

**Technical Advisory Committee Meeting Summary**  
**October 28, 2004 1:00 – 4:00 pm**  
**Randolph Parks and Recreation Annex, Mesquite Room**

Attendees: Trevor Hare, Rich Glinski, Guy McPherson, Marit Alanen, Ralph Marra, Ann Phillips, Dennis Abbate, Linwood Smith, Bruce Prior, Karen LaMartina (Tucson Water), Michael Wyneken (City of Tucson – Planning), Melissa Antol (City of Tucson – Planning), Rafael Sebba (City of Tucson – Planning), Clint Chiavarini (City of Tucson – Planning), Leslie Liberti (SWCA), Ken Kingsley (SWCA), Eileen Finnerty Rae (SAHBA), Tyler Jones (Town of Marana)

The topics on this meeting were discussed in a different order than is on the agenda to accommodate schedule conflicts for some participants.

**1. Covered Activities: Avra Valley/Tucson Water**

Ralph said that Tucson Water is in the process of finalizing a long range planning effort for the next 50 years. This plan would be going to Mayor and Council in late November.

Ralph illustrated his presentation with three posters. The first was a map of projected population distribution for Tucson and the larger metropolitan region. He said that this map, based on population growth modeling by Pima Association of Governments, showed that the regions of highest growth are predicted to be the areas along Houghton and along the road to Ajo. Ralph also noted that the Tucson Water service area was expected to double over the next 50 years.

Ralph then showed a chart that illustrated projected water demand and potential sources to supply that demand over the next 50 years (2000 to 2050). Among the points that Ralph mentioned are that:

- Total water demand is expected to rise from 125,000 acre-feet in 2000 to 250,000 acre-feet by 2050.
- Potable water demand is expected to rise from 115,000 acre-feet in 2000 to 225,000 acre-feet by 2050.
- Reclaimed water is expected to account for about 8% of all water demand.
- The C.A.P. allotment, which became part of the water supply equation around 2000, climbs to about 136,000 acre feet by around 2012.
- TARP, as a water source, is minimal and will not be available after about 2020.
- Groundwater supplied all water demand until 2000 and currently accounts for about 100,00 acre-feet of supply.
- The use of groundwater will level off about 2012 at a level considered to be hydrologically sustainable (about 50,000 acre-feet). This sustainable rate of water pumping is theoretically equivalent to the amount of water supplied annually by natural recharge. By the late 2010s, there will need to be an alternate source of water to meet demands without drawing groundwater at an unsustainable rate. Options for closing the gap between supply and demand are:
  - Water conservation
  - Water supplies from outside Tucson
  - Effluent (a local supply of water and therefore likely to be the most dependable alternate source)

Rich asked if C.A.P. water is provided at a sufficient rate that a reservoir would not be needed to meet water demand in Tucson. Ralph said that this was the case. Rich then wanted to know if the Santa Cruz River could be used to store water. Ralph replied that not enough water comes down the river to make that a feasible option.

Ann asked how the water shortage on the Colorado River would affect the Tucson allocation. Ralph said that there would be little effect initially because Tucson has a fairly high water priority; however, after 2020, there is a high probability of water shortages and that is when there might be reductions in water available to Tucson. Of the 2.8 million acre-feet of Colorado River water allocated to Arizona, 1.5 million acre-feet is C.A.P. water (and half of that is for the Tribes). The remaining 1.3 million acre-feet goes for agricultural uses which have a higher priority than C.A.P. water. Trevor asked whether the PAG population projections considered water availability. Ralph said that they did not.

The third poster that Ralph discussed with the TAC was a map of land ownership in Avra Valley. Included in this map were the individual projects that make up the Clearwater program. The projects include the CAVSARP recharge facility, a future recharge facility called SAVSARP, a potential future well field at Three Points, the Hayden Udall wastewater treatment facility, the Spencer interconnect, and the Avra Valley transmission main augmentation.

Ralph pointed out that Tucson is currently only using about 50% of its C.A.P. allocation. The 50% that is being used is taken from the C.A.P. canal and recharged at the CAVSARP (the current Clearwater facility). Water from CAVSARP is pumped to the Hayden-Udall Water Treatment Facility, then to the Clearwell reservoir, and then into the City.

In order to use the remaining 50% of the C.A.P. allocation, a second recharge facility (SAVSARP) is planned. SAVSARP is expected to handle 80 to 100 thousand acre-feet of recharge per year. The purpose of the CAVSARP and SAVSARP facilities is to put excess C.A.P. water underground (through recharge) so that it can then be used to supplement water supply in times of shortage.

Ralph said that pumping from a new well field at Three Points is anticipated to be necessary to reduce the total dissolved solids of the recharged water to less than 450 TDS. After a while, this pumped groundwater will be insufficient to keep TDS below 450 and, at that point, enhanced treatment would be necessary to keep the TDS below this level.

