Communicate as a group

**Texas A&M Water Conservation and Technology Center – Dr. Calvin Finch**

- Goal: Accelerate development and adoption of new and innovative technologies to solve emerging water problems and meet future water supply needs
- Focus: Water conservation, water reuse, groundwater desalination, energy development and water use – applied technology
  - Expect to utilize testing and validation, technology transfer and training, extension education
- Collaboration is key. Work to identify opportunities and needs, then select from resources of A&M to form teams to address the issue, fill the gap.

**Current Projects**

- Energy/SAWS Water Production (TCAT) – energy use in relation to water distribution, treatment and programs
- Proposal: Regional Conservation Program – expanding conservation programs to smaller communities in Edwards Aquifer region
- Feasibility of using brackish water from the Edwards Aquifer as a new water source – just in discussion stages (A&M, UTSA, Texas State)
- Water conservation/environmentally appropriate gardening articles – 10 different newspapers of weekly columns; expect to expand distribution

**Project Idea: Fracing Communication Link**

- Serve as “middleman” between citizens, local government, groundwater districts, schools, Railroad Commission and fracing industry – smooth energy/water nexus
- Need brainstorming to identify what it would take to accomplish fracing communication link; need neutral modeling source

**Plumbing Technology Firm**

- Discussing laboratory performance testing effort and develop and conduct “real life testing” program for new high efficiency toilet

**Programs of the San Antonio River Authority – Steve Raabe, P.E. Director of Technical Services**

- SARA has reorganized some over the past 3 years – same departments integrate into lots of projects; organize information programs and program leaders
- Irrigation in mission but don’t have significant projects in that area
- Flood Alley – Floodplain Administrative Assistance
  - Real-time flood mapping and response to emergency operation center
  - FEMA risk map – next generation mapping
- CRP participant – stream monitoring: intensive surveys, pollution investigation/adaptive monitoring, routine river recreation information at sara-tx.org
- Emerging contaminants: test for pharmaceuticals and personal care products
- Texas instream flows – draw in collaboration between engineering and environmental science (SARA, TWDB, TCEQ, TPWD)
- Bay and estuary support: environmental flows
- Eagle Ford Shale – don’t have much jurisdiction besides in a few key areas: bed and banks ownership – easement and permits to cross San Antonio River
  - Coordinate with regulatory agencies involved – requirements and protocols
- Sustainability solutions: LID, green infrastructure, conservation development, open channel restoration and schematic; westside creeks restoration project

**Perspectives on Irrigation and Water Issues – Dr. Daniel Leskovar**
- Major horticultural crops – Lower Rio Grande Valley, Winter Garden
- Limitations – drought, water demand, high temperatures, narrow market windows, competition from California and Mexico (less $), low prices and increasing input costs, labor skills and availability, food safety – regulation
- Strengths – rechargeable water source, excellent soil and water quality, mild winter = long growing season, efficient irrigation technology, balanced crop rotation system, solid ag-based economy, dynamic corridors (San Antonio–Austin–Laredo)
- Efficiency ➔ Less water and less land for higher yields
- From less efficient irrigation (furrow) to adoption of precision irrigation technologies – drip, SDI, center pivot, LEPA; hydroponic systems
- Water conservation programs – stress management, irrigation technology (in-ground lysimeters), landscape water use, cropping systems, drought tolerant crop, wildlife water use (rainwater harvesting and drip irrigation of wildlife food plots)
- Vegetable quality has to be there for consumers
- .2” in 24 hours water loss
- Crop coefficients (Kc); onion production has doubled in the past few years
- Irrigation water in Texas – 5.5 million acres, 17” irrigation, 7.707 million acre-feet total annual water use
- Ornamental native plants irrigation with graywater

**Research & Education Needs**
- Deficit irrigation to mitigate drought/water limitations
- Irrigation management for high value crops
- Integrated cropping systems for low ETc seasons
- Validation on estimates of graywater use for native plants
- Selection of low-water requirement plants
- Promote adoption of these technologies in Texas

**Texas Water Development Board Agricultural Water Conservation Programs – Cameron Turner, Team Leader, Agricultural Water Conservation Program, TWDB**
- TWDB Biggest Priority – implement state water plan and plan to address funding gap
- Texas Reservoir Storage – TWDB website – brought people to think of other opportunities
  - Will eventually have an app once data is populated – Water Data for Texas
- Public perception – food production versus recreation with lake water
• 1.5 million acre-feet annually IF ALL conservation practices are implemented in ALL regions – 9 million acre-feet of new supplies
• 10 more desalination plants under construction (1 in San Antonio)
• Reuse – not a “new” idea/technology; direct potable reuse – new
• Opportunity for ag irrigation reuse? Economic value? Room for improvement; golf course irrigation in with ag because municipal does not keep up with courses using reuse and not and water used
• Gap between groundwater irrigation and total irrigation come closer together
• Benefit to TWDB – folks here to improve on estimates and information to revise estimates; estimate irrigation by groundwater; surface water and wastewater need to be improved the most (TCEQ diversions)
• New GIS PhD – Mindy Conyers
• TNRIS – many layers; GIS Forum (now) thru TNRIS
• Ag grants webinars – Grants and demonstration projects come out of same fund, only $9 million left plus increase in loan interest – loans cut into ability to do grants, plus board is less fond of “research”
• Eligible uses (TAC) – what types of projects should TWDB be funding – don’t “have to” do RFPs… will continue metering
• January – RFA to come out ~ $60,000 depending on irrigation schedule…. Can do annual report or final report – negotiable
• WCAC Blue Legacy Awards due end of October
• TWDB needs new ideas from us. Not fond of Research and Development. Demonstrations are ok.

Discussions – Group
1. Current Projects – RGBI, Ogallala, TWDB funded programs, stormwater (Jaber – EPA)
2. Current & emerging issues and opportunities
   a. Cameron Turner presentation
   b. Develop collaborative efforts to embark in research and location of problems expand to other areas (San Antonio good starting place) – strategies in the plan and implementing those
   c. Need for public education and awareness (especially ag water footprint)
   d. Policy and economic analysis statewide for improving irrigation efficiency (expand upon Ogallala Aquifer Program efforts)
   e. Annual producer forum? What do they need and want and what will they use? How to develop tools that will be used; identify what works, tools, applicability, adoption
   f. Partnership with seed companies; public/private partnerships; irrigation equipment manufacturers and dealers
   g. Education at Farm Show, CEUs offered
   h. Meter calibration/testing – WCTC, testing and validation; Need for facility (TCAT?)
3. One thing we could do to have the biggest impact:
   a. Management and crop economics
   b. Specialty crop support?
c. Anything we can do to help rice farmers out? Round-up ready rice, herbicide-resistant, center pivot? Teach how to transition
d. Water/Energy Nexus (ex: biofuels)
e. Tell our story more effectively?
f. Management of education support needed for new technologies to optimize benefits; provide management data and recommendations
g. Tell them how to maximize optimization – demonstration?
h. Demonstration to promote adoption of technologies
i. Use economics to promote adoption
j. Address need for improved management

Planning wrap-up and business meeting – election of new chair
- Chair: Zhuping Sheng of Texas A&M AgriLife Research Center at El Paso
- Vice-Chair: Raul Cabrera of Texas A&M AgriLife Research at Uvalde
- Next meeting will be held in El Paso in 2013