Rich asked about how water flowed underground in the Avra Valley. Ralph said that it only moves a couple of hundred feet per year.

Ralph then switched to the topic of effluent and said that, while currently some effluent is going into the Sweetwater Wetlands for tertiary treatment, the bulk of it is released in to the Santa Cruz River at the Roger Road wastewater treatment plant. According to Ralph, after about 2015, the City may need to keep all effluent for potable use and at that point would no longer discharge it into the river. If effluent were used for potable uses, it would likely be super treated down to 50-100 TDS and then recharged. This however, leaves the question of how the resulting brine stream would need to be handled. One option for dealing with a brine waste stream (from enhanced treatment of high TDS water) is to use evaporative ponds. For the City, the enhanced treatment of large quantities of high TDS water (recharged C.A.P. water and/or effluent) would likely require hundreds of acres of evaporative ponds. Although it is not certain that this is what the City will need to do, they want to keep this option open for the future.

## **2. Santa Cruz River/Army Corps of Engineers restoration studies**

Leslie combined the discussion of the morning field trip to the Santa Cruz River with the presentation on the three Army Corps of Engineers river restoration studies. She provided background information on each of the three restoration studies, in order from upstream to downstream in the river: Paseo de las Iglesias, El Rio Medio, and Tres Rios del Norte.

### **Paseo de las Iglesias**

Leslie noted that Paseo, which was initiated in 2001 by Pima County, has a draft EIS out for public review. Comments on the DEIS are due by November 22, 2004 and a final EIS is expected out in February 2005.

Leslie showed a number of maps and graphics that had been copied from either the DEIS or a Powerpoint presentation, both available on the Pima County Flood Control District website. The first map showed the 5,000-acre project area, which covers 7 miles along the Santa Cruz River, from Los Reales Rd. to Congress St. Other maps focused in on the portion of this planning area that is actually proposed for restoration under the DEIS.

Leslie gave a few details on each of the three proposed alternatives in the DEIS. These three options are the high water, low water, and medium water alternatives. She explained that the high and low water alternatives had been selected by the Army Corps as the “best buy” alternatives; however, Pima County favored an intermediate proposal and therefore the medium water option is the preferred alternative in the DEIS.

For each alternative, a specific level of effort and water usages was specified for each of three areas along the river: the channel, the terraces, and the historic floodplain.

#### High water alternative elements

- Channel: Restore perennial flow, plant cottonwood-willow, and construct features such as pools, riffles, and runs.
- Terrace: Water harvesting at tributaries, irrigate and plant lower areas with riparian grasses, and irrigate and plant upper areas with mesquite and cottonwood-willow.
- Floodplain: Amend soil, plant and irrigate, and replace steep banks with planted terraces.

#### High water alternative – summary

- Focus: Create hydroriparian community intermittent flow in channel
- Water use: Intermittent flow in channel; long-term irrigation of terraces and floodplain
- Restored habitat: 1,227 acres
  - ~ 45% shrub
  - ~ 45% mesquite
  - ~ 5% cottonwood-willow
  - ~ 5% emergent marsh
  - 19 acres of flowing water

#### Low water alternative elements

- Channel: Water harvesting upstream of grade control structures (encourage emergent marsh), divert low flow from New West Branch to Old West Branch, and plant grasses, large shrubs.

- Terrace: Harvest stormwater runoff, water harvesting at tributaries, plant terraces and basins.
- Floodplain: Amend soil, harvest stormwater runoff, and replace steep banks with planted terraces.

#### Low water alternative – summary

- Focus: Dry-land restoration, i.e. water harvesting, soil patterning, soil amendment, surface grading, and water harvesting;
- Water use: Irrigate only during establishment and periods of prolonged drought.
- Restored habitat: 1,125 acres
  - ~ 75% xeroriparian shrub
  - ~ 25% mesquite
  - 6 acres emergent marsh

#### Medium water alternative elements

- Channel: Water harvesting upstream of grade control structures with supplemental irrigation (encourage emergent march and cottonwood-willow), create periodic flow in Old West Branch, and plant riparian grasses.
- Terrace: Water harvesting at tributaries, irrigate and plant upper areas with mesquite, and stabilize lower terraces with mesquite.
- Floodplain: Amend soil, plant and irrigate, and replace steep banks with planted terraces.

#### Medium water alternative – summary

- Focus: Create mesquite bosque
- Water use: Long-term irrigation of terraces and basins
- Restored habitat: 1,098 acres
  - ~ 65% mesquite
  - ~ 35% scrub-shrub
  - 18 acres cottonwood-willow
  - 6 acres emergent marsh

Leslie also showed several graphics and maps illustrating the conceptual design of the water harvesting basins, the proposed locations of water harvesting basins and grade control structures, and the general areas to be planted. She summarized the anticipated impacts of the project as follows:

- Conversion of 420 acres of Sonoran Desertscrub and Sonoran Deciduous Riparian Scrub to mesquite, cottonwood-willow, riparian scrub, grass, marsh.
- Emergent marsh and cottonwood-willow was a habitat that could be used by several sensitive species, although only 6 acres and 18 acres, respectively are proposed under the preferred alternative due to high cost and difficult obtaining water.
- Mesquite-associated species likely to do best under the preferred alternative.
- According to the DEIS, the preferred alternative is likely to adversely modify burrowing owl habitat and may threaten individual owls.

## **EI Rio Medio**

Leslie explained that this project, which was initiated in 2003, has been constrained by Army Corps budget problems and is, therefore, not much farther along than when it began. Michael added that a

planning area had not yet been identified. The only information on El Rio Medio that is publicly available is that the project, which covers about 4.5 miles of the Santa Cruz River from Congress St. to Prince Rd, is being sponsored by both Pima County and the City of Tucson.

### **Tres Rios del Norte (TRDN)**

Leslie explained that, although TRDN was initiated in the same year as Paseo (2001); Paseo came along earlier in the year than TRDN. Therefore, when Army Corps budget cuts became necessary, Paseo was a higher priority and is therefore farther along than TRDN. Tres Rios, which is co-sponsored by the Town of Marana, City of Tucson, and Pima County, has a draft EIS that is in process and is anticipated for release in spring 2005.

Leslie noted that although the project area covers approximately 17 miles of the river, from Prince Rd. to Sanders Rd., the only portion of the project within Tucson is that part south of El Camino del Cerro (ECDC).

South of ECDC, the draft plan proposes that the Roger Road wastewater treatment plant outlet be moved from Columbus Park, south to Prince Road. This will result in a longer stretch of wetted channel in the river. In addition, a grade control structure, similar to the one under the Ina Rd. bridge, has been proposed for just north of ECDC.

These two changes, along with some amount of plantings and irrigation, are expected to result in the following riparian vegetation:

- Emergent marsh: 7 acres in river channel between Prince Rd. and Columbus Park, 3 acres adjacent to Columbus Park Lake, and 4 acres upstream of El Camino del Cerro, south of the grade control structure. Total is about 14 acres.
- Cottonwood-willow: 37 acres at the Silverbell Golf Course (in and among the greens), 18 acres in river channel between Prince Rd. and ECDC, and 18 acres at Columbus Park. Total is about 75 acres.
- Mesquite: 75 acres from Sweetwater to El Camino del Cerro, in and around Columbus Park.
- Scrub-shrub: 60 acres at Columbus Park.

Leslie concluded the presentation by asking if anyone had questions pertaining to either the presentation or the morning's fieldtrip. No one had any questions; however, Trevor wanted to point out that restoration around golf courses was problematic because it could result in take of species through exposure to pesticides and domestic or feral animals.

### **3. Houghton Area Master Plan/Southlands**

Michael presented information on the Houghton Area Master Plan (HAMP) as a background for planning in the Southlands. In the HAMP, the City sought to plan at the largest and broadest scale possible. Michael explained that this plan was attempt to apply the principles of the Desert Village Model. This model has several key elements.

The first element is a hierarchy of activity nodes. These village centers are focal or meeting points in a "village" of 8,000 to 12,000 people. These village centers provide day-to-day service for the immediate residents. Large village centers would include industrial facilities and employment opportunities. Smaller village centers would be comprised of restaurants, entertainment options, and other services. The key to these village centers is that they avoid the use of 4-corners situations (a store on each corner of an intersection), emphasize mixed use, and have a strong

pedestrian orientation.

Along the periphery of the village centers will be higher density residential, with lower density residential over the majority of the area. This lower density residential will average 4 homes per acre, but will provide a full range of housing styles and densities.

Other key elements include preservation of the natural wash system. The washes are utilized to manage some stormwater runoff and this runoff can facilitate the growth or restoration of native vegetation in and around the washes. An important consideration is that additional water flows into the washes must be balanced so that flow velocity, and therefore flooding potential, is not increased. Rather than dealing with these drainage issues on a project-by-project basis, however, a sub-regional drainage plan is developed to plan for stormwater utilization/accommodation. A final concern in this model is that wash crossings are minimized.

Michael noted that the Arizona State Land Department (ASLD) had expressed a willingness to sell land in the HAMP area in "functional units" that could be self-supporting with respect to planned uses. This would result in the land being sold in a pattern that makes sense for infrastructure support, such as the road system.

Trevor asked if there were any industrial areas planned in the HAMP. Michael replied that there were not, with the exception of a small area within the Davis Monthan Air Force Base approach-departure paddle (a megaphone-shaped zone extending southeast from D-M's runway) and an area around the existing Global Solar facility. Rafael added that, instead of having commercial in ribbons along major roads, under this model it would be concentrated in nodes.

Michael then talked about the trail system planned for the HAMP. This trail system is based on the Pima County Trail Master Plan and primarily utilizes the open space along the wash as a trail corridor. Ann asked if the wash areas included just the tree canopy along the wash or if it included a buffer. Rafael said that the wash areas included the 100-year floodplain and areas with riparian signature as identified using an orthophoto. Ann noted that there had just been a Pima County meeting regarding mitigation and they had talked about how much buffer is needed to maintain the functionality of a wash. Some important considerations that came out of that discussion were that there needs to be a soil source or the washes will simply erode and that homes needed to be kept away from the washes to minimize disturbance.

Michael explained that the political reality of ASLD is that they envisioned berms around all of the washes. In the HAMP area, for example, ASLD had planned for about 14,000 feet of berms along the washes. These berms would be 2-3 feet high and made of dirt covered with concrete. Rich asked if the berms had to be put in place before the land was sold. Michael said that he didn't know; that was still an issue that had to be negotiated with ASLD. According to Michael, ASLD was seeking to ensure that the 100-year floodplain was contained. Rafael noted that one important theme of the HAMP was that preservation is one of the most affordable ways to provide amenities.

Michael then went on to say that the Southlands were a little different. There are not a lot of pristine areas to preserve, but there was the opportunity for careful engineering and planning to create better riparian areas than are currently in the Southlands. Ann added that you also had to consider the economic cost of a 404 permit and the cost of designing and implementing concrete drainages.

Bruce asked of the Southlands comprised the headwaters of the Atturbury Wash. Michael said that

it was. Ken asked how Fantasy Island (the State Land near Lincoln Park with trails that are heavily used by mountain bikers) was addressed in the HAMP. Michael said that it was not explicitly incorporated but that there was policy support expressed for the continued use of the area for biking.

Rafael pulled up maps of the ASLD conceptual plan for the Southlands. Rich asked if ASLD can zone over the top of Tucson's land use plans. Michael said that they could, but it was not likely to get to that situation. Ann asked whether HCPs were a tool to deal with issues on State Land. Leslie replied that HCPs could add value to this land by addressing ESA compliance and ASLD was starting to get more involved in conservation planning in the region.

#### **4. Field Trip**

Leslie reminded the group that a field trip was planned to the Avra Valley planning area for the morning of November 22. It turned out that this date conflicts with Tucson Water presenting their 50-year plan to the City Council, an alternate date has been requested. The field trip was rescheduled for Nov. 23, starting at 7:30 am from the Game and Fish offices on Greasewood.

#### **5. Conservation Targets**

Trevor had asked at the last meeting for additional information on the bats identified by Tim Snow that occurred in the planning area and were classified as Species of Concern by USFWS. Leslie handed out a summary that Ken had put together from the HDMS abstracts and the Arizona Bat Conservation Plan. Leslie said that none of this information indicated that any of the four species were likely to become listed in the next 5 to 10 years. She asked that the TAC review the handout after the meeting. Unless anyone had additional concerns, the 4 bats would remain "not likely to be listed" on the conservation target list. Leslie said she would send around a revised species summary list and spreadsheet that reflected all changes recommended by the TAC.

#### **6. Habitat Models**

Leslie provided a quick update on the status of the species habitat models. Plans were to meet with USFWS and AGFD to create a habitat model for the pygmy-owl and burrowing owl. The pygmy-owl model would be based on the proposed critical habitat and draft recovery areas, but would include additional areas that these two agencies considered to be suitable pygmy habitat within the planning area. The burrowing owl model would be based on input from AGFD and Courtney Conway. This model might be like the one created for the Marana HCP where AGFD identify areas of suitable habitat (for foraging and nesting) and these were buffered to cover the distance owls may forage from their burrows.

Leslie explained that of all the models, the yellow-billed cuckoo model seemed the most inaccurate. She asked if there was anyone who might be able to help refine or replace the SDCP habitat model for this species. Troy Corman with AGFD was recommended.

For the snake models, Phil Rosen would be consulted. The models than Phil created for Marana would be used to identify potential habitat in the City's planning areas. Phil would review the maps and determine whether any changes needed to be made to the models. The Pima and needle-spined pineapple cacti models would be developed based on Mima Falk's input.

## 7. Annexation

Michael gave a short update on the planning area expansion discussion. He said that it was unlikely that additional money was available, so if these areas were included in the planning process, it could only be up to the point that it did not create additional cost for the process.